



RACINE COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN

2023 - 2032



RACINE COUNTY LAND & WATER CONSERVATION

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**LAND AND WATER RESOURCE MANAGEMENT PLAN
FOR RACINE COUNTY: 2023-2032**

Prepared by the

Racine County Public Works and Development Services Department
Land & Water Conservation Division

July 2022

\$25.00

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Summary

In 1997, the Wisconsin State Legislature amended Chapter 92 of the Wisconsin State Statutes, requiring all counties to prepare a Land and Water Resource Management Plan (LWRMP). The intent was to develop a locally led planning process to address each County's unique natural resources and establishes a long-range set of goals, objectives, and actions to protect and restore those resources.

The original edition of the Racine County Land and Water Resource Management Plan was written in 2000. The 1st revision was approved in 2008 and 2nd revision was approved in 2013. This is the 3rd revision of this plan.

This 10-year workplan:

- Uses a locally led process for plan development and implementation
- Identifies local land and water resource objectives
- Establishes goals and objectives based on the resource concerns
- Develops a comprehensive program integrating existing and proposed resource programs
- Establishes partnerships between agencies, municipalities, and organizations
- Incorporates an information and education strategy
- Identifies a method to evaluate and monitor progress.

Public participation was used in the plan under the guidance of a Citizen's Advisory Committee. The committee was comprised of individuals that had natural resource, agricultural, or environmental backgrounds. The committee utilized their natural resource knowledge, combined with public participation surveys submitted by citizens, to develop the following goals.

The five goals established by the committee include:

- Reduce non-point source pollution, primarily cropland erosion, to improve water quality
- Utilize management and control of aquatic and terrestrial invasive species
- Prioritize and promote the repair of Lake Michigan bluff erosion, shoreline erosion, and streambank/ditch bank erosion
- Increase the awareness and provide further education of environmental stewardship to farmers, youth, elected officials and the general public
- Protect and preserve natural resources and environmental corridors

The Land and Water Resource Management Plan was organized into chapters to include charts, photos, and tables to help illustrate the resource base, current needs, planned actions and an implementation strategy. The chapters are as follows:

Chapter 1 – Introduction and Plan Development Process

Chapter 2 – Resource Assessment

Chapter 3 – Related Plans, Regulations and Programs

Chapter 4 – Goals, Objectives, Monitoring, Evaluation and Estimated Costs

The following represents a brief summary of each chapter to identify the major components of the plan.

Introduction and Plan Development Process

The plan was developed under the recommendations of the Citizen Advisory Committee (CAC). The CAC included agency personnel, farmers, elected officials, municipal representatives, industry representatives, and environmental non-profit members. The CAC reviewed survey responses, analyzed the results, and provided input for local priorities to be included in the plan.

This chapter provides an overview of the planning process, the study area, the plan purpose, and plan content. Finally, the chapter identifies the Citizen's Advisory Committee members along with their titles and affiliation.

Resource Assessment

The land and water resources of Racine County are susceptible to development, intensive farming, invasive species and other variable trends and elements over the next ten years. It is important to identify the soils and their production capability because this, combined with climate change, can determine locations dependent on soil health and regenerative agricultural systems. Secondly, the topography and geology of the County is taken into consideration for mineral extraction or other geologic characteristics.

The water resources are identified with this plan. Groundwater remains an important water supply and is generally protected by heavy clay in the central to eastern portion of the County. In the western portion of the county, sand and gravels create a higher potential for contamination.

Currently, a majority of the surface water resources are only partially meeting established water use objectives. Waterbodies listed as Section 303(d) waters include: Lake Michigan (near shore Racine, Wind Point, Myers Park Beach), and portions of the Root River, Fox River, Root River Canal, the Racine Harbor, the Pike River, the White River, the Des Plaines River, Eagle Creek, Husher Creek, Hoods Creek, the Kilbourn Road Ditch, Wind Lake, Waubeesee Lake, Tichigan Lake, Eagle Lake and a few unnamed tributaries. All water resources, including lakes, rivers, streams, ditches, groundwater, and wetlands are prioritized in this plan.

Terrestrial natural resources such as woodlands, natural areas and environmental corridors are to be protected due to their natural, recreational, historic and aesthetic value. These areas have been identified and should be preserved to maintain the overall quality of the environment.

Related Plans, Regulations, and Programs

One of the first steps to developing this plan was to take into consideration a collaboration of inventory, collation, and review of recommendations of relevant previously prepared plans and reports. Accordingly, an important step in the planning process was a review of existing framework of an area-wide, local land use planning effort and related land use regulations. Chapter three represents a summary of that review.

Summary of the Goals and Objectives

The CAC developed the five goals listed on the first page of this summary. No goal has a priority over another goal. Tables 12 through Table 16 list the planned actions, with measurable goals (**shown in bold**), to be accomplished by the Land and Water Conservation Division. The other planned actions listed may be part of the equation to assist with accomplishing the goals and work plan activities.

The first goal is to reduce non-point source pollution, primarily cropland erosion, to improve water quality. The Agricultural Performance Standards, Farmland Preservation Program, Nutrient Management Planning, the Animal Waste Management Ordinance and Livestock Siting are still effective regulatory methods to complete this task. A

successful plan can be accomplished through a combination of the standards and ordinances along with the priority farm strategy and continued monitoring.

An effective voluntary approach is to continue to work with the Watershed Protection Committee of Racine County, a producer-led group, to promote soil health and regenerative agriculture. This is done through workshops, field days, research plots, demonstrations, and informal meetings.

Finally, several State and Federal programs such as: SWRM, CREP, EQIP, CRP, TRM, CSP, Producer Led and any other grants funds can be used to assist with accomplishing this goal. Our office has established strong partnerships with the USDA's Farm Service Agency, Natural Resources Conservation Service, UW Extension, WI DATCP and WDNR to assist with completing this goal.

The second goal is to utilize management and control of aquatic and terrestrial invasive species. This includes youth activities, workshops, volunteer programs and the encouragement of plant removal or management.

The third goal is to prioritize and promote the repair of Lake Michigan bluff erosion, shoreline erosion and streambank/ditch bank erosion. The County will work with impacted municipalities to secure funding and find potential shoreline stabilization solutions. The LWCD will promote shoreline plantings and vegetative buffer zones for more natural plantings and an aesthetically native look. The LWCD will identify cost-share programs for funding and provide the Shoreline Stabilization Guide to Lake Association members and riparian owners.

The fourth goal is to increase awareness and provide further education of environmental stewardship to farmers, youth, elected officials and the general public. This outreach involves providing conservation information through newsletters, press releases, the County website, direct mailings, and social media. Also, the LWCD will continue to provide information through one-on-one contacts, phone calls, brochures and handouts related to all goals listed in this summary.

The final goal is to protect and preserve natural resources and environmental corridors. This includes utilizing conservation programs and environmental easements through planning efforts to protect natural resources. Other efforts include promoting buffer programs, groundwater recharge protection areas, and the protection of forestlands and woodlots. The proper management of shorelands, floodplains and wetlands are also included in the chapter, as well as appropriate reclamation of non-metallic mining sites.

Progress, Monitoring, Evaluation, and Estimated Costs

Monitoring the progress and program effectiveness is a critical component of not only accomplishing our goals but protecting the environment to enhance and improve the quality of the life of citizens of Racine County. Automated tracking, using GIS, spreadsheets, erosion data and water quality data is a vital component to demonstrate improvements. Knowing the number of farmland preservation participants, permits issued, acres of conservation easements, inspections conducted, and non-metallic mines reviewed are easier to quantify, but just as important to track and realize trends with data.

Consistent and thorough monitoring and evaluations of conservation efforts is essential to this plan. Racine County completes an annual report to WI DATCP to quantify implementation of this plan. Data has been collected since the beginning of Racine County's first adopted LWRM plan. The LWCD will continue to improve tracking and reporting to show the effectiveness of accomplished activities and trends for focusing on new activities.

The total cost of current funding levels to implement this plan is listed on Table 17. Fully implementing the Racine County Land and Water Resource Management Plan will require additional staff and cost share resources. Therefore, outside funding sources will be sought and used whenever possible to assist with staffing or cost share to fully implement this plan.

Chapter I

INTRODUCTION AND PLAN DEVELOPMENT PROCESS

OVERVIEW OF STUDY AREA

Racine County is located in southeastern Wisconsin, and bordered on the east by Lake Michigan, on the north by Milwaukee and Waukesha Counties, on the west by Walworth County, and on the south by Kenosha County. The impacts of urbanization in the Milwaukee, Kenosha, Northeastern Illinois County metropolitan areas, and the Waukesha County urbanizing area, are increasingly affecting the County.

The County covers about 340 square miles and contains two cities, eleven villages, and four towns. There are all or parts of five natural watersheds and a total of about 4,000 acres of inland surface waters within the County. The subcontinental divide between the Mississippi River and Great Lakes drainage basin traverses the County and has important implications for some aspects of land and water resources planning.

A majority of the population resides in the eastern portion of Racine County, within the City of Racine, the Villages of Sturtevant, Caledonia, Mt. Pleasant, North Bay, Wind Point, and Elmwood Park. However, population centers are also found in the western communities including the City of Burlington and Villages of Rochester, Union Grove, and Waterford, and in the vicinity of the major lakes, including Wind Lake, Tichigan Lake, Eagle Lake, Brown's Lake, and Bohner Lake areas. Much of the land in the County remains in agriculture, but the dairy industry has steadily declined. The primary form of agriculture involves cash-grain farming for corn and soybeans. Sod farming is predominant in the Wind Lake area. There also remains significant farm acreage devoted to cabbage and other vegetable production primarily in the eastern one-half of the County. The major industries within the County are generally located east of IH 94, with smaller industrial development being located west of IH 94 and in the other urban centers.

Racine County will face significant urban growth and development and the challenge is to balance this growth while protecting and maintaining its natural resources. This includes a large 3500-acre development currently impacting agriculture and natural resources in the Village of Mount Pleasant. The County has a diversified natural resource base, including the Lake Michigan nearshore area, several inland lakes, as well as major river systems. Additionally, the County contains significant areas of quality wetlands, woodlands, and grasslands, the most important of which are incorporated into the areas designated as environmental corridors. The environmental corridors are recognized and continually being protected and enhanced to improve the natural resource base of Racine County.

PLAN BACKGROUND AND PURPOSE

In 1997, the State Legislature, through Wisconsin Act 27, amended Chapter 92 of the *Wisconsin Statutes*, requiring all counties to develop a land and water resource management plan (LWRMP). The intent of this charge is to support a locally led process which is intended to address each individual county's unique natural resources; identify particular problems associated with the resource base; and establish a plan to help protect and restore those resources. Additionally, the County plans are intended to focus on State minimum nonpoint source pollution reduction standards related to agriculture and urban development.

The purpose of the Racine County land and water resource management planning effort is to develop a plan to be used as a guide for Racine County in carrying out its natural resource-related programs. The plan development process is intended to encourage innovative programming and leadership and to build local support. The plan identifies the natural resources and the current condition of those resources, the limitations of those resources, and sets forth a strategy that addresses the natural resource issues and problems. This plan also provides a means to inform the public about these issues and problems and include them in the steps necessary to protect the natural resource base.

The initial Racine County Land and Water Resource Management Plan was approved in 2000. Originally, Chapter 92 of the *Statutes* requires that the LWRMP must be updated every five years for counties to be able to receive conservation staff funding and cost-share grant monies. In 2003, Racine County requested and received a 3-year extension of its existing LWRMP from the Wisconsin Land and Water Conservation Board. The first revision of the original plan was developed in 2007. This was the Community Assistance Planning Report No. 259 (2nd Edition) A Land and Water Resource Management Plan for Racine County: 2008-2012. The 2nd Revision of this plan was completed in 2012. A revision to the plan requirements allows Counties to develop a 10-year plan, with a 5-year update. The Racine County Land and Water Resource Management Plan 2013-2022 was approved in 2012 and a 5-year update was given to the Land & Water Conservation Board in 2017. This plan will be the 3rd revision to be drafted and written by Racine County staff, using the previous plans as baseline information. The requirements of the Wis. Stats., 92.06, and additional guidelines have been established by the Wisconsin Department of Agriculture, Trade and Consumer Protection and the Wisconsin Land and Water Conservation Board. This plan will serve as a program guide for local conservation efforts in Racine County.

PLAN DEVELOPMENT AND PUBLIC PARTICIPATION

The Racine County Land and Water Resource Management Plan was developed through a collective effort of a number of agencies and organizations under the overall direction of the Racine County Land and Water Conservation Committee (LWCC). The agencies involved include the Racine County Land and Water Conservation Division, the Southeastern Wisconsin Regional Planning Commission, the Wisconsin Department of Natural Resources, the University of Wisconsin-Extension, the U.S. Department of Agriculture Natural Resources Conservation Service and the U.S. Department of Agriculture Farm Service Agency. The plan was developed under the guidance of the Racine County Land and Water Resource Management Plan Citizen's Advisory Committee (CAC), which was created by the County specifically for plan development purposes and is comprised of elected and appointed officials and citizens knowledgeable in land and water resource matters. In addition to the formation and active participation of the Citizen's Advisory Committee, the plan development process included the following steps:

The 3rd revision to the Racine County Land and Water Resource Management Plan began in June of 2021 with selecting members for the Citizen's Advisory Committee. The Citizen's Advisory Committee meetings were held on August 18 and October 13, 2021, and January 19, 2022. The Committee reviewed each chapter of the plan in draft form and provided comments and recommendations, which were then addressed in the final plan. This plan was approved by the Citizen's Advisory Committee on July 22, 2022. On August 1, 2022, the Racine County Land and Water Conservation Committee met to approve the plan. On August 15, 2022 the Economic Development and Land Use Planning Committee met to approve the plan; this meeting was open to the public for citizen comment and input. This meeting was announced twice in the *Racine Journal Times* prior to the meeting as a Class II public notice. The Racine County Board of Supervisors approved the plan on September 27, 2022, with application for final approval by the Wisconsin Land and Water Conservation Board on October 4, 2022.

EXISTING LAND AND WATER RESOURCE-RELATED PLANS

The Racine County Land and Water Resource Management Plan complements other planning and resource management efforts, linking local level planning with regional and watershed level plans. The plan, therefore, provides an integrated framework within which Racine County will conduct activities to protect and rehabilitate the land and water resource base of the County, and contribute to the environmentally sound management of these valuable resources in a coordinated and compatible manner with watershed-wide needs and resource management programs. One of the first steps to be undertaken in land and water resource management planning is the inventory, collation, and review of the recommendations of relevant previously prepared reports and plans.

A number of plans currently exist which focus on the natural resources of Racine County. These plans include programs which address the interconnectedness of the natural resources of Racine County with those of the related watersheds and the Southeastern Wisconsin Region, as well as the immediacy and importance of natural resources at the County and community level. The plans collated and reviewed for input into this current planning

program were generally most relevant to actions undertaken by the County. In addition, selected plans prepared at the local level, including local land use plans, park and open space plans, lake and water quality management plans, and sewer service area plans prepared for individual communities or for specific waterbodies were considered.

PLAN CONTENT

The Racine County Land and Water Resource Management Plan is organized into four chapters. Following this initial introductory chapter, the second chapter presents a description of the natural resource base of Racine County. The third chapter describes a summary of the regulations and programs available in Racine County. Chapter III also describes the State agricultural and nonagricultural performance standards as well as other land and water resource standards. Chapters IV includes the goals, objectives, plan elements, budget and implementation steps recommended to address the Citizens Advisory Committee's identified issues and problems for each of the areas involved and with the natural resources within Racine County. This final chapter will also contain recommendations regarding information and education, the methods of program performance review, and a summary for the plan on a countywide basis.

RACINE COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN CITIZEN ADVISORY COMMITTEE MEMBERS AND SUPPORTING STAFF

Name	Title and Affiliation
Committee Members:	
Monte Osterman, Chairman	Chairman, Racine County Land & Water Conservation Committee
Jesse Bennett	Regional Nonpoint Source Coordinator, WDNR
Dave Giordano	Executive Director, Root Pike Watershed Initiative Network
Tom Greil	Chairman, Watershed Protection Committee of Racine County
Brian Gunderson	Vice Chairman, Watershed Protection Committee of Racine County
Rhia Holden	Soil Conservationist, USDA Natural Resources Conservation Service
Greg Horeth	Chairman, Waterford Waterway Management District
Fred Koeller	Member, Southeast Wisconsin Fox River Commission
Kristin Looch	County Executive Director, USDA Farm Service Agency
Taun Parkers	Operator, A to Z Aggregates, Hillside Aggregates, Spring Valley Pit
Brandi Richter	District Conservationist, USDA Natural Resources Conservation Service
Jim Stute	Agricultural Scientist, Watershed Protection Committee of Racine County
Melissa Warner	Director, Weed Out! Racine
Brian Younger	President, Eagle Lake Improvement Association
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Chapter II

RESOURCE ASSESSMENT

INTRODUCTION

The conservation and wise use of agricultural and natural resources are important factors influencing the growth and development potential of the County. Aside from the County's physical location, the natural resource base is one of the assets that make the County a desirable community in which to reside and work. The natural resources not only provide recreational and aesthetic value, but also provide economic value. Protecting this resource base is also important to maintain biological diversity, which is vulnerable to the misuse that is associated with inappropriate development. Accordingly, future development should be guided to be consistent with the ability of the natural resource base to support various forms of urban and rural development without the deterioration of the existing natural resources in the County.

The natural resource base in Racine County is susceptible to permanent damage through inappropriate land use. Sufficient understanding and recognition of the characteristics and various elements of the natural resource base is essential in order to prevent excessive costs in terms of both monetary expenditures and environmental degradation. A sound land and water resource management program must recognize that natural resources are limited. Racine County and the local municipalities within the County have worked together to develop the Multi-Jurisdictional Comprehensive Plan for Racine County: 2035, that acknowledges the limited resource base, provides for development consistent with the limited resource base, and educates the public on the value of natural resources, and the means to protect those resources.

This chapter presents an inventory and analysis of those natural resource base elements of Racine County which are most directly related to land and water resources planning. Included is descriptive information pertaining to physiography, topography, soils, groundwater resources, surface water resources, wetlands, woodlands, wildlife habitat, natural areas, environmental corridors, and major parks and open space sites. The chapter also briefly discusses the climate in the County as it relates to the natural resource uses and protection measures.

SOILS AND AGRICULTURAL RESOURCES

Soil Characteristics

The USDA Natural Resources Conservation Service has classified soils into capability groupings that indicate their general suitability for farming. The groupings are based upon composition and limitations of the soils, risk of damage when used, and the way they respond to treatment. Under the NRCS system, there are eight capability classes ranging from Class I, which have few limitations, to Class VIII, which have severe limitations due to soils and land formations that are rough, shallow, or otherwise limited in that they do not produce economically worthwhile yields of crops, forage, or wood products (see Map 1, page 89). In general, Class I soils are more arable and suitable for cropland; Class II soils have some limitations that reduce the choice of plants that can be grown or require moderate conservation practices to reduce the risk of damage when used; Class III and IV soils have severe limitations that reduce the choice of plant, require special conservation practices, or both. The soils in the remaining classes have progressively greater natural limitations not suitable for cropland, but can be used for pasture, grazing, woodland, wildlife, recreation, and esthetic purposes. Generally, lands with Class I and II soils are considered "National Prime Farmlands" and lands with Class III soils are considered "Farmlands of Statewide Significance."

The location and amount of Class I, II, and III soils were critical in identifying farmland preservation areas under the Racine County Farmland Preservation Plan, adopted by the County in 1982 and updated in 2013. Racine County areas with Class I, II, and III soils are shown on Map 1. Racine County mainly consists of Class II soils which are well suited for agricultural use.

Soil Suitability for Agricultural Use

For agricultural purposes, the U.S. Natural Resources Conservation Service categorizes prime agricultural soils to have few manageable limitations for successful crop production. Also illustrated are soils within the County that are important for agriculture, although these soils are somewhat more challenging to manage properly. The remaining soils in the County are either unclassified or unsuitable for agricultural use primarily because of the high potential for erosion, steepness of land slope, or drainage and wetness problems.

Currently, there are approximately 290 square miles of prime and valuable agricultural soils, also referred to as Class I and Class II soils, respectively (Table 1) in the NRCS soil survey report. In addition, there are about 25 square miles of other, or Class III, soils that are valuable to agriculture but require more intensive management. About 15 square miles are covered by soils not recommended for agricultural purposes due to steepness, shallowness, or wetness problems. These soils are considered Class IV through Class VIII soils (Table 1).

SOILS

Soil properties exert a strong influence on how land is used, especially where land use is continually changing and evolving, as it is in Racine County. Soils directly affect the types of land use that can take place, whether those uses are agricultural, recreational, commercial, or residential. Any comprehensive land and water resource management plan needs to evaluate the ways that soils are being used and should best be used and managed over time.

A detailed, areawide soil survey was conducted by the U.S.D.A. Natural Resources Conservation Service (NRCS) (formerly the U.S. Soil Conservation Service) at the request of the Southeastern Wisconsin Regional Planning Commission. Soil information was gathered at the field level and the data were compiled and published as SEWRPC Planning Report No. 8,¹ and as a USDA-Soil Conservation Service soil survey report and maps for Kenosha and Racine Counties.² Those data are routinely used for land use, agricultural, and development planning. The information contained in the soil survey also contributes to the proper construction of commercial and residential developments, as well as the construction of roads, highways, airports, and railroads.

General Soil Associations

There are nine soil associations in Racine County as shown on Map 2. Soil associations refer to a group of soils that are commonly found together on different, but related parts of the landscape. Soils are typically grouped into an association by drainage patterns or often by surface horizon thickness. The general soil associations can be used for comparing suitability of relatively large areas for various land uses. However, for specific applications,

Table 1

SOILS SLOPE CLASSIFICATIONS WITHIN RACINE COUNTY

Slope Classes	Acres	Percent of Land Area
0 to 2 Percent	85,798	39
2 to 6 Percent	100,886	46
6 to 12 Percent ^a	15,957	8
12 to 20 Percent ^a	4,409	2
Greater than 20 Percent ^a	3,283	2
Disturbed Soils.....	2,380	1
Water	5,223	2
Total	217,936	100

^aSlope classes that are greater than 6 percent, are considered highly erodible lands according to the U.S.D.A. Natural Resources Conservation Service, provided those lands exceed one-third of the farm field.

¹SEWRPC Planning Report No. 8, Soils of Southeastern Wisconsin, June 1966.

²U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Kenosha and Racine Counties, Wisconsin, December 1970.

the soil survey information should be relied upon, as well as onsite field data for confirmation purposes. Soils are very diverse and non-uniform, therefore making it necessary to verify soils on the landscape. A brief description of each of the nine soil associations in Racine County, along with their spatial distribution within the County, is presented on Map 2.

The most erosive soils in Racine County are generally in the Villages of Yorkville and Raymond. These soils are generally clay loam to silty clay loam and on long slopes that are intensively farmed.



*Soil Pit at Beck Grain Farms – Town of Waterford
Dr. Jamie Patton, University of Wisconsin, describes soil structure to local farmers during a Field Day*

Existing Farmland

The U.S.D.A.'s National Agricultural Statistics Service provided the 2017 Census of Agriculture. The census indicates cropland encompassed about 171.5 square miles or approximately 50 percent of land in Racine County. This figure includes cultivated land, pastures, land used for horticulture or nurseries, and land occupied by farm buildings; it excludes wetland and woodland areas on existing farms.

Farms and Farm Production

Farms and farm production are valuable indicators in determining the economic impact of agricultural operations in Racine County. As part of the Census of Agriculture, farms are defined as operations from which \$1,000 or more of agricultural products were sold, or normally would be sold, during the year. Further, a farm includes land owned and operated by the farmer as well as lands rented from others. As reported in the most recent Census of Agriculture, there were 611 farms and 105,968 acres harvested in Racine County in 2017. Table 2 indicates the breakdown of the farm size and acres harvested.

TABLE 2

Farm by Size (in acres)	Number of Farms
1 to 9 acres	138
10 to 49 acres	178
50 to 179 acres	154
180 to 499 acres	79
500 to 999 acres	39
1000 acres or more	23

2021 Agricultural and Non-Agricultural Land Use (See Map 16)

Agricultural Land Use	Acres		Non-Agricultural Land Use	Acres
Soybeans	42,665.70		Deciduous Forest	24,278.80
Corn	34,005.00		Developed/Low Intensity	18,701.60
Grass/Pasture	19,890.80		Developed/Medium Intensity	14,505.50
Winter Wheat	7,931.90		Woody Wetlands	13,410.80
Alfalfa	7,346.80		Developed/Open Space	12,091.80
Other Hay/Non Alfalfa	1,790.30		Developed/High Intensity	5,945.90
Sod/Grass Seed	1,183.60		Herbaceous Wetlands	4,914.90
Cabbage	886.70		Open Water	4,692.10
Sweet Corn	810.60		Barren	1,200.90
Dry Beans	556.20		Mixed Forest	479.00
Greens	242.20		Evergreen Forest	228.20
Pumpkins	35.40		Shrubland	75.80
Oats	16.90		Total	100,525.30
Fallow/Idle Cropland	11.80			
Rye	7.30			
Dbl Crop Triticale/Corn	7.30			
Sweet Potatoes	4.00			
Dbl Crop WinWht/Soybeans	3.80			
Christmas Trees	3.60			
Sugarbeets	3.30			
Cherries	2.90			
Switchgrass	2.70			
Squash	2.70			
Barley	1.10			
Triticale	0.90			
Buckwheat	0.70			
Misc Veggies & Fruits	0.70			
Onions	0.70			
Apples	0.70			
Carrots	0.70			
Peas	0.40			
Sorghum	0.20			
Mint	0.20			
Potatoes	0.20			
Other Crops	0.20			
Strawberries	0.20			
Dbl Crop WinWht/Corn	0.20			
Total	117,418.60			

TOPOGRAPHY AND GEOLOGY

Glaciation has largely determined the topography and geology, as well as the soils of Racine County. Of the four major stages of glaciation, the last and most influential in terms of present physiography and topography was the Wisconsin Stage, which is believed to have ended in this area about 11,000 years ago. Racine County varies from gently rolling glacial plains, or ground moraines, in the eastern half to steeper hills in the western half. Map 5 indicates the slope analysis of Racine County. The ground moraines are typically comprised of dense basal till, which frequently contains a combination of silt and clay. The eastern edge of Racine County also contains the lake terrace, which runs parallel to and contiguous with the shoreline of Lake Michigan. In Racine County, the west side of the Fox River is comprised of sand and gravel outwash deposits. Glacial outwash deposits are common along the major rivers and streams of Racine County. Outwash is alluvial in origin and was deposited by glacial meltwaters. A few places in the County also contain lacustrine deposits, which include the sediments of glacial lakebeds. Land surface elevations range from about 580 feet above sea level on the Lake Michigan shoreline, to 950 feet above sea level in the far western portion of the County as shown on Map 4.

The bedrock formations that underlie the unconsolidated surficial deposits in Racine County primarily consist of Silurian Age dolomite. Eastern Racine County has prominent areas in which the Racine formation, which is one of the five Silurian formations, contains dolomite reef strata that are exposed through natural outcroppings along the Root River, Lake Michigan and old quarries. This reef stratum has a rich diversity of fossil marine organisms. Southwestern Racine County provides good examples of glacial topography extending west into Walworth County. Specifically, kettle and kame glacial formations can be found in this area. The advances of glacial ice sheets resulted in a wide range of glacial deposits over the bedrock. The most substantial glacial deposits, represented as depth to bedrock, are 100 to 300 feet thick, and located in the central portion of the County. Areas where bedrock ranges from zero to less than 100 feet are generally found in the eastern and western portions of the County as shown on Map 6.

Lake Michigan Bluff and Ravine Areas

Shoreline erosion conditions are important considerations in planning for the protection and sound development and redevelopment of lands located along Lake Michigan. These conditions can change over time because they are related to changes in climate, water level, the geometry of the near shore areas, the extent and condition of shore protection measures, the type and extent of vegetation, and the type of land uses in shoreline areas.



In recent years, the bluff erosion along the Lake Michigan shoreline has become more severe due to higher lake levels. The current lake level is approximately three feet higher than a decade ago. Federal, State and local governments are continuing to support further shoreline protection methods to minimize bluff erosion impacts to residential homes, businesses and public infrastructure.

Bluff Erosion along Lake Michigan

Nonmetallic Mineral Resources

Nonmetallic minerals include, but are not limited to, crushed stone (gravel), dimension stone, peat, clay, topsoil, asbestos, beryl, diamond, coal, feldspar, talc, and sand. Nonmetallic mines (quarries) in southeastern Wisconsin provide sand, gravel and crushed limestone or dolomite for road building; peat for gardening or horticulture; and dimension stone for use in buildings, landscaping, and monuments. Nonmetallic minerals are important economic resources that should be taken into careful consideration whenever land is being considered for development. If an adequate supply of stone and sand is desired for the future, wise management of nonmetallic mineral resources and access to them is important. Existing non-metallic mining operations in Racine County are shown on Map 7. Some nonmetallic mines supply limestone, but most are typically sand and gravel operations. Approximately 802 acres are actively being mined or these areas are being used for stockpiles, driveways, wash ponds or other mining activities. In 2020, there were 1985 acres permitted for non-metallic mining use in Racine County.

Soil Suitability for Mineral Extraction

Racine County has a moderately abundant supply of sand and gravel deposits. Potential sand and gravel deposit areas are shown on Map 8. This indicates the potential non-metallic mining resources are available under 130 square miles, or 38 percent of the total land area of the County. These areas are concentrated in the western portion of the County in the outwash areas, particularly west of the Fox River, where the washing action of glacial meltwaters has sorted the sand and gravel into somewhat homogeneous deposits, that are commercially more attractive. Therefore, the most abundant sources of the sand and gravel occur in the Towns of Waterford and Burlington as well as the Village of Rochester. In addition, there are many other small deposits scattered throughout the remainder of the County. The occurrence of such deposits is extremely variable, and onsite investigations are necessary to determine the suitability of any given site for sand and gravel or rock extraction purposes.



Cretex Materials, Inc. – Quarry in the Town of Burlington

WATER RESOURCES

The water resources of Racine County include both surface and subsurface resources. Subsurface water resources, or groundwater, provide much of the water supply within the County. This water resource is contained within the geological strata underlying Racine County, principally comprised of a surficial sand and gravel aquifer and a deeper sandstone aquifer. The former aquifer interacts closely with the surface water resources of the County. The surface waters are comprised of lakes and streams. In addition, given the topography of the County, numerous wetlands form a transitional system between the water resources of the County and the land surface. Together with the land resources of the County, these water resources form an important element of the natural resource base of Racine County.

Groundwater Resources

Groundwater is an important source of water supply in Racine County. Except for the areas east of I-94, which have public water supply systems connected to the City of Racine's Lake Michigan-supplied water system, nearly all of the potable water and a majority of the process water consumed in Racine County was drawn from groundwater sources.³ As of 2005, about 14 million gallons per day was withdrawn within the County for these various purposes. In addition to consumptive uses, groundwater is an important source of water supplying surface water systems as base flow in streams and as lake inflow.

There are three major aquifers within Racine County and Southeastern Wisconsin, which contain the usable groundwaters of the County. From the ground surface, these aquifers are: 1) the surficial sand and gravel aquifer, 2) the Niagara dolomite aquifer, and 3) the sandstone aquifer. The first two aquifers are often treated as a single aquifer commonly referred to as the "shallow" aquifer due to its proximity and intimate hydraulic interconnection to the land surface. The latter, accordingly, is commonly known as the "deep" aquifer since it underlies the shallow aquifer.

The sand and gravel aquifer consists of unconsolidated sand and gravel deposits in glacial drift and alluvium. These deposits occur over much of the County, either at the land surface or buried beneath less permeable drift such as glacial till. This aquifer interacts extensively with the surface water system of the County.

The Niagara dolomite aquifer in Racine County consists of Silurian Age dolomite, which overlies the Maquoketa shale stratum throughout the entire County. The Maquoketa shale separates the Niagara and sandstone aquifers. The shale layer has very low permeability, which restricts the vertical movement of water and largely confines water within the sandstone aquifer.

The sandstone aquifer includes all sedimentary bedrock below the Maquoketa shale stratum. The bottom of the sandstone aquifer is the surface of the impermeable Precambrian rocks. This aquifer is continuous throughout the County and is a part of a large regional aquifer that is used as a source of water supply for major concentrations of urban development throughout southeastern Wisconsin and northeastern Illinois. This aquifer is relatively unimportant in terms of its influence on the surface water resources of the County since it does not intersect the surface drainage.

The source of most groundwater is precipitation, which infiltrates and recharges the groundwater reservoirs. The amount of infiltrate largely depends on the type of soils that cover the land surface. Where the soils are high in clay content and have a high density, the rate of infiltration and permeability is reduced. Where the soils are predominately composed of glacial outwash—an assortment of stratified sands and gravels—the soils have a higher infiltration rate and much greater permeability. The deep sandstone aquifer is primarily recharged west of the County in western Walworth County and Jefferson County where the confining shale layer is absent. Groundwater discharge primarily occurs from the pumping of wells.

³*SEWRPC Technical Report No. 37, Groundwater Resources of Southeastern Wisconsin, April 2000.*

Two of the greatest concerns of the groundwater supply include contamination and over-usage. The vulnerability of groundwater to contamination is a combination of several factors; however, two of the most important elements are soil and subsurface material characteristics and depth to groundwater levels. Since the eastern half of the County is largely covered by glacial till soils with a high clay content, contamination is not as much of a concern compared to the western part of the County. As illustrated in Map 9, the western half of Racine County contains a large area with a depth of less than 25 feet to groundwater. The shallowness to groundwater in combination with the stratified sand and gravel characteristics of glacial outwash soils, make the Fox River basin the most sensitive to contamination. Over the last century, the sandstone aquifer has seen a drawdown of its water levels. In the latter part of the 1800s and the early part of the 1900s, Racine and Kenosha Counties began to experience a decline in groundwater levels. The water levels in the sandstone aquifer are declining at a rate of up to six feet per year in some areas. Over time, this has led to more wells being drilled, deeper wells, and greater economic costs associated with supplying water to residents and industries in the County.

Surface Water Resources

Surface water resources constitute an extremely important part of the natural resource base in Racine County. Surface waters are a focal point of water-related natural area and recreational activities and provide an attractive setting for properly planned residential development. Surface waters, particularly the few major lakes of greater than 50 acres in the County, also provide substantial economic benefits through expenditures by boaters, fisherman and other recreational users. Additionally, lakeshore properties generally have higher assessed property values, and serve to enhance the tax base of Racine County and its local municipalities. When viewed in the context of open space areas, surface waters greatly enhance the aesthetic and scenic characteristics of the County's natural environment. The surface water resources in Racine County are shown on Map 10.

Surface Drainage

There are two major drainage systems within Racine County, and several minor drainage systems, based upon the direction of surface water flow. Of the major drainage systems, the Root River and its tributaries drains the central and eastern portions of the County to the east, where they ultimately discharge into Lake Michigan and the Laurentian drainage system. The eastern portion of the County also drains to Lake Michigan, via the Pike River system, or direct drainage area tributary to Lake Michigan. The other major drainage system contains the Fox River drainage system, which drains the western portions of the County to the southwest, where the river ultimately discharges into the Mississippi River system. In addition, a small portion of the south-central area of the County comprises the headwaters of the Des Plaines River watershed and drains to the Mississippi River drainage basin. These waterways and watershed areas are shown on Map 10.

The subcontinental divide has important implications for the use of Lake Michigan as a source of potable water within the County. In general, under existing international agreements, water from Lake Michigan may be piped to areas west of the divide only if provision is made to route return flows of spent water back to the Lake. The diversion of water from Lake Michigan without provision for such return flows is subject to complex Federal, State, and international legal and administrative restrictions. The subcontinental divide, therefore, places an important constraint upon the planning of public sanitary sewer and water supply facilities within the area, requiring the coordinated development of such facilities.

Subsurface Drainage

Racine County contains many poorly drained soils that require additional man-made drainage systems to become productive farmland. Drain tiling is abundant on much of the cropland east of the Fox River in Racine County. Drain tiles encourage water to saturate deeper in the soil while dispersing water flow from rain events over the period of many days or weeks. This is compared to surface flow which will runoff the surface faster. Overall, lower peak flow rate can reduce flooding impacts and improve water quality due to less surface runoff.

Soil and phosphorus runoff generally occurs in surface water flows. They do not leave through the tiles lines except in situations where tile lines are failing or surface intakes exist in the field. There is a misconception that the over application of nitrogen enters into the tile lines and outputs into the waterways. The ultimate goal of the

farmer is to match the nitrogen (N) application with the crop need at the proper time. This does not completely stop the movement of nitrogen through tiles, but the farmer wants nitrogen to be used by the crop. Although, over application of N, poor timing of N application, or rainfall following N applications can result in N leaching below the root zone and then either into the groundwater or tile lines that intercept groundwater. N application rates above crop needs will result in excess N that can leach or denitrify.

Nutrient management planning, cover crops, side dressing, and utilizing nitrogen injections along planted seed are new improved methods of nitrogen application. Applying less fertilizer and eliminating fall applications will reduce nitrogen leaching into drainage systems. This is the goal of the 590 Nutrient Management Plan.

Lakes

There are a total of 18 named lakes in Racine County, 10 of which are over 50 acres in area. Nine of the lakes are over 100 acres as shown in Table 7. The named lakes cover approximately 3,500 acres, or about 2 percent of land area in the County, and range in area from the four-acre Delmonte Lake to the 1,132-acre Tichigan Lake.

Lake water quality is significantly affected by contaminants delivered to the water systems from surrounding lands. The nature and extent of urban development and agricultural activity on lands draining to lakes and streams can directly impact water quality. Water quality is affected by plant nutrients, such as nitrogen and phosphorus, sediments from the land surface, and various natural and synthetic chemicals, the concentrations of which may be artificially increased as a consequence of agricultural and urban activities.

Human impacts on lakes can cause numerous reasons for concern. Some of the human impacts are stormwater runoff and assistance with aquatic invasive species migration. Stormwater runoff is an area of concern because it can lead to pesticides, fertilizers, bacteria, hydrocarbons (gasoline and oil), and other pollutants to run off into the lake causing organisms living in the lake to become sick or die as well as effecting human health and the overall health of the lake negatively.

Other human impacts to the lakes are aiding the migration of aquatic invasive species such as zebra and quagga mussels. Invasive zebra and quagga mussels (collectively called dreissenid mussels) are causing significant ecological and economic impacts and the range of these impacts continues to increase as they spread across North America. These mussels affect industrial and municipal infrastructure, recreational water users, and they severely alter aquatic ecosystems. They filter out plankton that native species need for food and they attach to and incapacitate native mussels. It is essential you check and hose off your watercraft after recreational activities to reduce the spread. The trophic status of most of the lakes in Racine County is set forth in Table 2a. Trophic status is an indicator of overall water quality. It is commonly quantified using an index that takes into consideration water clarity, phosphorus and chlorophyll-*a* concentrations, and regional location within Wisconsin. While based upon a trophic continuum, there are essentially three commonly differentiated trophic levels. An oligotrophic lake has few nutrients and is characterized by clear water and low amounts of plant and algal growth. There are no oligotrophic lakes in Racine County. Mesotrophic lakes are characterized by moderate concentrations of nutrients and have somewhat reduced water clarity and increased numbers of aquatic plants. There is usually a healthy fisheries community which includes angling gamefish species. Swimming and boating can be enjoyed without significant restrictions. Given the underlying geological conditions within Racine County, most of the lakes may be expected to be mesotrophic in nature. In contrast, eutrophic lakes are characterized by high nutrient levels, high levels of plant and algal growth, and reduced water clarity. Fisheries in eutrophic lakes are generally dominated by a fewer species, including rough fish or species not generally considered desirable for angling purposes. Further, because of the accumulation of plant residues and the resulting decomposition that occurs, these lakes are often not as desirable for swimming and other water contact sports, due to the occurrence of odors and the presence of muck—the organic sediments created from mats of decaying plants. As set forth in Table 2a, ten of the lakes for which data were available were classified as eutrophic, two as mesotrophic in the regional water quality management plan updated and migration of these aquatic invasive species as well as numerous other aquatic invasive species.

Table 2a

LAKE CHARACTERISTICS WITHIN RACINE COUNTY

Lakes ^a	Lake Surface Area (acres)	Lake Volume (acre-feet)	Maximum Depth (feet)	Mean Depth (feet)	Lake Type ^b	Trophic State Index ^c	Trophic Status
Bohner	135	1,243	30	9	Drainage	49	Mesotrophic
Brock.....	11	--	12	4	Drainage	--	--
Browns.....	397	3,135	44	8	Drained	50	Eutrophic
Delmonte	4	--	6	5	Drainage	--	--
Denoon	167	2,940	55	18	Seepage	52	Eutrophic
Eagle.....	529	3,640	11	6	Drainage	71	Eutrophic
Echo	70	129	11	2	Drainage	63	Eutrophic
Kee Nong Go Mong	88	770	27	9	Drainage	52	Eutrophic
Leda (Frieda).....	12	--	22	13	Drained	--	--
Long.....	84	259	5	3	Drainage	61	Eutrophic
Overson Pond.....	18	--	6		Seepage	--	--
Rockland	45	--	25	10	Drained	49	Eutrophic
Rodgers Pond	11	--	7	19	Seepage	--	--
Tahoe	6	--	3	--	Seepage	--	--
Waterford Impoundment							
Buena.....	72	--	8		Drainage	56	Eutrophic
Tichigan	1,132	--	63	6	Drainage	51	Eutrophic
Waubeesee	139	2,450	73	19	Drainage	47	Mesotrophic
Wind ^d	919	8,995	47	10	Drainage	50	Eutrophic

^aLakes in Racine County exist only in the Fox River watershed.

^bDrainage lakes are lakes having both a defined inlet and a defined outlet. These waterbodies are commonly referred to as through-flow lakes. Drained lakes are lakes having a defined outlet without a defined inlet. Seepage lakes are lakes without either a defined inlet or defined outlet. These waterbodies are sometimes referred to as internally drained lakes.

^cTrophic State Index (TSI) values are determined from water clarity data, total phosphorus concentration data, and chlorophyll-*a* concentration data using mathematical relationships published by Robert E. Carlson, "A Trophic State Index for Lakes", Limnology and Oceanography, volume 22, pages 361-368, 1977. The data used to determine TSI values were collected between 2002 and 2020 by the Wisconsin Department of Natural Resources, the U.S. Geological Survey, or citizen volunteers under the Wisconsin Department of Natural Resources Self-Help Monitoring Program.



Eagle Lake, Town of Dover, Racine County

Rivers and Streams

Perennial rivers and streams are defined by maintaining, at a minimum, a small continuous flow throughout the year except under unusual drought conditions. There were about 105 miles of named perennial rivers and streams in Racine County reported by the Wisconsin Department of Natural Resources (WDNR) in their 1963 surface water inventory for the County.⁴ An additional 40 miles of unnamed tributary streams draining into the quality of water by acting as a filter or a buffer zone allowing silt and sediments to settle out. They also influence the quantity of water by providing water during periods of drought and holding it back during periods of flood.

Some rivers and streams within Racine County have been assessed and determined by the WDNR as being impaired by on or more pollutants (i.e., total phosphorus, bacteria, sediment/total suspended solids, chlorides, PCB's). Impaired water are waters that do not meet water quality standards (numeric or narrative criteria) and do not meet one or more beneficial uses of the water (recreation, public health and welfare, aquatic life and wildlife). Water quality criteria are developed by the WDNR to protect specific uses. The tables immediately following show the impaired waters as of 2022.

⁴*Wisconsin Department of Natural Resources (Wisconsin Conservation Department), Surface Water Resources of Racine County, 1961.*

Dams

Racine County has six dams located throughout the county, which are as follows: Echo Lake dam, Eagle Lake dam, Horlick dam, Rochester dam, Waterford dam, and the Wind Lake dam. Dams are structures that are built across a river or stream to store water. Most of the dams built are eventually used for multiple purposes which further enhances the importance of dams. Dams also help maintain the water level throughout rivers and streams. They can be used to produce hydroelectric power, support the irrigation system as well as be used for fishing and other recreational activities all at once.

Horlick Dam

The Root River drainage area upstream of the dam is approximately 198 square miles, encompassing portions of Waukesha, Milwaukee, Kenosha and Racine counties. The Horlick Dam specifically resides on the Root River at river mile 5.3, or 5.3 miles upstream of Lake Michigan. Horlick Dam blocks fish passage to 160.2 miles of upstream river and tributary habitat, and 6,176 acres of wetland habitat.

The goal is to restore riverine connectivity to the Root River watershed, and to restore riverine habitat within the reach affected by Horlick Dam. Objectives are to reestablish quality and connectivity of riverine and riparian habitats.

The project was determined to be in the federal interest in July 2020. In partnership with Racine County Public Works and Development Services, completion of the Feasibility Study Report would complete the plan formulation process, identify cost effective plans for ecosystem restoration purposes, and complete preliminary design of the recommended plan. The report will serve as the decision document for the approval of construction funding. The feasibility cost sharing agreement for this study was executed on December 3, 2020, between United States Army Corps of Engineers (USACE) and Racine County Public Works and Development Services. The feasibility study has been initiated and is scheduled for completion in early 2022.

Echo Lake Dam

In 2015 the Wisconsin Department of Natural Resources (WDNR) required the City of Burlington to perform a Dam Failure Analysis (DFA) for the Echo Lake Dam. The findings of the DFA were that the dam could not contain a modeled “500-year-flood”, which is a requirement of a dam of its classification. WDNR has required the City to achieve compliance with this requirement by July 2025. Compliance can be achieved by making modifications to the dam to increase spillway capacity, or by removing the dam. In either case some change will be necessary for the dam and maintaining the dam in its current state is not an option for compliance.

The City’s consultants are wrapping up the final elements of the Echo Lake Dam Feasibility Study. This study contains multiple options to achieve compliance with dam spillway capacity requirements including dam spillway modifications and dam removal. Each option presented in the study has a concept level design and cost estimate. City staff and staff from Ayres worked closely with staff from the Wisconsin Department of Natural Resources (WDNR) to ensure the spillway modification options presented in the study will be able to achieve compliance with spillway capacity requirements. This is a very important project for the community and it was critical we only presented options that are viable, realistic, and able to achieve compliance. The City is grateful for the collaboration and guidance provided by WDNR staff to help us achieve these goals.

The Council will then need to make a decision on which option to pursue to achieve dam compliance and approve an authorizing resolution for a municipal dam grant application for the selected project. This decision will likely be in early 2022.

Waterford Dam

In 1982, the WI DNR set the order for the Waterford Dam which regulates the water elevation at the dam at 772.63 feet mean sea level datum. The minimum flow release is set at 37 cfs at all times. One radial gate must be open at least 2.4 inches at all times or both radial gates must be open at 1.2 inches at all times. The dam creates an impoundment that supports over 1100 properties directly on the Fox River and Tichigan Lake.

Eagle Lake Dam

The Eagle Lake Dam is considered a low hazard dam by the Wisconsin DNR. The dam receives an in-depth inspection once every ten years with the most recent inspection occurring in 2017. The DNR approved the Inspection, Operation and Maintenance (IOM) plan in March 2013 which Racine County Public Works staff use and follow. The dam is inspected at least once per week for debris removal and functionality. The dam is inspected daily during large rain or flood events.

Rochester Dam

Historically, the Rochester Dam had drawdowns to allow work to be completed on the Wind Lake Canal and other tributaries directing water into the Fox River. In 2017, the WI DNR allowed the Racine County Drainage District one final permission to draw down citing the drawdowns have a negative impact on fish, wildlife, health of the river and recreational access. Located west of Case Eagle Park, the dam creates an area for fishing and canoe / kayak access to the river.

Wind Lake Dam

The Dam operation is regulated by the WI DNR order that dictates the water levels to be maintained. The top of the spillway is the legal level of Wind Lake during the summer. In winter, the legal level is six inches lower. The dam operator is in contact with the operator of the Big Muskego Dam to allow for more consistent management and minimally fluctuating lake levels.

Waukesha Water Diversion for Lake Michigan Water

Racine County is aware of the approval of a water diversion from Lake Michigan to Waukesha County in 2021. Waukesha and Racine County intend to use various methods to monitor downstream impacts on neighboring communities by promoting stream gauges, various agency monitoring and having data available to the public. The Racine County LWCD will review data and environmental impacts of the water diversion on Racine County in the Fox and Root River watersheds.

Wetland Resources

Wetlands form the transition between surface and ground water resources and land resources. Wetlands are defined by the Regional Planning Commission as, “areas that have a predominance of hydric soils and that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.” This definition, which is also used by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, is essentially the same as used by the Natural Resource Conservation Service.⁵ Another definition, which is applied by the State of Wisconsin Department of Natural Resources and which is set forth in Chapter 23 of the *Wisconsin Statutes*, defines a wetland as “an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which has soils indicative of wet conditions.” In practice, the Department definition differs from the Regional Planning Commission definition in that the Department considers very poorly drained, poorly drained, and some of the somewhat poorly drained soils as wetland soils meeting the Department “wet condition” criterion. The Commission definition only considers the very poorly drained and poorly drained soils as meeting the “hydric soil” criterion. Thus, the State definition as actually applied is more inclusive than the Federal and Commission

⁵*Lands designated as prior converted cropland, that is, lands that were cleared, drained, filled, or otherwise manipulated to make them capable of supporting a commodity crop prior to December 23, 1985, may meet the criteria of the U.S. Natural Resources Conservation Service wetland definition, but they would not be regulated under Federal wetland programs. If such lands are not cropped, managed, or maintained for agricultural production, for five consecutive years, and in that time the land reverts back to wetland, the land would then be subject to Federal wetland regulations.*

definitions in that the Department may include some soils that do not show hydric field characteristics as wet soils capable of supporting wetland vegetation, a condition which may occur in some floodlands.⁶

As a practical matter, experience has shown that application of the Wisconsin Department of Natural Resources, the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, and the Regional Planning Commission definitions, produce reasonably consistent wetland identifications and delineations in the majority of situations within the Southeastern Wisconsin Region. That consistency is due in large part to the provision in the Federal wetland delineation manual that allows for the application of professional judgement in cases where satisfaction of the three criteria for wetland identification is unclear.

As illustrated on Map 10, there are approximately 31.7 square miles of wetlands in Racine County, which is about 9 percent of the total land area in the County. In 2015, included in the 31.7 square miles of wetlands are 1.9 square miles which have been classified as “farmed wetlands;” these areas meet the definition of a wetland, but are actively being farmed as of 2015. This data is based on the Southeastern Wisconsin Regional Planning Commission wetlands inventory maps which are a refinement of the Wisconsin Department of Natural Resources State inventory maps. These maps illustrate wetlands that were delineated primarily by aerial photography interpretations. For site-specific consideration involving wetlands, it is recommended that an onsite investigation be conducted to determine the extent of the wetland areas. These wetlands are classified predominantly as potholes, fresh meadows, shallow marshes, deep marshes, shrub swamps, timber swamps, and bogs. These wetlands form an important part of the landscape in Racine County, in that they perform an important set of natural functions that make them ecologically and environmentally invaluable resources. Wetlands affect the named watercourses were identified in the adopted regional water quality management plan.⁷ There are 145 stream miles for which data are available, about 16 miles, or about 11 percent, were reported to be of very poor to fair quality, and about 53 miles, or about 37 percent, were reported to be of fair to poor quality, based upon calculated biotic indices^{8,9}.

When located along shorelines of lakes and streams, wetlands help protect those shorelines from erosion. Wetlands also may serve as groundwater discharge and recharge areas in addition to being important resources for overall ecological health and diversity by providing essential breeding and feeding grounds, shelter, and escape cover for many forms of fish and wildlife. However, wetlands are poorly suited to urban use. This is due to the high soil compressibility and instability, high water table, low load-bearing capacity, and high shrink-swell potential of wetland soils, and, in some cases, to their potential for flooding. In addition, metal conduits placed in some types of wetland soils may be subject to rapid corrosion. These constraints, if ignored, may result in flooding, wet basements and excessive operation of sump pumps, unstable foundations, failing pavements, broken sewer and water lines, and excessive infiltration of clear water into sanitary sewerage systems. In addition, there are significant onsite preparation and maintenance costs associated with the development of wetlands, particularly as they relate to roads, foundations, and public utilities.

⁶*Although prior converted cropland is not subject to Federal wetland regulations unless cropping ceases for five consecutive years and the land reverts to a wetland condition, the State may consider prior converted cropland to be subject to State wetland regulations if the land meets the criteria set forth in the State wetland definition before it has not been cropped for five consecutive years.*

⁷*SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings, September 1978.*

⁸*Wisconsin Department of Natural Resources Technical bulletin No. 132, Using a Biotic Index to Evaluate Water Quality in Streams, 1982.*

⁹*U.S. Department of Agriculture, Forest Service General Technical Report No. NC-149, Using The Index of Biotic Integrity (IBI) to Measure Environmental Quality in Warmwater Streams of Wisconsin, April 1992.*



Restored Wetland located in the Town of Dover, Racine County

CLIMATE

Racine County is located in the mid-continental zone, which gives the County a continental climate that spans four seasons. Summers typically occur during the months of June, July, and August. The summers are warm with periods of hot, humid weather and sporadic periods of cool weather. Winters are cold and generally occur during the months of December, January, and February. Winter weather conditions can also be experienced in November and March. Lake Michigan tends to have a cooling effect on Racine County during the summer and a warming effect during the winter. Autumn and spring are transitional weather periods with widely varying temperatures and long periods of precipitation.

The mean annual precipitation for Racine County is approximately 35 inches. The majority of precipitation in Racine County falls in the form of rain during the growing season, between May and September. Precipitation in Racine County can occur in the form of rain, sleet, hail, and snow and ranges from gentle showers to destructive thunderstorms. The more severe weather events, such as severe thunderstorms and tornadoes, can cause major property and crop damage, inundation of poorly drained areas, and lake, river, and stream flooding.

Any climate changes can have a significant impact of the growing season, intensity of storm events, soil erosion, changes in vegetation, flooding, and other environmental conditions. Climate changes are being monitored and taken into consideration for planning best management practices.

TERRESTRIAL NATURAL RESOURCES

The natural resource base of Racine County is comprised not only of the water resources described above, but also of upland areas comprised of woodlands and lands developed for human use as agricultural lands, residential lands, or commercial and industrial developments. As set forth above, the wetlands of Racine County are an example of a portion of the natural resource base that limits human usage to nonstructural uses. In contrast, woodlands and other uplands generally lend themselves to structural human uses. Because the woodlands of Racine County not only lend themselves to human development, but also form an important upland component of the natural resources base of the County, these terrestrial resources, together with an inventory of their wildlife, habitat, and recreational use value and potentials, are described below as elements of the land resources base of the County.

Woodlands

Woodlands are defined by the Regional Planning Commission as those areas containing a minimum of 17 trees per acre with a diameter of at least four inches at breast height (4.5 feet above the ground).¹⁰ Woodlands are classified as dry, dry-mesic, mesic, wet-mesic, wet hardwood, and conifer swamp forests; the last three are also considered wetlands. The major tree species in Racine County include the black willow (*Salix nigra*), cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), American elm (*Ulmus americana*), basswood (*Tilia americana*), northern red oak (*Quercus rubra*), and shagbark hickory (*Carya ovata*). Some isolated stands of tamarack (*Larix laricina*) also exist in the County, together with such other upland species as the white oak (*Quercus alba*), burr oak (*Quercus macrocarpa*), black cherry (*Prunus serotina*), and sugar maple (*Acer saccharum*).

Woodlands in Racine County have both economic and ecological values, and with proper management can serve a variety of uses with that provide multiple benefits. In 2010, there were approximately 19.6 square miles of woodlands or about 6 percent of the land area in the County as shown on Map 11. The quality of life within an area is greatly influenced by the scenic beauty and ecological diversity. Woodlands are primarily located along lakes and streams, along ridges and slopes, within wetlands, and in mixed isolated woodlots, and provide an attractive natural resource of immeasurable value. Not only is the beauty of the lakes, streams, and glacial landforms of the County accentuated by woodlands, but woodlands are also essential to maintaining the overall quality of the environment. Woodlands should be maintained for their total values—scenic, wildlife, educational, recreational, and watershed protection, as well as for their forest products. Under balanced use and sustained yield management, woodlands can provide many of these uses simultaneously.

Wildlife Habitat

Wildlife in Racine County include upland game and nongame species such as racoons, skunks, possum, rabbits, squirrels, shrews, mice, and woodchucks; predators such as fox, coyote and mink; game birds including pheasant; and marsh furbearers such as muskrats. In addition, waterfowl are present and deer are found in some areas. The remaining habitat and wildlife residing therein provide opportunities for recreational, educational, and scientific activities, and constitute an aesthetic asset to the County. Wildlife habitat areas remaining in the Southeastern Wisconsin Region were inventoried by the Regional Planning Commission in 1985 in cooperation with the Wisconsin Department of Natural Resources. The major criteria used to determine the value of these wildlife habitat areas are listed below:

1. Diversity—An area must maintain a high, but balanced, diversity of species for a temperate climate, balanced in such a way that the proper predatory-prey (consumer-food) relationships can occur. In addition, a reproductive interdependence must exist.

¹⁰SEWRPC Technical Record, Vol. 4, No. 2, March 1981.

2. Territorial Requirements—The maintenance of proper spatial relationships among species, allowing for a certain minimum population level, can occur only if the territorial requirements of each major species within a particular habitat are met.
3. Vegetative Composition and Structure—The composition and structure of vegetation must be such that it meets the required levels for nesting, travel routes, concealment, and protection from weather are met for each of the major species.
4. Location with Respect to Other Wildlife Habitats—It is very desirable that a wildlife habitat maintain proximity to other wildlife habitats to maintain connectivity through an environmental corridor.
5. Disturbance—Minimum levels of disturbance from human activities are necessary, other than those activities of a wildlife management nature.

Based on the five criteria, the wildlife habitat areas in Racine County were categorized as Class I, high-value; Class II, medium-value; or Class III, good-value habitat areas. Class I wildlife habitat areas contain a good diversity of wildlife, are adequate in size to meet all habitat requirements for the species concerned, are generally located in proximity to other wildlife habitat areas and meet all five criteria listed above. Class II wildlife habitat areas generally fail to meet one of the five criteria in the preceding list for a high value wildlife area. However, they do retain a good plant and animal diversity. Class III wildlife habitat areas are remnant in nature, and they generally fail to meet two or more of the five criteria for a high-value wildlife habitat, but may, nevertheless, be important if located in proximity to medium or high-value habitat areas, especially if they provide corridors linking wildlife habitat areas of higher value or if they provide the only available range in an area.

There are about 39,000 acres of wildlife habitat, or approximately 18 percent of the land area in the County, that was identified in the 1985 inventory. Of the wildlife habitat identified in the County, approximately 16,000 acres, or about 7 percent, were classified as Class I habitat; 15,000 acres, or 7 percent, were classified as Class II habitat; and 8,000 acres or, 4 percent, were classified as Class III habitat.

Natural Areas and Critical Species Habitat Sites

Natural areas, as defined by the Wisconsin Natural Areas Preservation Council, are tracts of land or water so little modified by human activity, or sufficiently recovered from the effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European settlement landscape.

Natural areas are classified into one of the following three categories:

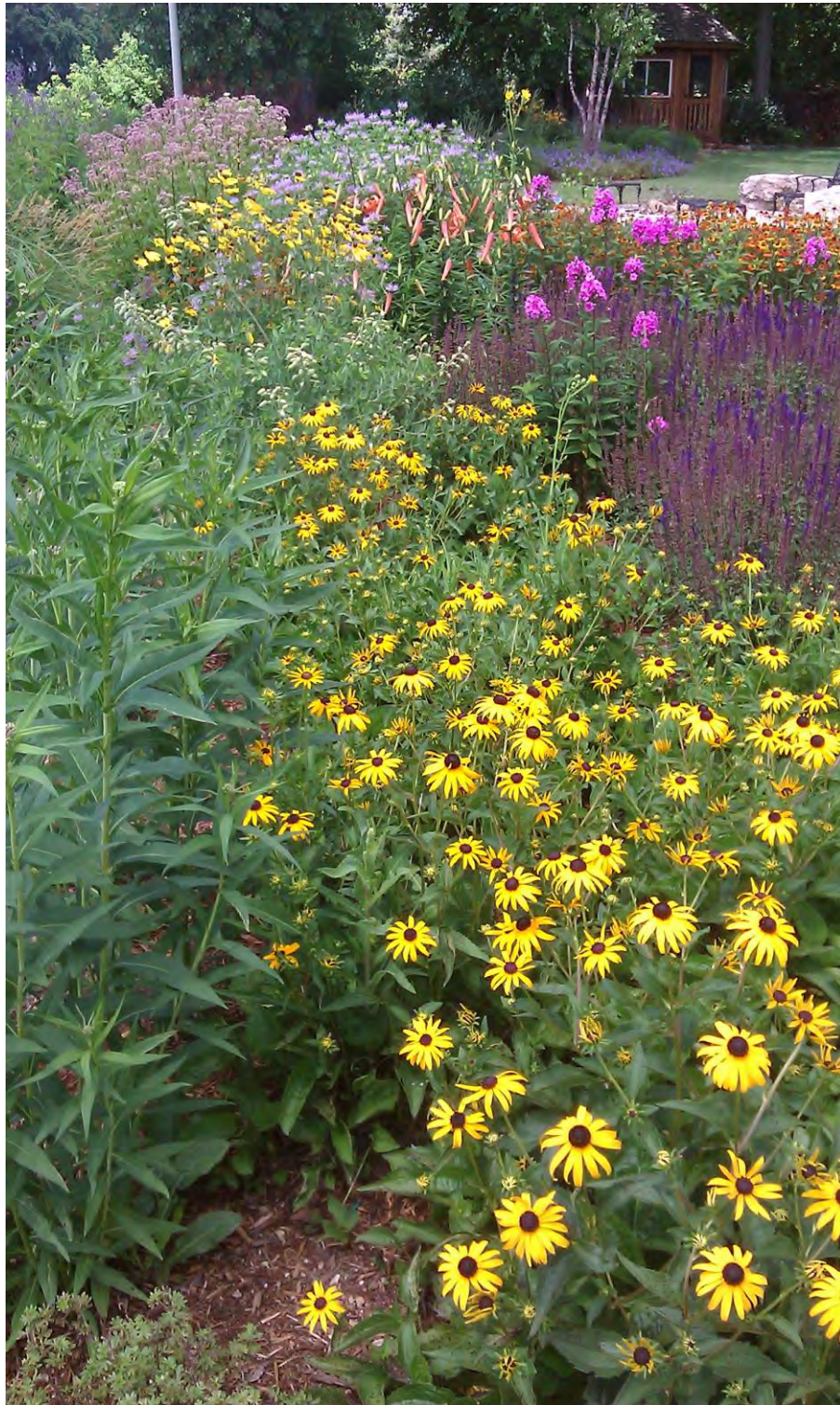
1. Natural area of Statewide or greater significance (NA-1)
2. Natural area of countywide or regional significance (NA-2)
3. Natural area of local significance (NA-3)

Classification of an area into one of these three categories is based upon consideration of several factors. These factors include the diversity of plant and animal species and community types present; the structure and integrity of the native plant or animal community; the extent of disturbance by human activity, such as logging, grazing, water level changes, and pollution; the commonness of the plant and animal communities present; any unique natural features within the area; the size of the area; and the educational value. Natural areas form an element of the wildlife habitat base of the County.

A comprehensive inventory of natural area sites in Racine County was completed in 2009 by area naturalists and by the Regional Planning Commission staff.¹¹ As indicated illustrated on Map 12, there were 61 natural area sites inventoried in the County that encompassed a total of about 5,600 acres, or approximately 3 percent of the land

¹¹*SEWRPC Planning Report, No. 42, A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, December 2010.*

area. In addition, the 2009 natural areas inventory also included an inventory of critical species habitat sites located in Racine County. Critical species are those species of plant and animals that are considered endangered, threatened, or of special concern. Map 13 identifies 38 critical species habitat sites are located within identified natural areas of the County; however, a few are located outside of the known natural areas.



Native Flowers along a Shoreline - Town of Waterford

Table 3
NATURAL AREAS IN RACINE COUNTY: 2009

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
1	Cherry Lake Sedge Meadow State Natural Area	NA-1 (SNA)	T3N, R19E Sections 10, 15 Village of Rochester	Department of Natural Resources and private	190	High-quality lowland complex of fen, wet prairie, sedge meadow, shrub-carr, shallow lake, and tamarack relict within a matrix of disturbed upland oak woods. A good combination of alkaline- and acid-loving plant is present. The irregular openings of water provide good nesting and escape cover for waterfowl, especially mallards, wood ducks, and blue-winged teals. The western border is a one-mile-long esker
2	Kansasville Railroad Prairie	NA-1	T3N, R20E Sections 25, 26, 35, 36 Town of Dover T3N, R21E Section 30 Town of Yorkville	Private	28	Discontinuous remnants of mesic prairie located along railway right-of-way between Union Grove and Kansasville. Small sections are of very high quality, representing the best remaining examples of the once-extensive mesic prairie of central Racine and Kenosha counties. Also included is a large old field which has been plowed but in which native prairie species have either persisted or are reinvading from the adjacent railway right-of-way. This latter area could be important for prairie reestablishment
3	Franksville Railroad Prairie	NA-1	T3N, R22E Sections 4, 9 Village of Mt. Pleasant	Private	4	A very rich and diverse remnant of mesic and wet-mesic prairie, located on west side of railway right-of-way. Contains some of the best such remnants in the Region. Regionally uncommon species include wild quinine (<i>Parthenium integrifolium</i>), prairie Indian plantain (<i>Cacalia tuberosa</i>), and marsh blazing-star (<i>Liatris spicata</i>)
4	Sanders Park Hardwoods State Natural Area	NA-1 (SNA)	T3N, R22E Section 36 Village of Mt. Pleasant	Racine County	56	Good-quality southern dry-mesic forest on two low ridges separated by a lowland swale. Good size-class distribution of tree species, including a number of large walnuts. The ground flora is rich and diverse, including several large patches of goldenseal (<i>Hydrastis canadensis</i>), a State-designated special concern species
5	Tichigan Fen, Springs, and Woods	NA-1	T4N, R19E Sections 21, 22 Town of Waterford	Department of Natural Resources and private	131	A fine example of springs and calcareous fen, with a number of uncommon species present. The site includes the lesser-quality upland woods to the south that protects the water sources of the springs
6	Elm Island Bog—Island Oak Woods	NA-1	T4N, R19E Sections 23, 24, 25, 26 Town of Waterford	Racine County and private	67	Two distinct plant communities of good quality are present—an upland wooded island dominated by red and white oaks without signs of past logging or grazing is bordered on the east by a sphagnum-tamarack bog with a number of characteristic bog species present
7	Renak-Polak Maple-Beech Woods State Natural Area	NA-1 (SNA)	T4N, R22E Section 14 Village of Caledonia	University of Wisconsin—Parkside and private	138	Outstanding, mostly old-growth low-lying southern mesic forest on east side of Root River. Wet-mesic hardwoods, shrub-carr, and shallow marsh lie along an intermittent stream which crosses the tract. Noted for spectacular displays of spring wildflowers. Probably the best such woods remaining in the Region
--	Subtotal	NA-1	7 sites	--	614	--
8	Karcher Springs State Natural Area	NA-2 (SNA)	T2N, R19E Section 21 Town of Burlington	Department of Natural Resources	19	Spring heads originating on east side of a wooded esker supply water for a clear, fast, cold, marl bottomed stream. Along banks is found calcareous fen, habitat for a number of uncommon species

Table 3 (continued)

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
9	Brock Lake Fen	NA-2	T3N, R19E Sections 15, 16, 21 Village of Rochester	Department of Natural Resources and private	231	High-quality wetland complex of fen, shallow marsh, sedge meadow, and small, undeveloped lake. The rich native species complement includes a number of uncommon ones, such as beaked spike-rush (<i>Eleocharis rostellata</i>), Ohio goldenrod (<i>Solidago ohioensis</i>), common bog arrow-grass (<i>Tyglachin maritima</i>), and marsh blazing-star (<i>Liatris spicata</i>). An integral part of a long northeast-southwest lowland corridor
10	Honey Lake Marsh and Sedge Meadow	NA-2	T3N, R19E Sections 17-20 Town of Burlington T3N, R18E Sections 13, 24 Town of Spring Prairie	Department of Natural Resources, The Nature Conservancy, and other private	250 (plus 141 in Walworth County)	Large, relatively undisturbed wetland complex, primarily consisting of good-quality sedge meadow and deep and shallow marsh, but also smaller areas containing springs and calcareous fens. Nesting site for sandhill cranes
11	Leda Lake Fen-Meadow	NA-2	T3N, R19E Sections 20, 21 29 Town of Burlington	Department of Natural Resources and private	222	Good-quality wetland complex of small, shallow, undeveloped lake, floating sedge mat, fen, sedge meadow, shrub-carr, and shallow cattail-bulrush marsh. Part of Cherry Lake—Brock Lake—Leda Lake environmental corridor
12	Rosewood Railroad Prairie	NA-2	T3N, R20E Sections 31-34 Town of Dover	Private	25	Discontinuous remnants of mesic prairie extending for three miles along deactivated railway right-of-way between Kansasville and Rosewood. Moderate quality overall, with small portions in better condition. Good diversity of native species, including a number of uncommon ones
13	Schroeder Road Marsh	NA-2	T3N, R20E Sections 35, 36 Town of Dover T2N, R20E Sections 1, 2 Town of Brighton	Private	77 (plus 111 in Kenosha County)	Large wetland area of shallow cattail marsh and sedge meadow that extends into Kenosha County. Perimeter has been disturbed but interior is intact
14	Union Grove Railroad Prairie	NA-2	T3N, R21E Sections 25, 26, 27, 28, 29 Town of Yorkville	Private	44	Discontinuous remnants of mesic prairie along railway right-of-way, extending east from Union Grove to IH 94. Some small patches are of very good quality, containing such uncommon species as wild quinine (<i>Parthenium integrifolium</i>) and prairie Indian plantain (<i>Cacalia tuberosa</i>), both designated as threatened in Wisconsin
15	Colonial Park Woods	NA-2	T3N, R23E Section 8 City of Racine	City of Racine and private	94	Complex of lowland hardwoods, floodplain forest, and upland mesic to dry-mesic woods bordering the Root River. A number of uncommon species are present, including the State-designated endangered blue-stemmed goldenrod (<i>Solidago caesia</i>) and the State-designated threatened forked aster (<i>Aster furcatus</i>)
16	Norris Marsh and Slough	NA-2	T4N, R19E Sections 2, 3, 10 Town of Waterford	Private	183 (plus 26 in Waukesha County)	Good-quality deep and shallow marsh along the Fox River
17	Tichigan Marsh	NA-2	T4N, R19E Sections 9, 10, 15, 16 Town of Waterford	Department of Natural Resources and private	466	Large, good-quality deep and shallow marsh with patches of sedge meadow, bordering Tichigan Lake. Department of Natural Resources has excavated a series of ponds for wildlife
18	Tichigan Wetlands and Low Woods	NA-2	T4N, R19E Sections 10, 11 Town of Waterford	Department of Natural Resources and private	170	Wetland-upland complex consisting of good-quality deep and shallow marsh and sedge meadow bordered on north by older dry, dry-mesic, and wet-mesic woods, and regenerating woods and old field

Inventory Findings

Table 3 (continued)

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
19	Waubesaee Oak Woods and Tamarack Relict	NA-2	T4N, R20E Section 7 Town of Norway	Racine County and private	187	Relatively large and mostly intact oak woods on rough glacial topography, with intervening wetlands in depressions, some of which contain relict tamaracks. This is one of the few woods of such size remaining in this rapidly developing part of the Region
20	Wind Lake Shrub-Fen	NA-2	T4N, R20E Section 9 Town of Norway	Private	21	Good-quality wetland complex of fen and shrub-carr on south end of Wind Lake. Contains a good population of Ohio goldenrod (<i>Solidago ohioensis</i>)
21	Wind Lake Tamarack Swamp	NA-2	T4N, R20E Sections 10, 11, 14, 15 Town of Norway	Department of Natural Resources and private	334	Large block of former tamarack swamp that is converting to lowland hardwoods due to hydrologic changes resulting from artificial drainage of surrounding agricultural land. This woods remains a refugium for many species with more northerly affinities, such as starflower, goldthread, winterberry, dwarf raspberry, yellow birch, bunchberry, and blueberry
22	County Line Riverine Woods	NA-2	T4N, R21E Section 1 Town of Raymond	Racine County and private	141	Good-quality riverine lowland hardwood forest along the Root River. Smaller upland to north west contains mesic hardwoods with a rich ground flora. An integral part of the Root River environmental corridor
23	Root River Canal Woods	NA-2	T4N, R21E Section 3 Town of Raymond T5N, R21 E Section 34 City of Franklin	Milwaukee County and private	163 (plus 152 in Milwaukee County)	A mixture of good-quality dry-mesic and lowland hardwood forest along the Root River Canal. One of the largest intact forested tracts in this part of the Region
24	Hunts Woods	NA-2	T4N, R22E Section 3 Village of Caledonia	Racine County and private	36	A small but undisturbed remnant of southern mesic hardwoods, dominated by mature beeches and sugar maples. The woods to the south and east are younger, while to the north are lowland hardwoods. The relatively rich ground flora includes the State-designated endangered blue-stemmed goldenrod (<i>Solidago caesia</i>)
25	Root River Wet-Mesic Woods—East	NA-2	T4N, R22E Section 5 Village of Caledonia T5N, R22E Section 32 City of Oak Creek	Racine County and Milwaukee County	2 (plus 50 in Milwaukee County)	Wet-mesic and mesic woods bordering a gravel-bottom stream that is tributary to the Root River. Contains a rich, diverse flora, including several rare species
26	Caledonia Wildlife Area	NA-2	T4N, R22E Section 21 Village of Caledonia	Village of Caledonia and private	166	An open wetland with seasonal ponds that attract a large number of migrating birds such as whistling swans, snow geese, golden plovers, and willets. The pond is one of the few secure stopover areas in the Region, and it is a very good observation area
27	Cliffside Park Woods and Clay Banks	NA-2	T4N, R23E Sections 7, 8 Village of Caledonia	Racine County, Village of Caledonia, and private	55	Second-growth mesic woods, ravine, and steep clay banks along Lake Michigan harbor a rich and diverse flora, including such uncommon species as buffaloberry, cream gentian, stiff gentian, balsam poplar, and blue-stemmed goldenrod
--	Subtotal	NA-2	20 sites	--	2,886	--
28	Burlington Hills Woods	NA-3	T2N, R19E Sections 5, 6, 7, 18 Town of Burlington T2N, R18E Sections 1, 12, 13 Town of Lyons	Private, plus a portion of site in Walworth County protected through conservation easement with Geneva Lakes Conservancy	416 (plus 86 in Walworth County)	Rough moraine ridges occupied by mature and second-growth oak woods, with small, scattered patches of dry hill prairie and disturbed openings. Largest remaining upland woods in Racine County; important for forest-interior-breeding birds. However, ongoing sand and gravel mine operations have reduced the wooded acreage

Inventory Findings

Table 3 (continued)

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
29	Burlington Railroad Prairie	NA-3	T2N, R19E Section 6 Town of Burlington T2N, R18E Section 1 Town of Lyons	Private	5 (plus 1 acre in Walworth County)	One-quarter-mile stretch of mesic, dry-mesic, and dry prairie remnants bordering railway right-of-way
30	Bohner Lake Lowlands	NA-3	T2N, R19E Sections 19, 20 Town of Burlington	Private	33	Moderate-quality combination of shallow marsh, sedge meadow, and shrub-carr
31	Tri-County Tamarack Swamp	NA-3	T2N, R19E Section 19 Town of Burlington T2N, R18E Sections 24, 25 Town of Lyons	Private	15 (plus 25 in Walworth County)	Medium-aged tamarack swamp surrounded by dense shrub-carr
32	Wadewitz Woods	NA-3	T3N, R19E Sections 2, 3 Village of Rochester	Racine County and private	204	Large upland complex of disturbed oak woods and former oak openings, cedar glades, dry-mesic woods, small dry hill prairie, and older woods
33	Rowntree Road Woods	NA-3	T3N, R19E Sections 11, 12 Village of Rochester	Private	77	A typical xeric oak woods, with several wet areas containing lowland hardwoods. An active blue heron rookery is present
34	English Settlement Prairie	NA-3	T3N, R19E Section 13 Village of Rochester	Private	16	Moderate-quality wet-mesic prairie with a history of disturbance, including plowing and grazing
35	Eagle Creek Woods	NA-3	T3N, R19E Sections 13, 14 Village of Rochester	Private	84	Typical xeric oak woods—relatively large but with a history of grazing and selective cutting
36	Fox River Prairie	NA-3	T3N, R19E Sections 14, 15 Village of Rochester	Private	2	Small prairie remnants along former railway right-of-way, now a county bicycle trail. Area consists of two separate patches—a hill to the south contains a small, depauperate dry prairie, while to the north a low area contains a larger and better-quality mesic and wet-mesic prairie
37	Honey Lake Leatherleaf Bog	NA-3	T3N, R19E Sections 19, 20 Town of Burlington	Private	63	A large monotypic leatherleaf bog relict, rare in the southern part of the Region
38	Fox River Riverine Forest	NA-3	T3N, R19E Sections 21, 22, 28 Town of Burlington	Racine County and private	131	Lowland and upland woods bordering the Fox River
39	Wehmhoff Park Upland Woods and Wetlands	NA-3	T3N, R19E Section 29 Town of Burlington	Town of Burlington and private	80	Moderate-quality sedge meadow-shallow marsh wetlands, located within an upland matrix of disturbed oak woods and dry hill prairie on hilly glacial terrain
40	Dover Wildlife Area Wetlands	NA-3	T3N, R20E Section 12 Town of Dover	Department of Natural Resources and private	49	Wetland complex maintained by Department of Natural Resources as wildlife refuge, consisting of shallow open water, shallow marsh, shrub-carr, and small wet-mesic prairie
41	Church Road Lowlands	NA-3	T3N, R20E Sections 16, 21 Town of Dover	Department of Natural Resources and private	24	Sedge meadow and shallow marsh on north shore of Eagle Lake
42	Eagle Lake Wetlands	NA-3	T3N, R20E Sections 27, 28 Town of Dover	Department of Natural Resources and private	46	Shallow marsh and shrub-carr on south shore of Eagle Lake. Disturbed by past ditching attempts
43	Vandenboom Road Marsh	NA-3	T3N, R20E Section 28 Town of Dover	Private and State of Wisconsin Public Trust Lands	27	Shallow, cattail-dominated marsh
44	Ives Grove Woods	NA-3	T3N, R21E Section 12 Town of Yorkville	Racine County and private	140	Relatively large upland wooded island, consisting of dry-mesic woods to south and xeric woods to north. Much of south woods is part of Racine County park. The ground flora is rich and diverse. A small stream bisects the two woods

Inventory Findings

Table 3 (continued)

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
45	Sylvania Railroad Prairie	NA-3	T3N, R22E Sections 20, 30 Village of Mt. Pleasant	Private	11	Mesic prairie remnant extending one mile east of IH 94 along railway right-of-way. Moderate quality, with a good population of wild quinine (<i>Parthenium integrifolium</i>), a State-designated threatened species
46	Hoods Creek Woods	NA-3	T3N, R22E Section 3 Village of Mt. Pleasant	Village of Mt. Pleasant and private	72	Mix of upland and lowland woods along Hoods Creek
47	Norris Oak Woods and Wetlands	NA-3	T4N, R19E Section 1 Town of Waterford T5N, R19E Sections 26, 35 Town of Vernon	Private	6 (plus 364 in Waukesha County)	Two separate disturbed oak woods and adjoining open wetlands bordering the Fox River
48	Van Valin Woods	NA-3	T4N, R19E Section 2 Town of Waterford	Private	26	Moderate-quality dry-mesic woods dominated by white oak, shagbark hickory, white ash, and sugar maple. Threatened by encroaching residential development
49	Tichigan Wet Prairie	NA-3	T4N, R19E Section 10 Town of Waterford	Department of Natural Resources	16	Moderate- to good-quality combination of wet prairie, sedge meadow, and shallow marsh, with some calciphiles, such as Ohio goldenrod (<i>Solidago ohioensis</i>), present. Site is burned periodically to control shrubs
50	Wind Lake Wet Meadow	NA-3	T4N, R20E Section 4 Town of Norway	Private	11	A moderate-quality wetland complex of wet meadow, fen, shallow marsh, and sedge meadow on north shore of Wind Lake. Contains marsh blazing-star (<i>Liatris spicata</i>), a State-designated special concern species
51	Six Mile Road Swamp	NA-3	T4N, R21E Section 7 Town of Raymond	Private	55	Lowland hardwood forest of moderate quality, with a few northern relicts, such as tamarack (mostly dead), winterberry, paper birch, dwarf raspberry, and sphagnum. Dry-mesic upland woods border on the south
52	Kimmel Woods	NA-3	T4N, R21E Section 12 Town of Raymond	Private	40	Moderate-quality southern dry-mesic woods and lowland hardwoods bordering a small stream. Good, representative ground flora
53	Root River Riverine Forest	NA-3	T4N, R22E Sections 3-6 Village of Caledonia T5N, R22E Sections 31-34 City of Oak Creek	Racine County, Milwaukee County, Wisconsin Department of Transportation, and private	184 (plus 147 in Milwaukee County)	A significant portion of the Root River corridor
54	Seven Mile Road Woods	NA-3	T4N, R22E Section 8 Village of Caledonia	Private	20	Second-growth maple-ash-oak woods of about 75 years of age that has been subjected to past selective cutting. Contains a rich and diverse ground flora. Low areas contain ephemeral ponds
55	Zirbes Woods	NA-3	T4N, R22E Section 9 Village of Caledonia	Private	13	A small but relatively undisturbed mesic woods dominated by basswood, white ash, red oak, and sugar maple, with a rich ground flora. Future high-grading is indicated by a number of the larger oaks which were marked
56	Caledonia Low Woods	NA-3	T4N, R22E Sections 10, 11, 14 Village of Caledonia	Racine County and private	107	Moderate-quality lowland hardwoods bordering the Root River. Adjoining upland woods contains three State-designated special concern species: American gromwell (<i>Lithospermum latifolium</i>), red trillium (<i>Trillium recurvatum</i>), and black haw (<i>Viburnum prunifolium</i>)
57	Foley Road Woods—East	NA-3	T4N, R22E Section 11 Village of Caledonia	Private	24	Moderate-quality mesic woods with a rich ground flora; reportedly contains the State-designated endangered blue-stemmed goldenrod (<i>Solidago caesia</i>)
58	Foley Road Woods—West	NA-3	T4N, R22E Section 11 Village of Caledonia	Private	19	Medium-age mesic and wet-mesic woods with a large population of black haw (<i>Viburnum prunifolium</i>)

Inventory Findings

Table 3 (continued)

Number on Map 12	Area Name	Classification Code ^a	Location	Ownership	Size (acres)	Description and Comments
59	Tabor Woods	NA-3	T4N, R22E Sections 13, 14 Village of Caledonia	Caledonia Conservancy and other private	106	Relatively large but irregularly shaped mesic, dry-mesic, and wet-mesic woods that have suffered various degrees of disturbance. Portions of the woods are dominated by beech. Threatened by increasing residential development in the area
60	Power Plant Ravine Woods	NA-3	T4N, R23E Section 6 Village of Caledonia	WE Energies	32	Mesic woods bordering a steep ravine that leads to Lake Michigan. Although the woods has suffered from disturbance, it contains a rich flora, including a large population of the State-designated endangered blue-stemmed goldenrod (<i>Solidago caesia</i>). The exposed ravine slopes and Lake Michigan clay banks contain a number of unusual species
61	Dominican Ravine	NA-3	T4N, R23E Section 21 Village of Caledonia	Private	18	Small woodland containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
--	Subtotal	NA-3	34 sites	--	2,172	--
--	Total	All Natural Areas	61 sites	--	5,672	--

^a NA-1 identifies Natural Area sites of statewide or greater significance.

NA-2 identifies Natural Area sites of countywide or regional significance.

NA-3 identifies Natural Area sites of local significance.

SNA, or State Natural Area, identifies those sites officially designated as State Natural Areas by the State of Wisconsin Natural Areas Preservation Council.

Source: SEWRPC.

Table 4

CRITICAL SPECIES HABITAT SITES IN RACINE COUNTY: 2009

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
1	Mt. Tom Woods	T2N, R19E Sections 1, 12 Town of Burlington T2N, R20E Sections 6, 7 Town of Brighton	Private and Town of Burlington	21 (plus 3 in Kenosha County)	Hilly woodland on border of Kenosha and Racine counties
2	Bong State Recreation Area	T2N, R19E Sections 12, 13 Town of Burlington T2N, R20E Sections 3, 4, 7, 9, 15-23 Town of Brighton	Private, Department of Natural Resources, and Public School Districts	267 (plus 4,754 in Kenosha County)	Extensive artificial grasslands provide critical nesting habitat for grassland birds
3	Burlington Crevasse Filling	T2N, R19E Section 4 Town of Burlington	Private	34	Semi-open woodland supporting a small population of the State-designated threatened kittentails (<i>Besseyia bullii</i>)
4	Margis Wildlife Area	T2N, R19E Section 17 Town of Burlington	Racine County	36	Small areas of wetland bordering open water contain lesser fringed gentian (<i>Gentianopsis procera</i>), a State-designated special concern species
5	Ranger Mac Fen	T2N, R19E Section 17 Town of Burlington	University of Wisconsin—Parkside	22	Lowland shrubland with small areas of fen and associated species
6	Karcher Sedge-Carr	T2N, R19E Sections 21, 22 Town of Burlington	Department of Natural Resources	249	Open wetland complex with a small population of prairie Indian plantain (<i>Cacalia tuberosa</i>), a State-designated threatened species
7	Case-Eagle Park	T3N, R19E Sections 10, 14, 15 Village of Rochester	Racine County	111	Disturbed oak woodland with small depauperate patches of dry prairie; the State-designated threatened kittentails (<i>Besseyia bullii</i>) is present at low densities
8	Waxdale Railroad Prairie	T3N, R22E Sections 15, 22 Village of Mt. Pleasant	Private	1	Small, disturbed patches of remnant prairie supporting two critical species: wild quinine (<i>Parthenium integrifolium</i>) and waxy meadow rue (<i>Thalictrum revolutum</i>)
9	Pritchard Park Woods	T3N, R22E Section 24 City of Racine	Racine County	10	Small remnant of dry-mesic and wet-mesic woods containing the State-designated special concern red trillium (<i>Trillium recurvatum</i>)
10	Campbell Woods	T3N, R22E Sections 35, 36 Village of Mt. Pleasant	Private	43	Formerly of NA-3 status, extensive residential development has reduced the wooded acreage. The State-designated special concern red trillium (<i>Trillium recurvatum</i>) remains
11	Willow Woods	T3N, R22E Section 36 Village of Mt. Pleasant	Private	4	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
12	Washington Park Woods	T3N, R23E Section 17 City of Racine	City of Racine	14	Disturbed, very open mesic woods, but with a substantial population of blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
13	Maple Road Gravel Pit	T4N, R19E Section 28 Town of Waterford	Private	102	Small patches of disturbed, open woodland bordering gravel pit that contains a small population of the State-designated threatened kittentails (<i>Besseyia bullii</i>)
14	Erwin Wetlands	T4N, R20E Section 3 Town of Norway	Private	2	Disturbed prairie-fen supporting Ohio goldenrod (<i>Solidago ohioensis</i>), a State-designated special concern species
15	Patzke Fen	T4N, R20E Section 3 Town of Norway	Private	33	Disturbed prairie-fen supporting Ohio goldenrod (<i>Solidago ohioensis</i>), a State-designated special concern species

Table 4 (continued)

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
16	Wind Lake	T4N, R20E Sections 3, 4, 8, 9, 10, 16, 17 Town of Norway	Department of Natural Resources and private	58	Wetlands bordering Wind Lake providing nesting habitat for black terns and Forster's terns
17	Waubeesee Lake	T4N, R20E Section 8 Town of Norway	Private	16	Wetlands bordering Waubeesee Lake providing nesting habitat for black terns and Forster's terns
18	Landon Wetland	T4N, R20E Section 10 Town of Norway	Private	12	Disturbed prairie-fen supporting Ohio goldenrod (<i>Solidago ohioensis</i>), a State-designated special concern species
19	WEPCO Oak Woods	T4N, R22E Section 1 Village of Caledonia	WE Energies	14	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
20	WEPCO Woods	T4N, R22E Section 1 Village of Caledonia	WE Energies	18	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
21	Sherwood Property	T4N, R22E Section 2 Village of Caledonia	Private	4	Wetland containing a population of hoplike sedge (<i>Carex lupuliformis</i>), a State-designated endangered species
22	Forked Aster Site	T4N, R22E Section 23 Village of Caledonia	Private	18	Woodland supporting forked aster (<i>Aster furcatus</i>), a State-designated threatened species
23	River Meadow Woods	T4N, R22E Section 23 Village of Caledonia	Private	14	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
24	Caledonia Sanitary Sewer Right-of-Way	T4N, R22E Section 25 Village of Caledonia	Caledonia Conservancy and other private	94	Shrubland containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species, and two species of special concern
25	Hoods Creek Swamp	T4N, R22E Section 26 Village of Caledonia	Private	13	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
26	Root River Bluff	T4N, R22E Section 26 Village of Caledonia	Private and Racine County	50	Small woodland supporting hoptree (<i>Ptelea trifoliata</i>), a State-designated special concern species
27	STH 38/CTH K	T4N, R22E Section 35 Village of Caledonia	Private	4	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
28	Lakeside Woods	T4N, R23E Section 30 Village of Caledonia	WE Energies	2	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
29	Wood Duck Woods	T4N, R23E Section 6 Village of Caledonia	WE Energies	3	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
30	Cliffside Park Old Field	T4N, R23E Sections 7, 8 Village of Caledonia	Racine County	55	Old field/grassland complex within county park containing breeding habitat for a number of grassland-nesting birds
31	Four Mile Road Woods	T4N, R23E Sections 19, 30 Village of Caledonia	Private	31	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
32	Wind Point Ravine Woods	T4N, R23E Sections 21, 22, 27 Village of Wind Point and Village of Caledonia	Private	14	Small ravine woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
33	Wind Point	T4N, R23E Section 27 Village of Wind Point	City of Racine	4	Portion of Lake Michigan sand beach supporting sea rocket (<i>Cakile edentula</i>), a State-designated special concern species
34	Caledonia Low Woods—South	T4N, R23E Section 30 Village of Caledonia	Private and Racine County	30	Small woodland supporting two State-designated special concern species: red trillium (<i>Trillium recurvatum</i>) and hoptree (<i>Ptelea trifoliata</i>)

Table 4 (continued)

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
35	Root River Ravine Woods	T4N R23E Section 30 Village of Caledonia	Private	5	Small woodland supporting red trillium (<i>Trillium recurvatum</i>), a State-designated special concern species
36	Root River Strip Woods	T4N, R23E Section 31 Village of Caledonia	Racine County	2	Small woodland supporting a State-designated special concern species, hoptree (<i>Ptelea trifoliata</i>)
37	River Bend Upland Woods	T4N, R23E Section 31 Village of Caledonia	Racine County	14	Dry-mesic woods containing blue-stemmed goldenrod (<i>Solidago caesia</i>), a State-designated endangered species
38	North Bay Ravine and Beach	T4N, R23E Section 33 Village of Caledonia	Private	2	Portion of Lake Michigan sand beach supporting sea rocket (<i>Cakile edentula</i>), a State-designated special concern species
Total	38 sites	--	--	1,426	--

Environmental Corridors

One of the most important tasks undertaken by the Regional Planning Commission in its work program has been the identification and delineation of areas having concentrations of natural, recreational, historic, aesthetic, and scenic resources and which, as such, should be preserved and protected in order to maintain the overall quality of the environment.¹² Such areas normally include one or more of the following seven elements of the natural resource base which are essential to the maintenance of both the ecological balance and the natural beauty of the Region: 1) lakes, rivers, streams and the associated undeveloped shorelands and floodlands; 2) wetlands; 3) woodlands; 4) prairies; 5) wildlife habitat areas; 6) wet, poorly drained, and organic soils; and 7) rugged terrain and high-relief topography. While the foregoing seven elements constitute integral parts of the natural resource base, there are five additional elements which, although not a part of the natural resource base per se, are closely related, to or centered on, that base and, therefore, are important considerations in identifying and delineating areas with scenic, recreational, and educational value. These additional elements are: 1) existing outdoor recreation sites; 2) potential outdoor recreation and related open space sites; 3) historic, archaeological, and other cultural sites; 4) significant scenic areas; and 5) natural and scientific areas.

In Southeastern Wisconsin, the delineation of these 12 natural resource and natural resource-related elements on maps results in an essentially linear pattern of relatively narrow, elongated areas which have been termed "environmental corridors" by the Commission. Primary and secondary environmental corridors have been identified. Primary environmental corridors include a wide variety of the aforementioned important resource and resource-related elements and are, by definition, at least 400 acres in size, two miles in length, and 200 feet in width. Secondary environmental corridors generally connect with the primary environmental corridors and are at least 100 acres in size and one mile long. In addition, smaller concentrations of natural resource features that have been separated physically from the environmental corridors by intensive urban or agricultural land uses have also been identified. These areas, which are at least five acres in size, are referred to as isolated natural resource areas.

Natural areas and related amenities are often attractive to development, which can create severe environmental and developmental problems as well. These problems include: water pollution, flooding, wet basements, failing foundations for roads and other structures, and excessive infiltration of clear water into sanitary sewerage systems. The preservation of undeveloped corridors is one of the major ways in which the water quality can be protected and perhaps improved at relatively little additional cost to the taxpayers. The riverbanks and lakeshores located within the environmental corridors should be candidates for immediate protection through proper zoning or through public ownership. Of the areas not already publicly owned, the remaining areas of natural shoreline and riparian wetland areas, are perhaps the most sensitive areas in need of greatest protection. As previously noted, the regional natural areas and critical species habitat protection and management plan recommends public

¹²SEWRPC Technical Record, Vol. 3, No. 6, April 1976.

acquisition of specific lands.¹³ Within the County, approximately 500 acres, is specifically recommended for acquisition, including the Renak-Polak Maple Beech Woods State Natural Area in the Village of Caledonia, the Kansasville Railroad Prairie in the Towns of Dover and Village of Yorkville, the Franksville Railroad Prairie and the Sanders Park Hardwood State Natural Area in the Village of Mt. Pleasant, the Cherry Lake Sedge Meadow State Natural Area in the Village of Rochester, and the Tichigan Fen and Elm Island Bog-Island Oak Woods in the Town of Waterford. In addition to these sites, the acquisition of a further 4,600 acres of lands of countywide or regional significance by both public agencies and private conservation organizations is recommended.

Primary environmental corridors within Racine County are illustrated on Map 14, and generally lie along major stream valleys, surround lakes, found in conjunction with wetlands and woodlands, and wildlife habitat areas. These corridors also contain many of the best remaining potential park sites. The primary environmental corridors are, in effect, a composite of the best remaining elements of the natural resource base of Racine County and have immeasurable environmental and recreational value. In 2010, there were approximately 37.3 square miles of primary environmental corridors, or about 11 percent of the land area in the County.

Secondary environmental corridors are typically located along small perennial and intermittent streams within the County. Secondary environmental corridors also contain a variety of resource elements, often being remnants of primary environmental corridors that have been partially converted to intensive urban or agricultural use. Secondary environmental corridors facilitate surface water drainage and maintain pockets of natural resource features. Secondary environmental corridors should also be considered for preservation as the process of development proceeds within the County, particularly when the opportunity is presented to incorporate these corridors into urban stormwater retention basins, associated drainageways, wildlife refuges, and neighborhood parks. As illustrated on Map 14, in 2010 there were approximately 11.5 square miles of secondary environmental corridors in the County, or about 3 percent of the total land area.

In addition to the primary and secondary environmental corridors, other, smaller pockets of natural resource base elements exist within the County. These pockets are isolated from the environmental corridors by urban development or agricultural uses. Even though they are separated from the environmental corridor network, these areas have important natural resource value. Since isolated natural resource areas may represent the only wildlife habitat in an area, provide good locations for local parks and nature study areas, and lend unique aesthetic character and natural diversity to an area, these areas should be protected and preserved to the extent practicable as the process of urban development proceeds within the County. These “isolated natural resource areas” should not be confused with Designated State Natural Areas, or Natural Areas of Statewide, Regional, or Local (NA-1, NA-2, or NA-3) Importance. The isolated natural resource areas shown on Map 14 encompassed approximately 13.7 square miles in 2010, or about 4 percent of the land area in the County.

Major Park and Open Space Sites

The State- and County-owned park and open space sites, as well as certain municipal and/or privately owned parks in Racine County, generally provide a wide variety of natural resource-related outdoor recreation facilities.

Classification of an area into one of these three categories is based upon consideration of several factors. These factors include the diversity of plant and animal species and community types present; the structure and integrity of the native plant or animal community; the extent of disturbance by human activity, such as logging, grazing, water level changes, and pollution; the commonness of the plant and animal communities present; any unique. It is important to note here that, because of the many interlocking and interacting relationships between living organisms and their environment, the destruction or deterioration of one element of the total environment may lead to a chain reaction of deterioration and destruction. The drainage of wetlands, for example, may have far-reaching effects, since such drainage may destroy fish spawning grounds, wildlife habitat, groundwater recharge areas, and natural filtration and floodwater storage areas in interconnected lake and stream ecosystems. The

¹³SEWRPC Planning Report No. 42, op. cit.

resulting deterioration of surface water quality may, in turn, lead to a deterioration of the quality of the groundwater that serves as a source of domestic, municipal, and industrial water supplies and provides a basis for low flows in rivers and streams. Similarly, the destruction of woodland cover, which may have taken a century or more to develop, may result in soil erosion and stream siltation, and in more rapid runoff and increased flooding, as well as in the destruction of wildlife habitat. Although the effects of any one of these environmental changes may not in and of itself be overwhelming, the combined effects may lead eventually to the deterioration of the underlying and supporting natural resource base, and of the overall quality of the environment for life. The need to protect and preserve the remaining environmental corridors within Racine County thus becomes apparent and critical.

Environmental corridors are subject to urban encroachment because of their desirable natural resource amenities. Unplanned or poorly planned intrusion of urban development into these corridors not only tends to destroy the sensitive lands serving residents throughout the County. In addition, these sites serve to protect natural resources and often encompass significant wetlands, woodlands, and wildlife habitat within the primary environmental corridors in the County. Sites that are larger than 100 acres in size have been termed major park and open space sites. It is important to note that, the smaller, less than 100-acre, municipal park and open space sites often provide outdoor recreation facilities such as ball diamonds and play areas, and generally serve local urban community and neighborhood areas. These smaller sites may, in some cases, also encompass important natural resources.



Pike River Restoration Project - Expansion of the Environmental Corridor while including a walking/biking trail.

Table 5

PARK AND OUTDOOR RECREATION SITES OWNED BY RACINE COUNTY: 2010

Number on Map 15	Site Name	Location ^a	Size (acres)
1	John Margis, Jr. Wildlife Area	T2N, R19E, Section 17	45
2	Fox River Parkway.....	T3N, R19E, Sections 2, 14, 21	38
3	W.R. Wadewitz Nature Camp	T3N, R19E, Section 3	176
4	Keucker Property	T3N, R19E, Section 10	85
5	Case Eagle Park.....	T3N, R19E, Section 11	245
6	Stenhouse Memorial Park.....	T3N, R19E, Section 13	10
7	Saller Woods	T3N, R19E, Sections 14, 15	90
8	Saller Woods Addition.....	T3N, R19E, Section 15	28
9	Browns Lake Golf Course.....	T3N, R19E, Section 28	140
10	Bushnell Park.....	T3N, R19E, Section 33	95
11	Fischer Memorial Park.....	T3N, R19E, Section 34	65
12	Beaumont Park	T3N, R20E, Section 2	1
13	Eagle Lake Park.....	T3N, R20E, Section 22	25
14	Evans Park	T3N, R21E, Section 12	64
15	Ives Grove Golf Links.....	T3N, R21E, Section 13	289
16	Skewes Memorial Park	T3N, R21E, Section 14	4
17	Old Settler's Park.....	T3N, R21E, Section 31	12
18	Haban Park.....	T3N, R22E, Section 8	41
19	Pritchard Park	T3N, R22E, Section 24	73
20	Sanders Park	T3N, R22E, Section 36	84
21	Quarry Lake Park.....	T3N, R23E, Section 6	39
22	Horlick Park	T3N, R23E, Section 6	15
23	Reefpoint Marina.....	T3N, R23E, Section 9	45
24	Belle Harbor Marina	T3N, R23E, Section 9	4
25	Racine Harbor Park	T3N, R23E, Section 9	17
26	American Eagle Manor Outlot.....	T4N, R19E, Section 2	17
27	Fowler's Bay North.....	T4N, R19E, Section 24	6
28	Fowler's Bay Outlot 1.....	T4N, R19E, Sections 25, 26	35
29	Whispering Hills Outlot.....	T4N, R20E, Section 7	43
30	Heg Park.....	T4N, R20E, Section 18	18
31	Koerber Property.....	T4N, R21E, Section 15	11
32	Cliffside Park.....	T4N, R23E, Sections 7, 8	223
33	Tabor Sokol Memorial Park	T4N, R23E, Section 19	1
34	Root River Parkway	T3N, R23E, Section 6 T4N, R21E, Section 1 T4N, R22E, Sections 3, 4, 5, 10, 11, 14, 23, 25 T4N, R23E, Sections 19, 30, 31	704
Total - 34 Sites		- -	2,788

^aU.S. Public Land Survey Township, Range, and Section.

Source: Racine County Public Works Division and SEWRPC.

Existing Park and Open Space Sites

Table 6

SELECTED OUTDOOR RECREATION FACILITIES WITHIN RACINE COUNTY PARKS: 2010

Number on Map 15	Site Name	Size (acres)	Playfield	Golf Course	Picnic Area	Swimming Beach	Trails	Boat Launch	Campsites (number)
1	John Margis, Jr. Wildlife Area.....	45	--	--	X	--	X	--	--
2	Fox River Parkway	38	--	--	--	--	--	--	--
3	W.R. Wadewitz Nature Camp.....	176	--	--	--	--	X	--	9
4	Keucker Property.....	85	--	--	--	--	--	--	--
5	Case Eagle Park.....	245	X	--	--	--	X	--	--
6	Stenhouse Memorial Park	10	--	--	--	--	--	--	--
7	Saller Woods	90	--	--	--	--	X	--	--
8	Saller Woods Addition	28	--	--	--	--	X	--	--
9	Browns Lake Golf Course.....	140	--	X	--	--	--	--	--
10	Bushnell Park	95	X	--	X	--	X	--	--
11	Fischer Memorial Park.....	65	X	--	X	X	--	X	--
12	Baumont Park.....	1	--	--	X	--	--	--	--
13	Eagle Lake Park	25	X	--	X	--	--	X	--
14	Evans Park	64	--	--	X	--	X	--	--
15	Ives Grove Golf Links	289	--	X	--	--	--	--	--
16	Skewes Memorial Park.....	4	--	--	X	--	--	--	--
17	Old Settler's Park.....	12	X	--	X	--	--	--	--
18	Haban Park.....	41	X	--	X	--	--	--	--
19	Pritchard Park.....	73	X	--	X	--	X	--	--
20	Sanders Park.....	84	X	--	X	--	X	--	25
21	Quarry Lake Park	39	--	--	X	X	--	--	--
22	Horlick Park	15	--	--	X	--	--	X	--
23	Reefpoint Marina	45	--	--	--	--	--	X	--
24	Belle Harbor Marina.....	4	--	--	--	--	--	-- ^a	--
25	Racine Harbor Park	17	--	--	--	--	--	--	--
26	American Eagle Manor Outlot	17	--	--	--	--	--	--	--
27	Fowler's Bay North.....	6	--	--	--	--	--	--	--
28	Fowler's Bay Outlot 1	35	--	--	--	--	--	--	--
29	Whispering Hills Outlot	43	--	--	--	--	--	--	--
30	Heg Park.....	18	X	--	X	--	--	--	--
31	Koerber Property	11	X	--	--	--	--	--	--
32	Cliffside Park	223	X	--	X	--	X	--	95
33	Tabor Sokol Memorial Park	1	--	--	X	--	--	--	--
34	Root River Parkway.....	704	--	--	X	--	--	X ^b	--
Total - 34 Sites		2,788	11	2	17	2	10	5	129 ^c

^a Boat launch well.^b Existing canoe launch in Root River Parkway is for non-motorized boats.^c The number of campsites include three group sites at Cliffside Park and nine group sites at W.R. Wadewitz Nature Camp.

Source: Racine County Public Works Division and SEWRPC.

Parks and Open Space Sites Owned by Local Governments or School Districts

In addition to the County and State-owned park and open space sites in Racine County, in 2010 there was a total of 238 sites owned by local units of government or school districts. Those sites encompass 3,287 acres, or about 2 percent of the total area of the County. Local governments own 185 park and open space sites and public school districts own 53 sites. The acreage attributed to school district sites includes only those portions of the site used for recreational or open space purposes.

In 2010, there were 55 parks, outdoor recreation, and parkway sites owned by Racine County and the State of Wisconsin as shown on Map 12 and Table 6, encompassing approximately 6,600 acres, or approximately 3 percent of the total land area in the County.¹⁴ Of the County owned park and open space sites, 8 are major parks and encompass a total of approximately 1,325 acres, 26 are comprised of other parks and outdoor recreation sites for a total of about 1,442 acres, included in these sites are two parkway sites combined for a total of about 740 acres. In addition, the Wisconsin Department of Natural Resources owns and maintains several park and open space land areas that encompass approximately 3,863 acres, which more than doubles the amount of public recreational lands within Racine County. In addition to County and State-owned parks, there are approximately 3,287 acres of park and open space sites that are owned by the Towns, Villages, or City, as well as about 2,473 acres that are privately owned.

Table 7

STATE OF WISCONSIN RECREATION AND OPEN SPACE LANDS IN RACINE COUNTY: 2010

Number on Map 15	Site Name	Location ^a	Size (acres)
	Department of Natural Resources Sites		
35	Statewide Habitat Area.....	T2N, R19E, Section 9	44
36	Scattered Wetland	T2N, R19E, Sections 14, 23	157
37	Karcher Marsh Wildlife Area	T2N, R19E, Sections 21, 22	279
38	Wind Lake Canal Access Site	T3N, R19E, Section 1	9
39	Honey Creek Wildlife Area.....	T3N, R19E, Sections 8,10,15,16,17,19, 20	1,010
40	Statewide Habitat Area.....	T3N, R19E, Section 34	227
41	Scattered Wetland	T3N, R20E, Section 12	81
42	Statewide Habitat Area.....	T3N, R20E, Section 12	10
43	Eagle Lake Fishery Area (North).....	T3N, R20E, Section 21	60
44	Eagle Lake Fishery Area (South)	T3N, R20E, Section 28	37
45	Scattered Wetland	T3N, R22E, Section 10	5
46	Tichigan Wildlife Area.....	T4N, R19E, Sections 10,11,15,16,21,22	1,425
47	Statewide Public Access-Waubesa Lake	T4N, R20E, Section 7	1
48	Wind Lake Fishery Area.....	T4N, R20E, Section 8	20
49	State Wetland.....	T4N, R20E, Section 11	260
50	Statewide Public Access-Wind Lake.....	T4N, R20E, Section 17	1
51	Scattered Wetland	T4N, R20E, Section 17	85
	Subtotal - 17 Sites	--	3,711
	University of Wisconsin Sites		
52	Ranger Mac Fen	T2N, R19E, Section 17	33
53	Renak-Polak Maple-Beech Woods	T4N, R22E, Section 14	108
	Subtotal - 2 Sites	--	141
	Department of Transportation Sites		
54	WisDOT Mitigation Site	T3N, R21E, Section 30	8
55	32nd Division Memorial Marker and Wayside	T4N, R22E, Section 12	3
	Subtotal - 2 Sites	--	11
--	Total - 21 Sites	--	3,863

^aU.S. Public Land Survey Township, Range, and Section.

Source: SEWRPC.

¹⁴SEWRPC Community Assistance Planning Report No. 134, 2nd Edition, A Park and Open Space Plan for Racine County, Wisconsin, draft.



Eagle Lake Park, Located in the Town of Dover

Chapter III

RELATED PLANS, REGULATIONS, AND PROGRAMS

This third update to the Racine County land and water resource management plan is built upon the first three plans and it complements other planning and resource management efforts and programs linking local level planning with regional and watershed level plans. The plan, therefore, provides an integrated framework within which Racine County will conduct activities to protect and rehabilitate the land and water resource base of the County and contribute to the environmentally sound management of these valuable resources in a coordinated and compatible manner with watershed wide needs and resource management programs. One of the first steps to be undertaken in the land and water resource management planning program is the inventory, collation, and review of the recommendations of relevant previously prepared reports and plans.

A number of plans currently exist which focus on the natural resources of Racine County. These plans include programs which address the interconnection of the natural resources of Racine County with those of the related watersheds and the Southeastern Wisconsin Region, as well as the importance of natural resources at the County and community level. The plans collated and reviewed for input into this current planning program were generally most relevant to actions undertaken by the County or potentially to be undertaken by the County. In addition, selected plans prepared at the local level, including local land use plans, park and open space plans, lake and water quality management plans, 9 key element plans, and sewer service area plans prepared for individual communities or for special-purpose units of government were considered. All of these documents provide the basis for developing an integrated scheme for the sustainable management of the natural resources of Racine County through the coordinated efforts of Federal, State, County, and local governments, special-purpose units of government, and community groups. The land and water resource management plan provides an opportunity to promote detailed action at the local level while achieving strategic objectives within the boundaries of Racine County, its watersheds, and the Southeastern Wisconsin Region. This plan takes into account planning objectives identified by local officials and also those reflected in locally-adopted land use plans and ordinances. Accordingly, an important step in the planning process was a review of the existing framework of areawide and local plans and related land use regulations. This chapter presents a summary of that review.

REGIONAL PLANS

Regional Land Use Plan

The regional land use plan sets forth the fundamental concepts that are recommended to guide the development of the seven-county Southeastern Wisconsin Region. The recommended regional land use plan table, as it pertains to Racine County. The key recommendations of the plan include:

- ***Environmental Corridors***

The regional land use plan recommends that development within primary environmental corridors be limited to transportation and utility facilities, compatible outdoor recreational facilities, and, on a limited basis, rural density housing located at the fringes of upland environmental corridor using conservation design principles at a maximum density of one dwelling unit per five acres. The plan further recommends the preservation, to the extent practicable, of the remaining secondary environmental corridors and isolated natural resource areas, as determined through county and local planning efforts. Primary environmental corridors are shown on Map 14 of Chapter II of this report. The regional land use plan recommends preservation of the remaining primary environmental corridors in essentially natural and open land uses.

- ***Urban Development***
The regional land use plan recommends a centralized regional settlement pattern within defined urban service areas. New urban development is encouraged to occur largely as infill in existing urban centers and in urban growth areas emanating outward from existing urban centers. The regional plan also recommends that existing developed areas be conserved and enhanced; that new urban development occur at densities which can efficiently and effectively support public sanitary sewerage, water supply, and other services; and that urban development occur only in those areas that are covered by soils suitable for such development and which are not subject to special hazards such as flooding or erosion.
- ***Prime Agricultural Land***
The regional land use plan recommends that prime agricultural land be preserved for long-term agricultural use and not be converted to either urban development or to other forms of rural development. An exception is prime agricultural land located adjacent to existing urban centers and within planned urban growth/sewer service areas, which is proposed to be converted to urban use to provide for orderly growth of those urban centers. The regional plan defers to county plans to identify prime agricultural land. Prime agricultural land is identified by the Racine County farmland preservation plan, which was originally adopted in 1981 and updated in 2013. The Racine County park and open space plan (3rd Edition) 2010, updated the farmland preservation areas to reflect farmland converted to urban uses since 1981.
- ***Other Agricultural and Rural-Density Residential Lands***
In addition to preserving prime agricultural lands and environmental corridors, the regional land use plan seeks to maintain the rural character of other lands located outside planned urban service areas. The plan encourages continued agricultural and other open space uses in such areas. The plan seeks to limit development in such areas primarily to rural-density residential development, with an overall density of no more than one dwelling unit per five acres. Where rural residential development is accommodated, the regional plan encourages the use of conservation design, with homes grouped together on relatively small lots surrounded by permanently preserved agricultural, recreational, or natural resource areas such as woodlands, wetlands, or prairies sufficient to maintain the maximum recommended density of no more than one home per five acres.

VISION 2050: A Regional Land Use and Transportation Plan

VISION 2050 recommends a long-range vision for land use and transportation in the seven county Southeastern Wisconsin Region. It makes recommendations to local and State government to shape and guide land use development and transportation improvement, including public transit, arterial streets and highways, freight, and bicycle and pedestrian facilities, to the year 2050. We have reached a pivotal moment in our Region's development, and more than ever we will need to compete with other areas to attract residents and businesses. To increase our competitiveness, VISION 2050 builds on our strengths as a Region and seeks to improve areas where we do not compete well with our peers.

Regional Natural Areas Plan

A regional natural areas and critical species habitat protection and management plan for Southeastern Wisconsin was adopted by SEWRPC as an amendment to the regional park and open space plan in September 1997. The regional plan refers to Natural Areas on Map 12 in Chapter II and Critical Habitat Sites on Map 13 in Chapter II. The planning effort was undertaken to identify the most significant remaining natural areas-irreplaceable, bio diverse remnants of the pre-European landscape-as well as other areas vital to the maintenance of endangered, threatened, and rare plant and animal species in the Region.

Promoting biodiversity, the plan represents an important additional element of the evolving comprehensive plan for Southeastern Wisconsin. It also provides an important supplement to the open space preservation recommendations of the regional land use, and park and open space plans. Under the plan, natural areas are defined as tracts of land or water so little modified by human activity, or which have sufficiently recovered from

the effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European-settlement landscape. Critical species habitats are defined as additional tracts of land or water which support endangered, threatened, or rare plant or animal species. As amended through 2010, the plan identified a total of 494 natural areas and 271 critical species habitat sites.

Regional Water Quality Management Plan

In 1979, the SEWRPC completed and adopted a region wide water quality management plan for Southeastern Wisconsin as a guide to achieving clean and healthy surface waters within the seven-county Region. The plan was designed, in part, to meet the Congressional mandate that the waters of the United States be made “fishable and swimmable” to the extent practical. It is set forth in SEWRPC Planning Report No. 30, *A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000*, Volume One, Inventory Findings, September 1978; Volume Two, Alternative Plans, February 1979; and Volume Three, Recommended Plan, June 1979. Subsequently, SEWRPC completed a report documenting the updated content and implementation status of the regional water quality management plan: SEWRPC Memorandum Report No. 93, *A Regional Water Quality Management Plan for Southeastern Wisconsin: An Update and Status Report*, March 1995. This status report also documents the extent of progress, which had been made toward meeting the water use objectives and supporting water quality standards set forth in the regional plan.

The regional water quality management plan update,¹ resulted in the reevaluation and, as necessary, revision of the three major elements comprising the original plan including; the land use element, the point source pollution abatement element, and the nonpoint source pollution abatement element. In addition, in cooperation with the MMSD, the regional water quality management plan update work was reviewed with a Citizens Advisory Council and was presented at forums of elected officials. The planning update was subject of a series of public hearings, and adopted by SEWRPC in 2007. The updated plan is set forth in SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*.

Regional Water Supply Plan

The Commission is conducting a regional water supply study for the Southeastern Wisconsin Region.² The regional water supply plan together with past SEWRPC groundwater inventories and a ground water simulation model^{3, 4} will form the SEWRPC regional water supply management program. The preparation of these three elements includes interagency partnerships with the U.S. Geological Survey, the Wisconsin Geological and Natural History Survey, the University of Wisconsin-Milwaukee, the Wisconsin Department of Natural Resources, and many of the area’s water supply utilities.

The regional water supply plan will include the following major components:

- Water supply service areas and forecast demand for water use.
- Recommendations for water conservation efforts to reduce water demand.
- Evaluation of alternative sources of supply, recommended sources of supply, and recommendations for development of the basic infrastructure required to deliver that supply.

¹SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, December 2007.

²SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*, December 2010.

³SEWRPC Technical Report No. 37, *Groundwater Resources of Southeastern Wisconsin*, June 2002.

⁴SEWRPC Technical Report No. 41, *A Regional Aquifer Simulation Model for Southeastern Wisconsin*, June 2005.

- Identification of groundwater recharge areas to be protected from incompatible development.
- Specification of new institutional structures necessary to carry out plan recommendations.
- Identification of constraints to development levels in certain areas of the region due to water supply sustainability concerns.

The recommendations and guidance for groundwater sustainability set forth in SEWRPC Planning Report No. 52 should be considered by municipalities in Racine County when evaluating the sustainability of proposed developments and in conducting local land use planning. The plan was completed in 2009.

COUNTY AND MULTI-JURISDICTIONAL PLANS

Racine County Multi-Jurisdictional Comprehensive Plan: 2035

The Multi-Jurisdictional Comprehensive Plan for Racine County: 2035 was completed in November, 2009. The local government bodies participating with Racine County in this planning process are listed below:

City of Burlington	Village of Union Grove
City of Racine	Village of Waterford
Village of Caledonia	Village of Wind Point
Village of Elmwood Park	Village of Yorkville
Village of Mt. Pleasant	Town of Burlington
Village of North Bay	Town of Dover
Village of Raymond	Town of Norway
Village of Rochester	Town of Waterford
Village of Sturtevant	

Racine County staff and officials worked with local governments, SEWRPC, and UW-Extension to produce the comprehensive plan. SEWRPC staff drafted the plan chapters for review by County and UW-Extension staff, and the advisory committee composed of local government representatives, local and County officials, and County residents and landowners. The County provided the local match required by the grant. Participating local governments were not asked for any direct financial contribution for preparation of the multi-jurisdictional comprehensive plan. The importance of the comprehensive plan as a basis for decision-making is reinforced by consistency requirements in the State planning law, which specify that zoning, land division, and official mapping regulations must be consistent with the plan.

In addition, the comprehensive plan serves to increase the awareness and understanding of County and city, village and town planning goals and objectives by landowners, developers, and other private interests. With an adopted comprehensive plan in place, private sector interests can proceed with greater assurance that proposals developed in accordance with the plan will receive required approvals.

Racine County Park and Open Space Plan

A County Park and Open Space Plan⁵ was most recently amended in 2010. That plan consists of both an open space preservation element and an outdoor recreation element, intended to, respectively, protect areas containing important natural resources and to provide major parks, areawide trails, and resource-oriented recreational facilities. Major parks are defined as publicly-owned parks at least 100 acres in size providing opportunities for such resource-oriented activities as camping, golfing, picnicking, and swimming. Responsibility for providing community parks, neighborhood parks, and local trails is assigned to cities, villages, and towns. Map 15 in Chapter II of this report shows County and State-owned park and open space sites in Racine County: 2010.

⁵ Documented in SEWRPC Community Assistance Planning Report No. 134, A Park and Open Space Plan for Racine County, Wisconsin, 3rd Edition February 2013.

The regional park and open space plan, as amended by the park and open space plan for Racine County, contains recommendations which, if implemented, would provide residents of Racine County with opportunities to participate in a wide range of resource-oriented outdoor recreation activities. Those recommendations are concerned with the provision of major parks, which provide opportunities for intensive resource-oriented outdoor recreation activities, and recreation corridors, which provide opportunities for various trail-oriented activities. In addition, the plan contains recommendations for the protection and preservation of open space lands, including natural resource features such as woodlands, wetlands, and floodplains, located within environmental corridors and isolated natural resource areas.

Racine County Farmland Preservation Plan

Prime agricultural lands are those lands which, in terms of farm size, the aggregate area being farmed, and soil characteristics, are best suited for the production of food. A number of important public purposes are served by the preservation of prime agricultural lands. Such public purposes include maintenance of agricultural reserves; maintenance of open space; control of public costs by avoiding the need to provide urban services such as sanitary sewer, public water, and full-time police and fire protection; and preservation of the local economic base.

Prime agricultural lands in Racine County were identified by the Racine County farmland preservation plan,⁶ which was adopted by the Racine County Board in June 1981 and updated in 2013. In this plan, prime agricultural land is determined by exclusive agricultural zoning and at least 50 percent of the farm unit must be covered by soils which meet USDA Natural Resources Conservation Service criteria for “Prime Farmland” or “Farmland of Statewide Importance” (generally Class I, II, or III soils); and the farm should be located in a contiguous farming area at least 100 acres in size. Farmland preservation is recommended by a number of local land use and comprehensive plans.

Racine County Land and Water Resources Management Plan 2000-2004, Updated 2008-2012 and Updated 2013-2022

The original land and water resources management plan⁷ was adopted by the County Board in September 2000. The plan update¹⁰ was adopted by County Board in September 2007. The plans identified a set of priority issues related to County land and water resources, including: stormwater management, sedimentation, animal waste runoff, yard waste management, illicit dumping of waste, excessive fertilizer and pesticide application, wetland resource protection, groundwater degradation, loss of farmland and open space, and lack of riparian buffers. These concerns and issues were used as a basis for developing the goals, objectives, and recommended actions for the plan. Recommendations specific to each of the County’s five watersheds were divided into the following categories: agricultural land use, nonagricultural and urban land use, water quality and wildlife habitat, educational programming, and groundwater. To address these issues the plan identifies the following goals: reduce agricultural and non-agricultural nonpoint source pollution; reduce sedimentation in agricultural drainageways; encourage urban density land use only within identified urban service areas; improve the overall water quality and wildlife habitat; continue to implement and enhance the County’s shoreland management

⁶ Documented in SEWRPC Community Assistance Planning Report No. 46 A Farmland Preservation Plan for Racine County, Wisconsin, 2nd Edition December 2013.

⁷ Documented in SEWRPC Community Assistance Planning Report No. 259, A Land and Water Resources Management Plan for Racine County, Wisconsin, September 2000.

¹⁰ Documented in SEWRPC Community Assistance Planning Report No. 259 (2nd edition), A Land and Water Resources Management Plan for Racine County, Wisconsin, September 2008.

program; reduce the threat to groundwater contamination; and increase educational efforts related to groundwater resources, natural resources, and the environment. The plan sets forth the objectives and actions that will be carried out in order to achieve the goals associated with each issue and identifies the agency or organization responsible for carrying out the listed action steps.

CITY, TOWN, AND VILLAGE PLANS

Local Land Use, Master, and Comprehensive Plans

Section 62.23 of the *Wisconsin Statutes* grants cities and villages the authority to prepare and adopt local master plans or plan elements, such as a community land use plan. Section 60.10(2)(c) of the *Statutes* gives towns the authority to prepare and adopt a local master plan under Section 62.23 provided a town adopts village powers and creates a town plan commission. All towns in Racine County that have incorporated as a Village have created a plan commission.

City and Village Land Use, Master, and Comprehensive Plans

Racine County's city and village future land use plans include a variety of land uses such as residential, commercial, industrial, parks, environmental corridors, government and institutional, and other land uses. City and village planning areas generally extend beyond corporate boundaries to include areas outside of those boundaries that are expected to be annexed by the city or village within the planning period. City and village planning areas are often related to the extraterritorial plat approval area granted to cities and villages under Section 236.10 of the *Statutes*.

Town Land Use and Comprehensive Plans

Town land use and comprehensive plans include a variety of recommended land uses, including agricultural, residential, commercial, industrial, parks, environmental corridors, government and institutional, and other land uses. Because towns do not have extraterritorial planning authority, town planning areas do not extend beyond town boundaries. The overlapping planning authority demonstrates the importance of intergovernmental cooperation in the comprehensive planning process.

WATERSHED PLANS

Southeastern Wisconsin Fox River Commission Implementation Plan: 2011-2020⁸

The implementation of the SEWFRC's work program over the next decade is recommended to build upon the practices and procedures adopted during the initial decade of the SEWFRC's operations. In addition to addressing the mandated issues of selective dredging and channel clearance, development of water use and dam operating plans, streambank and shoreline erosion control, and public access and water safety, the emerging issues of the modification of the Commission boundary and composition of the Board of Commissioners, funding and project selection, issues related to the Great Lakes-St. Lawrence River Basin Water Resources Compact, and partnerships were identified. While the SEWFRC's role in maintaining a watching-brief over issues such as ordinance development, nonnative species infestations, and coordination of activities within the Middle Fox River basin are largely no-cost activities, other (ongoing) activities require the continued and sustained application of funds and other resources. Thus, it is recommended that the SEWFRC work to implement the county-based funding process as envisioned by the Wisconsin Legislature in Subchapter VI of Chapter 33 of the Wisconsin Statutes, while continuing to seek additional external sources of funds through grants and other funding sources. To this end, the establishment and/or continuation of partnerships with other governmental entities and nongovernmental organizations is recommended.

⁸ SEWRPC Memorandum Report No. 199, *Southeastern Wisconsin Fox River Commission Implementation Plan: 2011-2020*, September 2011.

Eagle Lake Management Plan 2017-2026⁹

The Eagle Lake Management District and the Eagle Lake Improvement Association jointly funded the effort to update the original plan from 2007. The plan was contracted by the ELMD due to their status as a governmental entity. The purpose of the update is to identify, quantify, and prioritize the sources of runoff pollution and recommend ways to protect the watershed and Eagle Lake, which has a total phosphorus goal below 0.10 mg/l.

The plan will include new technologies used by rural and urban communities as well new state and local regulations out in place to reduce negative impacts of resource concerns within the watershed. This update includes priorities of action. Eagle Lake is retained in its present condition by a dam and has a surface water area of 531 acres. The lake is classified as eutrophic, but can support full recreational use and a warm water fishery.

The Eagle Lake Watershed covers approximately 4,225 acres of land in the Town of Dover, Racine County. Agriculture is the dominant land use, including some livestock operations, but much of the agricultural land is used for cash grain. Woodlands and wetlands cover approximately 18% of the watershed. Eagle Lake receives runoff from its direct watershed and tributary watersheds. Most of the channels carrying runoff to the Lake have been historically deepened, widened and relocated.



Oakcrest Creek Restoration – Remove legacy sediment, grade/seed eroding banks, create two-stage channel

⁹ Prepared for the Eagle Lake Improvement Association and the Eagle Lake Management District by Racine County Land Conservation: Eagle Lake Watershed Management Plan 2017-2026

Sediment that has eroded from upland slopes over past decades, during years of intensive land clearing, agriculture and construction has altered and continues to impair the hydrologic, biologic, aquatic, riparian, and water quality functions of pre-settlement conditions. These depositions have been identified as “Legacy Sediment”. The legacy sediment often accumulated in flat, low flow environments, resulting in thick accumulations of fine grained sediment that contains significant amounts of nutrients. To achieve the pollution reduction targets and improve the water quality within Eagle Lake, legacy sediment, as well as other nonpoint sources of pollution in the watershed, must be addressed. Legacy sediment may need to be inventoried, identified and removed to more quickly enhance water quality and the biodiversity that will come with a more natural tributary system. This will also prevent sediment from moving further downstream and into Eagle Lake.

Eagle Lake Watershed Plan’s success is not possible without the efforts and cooperation of many people and programs. This plan recommends a variety of sources of technical and financial assistance to reduce nonpoint sources of pollution and help “clean-up” the watershed and protect Eagle Lake.

9 Key Element Plans in Racine County

Racine County has multiple watershed-based plans that are consistent with EPA’s Nine Key Elements. Watershed plans consistent with EPA’s nine key elements provide a framework for improving water quality in a holistic manner within a geographic watershed. The nine elements help assess the contributing causes and sources of nonpoint source pollution, involve key stakeholders and prioritize restoration and protection strategies to address water quality problems. Development of watershed-based plans funded with Section 319 funds must be consistent with EPA’s nine elements. The elements can be used in watersheds with impaired waters or used to protect watersheds not yet impaired. The nine elements are:

1. Identify the causes and sources
2. Estimate pollutant loading into the watershed and the expected load reductions
3. Describe management measures that will achieve load reductions and targeted critical areas
4. Estimate technical and financial assistance and relevant authorities needed to implement the plan.
5. Develop an information/education component
6. Develop a project schedule
7. Develop the interim, measurable milestones
8. Identify indicators to measure progress and make adjustments
9. Develop a monitoring component

Root-Pike Watershed Initiative Network (Root-Pike WIN) is a non-profit organization that seeks grants and awards grants to projects that will preserve, promote, and protect watershed health. They have established three 9 Key Element Plans in Racine County; the Pike River Watershed Plan 2013, the Root River Watershed Restoration Plan 2014, and the Wind Point Watershed Restoration Plan 2015.

Pike River Watershed Plan 2013¹⁰

The Pike River Watershed Plan includes an “Action Plan” developed to provide stakeholders with recommendations to address plan goals. The Action Plan includes both programmatic recommendations and site-specific recommendations. Programmatic recommendations are general watershed-wide remedial, preventative, and regulatory actions. Site specific recommendations include actual locations where projects can be implemented to improve surface and groundwater quality, green infrastructure, and aquatic and terrestrial habitats.

The Pike River Watershed is located in portions of Racine and Kenosha counties, and consists of three sub-basins; the North Branch, South Branch and the Main Pike River. The North Branch originates near County Highway C

¹⁰ Prepared for Root-Pike WIN by Applied Ecological Services, Inc: Pike River Watershed Restoration Plan, August 2013

in the Village of Mount Pleasant. The South Branch is a drainage way that originates near Highway 50 in Kenosha County. From there, it flows north alongside the Union Pacific Railroad, picking up contributions from agriculture drainage tiles, Airport Branch, Somers Branch and other unnamed tributaries. The North Pike and South Branch meets at Petrifying Springs Park, forming the Main Branch of the Pike River. From Petrifying Springs, the Pike River flows east, then south through the City of Kenosha before emptying into Lake Michigan. The major tributary to the Pike River is Sorenson Creek. The one named lake found in this watershed is Petrified Springs Park Pond, which covers approximately three acres. Land cover is primarily rural, with agriculture dominant (52%). Urban land uses account for 19 percent of the land area, while grasslands (14%) and forests (8%) represent the other major rural uses. Wetlands cover less than two percent of the land area. The municipalities include the City of Kenosha, the Village of Sturtevant, Village of Mount Pleasant and the Town of Somers.

The Pike River Watershed Restoration Plan has been adopted by seven municipalities and the University of Wisconsin–Parkside. These municipalities and entities all have some part of their jurisdiction that includes the Pike River watershed. Adopters of the plan include Kenosha County, Racine County, City of Racine, Village of Mount Pleasant, Village of Sturtevant, Village of Pleasant Prairie, Village of Somers and University of Wisconsin – Parkside.

Watershed planning and implementation is a voluntary effort and relies upon existing authorities/ordinances. Active watershed stakeholders are needed to put this watershed plan into action. The Pike River Education & Public Outreach Committee (PREPOC) or Pike River Advisory Group is in place to support plan implementation and future planning efforts.

In 2016, Root-Pike WIN began implementing the Pike River Watershed Restoration Plan. Implementation includes the planning, design and construction of both municipal and private landowner projects. Root-Pike WIN's role is to serve as educator and facilitator of the plan's recommendations.

Root River Watershed Restoration Plan 2014¹¹

The Root River Watershed is located in portions of Waukesha, Milwaukee, and Racine counties and drains almost two-thirds of the entire Root-Pike River Basin (198 square miles). Nine sub-watersheds contribute flow: the Upper Root, Whitnall Park Creek, East Branch, Lower Root, Middle Root, Root River Canal, West Branch Root River Canal, East Branch Root River Canal, and Hoods Creek. There are a total of 117 miles of rivers and streams in the Root River watershed. The headwaters begin in west central Milwaukee and eastern Waukesha counties. From there, the river flows southeast, picking up contribution from eight sub-watersheds, and ultimately emptying into Lake Michigan in the City of Racine. Each sub-watershed serves a different land use.

The Upper Root is heavily urbanized. Whitnall Park Creek and the East Branch drainage areas are changing from mixed residential/agriculture to strictly residential as Milwaukee County is further developed. The Root River Canal system, the Middle Branch of the Root, Husher Creek and Hoods Creek primarily drain agricultural land. The Root River Watershed ranges from heavily urbanized at the headwaters and mouth, to agricultural use in the middle drainage area, and back to urban near the City of Racine. All told, agricultural use dominates land usage, at 49 percent, followed by grassland at 16 percent. Urban land uses cover about 14 percent of the land area. The remaining land uses consist of five percent wetland, and five percent barren and shrubland.

The health of a river system is usually a direct reflection of the use and management of the land within its watershed. The Root River watershed in southeastern Wisconsin is not in the best of health and has shown signs of degradation over several decades. The Root River Watershed Restoration Plan is a comprehensive resource

¹¹ Prepared for Root-Pike WIN and Southeastern Wisconsin Watersheds Trust, Inc by SEWRPC: Root River Watershed Restoration Plan, July 2014

developed to provide a set of specific, targeted recommendations to improve the Root River and its tributaries to a total phosphorus goal below 0.075 mg/l. The recommendations are for focused implementation from 2014 to 2019, but the plan is comprehensive in scope and it is likely that it will be implemented well beyond 2019.

The plan is coordinated with other recent plans and recommendations. Notably, the 2007 SEWRPC regional water quality management plan update provides comprehensive recommendations related to land use, pollution abatement, and water quality management that are directly related to the Root River watershed. The 2014 Root River plan includes a detailed review of the status of implementation of these recommendations

The Root River Watershed Restoration Plan has been adopted by six municipalities and the Milwaukee Metropolitan Sewerage District, who reside in the watershed. Adopters of the plan include Milwaukee County, Racine County, Village of Mount Pleasant, Milwaukee Metropolitan Sewerage District, City of Greenfield, the Village of Caledonia and the City of Racine.

In 2016, Root-Pike WIN began implementing the Root River Watershed Restoration Plan. Implementation includes the planning, design and construction of both municipal and private landowner projects. Root-Pike WIN's role is to serve as educator and facilitator of the plan's recommendations. Racine County included many recommendations in the plan and has implemented multiple agricultural BMP's noted in the plan.

Wind Point Watershed Restoration Plan 2015¹²

The Root-Pike WIN received grant funding from the Fund for Lake Michigan and SC Johnson Fund to undergo a watershed planning effort and produce a comprehensive "Watershed-Based Plan" for Wind Point watershed that meets requirements as defined by the United States Environmental Protection Agency (USEPA). Improvement projects identified within the watershed plan are eligible for state and federal grants.

The Wind Point Watershed is located in the extreme eastern portion of Racine County, north of the City of Racine, around the Village of Wind Point. Two unnamed perennial tributaries, totaling 4.4 miles, receive runoff from the watershed and drain a combined area of almost 19 square miles. Land cover for the Wind Point Watershed is pretty evenly split between urban and rural. Urban land uses account for 36 percent of the water basin. Rural uses include 20 percent grassland, 19 percent agriculture, and 14 percent forest. Other uses include shrubland (4%), and wetland (2%). The streams support forage fish communities. The remainder of the watershed is overland flow. The watershed has a considerable urban component. Residential development varies in lot sizes and the watershed further consists of parks, other open space, light industrial use, a coal plant, and sanitary facility. Its locally famous lighthouse is listed on the National Register of Historic Places.

The Wind Point Watershed Restoration Plan, completed in July 2015, is the first Nine Element plan for the watershed, which comprises portions of Racine and Milwaukee Counties and the Cities of Racine; Oak Creek, South Milwaukee and the Villages of Caledonia, North Bay, and Wind Point.

The Wind Point Watershed Restoration Plan was reviewed by the Department of Natural Resources and the Environmental Protection Agency and has been deemed "consistent with" (or approved according to) the Environmental Protection Agency's Nine Key Element standards for watershed restoration. In addition, the plan has been adopted by the Village of Wind Point. Root-Pike WIN has begun implementing the Wind Point plan in cooperation with the Villages of Wind Point and Caledonia and the City of Racine.

¹² Prepared for Root-Pike WIN by Applied Ecological Services, Inc: *Wind Point Watershed Restoration Plan, July 2015*

COUNTY AND LOCAL ORDINANCES

Good community development depends not only on quality planning at all levels of government, but on practical implementation measures as well. Land use and development regulations affect the type of uses allowed, as well as the detailed design and site layout of proposed developments. The following presents a summary of general zoning, subdivision, and official mapping regulations adopted by the county and local governments.

General Zoning

Zoning is a tool used to regulate the use of land in Racine County in a manner that serves to promote the general welfare of its citizens, the quality of the environment, and the conservation of its resources. Zoning is also used to implement a land use plan. Zoning in and of itself is the delineation of areas or zones into specific districts which provides uniform regulations and requirements that govern the use, placement, spacing, land size and structures. Cities in Wisconsin are granted general, or comprehensive, zoning powers under Section 62.23 of the *Wisconsin Statutes*. The same powers are granted to villages under Section 61.35 of the *Wisconsin Statutes*. Counties are granted general zoning powers within their unincorporated areas under Section 59.69 of the *Wisconsin Statutes*. However, a county zoning ordinance becomes effective only in those towns that ratify the county ordinance. Towns that have not adopted a county zoning ordinance may adopt village powers and subsequently utilize the city and village zoning authority conferred in Section 62.23 of the *Wisconsin Statutes*. Town zoning, however, is subject to county board approval where a general county zoning ordinance exists. Alternatively, towns may adopt a zoning ordinance under Section 60.61 of the *Wisconsin Statutes* where a general county zoning ordinance has not been adopted, but only after the county board fails to adopt a county ordinance at the petition of the governing body of the town concerned. General zoning is in effect in all communities in Racine County. The Racine County Development Services Division administers the state mandated Private Sewage System Program for all unsewered areas of Racine County. Development Services staff also conduct general zoning functions for the Village of Yorkville, the townships of Burlington, Dover, Norway, and Waterford. In addition, the office is responsible for shoreland, floodplain and shoreland-wetland zoning for all unincorporated areas in the County. The City of Racine, City of Burlington, the Villages of Caledonia, Elmwood Park, Mt. Pleasant, North Bay, Raymond, Rochester, Sturtevant, Union Grove, Waterford, and Wind Point have adopted and enforce their own general zoning ordinance.

Floodland Zoning

Section 87.30 of the *Wisconsin Statutes* requires that cities, villages, and counties, with respect to their unincorporated areas, adopt floodland zoning to preserve the floodwater conveyance and storage capacity of the floodplain areas and to prevent the location of new flood damage-prone development in flood hazard areas. The minimum standards that such ordinances must meet are set forth in Chapter NR 116 of the *Wisconsin Administrative Code*. The required regulations govern filling and development within a regulatory floodplain, which is defined as the area subject to inundation by the 100-year recurrence interval flood event, the event which has a 1 percent chance of occurring in any given year. Under Chapter NR 116, local floodland zoning regulations must prohibit nearly all forms of development within the floodway, which is that portion of the floodplain required to convey the 100-year recurrence peak flood flow. Local regulations must also restrict filling and development within the flood fringe, which is that portion of the floodplain located outside of the floodway that would be covered by floodwater during the 100-year recurrence flood. Permitting the filling and development of the flood fringe area, however, reduces the floodwater storage capacity of the natural floodplain, and may thereby increase downstream flood flows and stages. The County Shoreland and Floodplain Zoning Ordinance applies in all of the unincorporated areas of the Towns in Racine County. All incorporated cities and villages where floodplains have been identified have adopted floodland zoning ordinances. The two municipalities without floodland ordinances, the Villages of Elmwood Park and North Bay, have no identified flood hazard areas within their boundaries.

Shoreland and Shoreland-Wetland Zoning

Under Section 59.692 of the *Wisconsin Statutes*, counties in Wisconsin are required to adopt zoning regulations within statutorily defined shoreland areas, or, those lands that are within 1,000 feet of a navigable lake, pond, or flowage, or 300 feet of a navigable stream, or, to the landward side of the floodplain, whichever distance is

greater, within their unincorporated areas. Minimum standards for county shoreland zoning ordinances are set forth in Chapter NR 115 of the *Wisconsin Administrative Code*. Chapter NR 115 sets forth minimum requirements regarding lot sizes and building setbacks; restrictions on cutting of trees and shrubbery; and restrictions on filling, grading, lagooning, dredging, ditching, and excavating that must be incorporated into county shoreland zoning regulations. Most projects requiring a shoreland permit from Racine County will require a corresponding Wisconsin Department of Natural Resources and possibly a U.S. Army Corps of Engineers permit. Racine County shoreland permits are not valid without the necessary Town, State, or Federal permits. In addition, Chapter NR 115 requires that counties place all wetlands five acres or larger and within the statutory shoreland zoning jurisdiction area into a shoreland – wetland overlay district to ensure their preservation after completion of appropriate wetland inventories by the Wisconsin Department of Natural Resources. Aside from wetlands within the shoreland zone, selected wetlands generally five acres and larger are also placed into conservancy zoning outside the shoreland zone in the unincorporated areas of the County.

In 1982, the State Legislature extended shoreland-wetland zoning requirements to cities and villages in Wisconsin. Under Sections 62.231 and 61.351, respectively, of the *Wisconsin Statutes* cities and villages in Wisconsin are required to place wetlands five acres or larger and located in statutory shorelands into a shoreland-wetland conservancy zoning district to ensure their preservation. Minimum standards for city and village shoreland-wetland zoning ordinances are set forth in Chapter NR 117 of the *Wisconsin Administrative Code*.

It should be noted that the basis for identification of wetlands to be protected under Chapters NR 115 and NR 117 of the *Wisconsin Administrative Code* is the Wisconsin Wetlands Inventory. Mandated by the State Legislature in 1978, the Wisconsin Wetlands Inventory resulted in the preparation of wetland maps covering each U.S. Public Land Survey Township in the State. The inventory was completed for counties in Southeastern Wisconsin in 1982, the wetlands being delineated by the Regional Planning Commission in 1980, one inch equals 2,000 feet scale, ratioed and rectified aerial photographs. The most current wetland layer was produced by the Wisconsin DNR in 2010 and can be viewed on the WI DNR website under the Surface Water Data Viewer.

The Shoreland Zoning Ordinance was revised and adopted by the Racine County Board of Supervisors on April 13, 2021. This section adds impervious surface standards from Chapter NR 115.05 (1) (e) of the *Wisconsin Administrative Code* to the Shoreland Zoning ordinance, which restricts impervious surfaces to 30% of the parcel for residential purposes or 40% for non-residential purposes on highly developed shorelines. These impervious surface limits can be increased to no greater than 40% for residential purposes and 60% for commercial, industrial or business land uses through implementation on mitigation. Non highly developed shorelines are limited to 15% and up to 30% through mitigation.

County shoreland-wetland zoning ordinances are in effect in all unincorporated areas of Racine County. The incorporated Cities of Burlington and Racine, Villages of Caledonia, Mt. Pleasant, Raymond, Rochester, Sturtevant, Waterford, and Wind Point, have adopted their own shoreland-wetland zoning ordinances pursuant to Sections 62.231 and 61.351, respectively, of the *Wisconsin Statutes*. The remaining three Villages of Elmwood Park, North Bay, and Union Grove, did not contain shoreland wetlands and were thus not required to adopt such ordinances.

Subdivision Regulations

Chapter 236 of the *Wisconsin Statutes* requires the preparation of a subdivision plat whenever five or more lots of 1.5 acres or less in area are created either at one time or by successive divisions within a period of five years. The *Statutes* set forth requirements for surveying lots and streets, for plat review and approval by State and local agencies, and for recording approved plats. Section 236.45 of the *Statutes* allows any city, village, town, or county that has established a planning agency to adopt a land division ordinance, provided the local ordinance is at least as restrictive as the State platting requirements. Racine County adopted a Land Division Ordinance in 1956 and modified and on June 11, 1985 adopted *Chapter 18 Racine County Subdivision*. Local land division ordinances may include the review of other land divisions not defined as “subdivisions” under Chapter 236, such as when fewer than five lots are created or when lots larger than 1.5 acres are created.

The subdivision regulatory powers of Towns and the County are confined to unincorporated areas. City and Village subdivision control ordinances may be applied to extraterritorial areas, as well as to the incorporated areas. It is possible for both the County and a town to have concurrent jurisdiction over land divisions in unincorporated areas, or for a city or village to have concurrent jurisdiction with a town or the County in the city or village extraterritorial plat approval area. In the case of overlapping jurisdiction, the most restrictive requirements apply. Each of the incorporated communities in Racine County has adopted its own subdivision control ordinance. Racine County has objecting authority for land divisions carried out under the provision of these local ordinances.

Municipal Separate Storm Sewer System (MS4)

The WI DNR requires MS4 Permits for municipalities that meet one of the following criteria:

1. The municipality is located within a federally-designated Urbanized Area.
2. The population equals 10,000 or more based on the latest decennial census.
3. The Department of Natural Resources designates the municipality for permit coverage in accordance with s. NR 216.025.

As a result of these requirements, Racine County, the City of Racine, City of Burlington, the Villages of Caledonia, Mt. Pleasant, Sturtevant, Wind Point and the Town of Norway are required to obtain MS4 permits. The MS4 permits are effective for a period up to five years, at which point the permits are updated and re-issued.

The MS4 permits require municipalities to reduce polluted storm water runoff by implementing storm water management programs with best management practices. The MS4 permits usually do not contain numerical effluent limits like other WPDES permits.

Municipal storm water management programs cover a wide array of activities that occur within a municipality. The permits usually contain requirements for the following:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Pollutant Control
5. Post-Construction Storm Water Management
6. Pollution Prevention Practices for the Municipality
7. Developed Urbanized Area Standard
8. Storm Sewer System Maps

The DNR may review the programs and activities that municipalities will use to comply with the MS4 permit. Municipalities are also required to submit an annual / biennial report to the DNR to document progress and compliance with the permit requirements. Municipalities implementing their MS4 permit requirements is an important milestone described within the nine-key element watershed-based plans in Racine County.

Nonmetallic Mining Reclamation Ordinance

Effective May 22, 2001 Racine County adopted *Chapter 12.5 Racine County Non-Metallic Reclamation* and revised on May 7, 2007. The purpose of this chapter is to maintain a local program to ensure the effective reclamation of nonmetallic mining sites on which nonmetallic mining takes place in the County of Racine. The requirements of this chapter apply to all operators of nonmetallic mining sites within the County of Racine operating on or commencing to operate after August 1, 2001 except as exempted in sec. 12.5-7(b). Also exempt are nonmetallic mining site located in a city, village or town within the County of Racine that has adopted an ordinance pursuant to W.S.A. § 295.14, and Section NR 135.32(2), *Wisconsin Administrative Code*. This chapter does not apply to nonmetallic mining sites where nonmetallic mining activity permanently ceased before August 1, 2001.



Baumeister Pit – Town of Burlington

Animal Waste Management Ordinance

Effective June 26, 2012 *Chapter 20, Article XII Animal Waste Management* was adopted by the Racine County Board of Supervisors. The purpose of this article is to regulate new, expanding, altered, and abandoned animal waste storage facilities to prevent water pollution, thereby protect the health, safety and promote prosperity and the general welfare of the citizens of Racine County. The requirements of this article also include animal waste setbacks from property lines as well as the nutrient management component as required by the State of Wisconsin.

Procedures for Siting Livestock Facilities Ordinance

Racine County officially adopted procedures for siting and permitting livestock facilities under Sec. 20-1167 Procedures for Siting Livestock Facilities in 2006 and was updated and adopted on April 13, 2021. The procedures apply to livestock facilities that require a conditional use permit under this chapter which are all new or expanded livestock facilities that will have five hundred (500) or more animal units or existing livestock facilities as required. The County standards for issuing a permit shall follow the state livestock facility siting standards adopted under ATCP 51, *Wisconsin Administrative Code*.



DAIRY FARM – TOWN OF DOVER

STATE NONPOINT POLLUTION STANDARDS AND PROHIBITIONS

Through 1997 Wisconsin Act 27, the State Legislature required the WDNR and DATCP to develop performance standards for controlling nonpoint source pollution from agricultural and nonagricultural land and from transportation facilities. The performance standards are set forth in Chapter NR 151, “Runoff Management,” of the *Wisconsin Administrative Code*, which became effective on October 1, 2002, revised in July 2004 and February 2012, and revised again in July 2018. Below is a summary of the standards and prohibitions that apply to the Racine County Land and Water Resource Management plan:

Agricultural Performance Standards and Prohibitions

Performance standards relate to four areas of agriculture: cropland soil erosion control, soil loss from riparian lands, manure management, and nutrient management.

The agricultural performance standards are:

- Soil erosion rates on all cropland must be maintained at or below “T” (Tolerable Soil Loss).
- All areas receiving application of manure or other nutrients to croplands must be done in accordance with a nutrient management plan, designed to meet state standards for limiting the entry of nutrients into groundwater or surface water resources.

- Clean water runoff must be diverted away from contacting feedlots, manure storage facilities, and barnyards in water quality management areas (areas within 300 feet of a stream, 1000 feet from a lake, or areas susceptible to groundwater contamination).
- All new or substantially altered manure storage facilities must meet current engineering design standards to prevent surface or groundwater pollution.
- No tillage operations may be conducted within 5 feet of the top of the channel of surface waters.
- Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any individual year within the accounting period.
- There may be no significant discharge of process wastewater to waters of the state.

The manure management prohibitions are:

- No direct runoff from animal feedlots to “waters of the state”.
- No overflowing manure storage facilities.
- No unconfined manure piles in shoreland areas (areas within 300 of a stream, 1000 feet from lakes).
- No unlimited livestock access to “waters of the state” where the livestock prevent sustaining an adequate vegetative cover.

The Silurian bedrock standards are:

- No manure application on areas within 0-2 feet depth to bedrock
- Bedrock depth verification using best available data either through maps or in field verification.
- Pre-tillage requirements prior to liquid manure application

Confined Animal Feeding Operations

Chapter NR 243, Confined Animal Feeding Operations (CAFO's) of the *Wisconsin Administrative Code* sets forth rules for concentrated animal feeding operations and other animal feeding operations for the purpose of controlling the discharge of pollutants to waters of the State. Concentrated animal feeding operations are defined as livestock and poultry operations with more than 1,000 animal units. Animal units are calculated for each different type and size class of livestock and poultry. For example, facilities with 1,000 beef cattle, 700 milking cows, or 200,000 chickens each would be considered to have the equivalent of 1,000 animal units. All concentrated animal feeding operations and certain types of other animal feeding operations must obtain WPDES permits. In general, animal feeding operations are defined as feedlots or facilities, other than pastures, where animals are fed for a total of 45 days in any 12-month period. The Wisconsin DNR issues and verifies compliance with CAFO permits

Buffer Standards

It is important to note that non-agricultural performance standards set forth in section NR 151.12 (post-construction performance standard for new development and redevelopment) also generally requires impervious area setbacks of 50 feet from streams, lakes, and wetlands. This setback distance is increased to 75 feet to protect Chapter NR 102-designated Outstanding or Exceptional Resource Waters or Chapter NR 103-designated wetlands of special natural resource interest. Reduced setbacks from less susceptible wetlands and drainage channels of not less than 10 feet may be allowed.

Multi-Discharge Variance and other Phosphorus compliance options

Wastewater facilities with a WPDES permit may be required to reduce phosphorus level in their point source discharge. The upgrades can be very expensive. The multi-discharge variance (MDV) for phosphorus extends the timeline for complying with low-level phosphorus limits. In exchange, point sources commit to step-wise reductions of phosphorus within their effluent as well as helping reduce nonpoint sources of phosphorus from farm fields, cities or natural areas via projects designed to improve water quality. The MDV is similar to an individual variance. However, multiple point sources can be covered under the MDV, whereas an individual variance only applies to a single facility.

There are two other phosphorus compliance options other than the MDV. One is adaptive management and the other is phosphorus trading. Although they are similar, adaptive management differs from phosphorus trading. In both cases, point sources may take credit for phosphorus reductions in a watershed that leads to phosphorus standards compliance. While the practices for generating phosphorus reductions may be similar, these two compliance options have different permit requirements which affect the overall permit process and timing.

Adaptive Management

Adaptive management (AM) is a compliance option that allows owners of point and nonpoint sources of phosphorus to work together to improve water quality and to meet water quality standards. Adaptive management recognizes that excess phosphorus in lakes and rivers is the result of a variety of activities and sources; both point and nonpoint source reductions are often needed to achieve water quality standards. Facilities that discharge phosphorus can work with landowners, municipalities and counties to target nonpoint sources (runoff) of phosphorus to minimize their overall fiscal outlays while achieving compliance with water quality-based criteria and improving water quality. Unlike water quality trading, however, adaptive management focuses on improving water quality, rather than simply offsetting a permit limit.

Water quality trading allows point sources to offset their pollution load and comply with phosphorus limits by taking credit for other phosphorus source reductions within the watershed to offset a permit limit.

CONSERVATION PROGRAMS

Federal Programs

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) has several programs directed at agricultural producers to alleviate cropland erosion, and to protect natural resources, as well as provide a financial incentive. There are multiple programs that help to reduce erosion, protect wildlife habitat, restore wetlands, and improve water quality. All programs involve cost-share assistance from the federal government, provided the landowner follows the prescribed practices of each program.

Agricultural Conservation Easement Program

The Agricultural Conservation Easement Program (ACEP) protects the agricultural viability and related conservation values of eligible land by limiting non-agricultural uses which negatively affect agricultural uses and conservation values, protect grazing uses and related conservation values by restoring or conserving eligible grazing land, and protecting and restoring and enhancing wetlands on eligible land.

Conservation Reserve and Conservation Reserve Enhancement Program

The U.S. Department of Agriculture (USDA) administers several programs that contribute to water quality, reduce erosion, and provide wildlife habitat in agricultural areas. The USDA Conservation Reserve Program (CRP) encourages farmers to voluntarily convert highly erodible cropland and other environmentally sensitive land to permanent vegetative cover. Farmers receive an annual rent payment for a period of 10 years or more; cost-share assistance is available to establish vegetative cover. The Farm Service Agency (FSA) administers the Conservation Reserve Program. The USDA Conservation Reserve Enhancement Program (CREP) is an off-shoot of the CRP. The CREP is an opportunity for Racine County landowners to voluntarily enroll agricultural lands into conservation practices, such as riparian buffers, filter strips, wetland restorations, waterways and establishment of native grasslands. Enrollment can be made with a 15-year or perpetual easement application. Eligibility determinations are made on a first-come, first serve basis. Racine County has been allocated cost-share annually for the implementation of this program.

Conservation Stewardship Program

The Conservation Stewardship Program (CSP) is a voluntary conservation program that helps farmers build on their existing conservation efforts while strengthening their operation. The CSP offers guidance to farmers in regards to improving cattle gains per acre, increasing crop yields, decreasing inputs, increasing wildlife

population, and better resilience to extreme weather through the usage of cover crops, grazing plans, implementing no-till to reduce erosion and managing forested areas.

Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program that supports agriculture and environmental quality as compatible goals. Through EQIP, farmers may receive financial and technical help with structural and management conservation practices on agricultural land. EQIP offers contracts for practice implementation for periods ranging from one to 10 years, and it pays up to 100 percent of the costs of eligible conservation practices. Incentive payments and cost share payments may also be made to encourage a farmer to adopt land management practices such as nutrient management, manure management, integrated pest management, or wildlife habitat management.

State and Local Programs

Wisconsin Farmland Preservation Program

The Wisconsin Farmland Preservation Program provides income tax credits to eligible farmland owners. The program is administered by County and local governments, but the Wisconsin Land and Water Conservation Board (LWCB) must first certify that the county farmland preservation plan meets the standards specified in Chapter 91 of the *Wisconsin Statutes*. Of the 72 counties in Wisconsin, 70 have certified farmland preservation plans. Racine County's farmland preservation plan was certified in 1981 and updated in 2013. Farmland owners may participate in one of two ways: through exclusive agricultural zoning or through Farmland Preservation Agreements. Participation through exclusive agricultural zoning may occur only when the local jurisdiction having zoning authority (city, village, or county) has a zoning ordinance that is certified by the LWCB as having met the standards of Chapter 91 of the *Statutes*. The only uses permitted in exclusive agricultural zoning districts are agricultural uses and uses consistent with agricultural use, which are specified in the *Statutes*. Racine County has zoning ordinances that have been certified by the LWCB. Landowners in the Town of Burlington and Town of Waterford are eligible to participate in the Farmland Preservation Program because they are governed by the County zoning ordinance.

The Racine County farmland preservation plan and exclusive agricultural zoning were certified by the State in 1982, enabling many farmland owners in Racine County to participate in the Farmland Preservation program. Twenty-three landowners in Racine County claimed a Farmland Preservation Program tax credit in 2020, with an average credit amount of \$1350.

In addition to the Farmland Preservation program, landowners can also claim an income tax credit under the Wisconsin Farmland Tax Relief Credit program. The acreage and production requirements of this separate program are the same as for the Wisconsin Farmland Preservation program, indicated above; however, this is solely a tax relief program which the credit is not affected by the claimant's household income. In addition, there are no land use planning requirements or compliance with county soil and water conservation standards. A total of 33 owners of farmland residing in Racine County claimed an income tax credit under the Wisconsin Farmland Tax Relief Credit program in 2020, with an average credit amount of \$1,112.

Working Lands Initiative

In 2005, the Department of Agriculture, Trade, and Consumer Protection (DATCP) launched the Working Lands Initiative and established a steering committee to develop a consensus vision on managing Wisconsin's valuable land assets. The Working Lands Initiative Steering Committee in August 2006 issued a report with a set of recommendations intended to update and expand upon policies and programs affecting Wisconsin's working lands. To promote investment and protection of Wisconsin's agricultural base, the Working Lands Initiative, *Wis Act 28*, was signed into law on June 30, 2009. This Act made significant revisions to the existing components of the Farmland Preservation Program, Ch. 91 Wisconsin Statutes, which had been the farmland preservation law since 1977. The Working Lands Initiative comprised of three programs to preserve farmland.

- Farmland Preservation Program (FPP)
- Agricultural Enterprise Area Program (AEA)
- Purchase of Agricultural Conservation Easement Program (PACE)

Wisconsin Producer-Led Watershed Protection Program

In 2016, DATCP started to provide funding to producer-led groups that focus on nonpoint source pollution abatement activities through the Producer-Led Watershed Protection Grant Program (PLWPG). The goal of the program is to improve Wisconsin's soil and water quality by supporting and advancing producer-led conservation solutions by increasing the practices and farmer participation in these efforts. In order to apply for grant funding the application must come from a group of at least 5 farmers in the same watershed, collaboration with conservation agencies, institutions or nonprofit organizations. A total of 31 projects that have been funded since the program's inception. In 2020, 27 groups were awarded a total of \$750,000.

The Watershed Protection Committee of Racine County (WPCR) consists of a group of local farmers leading efforts in soil health, regenerative agriculture, erosion control, water quality improvements, and providing information to farmers and rural landowners on best management practices such as no-till and cover crops. The WPCR aims to accomplish these goals through incentive, research, and education programs. The Racine County LWCD collaborates with the WPCR to achieve its goals of promoting soil health and improving water quality.



Watershed Protection Committee of Racine County – Summer Field Day at Case Eagle Park

Soil and Water Resource Management Program

The current version of Chapter ATCP 50, “Soil and Water Resource Management Program,” of the *Wisconsin Administrative Code* became effective on October 1, 2002, and was most recently revised in February 2018. The administrative rule relates specifically to agricultural programs and it establishes requirements and standards:

- Soil and water conservation on farms,
- County soil and water programs, including land and water resource management plans,
- Grants to counties to support county conservation staff,
- Cost-share grants to landowners for implementation of conservation practices,
- Design certifications by soil and water professionals,
- Local regulations and ordinances, and
- Cost-share practice eligibility and design, construction, and maintenance.

Racine County Tree & Shrub Program

Racine County Tree & Shrub Program has been offered for 39 years and has sold over one million trees. The program encourages area residents to plant native trees and shrubs for the purpose of conservation and wildlife enhancement. The program offers a variety of pines, hardwoods, and shrubs. This sale is open to the interested public in our area. The tree program also offers an opportunity to introduce the community to conservation staff and programs.



Seedling trees bagged and ready to be delivered



Two bundles of American Arborvitae

Managed Forest Law Program

A number of landowners in Racine County participate in the Managed Forest Law Program (MFL), a State incentive program intended to encourage sustained yield forestry on private woodlands. Under this program, lands enrolled in the “closed” category are not available to the public while the “open” lands are accessible for such recreation activities as hunting, fishing, and cross-country skiing. Enrollment is by contract between the Wisconsin Department of Natural Resources and the landowner; the landowner can choose a 25- or 50-year contract; landowners make payments in lieu of property taxes amounting to less than what the property tax would be; and must consist of at least 10 acres of contiguous forest land located in the same municipality. Landowners must agree to follow a forest management plan. The MFL Program was created in 1985, replacing similar programs—the Wisconsin Forest Crop Law program and Wisconsin Woodland Tax Law program. Some contracts under the Forest Crop Law program remain in effect in Wisconsin; all Woodland Tax Law program contracts have expired.

Wildlife Damage and Abatement Program

The Wildlife Damage and Abatement Claims Program is a cooperative effort with the County, DNR and USDA Wildlife Services to control damage to agricultural crops against deer, goose, turkey, and bear damages. This program provides farmers, growers and producers the necessary technical and/or operational assistance in identifying, abating, controlling, and assessing deer, goose, turkey, and bear damages to agricultural interests. Agricultural producers must contact the USDA Wildlife Services within 14 days after first notice of damages to their crops to be eligible for abatement and or compensation.

Deer Donation Program

The Wisconsin Deer Donation Program began in the year 2000. Hunters donate their deer to selected sites to have the deer processed into ground venison. Racine County is one of 56 counties participating in the program annually. State-wide, since 2000, over 83,000 deer have been donated and provided more than 3.7 million pounds of ground venison.

Spongy Moth Suppression Program

The Spongy Moth Suppression Program is a voluntary partnership involving state, county, municipality and landowner in a state-organized aerial insecticide treatment to suppress damaging spongy moth populations. These populations can cause tree defoliation. The areas determined for aerial spraying are surveyed in the fall. The suppression program sprays are completed the following May and June.

Lake Districts and Associations

In order to maintain, protect, and improve the quality of a lake and its watershed, Public Inland Lake Protection and Rehabilitation Districts have been formed under Chapter 33 of the Wisconsin Statutes¹¹. Similar to sanitary districts, lake districts are established by orders or resolutions adopted by town, village, county boards, or city councils upon petition of the landowners within the district. Lake management districts are governmental bodies, and as such they have strictly defined boundaries. Lake districts, however, are special purpose governmental bodies with elected leaders as well as an adopted annual budget, but limited powers outside of their lake management function. In addition to lake districts, lake associations are voluntary organizations that often participate in lake management projects. They possess no authority over their membership or others using the lake, and both membership and dues are voluntary. Some lake associations may be incorporated and many are registered charitable organizations able to engage in fund-raising activities, in addition to their informational programming and advocacy roles. All of these organizations depend on the cooperation of general purpose units of government to address many of the jurisdictional issues that affect the use of the lakes. In Racine County, the eight public inland lake management districts and town sanitary districts having Lake District powers are:

¹¹ *University of Wisconsin-Extension Publication No. G3818, People of the Lakes: A Guide for Wisconsin Lake Organizations: Lake Associations & Lake Districts, 11th Edition, 2006.*

- Bohners Lake Sanitary District #1;
- Browns Lake Sanitary District;
- Eagle Lake Improvement Association;
- Eagle Lake Management District;
- Honey Lake Protection & Rehabilitation District;
- Long Lake Protection District;
- Waterford Waterways' Management District;
- Waubeesee Lake Protection District;
- Wind Lake Management District.

Of the eight districts, a lake management plan for Wind Lake was completed in 1991 and updated in June 2008 to enhance the water quality conditions, biological communities, and recreational opportunities of the Lake. In addition, a lake management plan was completed for the Waterford Impoundment in October 2007. In 1997, the Eagle Lake District developed a Watershed Planning Project was updated in 2007 and updated again in 2017.

The updated Eagle Lake Management Plan was produced by the Racine County, the Eagle Lake Management District, Eagle Lake Watershed Task Force and Wisconsin DNR in 2017. Lake Districts have offered to fund specific conservation practices and educational efforts. The Racine County LWCD continues to encourage mutually beneficial relationships with Lake Districts and Associations.

Great Lakes – St. Lawrence River Basin Water Resources Compact

The Great Lakes Compact is a formal agreement between the Great Lakes states which details how the states will work together to manage and protect the Great Lakes-St. Lawrence River Basin. A parallel agreement (the Sustainable Water Resources Agreement) includes Ontario and Québec, the two Canadian provinces that border the Great Lakes and the St. Lawrence Seaway. Through these agreements, the states and provinces manage the water in the Great Lakes watershed collectively. As part of the Great Lakes Compact, Wisconsin registers water withdrawals, receives and analyzes water use reports, requires water use permits, implements a conservation program and manages Great Lakes diversions.

The Great Lakes Compact became effective on Dec. 8, 2008, after final consent from the U.S. Congress. This date began the ban on diversions of water out of the basin, with limited exceptions. To implement the compact, Wisconsin passed implementing legislation in 2008 and has an active management program.

Two regional organizations oversee the implementation of the compact and the parallel agreement with the provinces. The Great Lakes-St. Lawrence River Basin Water Resources Council includes Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin. The Great Lakes-St. Lawrence River Basin Water Resources Regional Body includes the eight Great Lakes states plus Ontario and Québec.

Total Maximum Daily Loads (TMDL's)

Impaired waters in Wisconsin are largely addressed through an analysis known as a Total Maximum Daily Load (TMDL). A TMDL is the amount of pollutant a waterbody can receive and still meet water quality standards. While some waters may be restored through alternative projects such as watershed restoration plans, many issues are addressed through TMDL's.

In Racine County, the Illinois-Fox River Watershed is undergoing the development of a TMDL. The initial analysis and models are being completed with the final approved TMDL to occur within the next couple years.

Targeted Runoff Management Grant Program

To help control polluted runoff from both agricultural and urban sites. Targeted Runoff Management (TRM) grants are available to address high-priority resource problems. Eligibility is limited to local units of government, special purpose districts (i.e., school or storm water utility districts), tribal commissions, and regional planning agencies. Governmental units may be granted 70 percent of eligible costs for various (urban or rural) best management practices (BMPs), up to a cap of \$225,000. Property purchases (from willing sellers only) granted at 50 percent of WDNR-approved appraised value can be included in the \$225,000 grant cap. Rural easements, funded at 75 percent of the WDNR-appraised value, can also be included in the \$225,000 grant cap. For rural BMPs (i.e., barnyard relocation, manure storage), units of government (county land conservation departments) hold contracts on behalf of county residents. Funds are disbursed on a reimbursement basis at completion of the project according to the two-year grant contract terms.

SUMMARY

Racine County and its communities have a rich history of planning. Numerous plans have been developed at the regional level including a regional land use plan, transportation system plan, natural areas plan, regional water supply and a water quality management plans. Plans developed at the County level include a Farmland Preservation Plan, County Park and Open Space Plan, Hazard Mitigation Plan, Land and Water Resources Management Plan, Shoreland Development Management Study, Lake Michigan Coastal Erosion Study, and Des Plaines River Watershed Plan. Three 9-Key element watershed plans have been developed with the efforts of Root Pike WIN to identify areas of concern and solutions. The Southeast Wisconsin Fox River Commission has developed an implementation plan. In addition, the Towns of Dover, Burlington, Waterford and the Village of Rochester have all adopted long-range land use plans, and many of the communities in the County have developed park and open space plans. These existing plans and programs provide the guidelines for natural resource management in Racine County.

Chapter IV

GOALS, OBJECTIVES, MONITORING, EVALUATION, AND ESTIMATED COSTS

INTRODUCTION

The Racine County Land and Water Resources Management Plan incorporates inventory findings, including land use, natural resource data, soil type, agricultural assets and water quality data into this plan. Additionally, the plan addresses a 10-year scope with principal land and water resource concerns and issues identified by the Citizen Advisory Committee and public survey responses. A comprehensive set of goals, workplan objectives, and planned actions were developed based on the principal issues and concerns that were identified by the Citizen Advisory Committee and include the following:

- Reduce non-point source pollution, primarily cropland erosion, to improve water quality through the Agricultural Performance Standards as outlined in NR 151 of the Wisconsin Administrative Code;
- Undertake management and control of aquatic and terrestrial invasive species;
- Prioritize and promote repair of Lake Michigan bluff erosion, shoreline erosion and streambank/ditch bank erosion;
- Increase the awareness and provide further education towards environmental stewardship to farmers, youth, elected officials and the general public, and;
- Protect and preserve natural resources and environmental corridors.

The issues were used as a basis for developing the goals, workplan objectives, and planned actions for the Racine County Land and Water Resources Management Plan. To achieve these goals the Racine County LWCD plans to partner with State and Federal agencies and other environmental organizations on a variety of projects and programs. The objectives of the plan were divided into categories: agricultural performance standards implementation, invasive species control, shoreline erosion control, educational programming and natural resource preservation. The recommended goals, workplan objectives, and planned actions for the years 2023-2032 are summarized in the following section.

Racine County's Land and Water Resource Management Plan is a long-range, living document to plan conservation efforts over a 10-year period, therefore, the workplan activities may require amendments due to varying environmental and water quality conditions, local priorities, changing programs and policies, and funding considerations. The general goals of this plan, developed as a part of a public participation process and approved by the Department, will add any necessary amendments to workplan activities to be accomplished with proper approvals from the Racine County Land Conservation Committee and WI DATCP.

Additional goals and requirements will be listed in this Chapter as part of the daily workload performed by the LWCD. This work is required through Administrative Rules or Wisconsin State Statutes. While all goals are of equal priority, staff time is generally based on the workload as it is generated by client demand. The customer, in most cases the landowner, is taken through the process needed based on permitting, program availability, timing, cost-share availability and a many other items that vary depending on the projects needs.

Planned actions with measurable outcomes (in bold) are in the tables that follow the narrative. The other planned activities may be accomplished as time, staff or need permits.

GOAL #1

REDUCE CROPLAND EROSION AND IMPROVE WATER QUALITY THROUGH THE AGRICULTURAL PERFORMANCE STANDARDS

Goals and Workplan Objectives

The goals and objectives set forth in this plan focus on achieving the State minimum performance standards for rural nonpoint source pollution as well as the recommendations identified in the regional water quality and watershed management plans. Specifically, the goals and workplan objectives that were identified include the following:

- Implement the statewide agricultural performance standards and manure management prohibitions;
 - All cropped fields shall meet the tolerable (T) soil erosion rates established for that soil to control sheet, rill and wind erosion.
 - No tillage operations may be conducted within 5 feet of the top of the channel of surface waters.
 - Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any year within the accounting period.
 - All new, substantially altered, or abandoned manure storage facilities shall be constructed, maintained, or abandoned in accordance with accepted standards. Failing and leaking existing facilities posing an imminent threat to public health or fish and aquatic life or violate groundwater standards shall be upgraded or replaced.
 - There may be no significant discharge of process wastewater to waters of the State.
 - Runoff from agricultural buildings and fields shall be diverted away from contacting feedlots, manure storage areas and barnyards located within water quality management areas (300 feet from a stream or 1000 feet from a lake or areas susceptible to groundwater contamination.)
 - Agricultural operations applying nutrients to agricultural fields shall do so according to a nutrient management plan.

MANURE MANAGEMENT PROHIBITIONS

- No overflow of manure storage facilities.
- No unconfined manure piles in a water quality management area.
- No direct runoff from feedlots or stored manure into State waters.
- No unlimited livestock access to waters of the State in locations where high concentrations of animals prevent the maintenance of adequate or self-sustaining vegetative cover.

Planned Actions

The planned actions are to be used to achieve goals and workplan objectives include developing farm conservation plans for agricultural producers and encouraging landowners and farmers to utilize a wide variety of best management practices designed to target soil erosion and reduce/eliminate feedlot and milkhouse runoff.

The LWCD will continue to work with farmers to develop nutrient management plans that consider a variety of best management practices such as soil testing, accounting for legumes and manure before fertilizer application, and utilizing integrated pest management to reduce the amount of applied chemicals to fields. The LWCD will monitor manure management practices in the county to ensure that practices are in compliance with the State Performance Standards.

The LWCD will work with the Watershed Protection Committee of Racine County (WPCR) to promote soil health practices, such as no-tillage and cover crops, which will help meet soil loss and P-Index cropland performance standards. Soil health will be promoted at Field Days and Workshops to educate producers, youth, elected officials and the general public. Racine County leased Case Eagle Park to the WPCR for research and demonstration. The research will compare conventional production practices to regenerative agriculture. This environmental and economic data will be used to provide data regarding long term agricultural productivity and improving water quality. The LWCD has assisted the WPCR to expand their boundary throughout the entire County and really have begun to move the dial in a positive direction regarding regenerative agriculture.

The LWCD will continue to permit new, substantially altered or the abandonment of manure storage facilities. Staff will complete inspections and verify facilities comply with the NRCS Technical Standards.

The LWCD has developed a detailed database utilizing geographic information system (GIS) technology to identify and assist in management of farms prioritized for compliance with State performance standards. All conservation practices are documented on the GIS data base as installed by year, type of practice and location. The database is continually updated.

The LWCD supports and implements the Farmland Preservation Program with eligible farmers in the Towns of Waterford and Burlington. The LWCD works with participating farmers on annual certifications, nutrient management plan updates, farm inspections and other best management practices to keep farms in compliance with the program. Certificates of Compliance are mailed to eligible farmers every January. The GIS database updates are made with continued compliance.

The LWCD follows up on complaints relating to agriculture. A variety of complaints are received annually, including; flooding, drainage, manure spreading, manure pile locations/size, erosion, odor, wetland filling or draining, tree removal and other various issues. The LWCD follows up on all complaints with contacting the landowner and site inspections relating to County policy and then take appropriate actions. In cases where the County is not the appropriate contact for the complaint, staff will forward the information to the proper agency or municipality.

The LWCD administers local ordinances pertaining to agriculture. Chapter 20, Article XIII of the Racine County Code of Ordinances is titled Animal Waste Management. The Article references definitions and standards used by staff to follow up on compliance and inspections on farms with less than 500 animal units. Chapter 20, Article VIII references conditional uses. More specifically, Section 20-1167 is titled Procedures for Siting Livestock Facilities which references for farms with 500 – 999 animal units to be regulated by the LWCD. Farms with 1000 animal units or more are regulated through the Wisconsin Pollutant Discharge Elimination System (WPDES) permits for Confined Animal Feeding Operations (CAFOs) and are renewed every five years and regulated by the Wisconsin DNR.

AGRICULTURAL PERFORMANCE STANDARDS IMPLEMENTATION STRATEGY

The goals, workplan objectives and planned activities presented in this chapter represents part of the framework for an annual workplan that will be developed and carried out by the Racine County LWCD over the next ten years. Proposed planned activities were purposely broadly defined in order to allow for future changes in the environment, changes in programs and policies, changes in local priorities and changes in available funding. As required by DATCP, a more detailed list of planned activities are set forth below, as a strategy to implement the nonpoint pollution performance standards and prohibitions under NR 151. Also an estimate of the costs associated with plan implementation is provided.

Implementation Strategy (Agricultural)

To implement the above noted standards and prohibitions fairly in the agricultural areas, a systematic and comprehensive approach is required. The strategy for implementation detailed below is a likely process for implementation with some need for flexibility as program experience develops and fiscal conditions may dictate.

In the following sections, the term “landowner” is used generically to describe the person responsible for compliance with the above noted standards.

1. Conduct information and education activities:

Racine County LWCD will distribute information and educational material prepared by the WDNR, WI DATCP and the County to appropriate landowners. The information will also be distributed via our *Ties to the Land* newsletter, the county website, social media, public information meetings, and one-on-one contacts.

The educational materials will be designed to achieve the following objectives:

- Educate landowners about Wisconsin’s agricultural performance standards and prohibitions, county ordinances, applicable conservation practices, and cost-share grant opportunities;
- Promote voluntary implementation of conservation practices necessary to meet the performance standards and prohibitions;
- Inform landowners of compliance procedures and agency roles to be used statewide and locally and
- Make landowners aware of expectations for compliance and consequences for noncompliance;
- Share local examples of good agricultural practices.

2. Priority Farms Strategy:

The Racine County LWCD will identify and evaluate farms for compliance with standards and prohibitions. The LWCD will use GIS, maps and water quality monitoring data as described in this plan as a tool to identify priority farms for compliance determinations, track progress on implementing performance standards and meet reporting requirements. Color digital orthophotos from spring 2010 have been used as a base map for initial screening, while 2015 and 2020 orthophotos are used to record and document best management practices and continued compliance.

The Racine County two-foot contour maps and water resource layers, including the Water Quality Management Areas (WQMA’s) which are within 300 feet from a stream or 1000 feet from a lake have been delineated. This is the same area defined as the Shoreland Zone for the Racine County Development Services Division. These areas are more restrictive for erosion control and animal waste application.

Digital land units from the USDA-Farm Service Agency are being used to identify field boundaries. Information from the Soil Survey and groundwater contamination susceptibility maps may also be used to identify “potential” locations of runoff or groundwater problems. These data layers combined with a hydrologic data layer maintained by the Racine County LWCD will help identify water resources and locate potential problem areas within the WQMA. Agricultural fields and livestock operations within this area can be identified and a list of owners for contacting generated from the Land Information System parcel maps.

Once the list of landowners is created, LWCD staff can conduct a records inventory search for files related to conservation planning prepared by the LWCD. This initial review determines potential compliance with the agricultural performance standards based on past or present program participation. If no records are found, or if the records are found to be out of date with existing farming operations, an on-site farm visit will be scheduled.

In the initial stages, implementation will focus on high priority areas, WQMA, livestock operations, highly erodible soil areas, and lands not slated for development in the near future. Landowners within these areas will be contacted for compliance evaluation based on initial screening data noted above. Additional on-site review may also be identified through complaints or staff observations. The Racine County LWCD plans to conduct a minimum of five priority farm inventories annually. The number of compliance evaluations is also limited by existing program efforts and staffing levels.

3. Document and report compliance status.

Following completion of records review and on-site evaluations, an NR 151 Status Report will be prepared and issued to owners of the parcel evaluated. This report will include at a minimum:

- Compliance status of individual parcels with each of the performance standards and prohibitions.
- Corrective measure options and an approximate cost estimate to comply with each of the performance standards and prohibitions for which a parcel is not in compliance.
- Status of eligibility for cost-sharing available.
- Grant funding sources and technical assistance available from federal, state, and local government, and third party service providers.
- An explanation of conditions that apply if public cost share funds are used.
- A timeline for completing corrective measures, if necessary.
- Signature lines indicating landowner agreement or disagreement with report findings.
- Process and procedures for contesting evaluation results to the county.
- A copy of performance standards, prohibitions and technical design standards.

All evaluations and compliance status reports will be kept as public record in the office of Racine County Development Services Division. If a landowner agrees with the initial compliance determination and no corrective actions are required, a Letter of Compliance will be issued and the site mapped appropriately on the Racine County Land Information System. If a landowner disagrees with the initial compliance determination, the landowner may meet and discuss concerns with the LWCD regarding the compliance determination process and results. As necessary, WDNR staff may be contacted for assistance with determining compliance with applicable NR 151 agricultural performance standards or prohibitions.

4. Technical assistance and available cost-sharing to implement appropriate best management practices.

If a site is determined to be out of compliance with the state standards, technical assistance through the LWCD utilizing NRCS Standards and cost-sharing will be offered to the landowner to bring them into compliance. A list of conservation practices likely to be utilized to meet state performance standards and potential sources of cost-share funding is found in Appendix A. If no cost-sharing is available, a landowner is not required to comply until such time that cost-sharing becomes available. However, if cost-sharing is offered, and a landowner still refuses to make the corrective actions needed to bring the site into compliance, future cost-sharing is not required.

5. Administer funding and technical assistance.

Once a landowner agrees to implement the corrective actions to bring the site into compliance with the state standards, and if cost-sharing is involved, the cost-share agreement and schedule for implementation will be executed. If technical assistance is required it will be arranged for through appropriate agencies/staff with the proper engineering job approval or conservation planning certifications.

After the corrective measures are applied, the site will be re-evaluated to determine if the parcel is now in compliance with the relevant performance standards or prohibitions. An official notification will be sent to notify the landowner that the site has been determined to now be in compliance with applicable performance standards and prohibitions. Once a site is determined to be in compliance, it is required that the site remains in compliance for perpetuity without additional cost-sharing being required. As necessary, WDNR may be contacted for assistance with determining compliance with applicable NR 151 agricultural performance standards or prohibitions.

6. Issue required notices and enforcement activities.

Following compliance status notification, if appropriate action is not taken by the landowner/operator in a reasonable amount of time as detailed in the NR 151 Status Report, enforcement action may commence. A notice of violation letter will be issued via certified mail to inform the landowner of non-compliance with NR 151 with a timeline to be in compliance. This will coincide with notification from the WDNR. If compliance is not achieved by the deadline in the NOV, then then enforcement actions will be taken by the Department of Justice and/or the Racine County Court, the enforcement direction will be determined with the County staff consulting with DNR staff.

7. Compliance monitoring and Annual reporting.

Racine County LWCD will use GIS and a spreadsheet database to record progress on implementing performance standards and meet reporting requirements. Compliance monitoring may be done as random spot checks or through scheduled inspections of sites previously cost-shared. Annual reports will be compiled to evaluate the progress of administering performance standards and prohibitions and submitted to the WDNR and DATCP.

GOAL #2

INVASIVE SPECIES MANAGEMENT AND CONTROL

Goals and Workplan Objectives

Invasive species can alter ecological relationships among native species and can affect ecosystem function, economic value of ecosystems, crop production and human health. In order to more effectively control the infestation and spread of invasive animal and plant species, specific goals and workplan objectives have been identified as follows:

- Distribute informational material, answer phone and direct inquiries;
- Organize and educate local work and youth groups to identify and eliminate exotic and invasive species;
- Continue to conduct periodic workshops and presentations on invasive plant and animal species control;
- Apply for grants to hire contracted staff to assist with the clean boats, clean waters volunteer program;
- Create a monitoring program to track control measures over time and;
- Encourage the development and adoption of aquatic plant management plans for all inland lakes, and;
- Participate as needed in Aquatic Invasive Early Detection and Response Projects;
- Create a plan to control invasives on County Parks, Bike Trails, and County Roadsides.

Planned Actions

Invasive species control strategies rely heavily on information, education, and communication. Therefore, our plan will include a wide range of activities to implement an effective identification, prevention, and eradication program.

Racine County will continue to respond to citizen concerns of spongy moths in the county. The County participated in biological control through aerial treatments of 20 acres in 2009 and 15 acres in 2010.

The emerald ash borer is native to Asia and has killed 90% or more ash trees in the Great Lakes region. Infestations have been confirmed in most of Racine County as well as most of southeast Wisconsin. Racine County will continue to remove dead ash trees located in road right-of-ways, county parks, and within the county-owned Root River environmental corridor. The dead ash tree removal is prioritized for public safety.

The WDNR has recognized aquatic invasive species as a serious problem in Racine County lakes. When outbreaks of aquatic invasive species occur, Racine County LWCD along with the DNR will participate as a partner in their detection and eradication. Planned activities include the continuation of an ongoing program of public information and education being provided to both riparian landowners and lake users. Also, encourage lake association/districts to develop and adopt aquatic plant management plans for their individual lakes. Starting in 2021, Racine County has entered into a Cooperative Agreement with the University of Wisconsin-Madison Sea Grant Institute to hire a part-time staff to implement the Lake Monitoring and Protection Program in Racine County. This staff coordinates the Clean Boats, Clean Waters watercraft inspection program and works with local lake associations and districts to implement the Citizen Lake Monitoring Network and Aquatic Invasive Species Prevention Program.

Invasive shrubs such as buckthorn and honeysuckle prevent the regeneration of young trees, causing long-term, serious impacts to the forestry of Racine County.

Garlic mustard can invade woodlands and displace native vegetation. It spreads rapidly and can dominate the forest floor within ten years. It not only invades disturbed habitats, but readily spreads into high quality forests. Garlic mustard provides little food and habitat for wildlife.

Wild parsnip is an aggressive weed found mostly in grassland areas or in roadside ditches of Racine County. The plants spread very quickly due to their adaptive nature, ability to flower and spread their seeds rapidly and tend to choke out native species. While this plant causes a range of impacts to the environment, the largest concern from this invasive species is its ability to inflict burns to skin of people that come into contact with the sap from the plant. This reaction is called phytophotodermatitis as the sap will burn the skin when exposed to sunlight. Staff provides information to landowners about invasive species eradication and long-term maintenance.

Dames Rocket blooms in May and June, 3-4' flowering stalks bear lovely four-petalled flowers ranging in color from very pale pink, through blues, and into purple. Its colorful blooms are easily seen along our roadsides, and in both woodlands and open fields. This perennial plant is on the NR 40 list of regulated invasive plants in WI; it spreads easily due to its prolific seed production, and so crowds out native plants that feed our native wildlife.

Purple loosestrife and Phragmites are aggressive plants in our natural wetlands and even roadside ditches of Racine County. These plants spread quickly and choke out high-quality native wetland plant species, which consequently makes wetlands less useful for wildlife. Staff provide information to landowners about eradication and long-term maintenance.

Oak Wilt is caused by a fungus, *Bretziella fagacearum*, that grows through the infected tree's water conducting system and causes the tree to wilt and die.

Bur oak blight causes infected leaves to develop purple and brown lesions along the mid-vein and underside of the leaves. As chlorosis and necrosis expand on the leaves, the affected leaves eventually wilt and die, severely affecting the trees.

While native earthworms provide benefits to the ecosystem, Asian jumping worms have been found in Wisconsin since 2013. The invasive jumpers ravenously feed on organic matter and consume much of the nutrient intended for the plants,

animals, fungi and bacteria to survive. This leaves the soil looking like coffee grounds, which has poor structure and support to sustain plant life.

The County identifies areas on public land and implements eradication for invasives previously mentioned. Staff also provide information to landowners about invasive species eradication and long-term maintenance.

Racine County LWCD will continue to be a member of the Southeast Wisconsin Invasive Species Consortium (SEWISC) and attends the annual invasive species awareness event. Racine County will follow the SEWISC suggested timing of control for invasive species management throughout the County.

Racine County LWCD will assist in communication between the lake and river organizations within the County.

GOAL #3

BLUFF, SHORELINE AND STREAMBANK EROSION CONTROL

Goals and Workplan Objectives

Bluff, shoreline and streambank erosion are prominent in Racine County. The goal is to eliminate erosion and prioritize areas where structures and public infrastructure may be directly impacted. Additionally, water quality degradation due to erosion will be identified and addressed.

Planned Actions

Lake Michigan bluff erosion and stability is a concern to many landowners, public land managers and elected officials due to land values, property assets, land uses, economics, lake access, ecological value, public infrastructure, health and safety. Bluff erosion is a complex process and result of numerous factors which include lake elevations, wave heights, land use, land cover, bluff angle, and surface water and subsurface water drainage patterns.

Racine County LWCD will continue to work with local municipalities to monitor Lake Michigan shoreline, especially in those reaches with relatively high unprotected bluffs and where shoreline protection structures need maintenance. Shoreline protection structures have been placed in isolated situations are likely to cause erosion on unprotected portions of the shoreline in the vicinity of those structures.

Racine County will assist with erosion as follows:

- Work with all impacted municipalities to inventory and prioritize actively eroding areas.
- Utilize Federal partners to search for potential solutions, grants and other available resources.
- Apply for grants to receive funding to construct bluff stabilization projects.

Shoreline erosion is occurring on most inland lakes in Racine County. Shoreline erosion occurs due to wave action, foot traffic and ice heave. Rock riprap, combined with native shoreline plantings, are promoted by the Racine County LWCD and in some cases cost-share may be available to assist with an eroding shoreline.

In order to meet the identified goals and workplan objectives related to the protection and preservation of Racine County's land and water resources, soil erosion from unstable river and lake shorelines should be quantified. Priority sites have been mapped along the main stem of the Fox River and funding sources have been identified and obtained to assist landowners in implementing shoreline protection measures. The remainder of the County can be mapped, or have been mapped within the nine-key element watershed based plans as well to locate and prioritize shoreline erosion sites.

Racine County supports a vegetative buffer zone through shoreland zoning. The buffer zone prevents erosion, protects water quality, promotes fish / wildlife habitat and adds to a natural scenic preservation of shorelines. The LWCD will:

- Work with impacted landowners on best management practices for erosion control.
- Utilize available cost share programs to assist with BMP construction of shoreline erosion control.
- Provide the Shoreline Stabilization Guide to lake associations and homeowners.
- Implement the vegetative buffer zone ordinance.
- Promote a 75' setback from the shoreline to promote natural aesthetics and wildlife habitat.

Streambank and ditch bank erosion are occurring throughout much of the County. The erosion occurs for many reasons, a few include: vertical streambanks, wave action, large storm events, foot traffic, equipment traffic, and unlimited livestock access. Depending on the severity of the erosion and site conditions, the LWCD will promote best management practices to correct the erosion as well as recommend riparian buffers as an effective method to protect water quality. The LWCD will continue to:

- Work with impacted landowners on best management practices for erosion control.
- Utilize available cost share programs to assist with BMP construction of streambank erosion control.
- Promote riparian buffers
- Restore natural streams and/or create two stage channels in degraded waterways.
- Work with the Racine County Drainage Board to promote streambank/ditch bank stabilization.
- Support a study on the Rochester Dam to determine if upstream channels, such as the Wind Lake Canal, would have less erosion if the dam were removed.
- Promote long-term observations of water levels in the Fox River and the Root River before and after the Waukesha Water Diversion is finished.

GOAL #4

PROMOTE AWARENESS AND EDUCATION OF ENVIRONMENTAL STEWARDSHIP

Goals and Workplan Objectives

Developing and implementing a sound educational program is an important component of the land and water resources management plan. The goals and workplan objectives related to educational programming include the following:

- Enhance the general public's appreciation and involvement in natural resource protection and restoration;
- Provide information to rural landowners and farm operators on the agricultural performance standards;
- Promote learning strategies for environmental education among our youth;
- Provide outreach programs to developers, engineers, landscapers, local officials, and work groups that will increase awareness of storm water pollution impacts;
- Increase landowner and producer/operator awareness of conservation practices and programs;
- Provide information to riparian property owners and landscape contractors on the benefits of riparian buffers;

- Educate landowners, agricultural supply businesses, lawn maintenance companies, and golf course superintendents on the importance of nutrient and chemical management and;
- Provide information to county residents about how they can control water pollution, groundwater contamination, and control invasive species.

Planned Actions

The planned actions to meet the educational goals and workplan objectives in the agricultural areas include working with the Watershed Protection Committee of Racine County to offer a Summer Field Day and Winter Workshop each year to promote soil health.

Provide certification and training courses on nutrient management planning, as well as compliance obligations set forth in the State performance standards, will be offered to landowners, producers, cooperatives and agricultural suppliers.

Educate producers about existing cost-share programs for voluntary implementation of conservation best management practices along with the agencies involved and their roles.

Promote aquatic invasive species control through presentations at annual lake association meetings. Provide information with signs at boat launches, county parks, and other waterfront establishments regarding aquatic invasive species control.

Utilize school groups and non-profit organizations with events to control garlic mustard and buckthorn.

Informational and educational programming will be targeted towards Lake Michigan riparian property owners. Informational materials will be developed and distributed containing the details involved with Lake Michigan shoreline erosion processes. Additionally, material shall be provided that identifies the most appropriate methods to protect the shoreline from erosion and proper setback distances for structures from the shoreline.

Work with Racine County Drainage Board to support proper bank stabilization slopes and methods during dredging to ensure spread spoils are seeded or farmed to not re-enter the surface water.

It is important to utilize new and existing programs and teaching materials to develop curriculum for in-school programs that identify valuable natural resources and also identify ways to protect those resources, restoration methods, and sources of natural resource degradation, including nonpoint source pollution.

In order to implement the informational and educational program goals and workplan objectives, the following strategies and methods are part of our 10-year planned activities.

- Provide one-to-one contact with individuals, businesses, or local levels of government;
- Inform new and existing landowners about their obligation to maintain compliance with performance standards through personal contact, direct mail, newsletters, fact sheets, website, workshops, social media, field days, etc;
- Work with local non-profit environmental groups to assist with public and municipal employee education;
- Utilize new and existing programs to help implement a curriculum to inform students about natural resource issues, their function and role in the environment, and ways they can manage and restore those resources;
- Assist area youth groups in the development of outdoor classroom activities to promote land and water conservation;
- Make available internships to provide real work experience opportunities for High School and College students;

- Participate in the State of Wisconsin Environmental Poster Contest. This educational contest allows students to make posters using their creativity and artistic skills while educating students on an environmental topic. Winning posters are advanced to regional and state competitions.
- Distribute information material during office and site visits.
- Provide information at display booths at county fair, lake association meetings, and other environmental events;
- Partner with lake districts and associations on shoreline protection and restoration demonstration projects and workshops. Continue to distribute the shoreline stabilization packets to riparian landowners;
- Continue to distribute informational materials to homeowners on pet waste, leaf and grass clipping disposal, lawn fertilization techniques, and the problems associated with dumping chemicals directly into storm sewers;
- Promote storm drain stenciling and provide materials to schools and youth groups;
- Promote conservation education along bike trails throughout the County;
- Organize and educate local work and youth groups to identify and eliminate invasive species;
- Conduct seminars or workshops for the farming community, riparian residents, businesses, and local levels of government to include;
 - General awareness of conservation and/or runoff pollution
 - Land use/planning (including farmland preservation and development rights)
 - Groundwater management (including well abandonment and septic systems)
 - Shoreland mitigation efforts (rain gardens, rain barrels, pervious pavers)
 - Lake/river/shoreland management
 - Wetland/pond creation/enhancement/restoration
 - Woodlot/prairie/savannah management
 - Invasive species management
 - Wildlife habitat management
- Provide informative on the County social media pages focusing on different land conservation issues in the County;
- Use cable TV, radio, website, social media and newspaper to deliver environmental programming and circulate opinion surveys and;
- Maintain a County natural resource and land conservation website devoted to conservation programs, technical services, and cost-shared practices, with links to other sources of information;
- Make sure citizen's are aware of the list of invasives in NR 40.
- Promote internal conservation education training between County departments.

GOAL #5

PROTECT AND PRESERVE LAND AND WATER RESOURCES

Goals and Workplan Objectives

In order to more effectively protect and preserve land and water resources, specific goals and workplan objectives have been identified as follows:

- Conserve Racine County's unique natural resources as lands become more developed;
- Prevent the degradation and disturbance of wetlands;
- Create, restore and enhance wetland, riverine, and wildlife habitat throughout the county;
- Prepare and/or update comprehensive lake and watershed management plans;
- Promote riparian buffers along all water resources in the County;
- Promote regenerative farming and soil health practices.
- Protect the quality and quantity of groundwater supplies;
- Support efforts to protect and enhance our forests and woodlots and;
- Continue to implement and refine the County's shoreland management program with emphasis on shoreline protection, restoration, and enhancement.

Planned Actions

Racine County LWCD will encourage farmers to utilize regenerative agricultural practices and promote soil health along with its principles. The Racine County LWCD will also provide technical assistance for other best management practices such as grassed waterways, buffers, WASCOB's, wetland restorations, grade stabilization structures, streambank protection, nutrient management and other animal waste related bmp's to achieve compliance with the performance standards to address water quality and erosion problems.

The regional water quality management plan update^[1] will provide specific recommendations on land use, the point source pollution abatement, and the nonpoint source pollution abatement. These recommendations were determined by detailed modeling needed to achieve the adopted water use objectives for the southeastern Wisconsin region. The recommendations and guidance for water quality management set forth in SEWRPC Planning Report No. 50 are an invaluable resource tool for Racine County, the Towns, and local governments in land and water management planning.

Wetlands should be protected through NR 151, NR 103 and local ordinances to insure setback requirement for protected areas are met. The County and local governments will continue to work cooperatively to implement the recommended actions identified in the regional natural areas and critical species habitat plan. One way to protect wetlands is to remove reed canary grass, phragmites and non-native cattails as these plants will actually dry out a wetland, causing loss of all groundwater benefits a wetland provides.

The Racine County LWCD and the WDNR will work together update and review water quality inventory data to assess existing conditions, as well as providing a benchmark to evaluate the effectiveness of nonpoint source pollution control best management practices. This baseline data will be used to monitor progress of the land and water resource management

^[1]SEWRPC Planning Report No. 50, A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds.

plan implementation. The needed data would be obtained by the WDNR, by lake associations/districts and other work groups with an interest in water quality monitoring.

Racine County LWCD will continue to encourage lake associations/districts to develop, adopt, update, and implement lake management and aquatic plant management plans for their individual lakes, become more active in water quality monitoring and encourage interested organizations to apply for various grants for both lake and river protection activities. The LWCD will continue to partner with the Southeastern Wisconsin Regional Planning Commission to provide assistance in identifying grant opportunities and in the grant application process itself.

Riparian buffers are one of the most effective means of protecting water quality through reducing sediment delivery. Accordingly, Racine County LWCD will continue to work with and form more resource partnerships to educate riparian landowners of the water quality benefits of buffers. Racine County LWCD will offer SWRM cost-share funds, as available, to install bio-engineered systems with vegetated buffers. Racine County is currently promoting voluntary programs such as the Conservation Reserve Program (CRP) and the Conservation Reserve Enhancement Program (CREP) to protect water quality. The Racine County LWCD meets monthly with USDA partners from the Farm Service Agency and Natural Resources Conservation Service to coordinate projects for landowners as well as update one another on program status or share other relevant information.

Additionally, Racine County will protect the shoreline and water resources from continued degradation by continuing to administer its shoreland ordinance regulation limiting the extent of activities such as filling, tree cutting, and grading that occurs within the shoreland zone. Racine County LWCD also provides shoreland erosion control reviews for 1 and 2 family dwelling and subdivisions within the shoreland jurisdiction of the county zoning.

Racine County will continue to administer the floodplain ordinance. We have adopted floodland zoning regulations and are participating in the Nation Flood Insurance Program to effected units of local government.

In order to meet the goals and objectives to reduce the threat to groundwater contamination, Racine County LWCD will continue to use SWRM grant funds to cost-share the decommissioning of abandoned and unused wells. The County will also encourage and support local governments in developing wellhead protection programs to ensure safe setbacks from all municipal wells. The County will continue the current comprehensive onsite sewage disposal system management program and also to address the provisions set forth in the recently revised Comm 83 as needed. The County continues to facilitate the use of funding sources for repairing or replacing failing septic systems.

Because of the concerns associated with groundwater contamination from agriculture and related industries, the County LWCD and NRCS staff will work with agricultural producers to soil test farm fields and provide assistance to producers to develop nutrient management plans for farm fields, particularly fields that are in close proximity to private or public well or soils areas with high risk for groundwater contamination. The County will utilize the available inventory data and GIS mapping shown in this plan and also set forth in the regional groundwater inventory to delineate those areas that are considered groundwater related water quality management areas. The educational program activities mentioned above will include an element to increase the awareness level of the importance of groundwater and ways to protect groundwater resources through informational workshops, fact sheets and literature. In addition to existing programs and educational materials, new in-school programs will be encouraged to include: sources of groundwater and its importance, groundwater uses, and protection of groundwater.

To ensure the continued quality of groundwater resources in Racine County, the LWCD, Towns, and local government shall incorporate information on groundwater recharge areas and the potential for groundwater contamination as one component of future land use planning. Furthermore, new urban development will be encouraged to be located in areas where public water supply systems are available. The Southeastern Wisconsin Regional Planning Commission has conducted a regional water supply study for the Southeastern Wisconsin Region. The recommendations and guidance for

groundwater sustainability set forth in SEWRPC Planning Report No. 52^[2] will be considered by Racine County when evaluating the sustainability of proposed developments and in conducting local land use planning.

NONAGRICULTURAL PERFORMANCE STANDARDS

Goals and Workplan Objectives

Nonagricultural and urban land uses are a significant source of nonpoint pollution. To achieve the requirements of NR 151 Nonagricultural Performance Standards, the goals and objectives of this plan focus on storm water management, construction site erosion control, and sound land use planning. Specifically goals and workplan objectives include the following:

- Implement the State Nonagricultural Performance Standards including Construction Site Performance Standards for Permitted and Non-Permitted Sites
 - Erosion and Sediment Control Practices
 - Sediment Performance Standard
 - Preventative Measures to incorporate and maintain existing vegetation
 - Best Management Practice locations and implementation
- Implement the Post-Construction Performance Standards, including:
 - Total Suspended Solids load reduction
 - Peak Discharge Performance Standard
 - Infiltration Performance Standard
 - Protective Area Performance Standard

Planned Actions

In order to accomplish the identified nonagricultural nonpoint pollution goals and workplan objectives, a number of management practices need to be implemented. Construction sites are one of the highest contributors of erosion and sedimentation when best management practices are not properly installed and maintained. Storm water management and erosion control standards need to be established to provide consistent storm water permit requirements countywide. In addition, Racine County, the Towns and local governments, should work together to develop a consistent monitoring program for construction sites to ensure proper establishment and maintenance of best management practices. Racine County and local governments should set standards that require developers and contractors to leave the maximum amount of vegetation on a construction site. The County, Towns and local government should also, require through guidelines or adopted ordinance, developers to provide a site plan inventory of the drainage network including contiguous properties extending beyond the site boundary to show surface and subsurface runoff patterns onto, through, and from the site; watercourses that may affect or be affected by runoff from the site; flow path and direction for all storm water conveyance sections; watershed boundaries used in hydrology determinations to show compliance with performance standards; lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the project site.

^[2]SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin.

Storm water runoff is one of the principal factors associated with nonpoint source pollution. Not only does storm water transport sediment and contaminants, but it also contributes to erosion of streambanks, and temperature fluctuations of water resources. A coordinated program should be developed to prepare and implement detailed comprehensive storm water management plans for logical sub-watershed and groundwater protection areas. This program should emphasize new development, redevelopment of existing urban areas, and existing urban areas. Additionally, the Towns and local government should take on the primary responsibilities associated with maintenance of major storm water management facilities for future developments, to ensure that long-term maintenance issues are properly addressed, by providing a stable, responsible party for storm water management. Racine County, the Towns and local government should continue to work to develop coordinated and simplified requirements for storm water management facility permitting and regulation. Additionally, local requirements should be coordinated with the Wisconsin Department of Natural Resources permitting program.

Implementation Strategy

To implement the above noted standards and prohibitions fairly in the nonagricultural areas, a systematic and comprehensive approach will be required. Runoff pollution from urban lands can be the leading cause of water quality problems in some areas. As in rural areas the number one pollutant is sediment, or small bits of soil particles washed into streams and lakes. Attached to the soil particles are nutrients such as phosphorus that fuels the growth of algae and weeds in bodies of water. Other pollutants from urban areas include flakes of metal from vehicles, particles from vehicle exhaust, bits of tire and brake linings, soot from smokestacks, lead, zinc, pet waste, leaves and grass clippings and a variety of chemical compounds. This permit process involves plan review, on-site inspection, and necessary enforcement actions. In Racine County stormwater management is regulated by the local municipality.

In Racine County, the local municipality regulates erosion control on single-family home construction and the Racine County LWCD provides shoreland erosion reviews for family dwellings and subdivisions within the shoreland jurisdiction of the county zoning.

The City of Racine has implemented bio swales along Lake Michigan to capture runoff. The City has also restored Sam Myers Park into a series of bio-swales, rain gardens and walking paths to allow for access while improving beach habitat.

NONMETALLIC MINING RECLAMATION

Goals and Workplan Objectives

The goal is to rehabilitate sites where nonmetallic mining takes place. Final reclamation promotes the removal of mining refuse and haul roads no longer in use. Final grading will promote surface water flow in a manner to prevent environmental pollution. Final restoration of the site includes the replacement of topsoil onto stable soil conditions with the establishment of a vegetative cover. Site restoration needs to comply with the previously approved reclamation plan.

Implement Non-Metallic Mining Reclamation Standards

- General Standards
 - Refuse and solid wastes shall be properly disposed of, removed or reused onsite.
 - Minimize the disturbed area to the extent practical.
 - All sites shall be reclaimed following regulations governing public health and safety.
 - Include habitat restoration in the reclamation plan as practical.
 - Comply with other state and local laws referring to zoning or land use.

- Surface Water, Wetland and Groundwater Protection
 - Provides necessary measures for proper drainage.
 - Prevent any pollution to surface waters or groundwater.
 - Do not permanently adversely impact surface or groundwater quantity for the future users.
- Topsoil management, final grading and revegetation for site stabilization
 - Removal of topsoil and stockpiling in a manner to prevent erosion for future use onsite.
 - Final grading shall not exceed a 3:1 slope and in a manner to blend into the existing grades.
 - Respread topsoil and revegetate the site in accordance with the approved reclamation plan.

Planned Actions

In order to accomplish the items above, the Racine County Development Services and Land and Conservation Division staff inspect all approved non-metallic mining sites every two years. The sites are reviewed for any changes or discrepancies in the existing phasing and restoration plans. The site inspections verify proper locations of stockpiles, wash ponds, and promote the restoration of mined out or unused areas as shown in the reclamation plan.

The financial assurance is also revisited by Racine County to determine if the level of bonding or other means of financial assurance meets the current level needed for full reclamation.

Implementation Strategy

To implement the above noted standards, Racine County uses a cycle of renewing a Conditional Use Permit and then a Site Plan Review two years later to ensure all non-metallic mining facilities are following their approved extraction, phasing and reclamation plans. Staff meets with non-metallic mining operators prior to their meeting with the Economic Development and Land Use Planning Committee to review the sites for compliance and discuss any other mining activity or changes relating to their plans.

FINAL COST SUMMARY

Estimated Costs of Plan Implementation

This plan does not have the authority to establish county budget items, the estimated costs provided below are solely intended to meet LWRM planning requirements and are a representation based on historical amounts provided in Racine County LWCD budgets. It is assumed that no additional staff resources will be made available to implement this plan beyond what is currently allocated to land conservation programs in the County (3 FTE's). The cost estimates contained in Table 17 are based on average annual costs to maintain existing program efforts and staffing levels.

The average salary increases and inflationary costs are included in the increases shown each year. Currently all cost-share funding is acquired from Federal, State, and additional grant sources. Racine County LWCD will continue to apply for grants to supplement those funds. The table assumes that Racine County's current budgeted staffing level of three full-time employees is maintained, and it assumes stable segregated and bonding cost-share funds by the State.

Conservation practices, such as diversions, riparian buffers, filter strips and building projects such as manure storage facilities, concrete barnyards and roofed feedlots are considered "hard practices". Cropping practices, such as nutrient management, no-till and cover crops are known as "soft practices." The projected cost-share needs for installing hard and soft best management practices over the next ten years is only an approximate estimate due to uncertain funding levels, changing land use and farm economy, and increasing practice installation costs.

Summary

The procedures and cost estimates outlined in this chapter represent the best estimates of the LWCD at the time of plan preparation and are all subject to change. No attempt is made to identify the source of funding beyond the assumptions noted above. All of the estimated costs are subject to the annual budget processes at the county, state and federal levels. The LWCD will make every attempt to take advantage of the wide array of grants and partnerships that may be available through public or private sources to implement this plan.

Table 8

RACINE COUNTY WORKPLAN: 2023-2032

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #1 Increase Resource Protection by Reducing Non-Point Source Pollution (2080 hours per year)	Implement the State Agricultural Performance Standards to protect water quality	<ol style="list-style-type: none"> 1) Continue to work with agricultural producers to utilize a wide variety of best management practices to target soil erosion and animal waste management to improve water quality. 2) Assist farmers to develop nutrient management plans through farmer training or consultants. 3) Utilize the Watershed Protection Committee of Racine County to promote soil health practices to reduce soil erosion, promote water infiltration and reduce runoff. 4) Provide technical assistance for manure storage facilities, whether they are new, substantially altered or planned for abandonment. 5) Inventory at least 5 priority farm landowners yearly to evaluate compliance status. 6) Continue to use GIS for priority farm mapping as part of the tracking system. 7) Keep landowner's notified of compliance status through the issuance of compliance certifications or schedules of compliance. 8) Put landowner's on a maintenance schedule if already in compliance. 9) Assist with BMP implementation to put landowners into compliance with the Standards. 10) Respond to complaints to ensure the Agricultural Performance Standards are being met. 	Ongoing	LCD, WDNR

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
	Monitor and support the Farmland Preservation Program (FPP)	<ol style="list-style-type: none"> 1) LCD staff will monitor program participants for compliance with the applicable standards at least once every four years through a combination of landowner visitation, field inspections, and compliance checks. 2) Send the schedule of compliance in the form of a letter for each participating landowner to sign annually. 3) Update FPP parcels and acreages as properties are sold or rezoned. 4) Continue to assess and evaluate farm practices to keep conservation and nutrient management plans updated for compliance. 5) Send an annual report to DATCP with parcels rezoned out of exclusive agricultural zoning (A-1) 6) Annually email DATCP a list of FPP participants along with their Certificate of Compliance number. 7) Mail the correct FC Tax Schedule and updated Certificate of Compliance to FPP participants for use with Wisconsin tax preparation. 	Ongoing	LCD, DATCP
	Reduce soil erosion to (T) tolerable rates	<ol style="list-style-type: none"> 1) Work with the Watershed Protection Committee of Racine County (WPCR) to promote soil health activities. 2) Encourage farm conservation plans to include no-till and cover crops. 3) Correct all gully erosion with grassed waterways or appropriate best management practices. 4) Continue to promote farming practices to reduce sheet and rill erosion, including: <ol style="list-style-type: none"> A. Conservation tillage, including strip till and no till. B. Consider less erosive crop rotations with hay or winter wheat. C. Promote contour farming, contour strip cropping or field buffers to break up steeper slopes as applicable. D. Promote the Conservation Reserve Program for HEL, WQMA's, or other marginal farmland. E. Promote combinations of soil health activities to improve water infiltration and reduce runoff. 	Ongoing	LCD,DATCP NRCS,FSA, WDNR

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #1 (continued) Increase Resource Protection by Reducing Non-Point Source Pollution	Manage animal waste and livestock access to water resources in accordance with State performance standards	<ol style="list-style-type: none"> 1) Utilize cost-share funds to install conservation practices that improve barnyard runoff control, animal waste storage, animal waste storage abandonment and other animal waste management issues. 2) Enforce the Racine County Animal Waste Management ordinance. 3) Enforce the Racine County Livestock Facility Siting Ordinance. 4) Assist farmer with management decisions such as animal location, fencing, manure stacking location, stormwater runoff, milkhouse waste or other management issues. 5) Respond to animal waste storage and spreading complaints. 	Ongoing	LCD,DATCP, DNR, NRCS
GOAL #1 (continued) Increase Resource Protection by Reducing Non-Point Source Pollution	Develop, implement, and monitor compliance of nutrient and pest management plans to protect water quality	<ol style="list-style-type: none"> 1) Continue to work with producers, DATCP, NRCS and technical service providers to expand nutrient management and pest management planning and implementation. 2) Utilize DATCP's restriction maps during the planning process. 3) Integrate plans to reduce the amount of manure, fertilizers, and pesticides applied. 4) Assist with support and information when producers have questions regarding their nutrient or pest management plans or are considering changes to their plan. 5) Utilize GIS to report nutrient management planned acreage along with plan years, including an expiration date requiring new soil tests and plan updates. 6) Conduct compliance inspections on existing plans for proper implementation and assist with updating plans as needed. 	Ongoing	LCD, NRCS, DATCP, TSP's, WDNR

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #1 (continued) Increase Resource Protection by Reducing Non-Point Source Pollution	Reduce soil delivery rate from riparian cropland to waters of the State	<ol style="list-style-type: none"> 1) Utilize cost-share funds through the SWRM, TRM, CRP, CREP, CSP, EQIP or other programs as needed to reduce sediment delivery. 2) Enforce the tillage setback. 3) Work with landowners, farmers, and agency partners to establish buffers within riparian corridors. 4) Stabilize eroding banks along agricultural drainage ways as well as recommend buffers where sediment is being delivered to the surface water. 5) Clean out accumulated sediment from agricultural drainage areas as needed, incorporating the proper permitting process and associated sediment removal actions. 6) Promote stream naturalization such as two-stage channels with a base flow stage and a flood stage. 7) Promote the removal of legacy sediment. 	Ongoing	LCD, NRCS, DATCP, FSA, WDNR

Table 9

RACINE COUNTY WORKPLAN: 2023-2032

<p>GOAL #2 Invasive Species Management and Control. (520 hours per year)</p>	<p>Control the infestation of terrestrial invasives, aquatic invasives plants and animal species</p>	<ol style="list-style-type: none"> 1) Present at annual workshops, lake district meetings or other opportunities about invasive plant and animal species control. 2) Apply for the WI DNR Lake Monitoring and Protect Grant each year and utilize funds to hire part-time AIS coordinator. 3) Distribute informational material, answer phone and direct inquiries 4) Assist the clean boats, clean waters volunteer program, and support purple loosestrife biological control 5) Work with environmental non-profit groups to organize and educate local youth groups to identify and eliminate invasive species 6) Encourage the development and adoption of aquatic plant management plans for all inland lakes 7) Support the DNR AIS network by reporting aquatic invasive species to the regional coordinator. 8) Assist the DNR in the rapid response grant program 9) Work with the County Parks to identify areas with invasive species and plan for removal and or a control plan. 10) Work with the County highway operations staff to identify invasive species and plan to reduce their spread and even eliminate some populations through roadside maintenance. 	<p>Ongoing</p>	<p>LCD, UW-Ext, SEWISC, Non-Profit Environmental Groups, Lake Associations, WDNR</p>
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Table 10

RACINE COUNTY WORKPLAN: 2023-2032

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #3 Prioritize and promote repair of Lake Michigan bluff erosion, shoreline erosion and streambank / ditch bank erosion. (520 hours per year)	Implement Technical Standards for bluff erosion	<ol style="list-style-type: none"> 1) Continue to identify and map areas of severe erosion that may impact public infrastructure or damage private property. 2) Work with impacted municipalities and Federal partners to search for potential solutions, utilize grants and other means of assistance. 3) Work with local Commissions, Environmental Non-Profits, and Lake Association's to educate and provide technical / financial assistance to citizens. 4) Apply for Great Lakes grants where bluff erosion stabilization is an acceptable practice. 	Ongoing	LCD, WDNR, Local Gov'ts, Environmental Non-Profit Groups, Lake Associations
	Implement NRCS Technical Standards for shoreline erosion and implement the shoreland zoning ordinance	<ol style="list-style-type: none"> 1) Continue to promote shoreline protection on eroding shorelines with technical assistance. 2) Utilize existing cost-share programs to provide assistance to landowners with eroding shorelines. 3) Promote Riparian Buffer zones and implement the shoreland buffer zone ordinance. 4) Provide the Shoreline Stabilization Guide to lake associations and homeowners. 5) Promote the 75' shoreline buffer. 		
	Implement NRCS Technical Standards for streambank protection and two-stage channel creation	<ol style="list-style-type: none"> 1) Work with impacted landowners on best management practices for streambank erosion control 2) Utilize existing cost-share programs to provide assistance to landowners with eroding streambanks. 3) Promote riparian buffers along streams. 4) Restore natural streams and create two stage channels in degraded waterways. 5) Provide technical erosion control and streambank stabilization comments on Racine County Drainage Board proposed projects. 		

Table 11

RACINE COUNTY WORKPLAN: 2023-2032

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #4 Increase awareness and provide further Information and Education Activities to promote environmental steward to farmers, youth, elected officials and the general public (520 hours per year)	Provide outreach programs to developers, engineers, landscapers, local officials, environmental consultants and work groups that will increase awareness of stormwater pollution impacts	<ol style="list-style-type: none"> 1) Host or attend an annual workshop on stormwater and erosion control BMP's 2) Promote environmentally sensitive land development designs 3) Educate landowner associations in charge of stormwater basin management and maintenance 4) Provide information to developers about nonagricultural performance standards and prohibitions 	Ongoing	LCD, DNR, UW-Ext, Towns, WI DATCP, Producer Led Groups, Local Govt.
	Increase landowner, farmer, County Official and youth awareness of conservation practices and programs	<ol style="list-style-type: none"> 1) Continue to provide an annual newsletter <i>Ties to the Land</i> to 3500+ landowners and producers 2) Provide information at display booths at the county fair, Fox River Summit and Watershed Protection Committee of Racine County (WPCR) events 3) Promote the WPCR Winter Workshop's and Summer Field Day's by mailing brochures to agricultural producers, posting the events on social media and sending press releases to newspaper outlets 4) Assist the WPCR with research and demonstration plots at Case Eagle Park and share information with producers. 5) Include a technical education topic at Land Conservation Committee meetings. 6) Host periodic Southeast Area Land & Water Conservation Association summer tours. 7) Help sponsor a Dairy Breakfast field day annually to promote dairy farming 8) Maintain the Land Conservation Website on conservation programs, technical services, and cost-shared practices 9) Distribute informational material during office and site visits 10) Use direct mailings to contact priority farms 	Ongoing	LCD, FSA, NRCS, Local Gov'ts, WI DATCP, Producer Led Groups

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #4 (continued) Increase awareness and provide further Information and Education Activities to promote environmental steward to farmers, youth, elected officials and the general public (520 hours per year)	Provide information to riparian property owners and landscape contractors on the benefits of riparian buffers	<ol style="list-style-type: none"> 1) Continue to distribute the Shoreline Stabilization brochure to Lake Association leaders within the County 2) Partner with the WPCR to provide cover crop seed samples will pollinator species for riparian landowners to utilize along shorelines or within rain gardens or natural areas. 3) Hold seminars targeted towards landscape contractors on the effectiveness of riparian buffers and potential design options for residential and business situations 3) Assist in developing demonstration sites to illustrate sound riparian land management for buffer establishment 4) Partner with lake districts and associations on shoreline protection and restoration demonstration projects and workshops 5) Informational and educational programming targeted towards riparian property owners 	Ongoing	LCD, WDNR, UW Ext, Lake Groups

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #4 (continued) Increase awareness and provide further Information and Education Activities to promote environmental steward to farmers, youth, elected officials and the general public (520 hours per year)	Educate landowners, agricultural supply businesses, lawn maintenance companies, and golf course superintendents on the importance of nutrient chemical management	<ol style="list-style-type: none"> 1) Organize an annual nutrient management planning certification, update or revision training course 2) Work with area coops and other suppliers to develop seminars targeted to nutrient and agri-chemical management and regulations, as well as area lawn companies, golf course and park superintendents 	Ongoing	LCD, UW-Ext, DATCP

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #4 (continued) Increase awareness and provide further Information and Education Activities to promote environmental steward to farmers, youth, elected officials and the general public (520 hours per year)	Provide information to the county residents about how they can control water pollution and groundwater contamination	<ol style="list-style-type: none"> 1) Continue monthly surface water quality testing in 22 locations and provide water quality data at Workshops or Field Days to share information 2) Promote water conservation, rain gardens and rain barrels to reduce surface runoff and increase groundwater recharge 3) Promote tap water testing from wells in areas known for high nitrate or other contaminants 4) Continue to distribute informational materials to homeowners on pet waste, leaf and grass clipping disposal, lawn fertilization techniques, winter salt usage and problems associated with dumping chemicals directly into storm sewers 5) Promote storm drain stenciling and provide materials to schools and youth groups 	Ongoing	LCD, UW-Ext, DATCP, Schools, Youth Groups, Work Groups
GOAL #4 (continued) Increase awareness and provide further Information and Education Activities to promote environmental steward to farmers, youth, elected officials and the general public (520 hours per year)	Provide information to county residents about how they can control exotic and invasive species	<ol style="list-style-type: none"> 1) Conduct one workshop to educate local work and youth groups on how to identify and eliminate exotic and invasive species 2) Assist with Clean Boats, Clean Waters Volunteer program 3) Utilize and assist with the SEWISC inventory and monitoring program 	Ongoing	LCD, WDNR, DATCP, UW Ext, Schools, Work Groups, Youth Groups

Table 12

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #5 Protect and Preserve Land and Water Resources (1,080 hours per year)	Conserve Racine County's unique natural resources under development pressure	<ol style="list-style-type: none"> 1) Assist in the preparation of the annual <i>Farm Fresh Atlas</i> to advertise farmer's markets to support "farm to table" initiatives helping local farmers connect with local buyers. 2) Continue land use planning and regulatory tools to preserve productive farmland and agricultural businesses, including: <ol style="list-style-type: none"> A. Protect farmland through Exclusive Ag Zoning, Agricultural Enterprise Areas, and Purchase of Agricultural Conservation Easements Programs. B. Protect farmland through land division ordinances. C. Promote local and sustainable farm practices. D. Recommend open areas and green space to builders and developers. E. Promote rural cluster developments. 3) Advise subdivision associations regarding management of their wetlands, woodlots, and detention ponds. 4) Continue to support the acquisition and preservation of environmental corridors and important identified natural areas and critical species habitat areas. 5) Encourage urban-density land use to be confined to and within the identified urban service areas. 	Ongoing	LCD, UW-Ext, Local Gov'ts
	Create, restore, enhance, and protect wetland, riverine, and wildlife habitat throughout the county	<ol style="list-style-type: none"> 1) Assist planning commission staff, state and federal partners, and local work groups with 1 or more wetland mitigation or stream relocation project 2) Work with landowners, WDNR, FSA, USF&W, Racine/Kenosha Land Trust and NRCS to utilize local, state and federal program funds for wetland and riverine improvements 3) Seek funding sources for lake and river water quality protection 4) Continue to notify the appropriate government agencies of wetland disturbance or destruction 5) Work together with the WDNR, USACE and SEWRPC to resolve wetland related issues 	Ongoing	LWCD, UW-Ext, WDNR, NRCS, SEWRPC, D FSA, USACE, Work Groups

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #5 (continued) Protect and Preserve Land and Water Resources	Prepare, update and implement comprehensive lake and watershed management plans	<ol style="list-style-type: none"> 1) Work with planning commission staff, lake association members, and outside contractors in the development of 1 or more lake or watershed management plans 2) Encourage native grasses, plants and bio-stabilization on shorelines where applicable 3) Support lawn soil testing for application of less fertilizers 4) Advise lake groups and watershed management teams about non-point source pollution runoff best management practices 5) Encourage lake associations/districts to develop, adopt, update, and implement lake management and aquatic management plans for their individual lakes. 	Ongoing	LCD, UW-Ext, NRCS, WDNR, FSA, Work Groups
	Promote riparian buffers along all water resources in the County	<ol style="list-style-type: none"> 1) Continue to implement CREP agreements/easements (estimate 40 acres per year) 2) Continue to implement continuous and general CRP to protect water quality and promote wildlife habitat 3) Continue to work with and form more resource partnerships to educate riparian landowners of the water quality benefits of buffers 4) Use GIS and field inspections to characterize the existing riparian buffer widths along county streams 5) Recommend alternative methods available to protect shorelines subject to low erosion intensity 6) Offer SWRM cost-share funds to install bio-engineered systems with vegetated buffers 	Ongoing	LCD, DATCP, NRCS, UW-Ext, FSA
	Protect the quality and quantity of groundwater supplies	<ol style="list-style-type: none"> 1) Utilize SWRM and EQIP cost-share funds to permanently abandon 1-2 unused wells annually 2) Conduct one hazardous waste clean-up day each year 3) Encourage the infiltration of storm water as set forth in Chapter NR 151 of the <i>Wisconsin Administrative Code</i> 4) Help developers identify potential storm water infiltration areas using field data, web based GIS mapping, and the soil survey layer 5) Incorporate SEWRPC Regional Water Supply Plan recommendation into future planning efforts 6) Work with agricultural producers to soil test and provide assistance to producers to develop nutrient management plans for farm fields 	Ongoing	LCD, DATCP, NRCS, SEWRPC, WDNR

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #5 (continued) Protect and Preserve Land and Water Resources	Support efforts to protect and enhance our forests and woodlots	<ol style="list-style-type: none"> 1) Administer the annual Racine County tree program distributing 30,000+ trees and shrubs each spring 2) Work with the local DNR forester to provide forestry assistance to landowners 3) Continue to support the Woodland Stewardship Program 4) Support the Managed Forest Law Program 	Ongoing	LCD, WDNR
	Implement the County's shoreland/floodplain management program	<ol style="list-style-type: none"> 1) Continue to enforce the county shoreland regulations through review and issuance of 30+ shoreland permits annually 2) Administer existing floodplain maps and encourage mapping of un-modeled areas 3) Administer adopted floodplain zoning regulations and participation in the National Flood Insurance Program to effected municipalities 4) Preserve and protect streams and watercourses impacted by new construction and redevelopment 5) Continue to monitor Lake Michigan shoreline, especially in those reaches with relatively high unprotected bluffs 	Ongoing	LCD, WDNR, County Dev Services, Local Gov'ts
	Assure compliance of the reclamation of non-metallic mining sites	<ol style="list-style-type: none"> 1) Continue to act as the regulatory authority staff administering the Nonmetallic Mining Reclamation NR 135. 2) Approve submitted reclamation plans with a reclamation permit 3) Maintain proof of adequate financial assurance 4) Collect annual fees 5) Submit annual report to WDNR 6) Certify proper reclamation of closed non-metallic mines. 7) Conduct semi-annual compliance inspections of active and reclaimed sites 	Ongoing	LCD, WDNR, County Dev Services

Table 12

RACINE COUNTY WORKPLAN: 2013-2022

Required Activities	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #5 (continued) Protect and Preserve Land and Water Resources	Implement the Shoreland Zoning Ordinance within the impacted municipalities.	<ol style="list-style-type: none"> 1) Continue to review 50+ erosion control plans for new, redevelopment, earth disturbance or relevant activity within the shoreland zone. 2) Continue to encourage the adoption of storm water management and construction site erosion control standards and guidelines for urban, urbanizing, and redeveloping areas as set forth in Chapter NR 151 of the Wisconsin Administrative Code. 3) Work with local governments and towns to develop programs to routinely inspect, remove sediment, and otherwise maintain stormwater detention basins and other facilities. 4) Encourage municipalities and towns to take responsibility for maintenance of major stormwater management systems. 5) Continue to respond to complaints of erosion problems and notify local building inspectors or Development Services Staff of uninstalled or unmaintained erosion control measures. 6) Provide guidance to contractors, developers, and local building inspectors with erosion control issues. 7) Recommend special protection to outstanding and exceptional water resources and environmentally sensitive areas. 	Ongoing	LCD, DNR, Local Gov'ts
	Comply with the Municipal Separate Storm Sewer System (MS4) permit requirements under NR 216 of the <i>Wisconsin Administrative Code</i>	<ol style="list-style-type: none"> 1) Assist in the implementation of the MS4 permit requirements, which include: Public outreach and education, Illicit discharge detection and elimination, Construction site pollution control and prevention. 2) Complete annual MS4 permit report and submit to the DNR. 3) Provide SLAMM reports and updates as needed to show permitted areas, infiltration rates, and the reduction of total suspended solids attributed to stormwater runoff meeting the reduction requirements set forth in Wisconsin Administrative Code NR 216. 	Ongoing	LCD, DNR, Local Gov'ts

NOTES: All goals are of equal priority. Planned Actions with measurable outcomes are indicated in bold.

Agency acronyms used in this table are defined below:

DATCP = Wisconsin Department of Agriculture, Trade and Consumer Protection
 WDNR = Wisconsin Department of Natural Resources
 FSA = USDA Farm Service Agency
 LCD = Racine County Land Conservation Division
 NRCS = USDA Natural Resources Conservation Service
 TSP = Technical Service Provider
 SEWRPC = Southeastern Wisconsin Regional Planning Commission
 USACE = United States Army Corps of Engineers
 USF&W = United States Department of Agriculture–Fish & Wildlife Services
 UWEX = University of Wisconsin–Extension

Table 13

ESTIMATED TOTAL COSTS FOR PLAN IMPLEMENTATION: 2023-2032

Cost Category	2023	2024	2025	2026	2027
Salary and Benefits ^a	\$292,805	\$295,733	\$298,690	\$301,677	\$304,694
Operating Expenses ^a	29,917	30,216	30,518	30,823	31,131
Landowner Cost-Share Hard Practices ^b ..	55,000	55,000	55,000	55,000	55,000
Landowner Cost-Share Soft Practices ^b ...	80,000	80,000	80,000	80,000	80,000
Total Annual Costs	\$457,722	\$460,949	\$464,208	\$467,500	\$470,825

Cost Category	2028	2029	2030	2031	2032	Ten-Year Total Costs
Salary and Benefits ^a	\$307,741	\$310,818	\$313,926	\$317,065	\$320,236	\$3,063,385
Operating Expenses ^a	31,443	31,757	32,075	32,395	32,719	312,994
Landowner Cost-Share Hard Practices ^b ..	55,000	55,000	55,000	55,000	55,000	550,000
Landowner Cost-Share Soft Practices ^b ...	80,000	80,000	80,000	80,000	80,000	800,000
Total Annual Costs	\$474,184	\$477,575	\$481,001	\$484,460	\$487,952	\$4,726,379

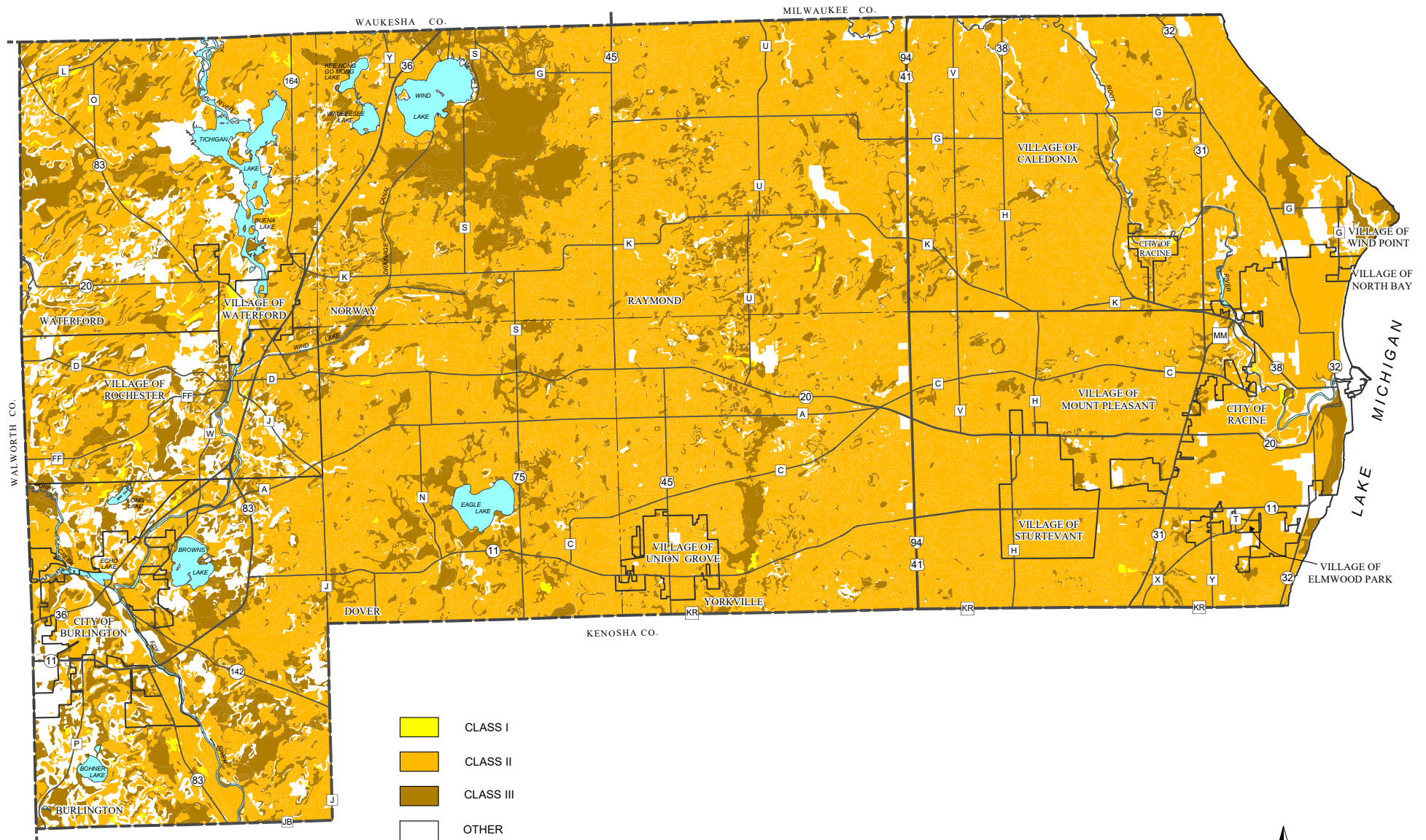
^aAnticipate 1 percent annual increases for salaries, benefits, and operating expenses.

^bThe costs provided by landowners and other grant recipients would be approximately \$405,000

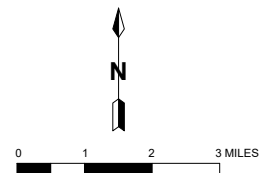
Source: Racine County Land Conservation Division, prepared in 2022 by CES

Map 1

AGRICULTURAL SOIL CAPABILITY IN RACINE COUNTY

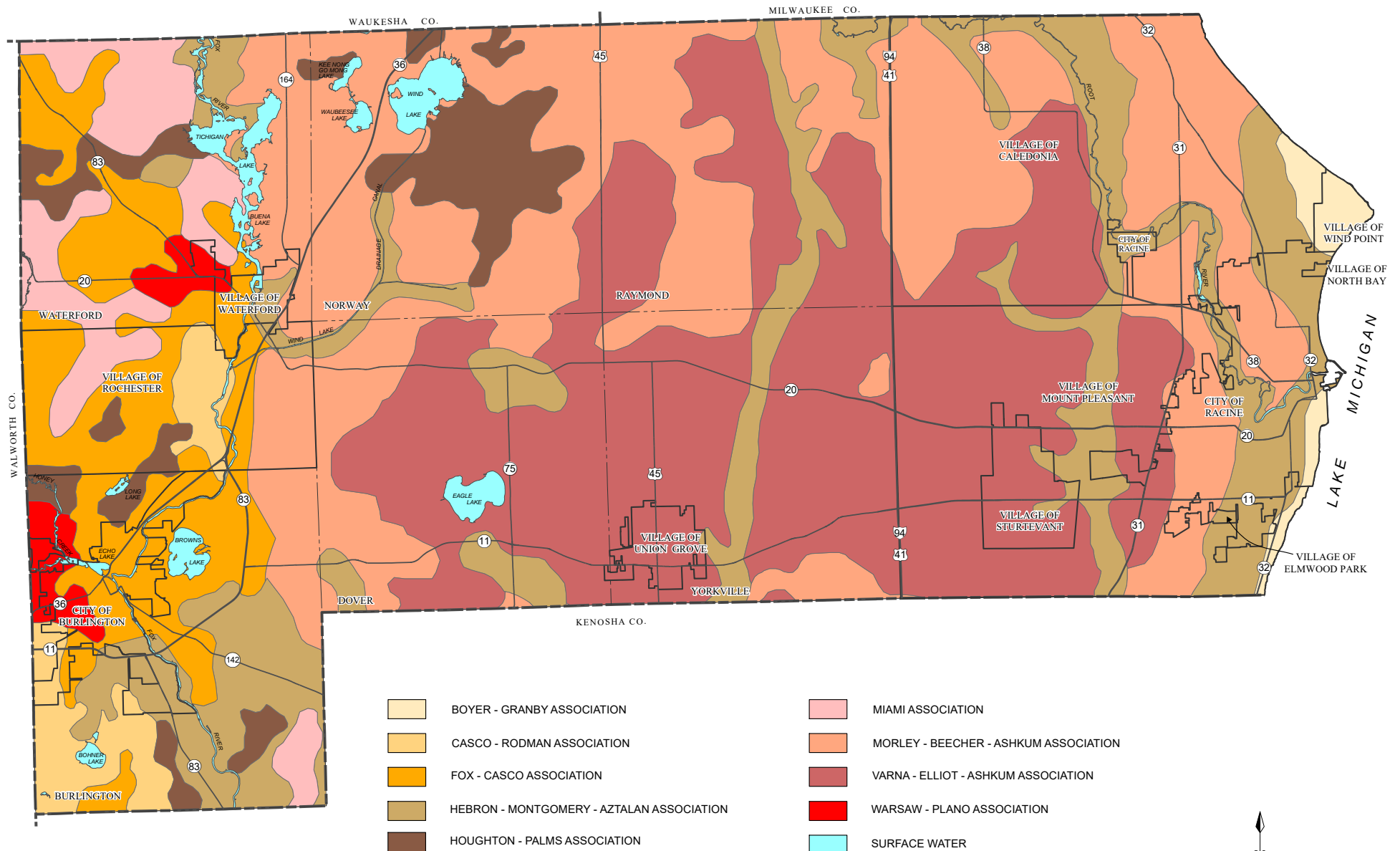


Source: USDA - Natural Resources Conservation Service and SEWRPC.

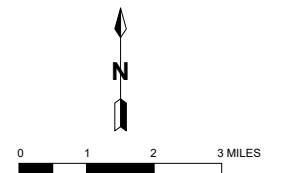


Map 2

GENERAL SOIL ASSOCIATIONS IN RACINE COUNTY

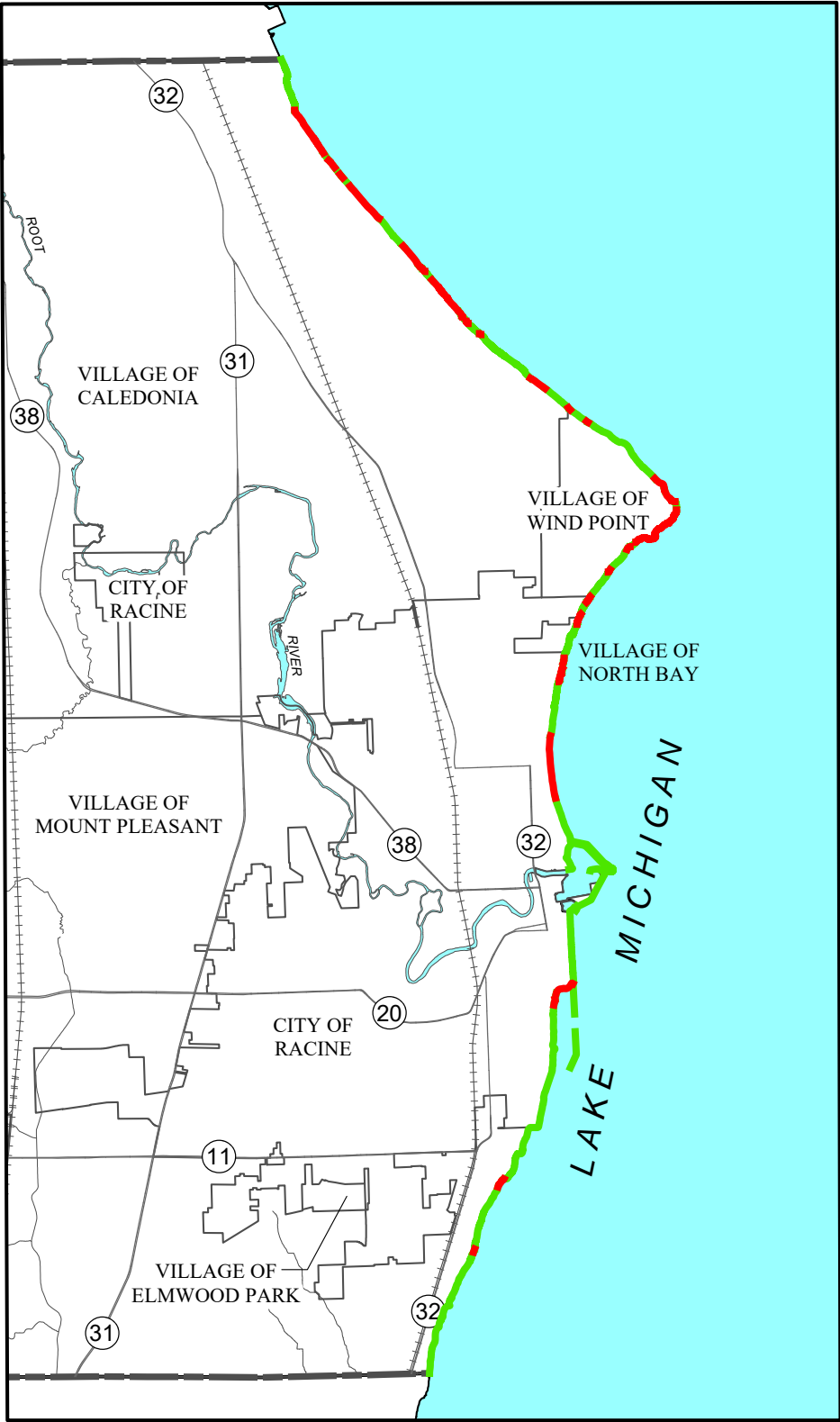


Source: USDA - Natural Resources Conservation Service and SEWRPC.



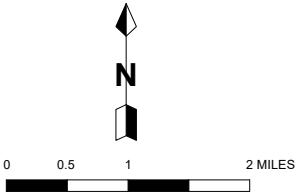
Map 3

LAKE MICHIGAN SHORELINE / EROSION PROTECTION IN RACINE COUNTY: 2015



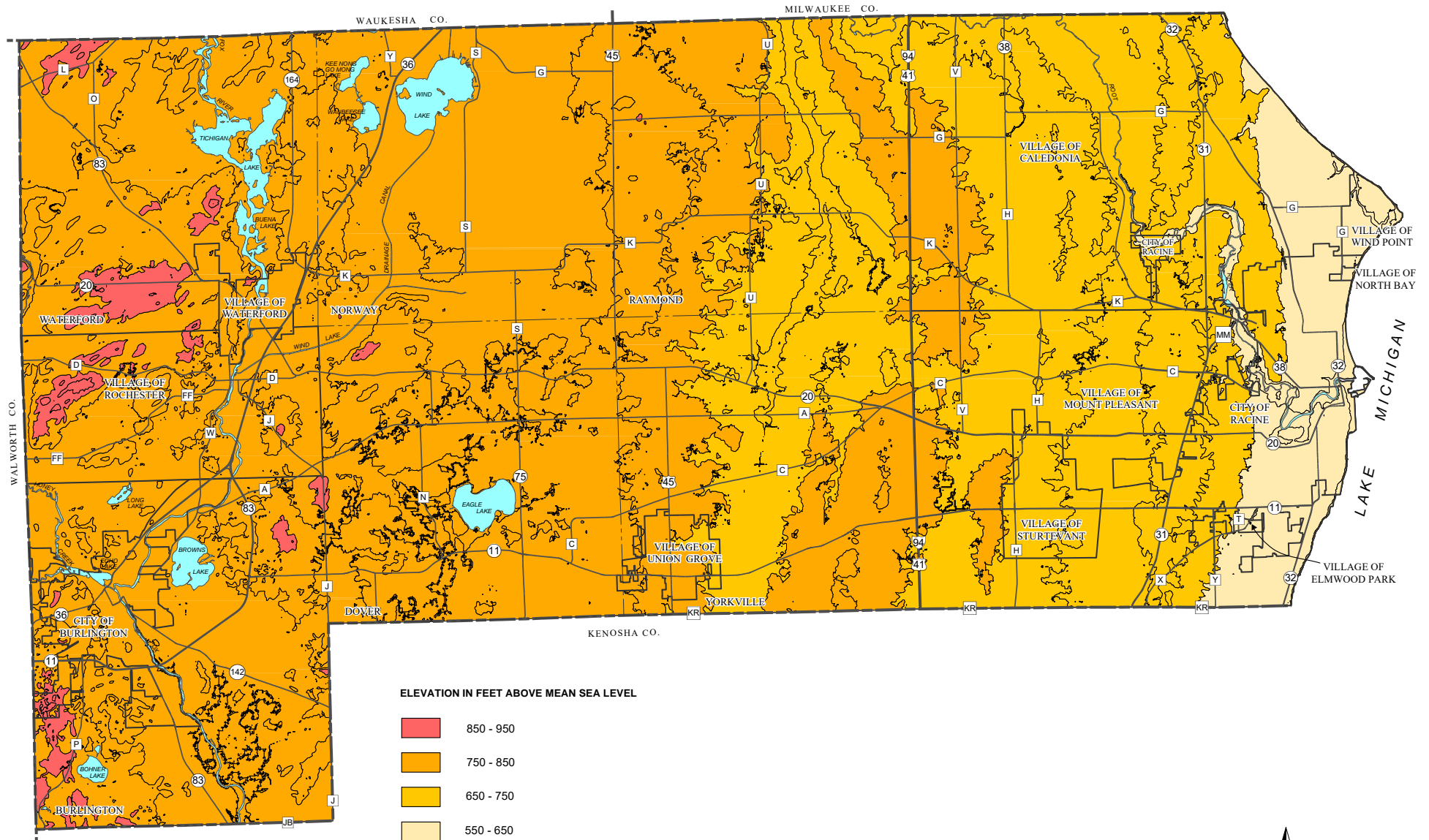
- PROTECTED SHORELINE
- UNPROTECTED SHORELINE

Source: S.D. Mackey, Habitat Solutions, and SEWRPC.

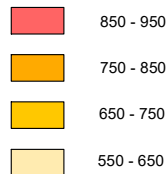


Map 4

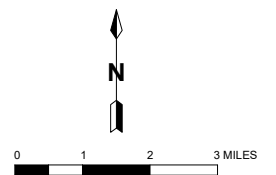
GENERALIZED TOPOGRAPHIC CHARACTERISTICS IN RACINE COUNTY



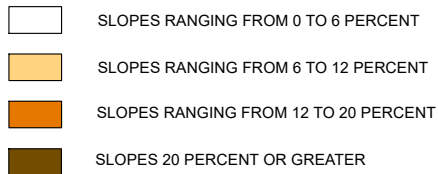
ELEVATION IN FEET ABOVE MEAN SEA LEVEL



Source: U.S. Geological Survey and SEWRPC.

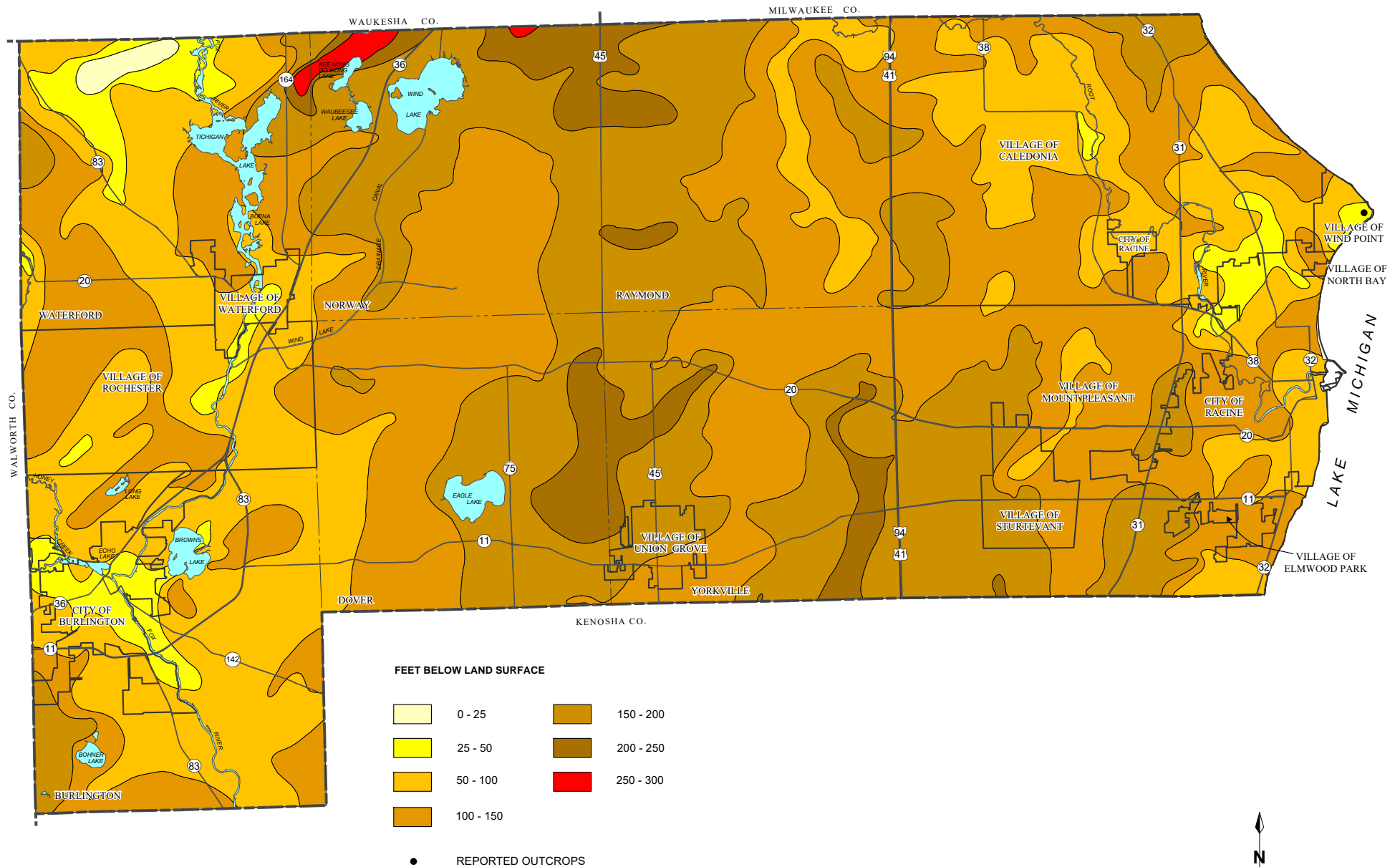


SLOPE ANALYSIS FOR RACINE COUNTY

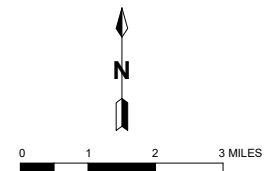


Map 6

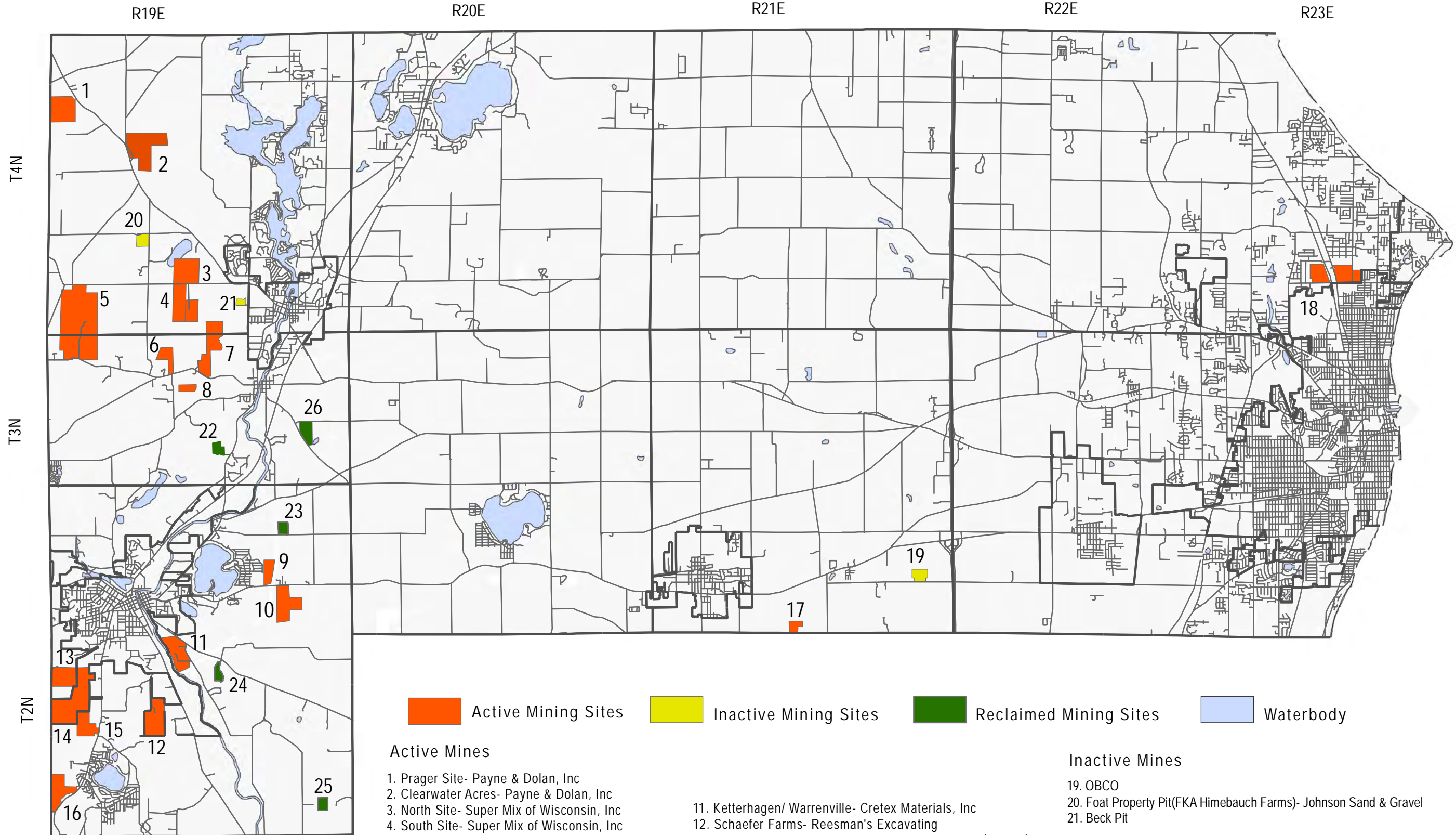
GENERALIZED DEPTH TO BEDROCK IN RACINE COUNTY



Source: University of Wisconsin - Extension, Wisconsin Geological and Natural History Survey, and SEWRPC.



Non- Metallic Mining Sites



Active Mining Sites
 Inactive Mining Sites
 Reclaimed Mining Sites
 Waterbody

Active Mines

1. Prager Site- Payne & Dolan, Inc
2. Clearwater Acres- Payne & Dolan, Inc
3. North Site- Super Mix of Wisconsin, Inc
4. South Site- Super Mix of Wisconsin, Inc
5. Honey Creek- Payne & Dolan, Inc
6. Oakes & Jung, LLC
7. Park View Sand & Gravel, LLC (Epping;Operator)
8. Frost Pit- Racine County
9. Wanasek Corporation
10. Pine Lake Materials-Trenton Ventures (Epping)

11. Ketterhagen/ Warrenville- Cretex Materials, Inc
12. Schaefer Farms- Reesman's Excavating
13. Spring Valley Pit- Burlington Spring Valley, LLC (Epping)
14. Cerami/Nine-T- Cretex materials, Inc
15. Hillside Aggregates- TTT Real Estate, LLC (Epping)
16. Baumeister Pit- Reesman's Excavating
17. Willkomm- Nick Willkomm
18. Racine Quarry- Payne & Dolan, Inc

Inactive Mines

19. OBCO
20. Foat Property Pit(FKA Himebauch Farms)- Johnson Sand & Gravel
21. Beck Pit

Reclaimed Mines

22. Buss & Kramer- Payne & Dolan, Inc
23. Coleman Pit- Thomas E. Coleman
24. Stipe Pit- JW Peters & Sons
25. Cramer Pit- B.R. Amon
26. Kruger Pit- Reesman' Excavating

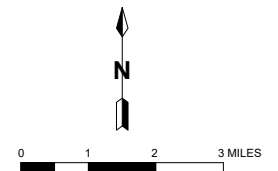
N



1 inch = 2 miles

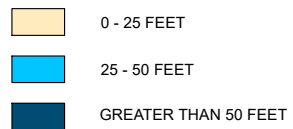
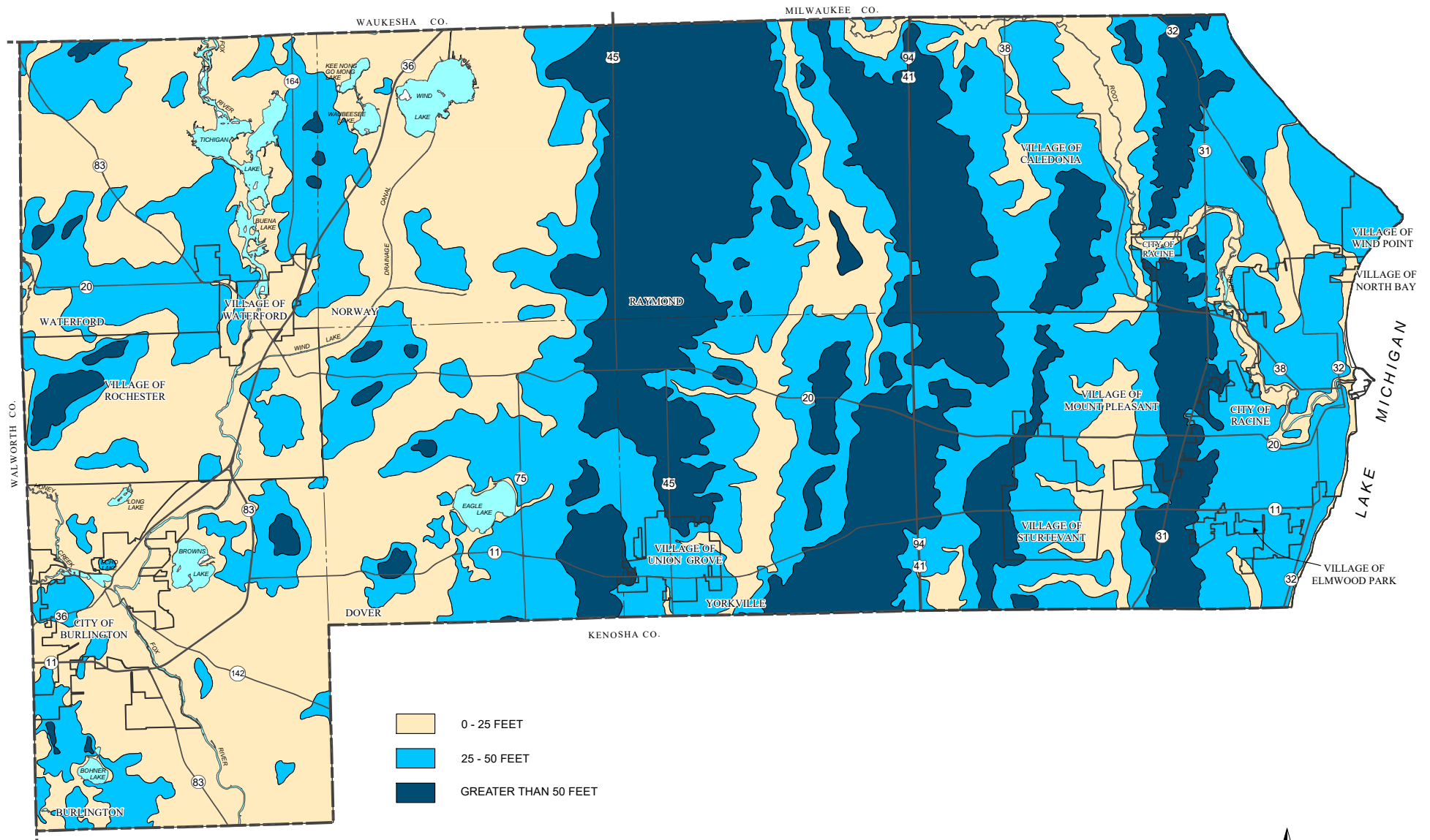
Map by SMR
Revised July 29, 2019
Racine County Development Services

POTENTIAL SOURCES OF SAND, GRAVEL, CLAY, AND PEAT IN RACINE COUNTY

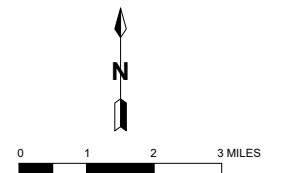


Map 9

DEPTH TO SEASONAL HIGH GROUNDWATER TABLE IN RACINE COUNTY

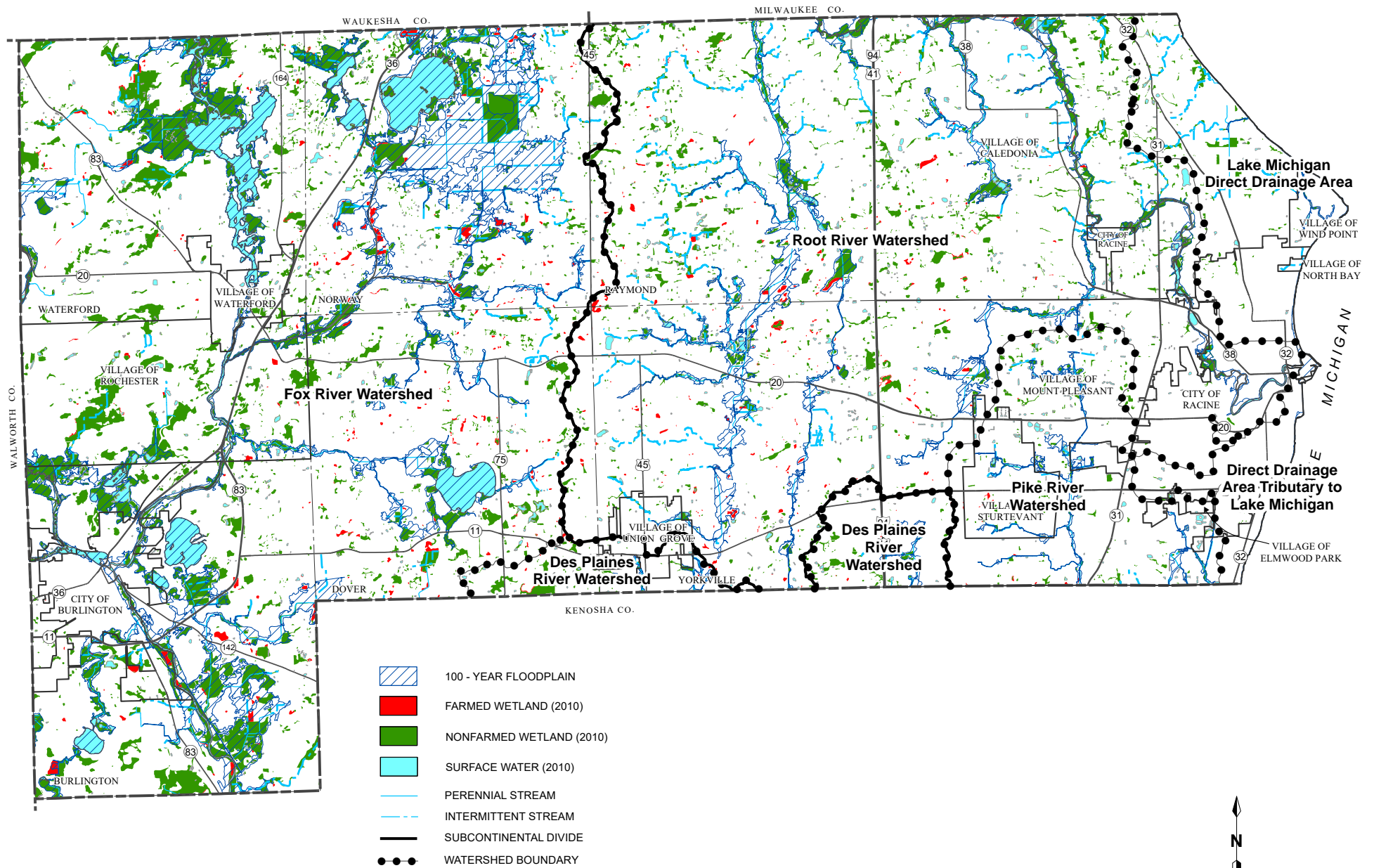


Source: Wisconsin Geological and Natural History Survey and SEWRPC.



Map 10

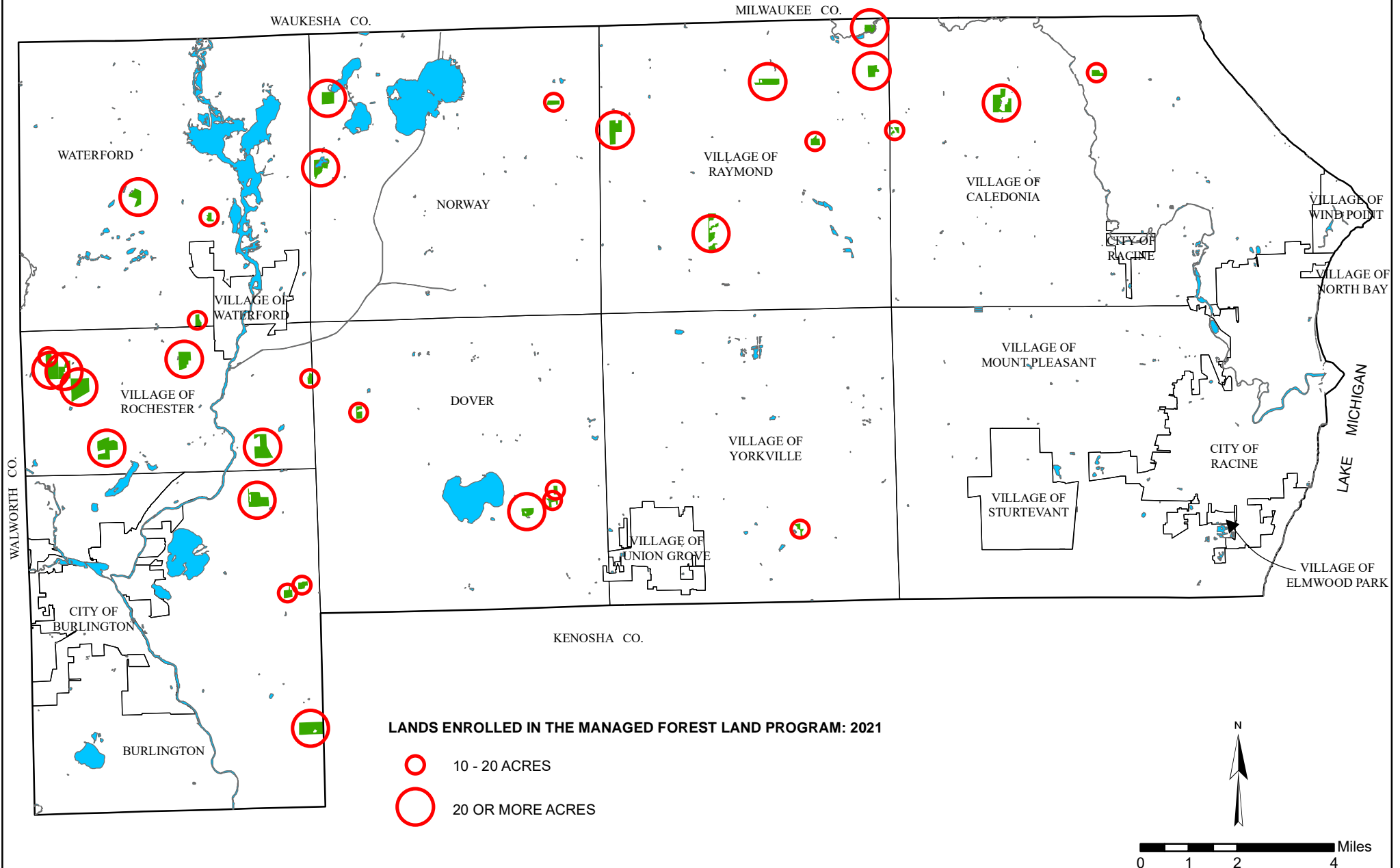
SURFACE WATERS, WETLANDS, AND FLOODPLAINS IN RACINE COUNTY



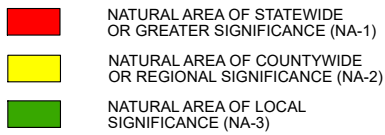
Source: Wisconsin Department of Natural Resources and SEWRPC.

Map 11

MANAGED FOREST LANDS IN RACINE COUNTY

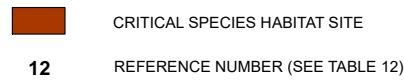


NATURAL AREAS IN RACINE COUNTY: 2009



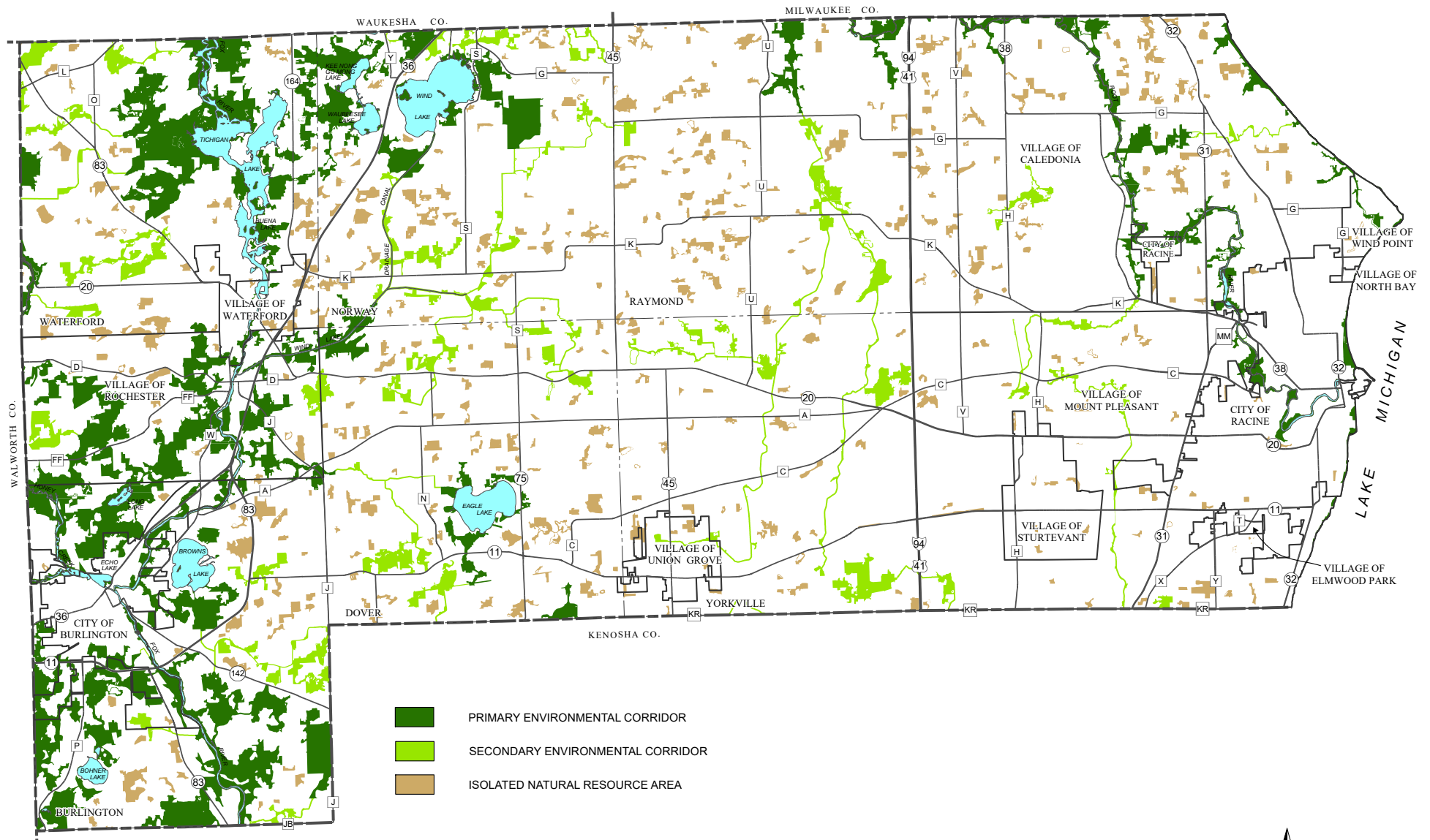
Source: SEWRPC.

CRITICAL SPECIES HABITAT SITES IN RACINE COUNTY: 2009

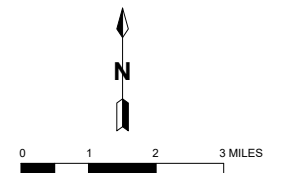


Map 14

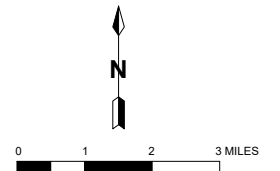
ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN RACINE COUNTY: 2010



Source: SEWRPC.



RACINE COUNTY AND STATE OF WISCONSIN PARK AND OPEN SPACE SITES: 2010



Source: Wisconsin Department of Natural Resources, Racine County, and SEWRPC.



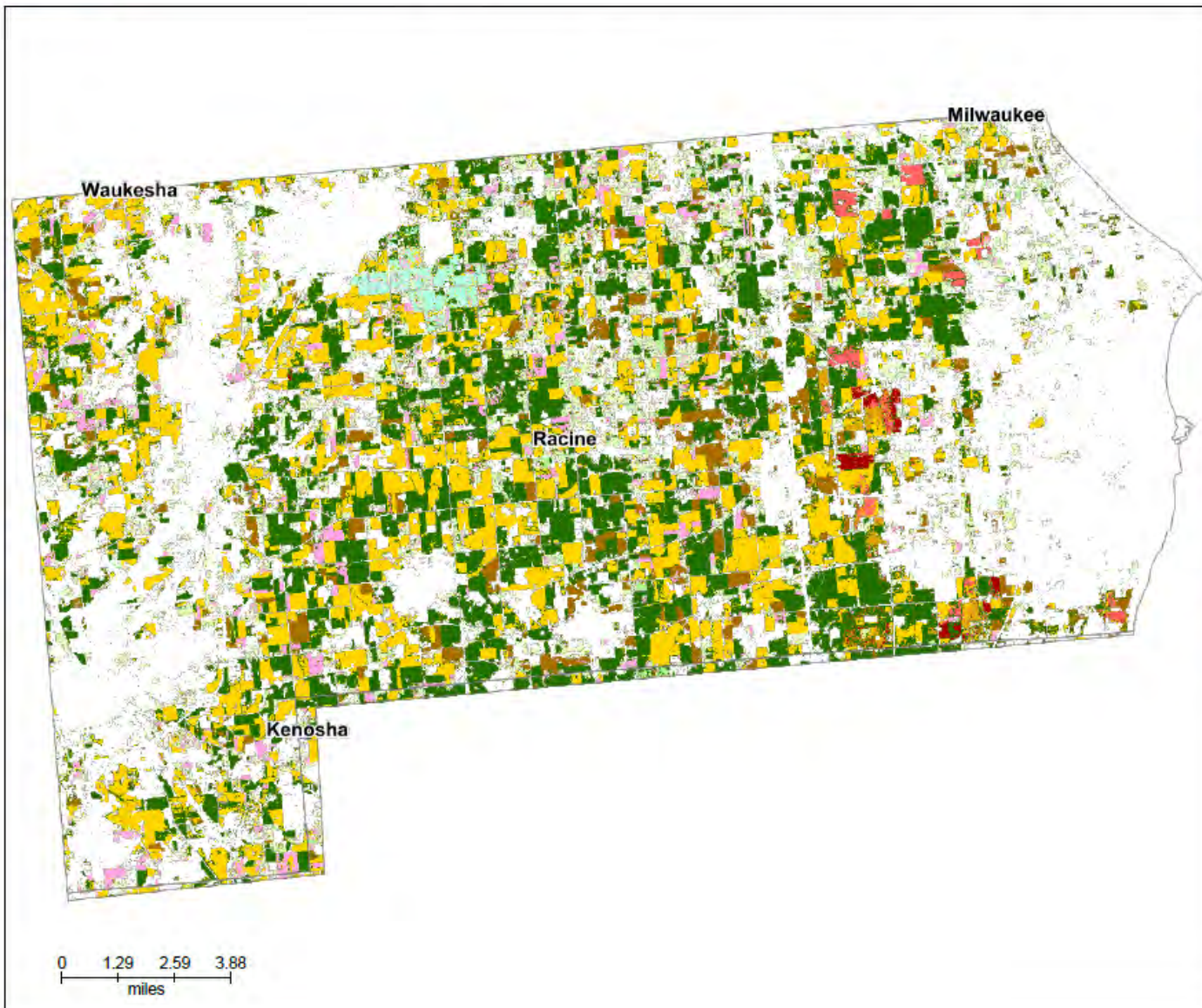
Map 16 CDL2021 CDL, Racine County, Wisconsin



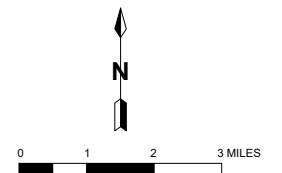
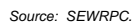
Land Cover Categories
(by decreasing acreage)

AGRICULTURE*

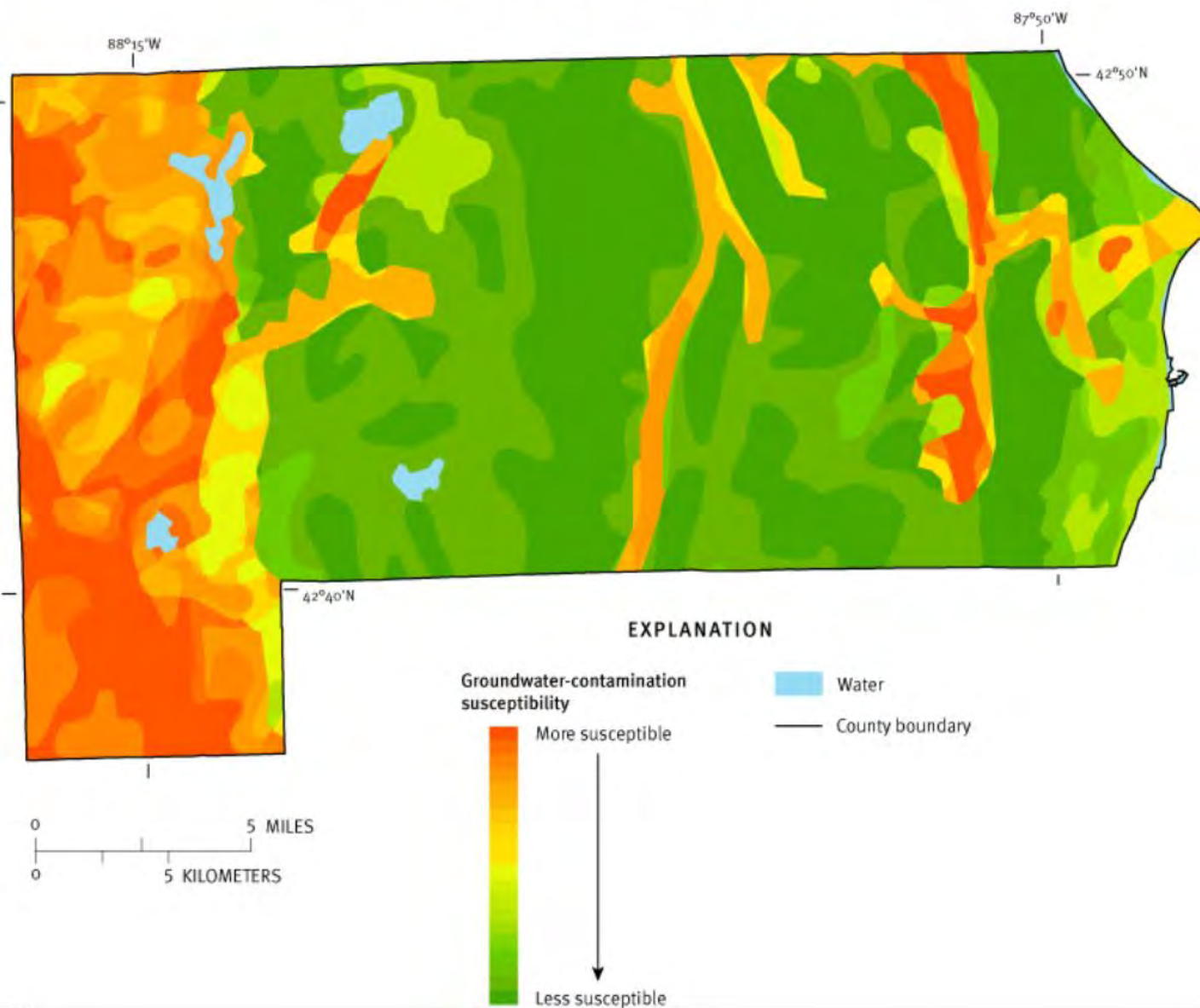
- Soybeans
- Corn
- Grass/Pasture
- Winter Wheat
- Alfalfa
- Other Hay/Non Alfalfa
- Sod/Grass Seed
- Cabbage
- Sweet Corn
- Dry Beans
- Greens
- Pumpkins
- Oats
- Fallow/Idle Cropland
- Rye
- Dbi Crop WinWht/Soybeans



WATERSHED FEATURES IN RACINE COUNTY



Map 18
Racine County – Groundwater-Contamination
Susceptibility Analysis



ACRONYMS

AEA	Agricultural Enterprise Area
AIS	Aquatic Invasive Species
BMP	Best Management Practice
CAC	Citizen Advisory Committee
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSA	Cost Share Agreement
CUP	Conditional Use Permit
DATCP	Department of Agriculture, Trade and Consumer Protection
DNR	Department of Natural Resources
DS	Development Services
ELIA	Eagle Lake Improvement Association
ELMD	Eagle Lake Management District
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentive Program
FPP	Farmland Preservation Program
FSA	USDA Farm Service Agency
GIS	Geographical Information System
I&E	Information and Education
LCC	Land Conservation Committee
LCD	Land Conservation Division
LWCB	Land and Water Conservation Board
LWRMP	Land and Water Resource Management Plan
MFL	Managed Forest Law
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer
NACD	National Association of Conservation Districts
NMP	Nutrient Management Plan
NOD	Notice of Discharge
NPS	Nonpoint Source Pollution
NR-115	State Administrative Code of Wisconsin's Shoreland Protection
NR-135	State Administrative Code of Nonmetallic Mining Reclamation
NR-151	State Administrative Code Establishing Run-off Pollution Performance Standards

NRCS	USDA Natural Resources Conservation Service
PACE	Purchase of Agricultural Conservation Easements
PDR	Purchase of Development Rights
PWDS	Public Works and Development Services
RUSLE2	Revised Universal Soil Loss Equation, Version 2
SEG	Wisconsin Segregated Funds
SEWFRC	Southeastern Wisconsin Fox River Commission
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SWPP	Storm Water Pollution Prevention
SWRM	Soil and Water Resource Management
“T”	Tolerable Soil Loss Rate
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
UNPS	Urban Nonpoint Source
USDA	United States Department of Agriculture
USGS	United States Geological Society
USFWS	United States Fish and Wildlife Service
UWEX	University of Wisconsin-Extension
WDACP	Wildlife Damage Abatement & Claims Program
WDNR	Wisconsin Department of Natural Resources
WLI	Working Lands Initiative
WQMA	Water Quality Management Area
WRP	Wetland Reserve Program
WWMD	Waterford Waterway Management District

July 14, 2021

Dear Citizen's Advisory Committee Member:

We are pleased to invite you to serve as a member of the Citizen's Advisory Committee. The Committee will assist in preparation of the 3rd Revision of the Racine County Land & Water Resource Management Plan (LWRMP). The LWRMP is instrumental to the protection and improvement of the natural resource base of Racine County. As we continue to meet our goals from previous plans, new resource challenges continue to arise. Your assistance in identifying local land and water resource concerns will establish a strong, effective plan for the next ten years.

The plan will greatly benefit from your involvement. We hope this will be a rewarding experience as the information exchanged during plan development will not only improve our planning, but also broaden your experience with environmental conservation.

The attached survey contains a list of environmental concerns within Racine County. Please fill out the survey and email (or mail) it to Chad prior to August 12, 2021, as this information will be used to prioritize concerns in our first meeting.

Secondly, I have attached a list of the Citizen Advisory Committee members for your information.

Finally, the first meeting will be on August 18th from 10 a.m. – 11:30 a.m. You will receive an agenda and materials about three weeks prior to the meeting.

Thank you for your participation.



Monte Osterman, Chair



Chad Sampson, Secretary

Rate the Land and Water Resource Issues in Racine County – 2021

5 = Serious Environmental Issue and Needs Immediate Attention!

4 = An Environmental Concern and Needs Attention Sooner than Later.

3 = Somewhat of an Issue and May Need Attention.

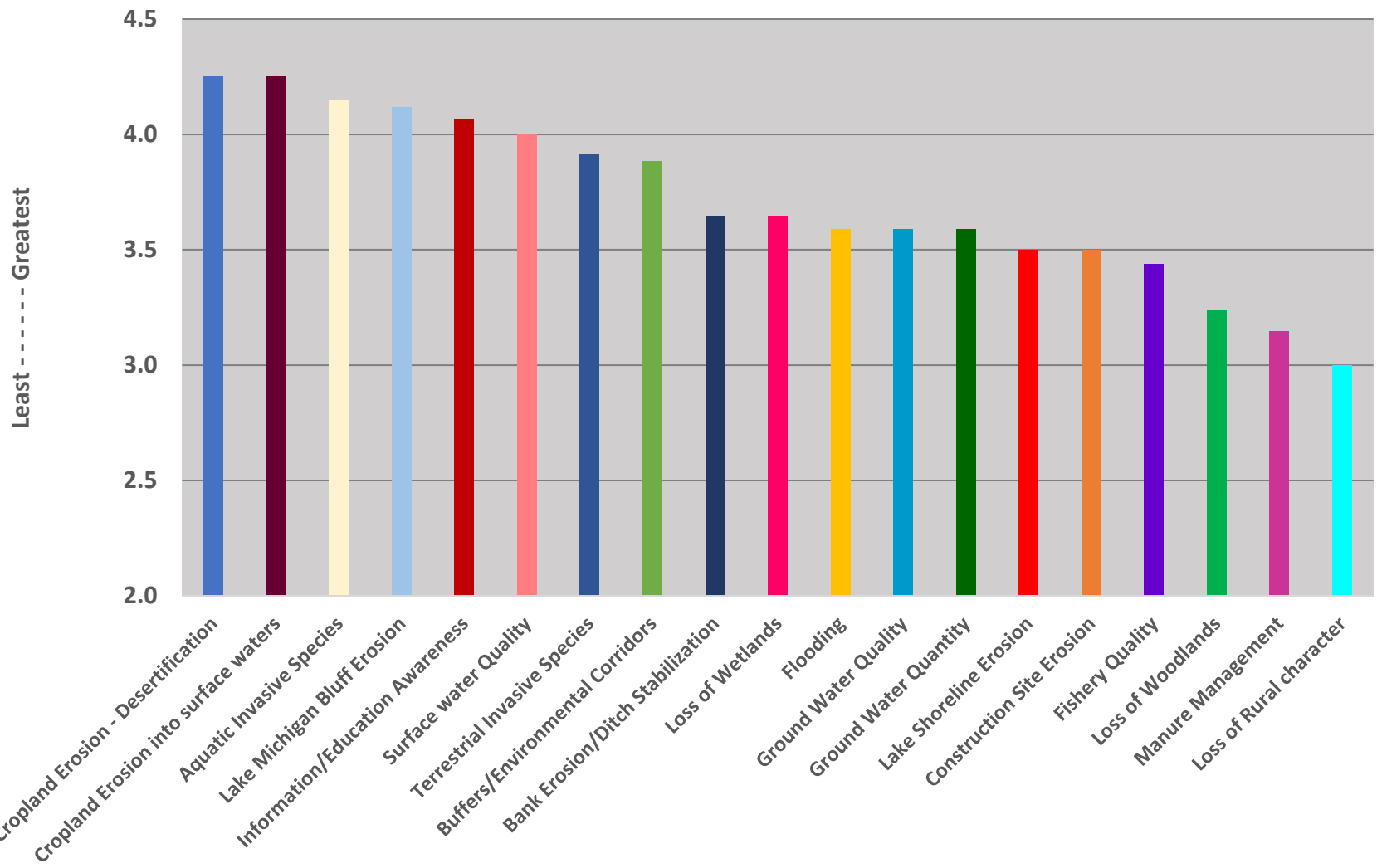
2 = Not Much of an Issue and May Need Attention in the Distant Future.

1 = Not an Environmental Concern.

Please Rate Each Category as you see fit in Racine County

- _____ Surface Water Quality for swimming, fishing, recreating (Lakes, Rivers, Streams)
- _____ Ground Water Quality (For Safe Drinking Water)
- _____ Ground Water Quantity (Long Term Sustainability)
- _____ Flooding due to Large Storm events
- _____ Lake Michigan Bluff Erosion
- _____ Cropland Erosion (Deteriorating Soils, Not Sustainable, Desertification)
- _____ Cropland Erosion (Eroding Soils entering our Surface Waters, Wetlands)
- _____ Construction Site Erosion Control (Eroding to Storm Sewers, Surface Waters, Wetlands)
- _____ Terrestrial Non-Native Invasive Species (Buckthorn, Wild Parsnip, Garlic Mustard, etc)
- _____ Aquatic Non-Native Invasive Species (Blue-Green Algae, Starry Stonewort, etc)
- _____ Streambank and Ditch Bank erosion
- _____ Shoreline Erosion on Lakes
- _____ Loss of Rural Character (Loss of Farms, Farmland to Urban Development)
- _____ Animal Waste Storage and Spreading (Manure Management)
- _____ Loss of Woodlands
- _____ Loss of Wetlands
- _____ Fishery Quality (in Lakes and Rivers)
- _____ Need for Buffers and Environmental Corridors need along Rivers, Streams, etc.
- _____ Need for General Public Education about the Environment
- _____ Add any comments and rate _____

2021 Citizen Advisory Committee
Land & Water Resource Concerns



Conservation Practices

<u>ATCP 50.61</u>	General standards for cost-shared practices; pre-approval of cost-shared practices.
<u>ATCP 50.62</u>	Manure storage systems.
<u>ATCP 50.63</u>	Manure storage system closure.
<u>ATCP 50.64</u>	Barnyard runoff control systems.
<u>ATCP 50.65</u>	Access road.
<u>ATCP 50.66</u>	Trails and walkways.
<u>ATCP 50.67</u>	Contour farming.
<u>ATCP 50.68</u>	Cover crop.
<u>ATCP 50.69</u>	Critical area stabilization.
<u>ATCP 50.70</u>	Diversions.
<u>ATCP 50.705</u>	Feed storage runoff control systems.
<u>ATCP 50.71</u>	Field windbreaks.
<u>ATCP 50.72</u>	Filter strips.
<u>ATCP 50.73</u>	Grade stabilization structures.
<u>ATCP 50.75</u>	Livestock fencing.
<u>ATCP 50.76</u>	Livestock watering facilities.
<u>ATCP 50.77</u>	Milking center waste control systems.
<u>ATCP 50.78</u>	Nutrient management.
<u>ATCP 50.79</u>	Pesticide management.
<u>ATCP 50.80</u>	Prescribed grazing.
<u>ATCP 50.81</u>	Relocating or abandoning animal feeding operations.
<u>ATCP 50.82</u>	Residue management.
<u>ATCP 50.83</u>	Riparian buffers.
<u>ATCP 50.84</u>	Roofs.
<u>ATCP 50.85</u>	Roof runoff systems.
<u>ATCP 50.86</u>	Sediment basins.
<u>ATCP 50.87</u>	Sinkhole treatment.
<u>ATCP 50.88</u>	Streambank or shoreline protection.
<u>ATCP 50.885</u>	Stream Crossing.
<u>ATCP 50.89</u>	Stripcropping.
<u>ATCP 50.90</u>	Subsurface drains.
<u>ATCP 50.91</u>	Terrace systems.
<u>ATCP 50.92</u>	Underground outlets.
<u>ATCP 50.93</u>	Waste transfer systems.
<u>ATCP 50.94</u>	Wastewater treatment strips.
<u>ATCP 50.95</u>	Water and sediment control basins.
<u>ATCP 50.96</u>	Waterway systems.
<u>ATCP 50.97</u>	Well decommissioning.
<u>ATCP 50.98</u>	Wetland development or restoration.

Racine County Impaired Waters – 2022

Official Name(Click for Details)	Local Name(Click for Map)	Water Type	Counties	Start Mile	End Mile	Pollutant	Impairment	Status	Priority
Des Plaines River	Des Plaines River	River	Kenosha, Racine	0.00	23.44	Total Phosphorus	Impairment Unknown	TMDL Development	High
Eagle Creek	Eagle Creek (Eagle Lake Outlet)	River	Racine	0.00	7.50	Total Phosphorus	Impairment Unknown	303d Listed	High
Eagle Lake	Eagle Lake	Lake	Racine			Total Phosphorus	Excess Algal Growth, Eutrophication	TMDL Development	High
Fox River	Fox River (Illinois)	River	Kenosha, Racine, Waukesha	47.17	85.23	Total Phosphorus	Degraded Biological Community	TMDL Development	High
Fox River	Fox River (Illinois)	River	Kenosha, Racine, Waukesha	47.17	85.23	PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Hoods Creek	Hoods Creek	River	Racine	0.00	9.70	Unknown Pollutant	Degraded Biological Community	303d Listed	Low
Husher Creek	Husher Creek (Hoosier)	River	Racine	0.00	3.40	Total Phosphorus	Degraded Biological Community	303d Listed	Medium
Kilbourn Road Ditch	Kilbourn Road Ditch	River	Kenosha, Racine	0.00	14.30	Chloride	Chronic Aquatic Toxicity	303d Listed	Low
Lake Michigan	Michigan Boulevard Beach, Lake Michigan	Great Lakes Beach	Racine	0.00	0.18	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low

Official Name(Click for Details)	Local Name(Click for Map)	Water Type	Counties	Start Mile	End Mile	Pollutant	Impairment	Status	Priority
Lake Michigan	Shoop Park Beach, Lake Michigan	Great Lakes Beach	Racine	0.00	0.09	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low
Lake Michigan	Wind Point Lighthouse Beach	Great Lakes Beach	Racine	0.00	0.08	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low
Lake Michigan	Lake Michigan	Great Lakes Shoreline	Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan	0.00	261.05	Mercury	Mercury Contaminated Fish Tissue	303d Listed	Low
Lake Michigan	Lake Michigan	Great Lakes Shoreline	Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan	0.00	261.05	PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Lake Michigan	Myers Park Beach, Lake Michigan	Great Lakes Beach	Racine	0.00	0.04	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low
North Branch Pike River	North Branch Of Pike River	River	Kenosha, Racine	0.00	5.23	Unknown Pollutant	Chronic Aquatic Toxicity	303d Listed	Low
North Branch Pike River	North Branch Of Pike River	River	Kenosha, Racine	0.00	5.23	Sediment/Total Suspended Solids	Degraded Habitat	303d Listed	Low

Official Name(Click for Details)	Local Name(Click for Map)	Water Type	Counties	Start Mile	End Mile	Pollutant	Impairment	Status	Priority
North Branch Pike River	North Branch Pike River	River	Racine	5.23	7.87	Chloride	Chronic Aquatic Toxicity	303d Listed	Low
Racine Harbor	Racine Harbor	Bay/Harbour	Racine			Unspecified Metals	Chronic Aquatic Toxicity	303d Listed	Low
Root River	Root River	River	Racine	0.00	5.82	Total Phosphorus	Impairment Unknown	303d Listed	Medium
Root River	Root River	River	Milwaukee, Racine	5.82	20.48	Total Phosphorus	Degraded Biological Community	303d Listed	Medium
Root River	Root River	River	Milwaukee, Racine	20.48	25.80	Sediment/Total Suspended Solids	Low DO	303d Listed	Medium
Root River	Root River	River	Milwaukee, Racine	20.48	25.80	Total Phosphorus	Degraded Biological Community, Low DO	303d Listed	Medium
Root River	Root River	River	Racine	0.00	5.82	PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Root River	Root River	River	Milwaukee, Racine	5.82	20.48	Chloride	Chronic Aquatic Toxicity	303d Listed	Low
Root River Canal	Root River Canal	River	Milwaukee, Racine	0.00	5.72	Sediment/Total Suspended Solids	Low DO	303d Listed	Medium

Official Name(Click for Details)	Local Name(Click for Map)	Water Type	Counties	Start Mile	End Mile	Pollutant	Impairment	Status	Priority
Root River Canal	Root River Canal	River	Milwaukee, Racine	0.00	5.72	Total Phosphorus	Low DO	303d Listed	Medium
Tichigan Lake	Tichigan Lake	Lake	Racine			Total Phosphorus	Impairment Unknown	TMDL Development	High
Tichigan Lake	Tichigan Lake	Lake	Racine			PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Unnamed	Waxdale Creek	River	Racine	0.00	2.91	Unknown Pollutant	NA	Pollutant Removed	Delisted 2008
Unnamed	Unnamed	River	Milwaukee, Racine	0.00	2.92	Total Phosphorus	Impairment Unknown	303d Listed	Medium
Unnamed	Local Water	River	Racine	0.00	4.34	Total Phosphorus	High Phosphorus Levels	303d Listed	Medium
Unnamed	Unnamed Trib to W Br Root River Canal	River	Racine	0.00	3.90	Total Phosphorus	Impairment Unknown	303d Listed	Medium
Unnamed	Waxdale Creek	River	Racine	0.00	2.91	Sediment/Total Suspended Solids	Degraded Habitat	303d Listed	Low
Unnamed	Local Water	River	Racine	0.00	0.58	Chloride	Chronic Aquatic Toxicity	303d Listed	Low
Unnamed	Perennial Stream E (B5)	River	Racine, Walworth	0.00	2.66	Sediment/Total Suspended Solids	Elevated Water Temperature	TMDL Approved	Not Applicable

Official Name(Click for Details)	Local Name(Click for Map)	Water Type	Counties	Start Mile	End Mile	Pollutant	Impairment	Status	Priority
Waubeesee Lake	Waubeesee Lake	Lake	Racine			Total Phosphorus	Impairment Unknown	Water Delisted	Delisted 2018
West Branch Root River Canal	West Branch Root River Canal	River	Racine	0.00	4.43	Sediment/Total Suspended Solids	Low DO	303d Listed	Medium
West Branch Root River Canal	West Branch Root River Canal	River	Racine	0.00	4.43	Total Phosphorus	Low DO	303d Listed	Medium
White River	White River	River	Racine, Walworth	0.00	15.45	Total Phosphorus	Impairment Unknown	TMDL Development	High
Wind Lake	Wind Lake	Lake	Racine			Total Phosphorus	Low DO, Excess Algal Growth	TMDL Development	High

Source: Wisconsin DNR - <https://dnr.wi.gov/water/impairedSearch.aspx>

Notice of Public Hearing
Racine County Economic Development and Land Use Planning Committee Hearing
Monday, August 15, 2022 at 6:00 p.m.
Ives Grove Complex, Auditorium
14200 Washington Avenue
Sturtevant, WI 53177

Notice is hereby given that on Monday, August 15, 2022 starting at 6:00 PM, the Racine County Economic Development and Land Use Planning Committee will conduct a public hearing on the update (4th edition) to the Racine County Land and Water Resource Management Plan (LWRMP). This ten-year plan is used as a guide for the Land & Water Conservation Division in carrying out their duties related to land and water resource protection in Racine County. Adoption of the plan will also help the county qualify for future state and federal grants. The public hearing will be held at the Ives Grove Complex, Auditorium 14200 Washington Avenue, Sturtevant, WI 53177

The Racine County Land and Water Resource Management Plan may be viewed online at <https://racinecounty.com/departments/public-works-and-development-services/land-conservation/programs>. A hard copy may be viewed at the Ives Grove Complex. For additional information regarding this hearing, please contact Chad Sampson of the Racine County Land and Water Conservation Division at 262-886-8440. All interested parties will be heard.

Publication Dates: August 3rd and August 8th, 2022 – in the Racine Journal Times.

RACINE COUNTY LAND CONSERVATION
14200 Washington Avenue
Sturtevant, Wisconsin 53177-1253
Phone: 262-886-8440 Fax: 262-886-8480

RACINE COUNTY LAND AND WATER CONSERVATION COMMITTEE

Also Known As A Subcommittee of

THE RACINE COUNTY ECONOMIC DEVELOPMENT AND LAND USE PLANNING COMMITTEE

This meeting will be held in the Ives Grove Auditorium

Attendance: M. Osterman ____ T. Hincz ____ J. Eckman ____ R. Grove ____
T. Wishau ____ O. White ____ T. Rutkowski ____ T. Greil ____
G. Horeth ____

Youth in Governance: R. Liberto ____ C. Letsch ____

Monday, 6:00 p.m., August 1, 2022

AGENDA

1. Roll Call
2. Review, discussion, and possible approval of the July 11, 2022, summary minutes.
3. Review, discussion, and possible approval of the 2023 – 2032 Racine County Land and Water Resource Management Plan.
4. Review, discussion, and possible approval of waiver language to be included in a form signed at field day's and other conservation events.
5. Information only: WI Land & Water Conservation Association update.
6. Information only: National Association of Conservation Districts update.
7. Information only: Conservation Reserve Enhancement Program (CREP) informational video.
8. Information only: Update from the Watershed Protection Committee of Racine County (WPCR).
9. Information only: Conservation projects installed.
10. Committee Member Projects update.
11. Information only: USDA Reports.
12. Other business as authorized by law.
13. Adjournment.