Chapter I

INTRODUCTION AND PLAN DEVELOPMENT PROCESS

OVERVIEW OF STUDY AREA

Racine County is located in southeastern Wisconsin, and is 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, nine villages, and six 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.

The 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, Browns Lake, and Bohners 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. There also remains significant farm acreage devoted to cabbage 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.

Although the housing market has slowed in recent years, Racine County will face significant urban growth and development, and faces the challenge of balancing this growth in conjunction with protecting and maintaining its natural resources. 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.

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. 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. This plan will be the 2nd 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 Conservation Committee (LCC). The agencies that were involved include the Racine County Land Conservation Division, the Southeastern Wisconsin Regional Planning Commission, the Wisconsin Department of Natural Resources, the University of Wisconsin-Extension Service, and the U.S. Department of Agriculture Natural Resources Conservation Service. The plan was developed under the guidance of the Racine County Land and Water Resource Management Plan Citizen Advisory Committee, 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 Advisory Committee, the plan development process included the following steps:

The 2nd revision to the Racine County Land and Water Resource Management Plan began in April of 2012 with selecting members for an Advisory Committee. The Advisory Committee meetings were held on May 23 and August 8, 2012. The Committee reviewed each chapter of the plan in draft form and provided comments and recommendations. The Committee was advised to focus on a 10-year period to analyze resource needs, forecast applicable trends, and identify existing as well as anticipated changes over the next ten years. This information was analyzed, assessments were made and incorporated in the final plan. On August 20, 2012, the County Land Conservation 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. This plan was approved by the LWRMP Advisory Committee on August 8, 2012, the Racine County Land Conservation Committee and the Racine County Economic Development and Land Use Planning Committee on August 20, 2012 and the Racine County Board of Supervisors on October 16, 2012, with final approval by the Wisconsin Land and Water Conservation Board on October 2, 2012.

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 watershedwide 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 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, 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 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 ADVISORY COMMITTEE MEMBERS AND SUPPORTING STAFF

Name	Title and Affiliation
Committee Members:	
Robert Grove, Chairman	Racine County Board Supervisor, Farmer
Ralph Rice	Chairman, Town of Burlington, Farmer
Rick Isaacson	Supervisor, Town of Burlington
Jeff Lang	Supervisor, Town of Burlington (alternate)
Harold Ranke	Supervisor, Town of Waterford, Farmer
Thomas Griel	Town of Waterford, Farmer
Keith Jacobson	President, Racine County Farm Bureau, Farmer
Kim Iczkowski	Executive Director, USDA Farm Service Agency
Michelle Lehner	Wisconsin Department of Natural Resources
Rose Skora	Agricultural Agent, UW Extension
Brandi Richter	District Conservationist, USDA Natural Resources Conservation Service
Dave Smerchek	Member, UW Extension Committee, Farmer
Staff:	
Julie Anderson	Director of Racine County Public Works and Development Services
Brian Jensen	Superintendent of Racine County Development Services
Chad Sampson	County Conservationist, Racine County Land Conservation Division
Dave Schilling	Principal Planner, Southeast Wisconsin Regional Planning Commission

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 forms so rough, shallow, or otherwise limited that they do not produce economically worthwhile yields of crops, forage, or wood products. 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 currently being updated in

2012. 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 255 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 50 square miles of other, or Class III, soils that are valuable to agriculture but require more intensive management. About 25 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). The soil capability by class are shown on Map 3.

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

[a]Slope classes that are greater than 6 percent, are considered highly erodible lands according the U.S. Natural Resources Conservation Service, provided that those lands exceed one-third of the farm field.

Source: U.S. Natural Resources Conservation Service and SEWRPC.

SOILS

Soil properties exert a strong influence on the manner in which the 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 means by which soils are currently being used and should best be used and managed over time.

A detailed, areawide soil survey was conducted by the U.S. 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, and to the construction of roads and highways, airports, and railroads.

General Soil Associations

There are nine soil associations in Racine County as shown on Map 1. 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

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

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

used for comparing suitability of relatively large areas for various land uses. However, for specific applications, the aforementioned detailed soil survey information should be relied upon, as well as onsite field data for confirmation purposes. Soils as a whole are very diverse and non-uniform, therefore making it necessary to verify what is actually 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 in Map 1.

Existing Farmland

The Regional Planning Commission's land use inventory indicates that agricultural land encompassed about 125,100 acres (195.5 square miles), or 57 percent of the Racine County planning area, in 2000. This figure includes cultivated land, pasture land, land used for horticulture and nurseries, and land occupied by farm buildings; it excludes wetland and woodland areas on existing farm units.

Table 2

AGRICULTURAL LAND IN RACINE COUNTY BY CIVIL DIVISION: 2000

Civil Division	Agricultural Land (Acres)	Percent of Civil Division Area
Cities		
Burlington	732	16.0
Racine	25	0.2
Villages		
Caledonia	15,726	53.9
Elmwood Park	0	0.0
Mt. Pleasant	12,043	55.5
North Bay	0	0.0
Rochester	49	14.3
Sturtevant	1,131	42.0
Union Grove	371	28.9
Waterford	352	21.8
Wind Point	11	1.3
Towns		
Burlington	11,381	51.0
Dover	17,501	75.6
Norway	14,267	62.5
Raymond	16,875	73.8
Rochester	5,707	52.0
Waterford	12,127	56.3
Yorkville	16,887	77.1
Total	125,185	57.4

Source: SEWRPC

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 Federal 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 652 farms and 97,528 acres harvested in Racine County in 2007. Table 3 indicates the breakdown of the farm size and acres harvested.

Table 3

FARM SIZE IN RACINE COUNTY, THE SOUTHEASTERN WISCONSIN REGION, AND THE STATE OF WISCONSIN: 2007

Size (acres)	Racine County		Southeastern Wisconsin Region*		Wisconsin	
	Number	Percent	Number	Percent	Number	Percent
Less than 10 Acres……	68	10.4	538	12.7	4,861	6.2
10 to 49 Acres……	282	43.3	1531	36.2	19,895	25.4
50 to 179 Acres……	173	26.5	1241	29.4	29,765	37.9
180 to 499 Acres……	80	12.3	601	14.2	17,837	22.7
500 to 999 Acres……	27	4.1	188	4.4	4,149	5.3
1,000 Acres or more…….	22	3.4	128	3.0	1,956	2.5
Total	652	100.0	4,227	100	78,463	100

Source: USDA National Agricultural Statistics Service (2007 Census of Agriculture) and SEWRPC.
** Southeastern Wisconsin Region includes Kenosha, Milwaukee, Racine, Ozaukee, Walworth, Washington, and Waukesha counties.*

Table 4

AGRICULTURAL SECTORS IN RACINE COUNTY AND THE STATE OF WISCONSIN BY PRODUCT SALES: 2007

Sector	Racine County		State	
	Sales (in thousands $)	Percent of Total Agricultural Revenues	Sales (in thousands $)	Percent of Total Agricultural Revenues
Dairy……..	_ _ a	N/A	4,573,294	51.0
Cattle and Calves……...	_ _ a	N/A	1,014,553	11.3
Grains (crops)…….	33,938	33.3	1,643,341	18.3
Vegetables……...	_ _ a	N/A	422,639	4.7
Horticulture……..	15,304	15.0	381,698	4.3
Other…….	N/A	N/A	931,833	10.4
Total	101,923[b]	100	8,967,358	100

[a]*Data was withheld to avoid disclosing for individual farms.*
[b]*Undisclosed data included in total.*
Source: U.S. Census Bureau and USDA National Agricultural Statistics Service.

Table 5

TRENDS IN SELECTED CROP HARVEST IN RACINE COUNTY: 1975-2007

Year	Acres Harvested					
	Corn for Grain	Corn for Silage	Soybeans	Wheat	Hay (dry)	Oats
1975	30,400	7,800	22,300	9,100	15,000	6,800
1980	41,700	5,500	35,800	9,000	12,700	3,000
1985	41,000	8,000	26,000	8,700	13,000	2,200
1990	40,000	5,000	29,800	9,800	10,300	2,200
1995	42,600	3,600	40,800	6,500	8,400	1,300
2000	37,100	3,400	42,300	7,100	7,500	800
2005	38,500	3,300	34,000	7,500	6,600	500
2010	41,310	2,400	34,700	8,800	5,200	440

Source: USDA National Agricultural Statistics Service (2007 Census of Agriculture) and SEWRPC.

Table 6

TRENDS IN SELECTED AGRICULTRAL PRODUCTS BY FARM IN RACINE COUNTY: 1987-2007

Agricultural Product[a]	1987	1992	1997	2002	2007
Number of Farms Producing:					
Corn for Grain……....	358	291	225	213	205
Corn for Silage……....	119	117	78	62	40
Soybeans…….	250	256	213	199	195
Hay-Alfalfa (forage)……...	343	297	234	260	143
Oats…….	152	111	62	59	33
Wheat……..	N/A	N/A	N/A	111	100
Total Number of Farms	710	607	554	631	652

[a]The total number of selected agricultural products by farm per year is greater than total farms because many farms produce more than on agricultural product.

Source: USDA National Agricultural Statistics Service and SEWRPC.

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. 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 the western area of Racine County, the western 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.

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, one of five Silurian formations, of dolomite reef strata are exposed either through natural outcroppings along the Root River and Lake Michigan or old quarries. This reef stratum has a rich diversity of fossil marine organisms. Southwestern Racine County provides good examples of glacial topography extending from 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.

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.

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 sand and gravel mining operations in Racine County are shown on the Map 8 and listed in Table 7. The mines produce sand and gravel. Approximately 2443 total acres in Racine County are located within nonmetallic mining sites.

Soil Suitability for Mineral Extraction

Racine County has a moderately abundant supply of sand and gravel deposits. Potential sand and gravel deposit areas, as shown on Map 9, comprise about 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.

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. With the exception of the areas east of IH 94 which have public water supply systems connected to the City of Racine 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 1995, About 11 million gallons per day was abstracted 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 Silurain Age dolomite, which overlies the Maquoketa shale stratum throughout the entire County. The Maquoketa shale separates the Niagara and sandstone aquifers.

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

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. Discharge primarily occurs from the pumping of wells.

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 high clay content, contamination is not as much of a concern compared to the western part of the County. 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 lead 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 major lakes of greater than 50 acres in areal extent 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

Above: Root River

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 11.

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 Plains River watershed and drains to the Mississippi River drainage basin. These waterways and watershed areas are shown on Map 11.

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.

Lakes

There are a total of 18 named lakes in Racine County, 11 of which are over 50 acres in area. These lakes are shown on Map 11. Nine of the lakes are over 100 acres in areal extent, as set forth in Table 7. The named lakes cover approximately 3,900 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.

Because 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.

The trophic status of most of the lakes in Racine County is set forth in Table 7. 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, including those fishes prized as angling gamefish species, while 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 number of 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 7, seven of the lakes for which data were available were classified as eutrophic, two as mesotrophic, and three lakes as meso-eutrophic, in the regional water quality management plan update.[4]

Table 7

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	45	Mesotrophic
Brock	13	- -	12	4	Drainage	- -	- -
Browns	396	3,135	50	8	Drained	51	Meso-eutrophic
Delmonte	4	- -	5	5	Drainage	- -	- -
Denoon	162	2,940	55	18	Seepage	49	Meso-eutrophic
Eagle	515	3,640	12	6	Drainage	52	Eutrophic
Echo	71	129	11	2	Drainage	55	Eutrophic
Kee Nong Go Mong	88	770	27	9	Drainage	55	Eutrophic
Leda (Frieda)	12	- -	22	13	Drained	- -	- -
Long	102	259	5	3	Drainage	61	Eutrophic
Overson Pond	18	- -	6		Seepage	- -	- -
Rockland	40	- -	28	10	Drained	49	Meso-eutrophic
Rodgers Pond	11	- -	7	19	Seepage	- -	- -
Tahoe	6	- -	5	- -	Seepage	- -	- -
Waterford Impoundment							
Buena	108	- -	8		Drainage	56	Eutrophic
Tichigan	1,132	- -	65	6	Drainage	54	Eutrophic
Waubeesee	129	2,450	73	19	Drainage	46	Mesotrophic
Wind[d]	936	8,995	50	10	Drainage	69	Eutrophic

[a]Lakes in Racine County exist only in the Fox River watershed; there are no lakes within the Des Plaines River, Root River, or Pike River watersheds.

[b]Drainage 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.

[c]Trophic 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 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.*

[d]Wisconsin Department of Natural Resources Wisconsin 303(d)-listed waterbody within Racine County (see Table 18).

Source: Wisconsin Department of Natural Resources and SEWRPC.

Rivers and Streams

Perennial rivers and streams are those streams that maintain, 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.[5] An additional 40 miles of unnamed tributary streams draining into the named watercourses were identified in the adopted regional water quality management plan. These stream lengths are set forth in the water quality characteristics of streams and rivers. Of the 145 stream miles for which data is

[4]*SEWRPC Memorandum Report No. 93,* A Regional Water Quality Management Plan for Southeastern Wisconsin: An Update and Status Report*, March 1995.*

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

available, about 16 miles, or about 11 percent, were reported to be very poor to fair quality, and about 53 miles, or about 37 percent, were reported to be in fair to poor quality, based on calculated biotic indices and/or the best professional judgement of WDNR staff conducting assessments. No water quality data was available for the remaining 76 miles of stream courses within Racine County.

Wetland Resources

Wetlands are important resources for the ecological heath and diversity of the County. Wetlands form the transition between surface and groundwater resources and land resources. Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency, and with a duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally occur in depressions and near the bottom of slopes, particularly along lakeshores and stream banks, and on large land areas that are poorly drained. Wetlands may, however, under certain conditions, occur on slopes and even on hilltops. In effect, they provide essential breeding, nesting sanctuary, and feeding grounds as well as offer escape cover for many forms of fish and wildlife. In addition, wetlands perform an important set of natural functions which include: water quality protection; stabilization of lake levels and streamflows; reduction in stormwater runoff by providing areas for floodwater impoundment and storage; and protection of shorelines from erosion.

The location and extent of wetlands in the Racine County planning area are shown on Map 11. These wetlands are based upon the Wisconsin Wetlands Inventory completed in the Region in 1982, updated to the year 2010 as part of the regional land use inventory. In total, the County's wetlands encompassed about 15,900 acres (24.8 square miles), or about 7 percent of the County area, in 2010. As a practical matter, these wetlands are classified predominantly as potholes, fresh meadows, shallow marshes, deep marshes, shrub swamps, timber swamps, and bogs. The three largest wetland complexes, Tichigan Wildlife Area, Honey Creek Wildlife Area, and Karcher Marsh Wildlife Area, are designated as State of the Wisconsin wildlife areas and managed by the Wisconsin Department of Natural Resources.

It should be noted that wetlands are constantly changing in response to changes in drainage patterns and climatic conditions. While wetland inventory maps provide a sound basis for area wide planning, they should be viewed as providing a point of departure to be supplemented with detailed field investigations for regulatory purposes.

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).[6] 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*), green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), American elm (*Ulmus*

[6]*SEWRPC Technical Record, Vol. 4, No. 2, March 1981.*

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. As illustrated on Map 13, in 2010, there were approximately 23 square miles of woodlands or about 7 percent of the land area in the County. 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 can and 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 includes upland game and nongame species such as rabbits, squirrels, shrews, mice, and woodchucks; predators such as fox 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 five 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.

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.

5. Disturbance—Minimum levels of disturbance from human activities are necessary, other than those activities of a wildlife management nature.

On the basis of these 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 of the 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.

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.[7] As indicated in Table 8, and illustrated on Map 14, 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 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. The majority of critical species habitat sites are located within identified natural areas of the County; however, a few are located outside of the known natural areas. Table 9 identifies 38 critical species habitat sites, site numbers 60 to 108, that are outside the abovementioned natural area sites.

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 those areas of the Region 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.[8] 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, river, and 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

[7]*SEWRPC Planning Report, No. 42,* A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin*, September 1997.*

[8]*SEWRPC Technical Record, Vol. 3, No. 6, April 1976.*

"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 sought by the development, but also tends to create severe environmental and developmental problems as well. These problems include, among others, 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 as yet 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 of the area.
The river banks 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 acquisition of specific lands.[9] Within the County, approximately 500 acres, is specifically recommended for acquisition, including the Renak-Polak Maple Beech Woods State Natural Area in the Town of Caledonia, the Kansasville Railroad Prairie in the Towns of Dover and Yorkville, the Franksville Railroad Prairie and the Sanders Park Hardwood State Natural Area in the Town of Mt. Pleasant, the Cherry Lake Sedge Meadow State Natural Area in the Town 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 16, 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 14,600 acres of primary environmental corridors, or about 7 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. Such 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 16, in 2010 there were approximately 6,600 acres 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,

[9]*SEWRPC Planning Report No. 42*, op. cit.

NA-2, or NA-3) Importance. The isolated natural resource areas shown on Map 16 encompassed approximately 7,300 acres in 2010, or about 3 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 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 ore 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 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.

In 2010, there were 55 parks, outdoor recreation, and parkway sites owned by Racine County and the State of Wisconsin as shown on Map 17 and Tables 10 and 11, encompassing approximately 6,600 acres, or just under 3 percent of the total land area in the County.[10] Of the County owned park and open space sites, 8 are major parks and encompass a total of approximately 1,300 acres, 19 are comprised of other parks and outdoor recreation sites for a total of about 560 acres, while the remaining two parkway sites combine for a total of about 660 acres. In addition, the Wisconsin Department of Natural Resources owns and maintains several park and open space land areas that encompass approximately 3,000 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 2,800 acres of park and open space sites that are owned by the Towns, Villages, or City, as well as about 2,100 acres that are privately owned.

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

Chapter II

RESOURCE ASSESSMENT

TABLES

Table 8

NATURAL AREAS IN RACINE COUNTY: 2009

Number on Map 14	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 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 (*Parthenium integrifolium*), prairie Indian plantain (*Cacalia tuberosa*), and marsh blazing-star (*Liatris spicata*)
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 (*Hydrastis canadensis*), 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

Number on Map 14	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
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
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 ncommon ones, such as beaked spike-rush (*Eleocharis rostellata*), Ohio goldenrod (*Solidago ohioensis*), common bog arrow-grass (*Triglochin maritima*), and marsh blazing-star (*Liatris spicata*). 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 (*Parthenium integrifolium*) and prairie Indian plantain (*Cacalia tuberosa*), 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

Number on Map 14	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
						State designated endangered blue-stemmed goldenrod (*Solidago caesia*) and the State designated threatened forked aster (*Aster furcatus*)
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
19	Waubeesee 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 (*Solidago ohioensis*)
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 (*Solidago caesia*)
25	Root River Wet-Mesic Woods—East	NA-2	T4N, R22E Section 5 Village of Caledonia	Racine County and Milwaukee	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

Number on Map 14	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
			T5N, R22E Section 32 City of Oak Creek	County		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 morainal 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
29	Burlington Railroad Prairie	NA-3	T2N, R19E Section 6 Town of Burlington T2N, R18E Section 1 Town of Lyons	Private	5 (plus I 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

Number on Map 14	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
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 and private	80	Moderate-quality sedge meadow-shallow marsh wetlands, located within an upland matrix of 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
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 (*Parthenium integrifolium*), 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

Number on Map 14	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
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 (*Solidago ohioensis*), present. Site is burned periodically to control shrub
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 (*Liatris spicata*), 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 (*Lithospermum latifolium*), red trillium (*Trillium recurvatum*), and black haw (*Viburnum prunifolium*)
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 (*Solidago caesia*)
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 (*Viburnum prunifolium*)

Number on Map 14	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 (*Solidago caesia*). The exposed ravine slopes and Lake Michigan clay banks contain a number of unusual specie
61	Dominican Ravine	NA-3	T4N, R23E Section 21 Village of Caledonia	Private	18	Small woodland containing blue-stemmed goldenrod (*Solidago caesia*), 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 9

CRITICAL SPECIES HABITAT SITES IN RACINE COUNTY: 2009

Number on Map 15	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 (*Besseya bullii*)
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 (*Gentianopsis procera*), 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 (*Cacalia tuberosa*), 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 (*Besseya bullii*) 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 (*Parthenium integrifolium*) and waxy meadow rue (*Thalictrum revolutum*)
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 (*Trillium recurvatum*)
10	Campbell Woods	T3N, R22E Sections 35, 36	Private	43	Formerly of NA-3 status, extensive residential

Number on Map 15	Area Name	Location	Ownership	Size (acres)	Description and Comments
		Village of Mt. Pleasant			development has reduced the wooded acreage. The State-designated special concern red trillium (*Trillium recurvatum*) remains
11	Willow Woods	T3N, R22E Section 36 Village of Mt. Pleasant	Private	4	Small woodland supporting red trillium (*Trillium recurvatum*), 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 (*Solidago caesia*), 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 (*Besseyabbullii*)
14	Erwin Wetlands	T4N, R20E Section 3 Town of Norway	Private	2	Disturbed prairie-fen supporting Ohio goldenrod (*Solidago ohioensis*), a State-designated special concern species
15	Patzke Fen	T4N, R20E Section 3 Town of Norway	Private	33	Disturbed prairie-fen supporting Ohio goldenrod (*Solidago ohioensis*), a State-designated special concern species
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 (*Solidago ohioensis*), 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 (*Solidago caesia*), 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 (*Solidago caesia*), a State-designated endangered species
21	Sherwood Property	T4N, R22E Section 2 Village of Caldeonia	Private	4	Wetland containing a population of hoplike sedge (*Carex lupuliformis*), a State-designated endangered species
22	Forked Aster Site	T4N, R22E Section 23 Village of Caldeonia	Private	18	Woodland supporting forked aster (*Aster furcatus*), a State-designated threatened species
23	River Meadow Woods	T4N, R22E Section 23 Village of	Private	14	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special

Number on Map 15	Area Name	Location	Ownership	Size (acres)	Description and Comments
		Caldeonia			concern species
24	Caledonia Sanitary Sewer Right-of-Way	T4N, R22E Section 25 Village of Caldeonia	Caledonia Conservancy and other private	94	Shrubland containing blue- stemmed goldenrod (*Solidago caesia*), 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 (*Trillium recurvatum*), 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 (*Ptelea trifoliata*), 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 (*Trillium recurvatum*), 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 (*Solidago caesia*), 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 (*Solidago caesia*), 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 (*Trillium recurvatum*), 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 (*Trillium recurvatum*), 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 (*Cakile edentula*), 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 (*Trillium recurvatum*) and hoptree (*Ptelea trifoliata*)
35	Root River Ravine Woods	T4N R23E Section 30 Village of Caledonia	Private	5	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
36	Root River Strip Woods	T4N, R23E Section 31	Racine County	2	Small woodland supporting a State-designated special concern

Number on Map 15	Area Name	Location	Ownership	Size (acres)	Description and Comments
		Village of Caledonia			species, hoptree (*Ptelea trifoliata*)
37	River Bend Upland Woods	T4N, R23E Section 31 Village of Caledonia	Racine County	14	Dry-mesic woods containing blue-stemmed goldenrod (*Solidago caesia*), 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 (*Cakile edentula*)t, a State-designated special concern species
Total	38 sites	--	--	1,426	--

Source: SEWRPC

Table 10

PARK AND OUTDOOR RECREATION SITES OWNED BY RACINE COUNTY: 2010

Number on Map 17	Site Name	Location[a]	Size (acres)
1	John Margis, Jr. Wildlife Area	T2N, R19E, Section 17	45
2	Fox River Parkway	T3N, R19E, Section 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, Section 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, Section 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, Section 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

[a]*U.S. Public Land Survey Township, Range, and Section.*

Source: Racine County Public Works Division and SEWRPC.

Table 11

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

Number on Map 17	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-Waubeesee 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	WIS DOT 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

[a]*U.S. Public Land Survey Township, Range, and Section.*

Source: SEWRPC.

Chapter III

RELATED PLANS, REGULATIONS, AND PROGRAMS

This second update to the Racine County land and water resource management plan is built upon the first two 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, 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 area wide 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 map, as it pertains to Racine County, is shown on Map 22. 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 16. 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 adopted in 1981. The Racine County park and open space plan (2nd Edition) 2001, 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.

Regional Transportation System Plan

The regional transportation system plan[11] is intended to provide a vision for, and guide to, transportation system development in the Region for 20 or more years into the future. It is a multimodal plan of recommended transportation actions designed to address existing and anticipated future transportation problems and needs. The plan consists of four principal elements: public transit, systems management, bicycle and pedestrian facilities, and arterial streets and highways. Future needs for transit, street and highway, and other transportation improvements considered in the regional transportation planning process are derived from the future growth proposed in the

[11]*Documented in SEWRPC Planning Report No. 49,* A Regional Transportation System Plan for Southeastern Wisconsin: 2035 *June 2006.*

regional land use plan. The 2035 regional transportation system plan elements include arterial street and highway, public transit, transportation systems management, and bicycle and pedestrian facilities.

Regional Natural Areas Plan

The regional natural areas plan as it pertains to Racine County is depicted in Map 14 of this report. The natural areas plan[12] identifies the most significant remaining natural areas, critical species habitats, geological sites, and archaeological sites in the Region, and recommends means for their protection and management. The plan

identifies potential sites to be placed in public or private protective ownership, and other sites to be protected, insofar as it is possible, through zoning or other regulatory means without protective ownership. It also recommends that a detailed management plan be prepared and implemented for each site placed under protective ownership. An inventory of natural areas, critical species habitat sites, and geological areas in the County is included in Chapter II.

Aquatic Plant Management Plans

In order to protect diverse and stable communities of native aquatic plants and prevent the spread of invasive aquatic plants, many aquatic plant management and nuisance control activities are listed in aquatic plant management plans. In Racine County, recent aquatic plant management plans have been developed by Bohner's Lake Sanitary District, Brown's Lake Sanitary District, Eagle Lake Management District, the Racine Harbor and the Waubeesee Lake Protection District.

Lake Management Plans

A method to assist lake groups into working toward long-term lake goals, such as improve water quality, understand the lake's complex ecosystem, and increase lake protection is to develop a Lake Management Plan. If implemented properly, Lake Management Plans can provide realistic lake management goals and outcomes to provide the lake community with a better environmental and economical return. In Racine County, the Waterford Waterways Management District and Wind Lake Management District have recently developed Lake Management Plans.

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,[13] 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

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[12] *Documented in SEWRPC Planning Report No. 42*, A Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin*, updated 2009.*

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

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*.

The principle human activities contributing to potential ground water contamination were identified in an inventory and analysis of the groundwater resources of the Southeast Region. The potential sources include: above ground storage tanks, accidental spills, animal waste storage facilities, agricultural activities, animal feed lot leakage, underground storage tanks, fertilizer application, pesticide application, irrigation return flow, septic tanks, landfills, underground pipelines, liquid waste, highway deicing, illegal drainage, illegal wells, improper waste disposal, sewers, and groundwater development such as improper well construction or over pumping.

Regional Water Supply Plan

The Commission is conducting a regional water supply study for the Southeastern Wisconsin Region.[14] The regional water supply plan together with past SEWRPC groundwater inventories and a ground water simulation model[15, 16] 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.
- 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
- City of Racine
- Village of Caledonia
- Village of Waterford
- Village of Wind Point
- Town of Burlington

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

[15] *SEWRPC Technical Report No. 37,* Groundwater Resources of Southeastern Wisconsin, *June 2002*.

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

- Village of Elmwood Park
- Village of Mt. Pleasant
- Village of North Bay
- Village of Rochester
- Village of Sturtevant
- Village of Union Grove
- Town of Dover
- Town of Norway
- Town of Raymond
- Town of Waterford
- Town of Yorkville

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 plan[17] was most recently amended in 2001. 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.

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.

The County park and open space plan is currently being updated and scheduled to be completed by the end of 2012.

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 and fiber. 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.

[17] *Documented in SEWRPC Community Assistance Planning Report No. 134,* A Park and Open Space Plan for Racine County, Wisconsin, *2nd Edition July 2001.*

Prime agricultural lands in Racine County were identified by the Racine County farmland preservation plan,[18] which was adopted by the Racine County Board in June 1981. In this plan, prime agricultural land must meet the following criteria: the farm unit must be at least 35 acres in size; at least 50 percent of the farm unit must be covered by soils which meet Soil Conservation Service (now the 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.

An update of the Farmland Preservation Plan is currently taking place to meet the requirement of changes to the program set forth by the State of Wisconsin.

Racine County Land and Water Resources Management Plan 2000-2004 and Plan Update 2008-2012
The original land and water resources management plan[19] was adopted by the County Board in September 2000. The plan update[10] 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 drainage ways; 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 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 of the towns in Racine County have adopted village powers and created a plan commission.

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[18] *Documented in SEWRPC Community Assistance Planning Report No. 45* A Farmland Preservation Plan for Racine County, Wisconsin*, June 1981.*

[19] *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.*

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.

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 Caledonia, the townships of Burlington, Dover, Norway, Raymond, Waterford and Yorkville. 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, Village of Mt. Pleasant, and Village of Rochester 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 (Table III-2). 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 on 1980, one inch equals 2,000 feet scale, ratioed and rectified aerial photographs.

County shoreland-wetland zoning ordinances are in effect in all unincorporated areas of Racine County. The incorporated Cities of Burlington and Racine, Villages of 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 then 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.

Nonmetallic Mining Reclamation Ordinance
Effective May 22, 2001 *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.

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.

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 2010 and became effective on January 1, 2011. 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 and pastures 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.
- A tillage setback of 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 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.
- Amount of material in manure storage facilities cannot exceed the margin of safety level.
- 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.

Chapter NR 243, "Animal Feeding Operations," 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. Most concentrated animal feeding operations are large and 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. Medium CAFO's (300-999 animal units) and small CAFO's (less than 300 animal units) may be defined or designated as CAFOs if they have discharges to navigable waters or contaminate a well. All concentrated animal feeding operations and certain types of other animal feeding operations must obtain WPDES permits.

In 2006 Racine County officially adopted procedures for siting and permitting livestock facilities under Sec. 20-1167 Procedures for Siting Livestock Facilities. 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.*

Under subchapter III of NR 216, Wis. Adm. Code, a notice of intent shall be filed with the DNR by any landowner who disturbs one or more acres of land. This disturbance can create a point source discharge of storm water from the construction site to waters of the state and is therefore regulated by DNR. Agriculture is exempt from this requirement for activities such as planting, growing, cultivating and harvesting of crops for human or livestock consumption and pasturing or yarding of livestock as well as sod farms and tree nurseries. Agriculture is not exempt from the requirement to submit a notice of intent for one or more acres of land disturbance for the construction of structures such as barns, manure storage facilities or barnyard runoff control systems. (See s. NR 216.42(2), Wis. Adm. Code.) Furthermore, construction of an agricultural building or facility must follow an erosion and sediment control plan consistent with s. NR 216.46, Wis. Adm. Code and including meeting the performance standards of s. NR 151.11, Wis. Adm. Code, but is not required to meet the post-construction performance standards of NR 151.12, Wis. Adm. Code.

Nonagricultural (Urban) Performance Standards

The nonagricultural performance standards set forth in Chapter NR 151 address non-agricultural facilities and practices that cause or may cause nonpoint runoff pollution. These performance standards are intended to limit nonpoint runoff pollution in order to achieve water quality standards. The performance standards address the following areas:

- Construction site performance standards for permitted and non-permitted sites,
- Construction site performance standards for sites of one acre or more,

- Post-construction performance standards for new development and redevelopment, and
- Post-construction performance standards for developed urban areas.

Requirements for county and local governments in urbanized areas, which are identified based on population and density, to obtain a Wisconsin Pollutant Discharge Elimination System (WPDES) storm water discharge permits as required under Chapter NR 216.

In Racine County, the City of Racine, Village of Mount Pleasant and Village of Caledonia were required to obtain municipal storm water permits under "Phase I". Racine County, the Village of Sturtevant and Village of Wind Point were required to obtain municipal stormwater permits under "Phase II" as part of the City of Racine "urbanized area".

The code requires that the designated county or local government meet State standards to control pollution that enters a municipal storm sewer system and develop a storm sewer system map, a public information and education program, a stormwater and erosion control ordinance, an illicit discharge detection program, and a plan to reduce suspended solids. An annual report on progress in meeting the requirements must be submitted to the DNR.

Section NR 151.12 of the *Wisconsin Administrative Code* requires infiltration of post-development runoff from areas developed on or after October 1, 2004. Revisions have been made to the performance standard and must be in accordance with the standard on or after January 1, 2011 subject to specific exclusions and exemptions as set forth in Sections 151.12(5)(c)5 and 151.12(5)(c)6, respectively.

In the plan, best management practices shall be designed, installed and maintained to control total suspended solids carried in runoff from the post-construction site as follows:

For new development, by design, reduce to the maximum extent practical, the total suspended solids load by 80%, based on an average annual rainfall, as compared to no runoff management controls. No one shall be required to exceed an 80% total suspended solids reductions to meet the requirements of NR 151.12 (5)(a)1.

For redevelopment and for in-fill development under five acres, by design, reduce to the maximum extent practical, the total suspended solids load by 40% based on the average annual rainfall, as compared to no runoff management controls. No one shall be required to exceed a 40% total suspended solids reduction to meet the requirements.

For in-fill development that occurs within 10 or more years after October 1, 2002, by design, reduce to the maximum extent practicable, the total suspended solids by 80%, based on an annual average rainfall. No one shall be required to meet the 80% reduction requirements.

An agricultural building or facility is not required to meet the post-construction performance standards of NR 151.12, Wis. Admin. Code.

The transportation facility construction sites disturbing less than one acre of land and routine maintenance consisting of less than 5 acres are the same as those listed for non-permitted construction sites.

Sections 62.234 and 61.354 of the *Wisconsin Statutes* grant authority to cities and villages, respectively, to adopt ordinances for the prevention of erosion from construction sites and the management of stormwater runoff from lands within their jurisdiction. Under Section 60.627 of the *Wisconsin Statutes* towns may adopt village powers and subsequently utilize the authority conferred on cities and villages to adopt their own erosion control and stormwater management ordinances, subject, however, to county board approval where a county ordinance exists. Racine County Land Conservation Division regulates erosion control measures for development within the shoreland zone.

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. If an when a buffer standard is incorporated into NR 151, Racine County LCD plans to refer to the WI Buffer Initiative for guidance, incorporated it into local program efforts and revise annual work plans, if necessary.

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 four 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.

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 application 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. A total of 2,570 acres and about 320 acres were enrolled in the Conservation Reserve and Conservation Reserve Enhancement programs in Racine County in 2012, respectively.

In addition, continuing efforts have restored farmlands and floodplains to more natural conditions, as well as created new floodplains and wetlands in Racine County. In the Town of Dover, approximately 45 acres of wetlands have been recently restored while 22 acres of adjacent land has been restored to native grasses; this restoration project is part of the CREP effort. In the Village of Mt. Pleasant, approximately 5.5 miles of the Pike River, from Spring Street (CTH C) south to the Racine County line (CTH KR) has been reconstructed to widen and, in some instances, lower the floodplain, replacing the current river channel with a more natural meandering channel. The project also includes the creation of new wetlands and floodplain storage areas or undeveloped lands adjacent to the Pike River corridor. Of the 5.5 existing river miles, approximately 3.1 miles have been reconstructed in the northern most areas of the Upper Pike River. In the Town of Norway, approximately 209 acres of land adjacent to Wind Lake, was restored to wetlands in 2008 as part of the Wetland Reserve Program.

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.

Wetlands Reserve Program

The Wetlands Reserve Program (WRP) is another voluntary program designed to restore and protect wetlands on private property. It is an opportunity for landowners to receive financial incentives to restore wetlands that have been drained for agricultural purposes. Landowners who choose to participate in WRP may sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland. This program offers landowners three options; permanent easements, 30-year easements, and restoration cost-share agreements of a minimum 10-year duration.

Resource Conservation and Development

The Resource Conservation and Development (RC&D) program was established by the federal Agricultural Act of 1962. This act directs the U.S. Department of Agriculture (USDA) to help units of government conserve and properly utilize all resources in solving local issues. Wisconsin has seven RC&Ds, covering all Wisconsin counties. In 2004 Racine County became a member of the Town and Country RC&D area which was organized to cover thirteen counties in southern Wisconsin. The Town and Country RC&D helps to facilitate the development and coordination of existing and innovative projects, and will assist in finding funding to implement them. Town and Country RC&D has helped promote agricultural, energy, water quality, and educational projects and programs throughout the Region.

Conservation Stewardship Program

The Conservation Stewardship Program (CSP) is a voluntary program that encourages agricultural and forestry producers to address resource concerns by undertaking additional conservation activities and improving and maintaining existing conservation systems. CSP provides financial and technical assistance to help land stewards conserve and enhance soil, water, air, and related natural resources on their land.

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. 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 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. Thirty-two landowners in Racine County claimed a Farmland Preservation Program tax credit in 2010, with an average credit amount of $956.

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 358 owners of farmland residing in Racine County claimed an income tax credit under the Wisconsin Farmland Tax Relief Credit program in 2009, with an average credit amount of $316.

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 be 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)

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 October 2004. The administrative rule relates specifically to agricultural programs and it establishes requirements and/or standards for:

- 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.

The Fund for Lake Michigan

The mission of the Fund for Lake Michigan is to support efforts, and in particular those in southeastern Wisconsin, that enhance the health of Lake Michigan, its shoreline and tributary river systems for the benefit of the people, plants and animals that depend upon the system for water, recreation and commerce. The Fund for Lake Michigan is a donor-advised fund of the Greater Milwaukee Foundation, Inc.

Racine County received a $100,000 grant for riparian buffer installation to improve water quality by reducing and filtering agricultural runoff draining in to the Root River and its tributaries; as well as the direct runoff draining to Lake Michigan. To do this, we promote planting riparian buffers to private landowners on agricultural land to

reduce sediment and nutrient runoff. Agricultural runoff typically contains high levels of phosphorus and nitrogen that are harmful to the quality of surface water and ground water. E. Coli is also a significant concern associated with agricultural runoff, especially from cropland receiving manure application. Riparian buffers will reduce erosion by filtering sediment and slowing the rate of runoff. The buffers will utilize the excess nutrients before they reach the surface waters they are designed to protect. The riparian buffers will also provide habitat for wildlife.

To reduce agricultural runoff, cropland adjacent to navigable surface waters or wetlands will be targeted for riparian buffers. The program will encourage agricultural producers to plant harvestable cool-season grasses or native prairie grasses to a minimum width identified in the USDA-Natural Resources Conservation Service Technical Standard 393. This will identify the minimum width needed for the greatest reduction of runoff.

Racine County Tree & Shrub Program

Racine County Tree & Shrub Program has been offered for over 30 years and has sold over one million trees. The purpose of the program is to encourage 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.

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. A total of 1,236 "closed" acres and 23 "open" acres were enrolled in the MFL Program in Racine County in 2008.

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 77,000 deer have been donated and provided more than 3.4 million pounds of ground venison.

Gypsy Moth Suppression Program

The Gypsy Moth Suppression Program is a voluntary partnership involving state, county, municipality and landowner in a state-organized aerial insecticide treatment to suppress damaging gypsy 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.

Aquatic Invasive Species Management and Control
Early Detection and Response Grant Program
Aquatic Invasive Species (AIS) Control Grants help prevent and control the spread of aquatic invasive species in the waters of the state. These grants can be used for education, prevention, planning, early detection, rapid response and established infestation control projects.

- Collecting an entire intact adult specimen. If possible, collect the roots, stems, flowers and fruit of the invasive plants.
- Icing or refrigerating the specimen immediately.
- Making a label that includes the date collected, the person who collected the specimen, the township, range and section, county, and waterbody name of where the specimen was collected. Include topographic map or plat map if possible.
- Submitting the specimen to the department within 3 days.

The Department will confirm the species and determine the appropriate method of control. The sponsor will be authorized in writing to conduct the project that will include a permit, if needed and notification of eligibility for an AIS grant. The sponsor will then need to complete a grant application to receive 75% reimbursement. Pre and post treatment monitoring will be required and is an eligible cost.

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 Statutes[11]. 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:

- Bohners Lake Sanitary District #1;
- Browns Lake Sanitary District;
- 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.

[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.*

Of the eight districts, a lake management plan for Wind Lake was completed in 1991 to enhance the water quality conditions, biological communities, and recreational opportunities of the Lake. This plan is currently being refined and updated. In addition, a management plan is being prepared for the Waterford Impoundment. In 1997, the Eagle Lake District developed a Watershed Planning Project, this was updated in 2007. The updated Eagle Lake Management Plan was produced by the Racine County, the Eagle Lake Management District and Wisconsin DNR in May, 2007. Lake Districts have offered to fund specific conservation practices and educational efforts. The Racine County LCD continues to encourage mutually beneficial relationships with Lake Districts and Associations.

Targeted Runoff Management Grant Program
Targeted Runoff Management (TRM) grants are made available by the DNR to control nonpoint source pollution. The majority of TRM funds are to control pollution from farms. Governmental units submit project applications and use these funds to support cost-share agreements that are negotiated between the farmer and the governmental unit. In some cases, TRM funds are used by municipalities to control nonpoint pollution on municipally owned or operated lands. TRM grants can be used to fund best management practices for up to 70% of the eligible costs.

Notice of Discharge Grant Program
Eligible applicants are governmental units working with livestock operation owners or operators with pollution discharge concerns resulting in the issuance of a Notice of Discharge (NOD) or Notice of Intent to Issue a Notice of Discharge (NOI) from DNR. Eligible projects are those designed to implement best management practices (BMPs) for improving water quality impaired by pollution discharges at an animal feeding operation satisfying the conditions of the NOD or NOI.

Urban Nonpoint Source Grant Program
Urban Nonpoint Source and Stormwater Management grant funds are used to control polluted runoff in urban project areas. Funds are awarded for either planning or construction projects. The grant period is 2 years. Projects funded by these grants are site specific, serve areas generally smaller in size than a subwatershed, and are targeted to address high-priority problems. An "urban project area" must meet one of these criteria:

- Has a population density of at least 1,000 people per square mile
- Has a commercial land use
- Is the non-permitted portion of a privately owned industrial site, or
- Is a municipally-owned industrial site (regardless of ch. NR 216, Wis. Adm. Code, permit requirements).

SUMMARY

Racine County and Racine County's 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 comprehensive plan, 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. In addition, the Towns of Dover, Rochester, Yorkville, Burlington and Waterford 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 and agricultural assets, and water quality data. Additionally, the plan addresses a 10-year scope with principal land and water resource concerns and issues that were 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 Nonpoint Pollution by implementing the State Agricultural and Nonagricultural Performance Standards and Prohibitions;
- Protect and Preserve Land and Water Resources and;
- Invasive and Exotic Species Management and Control;
- Increase Natural Resource, Environmental, and State Performance Standards Information and Education

These concerns and 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 LCD 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, including educational programming, agricultural and nonagricultural performance standards implementation, invasive species control, land and water quality protection, and improved partner relationships. The recommended goals, workplan objectives, and planned actions for the years 2013-2022 are summarized in the following section, and are presented in Table 12. Racine County's Land and Water Resource Management Plan is a long-range, living instrument to plan conservation efforts over a 10 year period, therefore, the workplan activities may require amendment due to varying environmental conditions, local priorities and commitments, 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 not change and any necessary amendments to workplan activities would only be accomplished with proper approvals from the Racine County LCC and DATCP.

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 nonpoint pollution performance standards;
    - All land where crops or feed are grown, including pastures, shall be managed to achieve a soil erosion rate equal to, or less than, the "tolerable" (T) rate established for that soil. [Note: "T" is the tolerable erosion rate for each soil type to maintain its productivity indefinitely. T-values generally range from three to five tons per acre per year and are documented in the NRCS Technical Guide.]
    - 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, 1,000 feet from a lake, or areas susceptible to groundwater contamination).
    - Follow the tillage setback of five feet from the top of the channel of surface waters
    - Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less and may not exceed a phosphorus index of 12 in any individual year within an accounting period.
    - There may be no significant discharge of process wastewater to waters of the State.
    - All new or substantially altered manure storage facilities must meet current engineering design standards to prevent surface or groundwater pollution. The following manure management prohibitions also apply statewide:
        - 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, 1,000 feet from lakes).
        - No unlimited livestock access to "waters of the state" where the livestock prevent sustaining an adequate vegetative cover.
- Support the Farmland Preservation Program;
- Reduce soil delivery rate from riparian cropland;

- Develop, implement, and monitor compliance of nutrient and pest management plans to protect water quality;

- Utilize GIS technology to maintain detailed mapping of priority farms and their compliance status; and

- Administer the Livestock Facility Siting and Animal Waste Management Ordinances.

Planned Actions
The planned actions are to be used in combination to achieve the aforementioned 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. The County will continue to conduct the annual cropland erosion survey to monitor the use of conservation practices and their effectiveness in reducing agricultural erosion. The County and municipalities will promote the establishment of appropriate riparian buffers designed according to NRCS standards, until a state buffer standard is adopted, to reduce sediment delivery to water resources.

The LCD 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 LCD will monitor manure management practices in the county to ensure that practices are in compliance with the State performance standards.

The Racine County LCD has developed a detailed data base utilizing geographic information system (GIS) technology to identify and assist in management of farms prioritized for compliance with State performance standards. Priority farm information has been inventoried and mapped. The priority areas include livestock farms, water quality management areas (WQMA's), farms with livestock and farmland preservation program participants. Additional information is being updated, inventoried and mapped, including restricted manure and sludge application sites, nutrient management plan locations, cost-shared practices, Natural Resources Conservation Service (NRCS) conservation plans for highly erodible lands, Conservation Reserve Program and Conservation Reserve Enhancement Program contracts.

Planned actions associated with improving stream sedimentation and agricultural drainage include the implementation, by individual agricultural producers, of best management practices to reduce soil erosion and sediment delivery as identified in farmland management plans. In addition, farmers and rural landowners shall be encouraged, after following proper permitting procedures, to periodically clean out accumulated sediment from drainage channels, and where possible, improve aquatic habitat and water quality.

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;

    — Control 80 percent of sediment from construction sites.

    — Control 80 percent of post-construction total suspended solids (TSS) from new developments and 40 percent from redevelopments.

- Maintain pre-development peak discharge rates for the two-year, 24-hour design storm for new developments.
- Infiltrate 90 percent of pre-development runoff volumes for new residential developments and 60 percent for nonresidential or demonstrate exemption.
- Maintain protected areas between new impervious surfaces and lakes, streams, and wetlands.
- Control petroleum runoff (visible sheen) from fueling and vehicle maintenance areas.

- Reduce construction site erosion;
- Manage storm water runoff more effectively;
- Encourage urban-density land use to be confined to and within the identified urban service areas and;
- Comply with the Municipal Separate Storm Sewer System (MS4) permit requirements under NR 216 of the *Wisconsin Administrative Code*.

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, the Towns 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.

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 subwatershed 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.

Racine County LCD's strategy to address applicable nonpoint pollution performance standards and prohibitions under NR 151 are described in more detail below.

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 in the face of increasing urbanization and resulting loss of farmland;
- 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;
- 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
The loss of farmland and the rural character is an important concern in Racine County. Efforts should be made by the County, the Towns and local government to restrict over-development by following existing and newly adopted land use plans. Ongoing and future development should be held to a high environmental standard through the implementation of existing and newly adopted local ordinances and policies. Racine County LCD will encourage farmers to keep farming, through sustainable and alternative agricultural practices and other initiatives which may include the purchase of development rights, comprehensive land use plans, farmland protection, farm-to-table programs (connecting local farmers with local buyers), cooperative farm approaches, trusts, deeded outlots, conservancies etc.

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. 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 should be mapped and funding should be identified and obtained to assist landowners in implementing shoreline protection measures. Wetlands should to 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.

The Racine County LCD 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

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

pollution control best management practices. This baseline data will be used to monitor progress of the land and water resource management 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 LCD 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 LCD 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 LCD will continue to work with and form more resource partnerships to educate riparian landowners of the water quality benefits of buffers. Racine County LCD 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 LCD encourages alternative methods available to protect shorelines subject with low erosion intensity. Racine County will work to achieve the pollutant reduction goals set forth in both regional and watershed water quality management plans. Racine County LCD will continue to monitor Lake Michigan shoreline, especially in those reaches with relatively high unprotected bluffs and where shoreline protection structures are in need of maintenance, failing or failed, and where shoreline protection structures have been placed in isolated situations and are likely to cause differential erosion processes acting on unprotected portions of the shoreline in the vicinity of those structures. 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 LCD 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 LCD 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 LCD 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. The County will utilize the available inventory data and GIS mapping that is 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 LCD, 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.

INVASIVE AND EXOTIC SPECIES MANAGEMENT AND CONTROL

Goals and Workplan Objectives
Exotic and invasive species can alter ecological relationships among native species and can affect ecosystem function, economic value of ecosystems, and human health. In order to more effectively control the infestation and spread of exotic and 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 exotic and invasive plant and animal species control;
- Assist 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.
- Participate as needed in Aquatic Invasive Early Detection and Response Projects

Planned Actions
Exotic and 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 conduct Gypsy Moth suppression monitoring in all areas of the county. The emerald ash borer is an exotic insect, native to Asia, which currently threatens ash trees in the Great Lakes region. Infestations have been confirmed in Racine County as well as most of southeast Wisconsin. Racine County will work together with DATCP, the WDNR, U.S. Forest Service, the University of Wisconsin and other state and local agencies and groups to educate the public on prevention and prepare for infestation. The WDNR has recognized aquatic invasive species as a potentially serious problem in Racine County lakes. Where outbreaks of aquatic invasive species occur, Racine County LCD 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.

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. Purple Loosestrife has become an aggressive weed in our natural wetlands and even roadside ditches of Racine County. This plant spreads quickly and chokes out high-quality native wetland plant species, which consequently makes wetlands less useful for wildlife. Racine County LCD will work to coordinate an annual invasive species awareness event.

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

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 LCD over the next ten years. Proposed planned activities were purposely broadly defined in order to meet 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 LCD will distribute information and educational material prepared by the WDNR and DATCP to appropriate landowners. The information will also be distributed via our *Ties to the Land* newsletter/e-letter, the county website, 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.

2. Priority Farms Strategy: Identify and evaluate farms for compliance with standards and prohibitions.
   Racine County LCD will use GIS 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. Using county 2-foot contour maps and water resource layers, Water Quality Management Areas (WQMA) (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. Digital land units from the USDA-Farm Service Agency are being used to identify field boundaries. Information from the Soil Survey may also be used to identify "potential" locations of runoff or groundwater problems. These data layers combined with a hydrologic data layer 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, LCD staff can conduct a records inventory search for files related to conservation planning prepared by our department or the NRCS. This is an initial review to determine potential compliance with the 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 LCD plans to conduct a minimum of 5 priority farm inventories annually. This number may increase after the GIS tool is in place and initial screening data is collected. 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 LCD regarding the compliance determination process and results.

4. Offer 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 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.

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.

7. Compliance monitoring and Annual reporting.
   Racine County LCD 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.

Implementation Strategy (nonagricultural)
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.

It should be noted that local erosion control ordinances do not apply to single-family home construction as these are regulated under COM 21 Wisconsin Administrative Code. By state statute, COM 21 supersedes all local ordinances. In Racine County the Towns regulates erosion control on single-family home construction and the Racine County LCD provides shoreland erosion reviews for 1 and 2 family dwelling and subdivisions within the shoreland jurisdiction of the county zoning.

Municipal Stormwater Discharge Permits
Administrative Rule NR 216 also contains storm water permitting requirements for communities, designed to treat discharges from municipal storm sewer systems. NR 216 requires municipalities outside urbanized areas with a population greater than 10,000 and a density over 1,000 persons per square mile to obtain a WPDES Storm water Discharge Permit. As a result of these requirements, Racine County, the City of Racine, and the Villages of Caledonia, Mt. Pleasant, Sturtevant and Wind Point will be required to obtain permits. Permitted municipalities are required to implement the following:

1. Provide public information and education programs relative to specific aspects of nonpoint source pollution control;

2. Conduct a municipal program for the collection and management of leaf and grass clippings and;

3. Create site-specific programs for application of lawn and garden fertilizers on municipally controlled properties with over five acres of pervious surface.

Under the requirements of Chapter NR 151, incorporated municipalities with average population densities of 1,000 people or more per square mile that are not required to obtain municipal storm water discharge permits must implement those same three programs.

Estimated Costs of Plan Implementation

Since this plan does not have the authority to establish county budget items, the estimated costs provided below are solely intended to satisfy state LWRM planning requirements and do not in any way represent anticipated Racine County LCD budgets. It is also 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 (approximately 3.2 full time employees). The cost estimates contained in Table 17 on page 74 are based on average annual costs to maintain existing program efforts and staffing levels.

The cost-sharing estimates in Table 17 are based on a statutory requirement of 70 percent cost-sharing and are dependent on the need for landowners to comply with the state performance standards described earlier in this chapter. Crop erosion control has greatly improved in Racine County owing to the widespread practice of conservation tillage and sowing of herbicide resistant field crops. Also Racine County has only a few livestock operations remaining. Therefore, compared to other Wisconsin counties, the costs to meet these requirements should be nominal. Racine County has, however, been under intensive agriculture for over a hundred years and many of its streams have accumulated sediment throughout that period. 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 LCD will continue to apply for grants to supplement those funds. The table assumes that Racine County's current budgeted staffing level of 3.2 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 and conservation tillage, 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.

EDUCATIONAL PROGRAMMING

Goals and Workplan Objectives

Developing and implementing a sound educational programming 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 I & E 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 rural areas include offering seminars or short courses on nutrient and agri-chemical management principals, and developing literature for distribution to farmers on the economics of soil conservation. Certification and training courses on nutrient management planning, as well as compliance obligations set forth in the State performance standards, will be offered landowners, agricultural cooperatives and suppliers, lawn maintenance companies, and golf course and park management personnel.

The planned actions to meet the educational goals and objectives in the nonagricultural and urban areas include offering seminars or short courses on the principals of sound erosion control and storm water management practices on construction sites. Residents will also be included in educational programming efforts. Specifically, it is recommended that residents be provided with information on yard waste management practices designed to reduce nonpoint source pollution. This can be done through distributing literature on lawn maintenance, such as proper fertilization and chemical application techniques, on yard landscaping alternatives to turf, and on the proper management of leaf and grass clippings, pet waste, and household chemicals. Additionally, informational materials on buffer effectiveness and buffer design options will be made available to riparian property owners. This information will also be made available to landscape contractors and architects, in addition to offering informational seminars related to this topic. Riparian buffer demonstration sites may be established and promoted to illustrate the desirable aesthetics and environmental soundness of riparian buffers.

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.

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, webpage, workshops etc;

- 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. Winning posters are advanced to regional and state competitions.

- Distribute information material during office and site visits. Provide I&E at display booths at county and lake fairs;

- Partner with lake districts and associations on shoreline protection and restoration demonstration projects and workshops. Continue to distribute lake information packets to new 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;

- Organize and educate local work and youth groups to identify and eliminate exotic and 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

    — State Performance standards and manure management prohibitions

    — Nutrient management planning and soil preservation techniques

    — Land use/planning (including farmland preservation and development rights)

    — Groundwater management (including well abandonment and septic systems)

    — Urban storm water management and erosion control

    — Water conservation, rain gardens, groundwater protection.

    — Lake/river/shoreland management

    — Wetland/pond creation/enhancement/restoration

    — Woodlot/prairie/savannah management

    — Invasive species management

    — Wildlife habitat management

- Provide informative news articles in the *Ties to the Land* newsletter; with sections focusing on different land conservation issues in the County;

- Use cable TV, radio 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.

Summary

The procedures and cost estimates outlined in this chapter represent the best estimates of the LCD 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 LCD 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 12

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #1 Increase Resource Protection by Reducing Non-Point Source Pollution (2.0 FTE and 60 percent of Budget/year)	Implement the State Agricultural Performance Standards to protect water quality	**1) Inventory at least 5 priority farm landowners yearly to evaluate compliance status.** 2) **Utilize an inventory tracking system.** 3) **Continue to use GIS for priority farm mapping as part of the tracking system.** 4) **Keep landowner's notified of compliance status through the issuance of compliance certifications or schedules of compliance.** 5) **Put landowner's on a maintenance schedule if already in compliance.**	Ongoing	LCD
	Monitor and support the Farmland Preservation Program	**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 parcels, acreages, and zoning certificates as properties are sold or rezoned. Keep DATCP notified of status changes.** 4) Continue to assess and evaluate farm practices to keep conservation plans updated for compliance.	Ongoing	LCD, DATCP

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
	Reduce soil erosion to tolerable rates (T)	**1) Conduct the annual transect survey to monitor cropland erosion levels, farming practices and crop rotations.** 2) Encourage farm conservation plans to be followed in accordance with the Ag Performance Standards. 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: A. Conservation tillage, including strip till and no till. B. Consider less erosive crop rotation such as 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.	Ongoing	LCD,DATCP NRCS,FSA
GOAL #1 (continued) Increase Resource Protection by Reducing Non-Point Source Pollution (2.0 FTE and 60 percent of Budget/year)	Manage animal waste and livestock access to water resources in accordance with State performance standards	**1) Utilize cost-share funds to install conservation practices that improve barnyard runoff control, animal waste storage, 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.	Ongoing	LCD, DATCP, DNR, NRCS

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
	Develop, implement, and monitor compliance of nutrient and pest management plans to protect water quality	**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) Conduct compliance inspections on existing plans for proper implementation and assist with updating plans as needed. 6) Utilize GIS to report nutrient management planned acreage along with plan years, including an expiration date requiring new soil tests and plan updates.	Ongoing	LCD, NRCS, DATCP, TSP's
	Reduce soil delivery rate from riparian cropland to waters of the State	**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.	Ongoing	LCD, NRCS, DATCP, FSA

Table 13

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #2 Implement the State Performance Standards to Reduce Nonagricultural Nonpoint Source Water Pollution (0.50 FTE and 15 percent Budget/year)	Implement the State Nonagricultural Performance Standards	**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 of uninstalled or unmaintained erosion control measures. 6) Assist 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 *Wisconsin Administrative Code*	**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 20% reduction requirement set forth in Wisconsin Administrative Code NR 216.**	Ongoing	LCD, DNR, Local Gov'ts

Table 14

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #3 Protect and Preserve Land and Water Resources (0.75 FTE and 20 percent Budget/year)	Conserve Racine County's unique natural resources in the face of increasing urbanization and resulting loss of farmland	**1) Assist in the preparation of the annual *Farm Fresh Atlas* 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: 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	**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,DFSA, USACE, Work Groups

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #3 (continued) Protect and Preserve Land and Water Resources (0.75 FTE and 20 percent Budget/year)	Prepare, update and implement comprehensive lake and watershed management plans	**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	**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

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
	Protect the quality and quantity of groundwater supplies	**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 *Wisconsin Administrative Code* 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 #3 (continued) Protect and Preserve Land and Water Resources (0.75 FTE and 20 percent Budget/year)	Support efforts to protect and enhance our forests and woodlots	**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

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
	Implement the County's shoreland/floodplain management program	**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 the reclamation of terminated non-metallic mining sites	**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 15

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #4 Invasive and Exotic Species Management and Control. (0.25 FTE and 5 percent of Budget/year)	Control the infestation of exotic and invasive plant and animal species	**1) Conduct 1 annual workshop or presentation on exotic and invasive plant and animal species control.** 2) Distributed informational material, answer phone and direct inquiries 3) Organize and educate local work and youth groups to identify and eliminate exotic and invasive species 4) Assist the clean boats, clean waters volunteer program, and support purple loosestrife biological control 5) Encourage the development and adoption of aquatic plant management plans for all inland lakes 6) Support the DNR AIS network by reporting aquatic invasive species to the regional coordinator. 6) Assist the DNR in the rapid response grant program	Ongoing	LCD, UW-Ext, Work Groups, DNR

Table 16

RACINE COUNTY WORKPLAN: 2013-2022

Goal	Workplan	Planned Actions	Status of Planned Action	Agencies
GOAL #5 Increase Information and Education Activities to Promote the Conservation of Natural Resources, The Environment, and knowledge of the State Performance Standards (0.25 FTE and 10 percent of Budget/year)	Provide outreach programs to developers, engineers, landscapers, local officials, and work groups that will increase awareness of stormwater pollution impacts	**1) Host or inform an annual workshop presentation 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, WDNR, UW-Ext, Towns, Local Govt.
	Increase landowner and producer/operator awareness of conservation practices and programs	**1) Continue to provide a quarterly newsletter *Ties to the Land* to 3500+ landowners and producers** **2) Provide I & E at display booths at the county fair** **3) Host periodic Southeast Area Land & Water Conservation Association summer tours.** 4) Help sponsor a Dairy Breakfast field day annually to promote dairy farming 5) Maintain a web page on conservation programs, technical services, and cost-shared practices 6) Distribute informational material during office and site visits 7) Use direct mailings to contact priority farms	Ongoing	LCD, FSA, NRCS, Local Gov'ts
	Provide information to riparian property owners and landscape contractors on the benefits of riparian buffers	**1) Continue to distribute 20+ lake information packets to new riparian landowners** 2) 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 #5 (continued) Increase Information and Education Activities to Promote the Conservation of Natural Resources, The Environment, and knowledge of the State Performance Standards (0.25 FTE and 10 percent of Budget/year)	Educate landowners, agricultural supply businesses, lawn maintenance companies, and golf course superintendents on the importance of nutrient chemical management	**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
	Provide information to the county residents about how they can control water pollution and groundwater contamination	**1) Conduct the annual Rural Landowner Workshop to provide information session about all conservation issues.** **2) Conduct an annual workshop presentation to promote water conservation, rain gardens, groundwater protection, etc.** 3) Continue to distribute informational materials to homeowners on pet waste, leaf and grass clipping disposal, lawn fertilization techniques, and problems associated with dumping chemicals directly into storm sewers 4) Promote storm drain stenciling and provide materials to schools and youth groups	Ongoing	LCD, UW-Ext, DATCP, Schools, Youth Groups, Work Groups
	Provide information to county residents about how they can control exotic and invasive species	**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

NOTES: All goals are of equal priority. Workplan objectives for each goal are listed in priority order from highest to lowest. 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 Servce 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 17

ESTIMATED TOTAL COSTS FOR PLAN IMPLEMENTATION: 2013-2022

Cost Category	2013	2014	2015	2016	2017
Salary and Benefits[a]	$264,473	$267,118	$269,788	$272,485	$275,210
Operating Expenses[a]	18,288	18,470	18,654	18,840	19,028
Landowner Cost-Share Hard Practices[b] ..	75,000	75,000	75,000	75,000	75,000
Landowner Cost-Share Soft Practices[b] ...	20,000	20,000	20,000	20,000	20,000
Total Annual Costs	$377,761	$380,588	$383,442	$386,325	$389,238

Cost Category	2018	2019	2020	2021	2022	Ten-Year Total Costs
Salary and Benefits[a]	$277,962	$280,741	$283,548	$286,383	$289,246	$2,766,954
Operating Expenses[a]	19,218	19,410	19,604	19,800	19,998	191,310
Landowner Cost-Share Hard Practices[b] ..	75,000	75,000	75,000	75,000	75,000	750,000
Landowner Cost-Share Soft Practices[b] ...	20,000	20,000	20,000	20,000	20,000	200,000
Total Annual Costs	$392,180	$395,151	$398,152	$401,183	$404,244	$3,908,264

[a] *Anticipate 1 percent annual increases for salaries, benefits, and operating expenses.*

[b] *The costs provided by landowners and other grant recipients would be approximately $225,000*

Source: Racine County Land Conservation Division, prepared in 2012 by CES

Maps

Map	
1	General Soil Associations in Racine County
2	Slope Analysis for Racine County
3	Agricultural Soil Capability in Racine County
4	Agricultural Lands in Racine County: 2010
5	Generalized Topographic Characteristics in Racine County
6	Generalized Depth to Bedrock in Racine County
7	Lake Michigan Shoreline / Erosion Protection in Racine County: 2005
8	Nonmetallic Mining Sites in Racine County: 2006
9	Potential Sources of Sand, Gravel, Clay, and Peat in Racine County
10	Watershed Features in Racine County
11	Surface Waters, Wetlands, and Floodplains in Racine County
12	Depth to Seasonal High Groundwater Table in Racine County
13	Woodlands and Managed Forest Lands in Racine County
14	Natural Areas in Racine County: 2009
15	Critical Species Habitat Sites in Racine County: 2009
16	Environmental Corridors and Isolated Natural Areas in Racine County: 2010
17	Racine County and State of Wisconsin Park and Open Space Sites: 2010
18	Planned Land Use in Racine County: 2035

ACRONYMS AND GLOSSARY

ACRONYMS

BMP	Best Management Practice
CAC	Citizen Advisory Committee
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DATCP	Department of Agriculture, Trade and Consumer Protection
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FPP	Farmland Preservation Program
FSA	USDA Farm Service Agency
GIS	Geographical Information Services
HEL	Highly Erodible Land
I&E	Information and Education
LCC	Land Conservation Committee
LCD	Land Conservation Division
LWRMP	Land and Water Resource Management Plan
MOU	Memorandum of Understanding
NMP	Nutrient Management Plan
NPS	Nonpoint Source Pollution
NRCS	USDA Natural Resources Conservation Service
PDR	Purchase of Development Rights
RC&D	Resource Conservation and Development
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SWRM	Soil and Water Resource Management
"T"	Tolerable Soil Loss Rate
TSP	Technical Service Provider
USCOE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USF&W	United States Fish and Wildlife Service
UW-Ext	University of Wisconsin-Extension
WDNR	Wisconsin Department of Natural Resources

WHIP	Wildlife Habitat Incentive Program
WRP	Wetland Reserve Program
WQMA	Water Quality Management Area

OSSARY

303(d) List – The 303(d) list is prepared by the WDNR under requirements of section 303(d) of the Clean Water Act and identifies waters which are not meeting water quality standards, including both water quality criteria for specific substances and their designated uses.

ATCP 50 – The chapter of *Wisconsin's Administrative Code* that implements the Land and Water Resource Management Program as described in Chapter 92 of the *Wisconsin Statutes*.

Best Management Practices (BMPs) – The most effective practice or combination of practices for reducing nonpoint source pollution to acceptable levels.

Chapter 92 – Portion of the *Wisconsin Statutes* outlining the soil and water conservation, agricultural shoreland management, and animal waste management laws and policies of the State.

Citizen Advisory Committee – A group of citizens formed to assist in the development and/or revisions to the Land & Water Resource Management Plan through recommendations to the Racine County Land Conservation Committee.

Conservation Plan – A record of decisions and intentions made by land users regarding the conservation of the soil, water and related natural resources of a particular unit of land.

Conservation Reserve Program (CRP) – A provision of the Federal Farm Bill that takes eligible cropland out of production and puts that land into grass or tree cover for 10 to 15 years.

Conservation Reserve Enhancement Program (CREP) – An add-on to the CRP program which expands and builds on CRP's success.

Department of Agriculture, Trade and Consumer Protection (DATCP) – The State agency responsible for establishing statewide soil and water conservation policies and administering the State's soil and water conservation programs. The DATCP administers State cost-share funding for a variety of LWCC operations, including support for staff, materials and conservation practices.

Economic Development and Land Use Planning – The Racine County office responsible for zoning administration, land conservation, land use planning, land information and GIS.

Environmental Protection Agency (EPA) – The agency of the Federal government responsible for carrying out the nation's pollution control laws. It provides technical and financial assistance to reduce and control air, water, and land pollution, and is responsible for administering the Clean Water Act.

Environmental Quality Incentives Program (EQIP) – Federal program to provide technical and cost-sharing assistance to landowners for water quality protection. The program focuses on whole farm planning to reduce nonpoint source pollution.

Eutrophication – The process by which a body of water becomes enriched in dissolved nutrients (such as phosphorus) that stimulate the growth of aquatic plant life usually resulting in the depletion of dissolved oxygen.

Farm Service Agency (FSA) - The FSA is under the direction of the United Stated Department of Agriculture (USDA) and is responsible for serving all farmers, ranchers, and agricultural partners through the delivery of effective, efficient agricultural programs.

Geographic Information Systems (GIS) – A computerized system of maps and layers of data about land including soils, land cover, topography, field boundaries, roads and streams, zoning and land use, etc.

hly Erodible Land (HEL) – Lands that are over 6 percent in grade. According to the NRCS, a farm field is sidered to be HEL if more than one third of that field has land slopes that exceed 6 percent.

Land Conservation Committee (LCC) – The portion of the County government that is empowered by Chapter 92 of the *Wisconsin Statutes* to conserve and protect the County's soil, water and related natural resources.

Natural Resources Conservation Service (NRCS) – The NRCS is under the direction of the United States Department of Agriculture (USDA) and is responsible for soil survey inventory and information, farm conservation planning, and providing technical assistance to landowners regarding best management practices.

Nonpoint Source Pollution (NPS) – Pollution resulting from many small and diffuse sources, unlike point source pollution, which results from one identifiable source. Soil erosion, livestock waste, stormwater runoff, nutrients such as nitrogen and phosphorus, and other pollutants are all examples of nonpoint source pollution.

Resource Conservation and Development (RC&D) - USDA program that focuses on utilizing and conserving natural resources for economic development, administered by NRCS.

Southeastern Wisconsin Regional Planning Commission (SEWRPC) – Governmental organization providing regional scale planning services to the seven-county Southeastern Wisconsin Region. These services include land use planning, transportation, environmental (wetlands, engineering, soils, and lake management), economic development, and GIS.

Tolerable Soil Loss (T) – Tolerable soil loss refers to the maximum allowable soil loss rate (tons/acre/year) for individual soil types. This rate refers to the amount of soil loss that can occur annually while the soil still remains agriculturally productive. It does not refer to the time it takes to naturally regenerate the soil.

United States Department of Agriculture (USDA) – Branch of Federal government with responsibilities in the areas of food production, forestry, and wildlife and fisheries.

University of Wisconsin-Extension – The outreach program of the University of Wisconsin that is responsible for formal and informal educational programs throughout the State.

Water Quality Management Area (WQMA) – The area that is within 300 feet of a navigable stream or river or 1,000 feet from a lake. In addition WQMAs also include lands adjacent to ponds, or areas that are susceptible to groundwater contamination, such as a wetland, sinkhole, or an area that is shallow to bedrock.

Watershed – The geographic area which drains to a particular river, stream, or waterbody.

Wetlands Reserve Program (WRP) – A provision of the Federal Farm bill that compensates landowners for voluntarily restoring and protecting wetlands on their property that had been in agricultural production.

Wildlife Habitat Incentives Program (WHIP) – Federal program to help provide technical and cost-share assistance to landowners to help improve wildlife habitat.

Wisconsin Department of Natural Resources (WDNR) – The State agency responsible for managing State owned lands and protecting public waters of the State. The WDNR also administers programs to regulate, guide

and assist land conservation programs within individual counties, as well as landowners in managing land, water, fish, and wildlife.

Wisconsin Association of Land Conservation Employees (WALCE) – Membership organization that represents all of Wisconsin's Land and Water Conservation employees.

Wisconsin Land and Water Conservation Association (WLWCA) – Membership organization that represents the state's 72 County Land Conservation Committees.

APPENDICES

APPENDIX A

RACINE COUNTY

PUBLIC WORKS & DEVELOPMENT SERVICES DEPARTMENT
LAND CONSERVATION DIVISION
14200 Washington Avenue, Sturtevant, WI 53177-1253
Phone: (262) 886-8440 Fax: (262) 886-8480

James A. Ladwig
County Executive

Julie A. Anderson
Director of Public Works & Development Services

May 15, 2012

Address

Dear CAC Member:

We are inviting you to serve as a member of an Advisory Group for preparation of the 2nd 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.

Using the same Advisory Group, we are updating the Farmland Preservation Plan. As agriculture continues to provide economic benefits for Racine County, protecting our prime farmland remains important to our County and local communities.

The plans can greatly benefit from your knowledge and involvement, we hope that you will be able to serve on the Advisory Group. Please advise me of your willingness to serve if you have not already spoken to me regarding your participation. If you have any questions, feel free to contact Chad Sampson at 262-886-8440 or by email at chad.sampson@goracine.org.

Sincerely,

Chad Sampson
County Conservationist

APPENDIX B

Notice of Public Hearing
Racine County Economic Development and
Land Use Planning Committee Hearing
Monday, August 20, 2012 at 6:00 p.m.
Ives Grove Complex, Auditorium
14200 Washington Avenue
Sturtevant, WI 53177

Notice is hereby given that on Monday, August 20, 2012 starting at 6:00 PM, the Racine County Economic Development and Land Use Planning Committee will conduct a public hearing at 6:00 PM on the update (third edition) to the Racine County Land and Water Resource Management Plan (LWRMP). This ten-year plan is to be used as a guide for the Land 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 informational meeting and 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 www.racineco.com -look under the alphabetical listing "L" for Land Conservation, and choose "Land and Water Resource Management Plan." It may also be viewed at the Ives Grove Complex in the Racine County Land Conservation Division office. For additional information regarding this hearing, please contact Chad Sampson of the Racine County Land Conservation Division at 262-886-8440. All interested parties will be heard.

Publication Dates: August 8th and August 13th, 2012 – in the Racine Journal Times.

APPENDIX B-1

LEGAL

1st Pub. Aug. 8, 12, 13
Notice of Public Hearing
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Economic Development and
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Publication Dates: August 8th and August 13th, 2012 - in the Racine Journal Times.

APPENDIX B-2

RACINE COUNTY ECONOMIC DEVELOPMENT & LAND USE PLANNING COMMITTEE

AGENDA - MONDAY, AUGUST 20, 2012 - 6:00 p.m.

Ives Grove Office Complex Auditorium
14200 Washington Avenue, Sturtevant, WI 53177

This location is handicap accessible. If you have other special needs, please contact the Racine County Public Works & Development Services Department at (262) 886-8440.

PUBLIC HEARING

1.	Burlington Soccer United Burlington Youth Center c/o Racine County Kapur & Associates, Agent	Conditional use approval of a master site development plan at Bushnell Park, to accommodate future soccer fields, parking lot expansions and interior roads, located in the P-2 Recreational Park District; 32100 Bushnell Road; Parcel Id. No. 002031933010000; Section 33, Town 3 North, Range19 East, Town of Burlington.

2. Review, discussion and recommendation regarding the update (3rd edition) to the Racine County Land and Water Resource Management Plan (LWRMP)

COMMITTEE MEETING

PLEASE NOTE: While the following agenda items are up for discussion and action before the Committee and the Committee may ask questions of the petitioners or affected neighbors, this portion of the agenda is a committee meeting and not a public hearing, and public hearing testimony may not be taken. All are welcome to attend.

1. Decisions on preceding petitions

2. Review, discussion and possible approval of July 16, 2012, summary minutes

4. Trenton Ventures, LLC
Robert Epping, Agent

Site Plan Review to continue a non-metallic mining (sand and gravel) extraction operation, including earthmoving, crushing, washing, sorting, sizing, stockpiling, transporting and reclamation; located in the M-4 Quarrying District; 29331 Durand Avenue; Parcel Id. No. 002031935002000; Section 35, Town 3 North, Range 19 East, **Town of Burlington**

3. Review, discussion and possible approval of August 2, 2012, summary minutes

da -Racine County Economic Development & Land Use Planning Committee
lay, August 20, 2012 – 6:00 p.m. / Ives Grove Office Complex Auditorium
2 of 2

5. James & Rita Harasha
laid over on 07/16/2012

Conditional Use to construct an itinerant agricultural laborer's quarters with attached garage (existing garage will be razed); located in the A-1 General Farming District I; 7611 Pleasant Road; Parcel Id. No. 016041908003030; Section 8, Town 4 North, Range 19 East, **Town of Waterford**

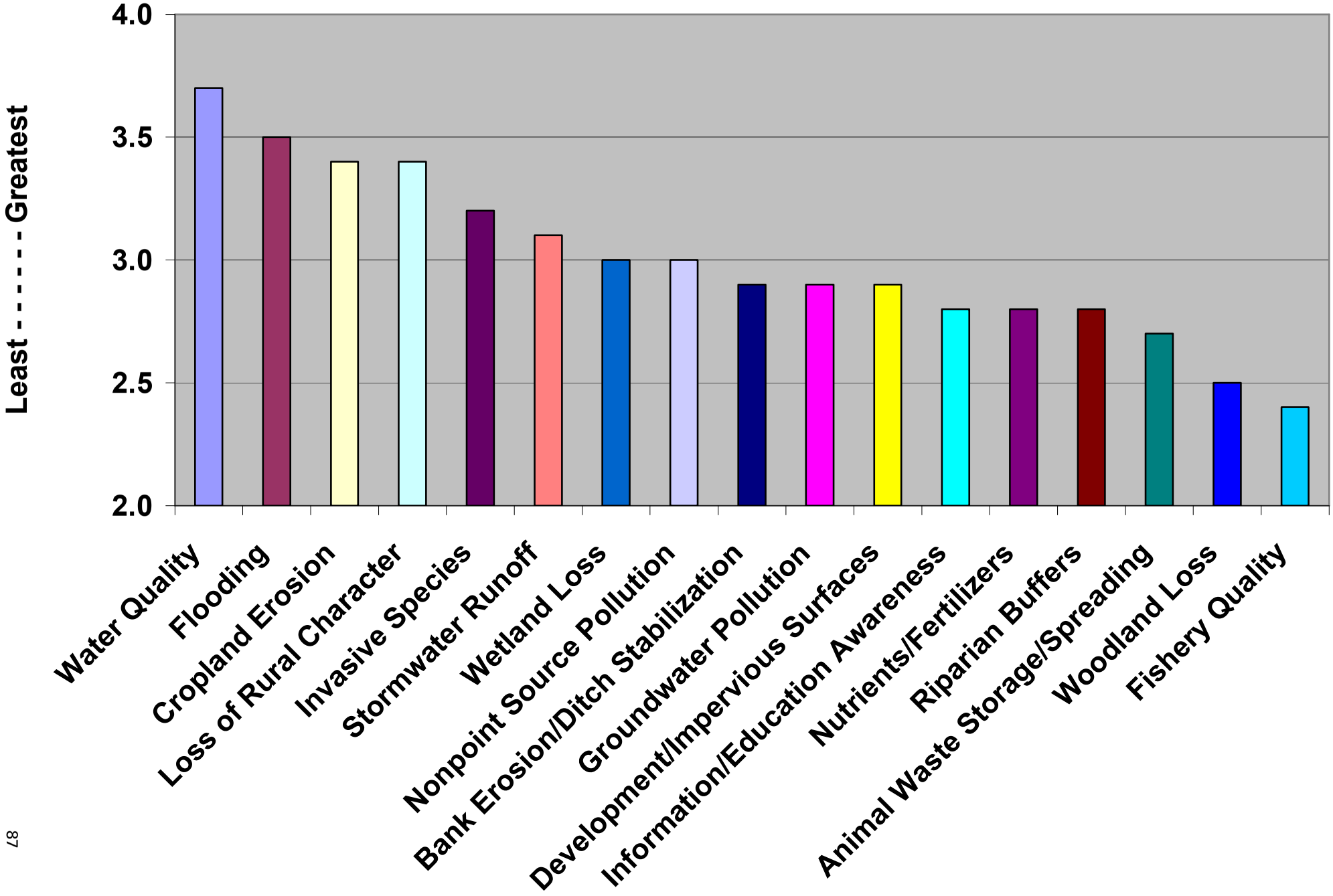
6. Review, discussion, and possible recommendation on a Resolution to authorize the formation of a Land Information Council, and appointment of members to said Council, pursuant to Wisconsin State Statutes, Chapter 59.72 (3m).

7. Review, discussion, and possible action on referrals from the Racine County Board of Supervisors

8. Other business as authorized by law

9. Adjourn

Appendix C
2012 Citizen Advisory Committee
Land & Water Resource Concerns



APPENDIX C-1

Advisory Committee Issues – May 23, 2012

4 - Very Concerned
3 - Somewhat Concerned
2 - Very Little Concern
1 - No Concern
0 - Don't Know – Not Sure

_____ **Water Quality**

_____ **Nonpoint Source Pollution**

_____ **Loss of Rural Character**

_____ **Flooding**

_____ **Cropland Erosion**

_____ **Stormwater Runoff**

_____ **Animal Waste Storage and Spreading**

_____ **Streambank Erosion / Ditch Stabilization**

_____ **Groundwater Pollution**

_____ **Fishery Quality**

_____ **Nutrients / Fertilizers**

_____ **Riparian Buffers**

_____ **Wetland Loss**

_____ **Invasive species**

_____ **Development / Impervious Surfaces**

_____ **Information and Education Awareness**

_____ **Woodland Loss**

APPENDIX D

Agricultural Performance Standards and Prohibitions	Non-Agricultural Performance Standards
• Control cropland and pasture erosion to meet tolerable rates. • Build, modify or abandon manure storage facilities according to accepted standards. • Divert clean runoff away from livestock and manure storage areas located near waterbodies or areas susceptible to groundwater contamination. • Apply manure and other fertilizers according to an approved nutrient management plan. • No overflow of manure and other fertilizers. • Amount of material in manure storage facility cannot exceed the margin of safety level. • No unconfined manure piles near waterbodies. • No direct runoff from feedlots or stored manure into state waters. • No trampled streambanks or shorelines from livestock. • Utilize the 5’ tillage setback • Follow the phosphorus index rules • Have no significant discharge of process wastewater to waters of the State.	• During construction, control 80% of the sediment load from sites of 1 acre or more. • After construction, control 80% of the total suspended solids, control the peak discharge rate, infiltrate a portion of the water coming off the site and maintain vegetated buffers around waterbodies. • Control petroleum product runoff from fueling and vehicle maintenance areas. • In developed urban areas (density of 1,000/sq. mi. or more), educate the public and develop programs on proper leaf, yard and pet wastes management, apply nutrients on municipally owned property in accordance with a nutrient management schedule and detect and eliminate management schedule and detect and eliminate illicit discharges. • Permitted municipalities, in addition to the above 3 requirements, must reduce total suspended solids by 20%. • Non-municipal properties that apply fertilizers to more than 5 acres of turf or lawn must do so according to an application schedule based on soil tests.

APPENDIX E

Tech Guide Practice Code	Practice Name	Racine County Cost-Share Rate
560	Access roads and cattle crossings.	70%
330	Contour farming.	N/A
340	Cover crop.	N/A
342	Critical area stabilization.	70%
362	Diversions.	70%
380	Field windbreaks.	N/A
393	Filter strips.	70%
410	Grade stabilization structures.	70%
561	Heavy use area protection.	70% (2)
468	Lined waterway or outlet	70%
382	Livestock fencing.	N/A
614	Livestock watering facilities.	N/A
313	Manure storage systems.	70% (2)
360	Manure storage system closure.	70% (2)
590	Nutrient management.	$7/ac/yr - 4 years upfront
528A	Prescribed grazing.	N/A
391	Riparian buffers.	70%
558	Roof runoff structure.	70%
580	Streambank and shoreline protection.	70% (2)
606	Subsurface drains.	70%
600	Terrace systems.	70%
620	Underground outlets.	70%
634	Waste transfer systems.	70% (2)
635	Wastewater treatment strips.	70%
638	Water and sediment control basins.	70%
412	Waterway systems.	70%
642	Well decommissioning.	70% (1)
657	Wetland restoration	70% (2)

(1) Payment not to exceed $700
(2) Payment not to exceed $10,000