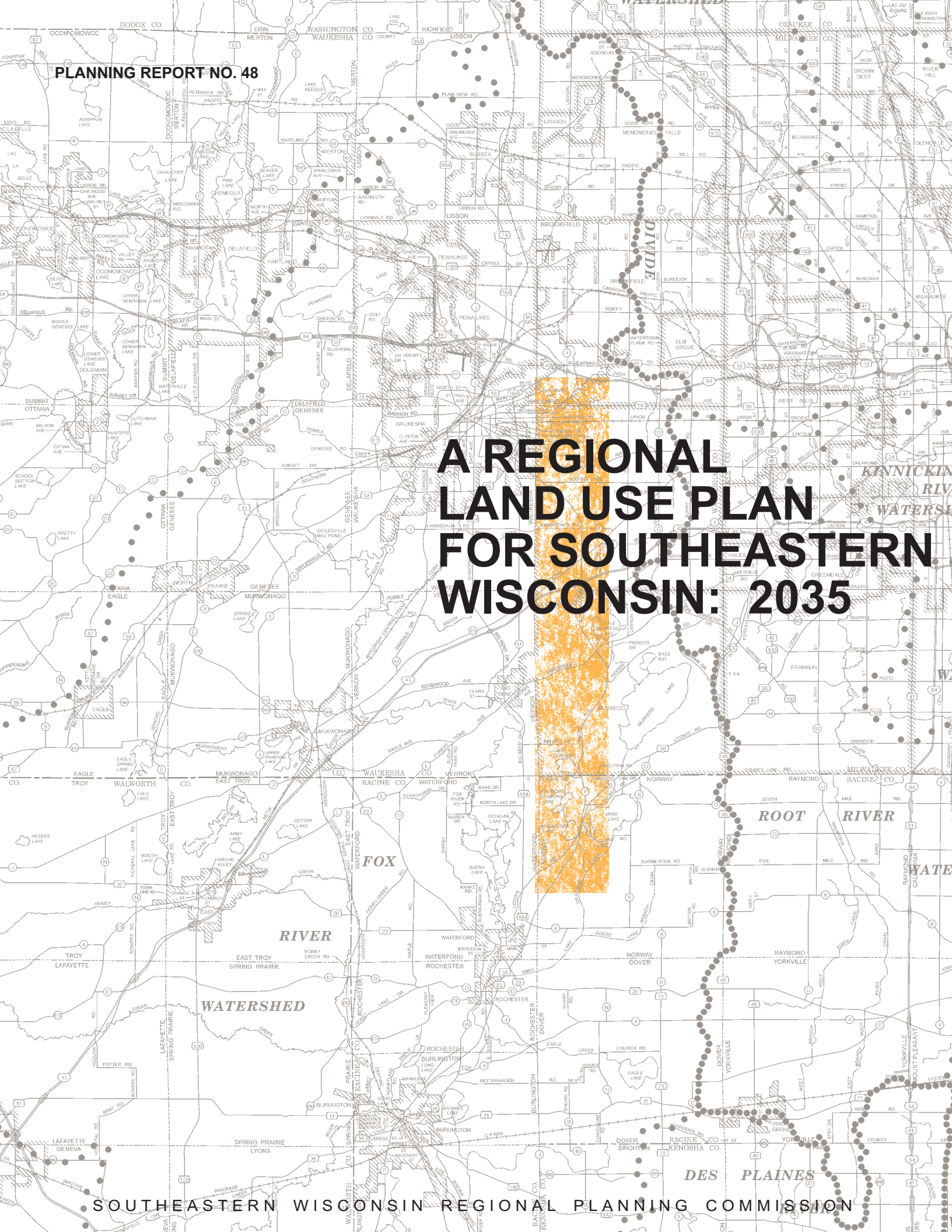
PLANNING REPORT NO. 48

A REGIONAL LAND USE PLAN FOR SOUTHEASTERN WISCONSIN: 2035



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NUMBER 48

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Prepared by the

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STATEMENT OF THE CHAIRMAN

After careful evaluation and public review of alternatives, the Regional Planning Commission in 1966 adopted an initial regional land use plan, with a design year 1990, as a guide for growth and development in the seven-county Southeastern Wisconsin Region. Major reevaluations of the plan were completed in 1977, 1992 and 1997. These efforts culminated in the preparation and adoption of new land use plans embodying the basic principles and concepts of the initial plan, with the plan design period extended, first to the year 2000 and then to the years 2010 and 2020.

In June 2006, the Commission completed the work necessary to extend the regional land use plan 15 years further into the future. The new plan accommodates population, household, and employment levels anticipated in the Region through the year 2035. As it was extended in time, the plan reflects development that occurred or was considered committed in the Region since the completion of the year 2020 plan, and to reflect as well recently completed county and municipal land use plans which serve to refine and detail the regional plan.

The year 2035 regional land use plan incorporates the basic principles and concepts of the previously adopted plans. The plan promotes a compact, centralized regional settlement pattern, with urban development recommended to occur within, and along the periphery of, existing urban centers; promotes the location of new urban development in areas which are physically suitable for such development and which may be readily served by basic urban services, including sanitary sewer, water supply, and public transit services; and seeks to preserve the environmentally sensitive lands and the most productive farmlands in the Region. Like the previous plans, the new plan is advisory in nature. Plan implementation will depend largely upon the willingness of county and local governments to use land use controls to shape development patterns in the regional interest.

The year 2035 regional land use plan will provide a sound regional development framework needed in support of transportation and other public facility planning at the regional level, and in support of the preparation of comprehensive plans and related plan implementation efforts by county and local units of government in the Region.

Very truly yours,

Thomas H. Buestrin
Chairman

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Chapter I

INTRODUCTION

This report documents the fifth-generation regional land use plan for the Southeastern Wisconsin Region, as well as the process used to arrive at that plan. The new plan is for the design year 2035 and reflects changes in the Region which have occurred since preparation of the previously adopted design year 2020 plan and projections of growth and change in the Region through the year 2035.

The Commission is the official areawide regional planning agency for the seven-county Southeastern Wisconsin Region under State law. It is charged by law with "the function and duty of making and adopting a master plan for the physical development of the region." The permissible scope and content of this plan, as outlined in the enabling legislation, extend to all phases of regional development, implicitly emphasizing, however, the preparation of spatial designs for the use of land and for supporting transportation and utility facilities.

In carrying out its designated planning responsibilities, the Commission has proceeded with the preparation of individual plan elements which together form the comprehensive plan for the Region. The individual elements are coordinated by being related to an areawide land use plan. In this sense, the land use plan constitutes the most basic plan element, the element on which other elements are based.

The Commission first adopted a regional land use plan, along with a supporting regional transportation system plan, in 1966. Those plans had a design year of 1990. Following a period of about 10 years, those plans underwent a major review and reevaluation. The review of the regional land use plan at that time included analyses of population and employment growth and change and land development trends, focusing on the conformance of those changes and trends to the forecasts used in the preparation of the plan. This plan reappraisal was supported by then-new 1970 and 1975 regional land use inventory data, 1970 U.S. Bureau of the Census population and household data, and then-available economic base data for the Region. This major plan reappraisal, which included a review of the extent to which the 1990 regional land use plan had been implemented over the previous 10 years, resulted in a second-generation design year 2000 regional land use plan, which was adopted by the Commission in 1977. Similarly, following a period of about 10 years, another major review and reevaluation was undertaken using 1980, 1985, and 1990 land use inventory data; 1980 and 1990 U.S. Bureau of the Census population and household data; and then-available economic base data. This review and reevaluation resulted in a third-generation design year 2010 regional land use plan, adopted by the Commission in 1992. In

1997, the regional land use plan was reviewed and reaffirmed, with amendment and extension of the plan design year to the year 2020, resulting in a fourth-generation year 2020 regional land use plan.[1] Each succeeding regional land use plan has been accompanied by a corresponding regional transportation system plan.

This report, then, presents the major findings and recommendations of the planning process leading to the preparation of the fifth-generation year 2035 regional land use plan. A corresponding fifth-generation regional transportation system plan is presented in SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*. The new land use and transportation plans represent principal elements of a regional comprehensive plan as envisioned under the State's expanded comprehensive planning legislation enacted in 1999.

THE REGION

The Southeastern Wisconsin Region consists of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties (see Map 1). Exclusive of Lake Michigan, these seven counties have a total area of 2,689 square miles, or about 5 percent of the total area of Wisconsin. These counties, however, account for about 36 percent of the total population of the State, about 36 percent of all jobs in the State, and about 37 percent of the total tangible wealth of the State as measured by equalized property value. Exclusive of school and other special-purpose districts, the Region contains 154 local units of government, all of which participate in the work of the Commission.

Geographically, the Region is located in a relatively good position with regard to continued growth and development. It is bounded on the east by Lake Michigan, which is an integral part of a major international transportation network. It is bounded on the south by the rapidly expanding metropolitan region of northeastern Illinois, and on the west and north by the fertile agricultural lands and desirable recreation areas of the rest of the State of Wisconsin. Many of the most important industrial areas and heaviest population concentrations in the Midwest lie within 250 miles of the Region.

Map 1 also shows the boundaries of the urbanized areas within the Region as defined by the U.S. Bureau of the Census. Urbanized areas are delineated by the U.S. Bureau of the Census based on resident population and population density; they consist of a central core and adjacent densely settled area that together contain at least 50,000 people. There are four urbanized areas within the Region: the Kenosha, Milwaukee, and Racine urbanized areas; and the Round Lake Beach urbanized area in western Kenosha County, the greater portion of which is located in northeastern Illinois.

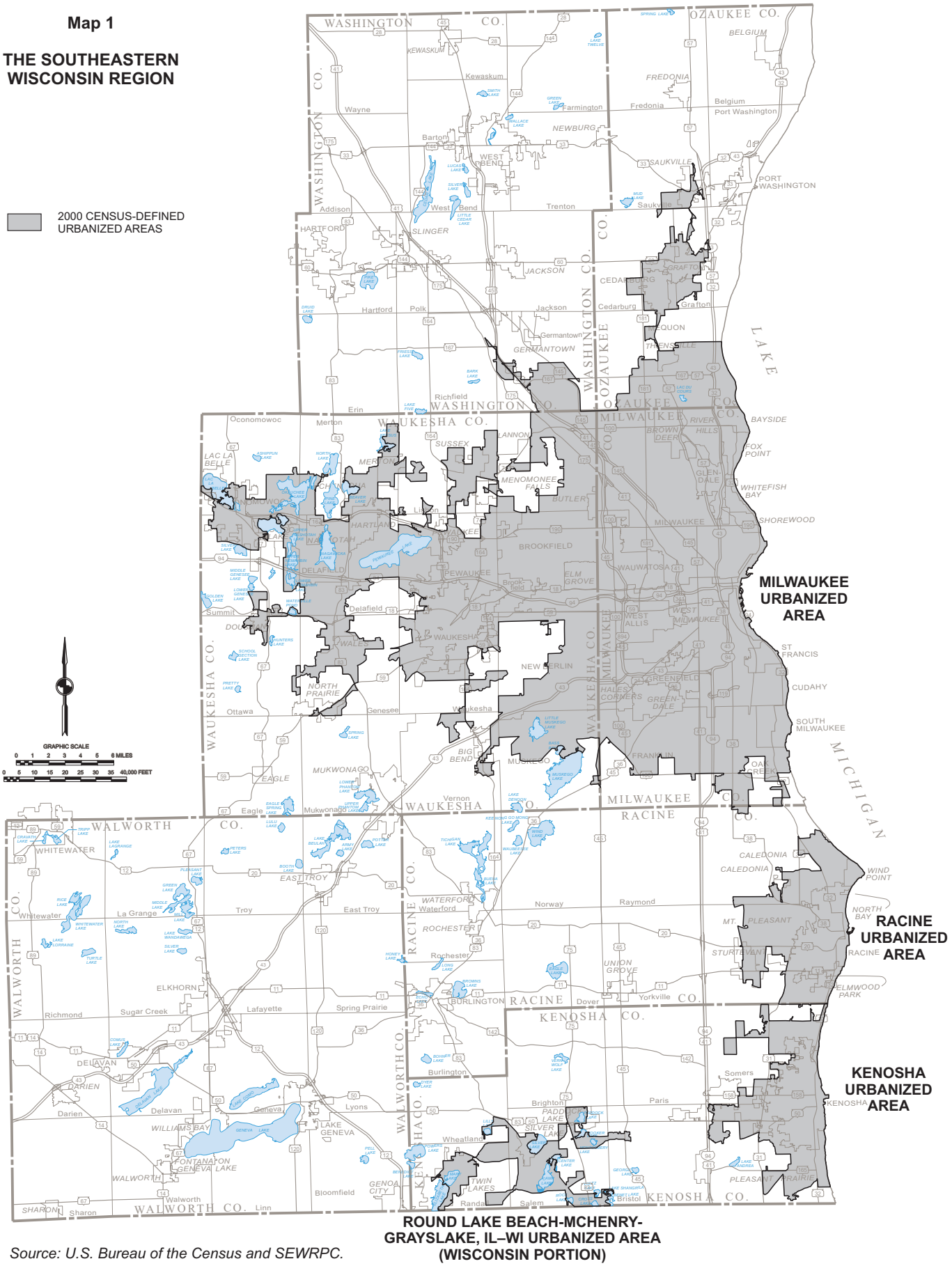
NEED FOR PLAN REVIEW, RE-EVALUATION, AND EXTENSION

Within the planning framework conceived by the Commission, the periodic review of major elements of the comprehensive plan is essential. Since it is the foundation for all other plan elements, the periodic review of the regional land use plan is especially important. Owing to the passage of time, there is a need for a thorough review

[1] *The first-generation regional land use plan along with the first-generation transportation plan, is documented in SEWRPC Planning Report No.7,* Land Use-Transportation Study, *Volume One,* Inventory Findings: 1963, *May 1965; Volume Two,* Forecasts and Alternative Plans: 1990, *June 1966, and Volume Three,* Recommended Regional Land Use and Transportation Plans: 1990, *November 1966. The second-generation regional land use plan, along with the second-generation transportation plan, is documented in SEWRPC Planning Report No. 25,* A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin-2000, *Volume One,* Inventory Findings, *April 1975, and Volume Two,* Alternative and Recommended Plans, *May 1978. The third-generation regional land use plan is documented in SEWRPC Planning Report No. 40,* A Regional Land Use Plan for Southeastern Wisconsin-2010, *January 1992. The fourth-generation regional land use plan is documented in SEWRPC Planning Report No. 45,* A Regional Land Use Plan for Southeastern Wisconsin: 2020, *December 1997.*

Map 1

THE SOUTHEASTERN WISCONSIN REGION



Source: U.S. Bureau of the Census and SEWRPC.

and evaluation of that plan in light of changes which have occurred with respect to population and employment levels and distribution, land use patterns, and public facility and utility systems and in light of any discernable changes in regional development objectives or the relative priority attached to those objectives. Moreover, there is a need to extend the plan to a new design year on the basis of these changes; on the basis of the findings and recommendations of other local, county, or regional plans since completed; and on the basis of new projections of population and economic activity. Finally there is a need to ensure that the regional land use plan, in conjunction with the regional transportation plan and other Commission-prepared plans, fulfills the requirements of the State comprehensive planning law, as appropriate at the regional level of planning.

SCOPE OF THE REGIONAL LAND USE PLAN

The regional land use plan addresses land use in a manner considered to be appropriate from an areawide planning perspective. It focuses on land uses which form the overall generalized pattern of urban and rural development considered at a regional scale. These include open space uses including agriculture; areas encompassing concentrations of wetlands, woodlands, and other natural resource features; and major parks and open space reserves. With respect to urban uses, the plan addresses the general location and intensity of residential development and the location of larger concentrations of commercial, industrial, and institutional uses, and certain transportation terminals—all of which place demands on public works facilities of areawide concern, including highways and transit facilities, sanitary trunk sewers and wastewater treatment plants, and major stormwater management facilities. Smaller urban uses, such as neighborhood commercial, institutional, and recreational areas, are considered in the regional planning process only in regard to the aggregate area they require and their approximate densities and distribution. Such neighborhood uses are incorporated implicitly in the regional land use plan as integral components of urban neighborhood units.

BASIC PRINCIPLES

The Commission's regional land use planning is based upon four basic principles:

- **Land use planning must be regional in scope.** Many problems and opportunities attendant to changing land use within an urbanizing region transcend corporate limits. Land use planning at a regional level assists in identifying common interests and objectives among counties and communities within the Region. As a practical matter, a regional land use plan provides an overall framework within which county and community land use plans—and, ultimately, neighborhood plans—can best be prepared and coordinated with one another.

- **Land use planning must be conducted concurrently with, and cannot be separated from, transportation and public utility planning.** The land use pattern determines transportation and public utility needs. In turn, the transportation and public utility systems may have some impact on shaping the future land use pattern. Although detailed land use patterns are primarily of local concern and properly subject to local planning and control, the aggregate effects of the spatial distribution of land use activities are regional in scope and interact strongly with the need for regional transportation and utility facilities.

- **Land use planning must recognize the existence of a limited natural resource base to which urban and rural development must be properly adjusted to ensure the overall environmental quality of the Region.** Land, water, and air resources are limited, and sensitive to potential misuse through improper land use, as well as public utility and facility development and through inadequate soil and water conservation practices.

- **The regional land use planning process is cyclical in nature, alternating between areawide systems planning and local planning.** Under this concept, an overall regional land use plan design is initially advanced at the areawide systems level of planning, and then an attempt is made to implement the plan recommendations through county and local land use planning. If, for whatever reasons, a particular

feature of the regional plan cannot be implemented at the local level, that determination is taken into account in the next cycle of areawide systems planning.

THE PLANNING PROCESS

The key steps in the regional land use planning process are 1) formulation of objectives and standards, 2) inventory, 3) analyses and forecasts, 4) plan design, 5) plan evaluation, and 6) plan refinement and plan adoption. Plan implementation, although a step beyond the foregoing planning process, is considered throughout the process so that realization of the plans may be fostered.

Formulation of Objectives and Standards

In its most basic sense, planning is a rational process for establishing and meeting objectives. The formulation of objectives is, therefore, an essential task to be undertaken before plans can be prepared. The objectives which are chosen guide the design and preparation of the plan and, when converted to standards, provide the criteria for plan evaluation.

As part of the current planning process, the land use development objectives and standards embodied in the fourth-generation year 2020 regional land use plan were carefully reviewed in light of changes in the Region since the preparation of that plan. Based upon that review, the prior objective and standards were re-affirmed or revised as appropriate, providing an important part of the basis for the preparation of the fifth-generation regional land use plan.

Inventory

Reliable basic planning and engineering data, collected on a uniform, areawide basis, are essential to the formulation of workable development plans. Consequently, inventory becomes the first operational step in any planning process. The crucial nature of factual information in the planning process should be evident, since no intelligent forecasts can be made, or alternative courses of action selected, without extensive knowledge of the current state of the system being planned.

Major inventory work conducted in support of the fifth-generation regional land use plan included areawide inventories of the population and economy, land use, natural resource base, public utility service areas, and community plans and zoning ordinances within the Region.

Analyses and Forecast

Inventories provide factual information about the present situation, but analyses and forecasts are necessary to provide estimates of future needs for land and resources. Analyses of the information provided by the inventories are required to provide an understanding of the existing situation, the trends of change in that situation, and the factors influencing these trends. Particularly important among the analytical relationships established are those which link population and economic activity levels to the demand for various categories of land use.

Future land use needs must be estimated from a sequence of interlocking forecasts founded in the results of the planning analyses. Economic activity and population forecasts set the general scale of future growth, which, in turn, is translated into future demands for natural resources and the various land uses.

The Regional Planning Commission prepared new projections of population, households, and employment for the Region in 2004, extending those projections to the year 2035. As in prior studies, the Commission projected a range of future population, household, and employment levels—high, intermediate, and low—for the Region. The intermediate projection is considered the most likely to be achieved for the Region overall, and in this sense, constitutes the Commission's forecast to be used as a basis for the preparation of the year 2035 regional land use plan and other elements of the comprehensive plan for the Region. The high and low projections are intended to provide an indication of the range of population, household, and employment levels which conceivably could be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

Plan Design

Plan design, or synthesis, forms the heart of the planning process. The most well-conceived objectives, the most sophisticated data collection and analysis efforts, and the most accurate forecasts are of little value if they do not ultimately result in sound plans to meet established objectives. The outputs of each of the three planning steps—formulation of objectives and standards, inventory, and forecast—become inputs to the plan design process. The land use plan design process seeks to meet the anticipated future demand for urban and rural land uses in the Region in a manner that is consistent with the established land use development objectives and standards.

Prior generations of the regional land use plan proposed that future land use in the Region be shaped in three significant ways, recommending the following: 1) that urban development be encouraged to occur only in those areas of the Region which are covered by soils suitable for such development, which are not subject to special hazards such as flooding and erosion, and which can be readily served by essential municipal facilities and services, including centralized public sanitary sewerage, water supply, and public transit service—with urban development occurring within existing urban centers as infill development and redevelopment, as well as within defined urban growth areas adjoining these centers; 2) that primary environmental corridors—generally, regionally significant, elongated areas in the landscape containing concentrations of the most important remaining elements of the natural resource base—be preserved in essentially natural, open use and that other areas containing concentrations of natural resource features identified as secondary environmental corridors and isolated natural resource areas be considered for preservation in county and local land use plans; and 3) that most of the remaining prime agricultural lands, consisting of the most productive farmlands in the Region, be reserved for agricultural use and that other areas located beyond planned urban service areas be retained in rural use, including, as appropriate, rural density residential development—that is development at a density of no more than one housing unit per five acres. Prior generations of the regional land use plan recommended a moderation of the trend of decentralization of population, employment, and urban land uses within the Region.[2]

The foregoing general design concepts were carried forward into the fifth-generation year 2035 regional land use plan. The new plan was designed to accommodate population, household, and employment levels envisioned for

[2] *Prior regional land use planning efforts prepared and presented for public evaluation the full range of spatial design alternatives that were practically available to the Region. Under the first regional planning study carried out in the 1960s, three plan design alternatives—a controlled existing trend plan, a corridor plan, and a satellite city plan—along with an unplanned alternative were prepared. These alternatives are described in SEWRPC Planning Report No. 7,* Land Use-Transportation Study, *Volume Two,* Forecasts and Alternative Plans: 1990, *dated June 1966. Based upon technical evaluation and the reaction of public officials and citizens of the Region, the controlled existing trend plan was adopted in 1966 as the recommended regional land use plan for the year 1990. In the second regional land use planning study, two variations of the controlled existing trend plan, differing in terms of the degree to which they would centralize development within the Region were prepared. These alternatives are described in SEWRPC Planning Report No. 25,* A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin-2000, *Volume Two,* Alternative and Recommended Plans, *dated May 1978. After careful review and evaluation, the plan alternative emphasizing centralized growth was selected for adoption as the recommended year 2000 regional land use plan. The initial design year 1990 and second-generation design year 2000 regional land use plans incorporated the plan recommendations regarding the general location and intensity of urban development and regarding the preservation of environmentally significant areas, important farming areas, and other rural areas, indicated in the above text. Subsequent generations of the regional land use plans—plans for the years 2010 and 2020—similarly incorporated those basic recommendations.*

the Region under the Commission intermediate projections for the year 2035. The resulting plan is intended to provide a desirable, and yet achievable, future land use pattern reasonably consistent with local land use plans and land use regulations.[3]

Plan Evaluation
This step involves the review of the proposed land use plan in terms of the degree to which the plan meets the regional land use development objectives. In the evaluation process, the proposed plan is reviewed against the standards supporting each objective. Those standards enable the land use objectives to be related to physical development recommendations and thus facilitate the evaluation of the ability of plan proposals to achieve the chosen objectives.

Plan Refinement and Adoption
The review of the land use plan was accomplished through an advisory committee structure and through public informational meetings and public hearings. In addition, opportunity to comment on the plan was afforded through the Commission's internet website. After refinement as warranted by that review process, upon the recommendation of the Commission's Advisory Committee on Regional Land Use Planning, the plan would be considered for adoption by the Regional Planning Commission. Upon adoption by the Commission, the plan would be certified to the concerned units and agencies of government for endorsement and implementation.

ORGANIZATIONAL STRUCTURE AND PUBLIC INVOLVEMENT FOR THE STUDY

The work leading to the preparation of the year 2035 regional land use plan was carried out by the staff of the Commission under the guidance of the Commission's Advisory Committee on Regional Land Use Planning. Membership on that Committee consists primarily of planning officials from counties and communities from throughout the Southeastern Wisconsin Region, as well as representatives of concerned State agencies, including the Wisconsin Departments of Natural Resources and Transportation. A complete membership list of the Advisory Committee is provided on the inside front cover of this report. The Advisory Committee guided the planning process, reviewing and approving this study report.

Also, during the course of the study, the Commission staff worked with a number of interests through individual and group meetings, providing information about, and obtaining input on, the plan and the planning process. These interests included agricultural interests, environmental interests, builders and realtors, and minority and low-income populations.

During the course of the study, a series of newsletters was issued to a wide audience including elected officials in the Region, technical and appointed planning and engineering officials within the Region, minority and low income population groups, business and industry groups, print and broadcast media, and Region residents who have indicated in the past, or during the study, an interest in planning issues.

The Commission also maintained a website—www.sewrpc.org/regionalplans—which included all materials prepared under the study including summary and background information; the study report as prepared chapter-by-chapter; Advisory Committee meeting agendas and minutes; newsletters; and an opportunity to provide comments on the study.

[3] *It is recognized that, in sewer service area planning and certain public facility planning efforts, it may be appropriate to consider future growth higher than envisioned under the intermediate projection, since growth in excess of the intermediate projection may occur in subareas of the Region and could conceivably occur for the Region as a whole. In order to facilitate such planning, a range of future population levels is presented for each planned urban service area within the Region in Appendix F of this report.*

Four series of general public informational meetings were held during the study to provide information on, and obtain input to, the planning process. These meetings dealt with both land use and transportation planning. The first series of meetings was held in summer 2004; the purpose of this series of meetings was to familiarize the public with the plan review and update process and to provide an opportunity for public input at the outset of the planning process. The second series of meetings, held in spring 2005, dealt with the land use objectives and land use design concepts to be used as a basis for developing the new regional land use plan, providing an opportunity for public input in this regard. The third series of meetings, held in fall 2005, and the fourth series, held in early 2006, dealt with the preliminary year 2035 regional land use plan, providing an opportunity for public review of, and comment on, the preliminary plan.

SCHEME OF PRESENTATION

The findings and recommendations of the year 2035 regional land use planning study are documented in this report. Following this introductory chapter, Chapter II presents updated information regarding the demographic and economic base, the natural environment, and land use and other aspects of the man-made environment of the Region—information that is essential to the land use planning process. Chapter III presents an evaluation of the year 2020 regional land use plan, including an assessment of progress made towards plan implementation. Chapter IV presents the results of a review of the regional development objectives and standards adopted under previous land use plans, along with any changes growing out of that review process. Chapter V presents population, household, and employment projections for the Region for the year 2035. Chapter VI presents a recommended land use plan designed to accommodate the anticipated changes in population, households, and employment through the year 2035. Chapter VII describes the actions which should be taken by the concerned units and agencies of government to facilitate implementation of the recommended plan. Chapter VIII provides an overall summary of the major findings and recommendations of the planning study.

Chapter II

EXISTING CONDITIONS AND TRENDS

INTRODUCTION

Information regarding existing conditions and historic trends with respect to the demographic and economic base, the natural environment, and the man-made environment is essential to the land use planning process. The Regional Planning Commission has developed an extensive database pertaining to these and other aspects of the Southeastern Wisconsin Region, updating that database periodically. A major inventory update effort was carried out by the Regional Planning Commission in the early 2000s in support of the preparation of new land use and transportation plans and other elements of the comprehensive plan for the Region. This chapter presents a summary of the results of that inventory update pertaining to the population, the economy, land use, sanitary sewer and water supply services, the natural resource base, the agricultural resource base, and community plans and zoning within the Region. Transportation-related inventory data are presented in a companion to this report, SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*.

DEMOGRAPHIC AND ECONOMIC BASE

Population[1]

Historic Trends and Distribution Among Counties

The population of the Region was 1,931,200 in 2000, compared to 1,810,400 in 1990. The increase of 120,800 persons, or 7 percent, in the regional population during the 1990s is substantially greater than the increase experienced during the 1970s (8,700 persons) and 1980s (45,600 persons)—but less than the increases of 333,000 persons and 182,500 persons experienced during the 1950s and 1960s, respectively (see Table 1).

In relative terms, the Region's population grew at a somewhat slower rate than the population of Wisconsin overall and the population of the United States during the 1990s. As a result, the Region's share of Wisconsin's population decreased slightly, from 37 percent to 36 percent, with the Region's share of the national population also declining. As indicated in Table 1, the Region's share of the State and national population has been gradually decreasing since 1960.

During the 1990s, six of the counties in the Region experienced significant population growth, while Milwaukee County lost population. Waukesha County gained the most population during the 1990s, increasing by 56,100 persons. Kenosha, Ozaukee, Racine, Walworth, and Washington Counties gained between 9,400 and 22,200 persons each. Milwaukee County lost 19,100 persons.

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[1]*The Regional Planning Commission conducted a detailed inventory and analysis of the regional population in 2004 following the release of the 2000 Federal census. The findings are presented in detail in SEWRPC Technical Report No. 11 (4th Edition),* The Population of Southeastern Wisconsin, *dated July 2004.*

Table 1

POPULATION TRENDS IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950-2000

	Region			Wisconsin			United States			Regional Population as a Percent of:	
		Change from Preceding Year			Change from Preceding Year			Change from Preceding Year			
Year	Population	Number	Percent	Population	Number	Percent	Population	Number	Percent	Wisconsin	United States
1950	1,240,618	- -	- -	3,434,575	- -	- -	151,325,798	- -	- -	36.1	0.82
1960	1,573,614	332,996	26.8	3,951,777	517,202	15.1	179,323,175	27,997,377	18.5	39.8	0.88
1970	1,756,083	182,469	11.6	4,417,821	466,044	11.8	203,302,031	23,978,856	13.4	39.7	0.86
1980	1,764,796	8,713	0.5	4,705,642	287,821	6.5	226,504,825	23,202,794	11.4	37.5	0.78
1990	1,810,364	45,568	2.6	4,891,769	186,127	4.0	249,632,692	23,127,867	10.2	37.0	0.73
2000	1,931,165	120,801	6.7	5,363,675	471,906	9.6	281,421,906	31,789,214	12.7	36.0	0.69

Source: U. S. Bureau of the Census and SEWRPC.

Table 2

POPULATION IN THE REGION BY COUNTY: 1950-2000

	Total Population											
	1950		1960		1970		1980		1990		2000	
County	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	75,238	6.1	100,615	6.4	117,917	6.7	123,137	7.0	128,181	7.1	149,577	7.7
Milwaukee	871,047	70.2	1,036,041	65.8	1,054,249	60.1	964,988	54.7	959,275	53.0	940,164	48.7
Ozaukee	23,361	1.9	38,441	2.5	54,461	3.1	66,981	3.8	72,831	4.0	82,317	4.2
Racine	109,585	8.8	141,781	9.0	170,838	9.7	173,132	9.8	175,034	9.7	188,831	9.8
Walworth	41,584	3.4	52,368	3.3	63,444	3.6	71,507	4.0	75,000	4.1	92,013	4.8
Washington	33,902	2.7	46,119	2.9	63,839	3.6	84,848	4.8	95,328	5.3	117,496	6.1
Waukesha	85,901	6.9	158,249	10.1	231,335	13.2	280,203	15.9	304,715	16.8	360,767	18.7
Region	1,240,618	100.0	1,573,614	100.0	1,756,083	100.0	1,764,796	100.0	1,810,364	100.0	1,931,165	100.0

	Population Change									
	1950-1960		1960-1970		1970-1980		1980-1990		1990-2000	
County	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	25,377	33.7	17,302	17.2	5,220	4.4	5,044	4.1	21,396	16.7
Milwaukee	164,994	18.9	18,208	1.8	-89,261	-8.5	-5,713	-0.6	-19,111	-2.0
Ozaukee	15,080	64.6	16,020	41.7	12,520	23.0	5,850	8.7	9,486	13.0
Racine	32,196	29.4	29,057	20.5	2,294	1.3	1,902	1.1	13,797	7.9
Walworth	10,784	25.9	11,076	21.2	8,063	12.7	3,493	4.9	17,013	22.7
Washington	12,217	36.0	17,720	38.4	21,009	32.9	10,480	12.4	22,168	23.3
Waukesha	72,348	84.2	73,086	46.2	48,868	21.1	24,512	8.7	56,052	18.4
Region	332,996	26.8	182,469	11.6	8,713	0.5	45,568	2.6	120,801	6.7

Source: U. S. Bureau of the Census and SEWRPC.

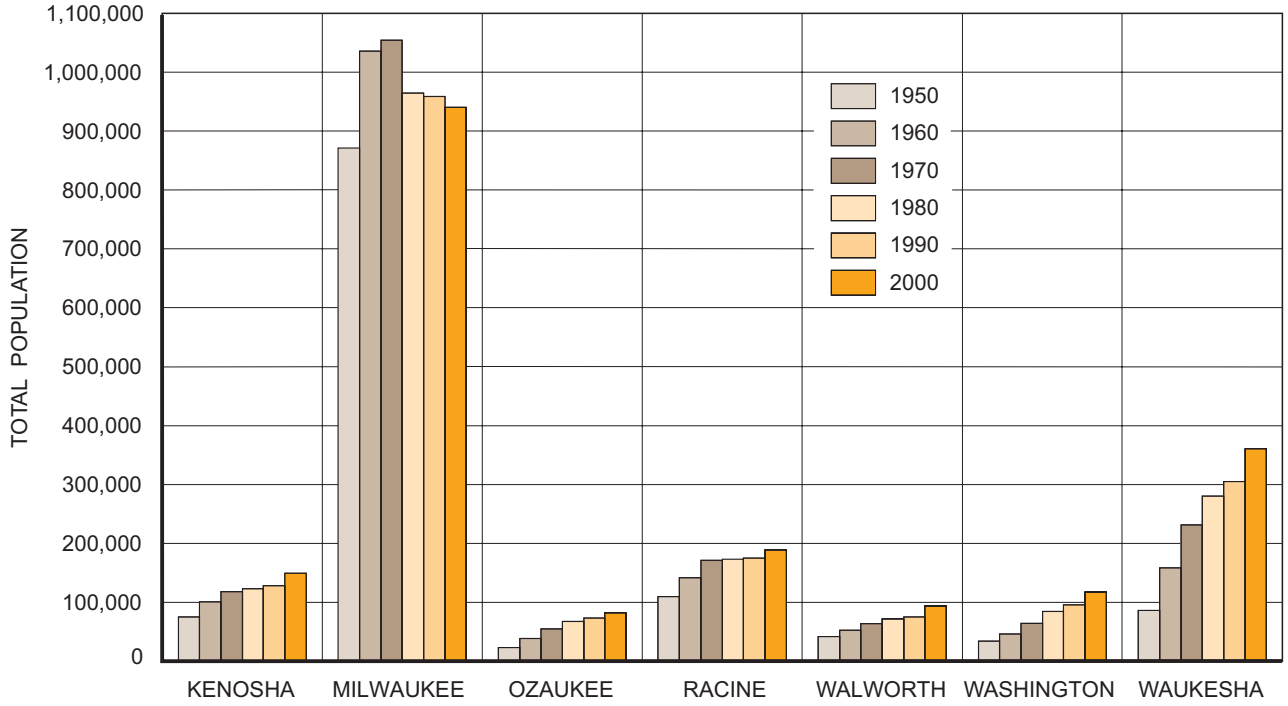
The past decade saw further change in the relative distribution of the population among the counties within the Region, continuing long-term trends in this respect (see Table 2 and Figure 1). Milwaukee County's share of the regional population decreased by about 4 percentage points during the 1990s, while the share of each of the other six counties increased at least slightly. Over the past fifty years, the most notable change in the distribution has been the increase in Waukesha County's share, from 7 percent to 19 percent of the regional population, and the decrease in Milwaukee County's share, from 70 percent to 49 percent.

Components of Population Change

Population change can be attributed to natural increase and net migration. Natural increase is the balance between births and deaths in an area over a given period of time; it can be measured directly from historical records on the number of births and deaths for an area. Net migration is the balance between migration to and from an area over a given period of time; as a practical matter, net migration is often determined as a derived number, obtained by subtracting natural increase from total population change for the time period concerned.

Figure 1

POPULATION IN THE REGION BY COUNTY: 1950-2000



Source: U.S. Bureau of the Census and SEWRPC.

Of the total population increase of 120,800 persons in the Region between 1990 and 2000, 116,900 can be attributed to natural increase; the balance can be attributed to a modest net in-migration—about 3,900 persons—into the Region. The level of natural increase in the Region has been relatively stable since the 1970s, averaging about 119,000 persons per decade (see Table 3 and Figure 2). This is significantly lower than the levels experienced during the 1950s and 1960—swhich include much of the post-World War II baby-boom era—when natural increase in the Region reached very high levels of 224,500 and 202,400 persons, respectively.

As noted above, the Region experienced a modest net in-migration during the 1990s—the first decade since the 1950s that the Region as a whole experienced positive net migration. The net in-migration of 3,900 persons for the Region during the 1990s followed three decades of net out-migration—out-migrations of 81,800 persons during the 1980s, 104,400 persons during the 1970s, and 19,900 persons during the 1960s.

An important aspect of net migration is the in-migration of persons to the Region from abroad. There was a significant movement of foreign-born persons into the Region during the 1990s. About 45,400 foreign-born persons in the Region in 2000 were reported by the U.S. Census Bureau to have entered the country between 1990 and 2000; this is significantly greater than the figures ranging from 12,300 to 18,300 reported in the 1970, 1980, and 1990 censuses. The increase in the foreign-born population, including a significant Hispanic component, is a key aspect of the population migration pattern for the Region during the 1990s.

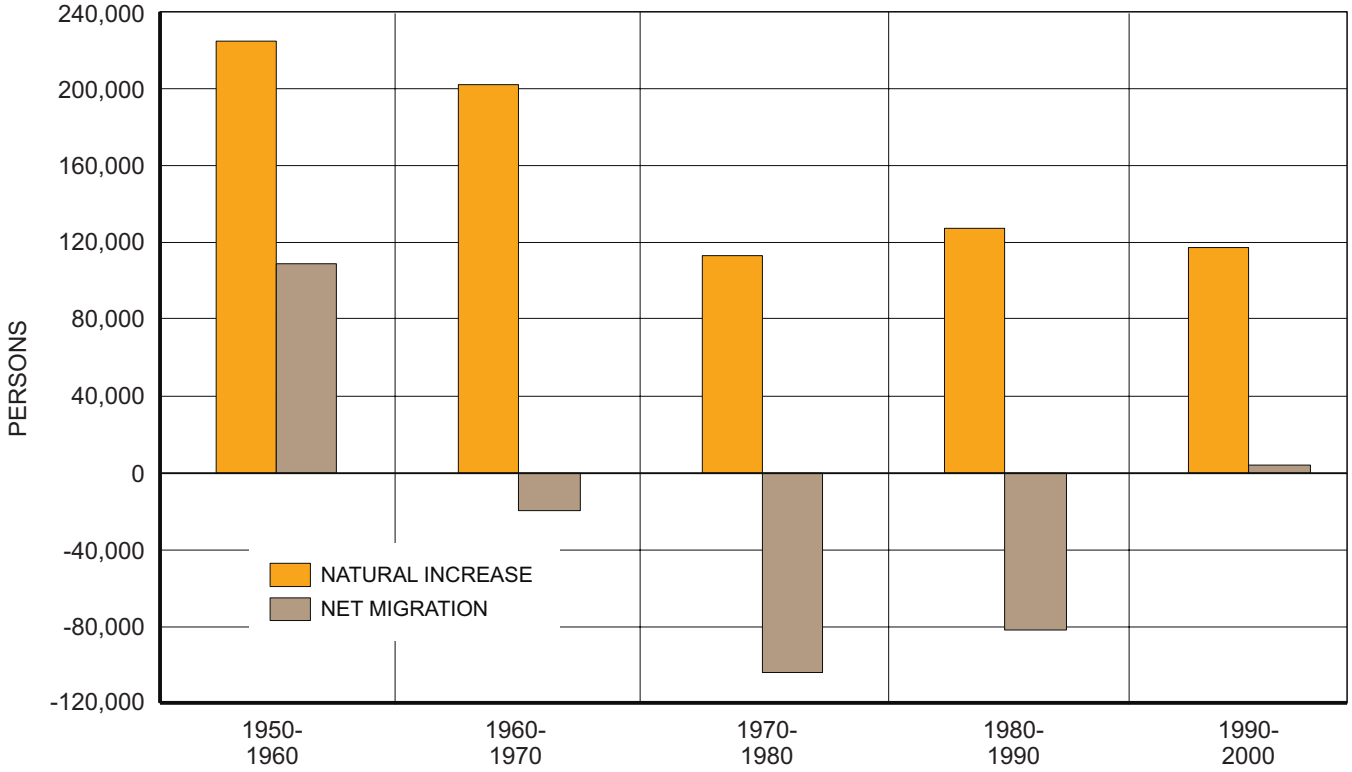
Households

Historic Trends and Distribution Among Counties

In addition to population, the number of households, or occupied housing units, is of importance in land use and public facility planning. Households directly influence the demand for urban land as well as the demand for

Figure 2

COMPONENTS OF POPULATION CHANGE IN THE REGION: 1950-2000



Source: U.S. Bureau of the Census; Wisconsin Department of Health and Family Services; and SEWRPC.

Table 3

LEVELS OF POPULATION CHANGE, NATURAL INCREASE, AND NET MIGRATION FOR THE REGION BY COUNTY: 1950-2000

County	1950-1960			1960-1970			1970-1980		
	Population Change	Natural Increase	Net Migration	Population Change	Natural Increase	Net Migration	Population Change	Natural Increase	Net Migration
Kenosha	25,377	13,931	11,446	17,302	15,125	2,177	5,220	7,746	-2,526
Milwaukee	164,994	150,141	14,853	18,208	122,192	-103,984	-89,261	60,105	-149,366
Ozaukee	15,080	5,926	9,154	16,020	6,090	9,930	12,520	4,798	7,722
Racine	32,196	21,473	10,723	29,057	20,441	8,616	2,294	12,842	-10,548
Walworth	10,784	5,733	5,051	11,076	4,685	6,391	8,063	2,451	5,612
Washington	12,217	7,501	4,716	17,720	8,122	9,598	21,009	7,163	13,846
Waukesha	72,348	19,746	52,602	73,086	25,699	47,387	48,868	18,011	30,857
Region	332,996	224,451	108,545	182,469	202,354	-19,885	8,713	113,116	-104,403

County	1980-1990			1990-2000		
	Population Change	Natural Increase	Net Migration	Population Change	Natural Increase	Net Migration
Kenosha	5,044	8,177	-3,133	21,396	9,365	12,031
Milwaukee	-5,713	69,529	-75,242	-19,111	64,145	-83,256
Ozaukee	5,850	5,141	709	9,486	3,916	5,570
Racine	1,902	13,720	-11,818	13,797	11,127	2,670
Walworth	3,493	2,939	554	17,013	2,592	14,421
Washington	10,480	7,756	2,724	22,168	7,159	15,009
Waukesha	24,512	20,068	4,444	56,052	18,582	37,470
Region	45,568	127,330	-81,762	120,801	116,886	3,915

Source U.S. Bureau of the Census; Wisconsin Department of Health and Family Services; and SEWRPC.

transportation and other public facilities and services. A household includes all persons who occupy a housing unit—defined by the Census Bureau as a house, an apartment, a mobile home, a group of rooms, or a single-room that is occupied, or intended for occupancy, as separate living quarters.

The number of households in the Region increased by 72,900 households, or 11 percent, from 676,100 households in 1990 to 749,000 households in 2000. This follows increases of 48,200 households during the 1980s, 91,500 households during the 1970s, 70,600 households during the 1960s, and 111,400 households during the 1950s.

During the 1990s, all counties in the Region experienced increases in the number of households, led by Waukesha County, which gained 29,200 households, an increase of 28 percent. Milwaukee County gained 4,700 households—a 1 percent increase—during the 1990s, despite having a decrease in total population. Changes in the distribution of households in the Region going back 50 years are indicated in Table 4 and Figure 3. These changes are similar to the distributional changes in the total population.

Household Size

In relative terms, the rate of growth in households in the Region during the 1990s, 10.8 percent, exceeded the rate of growth in the total population, 6.7 percent, as well as the rate of growth in the household population, 6.6 percent. Similar patterns were observed over each of the four previous decades. For the past 50 years overall, the number of households in the Region increased by 111 percent, while the total population increased by 56 percent and the household population increased by 58 percent. These differential growth rates between households and population are reflected in a declining average household size in the Region.

For the Region overall, the average household size—calculated as the household population divided by the number of households—was 2.52 persons in 2000 (see Table 5). During the 1990s, the average household size in the Region decreased by about 0.10 person per household, or about 4 percent, from the 1990 figure of 2.62 persons. The decrease in household size during the 1990s represents a continuation of a long-term trend in declining average household size for the Region over the past 50 years. A particularly large decrease in the average household size for the Region occurred between 1970 and 1980. Each of the seven counties in the Region has experienced a similar long-term trend of declining household size, traceable back to the 1970 or prior censuses. The decline in household size is related in part to changing household types in the Region. Single-person households and other nonfamily households have increased at a much faster rate than family households in the Region over the past three decades.

Employment[2]

Historic Trends and Distribution Among Counties

Information regarding the number and type of employment opportunities, or jobs, in an area is an important measure of the size and structure of the area's economy. Employment data presented in this section pertain to both wage and salary employment and the self-employed, and include both full-time and part-time jobs.

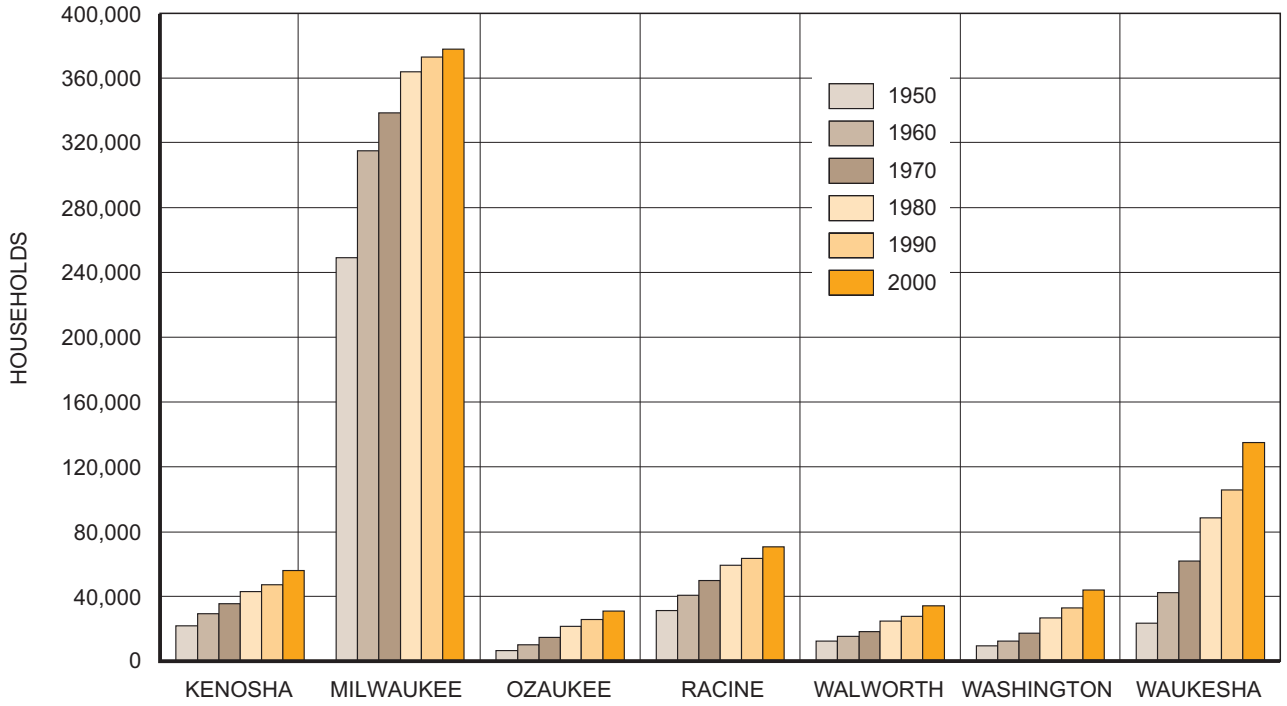
Total employment in the Region stood at 1,222,800 jobs in 2000, compared to 1,062,600 jobs in 1990. The increase of 160,200 jobs during the 1990s compares to 114,400 during the 1980s, 163,300 during the 1970s, 111,900 during the 1960s, and 99,500 during the 1950s (see Table 6).

In relative terms, employment in the Region grew at a somewhat slower rate than both the State and the Nation during the 1990s. As a result, the Region's share of total State employment decreased from about 38 percent to about 36 percent, with the Region's share of national employment also showing a slight decrease.

[2] *The Regional Planning Commission conducted a detailed inventory and analysis of the regional economy in 2004. The findings are presented in detail in SEWRPC Technical Report No. 10 (4th Edition),* The Economy of Southeastern Wisconsin*, dated July 2004.*

Figure 3

HOUSEHOLDS IN THE REGION BY COUNTY: 1950-2000



Source: U.S. Bureau of the Census and SEWRPC.

Table 4

HOUSEHOLDS IN THE REGION BY COUNTY: 1950-2000

County	Total Households											
	1950		1960		1970		1980		1990		2000	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	21,958	6.2	29,545	6.4	35,468	6.6	43,064	6.9	47,029	6.9	56,057	7.5
Milwaukee	249,232	70.3	314,875	67.6	338,605	63.1	363,653	57.9	373,048	55.2	377,729	50.4
Ozaukee	6,591	1.9	10,417	2.2	14,753	2.8	21,763	3.5	25,707	3.8	30,857	4.1
Racine	31,399	8.8	40,736	8.7	49,796	9.3	59,418	9.5	63,736	9.4	70,819	9.5
Walworth	12,369	3.5	15,414	3.3	18,544	3.5	24,789	3.9	27,620	4.1	34,505	4.6
Washington	9,396	2.7	12,532	2.7	17,385	3.2	26,716	4.2	32,977	4.9	43,843	5.8
Waukesha	23,599	6.6	42,394	9.1	61,935	11.5	88,552	14.1	105,990	15.7	135,229	18.1
Region	354,544	100.0	465,913	100.0	536,486	100.0	627,955	100.0	676,107	100.0	749,039	100.0

County	Household Change									
	1950-1960		1960-1970		1970-1980		1980-1990		1990-2000	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	7,587	34.6	5,923	20.0	7,596	21.4	3,965	9.2	9,028	19.2
Milwaukee	65,643	26.3	23,730	7.5	25,048	7.4	9,395	2.6	4,681	1.3
Ozaukee	3,826	58.0	4,336	41.6	7,010	47.5	3,944	18.1	5,150	20.0
Racine	9,337	29.7	9,060	22.2	9,622	19.3	4,318	7.3	7,083	11.1
Walworth	3,045	24.6	3,130	20.3	6,245	33.7	2,831	11.4	6,885	24.9
Washington	3,136	33.4	4,853	38.7	9,331	53.7	6,261	23.4	10,866	32.9
Waukesha	18,795	79.6	19,541	46.1	26,617	43.0	17,438	19.7	29,239	27.6
Region	111,369	31.4	70,573	15.1	91,469	17.0	48,152	7.7	72,932	10.8

Source: U.S. Bureau of the Census and SEWRPC.

Table 5

AVERAGE HOUSEHOLD SIZE IN THE REGION BY COUNTY: 1950-2000

County	Average Persons per Household					
	1950	1960	1970	1980	1990	2000
Kenosha	3.36	3.36	3.26	2.80	2.67	2.60
Milwaukee.....	3.34	3.21	3.04	2.59	2.50	2.43
Ozaukee	3.51	3.65	3.66	3.04	2.79	2.61
Racine	3.37	3.39	3.35	2.86	2.70	2.59
Walworth.....	3.25	3.28	3.16	2.74	2.60	2.57
Washington.....	3.55	3.64	3.63	3.14	2.86	2.65
Waukesha.....	3.51	3.66	3.66	3.11	2.83	2.63
Region	3.36	3.30	3.20	2.75	2.62	2.52

Source: U.S. Bureau of the Census and SEWRPC.

Table 6

EMPLOYMENT IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950-2000

Year	Region			Wisconsin			United States			Regional Employment as a percent of:	
	Jobs	Change from Preceding Year		Jobs	Change from Preceding Year		Jobs	Change from Preceding Year		Wisconsin	United States
		Number	Percent		Number	Percent		Number	Percent		
1950	573,500	- -	- -	1,413,400	- -	- -	61,701,200	- -	- -	40.6	0.93
1960	673,000	99,500	17.3	1,659,400	246,000	17.4	72,057,000	10,355,800	16.8	40.6	0.93
1970	784,900	111,900	16.6	1,929,100	269,700	16.3	88,049,600	15,992,600	22.2	40.7	0.89
1980	948,200	163,300	20.8	2,429,800	500,700	26.0	111,730,200	23,680,600	26.9	39.0	0.85
1990	1,062,600	114,400	12.1	2,810,400	380,600	15.7	136,708,900	24,978,700	22.4	37.8	0.78
2000	1,222,800	160,200	15.1	3,421,800	611,400	21.8	165,209,800	28,500,900	20.8	35.7	0.74

NOTE: Excludes military employment.

Source: U. S. Bureau of Economic Analysis and SEWRPC.

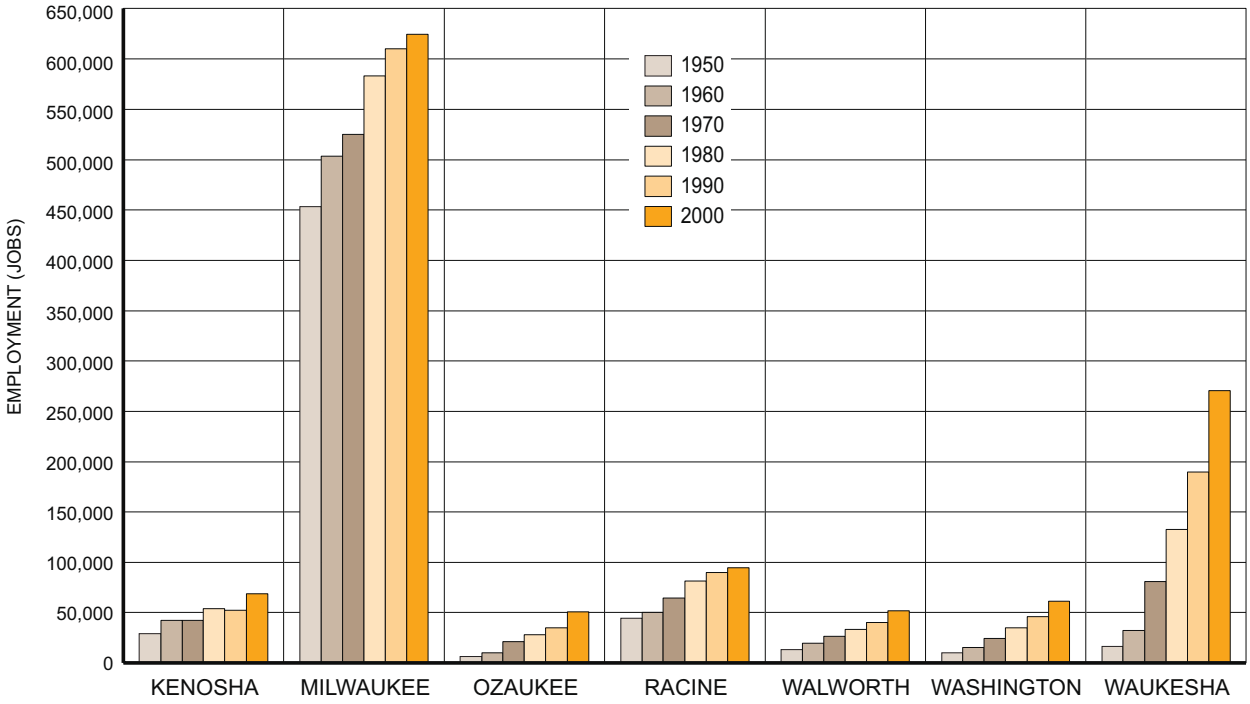
Historically, employment levels, both nationally and within the Region, tend to fluctuate in the short-term, rising and falling in accordance with business cycles. The long period of nearly uninterrupted job growth between 1983 and 2000 is unusual in this respect. Nationally and within the Region, total employment increased each year during that time, with the exception of a slight decrease in 1991. The extended period of employment growth in the Region ended after 2000, with total employment in the Region decreasing each year between 2000 and 2003. Estimated total employment in the Region stood at 1,179,000 jobs in 2003, about 4 percent below the 2000 level.

Information on current and historic employment levels is presented by county in the Region in Table 7 and Figure 4. Each county in the Region experienced an increase in employment between 1990 and 2000. With an increase of 81,100 jobs, Waukesha County accounted for just over half of the total increase in the Region's employment during the 1990s. Among the other six counties, the growth in employment during the 1990s ranged from 4,800 jobs in Racine County to 16,500 jobs in Kenosha County.

Between 1990 and 2000, Milwaukee and Racine Counties decreased in their share of total regional employment while the share of each of the other five counties increased at least slightly. Over the past five decades, Milwaukee County has experienced a substantial decrease in its share of regional employment; Waukesha County has experienced a substantial increase; and Ozaukee, Walworth, and Washington Counties have experienced gradual increases. In Kenosha and Racine Counties, the share of total regional employment in 2000 was about the same as in 1950, with some fluctuations occurring over the intervening decades.

Figure 4

EMPLOYMENT IN THE REGION BY COUNTY: 1950-2000



Source: U.S. Bureau of Economic Analysis and SEWRPC.

Table 7

EMPLOYMENT IN THE REGION BY COUNTY: 1950-2000

County	Total Employment (Jobs)											
	1950		1960		1970		1980		1990		2000	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	29,100	5.1	42,200	6.3	42,100	5.4	54,100	5.7	52,200	4.9	68,700	5.6
Milwaukee	453,500	79.1	503,300	74.8	525,200	66.9	583,200	61.5	609,800	57.4	624,600	51.1
Ozaukee	6,600	1.0	10,200	1.5	21,300	2.7	28,200	3.0	35,300	3.3	50,800	4.2
Racine	44,500	7.8	49,900	7.4	64,600	8.2	81,200	8.6	89,600	8.4	94,400	7.7
Walworth	13,200	2.3	19,600	2.9	26,400	3.4	33,500	3.5	39,900	3.8	51,800	4.2
Washington	10,200	1.8	15,200	2.3	24,300	3.1	35,200	3.7	46,100	4.3	61,700	5.0
Waukesha	16,400	2.9	32,600	4.8	81,000	10.3	132,800	14.0	189,700	17.9	270,800	22.2
Region	573,500	100.0	673,000	100.0	784,900	100.0	948,200	100.0	1,062,600	100.0	1,222,800	100.0

County	Employment Change									
	1950-1960		1960-1970		1970-1980		1980-1990		1990-2000	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	13,100	45.0	-100	-0.2	12,000	28.5	-1,900	-3.5	16,500	31.6
Milwaukee	49,800	11.0	21,900	4.4	58,000	11.0	26,600	4.6	14,800	2.4
Ozaukee	3,600	54.5	11,100	108.8	6,900	32.4	7,100	25.2	15,500	43.9
Racine	5,400	12.1	14,700	29.5	16,600	25.7	8,400	10.3	4,800	5.4
Walworth	6,400	48.5	6,800	34.7	7,100	26.9	6,400	19.1	11,900	29.8
Washington	5,000	49.0	9,100	59.9	10,900	44.9	10,900	31.0	15,600	33.8
Waukesha	16,200	98.8	48,400	148.5	51,800	64.0	56,900	42.8	81,100	42.8
Region	99,500	17.3	111,900	16.6	163,300	20.8	114,400	12.1	160,200	15.1

Source: U. S. Bureau of Economic Analysis and SEWRPC.

Employment by Industry

Information regarding employment by industry group provides insight into the structure of the regional economy and changes in that structure over time. As indicated in Table 8 and Figure 5, the services sector made up the largest proportion of regional employment in 2000, accounting for 33 percent of total employment. This was followed by manufacturing and retail trade, with 18 percent and 16 percent of total regional employment, respectively. Together, these three sectors accounted for roughly two-thirds of regional employment in 2000.

The 1990s saw a continuation of a shift in the regional economy from a manufacturing to a service orientation. Manufacturing employment in the Region was virtually unchanged during the 1990s, following a 15 percent decrease during the 1980s, and a modest 4 percent increase during the 1970s. Conversely, service-related employment increased substantially during each of the past three decades—by 33 percent during the 1990s, 41 percent during the 1980s, and 53 percent during 1970s. Due to these differential growth rates, the proportion of manufacturing jobs relative to total jobs in the Region decreased from 32 percent in 1970 to 18 percent in 2000, while service-related employment increased from 18 percent in 1970 to 33 percent in 2000. In comparison to the manufacturing and services industry groups, other major industry groups—such as wholesale trade, retail trade, government, and finance, insurance and real estate—have been relatively stable in terms of their share of total employment in the Region over the last three decades.

The State of Wisconsin and the United States have likewise experienced a major shift from manufacturing to service-related employment. However, the trend in manufacturing employment for the State overall has been more robust than for the Region. Manufacturing employment in the State increased by 24 percent between 1970 and 2000; the Region's manufacturing employment decreased by 12 percent during this time. While historically the Region exceeded the State in the proportion of manufacturing jobs relative to total jobs, by 2000 the Region and State had about the same proportion of jobs in manufacturing—just over 18 percent. In comparison, manufacturing jobs comprised about 12 percent of all jobs in the Nation in 2000.

Population and Employment Trends in Northeastern Illinois

The 1990s saw a continuation of growth and development in northeastern Illinois, including Illinois counties located immediately south of the Region. Together, the population of Lake and McHenry Counties, which abut the Region on the south, increased by 204,800 persons, or 29 percent, between 1990 and 2000. By 2000 the combined population of Lake and McHenry Counties stood at 904,400 persons (see Table 9). During the 1990s, there was also a significant net movement of population from northeastern Illinois into the Region, particularly into Kenosha and Walworth Counties.[3]

During the 1990s, employment in Lake and McHenry Counties increased by 146,800 jobs, or 41 percent. By 2000 total employment in Lake and McHenry Counties stood at 505,200 jobs. These and other counties in northeastern Illinois provide job opportunities for many residents of the Region, particularly residents of Kenosha and Walworth Counties. While a number of northeastern Illinois residents find employment in Kenosha and Walworth Counties, a far greater number of Kenosha and Walworth County residents commute to jobs in northeastern Illinois.[4]

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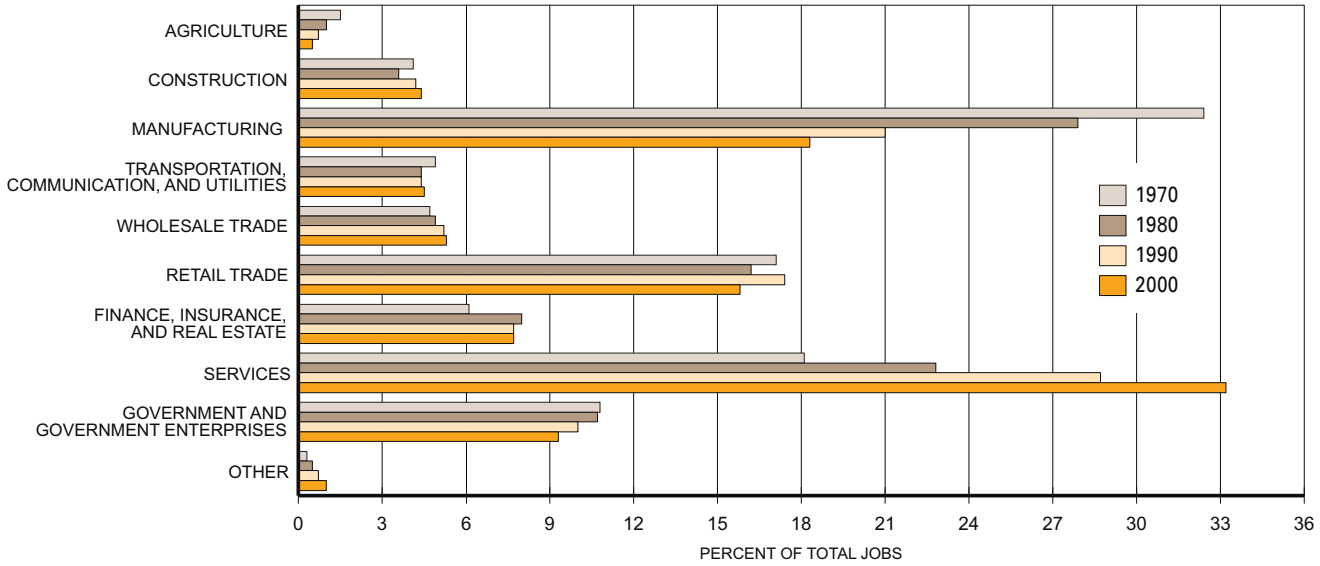
[3] *The year 2000 Federal Census reported that a total of 14,400 persons who lived in Kenosha or Walworth Counties in 2000 resided in Lake, McHenry, or Cook Counties five years earlier. This compares to a total of 4,400 persons who lived in Lake, McHenry, or Cook Counties in 2000 and resided in Kenosha or Walworth Counties five years earlier.*

[4] *The year 2000 Federal Census reported that about 25,200 persons lived in Kenosha or Walworth Counties and worked in Lake, McHenry, or Cook Counties. This compares to the reported 4,000 persons who lived in Lake, McHenry, or Cook Counties and worked in Kenosha or Walworth Counties.*

Figure 5

PERCENT DISTRIBUTION OF EMPLOYMENT BY GENERAL INDUSTRY GROUP IN THE REGION: 1970, 1980, 1990, AND 2000



Source: U.S. Bureau of Economic Analysis and SEWRPC.

Table 8

EMPLOYMENT BY GENERAL INDUSTRY GROUP IN THE REGION: 1970-2000

General Industry Group	Employment								Percent Change in Employment			
	1970		1980		1990		2000					
	Jobs	Percent of Total	Jobs	Percent of Total	Jobs	Percent of Total	Jobs	Percent of Total	1970-1980	1980-1990	1990-2000	1970-2000
Agriculture	12,000	1.5	10,000	1.0	7,200	0.7	6,000	0.5	-16.7	-28.0	-16.7	-50.0
Construction	32,400	4.1	33,900	3.6	45,100	4.2	53,800	4.4	4.6	33.0	19.3	66.0
Manufacturing	254,400	32.4	264,200	27.9	223,500	21.0	224,300	18.3	3.9	-15.4	0.4	-11.8
Transportation, Communication, and Utilities	38,500	4.9	42,200	4.4	46,300	4.4	54,800	4.5	9.6	9.7	18.4	42.3
Wholesale Trade	37,200	4.7	46,200	4.9	55,300	5.2	64,400	5.3	24.2	19.7	16.5	73.1
Retail Trade	133,900	17.1	153,900	16.2	185,400	17.4	193,700	15.8	14.9	20.5	4.5	44.7
Finance, Insurance, and Real Estate	47,600	6.1	75,600	8.0	81,800	7.7	93,700	7.7	58.8	8.2	14.5	96.8
Services	141,800	18.1	216,700	22.8	304,700	28.7	406,000	33.2	52.8	40.6	33.2	186.3
Government and Government Enterprises[a]	84,400	10.8	101,100	10.7	106,200	10.0	114,400	9.3	19.8	5.0	7.7	35.5
Other[b]	2,700	0.3	4,400	0.5	7,100	0.7	11,700	1.0	63.0	61.4	64.8	333.3
Total	784,900	100.0	948,200	100.0	1,062,600	100.0	1,222,800	100.0	20.8	12.1	15.1	55.8

[a] *Includes all nonmilitary government agencies and enterprises.*

[b] *Includes agricultural services, forestry, commercial fishing, mining, and unclassified jobs.*

Source: U. S. Bureau of Economic Analysis and SEWRPC.

The growth and development of northeastern Illinois has many implications for Southeastern Wisconsin, especially for Kenosha and Walworth Counties. These include impacts on travel patterns and on groundwater—since much development in northeastern Illinois is dependent on groundwater as a source of water supply and since the deep sandstone aquifer underlying the Southeastern Wisconsin Region is the same aquifer used by many northeastern Illinois communities. Moreover, the continued net migration of northeastern Illinois residents into the Region may be expected to impact the demand for urban land and for public utilities and services, especially in Kenosha and Walworth Counties.

Table 9

POPULATION AND EMPLOYMENT IN LAKE AND MCHENRY COUNTIES (ILLINOIS): 1970-2000

County	Year	Population			Employment		
		Population Level	Change From Preceding Year		Employment Level (jobs)	Change From Preceding Year	
			Number	Percent		Number	Percent
Lake	1970	382,600	- -	- -	134,000	- -	- -
	1980	440,400	57,800	15.1	186,500	52,500	39.2
	1990	516,400	76,000	17.3	275,300	88,800	47.6
	2000	644,300	127,900	24.8	393,900	118,600	43.1
McHenry	1970	111,600	- -	- -	41,900	- -	- -
	1980	147,900	36,300	32.5	56,400	14,500	34.6
	1990	183,200	35,300	23.9	83,100	26,700	47.3
	2000	260,100	76,900	42.0	111,300	28,200	33.9

Source: U.S. Bureau of the Census; U.S. Bureau of Economic Analysis; and SEWRPC.

LAND USE

The Commission relies on two types of inventories and analyses in order to monitor urban growth and development in the Region—an urban growth ring analysis and a land use inventory. The urban growth ring analysis delineates the outer limits of concentrations of urban development and depicts the urbanization of the Region over the past 150 years. When related to urban population levels, the urban growth ring analysis provides a good basis for calculating urban population and household densities. By contrast, the Commission land use inventory is a more detailed inventory that places all land and water areas of the Region into one of 66 discrete land use categories, providing a basis for analyzing specific urban and nonurban land uses. Both the urban growth ring analysis and the land use inventory for the Region have been updated to the year 2000 under the continuing regional planning program.

Urban Growth Ring Analysis

The urban growth ring analysis shows the historical pattern of urban settlement, growth, and development of the Region since 1850 for selected points in time. Areas identified as urban under this time series analysis include areas of the Region where residential structures or other buildings have been constructed in relatively compact groups, thereby indicating a concentration of residential, commercial, industrial, governmental, institutional, or other urban land uses. In addition, the identified urban areas encompass certain open space lands such as urban parks and small areas being preserved for resource conservation purposes within the urban areas.[5]

As part of the urban growth ring analysis, urban growth for the years prior to 1940 was identified using a variety of sources, including the records of local historical societies, land subdivision plat records, farm plat maps, U. S. Geological Survey maps, and Wisconsin Geological and Natural History Survey records. Urban growth for the years 1940, 1950, 1963, 1970, 1980, 1990, and 2000 was identified using aerial photographs. Because of limitations inherent in the source materials, information presented for the years prior to 1940 represents the extent of urban development at approximately those points in time, whereas the information presented for later years can be considered precisely representative of those respective points in time.

[5] *As part of the urban growth ring analysis, urban areas are defined as concentrations of residential, commercial, industrial, governmental, or institutional buildings or structures, along with their associated yards, parking, and service areas, having a combined area of five acres or more. In the case of residential uses, such areas must include at least 10 structures—over a maximum distance of one-half mile—located along a linear feature, such as a roadway or lakeshore, or at least 10 structures located in a relatively compact group within a residential subdivision. Urban land uses which do not meet these criteria because they lack the concentration of buildings or structures—such as cemeteries, airports, public parks, golf courses—are identified as urban where such uses are surrounded on at least three sides by urban land uses that do meet the aforereferenced criteria.*

The urban growth ring analysis, updated through 2000, is presented graphically on Map 2. In 1850, the urban portion of the Region was concentrated primarily in the larger urban centers located at Burlington, Kenosha, Milwaukee, Racine, Waukesha, and West Bend, along with many smaller settlements throughout the Region. Over the 100-year period from 1850 to 1950, urban development in the Region occurred in a pattern resembling concentric rings around existing urban centers, resulting in a relatively compact regional settlement pattern. After 1950, there was a significant change in the pattern and rate of urban development in the Region. While substantial amounts of development continued to occur adjacent to established urban centers, considerable development also occurred in isolated enclaves in outlying areas of the Region. Map 2 indicates a continuation of this trend during the 1990s, with significant amounts of development occurring adjacent to existing urban centers, and with considerable development continuing to occur in scattered fashion in outlying areas.

The urban growth ring analysis, in conjunction with the Federal censuses, provides a basis for calculating urban population and household densities in the Region and changes in density over time. Table 10 relates the urban area identified by the urban growth ring analysis with the urban population and households, going back to 1940.[6] In Table 10, the "urban population" is the total population of the Region excluding the rural farm population, as reported by the U.S. Bureau of the Census; similarly, "urban households" as reported in that table consist of all households other than rural farm households.[7]

As indicated in Table 10, the population density of the urban portion of the Region—as identified by the urban growth ring analysis—decreased significantly, from 10,700 persons per square mile in 1940 to about 5,100 persons per square mile in 1970, 3,900 persons per square mile in 1980, and 3,500 persons per square mile in 1990. During the 1990s, the urban population density decreased slightly—to about 3,300 persons per square mile in 2000. The long-term decrease in the urban population density is due in part to a trend toward lower density residential development. The decrease is also attributable, in part, to significant increases in the number of jobs—jobs having increased at a faster rate than population since 1960—and the attendant increase in commercial and industrial development in the Region. Part of the decrease in the urban population density also relates to the fact that the number of persons per household—the household being the basic unit of demand for residential development—has decreased by 25 percent since 1950.

A different density trend for the Region emerges when urban density is calculated based upon households rather than population (see Figure 6). Since 1963, the relative decrease in urban household density has been much lower than the decrease in urban population density. Between 1963 and 2000, the urban household density decreased by 23 percent, compared to a 43 percent decrease in the urban population density.

Land Use Inventory

The Commission land use inventory is intended to serve as a relatively precise record of land use for the entire area of the Region at selected points in time. The land use classification system used in the inventory consists of nine major categories which are divisible into 66 sub-categories, making the inventory suitable for both land use and transportation planning, adaptable to stormwater drainage, public utility, and community facility planning, and compatible with other land use classification systems. Aerial photographs serve as the primary basis for identifying existing land use, augmented by field surveys as appropriate. The most recent regional land use inventory was carried out based upon aerial photography taken in spring of 2000. The results of that inventory are summarized on Map 3 and Table 11.

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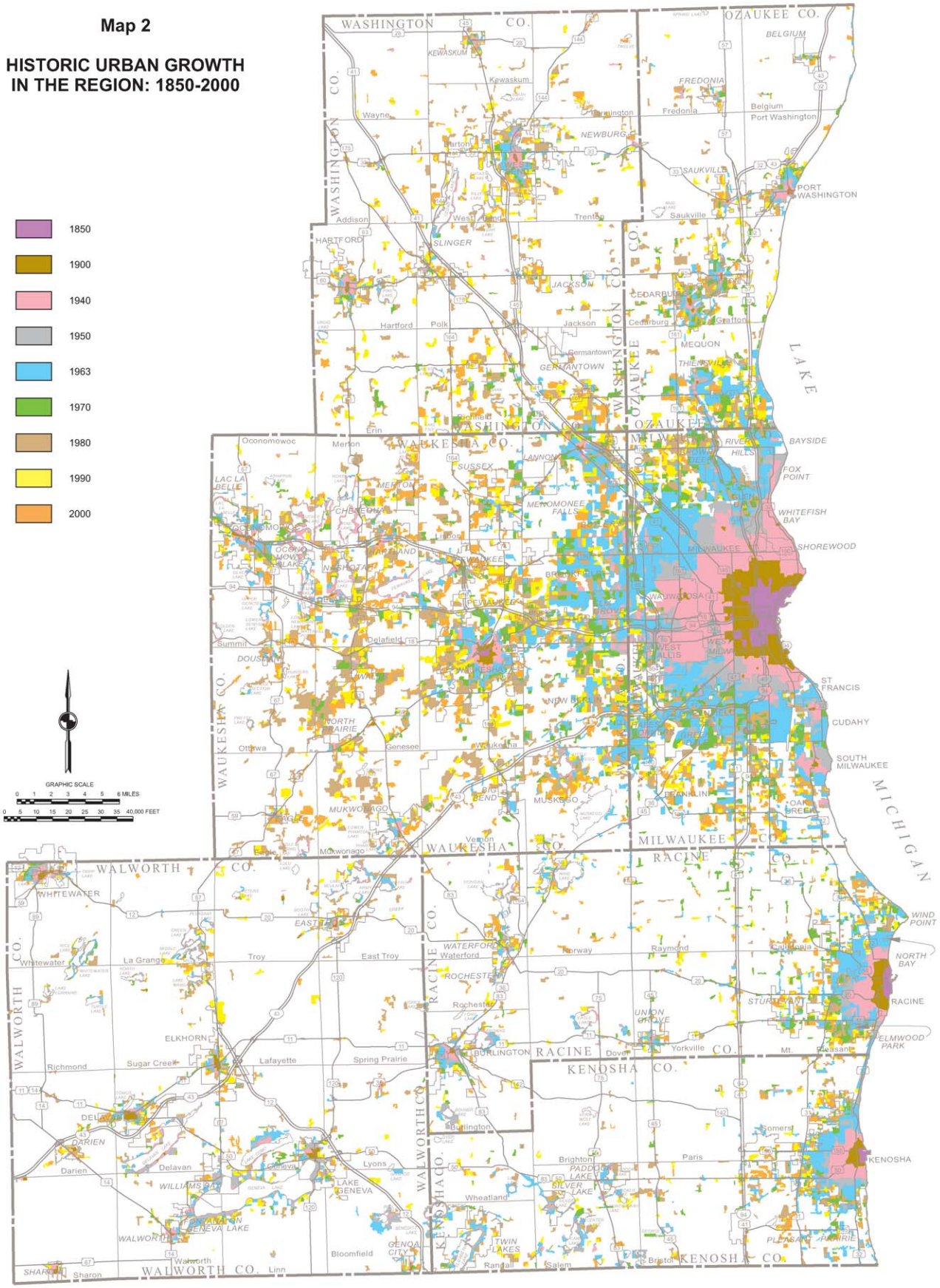
[6] *The urban growth ring analysis areas presented in Table 10 were developed using computerized map area measuring software. The area measurements presented in Table 10 differ slightly from the corresponding area measurement reported in the previous regional land use plan report, SEWRPC Planning Report No. 45, those measurements having been based on a combination of manual and computer measurement techniques.*

[7] *The Commission uses this method of approximating the population and households within the urban areas identified in the urban growth ring analysis in the absence of actual population and household counts for these areas. This method may include certain nonfarm residents living outside the identified urban areas in the estimate of the urban population and households for the Region, and, as a result, may overstate somewhat the actual urban population and household densities.*

Map 2

HISTORIC URBAN GROWTH IN THE REGION: 1850-2000



Source: SEWRPC.

Table 10

URBAN POPULATION DENSITY AND URBAN HOUSEHOLD DENSITY IN THE REGION: 1940-2000

Year	Urban Area[a] (square miles)	Urban Population		Urban Households	
		Persons[b]	Density (persons per urban square mile)	Households[c]	Density (households per urban square mile)
1940	93	991,535	10,662	272,077	2,926
1950	146	1,179,084	8,076	338,572	2,319
1963	282	1,634,200	5,795	470,856	1,670
1970	338	1,728,666	5,114	529,404	1,566
1980	444	1,749,238	3,940	623,441	1,404
1990	509	1,800,751	3,538	672,896	1,322
2000	579	1,923,674	3,322	746,500	1,289

[a] *Based upon the Regional Planning Commission urban growth ring analysis.*

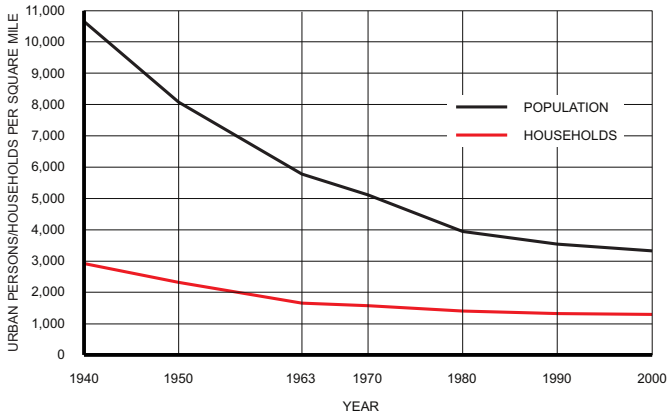
[b] *Total population, excluding rural farm population, as reported in the Federal Census; 1963 is Commission estimate.*

[c] *Total households, excluding rural farm households, as reported in the Federal Census; 1963 is Commission estimate.*

Source: U. S. Bureau of the Census and SEWRPC.

Figure 6

URBAN POPULATION AND HOUSEHOLD DENSITY IN THE REGION: 1940-2000



Source: U.S. Bureau of the Census and SEWRPC.

Table 11

EXISTING LAND USE IN THE SOUTHEASTERN WISCONSIN REGION: 2000

Land Use Category[a]	Square Miles	Percent of Urban/ Nonurban	Percent of Total
Urban			
Residential	362.1	47.6	13.5
Commercial	30.3	4.0	1.1
Industrial	32.9	4.3	1.2
Transportation, Communication, and Utilities	200.9	26.4	7.5
Governmental and Institutional	33.7	4.4	1.2
Recreational	50.4	6.6	1.9
Unused Urban Land	50.9	6.7	1.9
Subtotal Urban	761.2	100.0	28.3
Nonurban			
Natural Areas			
Surface Water	77.4	4.0	2.9
Wetlands	275.7	14.3	10.2
Woodlands	182.7	9.5	6.8
Subtotal Natural Areas	535.8	27.8	19.9
Agricultural	1,259.4	65.3	46.8
Unused Rural and Other Open Land	133.5	6.9	5.0
Subtotal Nonurban	1,928.7	100.0	71.7
Total	2,689.9	- -	100.0

[a] *Off-street parking is included with the associated land use.*

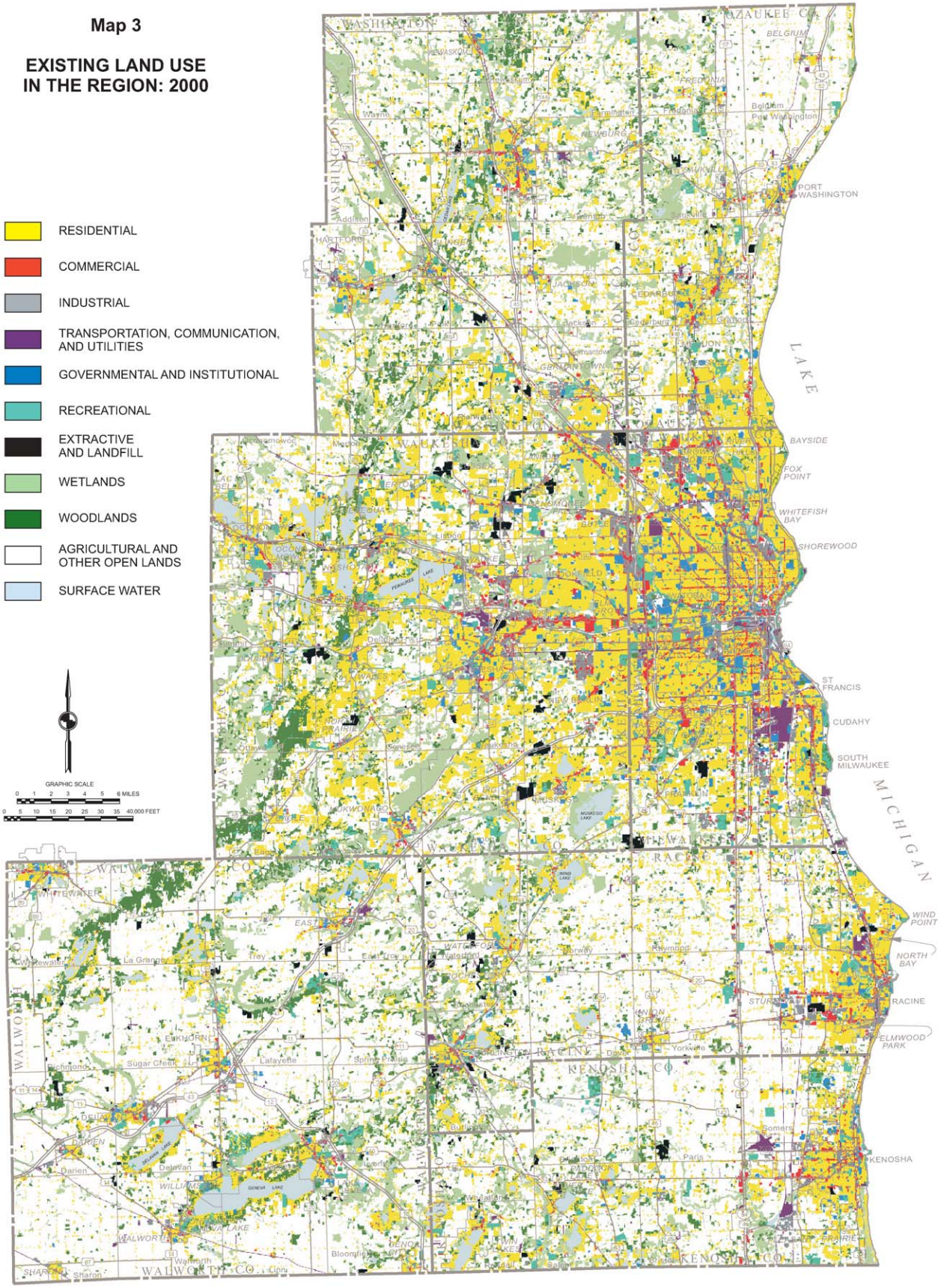
Source: SEWRPC.

Existing Land Use: 2000

Areas considered "urban" under the land use inventory include areas identified as being in residential, commercial, industrial, transportation-communication-utility, governmental-institutional, or intensive recreational

Map 3

EXISTING LAND USE IN THE REGION: 2000



Source: SEWRPC.

uses, along with "unused" urban lands.[8] In 2000, urban land uses as identified in the regional land use inventory encompassed about 761 square miles, or 28 percent of the total area of the Region. Residential land comprised the largest urban land use category, encompassing about 362 square miles, or about 48 percent of all urban land and about 14 percent of the overall area of the Region.[9] In combination, commercial and industrial lands encompassed about 63 square miles, or about 8 percent of all urban land and about 2 percent of the Region overall. Land used for governmental and institutional purposes encompassed 34 square miles, or 4 percent of all urban land and 1 percent of the Region overall. Land devoted to intensive recreational uses encompassed about 50 square miles, or 7 percent of all urban land and 2 percent of the Region overall. Land devoted to transportation, communication, and utility uses—including areas used for streets and highways, railways, airports, and utility and communication facilities—totaled 201 square miles, or 26 percent of all urban land and 8 percent of the Region overall. Unused urban lands encompassed 51 square miles, or 7 percent of all urban land and 2 percent of the overall area of the Region (see Table 11).

Areas considered "nonurban" under the land use inventory include agricultural lands, wetlands, woodlands, surface water, extractive and landfill sites, and "unused" rural lands.[10] In 2000, nonurban lands as identified in the regional land use inventory encompassed about 1,929 square miles, or 72 percent of the total area of the Region. Agricultural land constituted the largest nonurban land use category, encompassing 1,259 square miles, representing about 65 percent of all nonurban land and about 47 percent of the overall area of the Region. Wetlands, woodlands, and surface water together encompassed 536 square miles, representing about 28 percent of all nonurban land and 20 percent of the Region overall. All other nonurban lands, including extractive, landfill, and unused rural lands, encompassed 134 square miles, representing about 7 percent of all nonurban land and 5 percent of the overall area of the Region.

Prior Land Use Inventories

The Regional Planning Commission carried out the first regional land use inventory in 1963 and has conducted inventory updates periodically following the preparation of new aerial photography for the Region, with the most recent inventory prepared using aerial photographs taken in spring of 2000, as noted earlier. As part of the year 2000 land use inventory, the delineation of existing land use was referenced to real property boundary information not available in prior inventories.[11] This change increases the precision of the land use inventory and makes it more useable to public agencies and private interests throughout the Region. As a result of this change, however, year 2000 land use inventory data are not strictly comparable with data from the 1990 and prior inventories.

At the county and regional level, the most significant effect of this procedural change is to increase the transportation, communication, and utilities category—the result of the use of actual street and highway rights-of-way as part of the year 2000 land use inventory, as opposed to the estimated, typically narrower, rights-of-way observed on aerial photographs and used in prior inventories. This treatment of streets and highways generally diminishes the area of adjacent urban and nonurban land uses traversed by those streets and highways in the 2000

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[8] *Unused urban lands consist of open lands, other than wetlands and woodlands, which are located within urban areas but which were not developed for a particular use at the time of the land use inventory. Among the lands included in this category are lands where development was underway but not completed at the time of the inventory, and once-developed lands which have been cleared of development.*

[9] *As identified in the regional land use inventory, the residential land use category encompasses all residential land, including rural residential development, defined as residential development at a density of no more than one dwelling unit per five acres. It is envisioned that, utilizing property boundary information in a digital format, future regional land use inventories will specifically identify the location and extent of rural residential development, enabling the separate reporting of urban and rural residential land.*

[10] *Unused rural lands consist of open lands, other than wetlands and woodlands, which are located within rural areas but which were not in agricultural, pasture, or related use at the time of the land use inventory.*

[11] *At the time of the 2000 regional land use inventory, digital property boundary information was available for about 84 percent of the total area of the Region. Such data were not yet available for the northern portion of the City of Milwaukee and the central and northern portions of Walworth County.*

Table 12

LAND USE IN THE SOUTHEASTERN WISCONSIN REGION AS REPORTED IN THE YEAR 2000 AND PRIOR REGIONAL LAND USE INVENTORIES

Land Use Category[a]	Existing Land Use in Square Miles				
	1963	1970	1980	1990	2000
Urban					
Residential	180.0	210.8	269.1	300.4	362.1
Commercial	11.5	14.8	19.3	24.7	30.3
Industrial	13.5	17.3	22.0	26.1	32.9
Transportation, Communication, and Utilities	134.9	150.0	166.1	171.8	200.9
Governmental and Institutional	21.8	27.2	30.0	30.8	33.7
Recreational	26.0	33.1	39.3	42.3	50.4
Unused Urban Land	54.5	51.0	45.0	40.5	50.9
Subtotal Urban	442.2	504.2	590.8	636.6	761.2
Nonurban					
Natural Areas					
Surface Water	71.6	74.0	76.2	76.9	77.4
Wetlands	274.3	270.3	266.6	268.7	275.7
Woodlands	186.8	184.3	181.9	185.9	182.7
Subtotal Natural Areas	532.7	528.6	524.7	531.5	535.8
Agricultural	1,637.1	1,564.7	1,475.4	1,395.4	1,259.4
Unused Rural and Other Open Land	77.2	91.6	98.4	126.0	133.5
Subtotal Nonurban	2,247.0	2,184.9	2,098.5	2,052.9	1,928.7
Total	2,689.2	2,689.1	2,689.3	2,689.5	2,689.9

[a]*Off-street parking is included with the associated land use.*

NOTE: As part of the regional land use inventory for the year 2000, the delineation of existing land use was referenced to real property boundary information not available for prior inventories. This change increases the precision of the land use inventory and makes it more useable to public agencies and private interests throughout the Region. As a result of the change, however, year 2000 land use inventory data are not strictly comparable with data from the 1990 and prior inventories. At the county and regional level, the most significant effect of the change is to increase the transportation, communication, and utilities category—the result of the use of actual street and highway rights-of-way as part of the 2000 land use inventory, as opposed to the use of narrower estimated rights-of-way in prior inventories. This treatment of streets and highways generally diminishes the area of adjacent land uses traversed by those streets and highways in the 2000 land use inventory relative to prior inventories. Changes in total area may be due to this procedural change or to actual changes in the Lake Michigan shoreline.

Source: SEWRPC.

inventory relative to prior inventories. In addition, in many situations, the referencing of land use delineations to real property boundaries in the 2000 land use inventory resulted in an increase in the residential, commercial, and industrial acreage; this would occur, for example, where land use delineations were matched to actual property boundaries that extend beyond the estimated property boundaries observed on aerial photographs and used in prior inventories. Some of the effects of referencing the land use delineations to real property boundaries under the year 2000 inventory are offsetting. The cumulative effect of referencing the land use delineations to real property boundaries under the 2000 regional land use inventory cannot be precisely quantified.

The results of the year 2000 regional land use inventory are presented along with the results of prior land use inventories for the Region in Table 12.[12] Differences in inventory procedures notwithstanding, Table 12 indicates a significant increase in urban land uses in the Region between 1990 and 2000. As noted above, the year 2000 land use inventory indicates that urban land uses encompassed about 761 square miles in the Region in 2000. This compares to the figure of 637 square miles indicated by the 1990 land use inventory. It is estimated that about 15 square miles—or 12 percent of the increase of 125 square miles in urban land indicated by the 1990 and 2000 inventories—is attributable to the referencing of land use delineations to real property boundaries in the 2000 inventory, particularly to the adjustment of estimated street rights-of-way to match actual rights-of-way. Thus, the actual increase in urban land uses in the Region during the 1990s, discounting the effect of procedural changes in the land use inventory, may be estimated at about 110 square miles, or 17 percent. This compares to increases of 46 square miles, or 8 percent, during the 1980s, and 87 square miles, or 17 percent, during the 1970s.

[12] *County-level land use inventory data are presented in Appendix A of this report.*

Table 13

EXISTING AREA AND POPULATION SERVED BY PUBLIC SANITARY SEWERS IN THE REGION BY COUNTY: 1990 AND 2000

County	Area Served by Public Sanitary Sewers				Population Served by Public Sanitary Sewers			
	1990		2000		1990		2000	
	Square Miles	Percent of County/ Region Area	Square Miles	Percent of County/ Region Area	Persons	Percent of County/ Region Population	Persons	Percent of County/ Region Population
Kenosha	32.1	11.5	41.2	14.8	111,900	87.3	133,800	89.4
Milwaukee	180.5	74.4	193.2	79.6	954,600	99.5	938,800	99.9
Ozaukee	20.7	8.8	29.3	12.4	54,900	75.4	64,400	78.3
Racine	43.0	12.6	51.6	15.2	154,900	88.5	169,900	90.0
Walworth	17.0	2.9	27.6	4.8	45,200	60.3	62,100	67.5
Washington	15.6	3.6	23.2	5.3	53,300	55.9	71,500	60.9
Waukesha	84.9	14.6	110.7	19.1	219,500	72.0	272,200	75.4
Region	393.8	14.6	476.8	17.7	1,594,300	88.1	1,712,700	88.7

Source: SEWRPC.

PUBLIC UTILITIES

Sanitary sewerage and water supply utilities are particularly important to land use planning because the location and density of urban development influences the need for such facilities and, conversely, the existence of such facilities influences the location and density of new urban development. The extent and location of areas served by existing sanitary sewerage and water supply utilities are thus important considerations in any land use planning effort.

The majority of sewerage and water supply utilities in the Region are organized as sewer and water departments of incorporated municipalities, and serve largely those areas within the respective political boundaries of the municipalities. A general pattern of sewer and water service areas following political boundaries rather than natural topographic boundaries, such as watershed boundaries, exists within the Region.

Sanitary Sewer Service

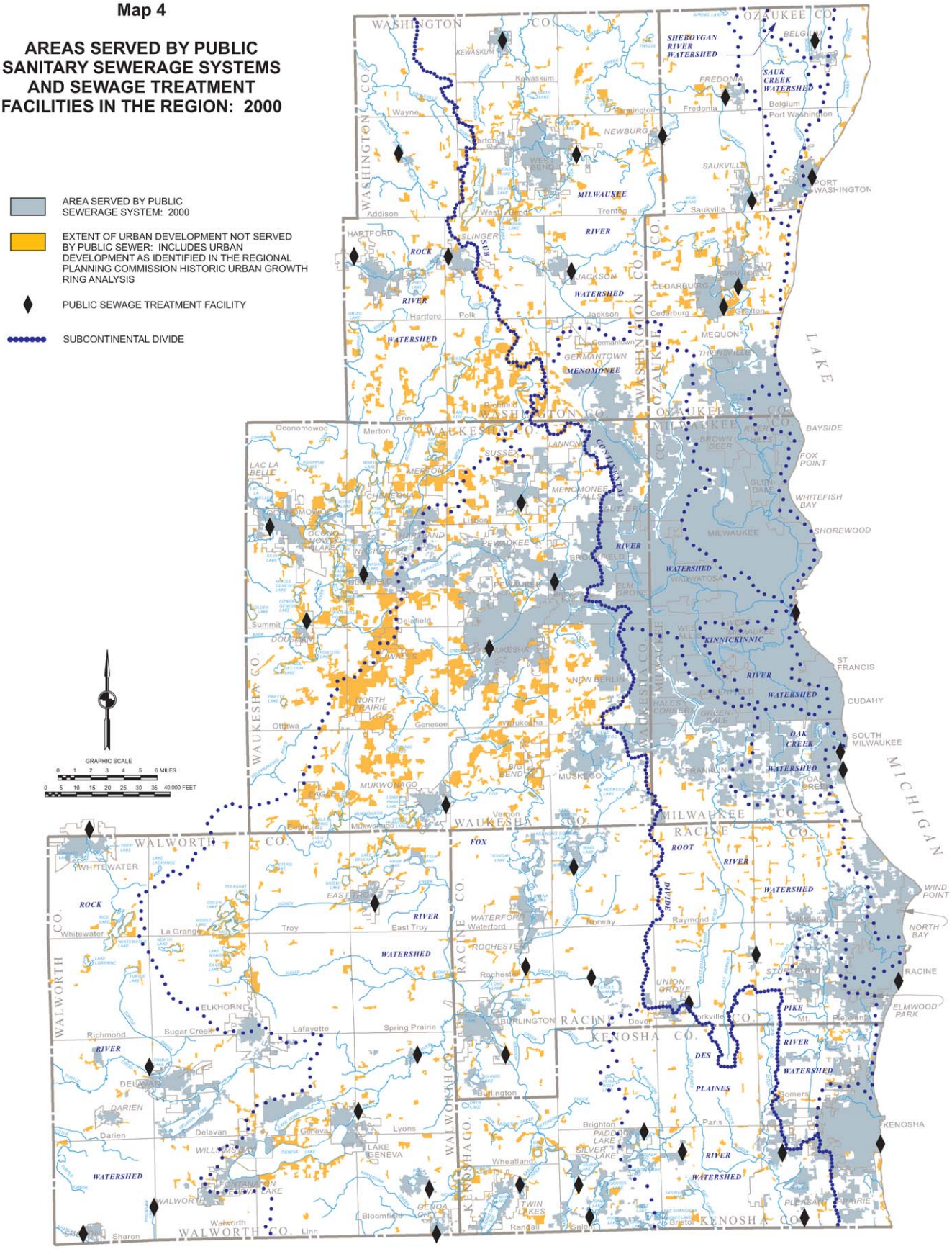
Areas served by public sanitary sewers in 2000 encompassed about 477 square miles, or about 18 percent of the total area of the Region—compared to about 394 square miles, or about 15 percent of the Region in 1990 (see Map 4 and Table 13). An estimated 1.71 million persons, or 89 percent of the regional population, were served by public sanitary sewers in 2000, compared to 1.59 million persons, representing 88 percent of the regional population, in 1990.[13]

The increase in the land area and population served by public sanitary sewerage facilities during the 1990s reflects both new development designed to be served by sanitary sewerage facilities and as well the retrofitting of existing

[13] *A complete re-inventory of areas served by public sanitary sewers in the Region was conducted for the year 2000. That inventory made use of digital map files of local sewerage systems not available for prior inventories, allowing for a more precise delineation of areas served by sanitary sewers. As part of the re-inventory effort, the more generalized delineation of sewered areas made as part of the previous inventory for the year 1990 was adjusted to ensure consistency with the 2000 inventory and the area served re-tabulated. As a result, the data regarding the area served by public sanitary sewers in 1990 indicated in Table 13 differ from the corresponding data for 1990 reported in the previous regional land use plan report, SEWRPC Planning Report No. 45. For similar reasons, the data regarding the area served by public water supply systems in 1990 indicated in Table 14 differ from the water supply service area data for 1990 presented in SEWRPC Planning Report No. 45.*

Map 4

AREAS SERVED BY PUBLIC SANITARY SEWERAGE SYSTEMS AND SEWAGE TREATMENT FACILITIES IN THE REGION: 2000



Source: SEWRPC.

urban areas—that is, the extension of sanitary sewer service to urban development which was initially developed with onsite sewage disposal systems. Some of the more notable recent retrofitting efforts include the extension of sanitary sewer service to the Lake Como and Pell Lake areas in Walworth County, the Bohner Lake area in Racine County, and the Okauchee Lake area in Waukesha County.

Under State administrative rules, sanitary sewers may be extended only to areas located within planned sanitary sewer service areas identified in local sanitary sewer service area plans adopted as part of the Commission's regional water quality management plan, which is in turn based upon the regional land use plan. Sewer service area plans are long-range plans intended to guide the provision of sanitary sewer service over a twenty-year period. Sewer service area plans are prepared through a cooperative planning process involving the local unit of government responsible for operation of the sewage treatment facility, the Regional Planning Commission, and the Wisconsin Department of Natural Resources. Such plans may be amended in response to changing local conditions and needs as well as in response to new population projections, subject to the provisions of *Wisconsin Administrative Code* Chapter NR 121. Currently adopted sanitary sewer service areas in the Region are shown on Map 5.

Water Supply Service

Areas served by public water utilities in 2000 encompassed about 390 square miles, or about 15 percent of the total area of the Region—compared to about 316 square miles, or about 12 percent of the Region in 1990 (see Map 6 and Table 14). An estimated 1.58 million persons, or 82 percent of the regional population, were served by public water utilities in 2000, compared to 1.47 million persons, representing 81 percent of the regional population, in 1990.

In addition to publicly-owned water utilities, there are numerous privately or cooperatively owned water systems operating in the Region. These water supply systems typically serve residential subdivisions, apartment or condominium developments, mobile home parks, and institutions. The areas served by such systems in the Region are shown on Map 6. It is estimated that these systems served a total of 37,000 persons in the Region in 2000.

NATURAL RESOURCE BASE

Comprehensive planning must recognize the existence of a limited natural resource base to which urban and rural development should be properly adjusted. This section provides a description of some of the key elements of the natural resource base of the Region.[14]

Surface Drainage and Surface Water

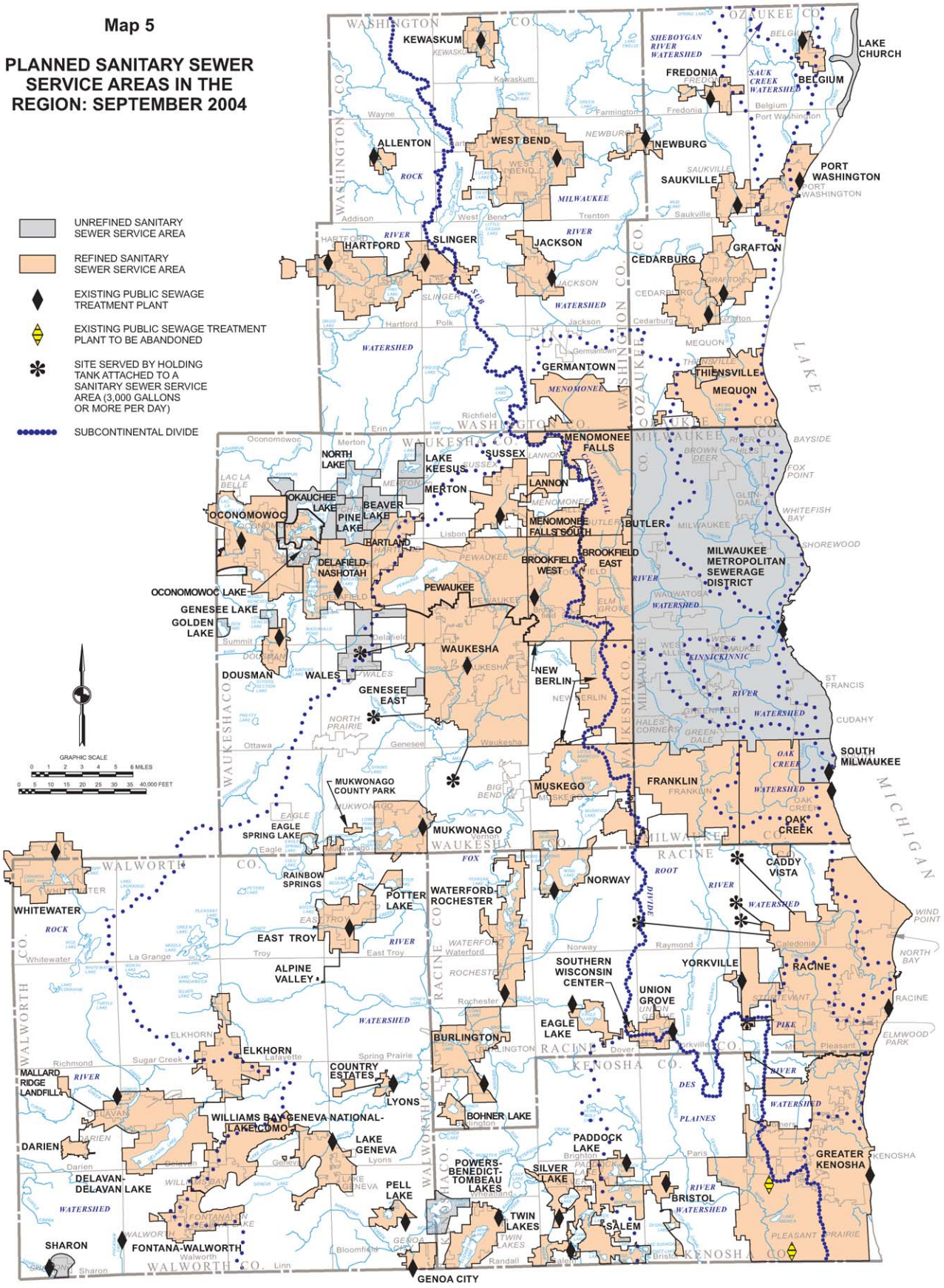
The surface drainage pattern of the Region is very complex because of the effects of glaciation. The land surface is complex as a result of being covered by glacial deposits, containing thousands of closed depressions that range in size from potholes to large areas. Significant areas of the Region are covered by wetlands, and many streams are mere threads of water through these wetlands.

There are 11 major watersheds in the Region as shown on Map 7. As also shown on this map, a major subcontinental drainage divide, oriented in a generally northwesterly-southeasterly direction, bisects the Region. About 1,680 square miles, or 62 percent of the Region, are located west of the divide and drain to the Upper Mississippi River system; the remaining 1,009 square miles, or 38 percent, drain to the Great Lakes-St. Lawrence

[14] *This section is limited to an overview of the Region's natural resource base. Additional information may be found in a number of other Commission publications. For example, information on the Region's climate, soils, and topography is presented in SEWRPC Planning Report No. 40,* A Regional Land Use Plan for Southeastern Wisconsin-2010. *Information on the glacial and bedrock geology along with detailed information regarding the groundwater resources of the Region is presented in SEWRPC Technical Report No. 37,* Groundwater Resources of Southeastern Wisconsin. *Information regarding water quality in the Region is presented in SEWRPC Memorandum Report No. 93,* A Regional Water Quality Management Plan for Southeastern Wisconsin: An Update and Status Report.

Map 5

PLANNED SANITARY SEWER SERVICE AREAS IN THE REGION: SEPTEMBER 2004



Source: SEWRPC.

Table 14

EXISTING AREA AND POPULATION SERVED BY PUBLIC WATER UTILITIES IN THE REGION BY COUNTY: 1990 AND 2000

County	Area Served by Public Water Utilities				Population Served by Public Water Utilities			
	1990		2000		1990		2000	
	Square Miles	Percent of County/ Region Area	Square Miles	Percent of County/ Region Area	Persons	Percent of County/ Region Population	Persons	Percent of County/ Region Population
Kenosha	22.2	8.0	29.8	10.7	95,100	74.2	111,000	74.2
Milwaukee	167.2	68.9	180.9	74.5	937,000	97.7	927,300	98.6
Ozaukee	9.3	3.9	15.7	6.7	35,800	49.2	45,400	55.2
Racine	32.0	9.4	37.9	11.1	136,200	77.8	146,400	77.5
Walworth	13.5	2.3	22.0	3.8	40,200	53.6	56,200	61.1
Washington	14.2	3.3	21.4	4.9	50,300	52.8	66,800	56.9
Waukesha	57.1	9.8	82.3	14.2	173,000	56.8	228,100	63.2
Region	315.5	11.7	390.0	14.5	1,467,600	81.1	1,581,200	81.9

NOTE: In addition to publicly-owned water utilities, there were numerous private or cooperatively-owned water utilities in the Region in 2000 serving residential subdivisions, apartment buildings, mobile home parks, and institutions. These privately-owned other than municipal water supply systems served areas encompassing 11.3 square miles, with a population of about 37,000 persons, in 2000.

Source: SEWRPC.

River system. The subcontinental divide not only exerts a major physical influence on the overall drainage pattern of the Region, but also carries with it certain constraints on the diversion of water across the divide, and thereby constitutes an important consideration in land use, water supply, and sanitary sewerage system planning.

Also shown on Map 7 are the 101 major lakes of at least 50 acres in area and the 1,150-mile perennial stream network in the Region. In addition, the Region encompasses numerous lakes and ponds less than 50 acres in size and an extensive network of smaller, intermittent streams. The Region is bounded on the east by Lake Michigan, with 77 miles of shoreline extending from the Wisconsin-Illinois border to the Ozaukee-Sheboygan County line.

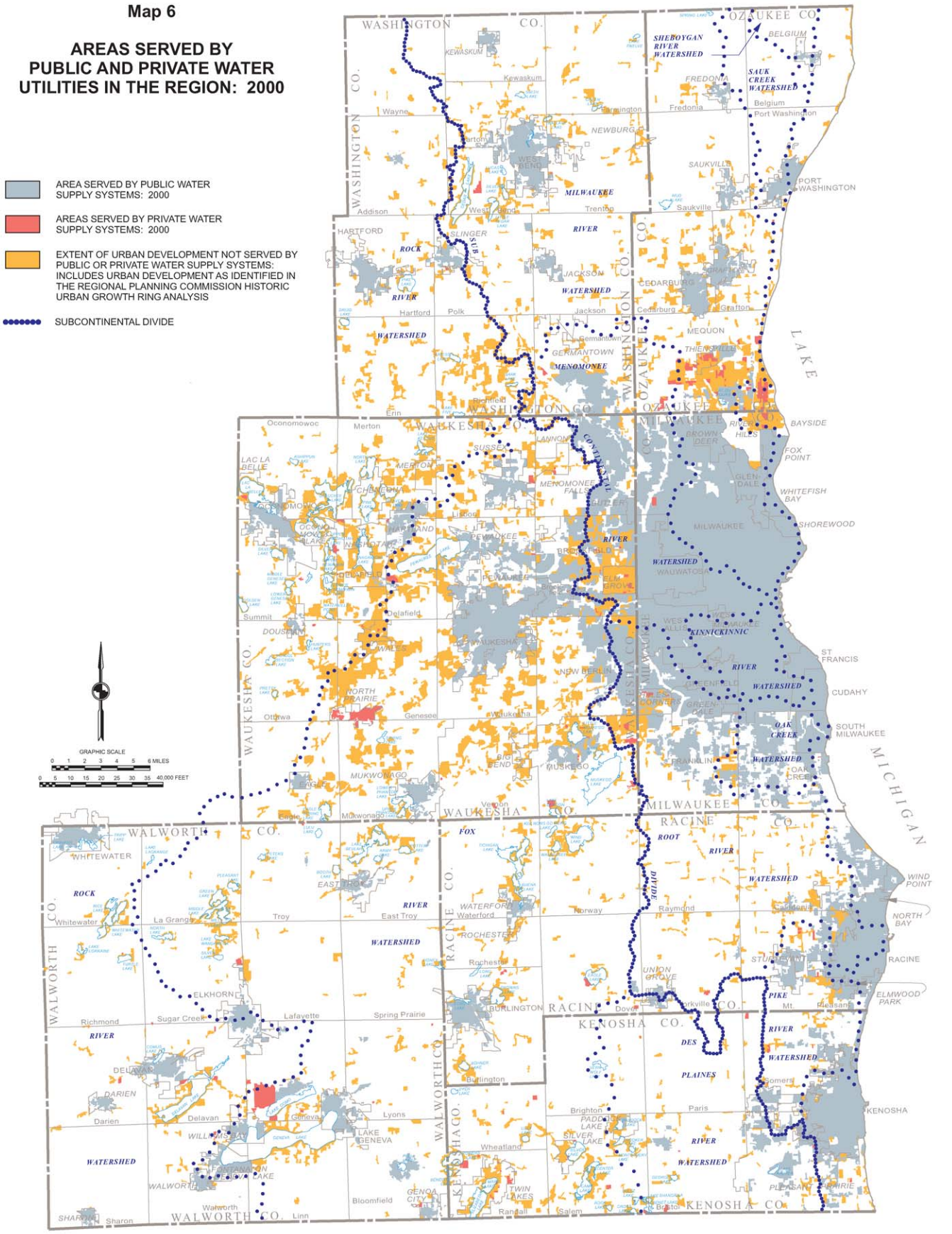
The quality of the Region's surface waters can potentially degenerate as a result of—among other factors—malfunctioning or improperly placed onsite sewage disposal systems; inadequate operation of sewage treatment facilities; inadequate soil conservation and other agricultural practices; construction site erosion; and urban runoff. Lakes and streams may also be adversely affected by the excessive development of lacustrine and riverine areas and the filling of peripheral wetlands. Land use planning must take into account the potential effects of urban and rural development on the quality of surface waters.

Objectives, or classifications, for biological and recreational uses, as well as for public health and welfare and wildlife protection, have been developed for streams and lakes by the Wisconsin Department of Natural Resources and integrated into the regional water quality management plan developed by the Regional Planning Commission. The objectives for biological and recreational uses range from coldwater fishery and full recreational use to limited aquatic life and limited recreational use. Water use objectives for streams and lakes are set forth in Chapter NR 102 of the *Wisconsin Administrative Code* and are summarized in SEWRPC Memorandum Report No. 93, *A Regional Water Quality Management Plan for Southeastern Wisconsin: An Update and Status Report.*

In addition, the Department of Natural Resources has identified a limited number of streams and lakes as "outstanding" and "exceptional" resource waters. "Outstanding" resource waters have the highest value as a resource, excellent water quality, and high-quality fisheries; they do not receive wastewater discharges, and point source discharges will not be allowed in the future unless the quality of such a discharge meets or exceeds the quality of the receiving water. Within the Region, Bluff, Potawatomi, and Van Slyke Creeks, all in Walworth County, along with Lulu Lake in Walworth County and Spring Lake in Waukesha County have been classified as

Map 6

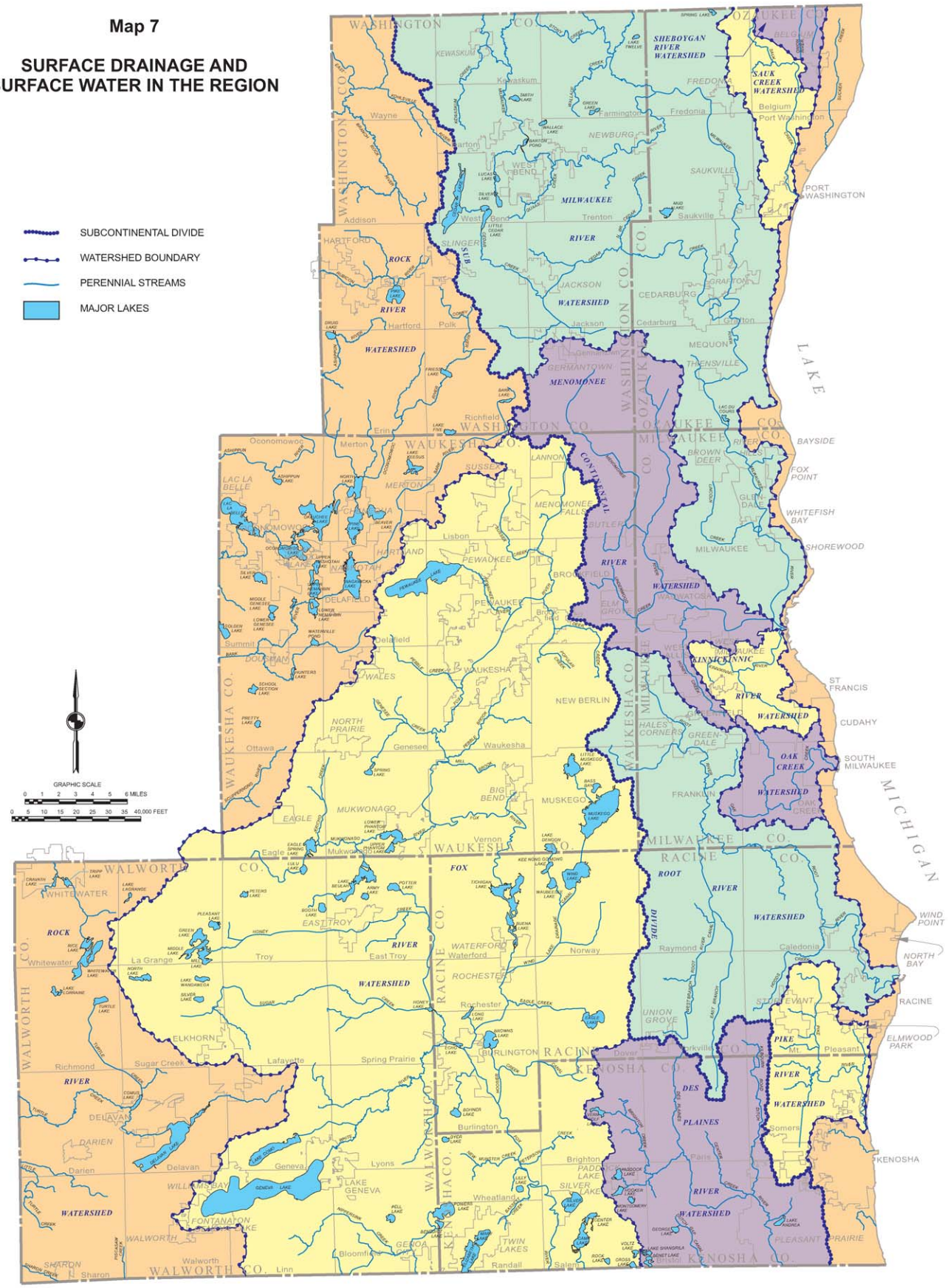
AREAS SERVED BY PUBLIC AND PRIVATE WATER UTILITIES IN THE REGION: 2000



Source: SEWRPC.

Map 7

SURFACE DRAINAGE AND SURFACE WATER IN THE REGION



Source: SEWRPC.

outstanding resource waters. “Exceptional” resource waters have excellent water quality and valued fisheries but already receive wastewater discharges or may in the future receive discharges necessary to correct environmental or public health problems. Within the Region, the following have been classified as exceptional water resources: the East Branch of the Milwaukee River from the Long Lake outlet to STH 28 in Washington County; and Genesee Creek above STH 59, the Mukwonago River from Eagle Springs Lake to Upper Phantom Lake, and the Oconomowoc River below North Lake to Okauchee Lake, all in Waukesha County.

Groundwater Resources

Groundwater resources constitute another key element of the natural resource base of the Region. Groundwater not only sustains lake levels and wetlands and provides the base flows of streams in the Region, but also comprises a major source of water supply for domestic, municipal, and industrial water users.

Groundwater occurs within three major aquifers that underlie the Region. From the land’s surface downward, they are: 1) the sand and gravel deposits in the glacial drift; 2) the shallow dolomite strata in the underlying bedrock; and 3) the deeper sandstone, dolomite, siltstone, and shale strata. Because of their proximity to the land’s surface and hydraulic interconnection, the first two aquifers are commonly referred to collectively as the “shallow aquifer,” while the latter is referred to as the deep aquifer. Within most of the Region, the shallow and deep aquifers are separated by the Maquoketa shale, which forms a relatively impermeable barrier between the two aquifers (see Figure 7).

Like surface water, groundwater is susceptible to depletion in quantity and to deterioration in quality as a result of urban and rural development in the Region. Consequently, land use planning must appropriately consider the potential impacts of urban and rural development on this important resource. Land use planning must also take into account, as appropriate, natural conditions which may limit the use of groundwater as a source of water supply, including the relatively high levels of naturally occurring radium in groundwater in the deep sandstone aquifer, found in certain areas of the Region.

It should be noted that the Regional Planning Commission, working with the U.S. Geological Survey, Wisconsin Geological and Natural History Survey, the University of Wisconsin-Milwaukee, and the Wisconsin Department of Natural Resources, recently completed two major groundwater studies for the Region that will be important resources for regional and local planning. These studies include a regional groundwater inventory and analysis and the development of a regional groundwater aquifer simulation model. The groundwater inventory and analysis findings are presented in SEWRPC Technical Report No. 37, *Groundwater Resources of Southeastern Wisconsin*. The aquifer simulation model is documented in SEWRPC Technical Report No. 41, *A Regional Aquifer Simulation Model for Southeastern Wisconsin.* Future Commission activities include the identification of important groundwater recharge areas utilizing the results of the inventory and analysis work and the aquifer model. In addition, the Wisconsin Department of Natural Resources in conjunction with local water utilities has undertaken an effort to identify areas of contribution to municipal wells that can be used for well protection planning.

Vegetation

Presettlement Vegetation

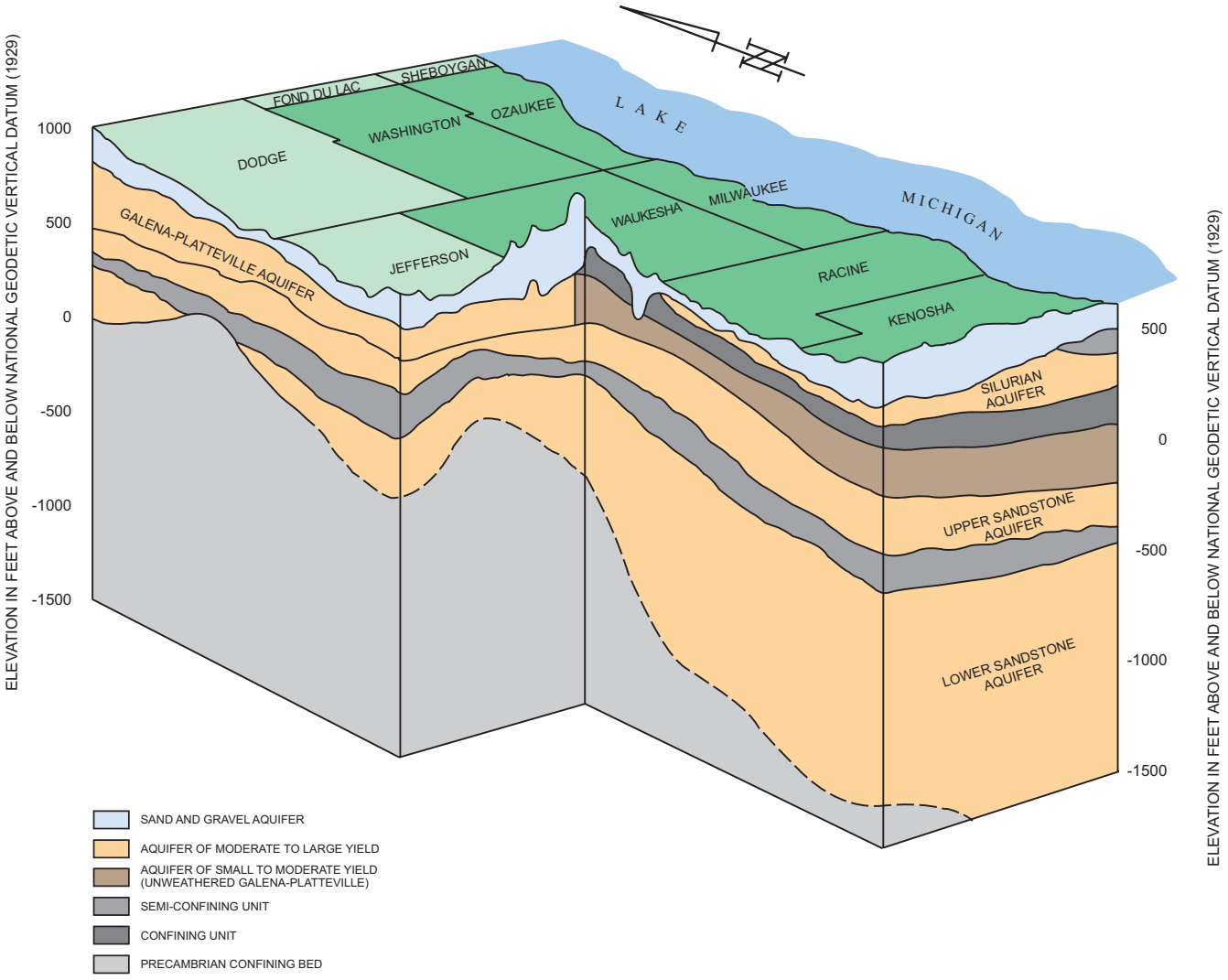
Historically, vegetational patterns in the Region were influenced by such factors as climate, soils, fire, topography, and natural drainage patterns. Historical records, particularly the records of the original U.S. Public Land Survey carried out within the Region in 1835 and 1836, indicate that large portions of Southeastern Wisconsin once consisted of open, level plains containing orchard-like stands of oak or prairies dominated by big blue-stem grass and colorful prairie forbs. Other portions of the Region were covered by mixed hardwood forests.

Prairies

Prairies are treeless or generally treeless areas dominated by perennial native grasses. For the purpose of this report, prairies also include savannas which are defined as areas dominated by native grasses but having between one and 17 trees per acre. In Southeastern Wisconsin, there are two types of savannas: oak openings and cedar glades. Prairies, which once covered extensive areas of Southeastern Wisconsin, have been reduced to scattered

Figure 7

AQUIFER SYSTEMS IN SOUTHEASTERN WISCONSIN



Source: SEWRPC.

remnants, primarily in the southern and western portions of the Region. The chief causes of the loss of prairies is their conversion to urban and agricultural use and the suppression of wildfires, which had served to constrain the advancing shrubs and trees that shade out the prairie plants. The remaining prairies in the Region have important ecological and scientific value. Many of the remaining prairies are encompassed with the natural areas and critical species habitat sites described later in this section.

Woodlands

Six woodland types are recognized in the Region: northern upland hardwoods, southern upland hardwoods, northern lowland hardwoods, southern lowland hardwoods, northern lowland conifers, and northern upland conifers. The northern and southern upland hardwood types are the most common in the Region. The remaining stands of trees within the Region consist largely of even-aged mature, or nearly mature specimens, with insufficient reproduction and saplings to maintain the stands when the old trees are harvested or die of disease or age. Located largely on ridges and slopes and along lakes and streams, woodlands are a natural resource of immeasurable value. Woodlands enhance the natural beauty of, and are essential to the overall environmental wellbeing of, the Region.

As identified in the Commission's regional land use inventory, upland woodlands encompassed about 183 square miles, or 7 percent of the total area of the Region, in 2000.[15] It should be noted that lowland wooded areas, such as tamarack swamps, are classified as wetlands in the land use inventory. Existing upland woodlands in the Region, as identified in the year 2000 land use inventory, are identified on Map 8.

Wetlands

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.[16] Wetlands may, however, under certain conditions, occur on slopes and even on hilltops. Wetlands perform an important set of natural functions which include support of a wide variety of desirable, and sometimes unique, forms of plant and animal life; water quality protection; stabilization of lake levels and streamflows; reduction in stormwater runoff by providing areas for floodwater impoundment and storage; protection of shorelines from erosion; and provision of groundwater discharge areas.

As identified in the Commission's regional land use inventory, wetlands encompassed about 276 square miles, or 10 percent of the total area of the Region, in 2000. Those wetlands are shown on Map 8. The wetlands shown on Map 8 are based upon the Wisconsin Wetlands Inventory completed in the Region in 1982, updated to the year 2000 as part of the regional land use inventory. It should be noted that, in addition to the wetlands shown on Map 8, certain other areas have been identified by the U.S. Natural Resources Conservation Service as farmed wetlands, which are subject to Federal wetland regulations.

Wetlands and their boundaries are continuously changing in response to changes in drainage patterns and climatic conditions. While wetland inventory maps provide a sound basis for areawide planning, detailed field investigations are often necessary to precisely identify wetland boundaries for individual tracts of land at a given point in time.

Natural Areas and Critical Species Habitat Sites

A comprehensive inventory of "natural areas" and "critical species habitat sites" in the Southeastern Wisconsin Region was completed by the Regional Planning Commission in 1994. The inventory sought to identify the most significant remaining natural areas—essentially, remnants of the pre-European settlement landscape—as well as other areas vital to the maintenance of endangered, threatened, and rare plant and animal species in the Region.

Natural areas 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 landscape before European settlement. Natural areas are classified into one of three categories: natural areas of statewide or greater significance (NA-1), natural areas of countywide or regional significance (NA-2), and natural areas of local significance (NA-3). Classification of an area into one of these three categories is based upon consideration of 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 from human activity; the commonness of the plant or animal community; the uniqueness of the natural features; the size of the site; and the educational value. A total of 447 natural areas were identified in the Region in 1994. In combination, these sites encompassed 90 square miles, or 3 percent of the total area of the Region. The location of the natural area sites in the Region is shown on Map 9.

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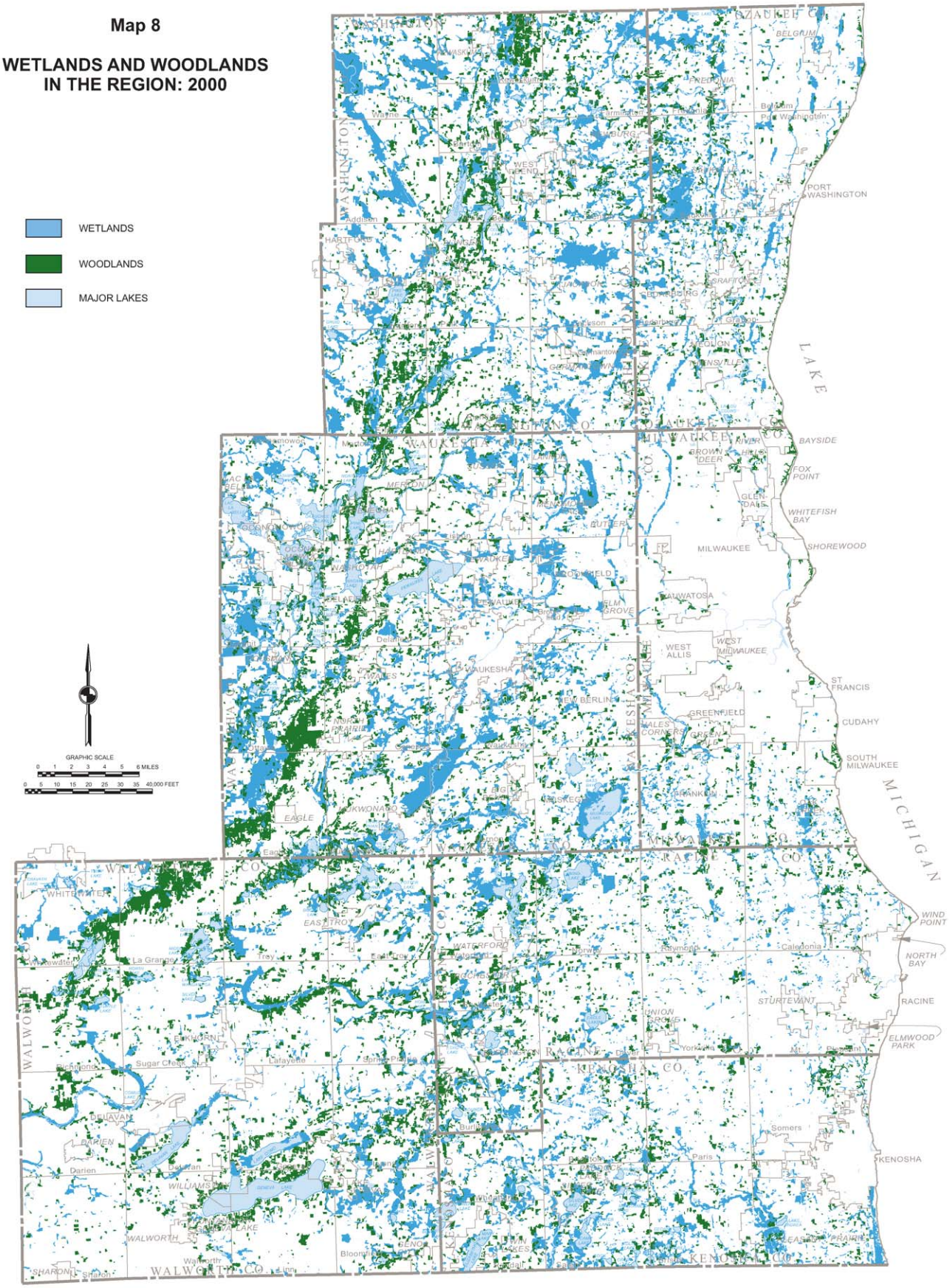
[15] *For purposes of this report, woodlands are defined as areas having 17 or more deciduous trees per acre each measuring at least four inches in diameter at breast height and having at least a 50 percent canopy cover. In addition, coniferous tree plantations and reforestation projects are defined as woodlands.*

[16] *The definition of "wetlands" utilized by the Commission is the same as that of the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. Under this definition, 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.*

Map 8

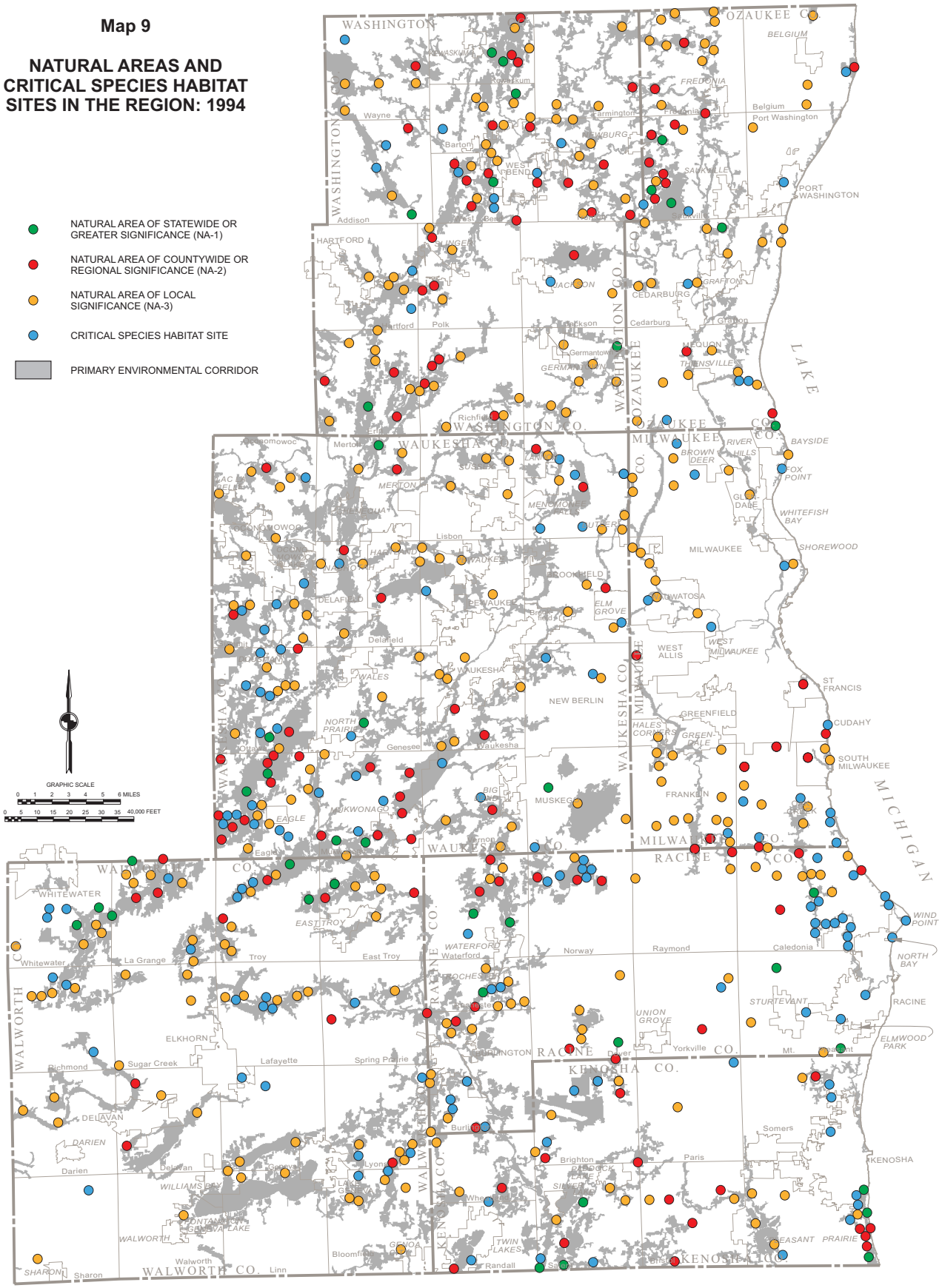
WETLANDS AND WOODLANDS IN THE REGION: 2000



Source: SEWRPC.

Map 9

NATURAL AREAS AND CRITICAL SPECIES HABITAT SITES IN THE REGION: 1994



Source: SEWRPC.

Critical species habitat sites consist of areas, located outside natural areas, which are important for their ability to support endangered, threatened, or rare plant or animal species. Such areas constitute "critical" habitat considered to be important to the survival of a species or group of species of special concern. A total of 142 critical species habitat sites were identified in the Region in 1994. Together, these critical species habitat sites encompassed 23 square miles, or less than 1 percent of the Region. These sites are also shown on Map 9. Most of the identified natural areas and critical species habitat sites in Southeastern Wisconsin are located within the Commission-identified environmental corridors and isolated natural resource areas described below.[17]

Environmental Corridors

One of the most important tasks completed under the regional planning program for Southeastern Wisconsin has been the identification and delineation of areas of the Region in which concentrations of the best remaining elements of the natural resource base occur. It was recognized that preservation of such areas is important to both the maintenance of the overall environmental quality of the Region and to the continued provision of amenities required to maintain a high quality of life for the resident population.

Under the regional planning program, seven elements of the natural resource base have been considered essential to the maintenance of the ecological balance, natural beauty, and overall quality of life in Southeastern Wisconsin: 1) lakes, rivers, and streams, and their associated 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. In addition, there are certain other features which, although not part of the natural resource base per se, are closely related to, or centered upon, that base and are a determining factor in identifying and delineating areas with recreational, aesthetic, ecological, and cultural value. These five additional elements are: 1) existing park and open space sites; 2) potential park and open space sites; 3) historic sites; 4) scenic areas and vistas; and 5) natural areas and critical species habitat sites.

The delineation of these 12 natural resource and natural resource-related elements on maps results, in most areas of the Region, in an essentially linear pattern of relatively narrow, elongated areas which have been termed "environmental corridors" by the Regional Planning Commission.[18] Primary environmental corridors include a variety of the aforementioned important natural resource and resource-related elements and are 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 in length. In addition, smaller concentrations of natural resource base elements that are 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.

The preservation of environmental corridors and isolated natural resource areas in essentially natural, open uses, yields many benefits, including recharge and discharge of groundwater; maintenance of surface and groundwater quality; attenuation of flood flows and stages; maintenance of base flows of streams and watercourses; reduction of soil erosion; abatement of air and noise pollution; provision of wildlife habitat; protection of plant and animal diversity; protection of rare and endangered species; maintenance of scenic beauty; and provision of opportunities for recreational, educational, and scientific pursuits. Conversely, since these areas are generally poorly suited for urban development, their preservation can help avoid serious and costly developmental problems.

[17] *The inventory findings and a plan for the protection and management of such areas are presented in SEWRPC Planning Report No. 42,* A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, *dated September 1997*.

[18] *A detailed description of the process of delineating environmental corridors in Southeastern Wisconsin is presented in the March 1981 issue (Volume 4, No. 2) of the* SEWRPC Technical Record.

Because of the many interacting relationships existing between living organisms and their environment, the destruction or deterioration of one important element of the total environment may lead to a chain reaction of deterioration and destruction of other elements. The drainage of wetlands, for example, may destroy fish spawning areas, wildlife habitat, groundwater recharge areas, and natural filtration and floodwater storage areas of interconnecting stream systems. The resulting deterioration of surface-water quality may, in turn, lead to a deterioration of the quality of the groundwater which serves as a source of domestic, municipal, and industrial water supply, and upon which low flows of rivers and streams may depend. Similarly, destruction of ground cover may result in soil erosion, stream siltation, more rapid runoff, and increased flooding, as well as the destruction of wildlife habitat. Although the effect of any one of these environmental changes may not in and of itself be overwhelming, the combined effects may eventually lead to a serious deterioration of the underlying and sustaining natural resource base and of the overall quality of the environment for life. In addition to such environmental impacts, the intrusion of intensive urban land uses into such areas may result in the creation of serious and costly developmental problems, such as failing foundations for pavements and structures, wet basements, excessive operation of sump pumps, excessive clear-water infiltration into sanitary sewerage systems, and poor drainage.

Primary Environmental Corridors

As shown on Map 10, the primary environmental corridors in the Region are primarily located along major stream valleys, around major lakes, and along the Kettle Moraine. These primary environmental corridors contain almost all of the best remaining woodlands, wetlands, and wildlife habitat areas in the Region, and represent a composite of the best remaining elements of the natural resource base. The protection of the primary environmental corridors from additional intrusion by incompatible land uses, degradation, and destruction is one of the key objectives of the adopted regional land use plan.

As indicated in Table 15, primary environmental corridors encompassed about 462 square miles, or about 17 percent of the total area of the Region, in 2000. As indicated in Table 16, there was a small net increase of 0.7 square mile, or 0.2 percent, in primary environmental corridor lands in the Region between 1990 and 2000.[19] The change in area is the net result of increases in primary environmental corridor lands in certain areas of the Region and decreases in other areas. Decreases in primary environmental corridor lands occur, for the most part, as a result of conversion to urban or agricultural use. Increases may occur as a result of managed restoration efforts (e.g., wetland, woodland, or prairie restoration) and as a result of situations where lands, such as farmed floodplains or wetlands, are simply allowed to revert to a more natural condition.

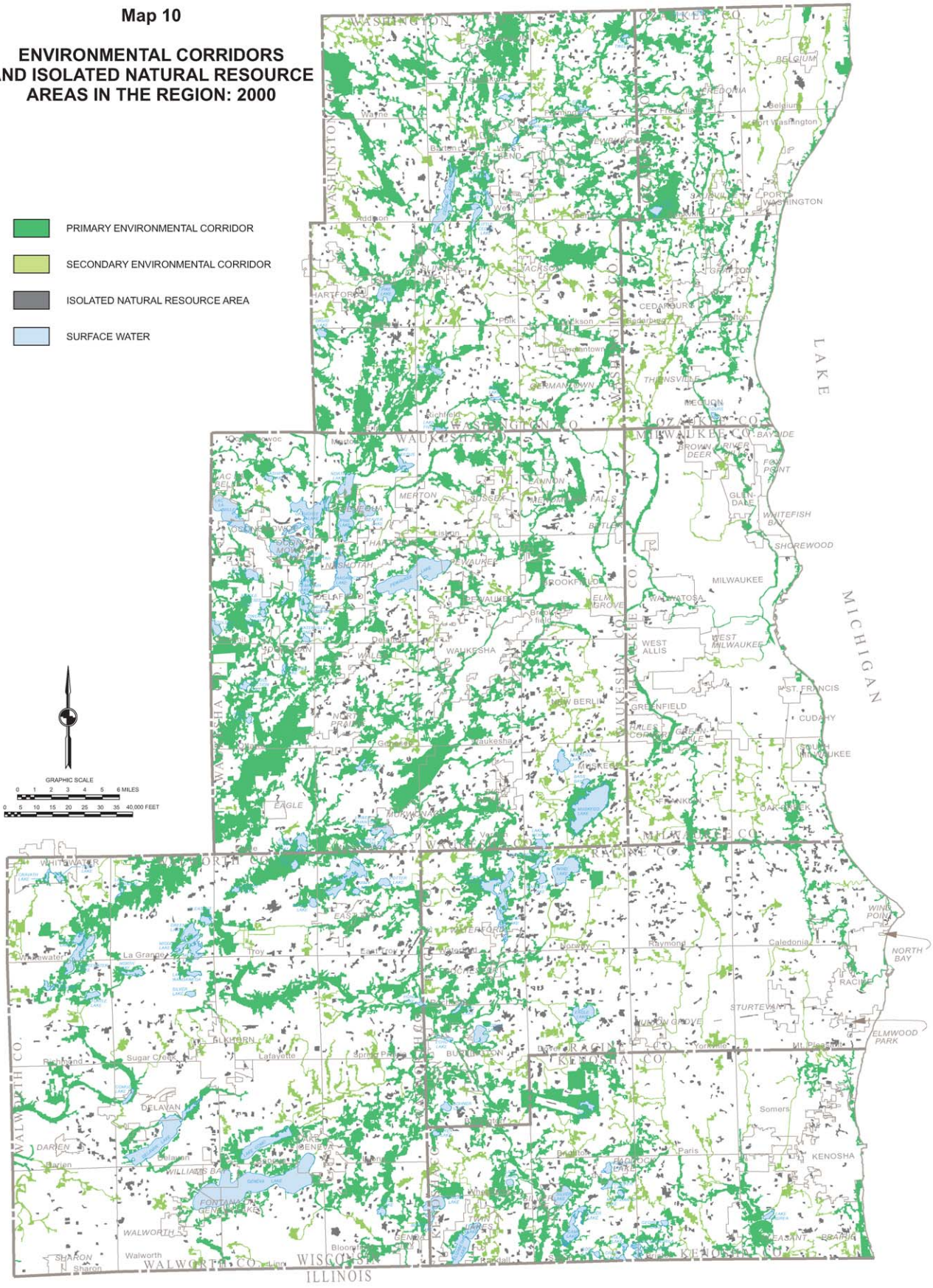
Secondary Environmental Corridors

As further shown on Map 10, secondary environmental corridors are generally located along the small perennial and intermittent streams within the Region. Secondary environmental corridors also contain a variety of resource elements, often remnant resources from primary environmental corridors which have been developed for intensive urban or agricultural purposes. Secondary environmental corridors facilitate surface-water drainage, maintain pockets of natural resource features, and provide corridors for the movement of wildlife, as well as for the movement and dispersal of seeds for a variety of plant species.

[19] *The areas encompassed by environmental corridors and isolated natural resource areas in 1990 presented in Table 16 differ slightly from corresponding areas presented in the previous regional land use plan report, SEWRPC Planning Report No. 45. The revisions to the 1990 data incorporated into Table 16 provide for a consistent time series with the year 2000 inventory, and were necessitated by certain procedural differences between the 1990 and 2000 environmental corridor inventories. These differences include the adjustment of the environmental corridor and isolated natural resource area boundaries to an orthophotographic-cadastral base as part of the 2000 inventory; the orthophotographic-cadastral base was not available when the 1990 inventory was completed. Additionally, the year 2000 inventory excluded intensively developed shoreland areas of inland lands and Lake Michigan from the environmental corridor delineations; such areas were included as part of the environmental corridor network delineated in the 1990 inventory, as reported in Planning Report No. 45.*

Map 10

ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN THE REGION: 2000



Source: SEWRPC.

Table 15

ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN THE REGION BY COUNTY: 2000

County	Primary Environmental Corridors		Secondary Environmental Corridors		Isolated Natural Resource Areas		Total Environmental Corridors and Isolated Natural Resource Areas	
	Square Miles	Percent of County/ Region	Square Miles	Percent of County/ Region	Square Miles	Percent of County/ Region	Square Miles	Percent of County/ Region
Kenosha	43.8	15.7	10.0	3.6	6.0	2.2	59.8	21.5
Milwaukee	14.5	6.0	5.2	2.1	3.3	1.4	23.0	9.5
Ozaukee	32.2	13.7	7.6	3.2	5.6	2.4	45.4	19.3
Racine	35.5	10.4	10.8	3.2	12.0	3.5	58.3	17.1
Walworth	99.2	17.2	14.6	2.5	12.9	2.3	126.7	22.0
Washington	94.2	21.6	15.4	3.6	10.1	2.3	119.7	27.5
Waukesha	142.8	24.6	11.2	1.9	13.0	2.3	167.0	28.8
Region	462.2	17.2	74.8	2.8	62.9	2.3	599.9	22.3

Source: SEWRPC.

Table 16

CHANGE IN ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN THE REGION: 1990-2000

Resource Feature	Existing 1990 (square miles)	Change: 1990-2000				Existing 2000 (square miles)
		Gains (square miles)	Losses (square miles)	Net Change		
				Square miles	Percent	
Primary Environmental Corridors	461.5	5.5	4.8	0.7	0.2	462.2
Secondary Environmental Corridors	74.6	1.9	1.7	0.2	0.3	74.8
Isolated Natural Resource Areas	63.3	3.0	3.4	-0.4	-0.6	62.9
Total	599.4	10.4	9.9	0.5	0.1	599.9

Source: SEWRPC.

In 2000, secondary environmental corridors encompassed about 75 square miles, or about 3 percent of the total area of the Region. There was a small net increase of 0.2 square mile, or 0.3 percent, in secondary environmental corridor lands in the Region between 1990 and 2000—also the result of increases in secondary environmental corridor lands in certain areas of the Region and decreases in other areas.

Isolated Natural Resource Areas

In addition to the primary and secondary environmental corridors, other smaller pockets of wetlands, woodlands, surface water, or wildlife habitat exist within the Region. These pockets are isolated from the environmental corridors by urban development or agricultural use, and although separated from the environmental corridor network, these isolated natural resource areas have significant value. They may provide the only available wildlife habitat in an area, usually provide good locations for local parks, and lend unique aesthetic character and natural diversity to an area.

Widely scattered throughout the Region, isolated natural resource areas encompassed about 63 square miles, or about 2 percent of the total area of the Region, in 2000. There was a small net decrease of 0.4 square mile, or 0.6 percent, in isolated natural resource areas in the Region between 1990 and 2000.

Air Quality

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set national ambient air quality standards (NAAQS) for six criteria pollutants (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur oxides) which are considered harmful to public health and the environment. Areas not meeting the NAAQS for one or all of the criteria pollutants are designated as nonattainment areas by the EPA. In areas where observed pollutant levels exceed the established NAAQS and which are designated as "nonattainment" areas by the EPA, growth and development patterns may be constrained. For example, major sources of pollutants seeking to locate or expand in a designated nonattainment area, or close enough to impact upon it, must apply emission control technologies. In addition, new or expanding industries may be required to obtain a greater than one-for-one reduction in emissions from other sources in the nonattainment area so as to provide a net improvement in ambient air quality. Nonattainment area designation may, therefore, create an economic disincentive for industry with significant emission levels to locating or expanding within or near the boundaries of such an area. In order to eliminate this disincentive and relieve the potential constraint on development, it is necessary to demonstrate compliance with the NAAQS and petition the EPA for redesignation of the nonattainment areas.

The Southeastern Wisconsin Region currently meets all but the ozone NAAQS, and the EPA has designated a single six-county ozone nonattainment area within the Region which is made up of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties.[20] Ozone is formed when precursor pollutants, such as volatile organic compounds and nitrogen oxides, react in the presence of sunlight. The ozone air quality problem within the Region is a complex problem because ozone is meteorologically dependant. In addition, the ozone problem in the Region is believed to be attributable in large part to precursor emissions which are generated in the large urban areas located to the south and southeast and carried by prevailing winds into the Region. The ozone problem thus remains largely beyond the control of the Region and State and can be effectively addressed only through a multi-state abatement effort. Over the past decade, the combination of local controls and offsets implemented within and external to the Region, along with national vehicle emissions control requirements have resulted in a significant improvement in ambient air quality within the Region as well as nationally, and projections of future emissions indicate a continued decline in precursor emissions and a continued improvement in air quality.

AGRICULTURAL RESOURCE BASE

Agricultural land in the Region has decreased significantly over the past four decades. It is estimated that lands devoted to agricultural use decreased by 22 percent between 1963 and 2000, including a decrease of about 8 percent during the 1990s.[21] Despite this decrease, a large portion of the total area of the Region remains in agricultural use, and agriculture remains an important component of the regional economy.

Based upon the Commission's regional land use inventory, about 1,259 square miles, or 47 percent of the total area of the Region, were in agricultural use in 2000. It should be noted that this figure includes lands actually used for agriculture—primarily cultivated lands and lands used for pasture—and excludes the wetland and woodland portions of existing farm units.

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[20] *The 1-hour ozone NAAQS was revoked effective June 15, 2005, and replaced with the 8-hour ozone NAAQS. The 8-hour nonattainment area designations remain the same as the 1-hour area, but the classification has changed from a "severe" nonattainment classification to a lower "moderate" nonattainment status. The 8-hour nonattainment area includes all counties of the Region with the exception of Walworth County, which reached attainment of both the 1-hour and 8-hour ozone standard. On June 29, 2004, the EPA made preliminary nonattainment area designations for particulate matter less than 2.5 microns (PM2.5). Kenosha County was preliminarily delineated as nonattainment based on its inclusion in the Chicago-Naperville-Joliet, IL-IN-WI, Metropolitan Statistical Area, as defined by the Office of Management and Budget. The State of Wisconsin requested, and was granted, attainment status on December 17, 2004, of the PM2.5 standard for Kenosha County, based on the monitoring data which showed Kenosha County meeting the PM2.5 NAAQS.*

[21] *These estimates are based upon the Commission's regional land use inventories and discount the effect of the procedural shifts made as part of the year 2000 inventory, described earlier in this chapter.*

Map 11 shows the extent of agricultural land in the Region as identified in the year 2000 regional land use inventory and further identifies those areas which are covered by highly productive soils—comprised of soils in agricultural capability Class I and Class II, as classified by the U.S. Natural Resources Conservation Service. Agricultural lands covered by Class I and Class II soils encompassed about 945 square miles, or 75 percent of all agricultural land in the Region, in 2000. The adopted regional land use plan recommends the preservation of Class I and Class II soils insofar as practicable.

The Class I and Class II farmland in the Region is represented along with the environmental corridors and isolated natural resource areas on Map 12. Under the adopted regional land use plan, these areas, which constitute about 57 percent of the total area of the Region, would be preserved in open use to the extent practicable. The regional plan thus envisions that substantial open space areas would be retained within the Region—even as the Region continues to accommodate additional urban growth and development.

COMMUNITY PLANS AND ZONING

An understanding of local land use objectives as embodied in community plans and zoning ordinances is necessary for the preparation of a practical and implementable regional plan. As part of the ongoing comprehensive planning program for the Region, the Commission maintains an inventory of community land use plans and zoning ordinances. The inventory was updated in the early 2000s in support of the preparation of a new regional land use plan. The findings of that inventory update are summarized in this section. Also presented in this section is an inventory of communities in the Region that have entered into municipal boundary agreements.

Local Land Use Plans

Over the years, many local units of government in the Region have prepared plans to guide land use development. In some cases, these have been prepared as land use plans, while in other cases they have been prepared as land use elements of more comprehensive master plans. In this section, the term "land use plan" is used to refer to all local land use plans, including those which are set forth as land use plan elements in broader master plans.

State law enacted in 1999 significantly alters the framework for local planning in Wisconsin. Commonly referred to as the "Smart Growth Law," that legislation specifies in detail the subject matter to be addressed in a comprehensive plan. Under the State planning law, a land use element is one of nine elements required to be included in a comprehensive plan. The State planning law effectively requires that each city, village, town and county prepare and adopt a comprehensive plan by January 1, 2010, with the stipulation that the local governing body adopt the plan by ordinance. The law further requires that, beginning on January 1, 2010, zoning, subdivision regulations, and official mapping regulations be consistent with the comprehensive plan.

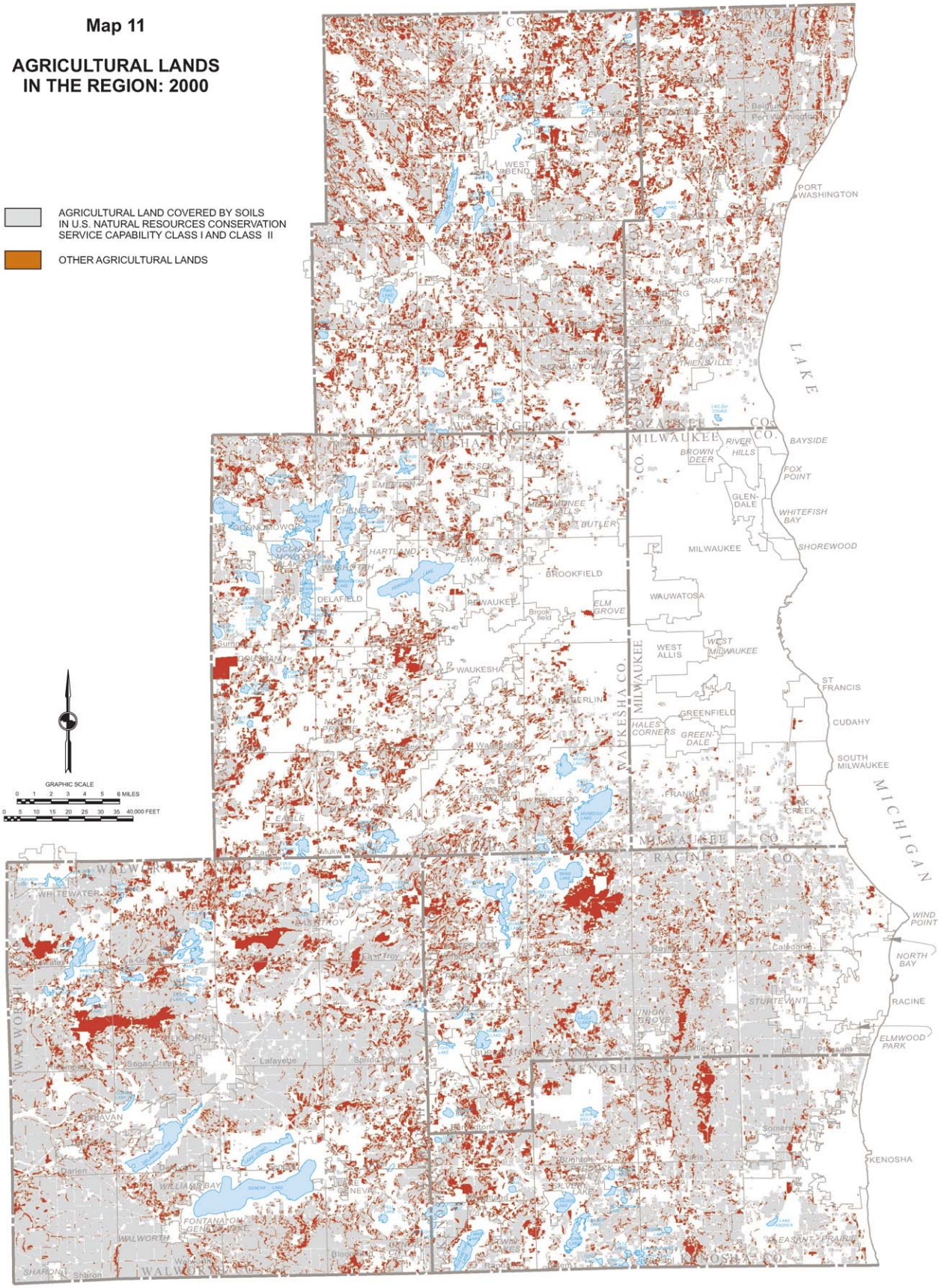
City, Village, and Town Land Use Plans

As of June 2004, local land use plans had been prepared by 125 of the 147 cities, villages, and towns in the Region.[22] In combination, these communities encompassed 2,275 square miles, or 85 percent of the total area of the Region, and had a year 2000 population of 1.84 million persons, or about 95 percent of the total Region

[22] *As part of this inventory, a community was considered to have a land use plan if it had prepared a community-wide land use plan or if it had prepared a series of neighborhood plans which covered extensive areas of the community. The city, village, and town land use plans are listed, along with the local plan adoption date, in Appendix B.*

Map 11

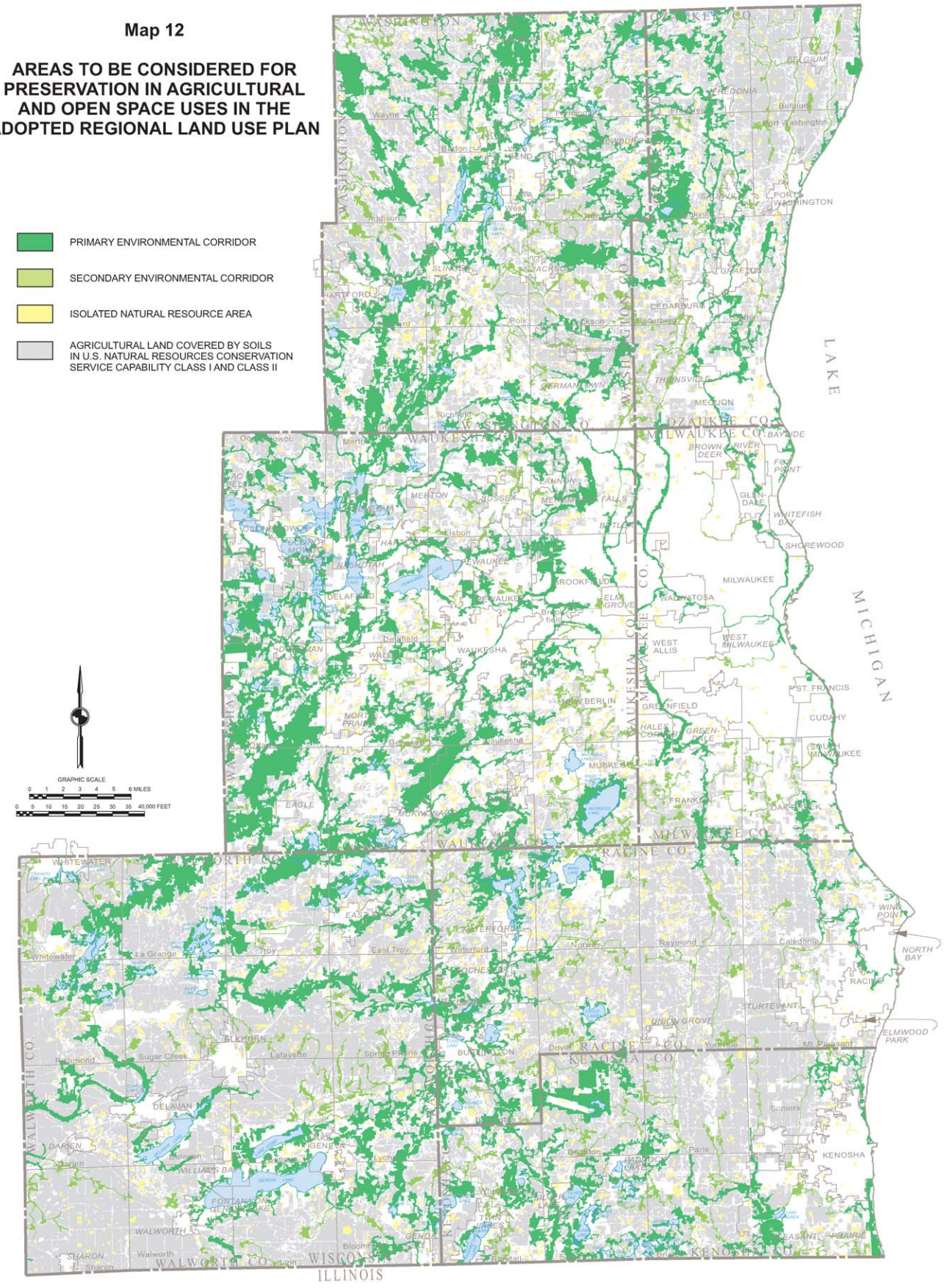
AGRICULTURAL LANDS IN THE REGION: 2000



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

Map 12

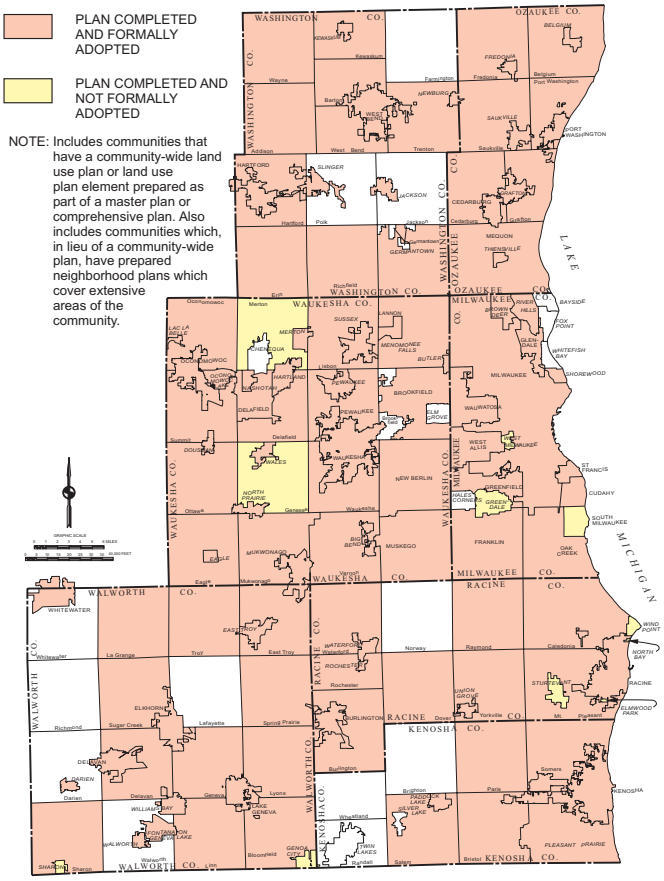
AREAS TO BE CONSIDERED FOR PRESERVATION IN AGRICULTURAL AND OPEN SPACE USES IN THE ADOPTED REGIONAL LAND USE PLAN



Source: SEWRPC.

Map 13

CITY, VILLAGE, AND TOWN LAND USE PLANS IN THE REGION: 2004



Source: SEWRPC.

population. In all but 11 of these communities, the land use plans were formally adopted by the local plan commission and/or local governing body (see Map 13).[23]

Much community planning activity has occurred in the Region since 1990, the base year of the adopted year 2020 regional land use plan. A total of 103 cities, villages, and towns either prepared new land use plans or significantly revised an existing local land use plan between 1990 and 2004.

As of June 2004, seven communities in the Region had prepared and adopted plans held out as meeting the requirements of the State comprehensive planning law. These include the Cities of Oak Creek and St. Francis in Milwaukee County; the Village of Fredonia in Ozaukee County; the City of West Bend in Washington County; and the Villages of Merton and Sussex and the Town of Summit in Waukesha County.

During 2004, efforts were underway to update existing, or prepare new, land use plans for 15 communities in the Region. For nine of these communities—the Villages of Paddock Lake and Twin Lakes and the Town of Randall in Kenosha County; the City of South Milwaukee in Milwaukee County; the Village of Sharon and Town of Linn in Walworth County; and the Villages of Germantown and Slinger and the Town of Richfield in Washington County—these planning efforts were intended to meet the requirements of the State comprehensive planning law. The other communities where planning efforts were underway in 2004 include the Towns of Burlington, Caledonia, and Raymond in Racine County; the Village of Genoa City and Town of Lafayette in Walworth County; and the Village of Hartland in Waukesha County.

County Land Use Plans

Two counties in the Region, Waukesha and Walworth counties, have prepared and adopted a land use plan. These plans pertain primarily to the unincorporated areas of the respective counties. Both counties' plans serve to refine and detail the regional land use plan.

[23] *Some of the local land use plans have been prepared cooperatively by contiguous communities. These include a land use plan for the Village and Town of Rochester and a land use plan for the Village of Union Grove and the Town of Yorkville, all in Racine County. In addition, the City of Kenosha, the Village of Pleasant Prairie, and the Town of Somers cooperatively prepared a land use plan in 1996. That plan was adopted by the Village of Pleasant Prairie and the Town of Somers but not the City of Kenosha; the City of Kenosha land use plan consists of a series of neighborhood plans covering much of the City. In addition to community-wide cooperative plans, some cities and villages in the Region have undertaken cooperative planning with abutting towns for portions of the towns within the vicinity of the incorporated areas, in conjunction with their boundary agreements.*

The Waukesha County Board of Supervisors adopted a land use plan as part of a County development plan in 1996. The County development plan, including the land use plan element, is documented in SEWRPC Community Assistance Planning Report No. 209, *A Development Plan for Waukesha County, Wisconsin*, dated August 1996. The land use element of the Waukesha County development plan has been amended on an annual basis.

The Walworth County Board of Supervisors adopted a land use plan, prepared as a refinement of the year 2010 regional land use plan, in 1993. In 2001, the County Board adopted a new plan, updating and extending the prior plan to the year 2020; that plan was prepared as a refinement of the year 2020 regional land use plan. The current plan is documented in SEWRPC Community Assistance Planning Report No. 252, *A Land Use Plan for Walworth County, Wisconsin: 2020*, dated April 2001. The Walworth County Board adopted minor amendments to the County land use plan in 2004.

In 2004, planning efforts were underway in Ozaukee and Waukesha Counties to prepare county comprehensive plans compliant with the State comprehensive planning law. Organizational efforts were underway to mount similar planning efforts in Kenosha, Racine, Walworth, and Washington Counties.

Local Zoning Regulations

A zoning ordinance is a public law which regulates the use of property in the public interest. Local zoning regulations include general zoning regulations and special-purpose regulations governing floodland and shoreland areas. General zoning and special-purpose zoning regulations may be adopted as a single ordinance or as separate ordinances, and may or may not be contained in the same document. A description of these zoning types and their application in cities, villages, towns, and counties in the Region follows.

General Zoning

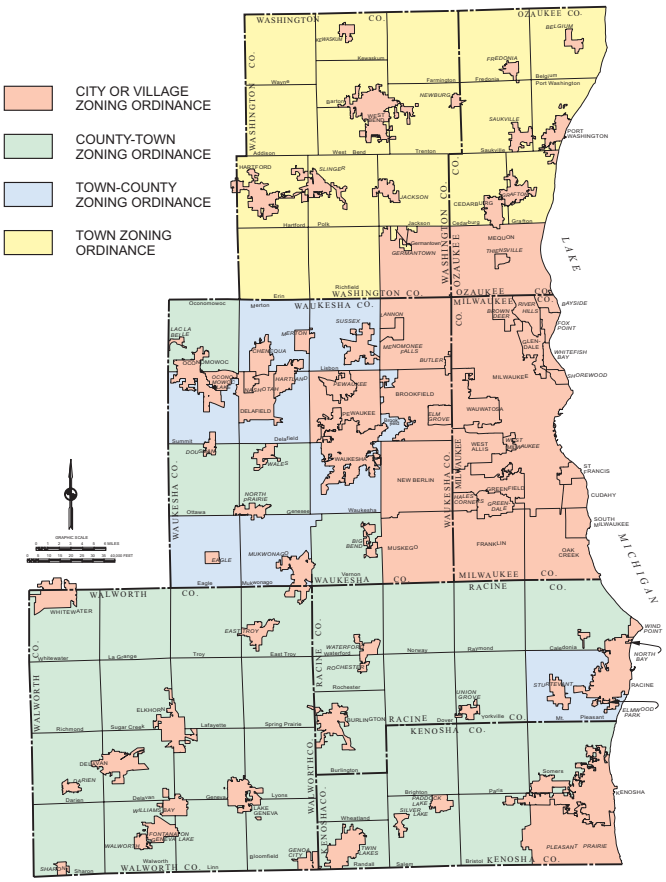
General zoning divides a community into districts for the purpose of regulating the use of land, water, and structures; the height, size, shape, and placement of structures; and the density of population. Cities in Wisconsin are granted authority under Section 62.23 of the *Wisconsin Statutes* to enact general zoning. The same authority is granted to villages under Section 61.35 of the statutes. General zoning within unincorporated areas is enabled under several statutory provisions. Counties are granted general zoning authority within unincorporated areas under Section 59.69 of the statutes; however, a county zoning ordinance becomes effective only in those towns which ratify the county ordinance. Because such zoning is administered jointly by the county and the ratifying towns, this arrangement may be referred to as "county-town" zoning. Towns which have not adopted a county zoning ordinance may adopt village powers and subsequently utilize the city and village authority referenced above—subject, however to county board approval where a general county zoning ordinance exists. In counties where a county zoning ordinance does exist, this arrangement may be referred to as "town-county" zoning, since, in that circumstance, no town zoning ordinance or ordinance amendment may take effect unless approved by the county board. Alternatively, in counties which have not adopted a general zoning ordinance, a town may adopt a zoning ordinance under Section 60.61 of the statutes, but only after the county board fails to adopt a county zoning ordinance at the request of the town board concerned. In addition, Section 62.23 of the statutes grants certain extraterritorial zoning authority to cities and villages with respect to unincorporated areas.

The status of general zoning in the Region in 2000 is shown on Map 14. General zoning was in effect in each of the 29 cities, 55 villages, and 63 towns in the Region in 2000.[24] Thirty-five towns were under the jurisdiction of county zoning ordinances in Kenosha, Racine, Walworth, and Waukesha Counties, while 28 towns had adopted their own zoning ordinances. The exercise of extra-territorial zoning authority by cities and villages in the Region at the end of 2000 was limited to the City of Elkhorn and the Villages of Fontana and Williams Bay, all within Walworth County.

[24] *The 63 towns include the Town of Mt. Pleasant, which became a village in 2003, and the Town of Caledonia, which became a village in 2005* .

Map 14

GENERAL ZONING ORDINANCES IN THE REGION: 2000



Source: SEWRPC.

Floodplain Zoning

Floodplain zoning is intended to preserve the floodwater conveyance and storage capacity of floodplain areas and to avoid the location of flood damage-prone urban development in flood hazard areas. Cities, villages, and counties (with respect to their unincorporated areas) are required, under Section 87.30 of the *Wisconsin Statutes*, to adopt floodplain zoning, provided that the hydraulic and engineering data required to formulate the ordinance are available. The minimum standards for floodplain zoning ordinances are set forth in Chapter NR 116 of the *Wisconsin Administrative Code*. All such regulations must govern filling and development activities within the entire 100-year recurrence interval floodplain—that is, the area subject to inundation during a 100-year recurrence interval flood event. Under minimum State requirements, local floodplain zoning regulations must prohibit nearly all forms of development in the floodway, which is the area of the floodplain required to convey the 100-year recurrence interval peak flood flow. Local regulations must also restrict filling and development within the flood fringe, which consists of the portion of the floodplain located outside the floodway that would be covered by floodwaters during a 100-year flood event.

The status of floodplain zoning in the Region in 2000 is shown on Map 15. Floodplain ordinances have been nearly universally adopted throughout Southeastern Wisconsin. In 2000, such ordinances were in effect in all six counties with with unincorporated territory, as well as in 71 of the 84 cities and villages in the Region. Most of the floodplain ordinances have been approved by the Wisconsin Department of Natural Resources.

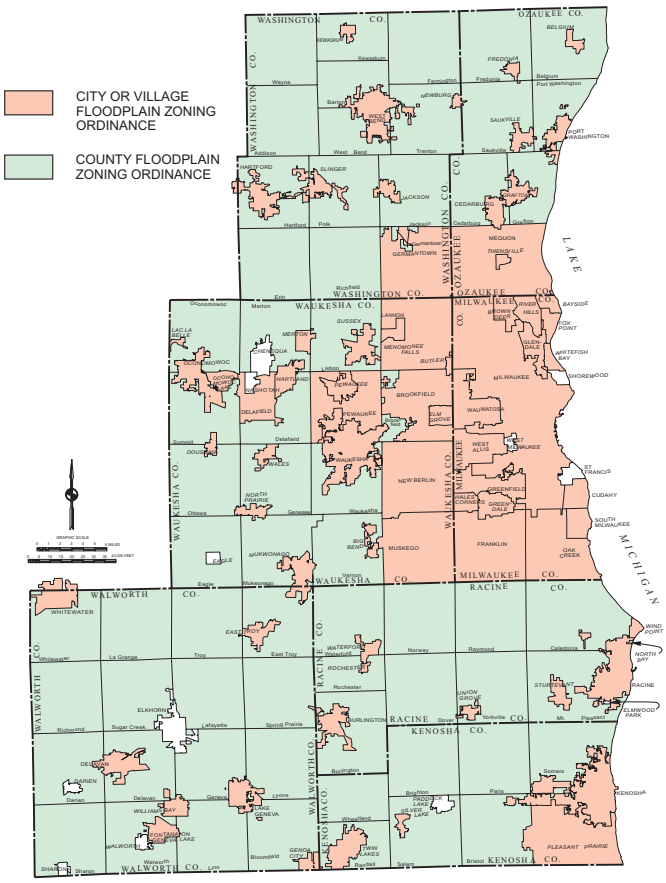
Shoreland Zoning

Section 59.692 of the *Wisconsin Statutes* requires that counties adopt regulations to ensure the protection and proper development of shorelands within their unincorporated areas. By statutory definition, shoreland areas are those lands within 1,000 feet of a navigable lake, pond, or flowage, or within 300 feet of a navigable stream or to the landward side of the floodplain, whichever distance is greater. Minimum standards for county shoreland regulations are set forth in Chapter NR 115 of the *Wisconsin Administrative Code.* Shoreland regulations must include minimum requirements for lot sizes and building setbacks as well as restrictions on the cutting of trees and shrubbery. State regulations also require that counties place all shoreland wetlands at least five acres in size in a protective conservancy district.[25] Under Section 62.231 and 61.351 of the *Wisconsin Statutes*, respectively, cities and villages are also required to enact regulations that protect wetlands five acres in size lying in shoreland

[25] *Under Section 59.692(7) of the Wisconsin Statutes, the provisions of a county shoreland zoning ordinance, including floodplain zoning adopted under Section 59.692, remain in effect on shorelands in areas annexed by a city or village after May 7, 1982, and in areas incorporated as a city or village after April 30, 1994. The Statutes provide for several different arrangements for the administration of shoreland zoning provisions in such situations.*

Map 15

FLOODPLAIN ZONING ORDINANCES IN THE REGION: 2000



Source: SEWRPC.

areas as defined above; rules pertaining to city and village shoreland-wetland zoning are set forth in Chapter NR 117 of the *Wisconsin Administrative Code*.

The status of shoreland zoning in the Region in 2000 is shown on Map 16. Shoreland ordinances were in effect in each of the six counties that have unincorporated areas. Shoreland-wetland zoning was in effect in 69 of the 84 cities and villages in the Region.

Existing Zoning Pattern

The current regional zoning inventory, like previous zoning inventories carried out by the Commission, included the preparation of a composite map showing the existing pattern of zoning throughout the Region. As part of this effort, local zoning districts were converted to a uniform, areawide classification system suitable for areawide analysis, and their boundaries were digitally mapped. It should be recognized that many local zoning ordinances provide for mixed-use districts. Such mixed-use districts include, among others, commercial districts that allow residential units to be located on upper stories or otherwise incorporated into permitted commercial structures; planned development districts that accommodate a mix of residential, neighborhood service, and retail uses; and business park districts which accommodate office buildings, research facilities, light manufacturing operations, and service establishments. As part of this analysis, local zoning districts were placed into generalized categories based upon the predominant type of use permitted in the local district.

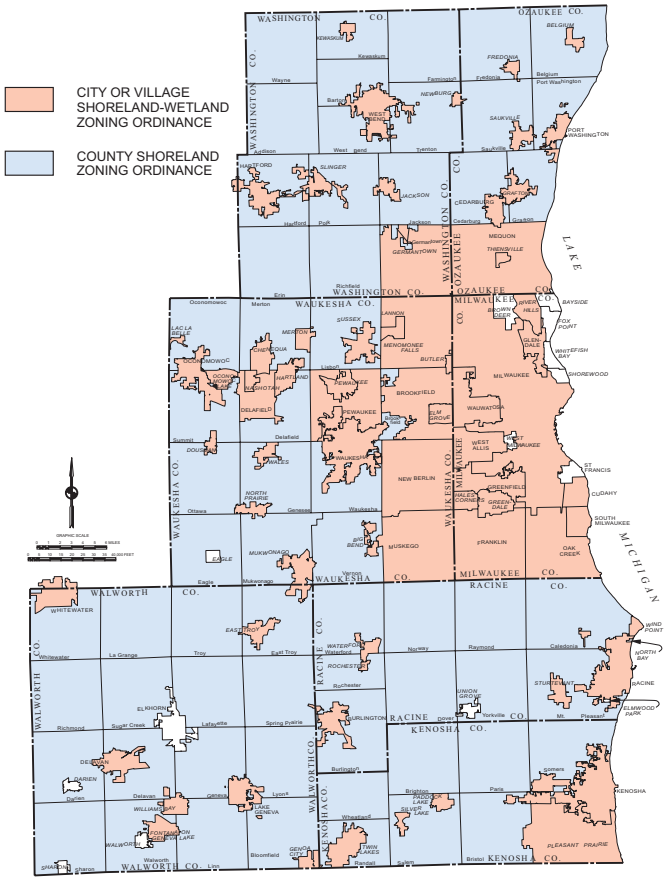
The composite map reflects general zoning as well as floodplain and shoreland zoning. On the map, floodplain zoning districts in undeveloped areas are shown as conservancy, regardless of any underlying general zoning district regulations, if the provisions of the floodplain district effectively preclude new urban development. Also, where the provisions of a county shoreland zoning ordinance and a town general zoning ordinance differ, the map reflects the more restrictive ordinance.

The resulting graphic summary of existing zoning in the Region is presented in Map 17. Related area measurements are presented in Table 17.[26] In reviewing Map 17, it should be recognized that differences exist among local units of government in terms of how they relate zoning and the local long-range land use or master plan. In the application of zoning districts, some local units of government retain future urban areas—as designated in the local land use plan—in agricultural or agricultural holding zoning districts until such time as development is imminent and essential services and facilities are available; at that time, the lands concerned are rezoned into appropriate residential, commercial, and other urban districts in accordance with the local land use

[26]*As part of the regional zoning inventory, the area encompassed by streets and railways is necessarily included in the area of the associated zoning category. This should be distinguished from the regional land use inventory, which includes the area of streets and railways in the transportation, communication, and utilities land use category.*

Map 16

SHORELAND ZONING ORDINANCES IN THE REGION: 2000



Source: SEWRPC.

plan. In contrast, other local units of government place most or all future urban areas—as designated in the local land use plan—in corresponding urban zoning districts. It should be noted that, under the State comprehensive planning law, beginning on January 1, 2010, zoning ordinances will have to be consistent with local comprehensive plans.

A description of the existing (2000) pattern of zoning within the Region follows.

Urban Residential Zoning

As indicated on Table 17, about 837 square miles, or 31 percent of the total area of the Region, have been placed in zoning districts which permit urban residential development, defined as residential development at a density of more than one dwelling unit per five acres. Of this total, 584 square miles have been placed in residential zoning districts explicitly intended to accommodate urban residential development. The remaining 253 square miles have been placed in nominal agricultural and conservancy zoning districts—that is, districts which are referred to as "agricultural" or "conservancy" districts in local zoning ordinances, but which allow urban residential development as a principal permitted use.

Certain local zoning districts included in the urban residential category under this regional inventory may in fact result in an overall rural density (no more than one dwelling unit per five acres) when adjacent conservancy areas are considered in calculating the overall density. This is the case in certain portions of Waukesha County, where analyses conducted in the preparation of the County development plan indicated that development of some areas which have been placed in zoning districts that allow a maximum of one dwelling unit per three acres would result in an overall density of no more than one dwelling unit per five acres when nearby conservancy lands are taken into account. Similarly, development of certain portions of the Town of West Bend in Washington County which have been placed in a zoning district that allows a maximum of one dwelling unit per every 3.5 acres may result in an overall density of no more than one dwelling unit per five acres when nearby conservancy lands are considered.

Commercial and Industrial Zoning

As further indicated in Table 17, lands in commercial and industrial zoning districts encompassed 67 square miles, or 3 percent of the Region, and 115 square miles, or 4 percent of the Region, respectively, in 2000.[27] Increasingly, commercial and industrial zoning districts permit a mix of uses. Many commercial districts permit a mix of retail, service, and office uses. Many industrial districts permit a mix of light industry, research, and office uses. Large airport grounds are commonly placed in industrial districts under local zoning.

[27] *The industrially zoned area reported herein includes a relatively small amount of land (1.3 square miles) which has been placed in local zoning districts specifically intended to accommodate transportation, communication, and utility uses.*

Table 17

GENERALIZED EXISTING ZONING IN THE REGION: 2000

Generalized Zoning Category	Square Miles	Percent of Total
Urban Residential Zoning–*allows residential development at a density greater than one dwelling unit per five acres*		
Residential Zoning Districts	584.3[a]	21.7
Nominal Agricultural and Conservancy Zoning Districts that Allow Urban Residential Development	253.0	9.4
Subtotal	837.3	31.1
Commercial Zoning	67.1	2.5
Industrial Zoning[b]	114.6	4.3
Governmental/Institutional Zoning	57.9	2.2
Recreational Zoning	66.6	2.5
Extractive Zoning	21.2	0.8
Conservancy Zoning[c]	439.5	16.3
Rural Residential Zoning	53.2	2.0
Agricultural Zoning		
Agricultural Zoning Districts– Minimum 35 Acres per Housing Unit	734.7	27.3
Agricultural Zoning Districts– 5-34 Acres per Housing Unit	232.7	8.6
Subtotal	967.4	35.9
Surface Water	65.1	2.4
Total	2,689.9	100.0

[a] *Includes 100.1 square miles of high-density (less than 6,000 square feet per dwelling); 167.9 square miles of medium-density (6,000 to 19,999 square feet per dwelling); 239.3 square miles of low-density (20,000 square feet to 1.49 acres per dwelling); 75.1 square miles of suburban-density (1.5 to 4.9 acres per dwelling); and 1.9 square miles of mobile home zoning.*

[b] *Includes 1.3 square miles of transportation, communication, and utility zoning.*

[c] *Includes 342.8 square miles of lowland conservancy zoning and 96.7 square miles of upland conservancy zoning.*

Source: SEWRPC.

Governmental-Institutional and Recreational Zoning

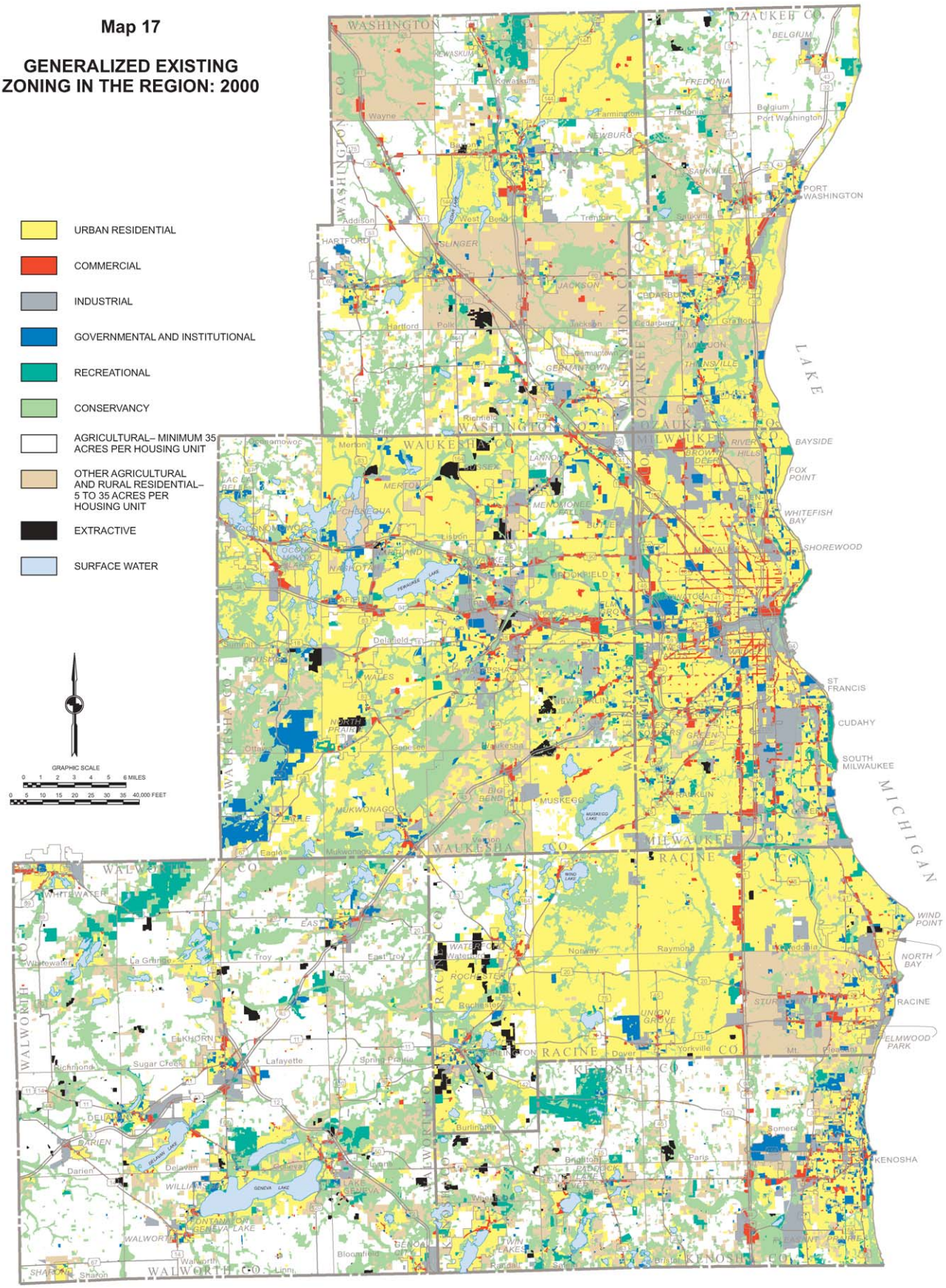
In 2000, lands in governmental-institutional and recreational zoning districts in combination encompassed about 125 square miles, or 5 percent of the Region. Local zoning ordinances vary considerably in their treatment of governmental-institutional and recreational lands. Some ordinances incorporate exclusive governmental-institutional districts that are applied to schools, churches, and other institutional sites and exclusive recreational districts that are applied to public parks and open space uses. Others include broadly-defined "public" districts or combination institutional-park districts. Still other local zoning ordinances have no special districts for governmental-institutional and recreational uses, with such uses being permitted in residential and other zoning districts.

Conservancy Zoning

Lands in conservancy zoning districts encompassed 440 square miles, or 16 percent of the Region, in 2000. This includes 343 square miles in lowland conservancy districts and 97 square miles in upland conservancy districts. Lowland conservancy districts prohibit nearly all types of structures and strictly limit the disturbance of natural conditions. For purposes of this inventory, lowland conservancy districts include shoreland-wetland zoning districts, other wetland zoning districts, and floodplain zoning districts which effectively preclude urban development. Upland conservancy districts are intended to protect upland woodlands, wildlife habitat, and other upland natural resource features; they typically limit land uses to conservancy uses, limited recreational uses, and residential development at a density of no more than one dwelling unit per five acres.

Map 17

GENERALIZED EXISTING ZONING IN THE REGION: 2000



Source: SEWRPC.

Rural-Density Residential Zoning
As defined herein, rural-density residential zoning districts include districts which are specifically intended to accommodate residential development at a density of no more than one dwelling unit per five acres. Such zoning is generally intended to maintain rural character in areas that are not envisioned to remain agricultural, and provide reasonable assurance that development can be sustained over the long term without urban facilities and services. Such zoning may require individual lots of five acres or larger, or may allow clustering of dwelling units on smaller lots, maintaining a density of no more than one dwelling unit per five acres for the development site overall. About 53 square miles, or 2 percent of the Region, were in such rural residential zoning districts in 2000.

It should be recognized that residential development at a rural density of no more than one dwelling unit per five acres is also generally permitted in upland conservancy zoning districts, as noted earlier, as well as in certain agricultural districts, as indicated below.

Agricultural Zoning
As defined herein, agricultural zoning districts include those agricultural districts which establish a minimum parcel size of at least five acres. Agricultural districts which establish a parcel size of less than five acres for a homesite are included in the urban residential zoning category on Map 17 and Table 17.

As indicated in Table 17, nearly 968 square miles, or 36 percent of the Region, were in agricultural zoning districts in 2000. Of this total, 735 square miles, or 27 percent of the Region, were in zoning districts which establish a minimum of 35 acres per housing unit. Such zoning was applied on a widespread basis during the 1970s and 1980s, partly in response to the creation of the Wisconsin Farmland Preservation Program by the State Legislature in 1977. That program combines planning and zoning provisions with tax incentives to promote the preservation of farmland. The minimum parcel size of 35 acres established under that program became the generally accepted criterion for exclusive agricultural zoning intended to protect prime farmland in Wisconsin.[28]

Other agricultural zoning districts—agricultural districts establishing a minimum of between five and 35 acres per housing unit—encompassed 233 square miles, or 9 percent of the Region, in 2000. Such districts are typically applied to less productive farmland. They provide a basis for accommodating hobby farms and other small farms as well as for accommodating rural-density residential development.

Trends in Zoning
The year 2000 inventory of local zoning is the fourth such inventory conducted by the Commission, prior inventories having been conducted for the years 1964, 1972, and 1985. The period between the 1972 and 1985 inventories, in particular, saw major changes in zoning patterns within the Region. As noted above, this period saw the widespread application of exclusive agricultural zoning, with a minimum parcel size of 35 acres; much of the exclusive agricultural zoning now in place was enacted during this period. In addition, this period saw a substantial increase in conservancy zoning. Much of the increase in conservancy zoning was in the form of State-mandated floodplain and shoreland zoning. In addition, many wetland and woodland areas lying outside floodland and shoreland areas were placed in appropriate conservancy zoning districts during that time.[29]

In comparison to the changes that occurred between 1972 and 1985, zoning changes in the Region since 1985 may be characterized as marginal in nature. The change in the areal extent of generalized zoning districts in the Region between 1985 and 2000 is indicated in Table 18. This table indicates the net change in each generalized

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[28] *The Wisconsin Legislature amended the Farmland Preservation law in Wisconsin in 1999, deleting the 35-acre parcel size standard from the definition of exclusive agricultural zoning for purposes of the Wisconsin Farmland Preservation Program.*

[29] *A more detailed description of zoning trends in the Region through 1985 is presented in Chapter VII of SEWRPC Planning Report No. 40,* A Regional Land Use Plan for Southeastern Wisconsin-2010, *dated January 1992.*

Table 18

GENERALIZED EXISTING ZONING IN THE REGION: 1985 AND 2000

Generalized Zoning Category	Area in Square Miles		
	1985	2000	Change: 1985-2000
Urban Residential Zoning–*allows residential development at a density greater than one dwelling unit per five acres*			
Residential Zoning Districts	585.8	584.3	-1.5
Nominal Agricultural and Conservancy Zoning Districts that allow Urban Residential Development	455.8	253.0	-202.8
Subtotal	1,041.6	837.3	-204.3
Commercial Zoning	60.5	67.1	6.6
Industrial Zoning	102.2	114.6	12.4
Governmental/Institutional Zoning	37.5	57.9	20.4
Recreational Zoning	38.9	66.6	27.7
Extractive Zoning	17.3	21.2	3.9
Conservancy Zoning	406.4	439.5	33.1
Rural Residential Zoning	15.2	53.2	38.0
Agricultural Zoning			
Agricultural Zoning Districts–Minimum 35 Acres per Housing Unit	670.5	734.7	64.2
Agricultural Zoning Districts–5-34 Acres per Housing Unit	172.1	232.7	60.6
Subtotal	842.6	967.4	124.8
Unzoned Land and Surface Water[a]	127.7	65.1	-62.6
Total	2,689.9	2,689.9	0.0

[a]*Portions of the Towns of Brighton and Bristol, encompassing about 60 square miles, were unzoned in 1985.*

Source: SEWRPC.

zoning category for the Region overall. For some categories, increases in one area of the Region offset decreases in another area. In reviewing Table 18, it should be noted that certain lands in the Region—namely, portions of the Kenosha County Towns of Brighton and Bristol located outside the statutory shoreland areas—were unzoned in 1985; these areas were zoned in 2000.

One of the more notable changes in zoning since 1985 has been a continued decrease in the use of nominal agricultural districts—that is, districts which are referred to as "agricultural" districts in local zoning ordinances, but which allow urban residential development as a principal permitted use. The area of the Region in such districts decreased by about 200 square miles between 1985 and 2000, with the areas concerned generally placed in exclusive agricultural or other rural zoning districts.[30] Significant reductions in nominal agricultural zoning occurred in the Town of Salem in Kenosha County; the Towns of Barton, Erin, Kewaskum, Trenton, and Wayne in Washington Counties; and the Towns of Ottawa and Vernon in Waukesha County.

The overall increase in exclusive agricultural zoning in the Region since 1985, indicated in Table 18, is the net effect of increases and decreases throughout the Region. Large portions of the Towns of Brighton and Bristol which were unzoned in 1985 have been placed in an exclusive agricultural district. The Towns of Paris and Salem in Kenosha County and the Towns of Erin and Trenton in Washington County had notable increases in exclusive agricultural zoning. These increases were partially offset by piecemeal rezonings from exclusive agricultural districts to urban zoning districts in a number of communities.

Municipal Boundary Agreements

The *Wisconsin Statutes* provide several options for neighboring cities, villages, and towns to cooperatively determine common boundaries. Section 66.0307 of the *Wisconsin Statutes* allows any combination of cities,

[30] *A much greater reduction in nominal agricultural zoning was observed in the previous zoning inventory, which indicated a decrease in the areal extent of such zoning from 1,380 square miles in 1972 to 456 square miles in 1985.*

Table 19

BOUNDARY AGREEMENTS IN THE REGION: 2004

County	Communities With Boundary Agreements	Year Agreement Signed	Statute
Kenosha	City of Kenosha/Village of Pleasant Prairie	1997	66.0307
	City of Kenosha/Village of Pleasant Prairie/Town of Bristol	1992	66.0307
	City of Kenosha/Town of Bristol	2000	66.0307
	City of Kenosha/Town of Somers	1990	66.0301; 66.0307
	Village of Pleasant Prairie/Town of Bristol	1997	66.0225; 66.0307
Ozaukee	City of Port Washington/Town of Port Washington	2004	66.0225
Racine	City of Burlington/Town of Burlington	2001	66.0225
	Village of Sturtevant/Former Town of Mt. Pleasant	2003	66.0307
Walworth	Village of Genoa City/Town of Bloomfield	1999	66.0301
Washington	Village of Jackson/Town of Jackson	1999	66.0301, 66.307
	City of West Bend/Town of West Bend	2002	66.0307
Waukesha	City of Delafield/Village of Hartland/Town of Delafield	1998	66.0225
	City of Oconomowoc/Town of Summit	1999	66.0301, 66.0225
	City of Waukesha/Former Town of Pewaukee	1998	66.0307
	Village of Dousman/Town of Ottawa	2004	66.0225
	Village of Mukwonago/Town of Mukwonago	2000	66.0225
	Village of North Prairie/Town of Genesee	1999	66.0225
	Village of North Prairie/Town of Mukwonago	2000	66.0225
	Village of Oconomowoc Lake/Town of Summit	2000	66.0301, 66.0225
	Village of Pewaukee/Former Town of Pewaukee	1989	66.0225
	Village of Wales/Town of Delafield	2002	66.0225
	Village of Wales/Town of Genesee	2000	66.0225

Source: SEWRPC.

villages, and towns to determine the boundary lines between themselves under a cooperative plan. Section 66.0307 envisions the cooperative preparation of a comprehensive plan for the affected area by the concerned local units of government and prescribes in detail the contents of the cooperative plan. Importantly, the cooperative plan must identify any boundary change and any existing boundary that may not be changed during the planning period; identify any conditions that must be met before a boundary change may occur; include a schedule of the period during which a boundary change shall or may occur; and specify arrangements for the provision of urban services to the territory covered by the plan. A boundary agreement can also be achieved under Section 66.0225 which allows two abutting communities that are parties to a court action to enter into a written stipulation determining a common boundary. In addition, communities can agree upon common boundaries under Section 66.0301, the "intergovernmental cooperation" statute.

Communities in the Region which have entered into municipal boundary agreements under any of the aforementioned statutes as of December 2004 are listed in Table 19.

SUMMARY

A major effort to update the regional planning database was carried out by the Regional Planning Commission in the early 2000s in support of the preparation of new land use and transportation plans and other elements of the comprehensive plan for the Region. This chapter presents a summary of the results of that inventory update pertaining to the population, economy, land use, sanitary sewer and water supply services, natural resource base, and community plans and zoning within the Region. Transportation-related inventory data are presented in a companion to this report, SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*. A summary of key inventory findings from this chapter follows.

Demographic and Economic Base

- The population of the Region increased by 120,800 persons, or 7 percent, from 1,810,400 persons in 1990 to 1,931,200 persons in 2000. Of the total population increase of 120,800 persons during the 1990s, 116,900 can be attributed to natural increase; the balance can be attributed to a modest net in-migration—about 3,900 persons—into the Region. The past decade saw further change in the relative distribution of the population among the counties within the Region, continuing long-term trends in this respect. Milwaukee County's share of the regional population decreased by about 4 percentage points during the 1990s, while the share of each of the other six counties increased at least slightly.

- The number of households, or occupied housing units, in the Region increased by 72,900, from 676,100 households in 1990 to 749,000 households in 2000. In relative terms, the rate of growth in households in the Region during the 1990s, 11 percent, exceeded the rate of growth in the total population of 7 percent. Similar patterns have been observed over each of the four previous decades. The differential growth rates in households and population are reflected in a declining average household size. During the 1990s, the average household size in the Region decreased by about 0.10 person per household, or about 4 percent, from 2.62 persons in 1990 to 2.52 persons in 2000.

- Total employment in the Region increased by 160,200 jobs, or 15 percent, from 1,062,600 jobs in 1990 to 1,222,800 jobs in 2000. Historically, employment levels, both nationally and within the Region, tend to fluctuate in the short-term, rising and falling in accordance with business cycles. The long period of nearly uninterrupted job growth between 1983 and 2000 is unusual in this respect. Nationally and within the Region, total employment increased each year during that time, with the exception of a slight decrease in 1991. The extended period of employment growth in the Region ended after 2000, with total employment in the Region decreasing each year between 2000 and 2003.

- Each county in the Region experienced an increase in employment during the 1990s. Between 1990 and 2000, Milwaukee and Racine Counties decreased in their relative share of total regional employment while the share of each of the other five counties increased at least slightly.

- The 1990s saw a continuation of a shift in the regional economy from a manufacturing to a service orientation. Manufacturing employment in the Region was virtually unchanged during the 1990s, following a 15 percent decrease during the 1980s, and a modest 4 percent increase during the 1970s. Conversely, service-related employment increased substantially during each of the past three decades—by 33 percent during the 1990s, 41 percent during the 1980s, and 53 percent during 1970s. Due to these differential growth rates, the proportion of manufacturing jobs relative to total jobs in the Region decreased from 32 percent in 1970 to 18 percent in 2000, while service-related employment increased from 18 percent in 1970 to 33 percent in 2000.

Land Use

- Urban land uses as identified in the Commission's regional land use inventory encompassed about 761 square miles, or 28 percent of the total area of the Region, in 2000. Urban lands include areas identified as being in residential, commercial, industrial, transportation-communication-utility, governmental-

institutional, or intensive recreational uses, along with unused urban land. Residential land comprised the largest urban land use category, encompassing about 362 square miles, or about 48 percent of all urban land and about 14 percent of the overall area of the Region. In combination, commercial and industrial lands encompassed about 63 square miles, or about 8 percent of all urban land and about 2 percent of the Region overall. Land used for governmental and institutional purposes encompassed 34 square miles, or 4 percent of all urban land and 1 percent of the Region overall. Land devoted to intensive recreational uses encompassed about 50 square miles, or 7 percent of all urban land and 2 percent of the Region overall. Land devoted to transportation, communication, and utility uses—including areas used for streets and highways, railways, airports, and utility and communication facilities—totaled 201 square miles, or 26 percent of all urban land and 8 percent of the Region overall. Unused urban lands encompassed 51 square miles, or 7 percent of all urban land and 2 percent of the overall area of the Region.

- Areas considered "nonurban" under the land use inventory include agricultural lands, wetlands, woodlands, surface water, extractive and landfill sites, and unused rural lands. In 2000, nonurban lands as identified in the regional land use inventory encompassed about 1,929 square miles, or 72 percent of the total area of the Region. Agricultural land constituted the largest nonurban land use category, encompassing 1,259 square miles, representing about 65 percent of all nonurban land and about 47 percent of the overall area of the Region. Wetlands, woodlands, and surface water together encompassed 536 square miles, representing about 28 percent of all nonurban land and 20 percent of the Region overall. All other nonurban lands, including extractive, landfill, and unused rural lands, encompassed 134 square miles, representing about 7 percent of all nonurban land and 5 percent of the overall area of the Region.

- Owing to certain procedural differences, the results of the Commission's year 2000 regional land use inventory are not strictly comparable with prior regional land use inventories. Procedural differences notwithstanding, Commission inventories indicate a significant increase in urban land uses in the Region between 1990 and 2000. As noted above, the year 2000 land use inventory indicates that urban land uses encompassed about 761 square miles in the Region in 2000. This compares to the figure of 637 square miles indicated by the 1990 land use inventory. It is estimated that about 15 square miles—or 12 percent of the increase of 125 square miles in urban land indicated by the 1990 and 2000 inventories—is attributable to the procedural differences. Thus, the actual increase in urban land uses in the Region during the 1990s, discounting the effect of procedural changes in the land use inventory, may be estimated at about 110 square miles.

- The population density of the urban portion of the Region—as identified by the Commission's urban growth ring analysis—decreased significantly, from 10,700 persons per square mile in 1940 to about 5,100 persons per square mile in 1970, 3,900 persons per square mile in 1980, and 3,500 persons per square mile in 1990. During the 1990s, the urban population density decreased slightly—to about 3,300 persons per square mile in 2000. A different density trend for the Region emerges when urban density is calculated based upon households rather than population. Since 1963, the relative decrease in urban household density has been much lower than the decrease in urban population density. Between 1963 and 2000, the urban household density decreased by 23 percent, compared to a 43 percent decrease in the urban population density.

Public Utilities

- Areas served by public sanitary sewers in 2000 encompassed about 477 square miles, or about 18 percent of the total area of the Region—compared to about 394 square miles, or about 15 percent of the Region in 1990. An estimated 1.71 million persons, or 89 percent of the regional population, were served by public sanitary sewers in 2000, compared to 1.59 million persons, representing 88 percent of the regional population, in 1990. The increase in the land area and population served by public sanitary sewerage facilities during the 1990s reflects both new development designed to be served by sanitary sewerage facilities and as well the retrofitting of existing urban areas—that is, the extension of sanitary sewer service to urban development which was initially developed with onsite sewage disposal systems.

- Areas served by public water utilities in 2000 encompassed about 390 square miles, or about 15 percent of the total area of the Region—compared to about 316 square miles, or about 12 percent of the Region in 1990. An estimated 1.58 million persons, or 82 percent of the regional population, were served by public water utilities in 2000, compared to 1.47 million persons, representing 81 percent of the regional population, in 1990. In addition to publicly-owned water utilities, there are numerous privately or cooperatively owned water systems operating in the Region. These water supply systems typically serve residential subdivisions, apartment or condominium developments, mobile home parks, and institutions. These systems served a total of about 37,000 persons in the Region in 2000.

Natural Resource Base

- Surface and groundwater resources comprise an extremely important component of the natural resource base of the Region. The Southeastern Wisconsin Region encompasses 101 major lakes (lakes of at least 50 acres in area) and 1,150 miles of perennial streams. In addition, the Region encompasses numerous lakes and ponds less than 50 acres in area and an extensive network of smaller, intermittent streams. Groundwater sustains lake levels and provides the base flows of streams in the Region. Groundwater also comprises a major source of water supply for domestic, municipal, and industrial water users.

- A major subcontinental drainage divide, oriented in a generally northwesterly-southeasterly direction, bisects the Region. About 1,680 square miles, or 62 percent of the Region, are located west of the divide and drain to the Upper Mississippi River system; the remaining 1,009 square miles, or 38 percent, drain to the Great Lakes-St. Lawrence River system. The subcontinental divide not only exerts a major physical influence on the overall drainage pattern of the Region, but also carries with it certain constraints on the diversion of water across the divide, and thereby constitutes an important consideration in land use, water supply, and sanitary sewerage system planning.

- Upland woodlands as identified in the regional land use inventory encompassed about 183 square miles, or 7 percent of the total area of the Region, in 2000. Wetlands as identified in the regional land use inventory encompassed about 276 square miles, or 10 percent of the Region. Prairies, which once covered extensive areas of Southeastern Wisconsin, have been reduced to scattered remnants, primarily in the southern and western portions of the Region.

- A comprehensive inventory of “natural areas” and “critical species habitat sites” in the Southeastern Wisconsin Region was completed by the Regional Planning Commission in 1994. Natural areas 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 landscape before European settlement. A total of 447 natural areas were identified in the Region in 1994. In combination, these sites encompassed 90 square miles, or 3 percent of the total area of the Region. Critical species habitat sites consist of areas, located outside natural areas, which are important for their ability to support endangered, threatened, or rare plant or animal species. Such areas constitute “critical” habitat considered to be important to the survival of a species or group of species of special concern. A total of 142 critical species habitat sites were identified in the Region in 1994. Together, these critical species habitat sites encompassed 23 square miles, or less than 1 percent of the Region. Most of the identified natural areas and critical species habitat sites in Southeastern Wisconsin are located within the Commission-identified environmental corridors and isolated natural resource areas described below.

- The most important elements of the natural resource base and features closely related to that base—including wetlands, woodlands, prairies, wildlife habitat, major lakes and streams and associated shorelands and floodlands, and historic, scenic, and recreational sites—when combined result in essentially elongated patterns referred to by the Commission as “environmental corridors.” “Primary” environmental corridors, which are the longest and widest type of environmental corridor, are generally located along major stream valleys, around major lakes, and along the Kettle Moraine; they encompassed 462 square miles, or 17 percent of the total area of the Region, in 2000. “Secondary” environmental

corridors are generally located along small perennial and intermittent streams; they encompassed 75 square miles, or 3 percent of the Region, in 2000. In addition to the environmental corridors, "isolated natural resource areas," consisting of small pockets of natural resource base elements separated physically from the environmental corridor network, have been identified. Widely scattered throughout the Region, isolated natural resource areas encompassed about 63 square miles, or 2 percent of the Region, in 2000.

- There were small net changes—changes of less than 1 percent—in the areas encompassed by primary environmental corridors, secondary environmental corridors, and isolated natural resource areas in the Region between 1990 and 2000. The changes in area are the net result of increases in environmental corridor and isolated natural resource area lands in certain areas of the Region and decreases in other areas. Decreases in environmental corridors and isolated natural resource areas occur, for the most part, as a result of conversion to urban or agricultural use. Increases may occur as a result of managed restoration efforts (e.g., wetland, woodland, or prairie restoration) and as a result of situations where lands, such as farmed floodplains or wetlands, are simply allowed to revert to a more natural condition.

- The Southeastern Wisconsin Region currently meets all national ambient air quality standards except the standard pertaining to ozone. The U.S. Environmental Protection Agency has designated a single six-county ozone nonattainment area within the Region which is made up of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties. Ozone is formed when precursor pollutants, such as volatile organic compounds and nitrogen oxides, react in the presence of sunlight. The ozone air quality problem within the Region is a complex problem because ozone is meteorologically dependant. In addition, the ozone problem in the Region is believed to be attributable in large part to precursor emissions which are generated in the large urban areas located to the south and southeast and carried by prevailing winds into the Region. Over the past decade, the combination of local controls and offsets implemented within and external to the Region, along with national vehicle emissions control requirements have resulted in a significant improvement in ambient air quality within the Region as well as nationally, and projections of future emissions indicate a continued decline in precursor emissions and a continued improvement in air quality.

Agricultural Resource Base

- Agricultural land in the Region has decreased significantly over the past four decades. It is estimated that lands devoted to agricultural use decreased by 22 percent between 1963 and 2000, including a decrease of about 8 percent during the 1990s. Despite this decrease, a large portion of the total area of the Region remains in agricultural use, and agriculture remains an important component of the regional economy. Based upon the Commission's regional land use inventory, about 1,259 square miles, or 47 percent of the total area of the Region, were in agricultural use in 2000. Of this total, about 945 square miles, or 75 percent, were covered by highly productive soils—agricultural capability Class I and Class II soils, as identified by the U.S. Natural Resources Conservation Service.

Local Land Use Plans

- Over the years, many local units of government in the Region have prepared plans to guide land use development. In some cases, these have been prepared as land use plans, while in other cases they have been prepared as land use elements of more comprehensive master plans. As of June 2004, local land use plans or land use plan elements had been prepared by 125 of the 147 cities, villages, and towns in the Region. In combination, these communities encompassed 2,275 square miles, or 85 percent of the total area of the Region, and had a year 2000 population of 1.84 million persons, or about 95 percent of the total Region population. In all but 11 of these communities, the land use plans were formally adopted by the local plan commission and/or local governing body.

- State law enacted in 1999 significantly alters the framework for local planning in Wisconsin. Commonly referred to as the "Smart Growth Law," that legislation specifies in detail the subject matter to be

addressed in a comprehensive plan. Under the State planning law, a land use element is one of nine elements required to be included in a comprehensive plan. The State planning law effectively requires that each city, village, town and county prepare and adopt a comprehensive plan by January 1, 2010, with the stipulation that the local governing body adopt the plan by ordinance. The law further requires that, beginning on January 1, 2010, zoning, subdivision regulations, and official mapping regulations be consistent with the comprehensive plan. As of June 2004, seven communities in the Region had prepared and adopted plans held out as meeting the requirements of the State comprehensive planning law.

- Two counties in the Region, Waukesha and Walworth Counties, have prepared and adopted land use plans. Waukesha County adopted a land use plan as an element of a County development plan in 1996. Walworth County adopted a land use plan for the year 2010 in 1993 and subsequently adopted a land use plan for the year 2020 in 2001. The Waukesha County and Walworth County plans pertain primarily to the unincorporated areas of the respective counties. Both Counties' plans serve to refine and detail the regional land use plan. In 2004, planning efforts were underway in Ozaukee and Waukesha Counties to prepare county comprehensive plans compliant with the State comprehensive planning law. Organizational efforts were underway to mount similar planning efforts in Kenosha, Racine, Walworth, and Washington Counties.

Local Zoning Regulations

- A Commission inventory of local zoning regulations in effect in the year 2000 included the preparation of a composite map showing the existing pattern of zoning throughout the Region. As part of this effort, local zoning districts were converted to a uniform, areawide classification system suitable for areawide analysis, and their boundaries were digitally mapped. The composite map (Map 17) reflects general zoning as well as floodplain and shoreland zoning. The inventory indicated that 837 square miles, or 31 percent of the Region, have been placed in zoning districts which permit urban residential development, defined as residential development at a density of more than one dwelling unit per five acres. Of this total, 584 square miles have been placed in residential zoning districts explicitly intended to accommodate urban residential development; the remaining 253 square miles have been placed in nominal agricultural and conservancy zoning districts—that is, districts which are referred to as "agricultural" or "conservancy" districts in local zoning ordinances, but which allow urban residential development as a principal permitted use. The extent of other generalized zoning categories in the Region in 2000 was as follows: commercial—67 square miles, or 3 percent of the Region; industrial—115 square miles, or 4 percent; governmental-institutional and recreational, combined—125 square miles, or 5 percent; extractive—21 square miles, or 1 percent; conservancy—440 square miles, or 16 percent; agricultural and rural residential—1,020 square miles, or 38 percent; and surface water—65 square miles, or 2 percent.

- The year 2000 inventory of local zoning is the fourth such inventory conducted by the Commission, prior inventories having been conducted for the years 1964, 1972, and 1985. The period between the 1972 and 1985 inventories, in particular, saw major changes in zoning patterns within the Region. That period saw the widespread application of exclusive agricultural zoning, with a minimum parcel size of 35 acres. In addition, that period saw a substantial increase in conservancy zoning, much of the increase being in the form of State-mandated floodplain and shoreland zoning. In comparison to the changes that occurred between 1972 and 1985, zoning changes in the Region since 1985, which are summarized quantitatively in Table 18, may be characterized as marginal in nature.

Chapter III

REVIEW OF THE CURRENTLY ADOPTED 2020 REGIONAL LAND USE PLAN

INTRODUCTION

This chapter describes the currently adopted design year 2020 regional land use plan and assesses progress made toward implementing the plan since 1990, the base year of the plan. The first section of this chapter describes the historical development of the regional land use plan from the first-generation design year 1990 plan, adopted in 1966, to the current plan, the fourth-generation design year 2020 plan, adopted in 1997. The second section provides a summary of the key recommendations of the currently adopted plan. The third section reviews the forecasts upon which the plan is based and compares them to estimated actual levels of population, households, and employment. Subsequent sections present the key recommendations of the plan in greater detail and evaluate actual development trends since 1990 in terms of their conformance with, or departure from, the plan recommendations.

HISTORICAL DEVELOPMENT OF THE REGIONAL LAND USE PLAN

Prior regional land use planning efforts prepared and presented for public evaluation the full range of spatial design alternatives that were practically available to the Region. Under the first regional planning study carried out in the 1960s, three plan design alternatives—a controlled existing trend plan, a corridor plan, and a satellite city plan—along with an unplanned alternative were prepared. These alternatives are described in SEWRPC Planning Report No. 7, *Land Use-Transportation Study,* Volume Two, *Forecasts and Alternative Plans: 1990,* dated June 1966. Based upon technical evaluation and the reaction of public officials and citizens of the Region, the controlled existing trend plan was adopted in 1966 as the recommended regional land use plan for the year 1990. That plan called for a return to the historic development trends within the Region most evident prior to the mid-1950s, with urban development proposed to occur within, and in concentric rings along the periphery of, existing urban centers.

In the second regional land use planning study, two variations of the controlled existing trend plan, differing in terms of the degree to which they would centralize development within the Region, were prepared. The "controlled centralization" alternative embodied the basic design concepts of the first-generation plan. The basic design concept emphasized was one of centralization, with virtually all new urban development proposed to be located in areas served by centralized public sanitary sewer and water supply facilities and with new urban development occurring largely in planned neighborhood units. The "controlled decentralization" alternative placed less emphasis on centralization and on the planned neighborhood development unit, and more emphasis on lower density and more diffusion of urban development, with greater reliance on private onsite sewage disposal systems and private wells. These alternatives are described in SEWRPC Planning Report No. 25, *A Regional*

Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin-2000, Volume Two, *Alternative and Recommended Plans*, dated May 1978. After careful review and evaluation, the plan alternative emphasizing centralized growth was selected for adoption as the recommended year 2000 regional land use plan.

The third-generation year 2010 plan and the fourth-generation year 2020 plan incorporated the basic design concepts of the prior plans. With each succeeding generation of the regional land use plan, the plan was revised to reflect growth and change in the Region that had occurred since the preparation of the prior plan along with new projections of population, households, and employment. However, the concepts and basic recommendations of the plan have remained largely unchanged. These concepts and recommendations are described in the following overview of the year 2020 regional land use plan.

OVERVIEW OF THE YEAR 2020 REGIONAL LAND USE PLAN

The regional land use plan, which is summarized graphically on Map 18, serves as a generalized long-range guide to future urban and rural development and open space preservation in the seven-county Southeastern Wisconsin Region. It was designed to accommodate anticipated future population, household, and employment levels in the Region through the year 2020 in a manner consistent with a set of land use objectives adopted as part of the plan (see objectives in Table 20). The plan would accommodate a 15 percent increase in population, a 22 percent increase in households, and a 20 percent increase in employment anticipated in the Region between 1990 and 2020.

Like the three previous generations of the regional land use plan, the year 2020 plan places heavy emphasis on the continued operation of the urban land market in determining the location, intensity, and character of future development, while seeking to influence the operation of the market in several important ways in order to achieve a healthful, attractive, and efficient settlement pattern. The plan includes recommendations pertaining to future urban development, environmentally significant lands, and agricultural and other open lands. Key recommendations of the regional land use plan with respect to future urban development in the Region are as follows:

- Urban development—including urban residential,[1] commercial, industrial, and governmental and institutional land—and should occur primarily within existing urban centers as infill development and redevelopment, as well as within defined urban growth areas adjoining these centers.

- New urban development should occur in areas that are covered by soils suitable for urban use and that are not subject to flooding and erosion.

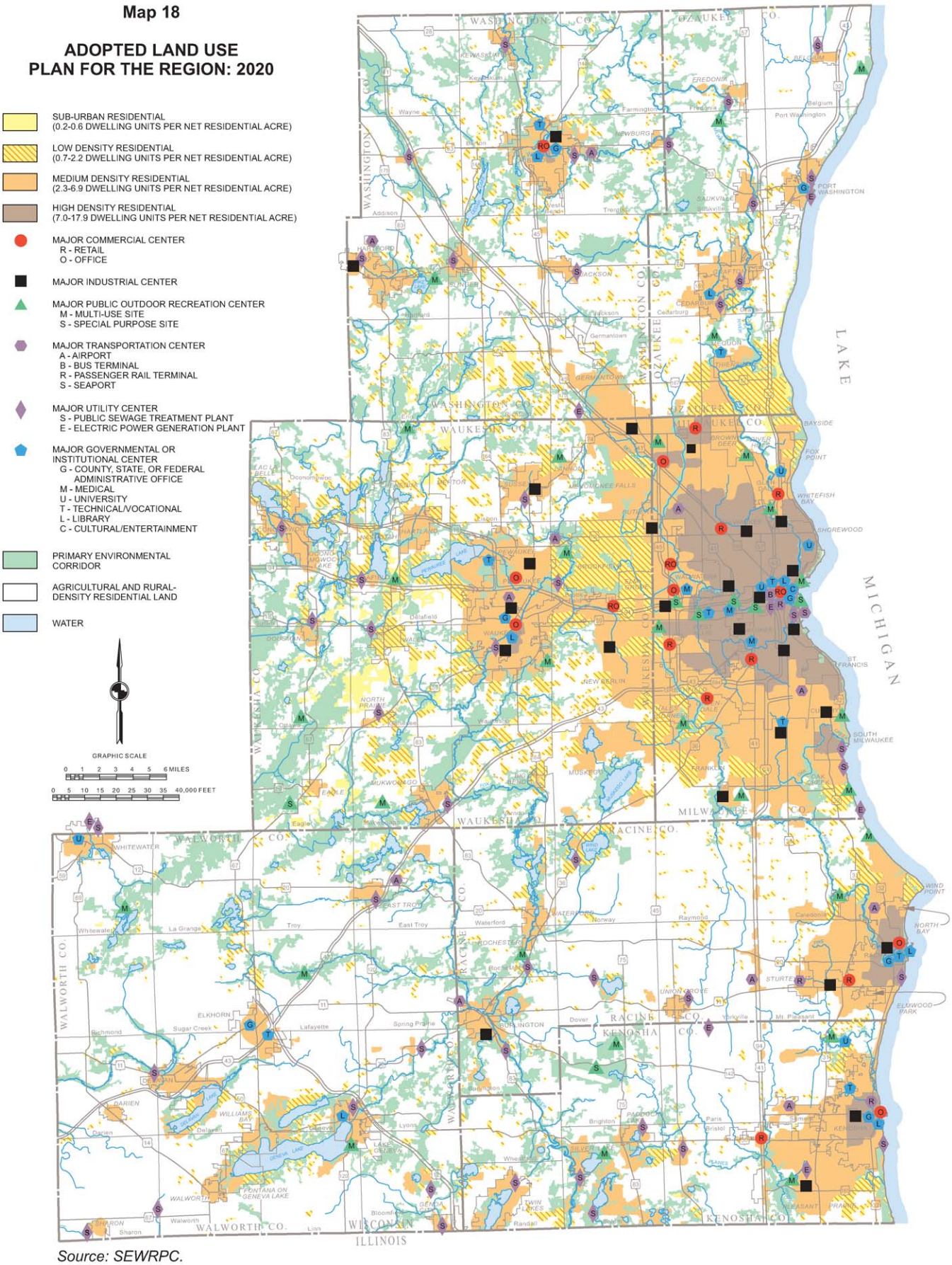
- New urban development should occur in areas that can readily be served by essential municipal facilities and services, including centralized public sanitary sewerage, water supply, and public transit services.

- New urban residential development should occur at a range of residential densities, with the majority of new urban residential development occurring at a medium density. More specifically, the plan envisions that about 30 percent of new housing units would be accommodated at a high density (at least 7.0 dwelling units per net acre); about 58 percent would be accommodated at a medium density (2.3 to 6.9 dwelling units per net acre); and about 10 percent would be accommodated at a low density (0.7 to 2.2 dwelling units per net acre). Under the plan, high-, medium- and low-density residential development would occur in planned neighborhoods served by public sanitary sewerage and water supply facilities, and to the extent practicable, by a local park, school, and shopping area.

[1] *Under the regional plan, urban residential development is defined as residential development at a density of more than one dwelling unit per five acres.*

Map 18

ADOPTED LAND USE PLAN FOR THE REGION: 2020



Source: SEWRPC.

Table 20

LAND USE DEVELOPMENT OBJECTIVES OF THE 2020 REGIONAL LAND USE PLAN

Objective Number	Land Use Development Objective
1	A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the regional population.
2	A spatial distribution of the various land uses which will result in a compatible arrangement of land uses.
3	A spatial distribution of the various land uses which maintains biodiversity and which will result in the protection and wise use of the natural resources of the Region, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, prairies, wildlife, and natural areas and critical species habitats.
4	A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems in order to assure the economical provision of transportation, utility, and public facility services.
5	The development and preservation of residential areas within a physical environment that is healthy, safe, convenient, and attractive.
6	The preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.
7	The preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and facilitate the ultimate attainment of a balanced year-round public outdoor recreation program providing a full range of facilities for all age groups.
8	The preservation of land areas to provide for agriculture, provide a reserve or holding area for future urban and rural needs, and ensure the preservation of those rural areas which provide wildlife habitat and which are essential to shape and order urban development.

Source: SEWRPC.

- Under the regional plan, new sub-urban density residential development (defined as between 0.2 and 0.6 dwelling units per net acre) would be limited to that which is already committed in subdivision plats and certified surveys. Sub-urban residential development, which is neither truly urban nor rural in character, would generally not occur in planned neighborhood units; would not be provided with public sanitary sewerage and water supply facilities; and would receive only minimal public services, such as public safety services.

- Regional-scale commercial and industrial centers should be maintained and developed consistent with the needs of the regional population and economy. The regional plan envisions a total of 18 major commercial centers and 27 major industrial centers in the Region in 2020.

- Regional parks—large parks of at least 250 acres that accommodate a variety of outdoor recreational activities—should be maintained and developed to meet the recreational needs of the regional population. The regional plan envisions a total of 30 major parks in the Region in the year 2020.

Key recommendations of the regional land use plan with respect to environmentally significant lands in the Region are as follows:

- Primary environmental corridors—large elongated areas in the landscape containing concentrations of the most important remaining elements of the natural resource base—should be preserved in essentially natural, open use. Located along major stream valleys, around major lakes, and along the Kettle Moraine, these corridors encompass almost all of the best remaining woodlands, wetlands, and wildlife habitat areas in the Region, and represent a composite of the best remaining elements of the natural resource base. Under the plan, development within the primary environmental corridors would be limited to essential transportation and utility facilities, compatible outdoor recreation facilities, and rural-density residential development (a maximum of one dwelling unit per five acres) in upland corridor areas, with building sites avoiding steep slopes. Existing primary environmental corridors in the Region are shown on Map 10 in Chapter II of this report.

- Secondary environmental corridors and isolated natural resource areas should also be considered for preservation. Smaller than primary environmental corridors, secondary environmental corridors also contain a variety of resource elements, often remnant resources from primary environmental corridors that have been partially developed for intensive urban or agricultural purposes. Isolated natural resource areas consist of smaller pockets of wetlands, woodlands, surface water, and wildlife habitat that are isolated from the environmental corridors by urban development or agricultural use. Existing secondary environmental corridors and isolated natural resource areas in the Region are also shown on Map 10 in Chapter II of this report.

Key recommendations of the regional land use plan with respect to agricultural and other rural lands in the Region are as follows:

- The most productive soils for agricultural purposes—capability Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service—should be preserved for agricultural use insofar as practicable. Existing agricultural lands covered by Class I and Class II soils in the Region are shown on Map 11 in Chapter II.

- Other areas located beyond planned urban service areas should be retained in rural use. The plan encourages continued agricultural activity in such areas. Under the plan, development in such areas would be limited to rural-density residential development (a maximum of one dwelling unit per five acres), with the use of conservation subdivision designs to accommodate rural density residential development encouraged.

REVIEW OF YEAR 2020 POPULATION, HOUSEHOLD, AND EMPLOYMENT FORECASTS

Under the year 2020 regional land use plan, three projections—low, intermediate, and high—were prepared for population, households, and employment in the Region. The intermediate projection was considered the most likely to be achieved for the Region and constituted the Commission's forecast which was used as the basis for the preparation of the year 2020 regional land use plan. The high and low projections were intended to provide an indication of population, household, and employment levels which could conceivably be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

As indicated in Table 21 and Figure 8, the actual population of the Region was about 1,959,800 persons in 2003, representing an increase of 149,400 persons, or 8 percent, over the 1990 base-year population of 1,810,400 persons. The actual 2003 regional population was about 21,100 persons, or 1 percent, less than the forecast for 2003. With respect to the seven counties in the Region, the forecast 2003 population was generally within 5 percent of the actual 2003 population.

As indicated in Table 22 and Figure 9, the actual number of households in the Region was about 770,900 in 2003, about 94,800 households, or 14 percent, greater than 1990. The actual 2003 household level was about 12,100 households, or 2 percent, greater than the forecast for 2003. Among the counties in the Region, the forecast 2003 number of households was generally within 5 percent of the actual number.

As indicated in Table 23 and Figure 10, actual employment in the Region stood at about 1,179,000 in 2003, about 116,400 jobs, or 11 percent, more than in 1990. The number of jobs increased rapidly during the 1990s before declining in the early 2000s. The estimated actual 2003 employment level was about 7,900 jobs, or 1 percent, less than the forecast for 2003. Among the counties in the Region, the forecast 2003 employment level was generally within 10 to 15 percent of the estimated actual number of jobs.

Also presented in Tables 21, 22, and 23 are the actual and forecast relative distributions of population, households, and employment by county in the Region for 2003. The forecasts underlying the year 2020 regional land use plan envisioned that there would be a continuation of the long-term trend of decentralization of population, households, and jobs in the Region relative to Milwaukee County, but that the rate of decentralization

Table 21

ACTUAL AND FORECAST POPULATION IN THE REGION BY COUNTY: 1990 AND 2003

County	Actual 1990 Population		Actual 2003 Population		Forecast 2003 Population: Year 2020 Regional Land Use Plan		Difference Between Actual and Forecast 2003 Population	
	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent
Kenosha	128,200	7.1	154,200	7.9	149,500	7.6	4,700	3.0
Milwaukee	959,300	53.0	941,300	48.0	985,600	49.8	-44,300	-4.7
Ozaukee	72,800	4.0	84,500	4.3	85,200	4.3	-700	-0.8
Racine	175,100	9.7	191,100	9.8	186,800	9.4	4,300	2.3
Walworth	75,000	4.1	95,600	4.9	86,900	4.4	8,700	9.1
Washington	95,300	5.3	121,900	6.2	119,700	6.0	2,200	1.8
Waukesha	304,700	16.8	371,200	18.9	367,200	18.5	4,000	1.1
Region	1,810,400	100.0	1,959,800	100.0	1,980,900	100.0	-21,100	-1.1

Source: U.S. Bureau of the Census; Wisconsin Department of Administration; and SEWRPC.

would be moderated somewhat. As indicated in Table 23, Milwaukee County's share of total regional employment was 4.5 percentage points lower than the forecast share for 2003, generally indicating that the decentralization of jobs within the Region has occurred at a faster rate than envisioned under the plan. As indicated in Table 21 and 22, Milwaukee County's relative shares of the total Region population and households in 2003 more closely approximated forecast shares.

IMPLEMENTATION STATUS OF THE YEAR 2020 REGIONAL LAND USE PLAN

As indicated earlier in this chapter, the regional land use plan includes recommendations regarding the location and density of new urban development and the provision of essential urban services; the development of major commercial and industrial centers and major parks; the preservation of environmental corridors; and the preservation of highly productive farmland and the maintenance of rural character. The following reports the results of monitoring land use development activity in the Region since 1990, the base year of the 2020 plan, in relation to key regional plan recommendations.

Urban Development Activity

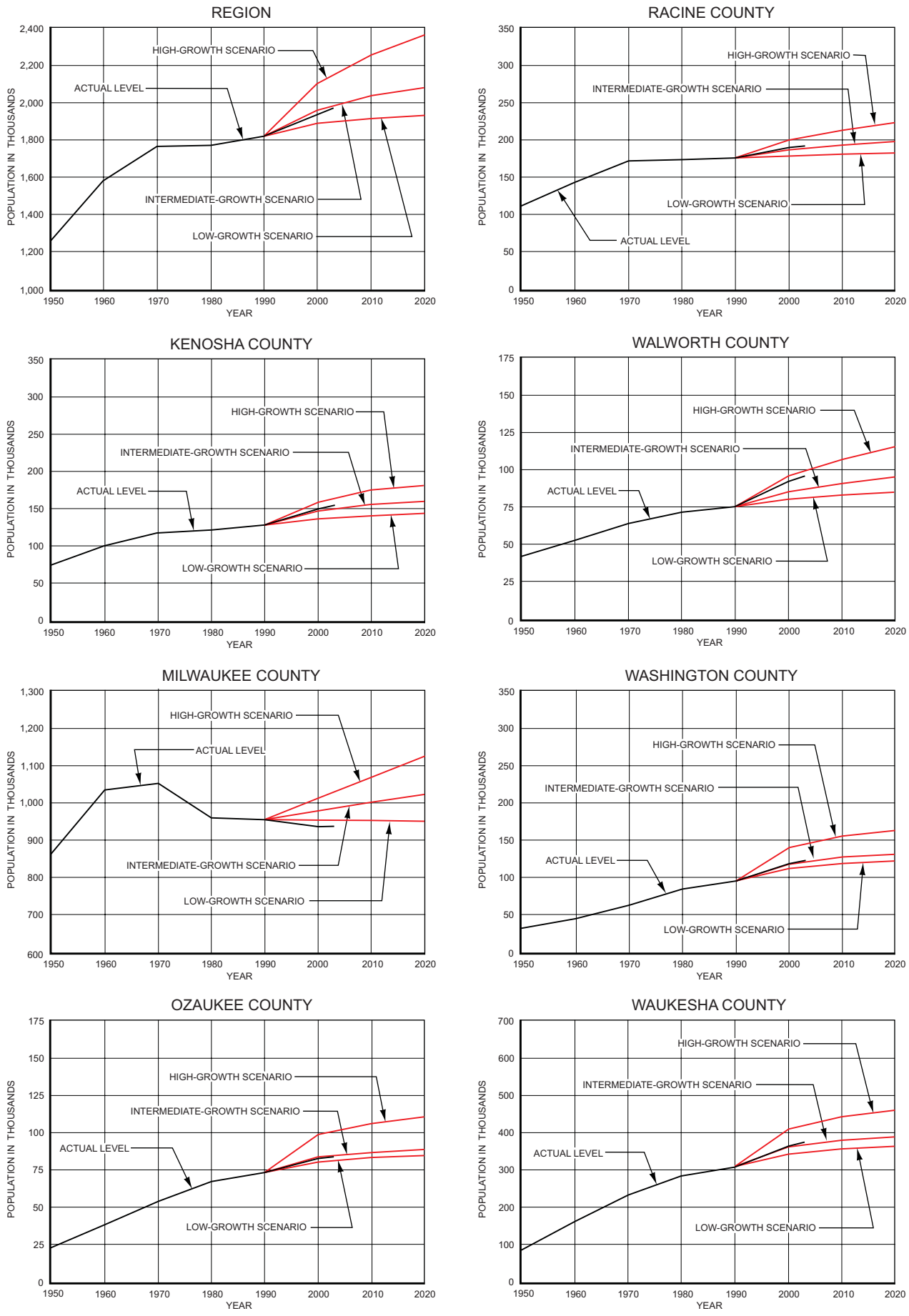
Location of Incremental Urban Development

The regional land use plan recommends that urban development primarily occur in existing urban centers as infill development and redevelopment and within defined urban growth areas adjoining these centers. In order to help assess the degree of attainment of this recommendation, an analysis was made of the incremental urban development that took place in the Region between 1990 and 2000, as indicated by the Commission urban growth ring analysis described in Chapter II. As part of this analysis, the incremental urban areas that materialized between 1990 and 2000—as identified on Map 2 in Chapter II—were reviewed and classified in terms of whether they were located consistent with the regional plan.

The incremental urban growth that occurred in the Region during the 1990s, as identified in the urban growth ring analysis, is re-presented graphically on Map 19. On Map 19, urban growth that occurred during the 1990s is classified based upon whether it is located in accordance with the regional plan. In reviewing this map, it should be recognized that rural-density residential development (residential development at a density of no more than one dwelling unit per five acres) is not included in the delineated urban growth areas. It should also be recognized that the identified urban growth areas consist of areas converted from agricultural and other open space uses to intensive urban use; they do not reflect substantial urban redevelopment efforts which have taken place in the older urban centers of the Region.

Figure 8

ACTUAL AND PROJECTED REGIONAL AND COUNTY POPULATION LEVELS: 1950-2020



Source: U.S. Bureau of the Census; Wisconsin Department of Administration; and SEWRPC.

Table 22

ACTUAL AND FORECAST HOUSEHOLDS IN THE REGION BY COUNTY: 1990 AND 2003

County	Actual 1990 Households		Actual 2003 Households		Forecast 2003 Households: Year 2020 Regional Land Use Plan		Difference Between Actual and Forecast 2003 Households	
	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent
Kenosha	47,000	6.9	58,900	7.6	56,100	7.4	2,800	4.8
Milwaukee	373,100	55.2	381,000	49.4	389,700	51.4	-8,700	-2.3
Ozaukee	25,700	3.8	32,500	4.2	31,700	4.2	800	2.5
Racine	63,700	9.4	72,900	9.5	70,800	9.3	2,100	2.9
Walworth	27,600	4.1	36,700	4.8	32,800	4.3	3,900	10.6
Washington	33,000	4.9	46,600	6.0	44,400	5.8	2,200	4.7
Waukesha	106,000	15.7	142,300	18.5	133,300	17.6	9,000	6.3
Region	676,100	100.0	770,900	100.0	758,800	100.0	12,100	1.6

Source: U.S. Bureau of the Census; Wisconsin Department of Administration; and SEWRPC.

The analysis indicated that, of the 70 square miles of incremental urban development that took place between 1990 and 2000, 49 square miles, or 70 percent, were located in accordance with the regional plan. Shaded green on Map 19, most of these areas are located within planned urban service areas. These areas also include limited amounts of land located beyond planned urban service areas that were platted for urban residential development when the regional plan was prepared.

Urban Residential Land Use

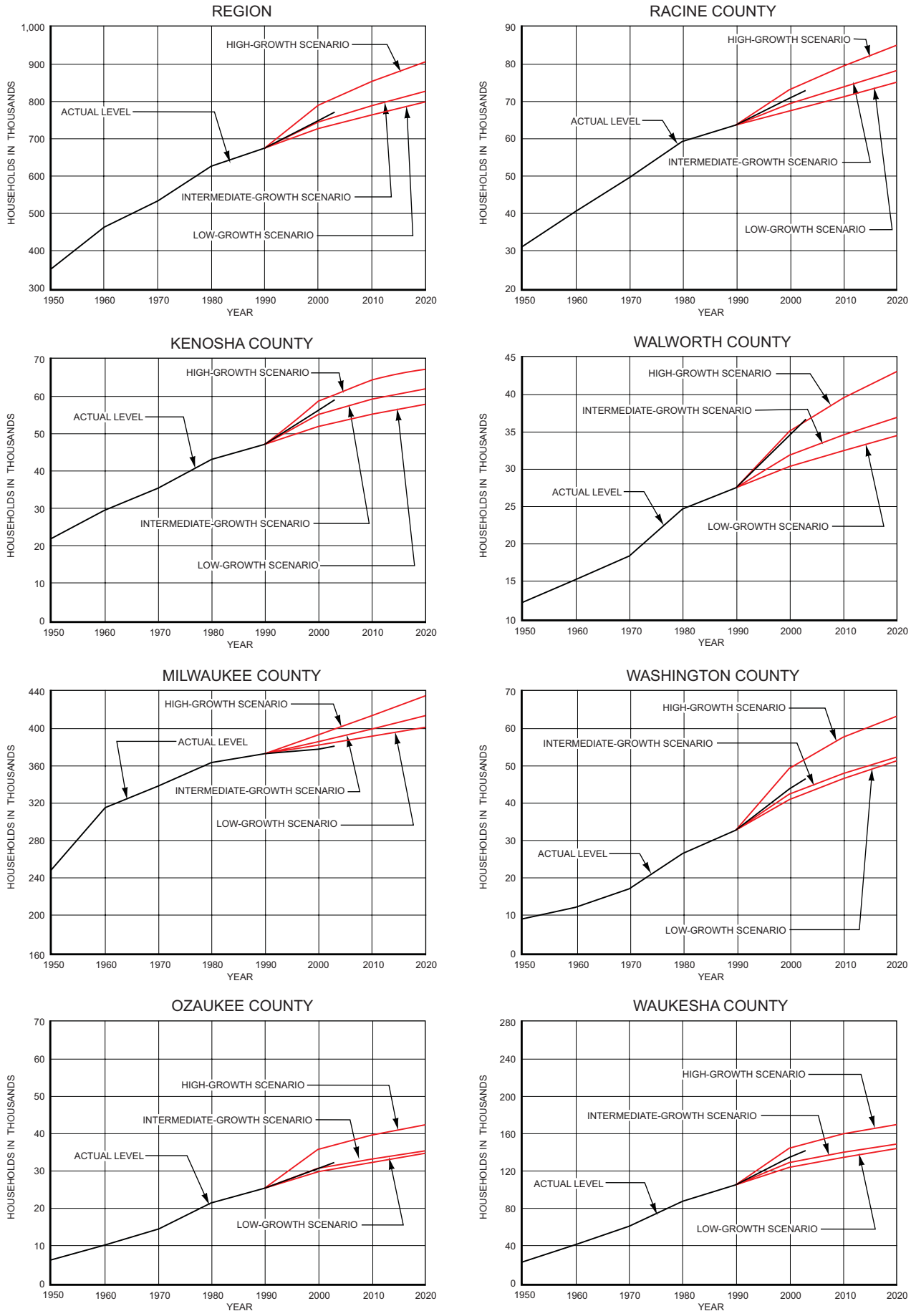
The regional land use plan identifies three urban residential density ranges: high density—at least 7.0 dwelling units per net acre; medium density—2.3 to 6.9 dwelling units per net acre; and low density—0.7 to 2.2 dwelling units per net acre. These densities represent overall densities that may be achieved within developing and redeveloping areas through various combinations of lot sizes and structure types over entire neighborhoods. A medium-density neighborhood could, for example, be achieved through a combination of single-family lots averaging a quarter of an acre along with multiple-family development averaging about 10 dwelling units per acre. It should be noted that the regional plan density ranges have been broadly defined so as to provide flexibility to local units of government as they prepare local land use plans and administer local land use regulations within the framework provided by the regional plan. It is incumbent upon each community to determine at which point within the recommended density range that it wants development to occur.

The regional land use plan recommends additional urban residential development and redevelopment in the Region commensurate with the anticipated increase in population and households through the year 2020. The plan recommends that much of the needed urban residential land be developed in the medium-density range. Development at a medium—or higher—residential density facilitates the economical and efficient provision of urban services and facilities; facilitates the development of neighborhoods with schools, parks, and other neighborhood facilities; and serves to moderate the amount of land needed to be converted to urban use in order to accommodate growth in population and households.

The regional land use plan also identifies a sub-urban density residential land use category, defined as between 0.2 and 0.6 dwelling units per net acre, equivalent to 1.5 to 4.9 acres per dwelling unit. This density range is neither truly urban nor rural in character. The plan recognizes commitments made to such development through subdivision plats and certified surveys, but does not recommend additional sub-urban density development beyond what is committed.

Figure 9

ACTUAL AND PROJECTED REGIONAL AND COUNTY HOUSEHOLD LEVELS: 1950-2020



Source: U.S. Bureau of the Census; Wisconsin Department of Administration; and SEWRPC.

Table 23

ACTUAL AND FORECAST EMPLOYMENT IN THE REGION BY COUNTY: 1990 AND 2003

County	Actual 1990 Jobs		Actual 2003 Jobs		Forecast 2003 Jobs: 2020 Regional Land Use Plan		Difference Between Actual and Forecast 2003 Jobs	
	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent
Kenosha	52,200	4.9	69,500	5.9	60,700	5.1	8,800	12.7
Milwaukee	609,800	57.4	589,800	50.0	646,800	54.5	-57,000	-9.7
Ozaukee	35,300	3.3	49,200	4.2	43,000	3.6	6,200	12.6
Racine	89,600	8.4	90,000	7.6	99,600	8.4	-9,600	-10.7
Walworth	39,900	3.8	52,300	4.4	54,500	4.6	-2,200	-4.2
Washington	46,100	4.3	61,800	5.3	54,400	4.6	7,400	12.0
Waukesha	189,700	17.9	266,400	22.6	227,900	19.2	38,500	14.5
Region	1,062,600	100.0	1,179,000	100.0	1,186,900	100.0	-7,900	-0.7

NOTE: The 1990 employment data presented in this table reflect U.S. Bureau of Economic Analysis data released in Spring 2003. These data differ slightly from 1990 employment data disseminated by the Bureau of Economic Analysis at the time the Commission's year 2020 employment projections were prepared.

Source: U.S. Bureau of Economic Analysis and SEWRPC.

Table 24 compares the actual increase in residential land use by density category during the 1990s with the increase anticipated under the regional plan. In reviewing this table, it should be recognized that the data regarding existing residential land use for the years 1990 and 2000 are not strictly comparable because of procedural differences in the respective land use inventories, described in Chapter II. Nonetheless, the results of the 1990 and 2000 land use inventories as presented in Table 24 may be considered to provide a reasonable indication of the actual change in residential land use by density category in the Region during the 1990s.

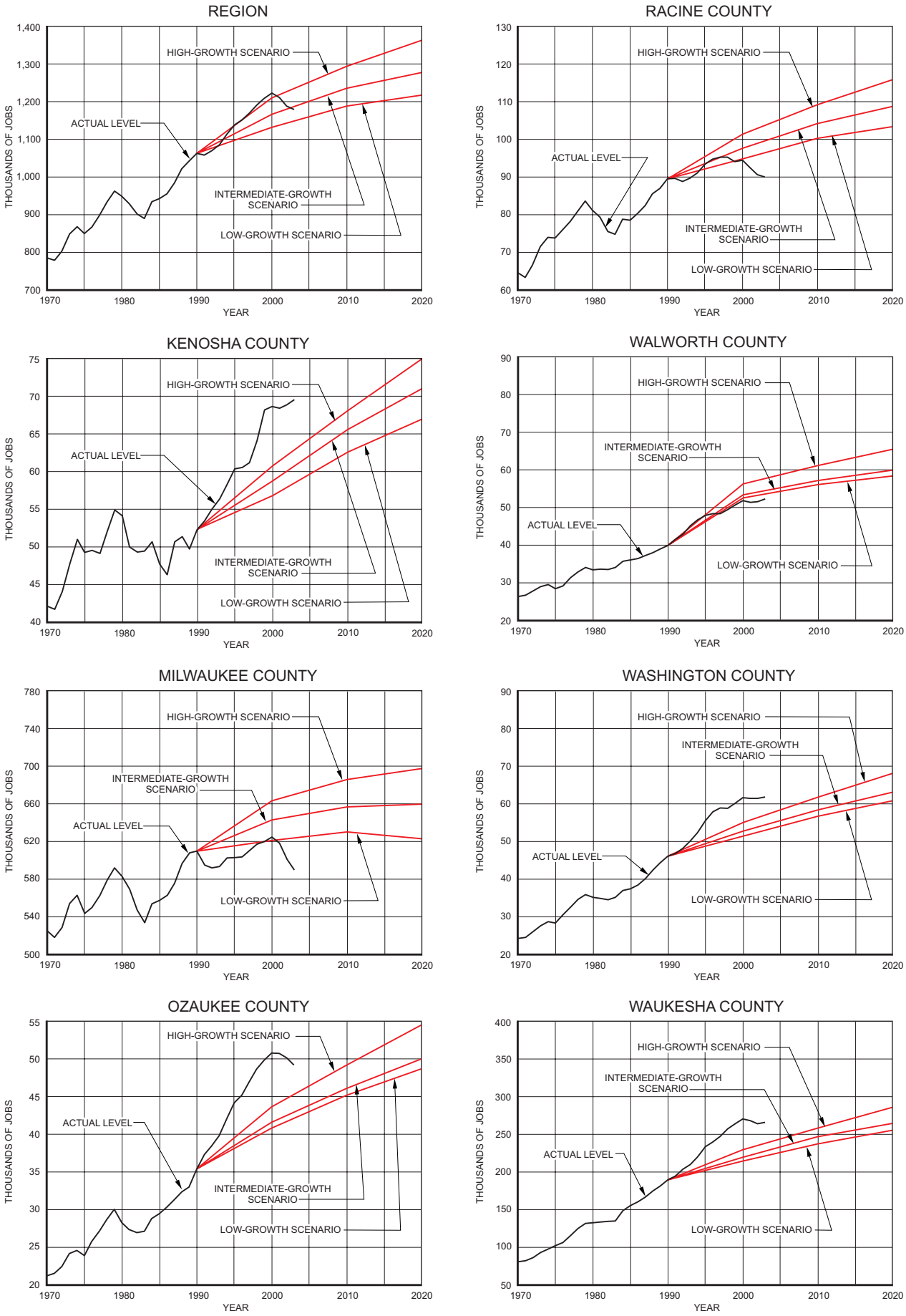
As indicated in Table 24, under the regional land use plan, about 35 square miles of land were planned to be converted to urban (high-, medium-, and low-density) residential use during the 1990s. Commission land use inventories indicate that about 48 square miles of land were converted to urban residential use between 1990 and 2000, about 13 square miles more than planned. Less new medium-density residential development and more new low-density residential development occurred in the Region during the 1990s than recommended in the plan. While the plan envisioned an increase of about 26 square miles in medium-density residential land during the 1990s, the actual increase was about 19 square miles; and, while the plan envisioned an increase of about 6 square miles in low-density residential land, the actual increase was about 28 square miles.

As noted above, the regional land use plan recognized commitments to sub-urban density residential development, about 2 square miles at the time the plan was prepared. Commission land use inventories indicate that about 14 square miles were converted to sub-urban density residential use between 1990 and 2000, about 12 square miles more than were committed to such development at the time the plan was prepared. [2]

[2] *The increase in low-and sub-urban-density residential land reported in this section includes some incremental residential land that was developed at a rural density (a density of no more than one dwelling unit per five acres). It is envisioned that, utilizing digital property boundary information, future regional land use inventories will be able to specifically identify the location and extent of rural-density residential development in the Region, enabling the separate reporting of rural, sub-urban, and urban residential land.*

Figure 10

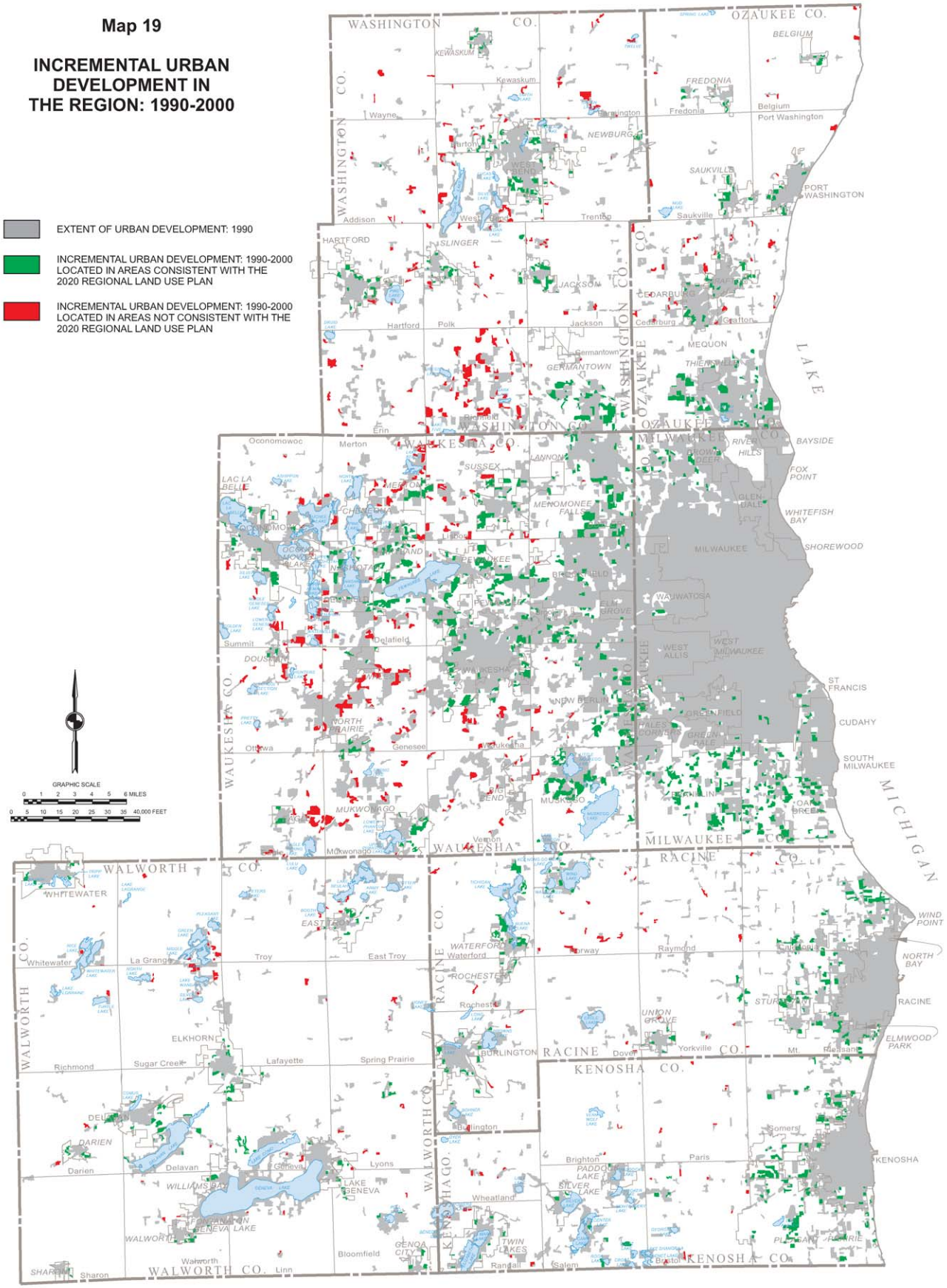
ACTUAL AND PROJECTED REGIONAL AND COUNTY EMPLOYMENT LEVELS: 1970-2020



Source: U.S. Bureau of Economic Analysis; Wisconsin Department of Workforce Development; and SEWRPC.

Map 19

INCREMENTAL URBAN DEVELOPMENT IN THE REGION: 1990-2000



Source: SEWRPC.

Table 24

ACTUAL AND PLANNED RESIDENTIAL LAND USE IN THE REGION: 1990-2000

Density Category	Actual Residential Land				Planned Residential Land		
	1990 (Square Miles)	2000 (Square Miles)	Change: 1990-2000		2000 (Square Miles)	Change: 1990-2000	
			Square Miles	Percent		Square Miles	Percent
Urban							
High-Density	44.4	45.9	1.5	3.4	47.4	3.0	6.8
Medium-Density	90.2	109.0	18.8	20.8	115.9	25.7	28.5
Low-Density	150.4	178.0	27.6	18.4	156.4	6.0	4.0
Subtotal	285.0	332.9	47.9	16.8	319.7	34.7	12.2
Sub-urban	15.4	29.1	13.7	89.0	17.4	2.0	13.0
Total	300.4	362.0	61.6	20.5	337.1	36.7	12.2

NOTE: The data regarding residential land use for the years 1990 and 2000 are not strictly comparable because of procedural differences in the 1990 and 2000 regional land use inventories, described in Chapter II.

Source: SEWRPC.

Provision of Sanitary Sewer and Water Supply Services

The regional land use plan recommends that most new urban development occur in areas which can be served by essential municipal services and facilities, including public sanitary sewer and water supply services. Information regarding the area and population served by public sanitary sewerage and water supply systems, obtained as part of the Commission's regional public utility inventories, was presented in Chapter II. As indicated in Chapter II, there was a significant increase in the area and population served by public water utilities in the Region between 1990 and 2000. Commission inventories indicate that the area served by public water supply systems increased by 75 square miles, or 24 percent, while the population served increased by about 112,000 persons, or 8 percent. The percent of the regional population served by public water supply systems increased slightly, from 81.1 to 81.8 percent, between 1990 and 2000.

As also indicated in Chapter II, there was a significant increase in the area and population served by public sanitary sewerage systems in the Region between 1990 and 2000. The area served by public sanitary sewerage systems increased by 83 square miles, or 21 percent, while the population served increased by about 118,000 persons, or 7 percent. This increase primarily reflects the extension of sanitary sewer service to new urban development; it also reflects the retrofitting with sanitary sewers of certain areas which were initially developed with onsite sewage disposal systems. The percent of the regional population served by public sanitary sewerage systems increased slightly, from 88.1 to 88.7 percent, between 1990 and 2000.

In addition to the public utility inventories described in Chapter II, a supplementary inventory of sanitary permits issued for the installation of onsite sewage disposal systems in the Region during the 1990s was undertaken. Information was obtained from each of the six counties in the Region responsible for the regulation of onsite sewage disposal systems, and from the Cities of Franklin and Oak Creek, which account for most of the sanitary permits issued for onsite sewage disposal systems in Milwaukee County. The inventory revealed that a total of about 17,000 permits were issued for onsite sewage disposal systems in support of new residential development in the Region from 1990 through 1999; this figure excludes permits issued for replacement disposal systems. While the issuance of a permit does not mean that a system was actually installed, it is believed that a high percentage of permits are acted upon and that the number of permits issued provides a good estimate of the number of onsite sewage disposal systems that were put in place.

Some of the sanitary permits for onsite sewage disposal systems issued during the 1990s were for housing developed at a rural density in accordance with the regional plan. In addition, some of those permits were issued for housing developed in accordance with the regional plan in communities such as the Villages of North Prairie and Eagle that have public water supply service but not sanitary sewer service. However, the majority of the sanitary permits issued for onsite sewage disposal systems were intended to serve residential development at urban densities in areas not recommended for such development in the regional plan.

An estimated 88,500 new housing units were built within the Region during the 1990s.[3] From the foregoing information regarding sanitary permits, it may be concluded that about 17,000 of these housing units were served by onsite sewage disposal systems, with the balance, 71,500 housing units, served by public sanitary sewerage systems.[4] Thus, the vast majority of housing constructed in the Region between 1990 and 2000—about 81 percent—was provided with public sanitary sewer service in accordance with the regional plan. About 19 percent of the new housing was served by onsite sewage disposal systems, with the majority of that development occurring in areas and at densities not recommended in the regional plan.

Major Centers

Major Commercial Centers

The regional land use plan envisions a total of 18 major commercial centers in the Region in the year 2020. Two types of major commercial centers—major retail centers and major office centers—are defined and identified in the plan. To qualify as a major retail center as defined in the plan, a site must accommodate at least 2,000 retail jobs. To qualify as a major office center, a site must accommodate at least 3,500 office and service-related jobs. Because commercial sites may accommodate a mix of retail, service, and office uses, the plan envisions that certain sites would meet both criteria.

There were 14 major commercial centers in the Region in 1990, including seven major retail centers, three major office centers, and four combined major retail and office centers. The regional land use plan envisioned that all 14 sites would be retained as major commercial centers through the year 2020. The plan envisioned four additional major commercial centers in the Region in 2020, including one major retail center and three major office centers. All of the proposed commercial centers were under some stage of development when the regional plan was adopted in 1997.

The current status of the 18 major commercial centers recommended in the year 2020 regional land use plan is summarized on Map 20. The four additional commercial centers proposed in the plan—the Park Place, Pewaukee, and Milwaukee County Research Park office centers and the Kenosha West retail center—had been substantially developed by 2000, but only the Pewaukee center met the major center employment level criterion.[5]

As further shown on Map 20, 12 major centers that existed in 1990 retained their major center status in 2000. These include the Bayshore, Northridge, Southridge, West Allis (STH 100), and Regency Mall retail centers; the Kenosha CBD, Racine CBD, and Waukesha CBD office centers; and the Blue Mound Road, Mayfair, Milwaukee CBD, and West Bend combined retail and office centers.

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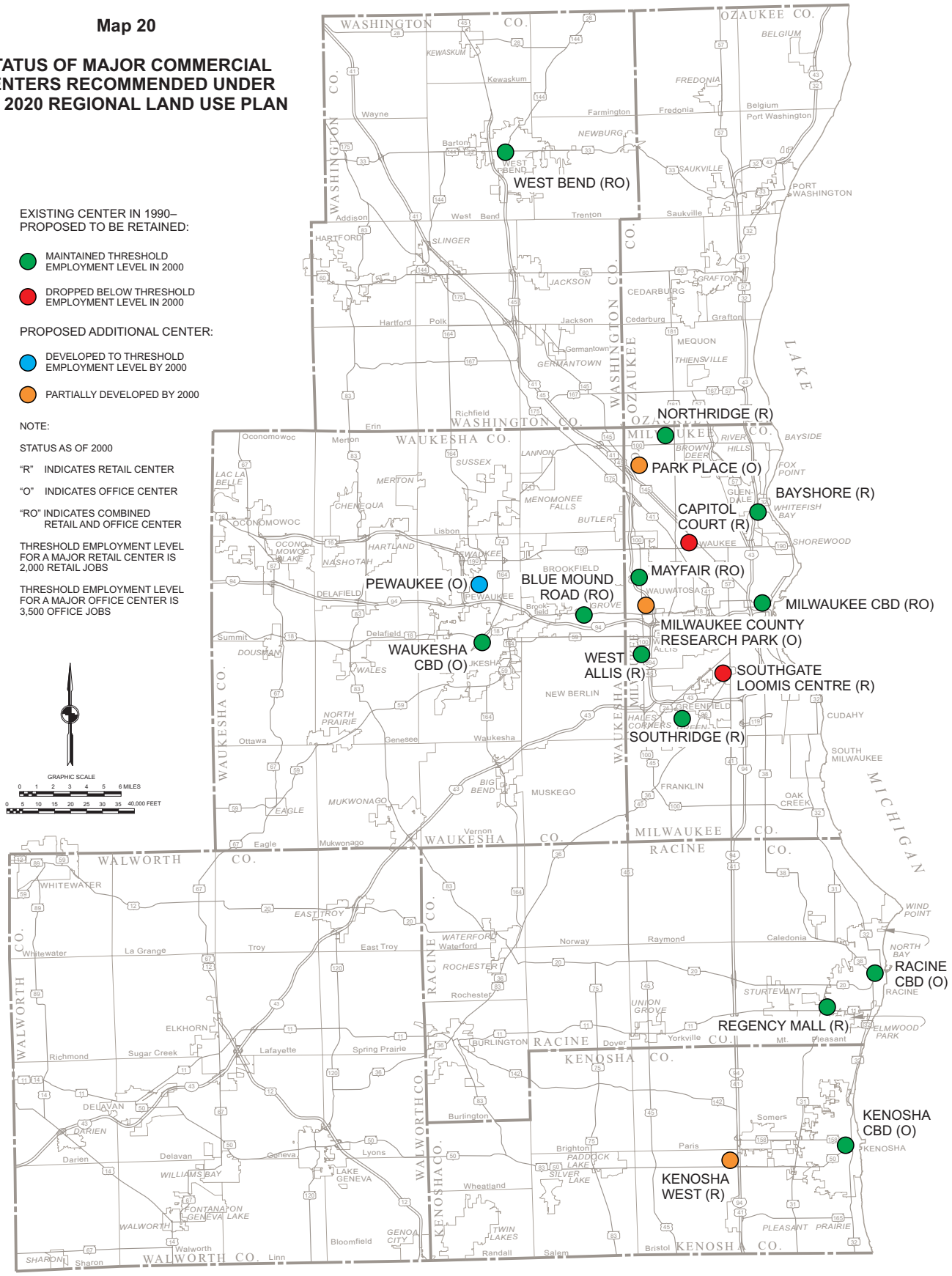
[3] *The estimated number of housing units built in the Region between 1990 and 2000 was developed by adding the number of housing unit demolitions estimated to have occurred in the Region during the 1990s (about 9,000) to the net increase of 79,500 housing units in the Region between 1990 and 2000 reported by the U.S. Bureau of the Census.*

[4] *This assumes that each sanitary permit issued resulted in an onsite disposal system serving one housing unit.*

[5] *It should be noted that, while the Milwaukee County Research Park itself had not reached the major office center employment criterion by 2000, employment at the research park in combination with employment at the adjacent Milwaukee Regional Medical Center far surpassed the major center employment level.*

Map 20

STATUS OF MAJOR COMMERCIAL CENTERS RECOMMENDED UNDER THE 2020 REGIONAL LAND USE PLAN



Source: SEWRPC.

Two of the major commercial centers that existed in 1990 did not meet the major center employment criteria in 2000—the areas formerly known as the Capitol Court shopping center and Southgate-Loomis Centre. After the loss of many retail stores, the Capitol Court shopping center, which opened in the mid-1950s, was razed in 2001. The site is now being redeveloped as the Midtown Center shopping area; by 2002, new development there included a large discount department store and large grocery store, among other stores.

Opened in 1951, the Southgate shopping center was the first major shopping mall in the Milwaukee area. After years of decline, the Southgate shopping center was substantially razed in 1999. A large discount department store has been built on the site, opening in 2001. Also following years of decline, the nearby shopping area once known as Loomis Centre was substantially razed in 2001-02.

As also shown on Map 20, the Northridge area was still accorded regional commercial center status as of 2000, since retail employment at the mall at that time, combined with retail employment in nearby stores on the adjacent arterial streets, met the major retail center employment standard. However, all four of the "anchor" stores once located within the Northridge shopping center closed between 2000 and 2003, and demolition of the mall began in 2004. A phased redevelopment of the area with a combination of retail and office uses is planned.

Monitoring of commercial development in the Region indicates that, in addition to the centers shown on Map 20, the commercial area in the vicinity of STH 31 and STH 50 in the City of Kenosha had grown faster than anticipated in the regional plan, with employment reaching the major center threshold by 2000. The regional land use plan envisioned some retail growth near STH 50 and STH 31; however, the plan envisioned a community-scale retail center, rather than a regional center, at that location. In addition, three other areas in the Region were approaching, but had not achieved, major retail center status by 2000. These include the area in the vicinity of the intersection of W. Appleton Avenue (STH 175) and W. County Line Road (CTH Q) in the Villages of Menomonee Falls and Germantown; the area in the vicinity of the intersection of STH 83 and IH 94 in the City of Delafield; and the area in the vicinity of the intersection of S. 27th Street and W. College Avenue in the Cities of Franklin and Oak Creek. The adopted regional land use plan envisioned a significant increase in retail development at the aforereferenced locations in Delafield, Franklin-Oak Creek, and Menomonee Falls-Germantown, anticipating that retail employment levels would approach, but not reach, the major retail center threshold of 2,000 jobs by 2020.

In addition, since 2000, plans have been announced for the development of a large office center near the intersection of S. 27th Street and W. Drexel Avenue in the City of Franklin. Development of this site began in 2002. Upon full development, this site could be expected to meet the major office center employment threshold of 3,500 office jobs.

The concept of major commercial centers has been a component of the regional land use plan since the first-generation, design year 1990 regional land use plan was adopted in 1966. Initially, the major commercial center concept pertained to retail and service activity, with the office-related element added in later generations of the regional plan. In the 1960s, it was envisioned that new major retail and service areas would be developed, for the most part, in the form of shopping centers or malls. While a number of large traditional shopping malls exist and continue to thrive within the Region, monitoring of retail development in the Region indicates that many large retail operations—including discount department stores, home supply stores, electronic/appliance stores, office supply stores, and large drugstores—prefer freestanding buildings in a variety of settings other than within shopping malls. Such large retailers may locate in proximity to traditional retail malls; in clusters with other similar retailers, typically at the intersection of major streets and highways; in strip fashion with similar retailers along major streets and highways; or in relative isolation from other large retail establishments. In general, the pattern of retail development that has emerged within the Region is much more diverse than the structured system of major regional, community, and neighborhood retail and service centers envisioned when the initial regional land use plan was prepared.

Major Industrial Centers

The regional land use plan envisions a total of 27 major industrial centers in the Region in the year 2020. Under the plan, major industrial centers are defined as concentrations of industrial land having manufacturing and

wholesaling employment levels of at least 3,500 jobs. The 27 centers identified in the plan range in character from older industrial complexes in central-city areas to planned industrial parks in other areas of the Region.

There were 22 major industrial centers in the Region in 1990. The regional land use plan envisioned that all 22 sites would be retained as major industrial centers through the year 2020. The plan envisioned five additional major industrial centers in the Region in 2020. All of the proposed industrial centers were under some stage of development when the regional plan was adopted in 1997.

The current status of the 27 major industrial centers recommended in the regional land use plan is summarized on Map 21. Four of the five additional industrial centers proposed in the plan—the Franklin, Hartford, Pleasant Prairie, and Sussex centers—achieved major center status by 2000.[6] The other industrial center proposed in the plan—the Burlington center—had been substantially developed by 2000, but did not yet meet the major industrial center employment standard.

As further shown on Map 21, 20 major industrial centers that existed in 1990 retained their major center status in 2000. Two of the major industrial centers that existed in 1990—identified on Map 21 as Milwaukee-South and Milwaukee-Near North—did not meet the major center employment standard in 2000. Certain other older industrial areas lost industrial jobs, but continued to meet the major industrial center employment standard in 2000.

Monitoring of industrial development in the Region indicates that, in addition to the centers shown on Map 21, two other areas—the Germantown Industrial Park and the Mequon West industrial area—had reached major industrial center status by 2000, having grown faster than anticipated in the regional land use plan. In addition, one industrial area—an area in the vicinity of the interchange of IH 43 and STH 50 in the City of Delavan—was approaching, but had not reached, the major industrial employment level by 2000.

In addition, substantial industrial development is envisioned within the area referred to as the Pabst Farms property, located near the interchange of IH 94 and STH 67 in the City of Oconomowoc and the Town of Summit. Future industrial development within the Pabst Farms, in conjunction with nearby existing industrial development located north of IH 94 and west of STH 67, may be expected to accommodate industrial employment levels which exceed the major industrial employment threshold of 3,500 industrial jobs.

The concept of major industrial centers has also been a component of the regional land use plan since the first-generation, design year 1990 regional land use plan. When the first regional land use plan was prepared in the 1960s, it was envisioned that major industrial centers would accommodate nearly exclusively manufacturing and wholesaling operations. Over the years, "industrial" areas have accommodated an increasingly wider range of uses, including offices, service operations, and research facilities, in addition to manufacturing, wholesaling, and distribution facilities. With the increasing mix of uses, there is less distinction between industrial centers and commercial office centers than in the past.

Major Outdoor Recreation Centers

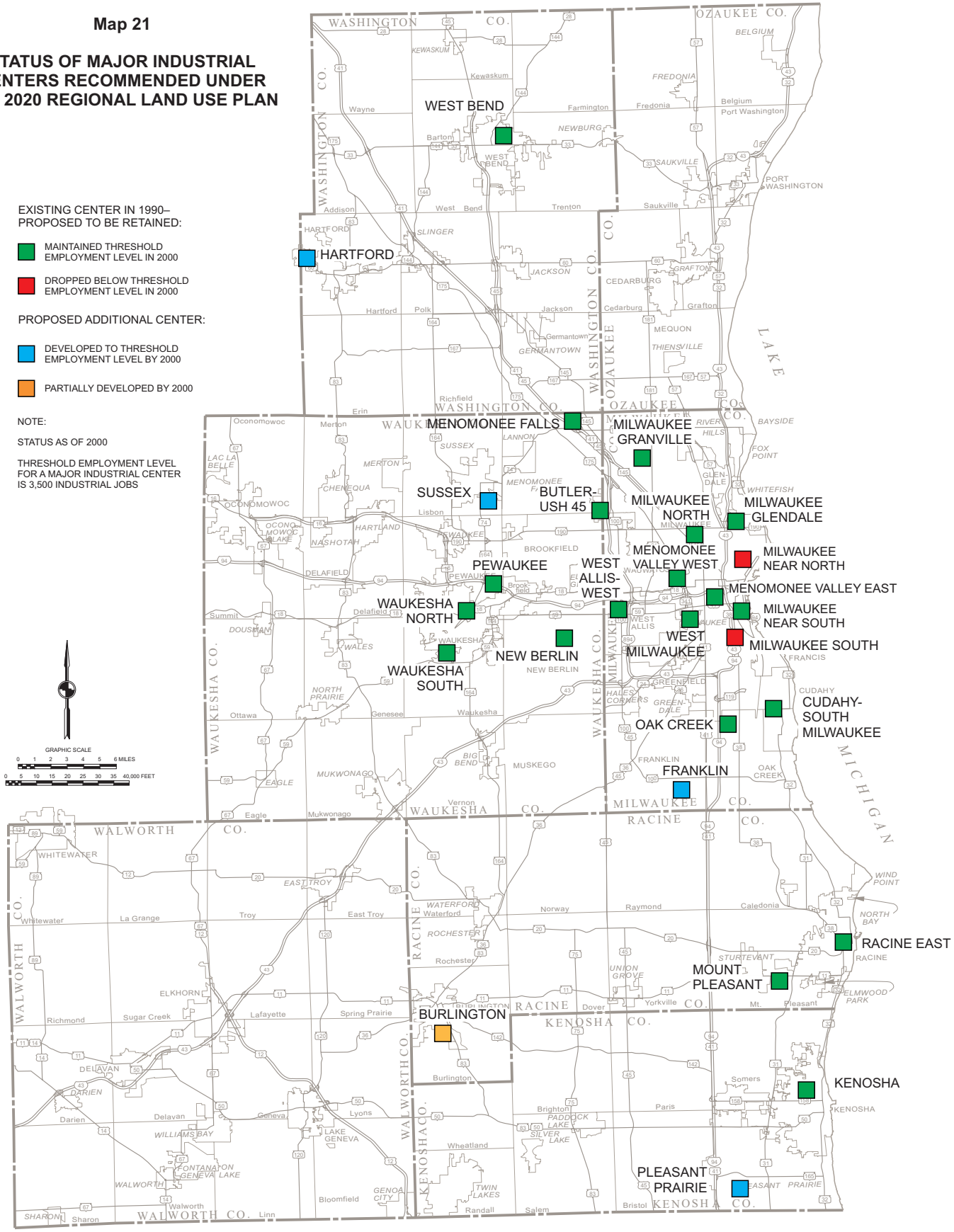
The adopted regional land use plan envisions a total of 30 major parks of regional size and significance to serve the needs of the Region through the year 2020. By definition, such parks have an area of at least 250 acres and provide opportunities for a variety of resource-oriented outdoor recreational activities.

Of the 30 major parks identified in the plan, 24 sites had been substantially acquired and developed for park purposes by 1990, the base year of the plan, and were recommended to be retained. The plan envisioned further development of five sites that had been substantially acquired for park purposes by 1990 but that were undeveloped or only partially developed at that time. These include Prairie Spring Park in Kenosha County,

[6] *The Hartford industrial center includes land in Washington and Dodge Counties.*

Map 21

STATUS OF MAJOR INDUSTRIAL CENTERS RECOMMENDED UNDER THE 2020 REGIONAL LAND USE PLAN



Source: SEWRPC.

Bender Park in Milwaukee County, Case Eagle Park in Racine County, and Fox Brook Park and Monches Park in Waukesha County. The plan also envisioned the acquisition and development of one entirely new site, to be located along Sugar Creek in Walworth County.

The current status of the 30 major parks recommended in the regional land use plan is summarized on Map 22. As shown on that map, each of the aforereferenced sites that were recommended for additional facility development under the plan experienced at least some development during the 1990s in accordance with the plan. In addition, the recommended new site along Sugar Creek in Walworth County was partially acquired for park purposes. The acquisition of that site, the Price Conservancy, is in keeping with a longstanding recommendation—made in the initial regional land use plan adopted in 1966—for a major regional park in the resource-rich Sugar Creek corridor.

In addition to the major park sites shown on Map 22, Kenosha County and Waukesha County have both acquired large sites for future park development. The Kenosha County site was acquired in 2003 and is located in the Towns of Randall and Wheatland. The Waukesha County site is located in the Town of Oconomowoc and has been named Ashippun River Park. As of 2004, 347 acres of this proposed 500 acre park have been acquired by Waukesha County. Future development of resource-oriented facilities at these sites would warrant designation of these sites as major regional parks.

In addition to the 30 major park sites, the 2020 regional land use plan envisioned the retention of seven major special-use recreation sites in the Region. These include the Bong Recreation Area in Kenosha County; Old World Wisconsin in Waukesha County; and Maier Festival Park, Milwaukee County Stadium-Miller Park, the Mitchell Park Horticultural Conservatory, the Milwaukee County Zoo, and Wisconsin State Fair Park in Milwaukee County. Miller Park replaced Milwaukee County Stadium when Miller Park opened in 2001.

Environmental Corridors and Isolated Natural Resource Areas

As indicated in Chapter II, wetlands, woodlands, surface water, wildlife habitat, and other elements of the natural resource base tend to be concentrated in elongated areas in the landscape of the Region referred to as environmental corridors. “Primary” environmental corridors comprise the largest and widest of these corridors and are considered to be of regional significance. Secondary environmental corridors are somewhat smaller in size, often being remnants of primary corridors which have been partially converted to urban or agricultural use. In addition, smaller, but nevertheless significant, areas containing concentrations of resource base features, which are physically separate from the environmental corridors, also exist and are referred to as “isolated natural resource areas.” The location of these areas in the Region is shown on Map 10 in Chapter II.

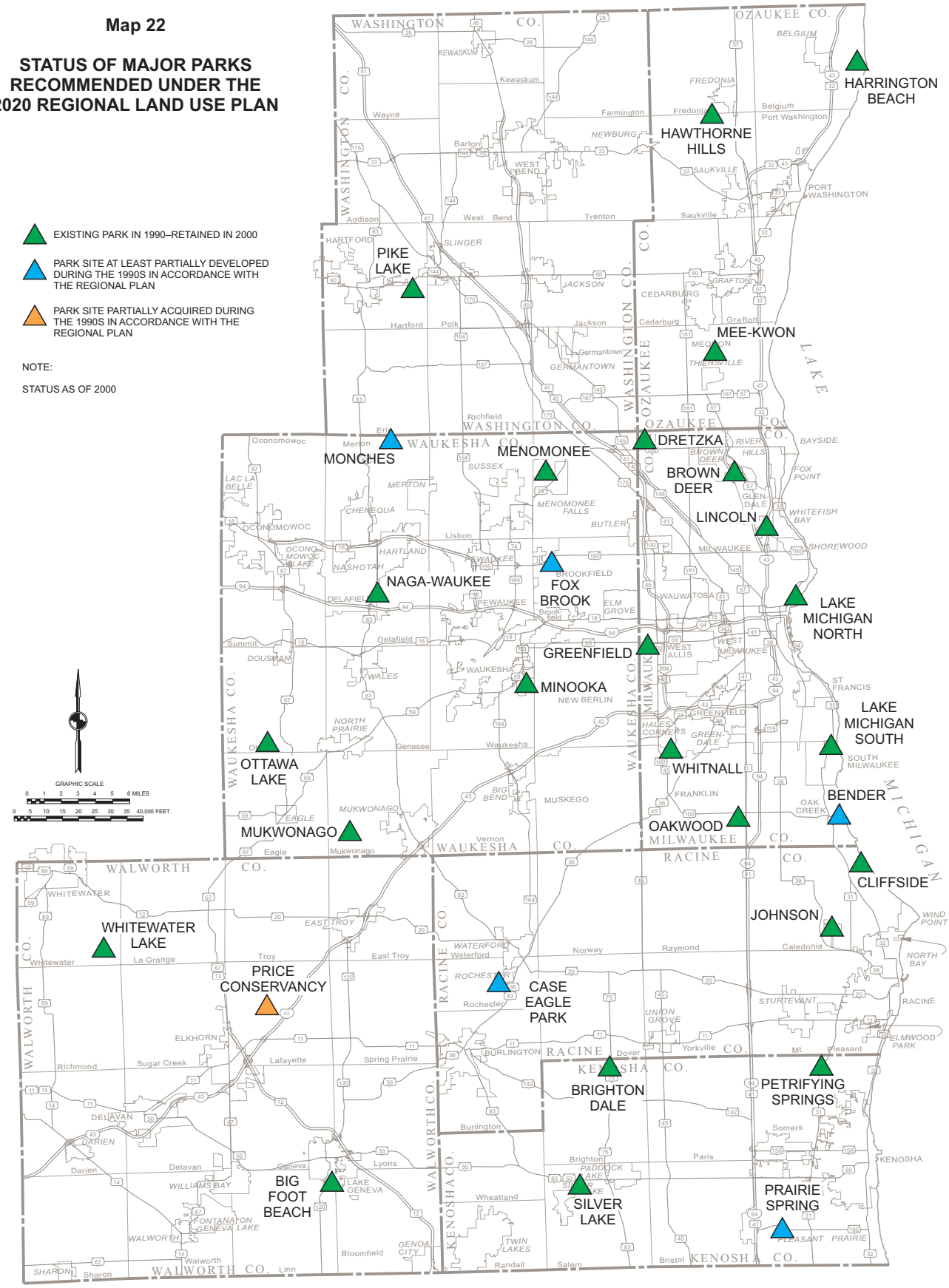
The regional land use plan recommends that primary environmental corridors be preserved in essentially natural, open uses, forming an integrated system of open space lands in the Region. Under the plan, development within the primary environmental corridors would be limited to essential transportation and utility facilities, compatible outdoor recreation facilities, and rural-density residential development (a maximum of one dwelling unit per five acres) in upland corridor areas not encompassing steep slopes. The regional plan also encourages the preservation in a similar manner of secondary environmental corridors and isolated natural resource areas, and recommends that counties and communities consider the preservation of these areas in the preparation of county and local land use plans.

As reported in Chapter II, there have been both gains and losses of environmental corridors and isolated natural resource areas throughout the Region since 1990, the base year of the adopted regional land use plan. Decreases in such areas occur as a result of conversion to urban or agricultural use. Increases occur as a result of managed restoration efforts (e.g., wetland, woodland, or prairie restoration) and as a result of situations where certain lands, such as farmed floodplains, are simply allowed to revert to a more natural condition.

As indicated in Chapter II, gains and losses in primary environmental corridors in the Region between 1990 and 2000 were essentially offsetting. Gains in primary environmental corridors in the Region totaled about 5.5 square miles while losses in primary environmental corridors totaled about 4.8 square miles, for a net increase of 0.7

Map 22

STATUS OF MAJOR PARKS RECOMMENDED UNDER THE 2020 REGIONAL LAND USE PLAN



Source: SEWRPC.

square mile, or 0.2 percent. Gains and losses in secondary environmental corridors and isolated natural resource areas between 1990 and 2000 were also essentially offsetting, with secondary environmental corridors experiencing a net increase of 0.2 square mile, or 0.3 percent (gains of 1.9 square miles and losses of 1.7 square miles) and with isolated natural resource areas experiencing a net decrease of 0.4 square mile, or 0.6 percent (gains of 3.0 square miles and losses of 3.4 square miles).

A number of important measures that help to ensure the preservation of environmentally significant areas had already been put in place by 1990 and remain in effect today. The current protection status of primary environmental corridors in the Region is shown on Map 23 and is summarized quantitatively in Table 25.

As indicated in Table 25, about 183 square miles, or 40 percent of the primary environmental corridors in the Region, were protected through public interest ownership in 2000—including 93 square miles of publicly owned lands; 19 square miles of privately held lands, consisting of lands owned by conservancy organizations and other privately held lands that were in compatible outdoor recreational use; and 71 square miles of surface water. An additional 146 square miles, or 32 percent of the primary environmental corridors, were effectively protected from inappropriate urban development through joint state-local floodplain and shoreland-wetland zoning. Beyond this, 30 square miles, representing 6 percent of the primary environmental corridors, were substantially protected through State administrative rules governing sanitary sewer extensions within planned sanitary sewer service areas.[7] And finally, an additional 67 square miles, or 14 percent of the primary environmental corridors, were protected through local land use regulations. The latter includes protection through local conservancy zoning and, in the case of Waukesha County, through its review of proposed land divisions.[8] In total, then, about 426 square miles, representing 92 percent of the primary environmental corridors in the Region, were substantially protected from incompatible urban development in 2000.

Primary environmental corridor lands that were not protected from urban development encompassed just over 36 square miles, or about 8 percent of the remaining primary environmental corridors in the Region, in 2000. These unprotected corridors consist largely of upland areas comprised of woodlands, significant wildlife habitat, and steeply sloped areas. Destruction of these areas may occur as a result of urban residential development projects supported by private onsite sewage disposal systems and other urban encroachment not served by sanitary sewers.

Agricultural Lands

The regional plan recognized that the orderly growth and development of the Region would involve the conversion of some agricultural lands to urban use. The plan envisioned that about 32 square miles of agricultural land would be converted to urban use between 1990 and 2000. It is estimated that lands devoted to agricultural use decreased by about 115 square miles, or 8 percent, between 1990 and 2000.[9] It should be recognized that this decrease reflects the conversion of agricultural land to urban use and reflects as well agricultural lands taken out of production for other reasons and agricultural lands that reverted to wetlands and other open uses.

The regional land use plan seeks to preserve, insofar as practicable, the most productive agricultural soils—namely, agricultural capability Class I and Class II soils as identified by the U.S. Natural Resources Conservation Service. Under the plan, the conversion of Class I and Class II agricultural land to urban use would be limited to lands within planned urban service areas as necessary for the orderly growth and development of those urban areas, as well as to lands located beyond the planned urban service areas which had been committed to urban

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[7] *Such State administrative rules would not prevent destruction of environmental corridor lands as a result of urban development that occurs without sanitary sewer service.*

[8] *Waukesha County utilizes its land division approval-objection authority to help ensure the preservation of environmental corridors in accordance with the Waukesha County development plan. Waukesha County reviews all proposed subdivision plats and some, but not all, proposed certified survey maps in Waukesha County.*

[9] *The estimated loss in agricultural land is based upon the regional land use inventory and discounts the effect of the procedural changes made as part of the year 2000 inventory described in Chapter II.*

Table 25

PROTECTION STATUS OF PRIMARY ENVIRONMENTAL CORRIDORS IN THE REGION: 2000

Category	Square Miles	Percent of Total
Protected Primary Environmental Corridor		
Area Protected Through Public Interest Ownership:		
Existing Public Ownership	92.7	20.1
Existing Private Ownership	19.2	4.2
Surface Water	71.5	15.5
Subtotal	183.4	39.8
Additional Area Protected Through Public Land Use Regulation:		
Wetlands Protected by Floodplain Zoning and Shoreland-Wetland Zoning	145.8	31.5
Upland Areas Protected by State Administrative Rules Governing Sewer Extensions	29.8	6.4
Other Areas Protected by Local Land Use Regulations	66.6	14.4
Subtotal	242.2	52.3
Total Protected Area	425.6	92.1
Unprotected Primary Environmental Corridor	36.6	7.9
Total Primary Environmental Corridor	462.2	100.0

Source: SEWRPC.

development in approved subdivision plats. In order to help assess the degree of attainment of this recommendation, an analysis was made of the Class I and Class II farmland lost to urban development between 1990 and 2000 utilizing the Commission urban growth ring analysis and information regarding Class I and Class II agricultural lands described in Chapter II. The results of this analysis are shown on Map 24. This map identifies agricultural lands covered by Class I and Class II soils that were converted to urban use between 1990 and 2000 and those that remained in agricultural use in 2000. This map distinguishes Class I and Class II agricultural land conversions in locations that are consistent with the regional plan from those in locations that are inconsistent with the plan. The analysis indicates that, during the 1990s, about 24 square miles of Class I and Class II agricultural land were converted to urban use in locations consistent with the regional plan, with most of these conversions occurring within planned urban service areas. The analysis further indicates that about 9 square miles of Class I and Class II agricultural land were converted to urban use in locations not consistent with the plan.

The regional plan recognizes that, under the provisions of the Wisconsin Farmland Preservation Program, counties in the State are responsible for the identification of prime agricultural lands and further recognizes that the criteria to identify prime agricultural lands may differ from county to county. Each of the six counties in the Region that have substantial amounts of agricultural land had already prepared and adopted farmland preservation plans by the mid-1980s. The year 2020 regional land use plan recommends that the counties update their farmland preservation plans. The regional plan recommends that such county plan updates seek to preserve Class I and Class II soils insofar as practicable, and establish the presence of Class I and Class II soils as a key determinant of prime agricultural land. The regional plan recognizes that the county farmland preservation plan updates may include other classes of soils in the definition of prime agricultural land and may incorporate other criteria, such as the size of farm units or size of the contiguous farming area, in the definition of prime agricultural land. In Waukesha County, the definition and attendant delineation of prime agricultural land were revised as part of the County development plan adopted by the Waukesha County Board in 1996. Waukesha County drafted an updated County farmland preservation plan reflecting the new definition and delineation of prime agricultural lands in 1998; that plan was not adopted by the County Board. Washington County drafted updated farmland preservation plan maps for two towns in 2004; County adoption was pending at the time of the preparation of this report.

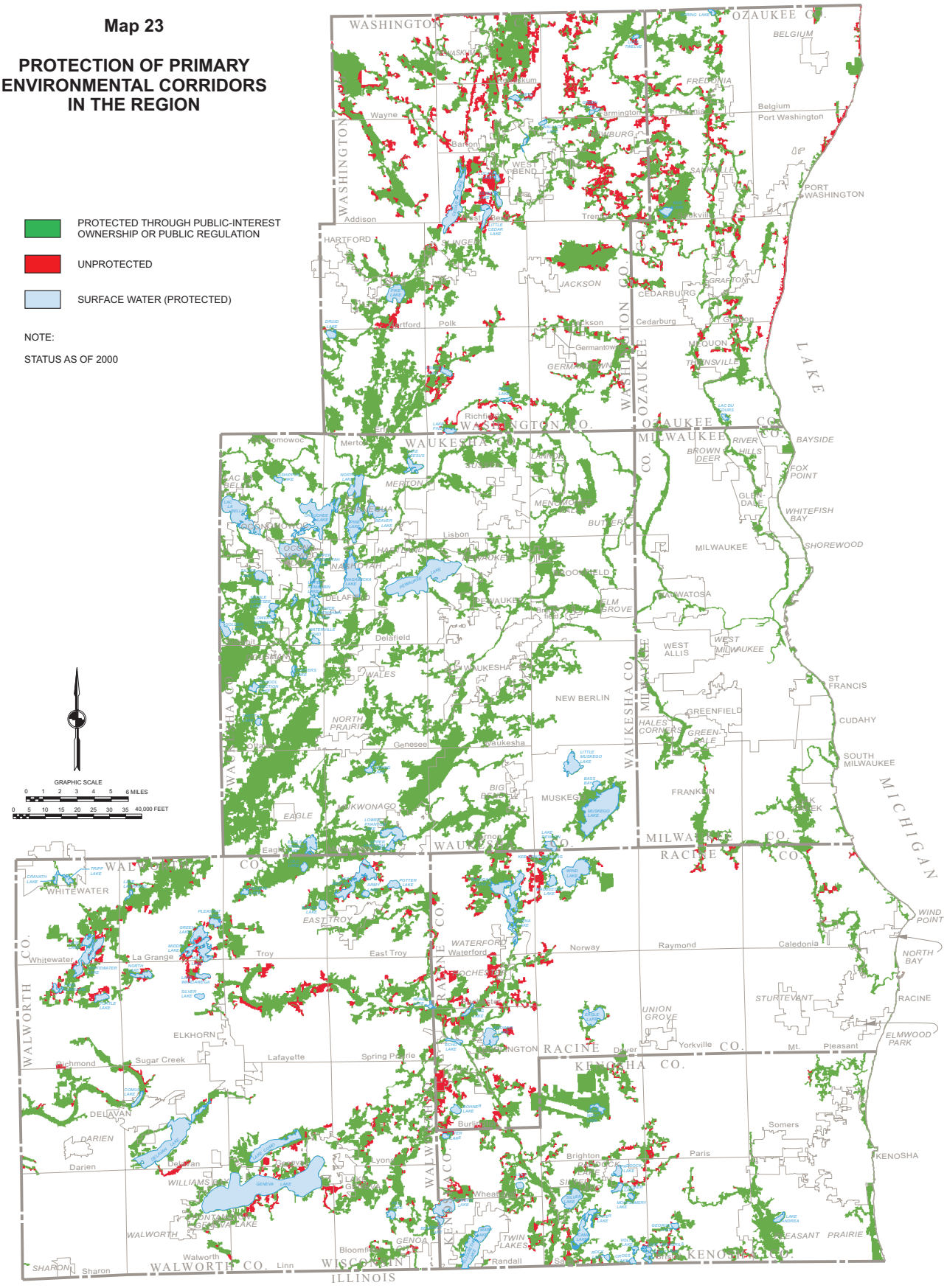
The prime agricultural lands recommended for preservation under the county farmland preservation plans for Kenosha, Ozaukee, Racine, Walworth, and Washington Counties are shown on Map 25, along with the prime agricultural lands recommended for preservation in the Waukesha County development plan. Also shown on Map 25 are the prime agricultural lands in the City of Franklin, the only community in Milwaukee County where prime agricultural lands have been identified for the purposes of the Wisconsin Farmland Preservation Program.

Rural Residential Development

The regional plan defines rural residential development as residential development at an overall density of no more than one dwelling unit per five acres. Under the regional plan, rural residential development, while not

Map 23

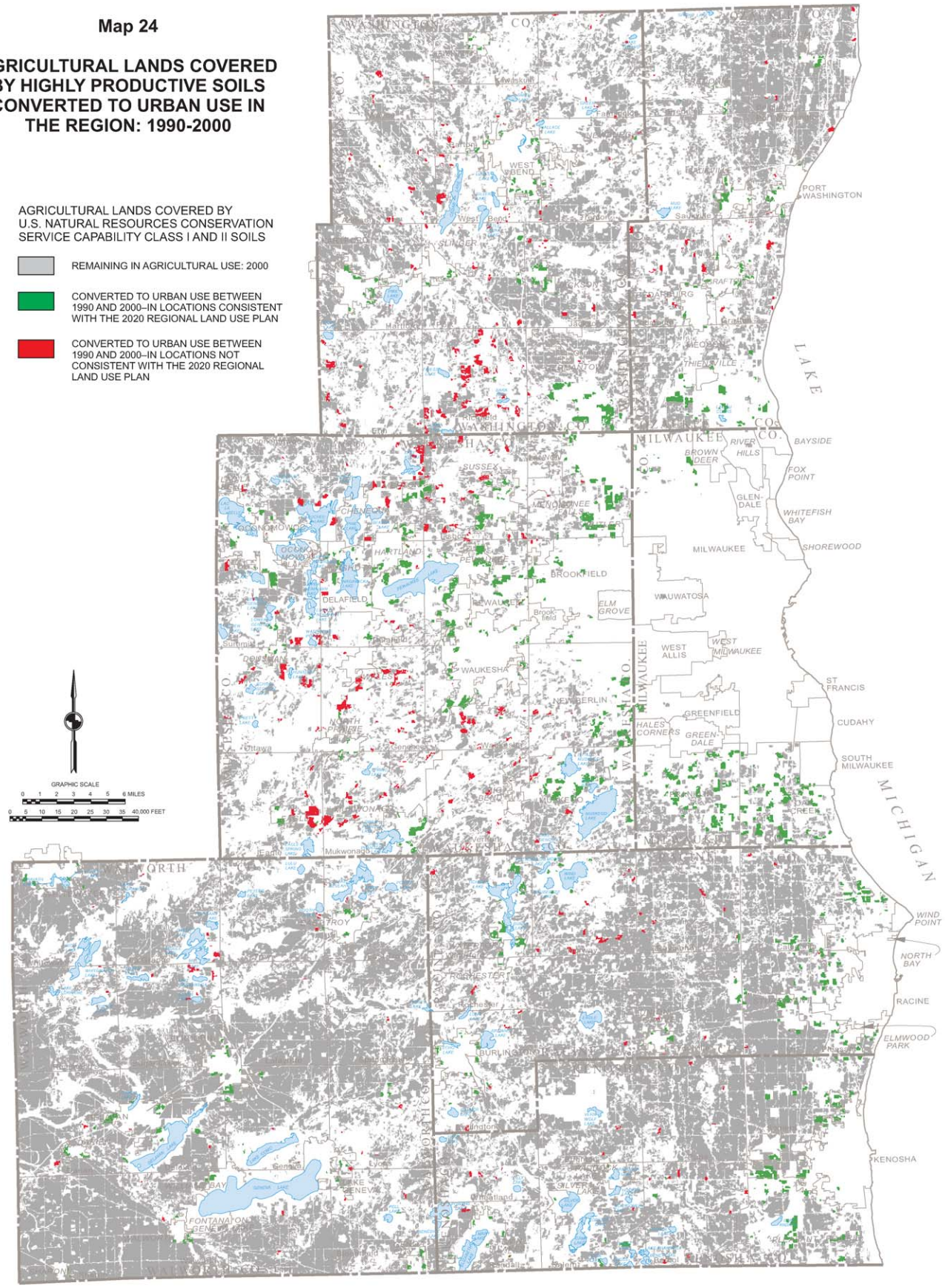
PROTECTION OF PRIMARY ENVIRONMENTAL CORRIDORS IN THE REGION



Source: SEWRPC.

Map 24

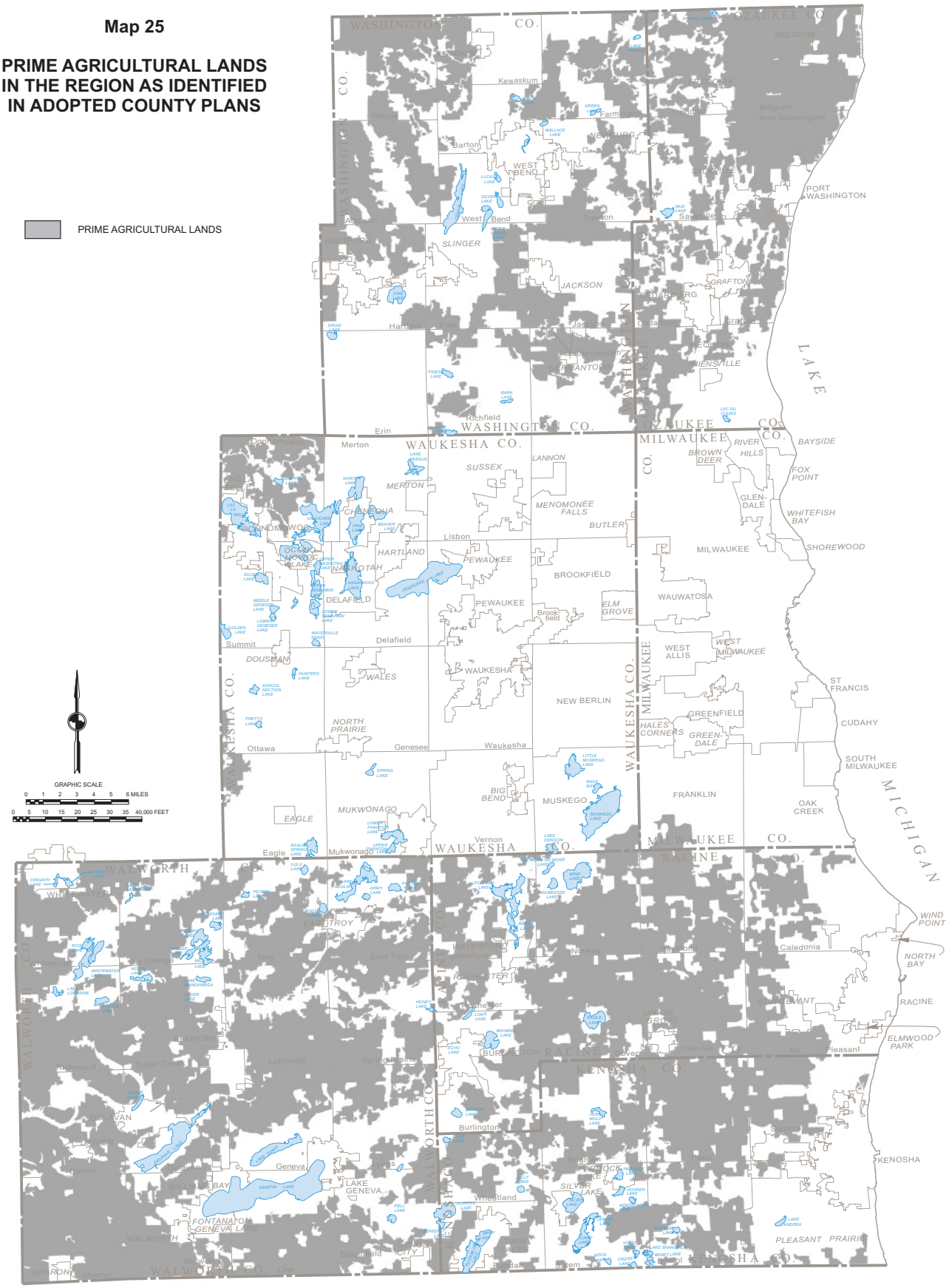
AGRICULTURAL LANDS COVERED BY HIGHLY PRODUCTIVE SOILS CONVERTED TO URBAN USE IN THE REGION: 1990-2000



Source: SEWRPC.

Map 25

PRIME AGRICULTURAL LANDS IN THE REGION AS IDENTIFIED IN ADOPTED COUNTY PLANS



Source: SEWRPC.

encouraged, would be accommodated in marginal farming areas as well as in upland environmental corridors and isolated natural resource areas that are devoid of steep slopes. Where rural residential development is accommodated, the plan encourages the use of conservation subdivision designs, as appropriate.

Areawide information on the location and extent of new rural residential development in the Region is not available (see Footnote No. 9 in Chapter II). However, Commission monitoring of residential subdivision platting activity in the Region provides some insight in this regard. Such monitoring indicates that about 630 residential lots were created in rural-density residential subdivisions platted in the Region from 1990 through 1999; this does not include lots created through certified surveys or other land divisions. The number of such lots actually developed as homesites during the 1990s is unknown.

SUMMARY AND CONCLUSION

This chapter has reviewed the major recommendations of the adopted design year 2020 regional land use plan in light of changes in the Region that have occurred since 1990, the base year of the plan. A summary of the key findings of this chapter follows.

- Current population, household, and employment levels for the Region overall closely approximate the forecasts levels on which the plan is based. In this respect, actual population, household, and employment levels for the Region in 2003 were within 2 percent of the forecast levels for 2003 embodied in the regional plan.

- Among the counties in the Region, the forecast 2003 population and household levels were generally within 5 percent of the actual 2003 levels; the forecast 2003 employment levels were generally within 10 to 15 percent of the actual 2003 levels. The forecasts underlying the year 2020 regional land use plan envisioned that there would be a continuation of the long-term trend of decentralization of population, households, and jobs within the Region relative to Milwaukee County, but that the rate of decentralization would be moderated somewhat. Monitoring data indicate that Milwaukee County's share of total regional employment was 4.5 percentage points lower than the forecast share for 2003, generally indicating that the decentralization of jobs within the Region has occurred at a faster rate than envisioned under the plan. Milwaukee County's relative shares of the total Region population and households in 2003 more closely approximated forecast shares.

- Of the 70 square miles of incremental urban development that took place in the Region between 1990 and 2000 as identified in the Commission urban growth ring analysis, 49 square miles, or 70 percent, were located in accordance with the regional land use plan, primarily within planned urban service areas. The remaining 21 square miles of incremental urban development, representing about 30 percent of the total, took place in a scattered fashion outside urban service areas, contrary to regional plan recommendations.

- Under the regional land use plan, about 35 square miles of land were planned to be converted to urban (high-, medium-, and low-density) residential use during the 1990s. Commission land use inventories indicate that about 48 square miles of land were converted to urban residential use between 1990 and 2000, about 13 square miles more than planned. Less new medium-density residential development and more new low-density residential development occurred in the Region during the 1990s than recommended in the plan. While the plan envisioned an increase of about 26 square miles in medium-density residential land during the 1990s, the actual increase was about 19 square miles. By contrast, the plan envisioned an increase of about 6 square miles of low-density residential land; the actual increase was about 28 square miles. The plan recognized commitments to sub-urban density residential development, but does not recommend any new sub-urban development beyond what is committed. While the plan reflected such commitments—about 2 square miles at the time the plan was prepared—the actual increase between 1990 and 2000 was about 14 square miles.

- The vast majority of housing units constructed in the Region between 1990 and 2000—an estimated 71,500 housing units, or about 81 percent of the estimated total of 88,500 new housing units—was

provided with public sanitary sewer service in accordance with the regional plan. The balance of about 17,000 housing units, or about 19 percent of the total, was served by onsite sewage disposal systems. Some of the new housing served by onsite sewage disposal systems was developed at a rural density in accordance with the regional plan. In addition, some housing served by onsite systems was developed in accordance with the regional plan in communities such as the Villages of North Prairie and Eagle that have public water supply service but not sanitary sewer service. However, the majority of new housing served by onsite sewage disposal systems was developed at urban densities in areas not recommended for such development in the regional plan.

- The regional plan recommends that 18 major commercial centers serve the Region, each providing a minimum of 2,000 retail jobs or 3,500 office and service jobs, or both, depending on the location. Of this total, 14 existed in 1990, the base year of the plan, and four were newly proposed. Monitoring data indicate that 12 of the 14 sites that existed in 1990 continued to meet the requisite employment threshold in 2000. The Capitol Court shopping center and the Southgate-Loomis Centre shopping area did not meet the employment threshold in 2000; both of these, along with the Northridge shopping center, have been substantially razed and were under redevelopment in the early 2000s. The four additional commercial centers proposed in the plan—the Park Place, Pewaukee, and Milwaukee County Research Park office centers and the Kenosha West retail center—had been substantially developed by 2000, but only the Pewaukee center met the major center employment level criterion. Monitoring data further indicate that, in addition to the major commercial centers envisioned in the regional plan, a commercial center located near STH 31 and STH 50 in the City of Kenosha had grown faster than anticipated in the plan, reaching the major retail center employment threshold by 2000. In addition, three other areas in the Region—including areas in the City of Delafield, the Cities of Franklin and Oak Creek, and the Villages of Menomonee Falls and Germantown—were approaching, but had not achieved, major retail center status by 2000. Moreover, since 2000, construction has begun on a large office center in the City of Franklin; upon full development, this site could be expected to meet the major office center employment threshold.

- The regional plan recommends that 27 major industrial centers serve the Region, each providing a minimum of 3,500 industrial jobs. Of this total, 22 existed in 1990, and five were newly proposed. Monitoring data indicate that 20 of the 22 sites that existed in 1990 continued to meet the requisite employment threshold in 2000. Two of the older centers, Milwaukee-South and Milwaukee-Near North, fell below the industrial employment threshold by 2000. Four of the five additional centers proposed in the plan—the Franklin, Hartford, Pleasant Prairie, and Sussex centers—had achieved major center status by 2000. The other industrial center proposed in the plan—the Burlington center—had been substantially developed by 2000, but did not yet meet the major industrial center employment standard. Monitoring data further indicate that, in addition to the major industrial centers envisioned in the plan, two other areas—the Germantown Industrial Park and the Mequon West industrial area—had reached major industrial center status by 2000, having grown faster than anticipated in the regional land use plan. One industrial area—located in the City of Delavan—was approaching, but had not reached, the major industrial employment level by 2000. Moreover, planned industrial development within the Pabst Farms property, located in the City of Oconomowoc and the Town of Summit, in conjunction with nearby existing industrial development, may be expected to accommodate industrial employment levels which exceed the major industrial employment threshold of 3,500 industrial jobs.

- The nature of commercial and industrial activity centers has changed since the first generation regional land use plan was prepared in 1966. While a number of traditional regional shopping malls exist and continue to thrive within the Region, many large retailers appear to prefer freestanding buildings in a variety of settings other than within shopping malls. The pattern of retail development that has emerged within the Region is much more diverse than the structured system of major regional, community, and neighborhood retail and service centers envisioned when the initial regional land use plan was prepared. The nature of industrial centers is also changing, as “industrial” areas accommodate an increasingly wider range of uses, including offices, service operations, and research facilities, in addition to manufacturing, wholesaling, and distribution facilities. With the increasing mix of uses, there is less distinction between industrial centers and commercial office centers than in the past.

- The regional plan recommends that 30 major parks serve the Region. Such parks have an area of at least 250 acres and provide opportunities for a variety of resource-oriented outdoor recreation activities. Of the 30 major parks identified in the regional plan, 24 sites had been substantially acquired and developed for park purposes by 1990. The 1990s saw significant additional recreational facility development at the recommended sites, in accordance with the plan. In addition, the recommended new site along Sugar Creek in Walworth County was partially acquired for park purposes. The acquisition of that site, the Price Conservancy, is in keeping with a longstanding recommendation—made in the initial regional land use plan adopted in 1966—for a major regional park in the resource-rich Sugar Creek corridor. In addition to the 30 major parks identified in the regional plan, Kenosha County and Waukesha County have acquired large sites located in the Towns of Randall and Wheatland and the Town of Oconomowoc respectively, for future park development; future development of resource-oriented facilities at these sites would warrant designation of these sites as major regional parks.

- The regional land use plan recommends the preservation of primary environmental corridors in essentially natural open uses, and encourages as well the preservation of secondary environmental corridors and isolated natural resource areas. There have been both gains and losses of environmental corridors and isolated natural resource areas throughout the Region since 1990. Decreases in such areas occur as a result of conversion to urban or agricultural use. Increases occur as a result of managed restoration efforts (e.g., wetland, woodland, or prairie restoration) and as a result of situations where certain lands, such as farmed floodplains, are simply allowed to revert to a more natural condition. Gains and losses in environmental corridors and isolated natural resource areas during the 1990s were essentially off-setting. Primary environmental corridors increased by 0.2 percent; secondary environmental corridors increased by 0.3 percent; and isolated natural resource areas decreased by 0.6 percent.

- A number of important measures that help to ensure the preservation of environmentally significant areas had already been put in place by 1990 and remain in effect today. About 183 square miles, or 40 percent of the primary environmental corridors in the Region, were protected through public interest ownership in 2000. An additional 243 square miles, or 52 percent of the primary environmental corridors, were effectively protected from inappropriate urban development through various land use regulations. In total, then, about 426 square miles, representing 92 percent of the primary environmental corridors in the Region, were substantially protected from incompatible urban development in 2000. The remaining 36 square miles, or 8 percent, are essentially unprotected primary environmental corridors, consisting largely of upland corridor lands in rural portions of the Region.

- The regional plan recognized that the orderly growth and development of the Region would require the conversion of some agricultural lands to urban use. The plan envisioned that about 32 square miles of agricultural land would be converted to urban use between 1990 and 2000. It is estimated that lands devoted to agricultural use decreased by about 115 square miles, or 8 percent, between 1990 and 2000. It should be recognized that this decrease reflects the conversion of agricultural land to urban use and reflects as well agricultural lands taken out of production for other reasons and agricultural lands that reverted to wetlands and other open uses.

- The regional land use plan recommends that the most productive soils for agricultural purposes—capability Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service—be preserved for agricultural use insofar as practicable. Under the plan, the conversion of Class I and Class II agricultural land to urban use would be confined, for the most part, to locations within planned urban service areas. Monitoring data indicate that about 24 square miles of Class I and Class II agricultural land were converted to urban use during the 1990s in locations consistent with the regional plan, with most of

these conversions occurring within planned urban service areas. The data further indicate that about 9 square miles of Class I and Class II agricultural land were converted to urban use in locations inconsistent with the regional plan.

The review of the currently adopted regional land use plan in light of actual development trends in the Region during the 1990s as presented in this chapter indicates both areas of progress toward, and departure from, the regional plan. The findings of this review are similar in many respects to the findings of earlier reviews of prior generations of the regional land use plan. The findings of this review will be considered in the re-evaluation and revision, as appropriate, of the currently adopted land use objectives and standards and in the preparation of the year 2035 regional land use plan. Nothing in these review findings, however, would suggest the need for a substantive change in the basic concepts underlying the regional land use plan.

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Chapter IV

OBJECTIVES, PRINCIPLES, AND STANDARDS

INTRODUCTION

Planning may be described as a rational process for formulating and achieving objectives. The formulation of objectives is an essential task to be undertaken before plans can be prepared. This chapter presents a set of land use objectives along with supporting principles and related standards recommended by the Advisory Committee on Regional Land Use Planning as a basis for the preparation and evaluation of the year 2035 regional land use plan.

BASIC CONCEPTS AND DEFINITIONS

The terms “objective,” “principle,” “standard,” “plan,” “policy,” and “program” are subject to a range of interpretations. Although this chapter deals with only the first three of these terms, an understanding of the interrelationship between the foregoing terms and the basic concepts which they represent is essential to any consideration of objectives, principles, and standards. Under the regional planning program, these terms have been defined as follows:

1. Objective: a goal or end toward the attainment of which plans and policies are directed.

2. Principle: a fundamental, primary, or generally accepted tenet used to support objectives and prepare standards and plans.

3. Standard: a criterion used as a basis of comparison to determine the adequacy of plan proposals to attain objectives.

4. Plan: a design which seeks to achieve agreed-upon objectives.

5. Policy: a rule or course of action used to ensure plan implementation.

6. Program: a coordinated series of policies and actions to carry out a plan.

HISTORICAL DEVELOPMENT OF THE LAND USE OBJECTIVES, PRINCIPLES, AND STANDARDS

One of the most important tasks accomplished as part of the first regional land use planning study in the mid-1960s was the formulation of a set of objectives, principles, and standards expressing the desired direction, magnitude, and quality of future development within the Region. Formulated under the guidance of a broad-based

advisory committee, these objectives provided the basis for the development of the first regional land use plan—the design year 1990 regional land use plan adopted by the Commission in 1966. About ten years later, the initial objectives, principles, and standards underwent a major review and reevaluation. In that review, attention was given to the degree of attainment of each of the objectives since their initial adoption as well as to both adverse and favorable public reaction to plan implementation proposals. The objectives, principles, and standards were subsequently reaffirmed, with only minor modification, and recommended for use as a basis for the preparation of the second-generation, design year 2000 regional land use plan adopted by the Commission in 1977. A similar review and evaluation of the objectives, principles, and standards was conducted under two subsequent regional planning studies. In both cases, the objectives were reaffirmed with minor modifications, providing the basis for the preparation of the year 2010 regional land use plan and the year 2020 regional land use plan adopted by the Regional Planning Commission in 1992 and 1997, respectively.

Under the current regional planning effort, the land use objectives, principles, and standards were again reviewed and evaluated by the Advisory Committee on Regional Land Use Planning. Following that review and evaluation, the Advisory Committee substantially reaffirmed the land use objectives, principles, and standards adopted as part of the year 2020 regional land use plan, with some modifications, as a basis for the preparation of the year 2035 plan. The modifications proposed by the Committee are intended primarily to update the language and clarify the intent of the objectives and standards, leaving the underlying concepts essentially unchanged.

OBJECTIVES

The Commission has identified and recommended both general and specific land use development objectives. General development objectives—often referred to by other agencies as "goals"—are by their very nature either qualitative or difficult to relate directly to development plans in a quantitative manner. Conversely, specific development objectives can be directly related to development plans and at least crudely quantified.

General Development Objectives

The general development objectives which follow are proposed as goals which public policy within the Region should promote over time. They are necessarily general but, nevertheless, provide the broad framework within which regional planning can take place and the more specific goals for the various functional elements and component parts of the Region can be stated and pursued. With respect to the application of these objectives, it is sufficient that there be a consensus within the Advisory Committee and the Commission itself that plan proposals support, or at least do not conflict with, the objectives. Such consensus represents the most practical evaluation of the ability of plan proposals to meet the general development objectives.

The following general development objectives have been adopted by the Advisory Committee for use in the preparation of the year 2035 land use plan; no ranking is implied by the order in which these objectives are listed:

1. Economic growth at a rate consistent with regional resources, including land, labor, and capital, and primary dependence on free enterprise in order to provide needed employment opportunities for the expanding labor force of the Region.

2. A wide range of employment opportunities through a broad, diversified economic base.

3. Preservation and protection of desirable existing residential, commercial, industrial, and agricultural development in order to maintain desirable social and economic values; renewal of obsolete and deteriorating areas in the rural as well as in the urban areas of the Region; and prevention of slums and blight.

4. A broad range of choice among housing designs, sizes, types, and costs, recognizing changing trends in age-group composition, income, and family living habits.

5. An adequate, flexible, and balanced level of community services and facilities.

6. An efficient and equitable allocation of fiscal resources within the public sector of the economy.

7. An attractive and healthful physical and social environment with ample opportunities for high-quality education, cultural activities, and outdoor recreation.

8. Protection, sound use, and enhancement of the natural resource base.

9. Development of communities having distinctive individual character, based on physical conditions, historical factors, and local desires.

10. Balancing of public interests and objectives with private property interests.

Specific Development Objectives

Within the framework established by the general development objectives, a secondary set of more specific objectives which is directly relatable to physical development plans and which can be at least crudely quantified has been postulated. The specific development objectives are largely self-descriptive. They are concerned primarily with spatial allocation to, and distribution of, the various land uses; land use compatibility; resource protection; and accessibility. Their application is facilitated by complementing each objective with a set of quantifiable planning standards which are, in turn, directly relatable to a planning principle which supports the chosen objective.

The following specific development objectives have been adopted by the Advisory Committee. No ranking is implied by the order in which these objectives are listed:

1. A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the regional population.

2. A spatial distribution of the various land uses which will result in a convenient and compatible arrangement of land uses.

3. A spatial distribution of the various land uses which maintains biodiversity and which will result in the preservation and wise use of the natural resources of the Region.

4. A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems in order to assure the economical provision of transportation, utility, and public facility services.

5. The development and preservation of residential areas within a physical environment that is healthy, safe, convenient, and attractive.

6. The preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.

7. The conservation, renewal, and full use of existing urban areas of the Region.

8. The preservation of productive agricultural land.

9. The preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and provide opportunities for a full range of outdoor recreational activities.

The foregoing represent systems-level objectives which the regional land use plan should seek to achieve. They are concerned with the proper allocation of space to the various categories of land use and the proper arrangement of land use at the systems level of planning. While the objectives and standards include guidelines for neighborhood development and the development of commercial and industrial areas, detailed site design considerations are properly addressed at the local level of planning, and it is the function of local planning to ensure good design at individual development sites. It is in the local planning process that the ultimate responsibility lies to ensure the development of properly designed neighborhood units, commercial and industrial areas, and mixed-use areas appropriately related to, and integrated with, the surrounding urban areas. Local planning must also seek to ensure that, to the extent that it is accommodated, rural development is designed in a way that minimizes impacts on the natural resource base, scenic values, and overall character of rural areas of the Region. Achievement of the land use objectives embodied in the

regional land use plan thus depends to a large extent upon local planning within the framework of the regional plan, along with the exercise of local land use controls in a manner that is consistent with such planning.

PRINCIPLES AND STANDARDS

Complementing each of the foregoing specific land use development objectives are one or more planning principles and a set of planning standards. Each set of standards is directly related to a planning principle, as well as to the objective. The standards facilitate application of the objectives in plan design and evaluation. The principles and standards related to the nine specific land use objectives are presented in Table 26.

OVERRIDING CONSIDERATIONS

In applying the planning standards and preparing the regional land use plan, it should be recognized that it is unlikely that any one plan proposal can meet all of the standards completely. The extent to which each standard is met, exceeded, or violated serves as a measure of the ability of the plan proposal to achieve the associated objective.

It should also be recognized that some objectives are complementary, with the achievement of one objective supporting the achievement of others. Conversely, some objectives may be conflicting, requiring reconciliation through compromise. For example, as part of the planning process, the objectives of preserving agricultural and other open space lands, as called for in Objectives No. 8 and No. 9, must be reconciled with the need to convert certain lands to urban use in support of the orderly growth and development of the Region, as envisioned in Objective No. 1.

CONCLUDING REMARK

While the objectives, principles, and standards do not constitute a plan, collectively they provide a vision for land use within southeastern Wisconsin. Under that vision, urban land would increase as necessary to accommodate growth in the regional population and economic base. New urban land would be provided through the infilling and renewal of existing urban areas, as well as through the orderly expansion of existing urban areas, resulting in a more compact and efficient overall urban settlement pattern, one that is readily served by basic urban services and facilities and that maximizes the use of existing urban service and facility systems. The land development needs of the Region would be met while preserving the best remaining elements of the natural resource base and minimizing the loss of important farmland.

Table 26

LAND USE DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS

OBJECTIVE NO. 1

A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the regional population.

1. URBAN LAND USE

PRINCIPLE

The planned supply of urban land use should approximate the anticipated demand for that use.

STANDARDS[a]

a. For each additional 100 dwelling units to be accommodated within the Region at each urban residential density, the following amounts of residential and related land should be allocated:

Urban Residential Density Category[b]	Residential Area[c] (acres per 100 dwelling units)	Residential Area Plus Supporting Land Uses[d] (acres per 100 dwelling units)
High-Density (7.0 or more dwelling units per net acre)[e] ...	Less than 15	Less than 20
Medium-Density (2.3 to 6.9 dwelling units per net acre) ..	15-44	20-59
Low-Density (0.7 to 2.2 dwelling units per net acre)	45-144	60-179

b. For each additional 1,000 persons to be accommodated within the Region, at least 5 acres of land should be set aside in major public parks of at least 250 acres in size, and at least 9 acres should be set aside in other public parks.

c. For each additional 1,000 persons to be accommodated within the Region, approximately 12 acres of governmental and institutional land should be allocated.[f]

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[a] *These standards are intended to be applied at the regional level of planning. It is recognized that these standards may be refined for application in county and community planning efforts.*

[b] *For purposes of the regional land use plan, residential densities are intended to be applied on an overall neighborhood, rather than a parcel-by-parcel, basis. The density categories represent overall densities that may be achieved within developing and redeveloping areas through various combinations of lot sizes and housing structure types over entire neighborhoods. The density ranges are broadly defined so as to provide flexibility to local units of government as they prepare local land use plans and administer local land use regulations within the framework provided by the regional plan. It is incumbent upon each community to determine at which point within the recommended density range that it wants development to occur.*

[c] *Residential area is defined as the actual site area devoted to residential use, and consists of the ground floor site area occupied by housing units and accessory structures plus the required yards and site area, but excludes streets. This definition does not preclude communities from considering open space land to be preserved in the calculation of housing unit yields for development projects.*

[d] *Supporting land uses include streets and utilities, neighborhood parks and playgrounds, elementary schools, and neighborhood institutional and commercial uses.*

[e] *For purposes of the regional plan, the high-density category includes residential development at densities of 7.0 dwelling units per acre or greater. Communities may chose to accommodate residential neighborhoods at densities substantially greater than the minimum threshold for the high-density range, particularly in redevelopment situations. In order to provide flexibility in this respect, no maximum density—or upper bound—is specified for the high-density category.*

[f] *Commercial, industrial, and governmental and institutional area includes the area devoted to the given use, consisting of the ground floor site area occupied by any building, required yards and open space, and parking and loading areas.*

d. For each additional 100 industrial employees to be accommodated within the Region, approximately 12 acres of industrial land should be allocated.[f,g]

e. For each additional 100 commercial employees to be accommodated in retail and service settings within the Region, approximately 6 acres of retail and service land should be allocated.[f]

f. For each additional 100 commercial employees to be accommodated in office settings within the Region, approximately 2.5 acres of commercial office land should be allocated.[f,h]

2. SUB-URBAN DENSITY RESIDENTIAL DEVELOPMENT

PRINCIPLE

Sub-urban density residential development—defined as a development at a density between 0.2 and 0.6 dwelling unit per acre, equivalent to between 1.5 and 4.9 acres per dwelling unit—is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sanitary sewer and water supply facilities and other urban amenities. Development at this density can place excessive demands on streets and highways and public safety services in otherwise rural areas and result in a loss of rural character.

STANDARD

a. New sub-urban density residential development should be limited to that which is already committed in approved subdivision plats and certified surveys.

3. RURAL DENSITY RESIDENTIAL DEVELOPMENT

PRINCIPLE

The demand for residential dwellings in an open space setting can best be accommodated at a density of no more than one dwelling unit per five acres. Development at this density can help minimize the impacts of such development on the natural resource base, on the demand for public facilities and services, and on the overall character of the rural environment.

STANDARD

a. Rural density residential development—defined as development at a density of no more than one dwelling unit per five acres—should be accommodated on a limited basis, in response to market demands for residential development in an open space setting, where consistent with other land use objectives, as determined in county and local plans.

OBJECTIVE NO. 2

A spatial distribution of the various land uses which will result in a convenient and compatible arrangement of land uses.

PRINCIPLE

The proper allocation of uses to land can avoid or minimize hazards and dangers to health, safety, and welfare and maximize amenity and convenience in terms of accessibility to supporting land uses.

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[g] *The industrial standard is intended to be representative of typical new single-story industrial development. It should be recognized that the number of industrial employees per acre can vary considerably from site to site, depending upon the nature of the manufacturing activity, the level of automation, the extent to which warehousing or office functions are located at the site, and other factors.*

[h] *The office standard is equivalent to a floor area ratio of 30 percent and a gross building area of about 325 square feet per employee. In situations where high-rise office buildings are common, such as in the Milwaukee central business district, the ratio of land area allocated for office use to the related office employment would be significantly lower—or, stated another way, the number of office employees per acre would be significantly higher.*

STANDARDS

1. Urban high-, medium-, and low-density residential uses should be located within neighborhood and other planning units which are served with centralized public sanitary sewerage and water supply facilities and contain, within a reasonable walking distance, necessary supporting local service uses, such as park, commercial, and elementary school facilities.

2. Mixed-used development designs should be used, as appropriate, to accommodate urban land uses that are compatible and complementary in the vicinity of each other.

3. To the extent practicable, residential and employment-generating land uses should be located so as to provide opportunities for living in proximity to work.

4. When accommodated, rural residential development should be located in such a way as to minimize conflicts attendant to dust, odors, and noise associated with farming activity that may arise when residences are located in the vicinity of agricultural operations. Rural residential development should also be located in such a way as to minimize impacts on the natural resource base including wildlife habitat.

OBJECTIVE NO. 3

A spatial distribution of the various land uses which maintains biodiversity and which will result in the preservation and wise use of the natural resources of the Region.

1. ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS[i]

PRINCIPLE

The preservation of environmental corridors and isolated natural resource areas in essentially natural, open use yields many benefits, including recharge and discharge of groundwater; maintenance of surface water and groundwater quality; attenuation of flood flows and flood stages; maintenance of base flows of streams and watercourses; reduction of soil erosion; abatement of air and noise pollution; provision of wildlife habitat; protection of plant and animal diversity; protection of rare and endangered species; maintenance of scenic beauty; and provision of opportunities for recreational, educational, and scientific pursuits. Conversely, since the environmental corridors and isolated natural resource areas are frequently poorly suited for urban development, their preservation can help avoid serious and costly development problems.[j]

STANDARDS

a. Primary environmental corridors should be preserved in essentially natural, open uses.

b. Secondary environmental corridors and isolated natural resource areas should be preserved in essentially natural, open uses to the extent practicable, as determined in county and local plans.

Uses considered to be compatible with the preservation of environmental corridors and isolated natural resource areas are indicated in Table 27, located at the end of this Chapter.

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[i] *Environmental corridors are elongated areas in the landscape which contain concentrations of natural resource features (lakes, rivers, streams, and their associated shorelands and floodlands; wetlands; woodlands; prairies; wildlife habitat areas; wet, poorly drained, and organic soils; and rugged terrain and high-relief topography) and natural resource-related features (existing park and open space sites; potential park and open space sites; historic sites; scenic areas and vistas; and natural areas and critical species habitat sites). Primary environmental corridors include a variety of these features and are at least 400 acres in size, two miles long, and 200 feet in width. Secondary environmental corridors also contain a variety of these features and are at least 100 acres in size and one mile in length. Isolated natural resource areas are smaller concentrations of natural resource features that are physically separated from the environmental corridors by intensive urban or agricultural uses; by definition, such areas are at least five acres in size.*

[j] *As used herein, the term "preserve" generally means to retain existing conditions. In some cases—for example, when used in relation to environmental corridors or isolated natural resource areas—this term has been specifically defined to indicate certain types of uses that are able to be accommodated while maintaining the overall integrity of the existing resources. The objectives and standards presented in this table indicate that certain areas should be preserved; they do not indicate the measures—such as public interest ownership, conservation easements, or land use regulation—that may be used to help assure the desired preservation. Such measures are dealt with in the plan and plan implementation chapters of this report.*

2. OTHER ENVIRONMENTALLY SENSITIVE AREAS

PRINCIPLE

Care in locating urban and rural development in relation to other environmentally sensitive areas can help to maintain the overall environmental quality of the Region and to avoid developmental problems.

STANDARDS

a. Small wetlands, woodlands, and prairies not identified as part of an environmental corridor or isolated natural resource area should be preserved to the extent practicable, as determined in county and local plans.[k]

b. All natural areas and critical species habitat sites as identified in the regional natural areas and critical species habitat protection and management plan should be preserved.[l]

c. One hundred-year recurrence interval floodlands should not be allocated to any development which would cause or be subject to flood damage; and no unauthorized structure should be allowed to encroach upon and obstruct the flow of water in perennial stream channels and floodways.

d. Urban and rural development should be directed away from areas which are covered by soils with severe limitations for the use concerned, to the extent practicable.

e. Potentially contaminating land uses should not be located in areas where the potential for groundwater contamination is the highest.

f. Land use development patterns and practices should be designed to preserve important groundwater recharge areas and should support maintaining the natural surface and groundwater hydrology to the extent practicable.[m]

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[k] *The following definitions are used throughout this report:*

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Woodlands are upland areas having 17 or more deciduous trees per acre each measuring at least four inches in diameter at breast height and having at least a 50 percent canopy cover. In addition, coniferous tree plantations and reforestation projects are defined as woodlands. Lowland wooded areas, such as tamarack swamps, are defined as wetlands because the water table in such areas is located at, near, or above the land surface and because such areas are generally characterized by hydric soils which support hydrophitic trees and shrubs.

Prairies are open, generally treeless areas which are dominated by native grasses. In southeastern Wisconsin, there are three types of prairies corresponding to soil moisture conditions: dry prairies, mesic prairies, and wet prairies. For purposes of this report, savannas, which are defined as areas dominated by native grasses but having between one and 17 trees per acre, are classified as prairies. In southeastern Wisconsin, there are two types of savannas: oak openings and cedar glades.

[l] *Natural areas are tracts of land or water so little modified by human activity, or which have sufficiently recovered from the effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European-settlement landscape. Critical species habitat sites consist of areas, located outside natural areas, which support endangered, threatened, or rare plant or animal species. Most of the identified natural areas and critical species habitat sites are located within the environmental corridors and isolated natural resource areas of the Region.*

[m] *The regional water supply system planning effort, initiated in 2005, will attempt to identify important groundwater recharge areas, and provide recommendations for their protection as appropriate.*

3. RESTORATION/ENHANCEMENT OF NATURAL CONDITIONS

PRINCIPLE

The restoration of farmland and other open space land to more natural conditions, resulting in the re-establishment or enhancement of wetlands, woodlands, prairies, grasslands, and forest interiors, can increase biodiversity and contribute to the overall environmental quality of the Region by providing additional functional values as set forth in No. 1 above.

STANDARD

a. Carefully planned efforts to restore farmland and other open space land to more natural conditions should be encouraged.

OBJECTIVE NO. 4

A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems in order to assure the economical provision of transportation, utility, and public facility services.

PRINCIPLE

The transportation and public utility facilities and the land use pattern which these facilities serve and support are mutually interdependent in that the land use pattern determines the demand for, and loadings upon, transportation and utility facilities; and these facilities, in turn, are essential to, and form a basic framework for, land use development.

STANDARDS

1. Urban development should be located and designed so as to maximize the use of existing transportation and utility systems.

2. The transportation system should be located and designed to serve not only all land presently devoted to urban development but to land planned to be used for such urban development.

3. The transportation system should be located and designed to minimize the penetration of existing and planned residential neighborhood units by through traffic.

4. Transportation terminal facilities, such as off-street parking, off-street truck loading, and public transit stops, should be located in proximity to the principal land uses to which they are accessory.

5. Land developed or planned to be developed for urban high-, medium-, and low-density residential use should be located in areas serviceable by an existing or planned public sanitary sewerage system and preferably within the gravity drainage area tributary to such a system.

6. Land developed or planned to be developed for urban high-, medium-, and low-density residential use should be located in areas serviceable by an existing or planned public water supply system.

7. Land developed or planned to be developed for urban high- and medium- density residential use should be located in areas serviceable by existing or planned public transit facilities.

8. Mixed use development should be encouraged to accommodate multi-purpose trips, including pedestrian trips, as a matter of convenience and efficiency.

9. In the absence of public sanitary sewer service, onsite sewage disposal systems should be utilized only in accordance with the following:

    a. Onsite soil absorption sewage disposal systems should be sited and designed in accordance with Chapter Comm 83 of the *Wisconsin Administrative Code.*

    b. The use of onsite sewage disposal systems should be limited to the following types of development:

        - Rural density residential development.

        - Sub-urban density residential development, limited, however, to areas already committed to such use through subdivision plats or certified surveys.

- Urban land uses which may be required in unsewered areas such as transportation-related businesses, agriculture-related businesses, communication facilities, utility installations, and park and recreation sites.

c. New urban development served by onsite sewage disposal systems in areas planned to receive sanitary sewer service should be discouraged. Where such development is permitted, it should be designed so that the public and private costs of conversion to public sanitary sewer service are minimized.

OBJECTIVE NO. 5

The development and preservation of residential areas within a physical environment that is healthy, safe, convenient, and attractive.[n]

1. NEIGHBORHOOD RESIDENTIAL DEVELOPMENT

PRINCIPLE

Residential development in the form of planned residential neighborhoods can provide a desirable environment for families as well as other household types; can provide efficiency in the provision of neighborhood services and facilities; and can foster safety and convenience.

STANDARDS

a. Urban high-, medium-, and low-density residential neighborhoods should be designed as cohesive units properly related to the larger community of which they are a part. Such neighborhoods should be physically self-contained within clearly defined and relatively permanent recognizable boundaries, such as arterial streets and highways, major park and open space reservations, or significant natural features, such as rivers, streams, or hills. Desirably, the neighborhoods should contain enough area to provide the following: housing for the population served by one elementary school and one neighborhood park; an interconnected internal street, bicycle-way, and pedestrian system which provides multiple opportunities for access and circulation; and those community and commercial facilities necessary to meet the day-to-day living requirements.[o]

To meet the foregoing standards, land should typically be allocated as follows:[p]

Land Use Category	Percent of Area in Land Development Category		
	Urban High-Density (7.0 or more dwelling units per net residential acre)	Urban Medium-Density (2.3-6.9 dwelling units per net residential acre)	Urban Low-Density (0.7-2.2 dwelling units per net residential acre)
Residential	66.0	71.0	76.5
Streets and Utilities	25.0	23.0	20.0
Parks and Playgrounds	3.5	2.5	1.5
Public Elementary Schools	2.5	1.5	0.5
Other Governmental and Institutional	1.5	1.0	1.0
Retail and Service	1.5	1.0	0.5
Nonurban	- -	- -	- -
Total	100.0	100.0	100.0

[n] *This objective does not address sub-urban density residential development (between 0.2 and 0.6 dwelling units per acre) since new sub-urban density residential development would be limited to that which is already committed in subdivision plats and certified surveys.*

[o] *Neighborhood sizes envisioned under these standards are as follows: high-density—160 acres; medium-density—640 acres; and low-density—2,560 acres. As a practical matter, smaller household sizes and the attendant lower neighborhood population levels often require that an elementary school or retail and service area be provided to serve two or more contiguous neighborhoods, rather than a single neighborhood.*

[p] *These standards are intended to be applied at the regional level of planning. It is recognized that these standards may be refined for application in county and community planning efforts.*

b. Desirably, urban residential neighborhoods should accommodate a mix of housing sizes, structure types, and lot sizes, resulting in an overall density that is within the planned density range for each neighborhood.

c. Conservation subdivision design concepts should be incorporated into urban residential neighborhoods, as appropriate.[q]

d. To the extent practicable, efforts directed at the conservation and renewal of existing residential areas should be undertaken on a neighborhood basis and should seek to preserve those cultural features which contribute to the promotion of neighborhood identity within the larger urban complex.

2. MIXED-USE RESIDENTIAL DEVELOPMENT

PRINCIPLE

Residential development in mixed-use settings can provide a desirable environment for a variety of household types seeking the benefits of proximity to places of employment as well as civic, cultural, commercial, and other urban amenities. Examples of mixed use settings include dwellings above the ground floor of commercial uses and residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or civic uses.

STANDARDS

a. Opportunities should be provided for residential dwellings—particularly in the medium- and high-density range—within a variety of mixed-use settings.

b. Residential uses should be integrated into, or located in close proximity to, major economic activity centers.

3. RURAL DENSITY RESIDENTIAL DEVELOPMENT

PRINCIPLE

Residential development in a rural setting can provide a desirable environment for households seeking proximity to open space.

STANDARDS

a. Rural residential development (residential development at a density of no more than one dwelling unit per five acres) should be located and designed to minimize impacts on the natural resource base, minimize impacts on the scenic beauty and character of rural areas, and minimize the loss of farmland covered by agricultural soil suitability Class I and Class II soils.

b. Conservation subdivision design concepts should be utilized in rural density residential development to the extent practicable.

OBJECTIVE NO. 6

The preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.

PRINCIPLE

The production and sale of goods and services are among the principal determinants of the level of economic vitality in any society; the important activities related to these functions require areas and locations suitable to their purposes.

[q] *Conservation subdivision designs generally involve locating dwelling units in clusters surrounded by open space, thereby achieving the desired density for the site on an overall basis. The layout of individual lots and supporting streets is done in a manner that preserves the most significant existing natural resource features to the extent practicable. In a rural setting, conservation subdivisions can include agricultural lands as part of the open space area that is planned to be preserved. The use of conservation subdivision designs should not reduce or increase the number of dwelling units from that which would be obtained through conventional designs.*

STANDARDS

1. Industrial, retail, and office uses should meet the following standards:

    a. Available adequate water supply, sanitary sewer service, stormwater drainage facilities, and power supply.
    b. Ready access to the arterial street and highway system.
    c. Adequate on-street and off-street parking and loading areas.
    d. Provision of properly located points of ingress and egress appropriately controlled to prevent congestion on adjacent arterial streets.
    e. Site design emphasizing integrated nodes or centers, rather than linear strips.
    f. Site design appropriately integrating the site with adjacent land uses.
    g. Served by local transit service (applies to industrial, retail, and office uses located within, or in proximity to, medium- and high-density areas).[r]

2. In addition, major centers accommodating industrial, retail, and office development should meet the following standards:[s]

    a. Served by rapid and express transit service.
    b. Access within two miles of the freeway system.
    c. Access to a transport-corporate airport within a maximum travel time of 30 minutes (major office and industrial development).[t]
    d. Reasonable access through appropriate components of the transportation system to railway and seaport facilities, consistent with the requirements of the industries concerned (major industrial development).
    e. Residential uses appropriately integrated into, or located in proximity to, the major center.

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[r] *It should be recognized that industrial, retail, and office uses located in outlying areas may not be able to be served by transit service.*

[s] *A major economic activity center is defined as a concentrated area of commercial and/or industrial land having a minimum of 3,500 total employees or 2,000 retail employees. Major economic activity centers are further classified according to the following employment levels, recognizing that a major economic activity center may meet more than one of the indicated thresholds:*

Major industrial center: A major economic activity center that accommodates at least 3,500 industrial employees.

Major office center: A major economic activity center that accommodates at least 3,500 office employees.

Major retail center: A major economic activity center that accommodates at least 2,000 retail employees.

General-purpose major center: A center that qualifies as a major economic activity center having total employment of at least 3,500, but does not meet any of the above individual thresholds for an industrial, office, or retail center.

It should be recognized that major industrial, office, and retail centers generally encompass a mix of uses. A major industrial center may accommodate offices, service operations, and research facilities in addition to manufacturing, wholesaling, and distribution facilities. A major retail center may accommodate office and service uses in addition to retail operations. The mix of uses extends to residential uses—which should be integrated into, or provided in close proximity to, major economic activity centers, as those centers develop or are re-developed.

[t] *A transport-corporate airport is defined as an airport that is intended to serve business and corporate jets as well as virtually all small single- and twin-engine general aviation aircraft. Existing and proposed transport-corporate airports in the Region are identified in the regional airport system plan, documented in SEWRPC Planning Report No. 38 (2nd Edition),* A Regional Airport System Plan for Southeastern Wisconsin: 2010*, November 1996.*

OBJECTIVE NO. 7

The conservation, renewal, and full use of existing urban areas of the Region.

PRINCIPLE

The conservation and renewal, as appropriate, of existing urban areas can enhance their viability and desirability as places to live, work, recreate, and participate in cultural activities. Such efforts, along with infill development on vacant land within existing urban service areas, serves to maximize the use of existing public infrastructure and public service systems and can moderate the amount of agricultural and other open space land converted to urban use to accommodate growth in the regional population and economy.

STANDARDS

1. Existing urban areas should be conserved and renewed, as appropriate.

2. To the extent practicable, the additional urban land necessary to accommodate growth in the regional population and economy should be met through the renewal or redevelopment as appropriate of older, underutilized urban areas that are in need of revitalization and through the infilling of undeveloped land within existing urban service areas.

OBJECTIVE NO. 8

The preservation of productive agricultural land.

PRINCIPLE

The preservation of productive agricultural land is important for meeting future needs for food and fiber. Agricultural areas, in addition to providing food and fiber, can provide wildlife habitat and contribute to the maintenance of an ecological balance between plants and animals. Moreover, the preservation of agricultural areas also contributes immeasurably to the maintenance of the scenic beauty and cultural heritage of the Region. Maintaining agricultural lands near urban areas can facilitate desirable and efficient production-distribution relationships, including community-supported agriculture operations. The preservation of agricultural lands can maximize return on investments in agricultural soil and water conservation practices; minimize conflicts between farming operations and urban land uses; and help maintain an important component of the economic base of the Region.

STANDARD

1. The most productive soils, those designated by the U. S. Natural Resources Conservation Service as comprising agricultural soil capability Classes I and II, should be preserved for agricultural use, to the extent practicable, recognizing that certain Class I and Class II farmland will have to be converted to urban use in order to accommodate the orderly expansion of urban service areas within the Region.

OBJECTIVE NO. 9

The preservation and provision of open space[u] to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and provide opportunities for a full range of outdoor recreational activities.

PRINCIPLE

Open space is the fundamental element required for the preservation and wise use of such natural resources as soil, water, woodlands, wetlands, native vegetation, and wildlife; it provides the opportunity to add to the physical, intellectual, and spiritual growth of the population; it enhances the economic and aesthetic value of certain types of development; and it is essential to outdoor recreational pursuits.

[u] *Open space is defined as land or water areas which are generally undeveloped for urban residential, commercial, or industrial uses and which are or can be considered relatively permanent in character. It includes areas devoted to park and recreational uses and to large land-consuming institutional uses, as well as areas devoted to agricultural use and to resource conservation, whether publicly or privately owned.*

STANDARDS

1. Attainment of the standards pertaining to the preservation of environmentally significant lands under Objective No. 3 and the preservation of agricultural lands under Objective No. 8, would ensure the maintenance of an integrated system of open space lands within the Region. In addition, the following standards should be met:

    a. Major park and recreation sites providing opportunities for a variety of resource-oriented outdoor recreational activities should be provided within a 10-mile service radius of every dwelling unit in the Region, and should have a minimum gross site area of 250 acres.

    b. Other park and recreation sites should be provided within a maximum service radius of one mile of every dwelling unit in an urban area, and should have a minimum gross site area of five acres.

    c. Areas having unique scientific, cultural, scenic, or educational value should not be allocated to any urban or agricultural land uses; adjacent surrounding areas should be retained in open space use, such as agricultural or limited recreational uses.

Table 27

GUIDELINES FOR DEVELOPMENT CONSIDERED COMPATIBLE WITH ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS

Component Natural Resource and Related Features within Environmental Corridors[a]	Permitted Development																
	Transportation and Utility Facilities (see General Development Guidelines below)				Recreational Facilities (see General Development Guidelines below)											Rural Density Residential Development (see General Development Guidelines below)	Other Development (See General Development Guidelines below)
	Streets and Highways	Utility Lines and Related Facilities	Engineered Stormwater Management Facilities	Engineered Flood Control Facilities[b]	Trails[c]	Picnic Areas	Family Camping[d]	Swimming Beaches	Boat Access	Ski Hills	Golf	Playfields	Hard-Surface Courts	Parking	Buildings		
Lakes, Rivers, and Streams	- -[e]	- -[f,g]	- -	- -[h]	- -[i]	- -	- -	X	X	- -	- -	- -	- -	- -	- -	- -	- -
Shoreland	X	X	X	X	X	X	- -	X	X	- -	X	- -	- -	X	X[j]	- -	- -
Floodplain	- -[k]	X	X	X	X	X	- -	X	X	- -	X	X	- -	X	X[l]	- -	- -
Wetland[m]	- -[k]	X	- -	- -	X[n]	- -	- -	- -	X	- -	- -[o]	- -	- -	- -	- -	- -	- -
Wet Soils	X	X	X	X	X	- -	- -	X	X	- -	X	- -	- -	X	- -	- -	- -
Woodland	X	X	X[p]	- -	X	X	X	- -	X	X	X	X	X	X	X[q]	X	X
Wildlife Habitat	X	X	X	- -	X	X	X	- -	X	X	X	X	X	X	X	X	X
Steep Slope	X	X	- -	- -	- -[r]	- -	- -	- -	- -	X[s]	X	- -	- -	- -	- -	- -	- -
Prairie	- -	- -[g]	- -	- -	- -[r]	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Park	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	- -	- -
Historic Site	- -	- -[g]	- -	- -	- -[r]	- -	- -	- -	- -	- -	- -	- -	- -	X	- -	- -	- -
Scenic Viewpoint	X	X	- -	- -	X	X	X	- -	X	X	X	- -	- -	X	X	X	X
Natural Area or Critical Species Habitat Site	- -	- -	- -	- -	- -[q]	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

NOTE: An “X” indicates that facility development is permitted within the specified natural resource feature. In those portions of the environmental corridors having more than one of the listed natural resource features, the natural resource feature with the most restrictive development limitation should take precedence.

APPLICABILITY

These guidelines indicate the types of development that can be accommodated within primary and secondary environmental corridors and isolated natural resource areas while maintaining the basic integrity of those areas. Throughout this table, the term “environmental corridors” refers to primary and secondary environmental corridors and isolated natural resource areas.

Under the regional plan:

- As regionally significant resource areas, primary environmental corridors should be preserved in essentially natural, open use—in accordance with the guidelines in this table.
- Secondary environmental corridors and isolated natural resource areas warrant consideration for preservation in essentially natural open use, as determined in county and local plans and in a manner consistent with State and Federal regulations. County and local units of government may choose to apply the guidelines in this table to secondary environmental corridors and isolated natural resource areas.

GENERAL DEVELOPMENT GUIDELINES

- Transportation and Utility Facilities: All transportation and utility facilities proposed to be located within the important natural resources should be evaluated on a case-by-case basis to consider alternative locations for such facilities. If it is determined that such facilities should be located within natural resources, development activities should be sensitive to, and minimize disturbance of, these resources, and, to the extent possible following construction, such resources should be restored to preconstruction conditions.

  The above table presents development guidelines for major transportation and utility facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Recreational Facilities: In general, no more than 20 percent of the total environmental corridor area should be developed for recreational facilities. Furthermore, no more than 20 percent of the environmental corridor area consisting of upland wildlife habitat and woodlands should be developed for recreational facilities. It is recognized, however, that in certain cases these percentages may be exceeded in efforts to accommodate needed public recreational and game and fish management facilities within appropriate natural settings. In all cases however, the proposed recreational development should not threaten the integrity of the remaining corridor lands nor destroy particularly significant resource elements in that corridor. Each such proposal should be reviewed on a site-by-site basis.

  The above table presents development guidelines for major recreational facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Rural Density Residential Development: Rural density residential development may be accommodated in upland environmental corridors, provided that buildings are kept off steep slopes. The maximum number of housing units accommodated at a proposed development site within the environmental corridor should be limited to the number determined by dividing the total corridor acreage within the site, less the acreage covered by surface water and wetlands, by five. The permitted housing units may be in single-family or multi-family structures. When rural residential development is accommodated, conservation subdivision designs are strongly encouraged.
- Other Development: In lieu of recreational or rural density residential development, up to 10 percent of the upland corridor area in a parcel may be disturbed in order to accommodate urban residential, commercial, or other urban development under the following conditions: 1) the area to be disturbed is compact rather than scattered in nature; 2) the disturbance area is located on the edge of a corridor or on marginal resources within a corridor; 3) the development does not threaten the integrity of the remaining corridor; 4) the development does not result in significant adverse water quality impacts; and 5) development of the remaining corridor lands is prohibited by a conservation easement or deed restriction. Each such proposal must be reviewed on a site-by-site basis.

  Under this arrangement, while the developed area would no longer be part of the environmental corridor, the entirety of the remaining corridor would be permanently preserved from disturbance. From a resource protection point of view, preserving a minimum of 90 percent of the environmental corridor in this manner may be preferable to accommodating scattered homesites and attendant access roads at an overall density of one dwelling unit per five acres throughout the upland corridor areas.
- Pre-Existing Lots: Single-family development on existing lots of record should be permitted as provided for under county or local zoning at the time of adoption of the land use plan.
- All permitted development presumes that sound land and water management practices are utilized.

FOOTNOTES TO TABLE 27

[a]*The natural resource and related features are defined as follows:*

Lakes, Rivers, and Streams: Includes all lakes greater than five acres in area and all perennial and intermittent streams as shown on U. S. Geological Survey quadrangle maps.
Shoreland: Includes a band 50 feet in depth along both sides of intermittent streams; a band 75 feet in depth along both sides of perennial streams; a band 75 feet in depth around lakes; and a band 200 feet in depth along the Lake Michigan shoreline.
Floodplain: Includes areas, excluding stream channels and lake beds, subject to inundation by the 100-year recurrence interval flood event.
Wetlands: Includes areas that are inundated or saturated by surface water or groundwater at a frequency, and with a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
Wet Soils: Includes areas covered by wet, poorly drained, and organic soils.
Woodlands: Includes areas one acre or more in size having 17 or more deciduous trees per acre with at least a 50 percent canopy cover as well as coniferous tree plantations and reforestation projects; excludes lowland woodlands, such as tamarack swamps, which are classified as wetlands.
Wildlife Habitat: Includes areas devoted to natural open uses of a size and with a vegetative cover capable of supporting a balanced diversity of wildlife.
Steep Slope: Includes areas with land slopes of 12 percent or greater.
Prairies: Includes open, generally treeless areas which are dominated by native grasses; also includes savannas.
Park: Includes public and nonpublic park and open space sites.
Historic Site: Includes sites listed on the National Register of Historic Places. Most historic sites located within environmental corridors are archeological features such as American Indian settlements and effigy mounds and cultural features such as small, old cemeteries. On a limited basis, small historic buildings may also be encompassed within delineated corridors.
Scenic Viewpoint: Includes vantage points from which a diversity of natural features such as surface waters, wetlands, woodlands, and agricultural lands can be observed.
Natural Area and Critical Species Habitat Sites: Includes natural areas and critical species habitat sites as identified in the regional natural areas and critical species habitat protection and management plan.

[b]*Includes such improvements as stream channel modifications and such facilities as dams.*

[c]*Includes trails for such activities as hiking, bicycling, cross-country skiing, nature study, and horseback riding, and excludes all motorized trail activities. It should be recognized that trails for motorized activities such as snowmobiling that are located outside the environmental corridors may of necessity have to cross environmental corridor lands. Proposals for such crossings should be evaluated on a case-by-case basis, and if it is determined that they are necessary, such trail crossings should be designed to ensure minimum disturbance of the natural resources.*

[d]*Includes areas intended to accommodate camping in tents, trailers, or recreational vehicles which remain at the site for short periods of time, typically ranging from an overnight stay to a two-week stay.*

[e]*Certain transportation facilities such as bridges may be constructed over such resources.*

[f]*Utility facilities such as sanitary sewers may be located in or under such resources.*

[g]*Electric power transmission lines and similar lines may be suspended over such resources.*

[h]*Certain flood control facilities such as dams and channel modifications may need to be provided in such resources to reduce or eliminate flood damage to existing development.*

[i]*Bridges for trail facilities may be constructed over such resources.*

[j]*Consistent with Chapter NR 115 of the* Wisconsin Administrative Code*.*

[k]*Streets and highways may cross such resources. Where this occurs, there should be no net loss of flood storage capacity or wetlands. Guidelines for mitigation of impacts on wetlands by Wisconsin Department of Transportation facility projects are set forth in Chapter Trans 400 of the* Wisconsin Administrative Code.

[l]*Consistent with Chapter NR 116 of the* Wisconsin Administrative Code*.*

[m]*Any development affecting wetlands must adhere to the water quality standards for wetlands established under Chapter NR 103 of the* Wisconsin Administrative Code*.*

[n]*Only an appropriately designed boardwalk/trail should be permitted.*

[o]*Wetlands may be incorporated as part of a golf course, provided there is no disturbance of the wetlands.*

[p]*Generally excludes detention, retention, and infiltration basins. Such facilities should be permitted only if no reasonable alternative is available.*

[q]*Only if no alternative is available.*

[r]*Only appropriately designed and located hiking and cross-country ski trails should be permitted.*

[s]*Only an appropriately designed, vegetated, and maintained ski hill should be permitted.*

Source: SEWRPC.

Chapter V

POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS

INTRODUCTION

In any planning effort, forecasts are required of those future events and conditions which are outside the scope of the plan but which will affect plan design and implementation. In the preparation of the regional land use plan, the future demand for land which the plan must seek to accommodate depends primarily upon future population, household, and employment levels. Control of changes in such levels lies largely outside the scope of governmental activity and outside the scope of the physical planning process. Future population, household, and employment levels must therefore be forecast, with land use and supporting facility plans being designed to accommodate forecast conditions.

Following major analyses of the regional population and economy, the Commission in 2004 completed projections of population, households, and employment for the Region for the period from 2000 to 2035 as a basis for the preparation of the year 2035 regional land use and transportation plans and for updating other elements of the comprehensive plan for the Region. The projections took into account the results of the 2000 Federal census and the most recent economic base data available. The projections were prepared under the guidance of the Commission's Advisory Committee on Regional Population and Economic Forecasts, consisting of individuals from the public and private sectors who have backgrounds and expertise in the area of socioeconomic projections and who are familiar with population and economic trends within the Region.

This chapter presents an overview of the methodology and assumptions that underlie the new population, household, and employment projections, along with the projections themselves. The new employment projections are fully documented in SEWRPC Technical Report No. 10 (4th Edition), *The Economy of Southeastern Wisconsin*. The new population and household projections are fully documented in SEWRPC Technical Report No. 11 (4th Edition), *The Population of Southeastern Wisconsin*. These two reports were prepared in tandem to ensure consistency between the Commission's long-range population, household, and employment projections.

As in prior similar studies, the Commission once again projected a range of future population, household, and employment levels—high, intermediate, and low—for the Region. This approach recognizes the uncertainty that surrounds any effort to predict future socioeconomic conditions. The intermediate projection is considered the most likely to be achieved for the Region overall, and, in this sense, constitutes the Commission's "forecast,"

intended to be used as a basis for the preparation of the regional land use and transportation plans.[1] The high and low projections are intended to provide an indication of the range of population, household, and employment levels which could conceivably be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

PROJECTION METHODOLOGY AND ASSUMPTIONS

This section provides an overview of the methodology and assumptions used in the preparation of the population, household, and employment projections for the year 2035. The projection methodology and assumptions are documented in detail in the aforereferenced technical reports.

Employment Projections—Methodology and Assumptions

Future employment levels in the Region may be expected to be strongly influenced by the strength of the regional economy relative to the rest of the State and Nation. The Commission's recently completed economic study found no reason to conclude that the regional economy is likely to significantly increase or decrease in strength relative to the State or Nation over the course of the projection period. While there are some indications that the Region's economy has diminished marginally relative to the State and Nation over the past several decades—for example, a gradual decline in the Region's share of total State and national employment, as reported in Chapter II—a material change in the relative competitiveness of the regional economy has not occurred, and is not expected.

The intermediate employment projection for the Region reflects the foregoing general economic outlook. It assumes that the regional economy would generally maintain its competitive position, but would not significantly increase or decrease in strength relative to the rest of the State and Nation. The high projection, on the other hand, would be expected to be achieved only if the regional economy were to become significantly more competitive relative to the State and Nation, resulting in the creation of a significantly greater number of employment opportunities, and inducing a substantial net in-migration of workers to fill those jobs. Conversely, the low projection would be expected to be achieved only with a stagnating regional economy that becomes substantially less competitive in relation to the rest of the State and Nation in the coming decades.

Procedurally, the Commission utilized a disaggregate approach to the preparation of employment projections. As applied by the Commission, this approach involves the explicit consideration of employment in "dominant" and "subdominant" industry groups, along with certain residual groups, and the preparation of projections for those groups. "Dominant" industries are those which account for at least 4.0 percent of total regional employment; "subdominant" industries are those which account for 2.0 percent to 3.9 percent.

The employment-level projections for each industry were developed based upon a consideration of past industry trends, available indicators of future trends nationally and in the State and Region, and relative industry and sector strength in the Region as compared to State and national industries and sectors. Projections by State agencies and other recently published projections were consulted. The projected employment levels take into account the employment declines of the 2001 recession and use 2003 data estimates as the last historical data points.

Still another important consideration in the preparation of the employment projections was the future available labor force in the Region. Commission population projections indicate that a leveling-off in the regional labor force may be expected, particularly toward the middle of the projection period, as much of the baby-boom generation (those born from 1946 through 1964) reaches retirement age. This leveling-off in the labor force may be expected to moderate the number of jobs able to be accommodated in the Region.

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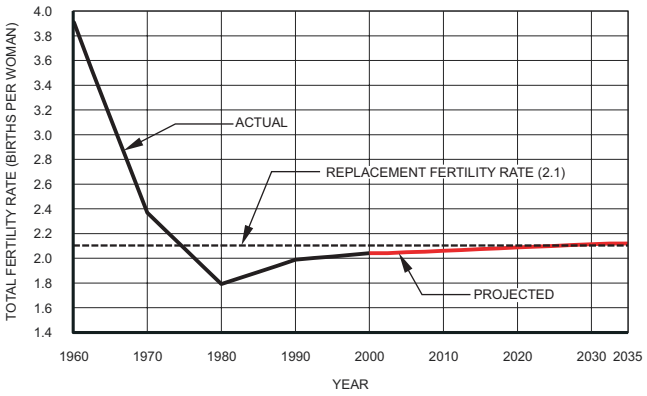
[1] *This usage is consistent with the generally accepted distinction between the terms "projection" and "forecast." A projection is an indication of the future value of a variable, such as population or employment levels, under a set of assumptions which affect that variable. Typically, more than one projection is developed, each with its own set of assumptions. A forecast, on the other hand, involves an element of judgment, it being the projection deemed most likely to occur.*

Figure 11

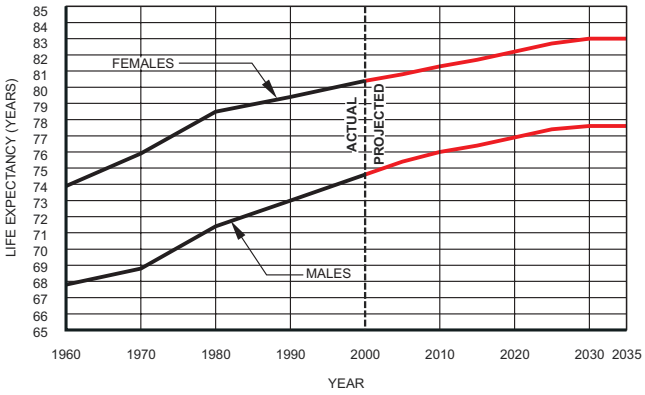
HISTORIC AND PROJECTED TOTAL FERTILITY RATE FOR THE REGION



Source: U.S. Bureau of the Census, Wisconsin Department of Health and Family Services, and SEWRPC.

Figure 12

HISTORIC AND PROJECTED LIFE EXPECTANCY FOR THE REGION



Source: U.S. Bureau of the Census, Wisconsin Department of Health and Family Services, and SEWRPC.

Population Projections—Methodology and Assumptions

The intermediate population projection was developed using a cohort-component population projection model, with specific assumptions made regarding vital events that affect population levels—births, deaths, and migration.[2] In general, the intermediate population projection envisions a modest increase in fertility rates, a modest improvement in survival rates, and a relatively stable migration pattern for the Region overall in the coming decades.

As shown in Figure 11, the Region's total fertility rate increased slightly during the 1990s, from 1.99 births per childbearing-age female in 1990 to 2.04 in 2000. The intermediate projection assumes a long-term gradual increase in the total fertility rate to a level of 2.12 births per childbearing-age female in 2035. The fertility rate assumption is based partially upon a consideration of past fertility rate trends in the Region; U.S. Census Bureau fertility rate projections for the Nation; and Wisconsin Department of Administration fertility rate projections for the State.[3]

The intermediate population projection assumes a modest increase in survival rates over the course of the projection period. At the regional level, the relative rates of change in survival rates assumed in the Commission projections are the same as the rates of change in survival rates projected by the Wisconsin Department of Administration for the State overall. With the assumed improvement in survival rates, the male life expectancy in the Region would increase from an estimated 74.7 years in 2000 to 77.6 years in 2035. Female life expectancy would increase from 80.4 years in 2000 to 83.0 years in 2035 (see Figure 12).

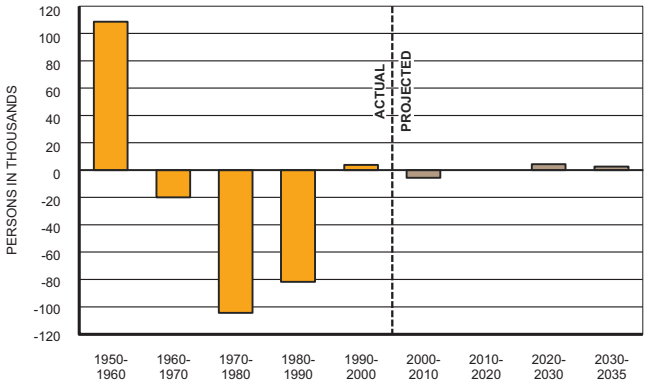
The migration assumptions underlying the Commission intermediate population projections were developed within the context of what is considered to be the most likely future economic growth scenario for the Region. As noted above, under the concurrent Commission economic study, it was concluded that, overall, the economy of

[2] *The cohort-component model is a widely used population projection method. Its name reflects the fact that the method involves disaggregating the population into cohorts, or subgroups, based upon characteristics such as age and gender, and explicitly considering the three components of population change—births, deaths, and migration—with respect to each cohort.*

[3] *The Wisconsin Department of Administration completed a set of population projections the State for the period from 2000 to 2030 in 2004.*

Figure 13

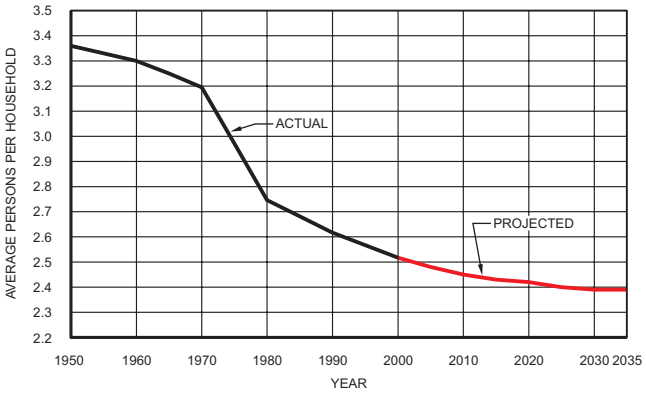
HISTORIC AND PROJECTED NET MIGRATION FOR THE REGION: 1950-2035



Source: U.S. Bureau of the Census, Wisconsin Department of Health and Family Services, and SEWRPC.

Figure 14

ACTUAL AND PROJECTED HOUSEHOLD SIZE FOR THE REGION: 1950-2035



Source: U.S. Bureau of the Census and SEWRPC.

Southeastern Wisconsin is not likely to significantly increase or decrease in strength relative to other areas of the State or Nation. Under this assumption, major changes in population migration patterns for the Region from the recent past would not be expected. Accordingly, the intermediate population projection envisions a relatively stable migration pattern for the Region, with minimal net migration anticipated for the Region overall throughout the projection period (see Figure 13).

The development of the high and low population projections involved less mathematical formulation than the intermediate projection, and relied heavily upon the professional judgment and experience of the Forecast Advisory Committee and Commission staff. The projections are the result of careful consideration by the Committee and the staff of factors having the potential to augment or dampen future population growth in the Region. The resulting projections represent the Committee and staff consensus regarding conceivable high and low population levels for the Region. In deliberating on the possible range of future population levels, the Advisory Committee and the Commission staff identified the relative strength of the regional economy as the primary factor which could result in future population levels significantly greater or less than the intermediate projection. Implicit in the high population projection is an assumption that the regional economy would become significantly more competitive, creating an increased demand for workers and inducing a substantial net in-migration of people to meet that demand. Implicit in the low population projection is a significantly less competitive regional economy, resulting in an out-migration of population, as workers move to areas experiencing stronger economic growth. In developing the high and low population projections, an effort was made to ensure consistency between those projections and the corresponding high and low employment level projections developed under the concurrent Commission study of the regional economy.

Household Projections—Methodology and Assumptions

Accompanying the changes in the size of the resident population of the Region will be changes in the number and size of households. In the preparation of the intermediate household projections, it was assumed that, over the course of the projection period, the relative shares of the population residing in households and group quarters by age group would not change significantly from the current situation. It was further assumed that the average household size in the Region would continue to decrease, but not as rapidly as in the past (see Figure 14).

Table 28

ACTUAL AND PROJECTED EMPLOYMENT IN THE REGION BY COUNTY: 2000-2035

Data Item	Kenosha County			Milwaukee County			Ozaukee County			Racine County		
Actual Employment: 2000	68,700			624,600			50,800			94,400		
Percent of Region: 2000	5.6			51.1			4.2			7.7		
Projected Employment:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	71,800	71,400	71,000	591,100	587,600	584,400	51,400	51,200	50,900	92,400	91,900	91,400
2010	77,100	75,300	73,600	615,600	600,800	587,900	55,700	54,300	53,100	97,900	95,500	93,500
2015	82,500	78,900	75,900	638,600	610,600	587,900	60,000	57,300	55,200	103,100	98,600	94,900
2020	86,200	80,800	76,900	651,100	611,100	581,200	62,800	59,000	56,100	106,900	100,300	95,400
2025	88,600	81,900	77,200	663,500	613,400	578,000	64,600	59,700	56,300	109,300	101,100	95,200
2030	91,100	83,300	77,800	676,400	618,100	577,300	66,300	60,600	56,600	111,900	102,300	95,500
2035	93,700	85,000	78,700	689,500	624,900	578,900	68,100	61,700	57,200	114,700	104,000	96,300
Projected Change: 2000-2035												
Employment	25,000	16,300	10,000	64,900	300	-45,700	17,300	10,900	6,400	20,300	9,600	1,900
Percent	36.4	23.7	14.6	10.4	- -[a]	-7.3	34.1	21.5	12.6	21.5	10.2	2.0
Percent of Region: 2035	6.2	6.2	6.2	45.7	45.7	45.7	4.5	4.5	4.5	7.6	7.6	7.6

Data Item	Walworth County			Washington County			Waukesha County			Region		
Actual Employment: 2000	51,800			61,700			270,800			1,222,800		
Percent of Region: 2000	4.2			5.0			22.2			100.0		
Projected Employment:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	53,800	53,500	53,200	64,000	63,700	63,300	272,800	271,300	269,800	1,197,300	1,190,600	1,184,000
2010	58,500	57,100	55,900	69,600	68,000	66,500	296,200	289,100	282,800	1,270,600	1,240,100	1,213,300
2015	63,300	60,600	58,300	75,400	72,100	69,500	320,300	306,300	294,900	1,343,200	1,284,400	1,236,600
2020	67,000	62,900	59,800	79,600	74,700	71,000	340,300	319,400	303,800	1,393,900	1,308,200	1,244,200
2025	69,200	64,000	60,300	81,900	75,700	71,300	354,100	327,300	308,400	1,431,200	1,323,100	1,246,700
2030	71,500	65,300	61,000	84,300	77,000	71,900	368,300	336,500	314,400	1,469,800	1,343,100	1,254,500
2035	73,800	66,900	62,000	86,700	78,600	72,800	383,100	347,200	321,600	1,509,600	1,368,300	1,267,500
Projected Change: 2000-2035												
Employment	22,000	15,100	10,200	25,000	16,900	11,100	112,300	76,400	50,800	286,800	145,500	44,700
Percent	42.5	29.2	19.7	40.5	27.4	18.0	41.5	28.2	18.8	23.5	11.9	3.7
Percent of Region: 2035	4.9	4.9	4.9	5.7	5.7	5.7	25.4	25.4	25.4	100.0	100.0	100.0

[a]Less than 0.1 percent

Source: U. S. Bureau of Economic Analysis and SEWRPC.

In developing the high and low household projections, it was assumed that the relative strength of the regional economy in the years ahead would not have a significant effect on the size of households in the Region, and, accordingly, that the trend in household size might be expected to be similar under high-, intermediate-, and low-growth conditions in the Region. It was also assumed that the relative shares of the total population residing in households and in group quarters would be similar under high-, intermediate-, and low-growth conditions.

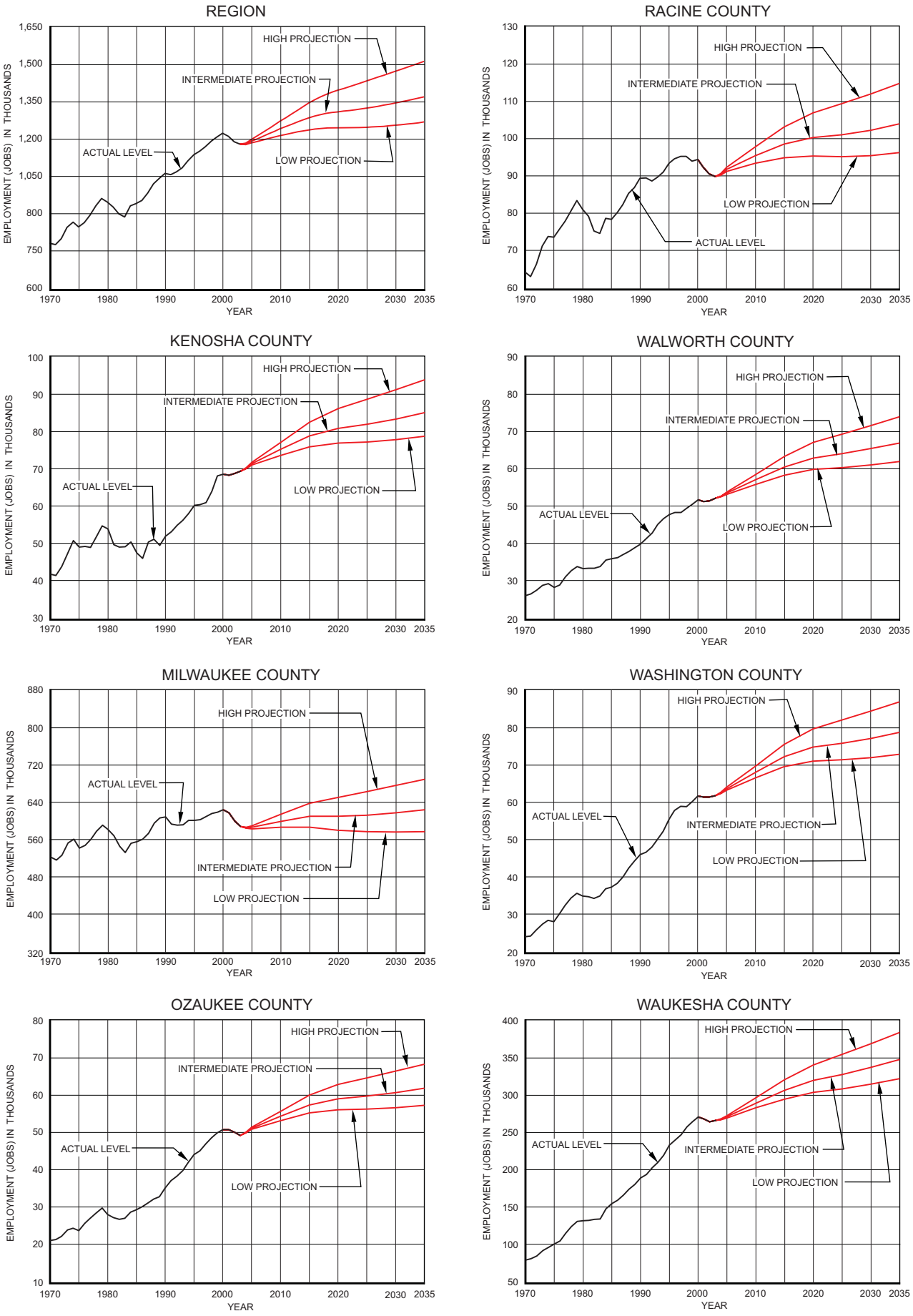
EMPLOYMENT PROJECTIONS

Commission employment projections for the year 2035 are presented in Table 28 and in Figure 15. Under the intermediate projection, total employment in the Region would recover from the reduced levels of the early 2000s, experiencing fairly strong growth until about the middle of the projection period. At that time, employment growth is projected to moderate, coinciding with an anticipated leveling-off in the labor force, particularly as large numbers of baby-boomers retire. Relatively modest employment growth is envisioned over the last 10 years of the projection period. The intermediate projection envisions total employment of 1,368,300 jobs in the Region in 2035, an increase of 145,500 jobs, or 12 percent, over the 2000 level of 1,222,800 jobs.[4] The high projection indicates that employment in the Region could be as high as 1,509,600 jobs in 2035, an increase of about 286,800 jobs, or 24 percent, over the 2000 level. The low projection indicates that employment in the Region could be as low as 1,267,500 jobs in 2035, about 44,700 jobs, or 4 percent, over the 2000 level.

[4] *The intermediate projection of a 12 percent increase in total regional employment over the 35-year period from 2000 to 2035 compares to the forecast increase of 20 percent over the 30-year period from 1990 to 2020 indicated in the previous Commission forecast prepared in 1995. The intermediate projection of 1,368,300 jobs for the year 2035 is 7 percent greater than the figure of 1,277,100 jobs for the year 2020 indicated in the previous forecast.*

Figure 15

ACTUAL AND PROJECTED EMPLOYMENT IN THE REGION BY COUNTY: 1970-2035



Source: U.S. Bureau of Economic Analysis and SEWRPC.

Table 29

PROJECTED EMPLOYMENT BY INDUSTRY GROUP IN THE REGION: 2035

Industry	2000 Employment		Projected 2035 Employment					
			High		Intermediate		Low	
	Number of Jobs	Percent of Total	Number of Jobs	Percent of Total	Number of Jobs	Percent of Total	Number of Jobs	Percent of Total
Manufacturing:								
Printing and Publishing	24,500	2.0	27,900	1.8	24,700	1.8	22,800	1.8
Fabricated Metal Products	25,600	2.1	12,800	0.9	11,600	0.9	10,700	0.9
Industrial Machinery and Equipment	48,000	3.9	27,800	1.8	24,900	1.8	22,900	1.8
Electronic and Other Electrical Equipment	27,000	2.2	16,800	1.1	15,300	1.1	14,100	1.1
All Other Manufacturing	99,200	8.1	89,400	5.9	83,900	6.1	77,600	6.1
Subtotal Manufacturing	224,300	18.3	174,700	11.5	160,400	11.7	148,100	11.7
Construction	53,800	4.4	62,600	4.1	57,100	4.2	53,200	4.2
Retail Trade	193,700	15.8	223,900	14.8	205,400	15.0	190,600	15.0
Wholesale Trade	64,400	5.3	68,800	4.6	64,400	4.7	59,600	4.7
Transportation, Communication, and Utilities	54,800	4.5	56,700	3.8	51,100	3.7	47,800	3.8
Services:								
Business Services	102,800	8.4	188,200	12.5	164,600	12.0	152,500	12.0
Health Services	97,700	8.0	148,100	9.8	132,000	9.7	122,400	9.7
Social Services	34,300	2.8	69,900	4.6	62,100	4.5	57,400	4.5
All Other Services	171,200	14.0	257,500	17.1	231,300	16.9	213,300	16.8
Subtotal Services	406,000	33.2	663,700	44.0	590,000	43.1	545,600	43.0
Finance, Insurance, and Real Estate	93,700	7.7	113,200	7.5	103,600	7.6	96,400	7.6
Government and Government Enterprises[a]	114,400	9.3	123,100	8.2	115,300	8.4	106,900	8.4
Agriculture	6,000	0.5	5,200	0.3	4,800	0.4	4,500	0.4
Other[b]	11,700	1.0	17,700	1.2	16,200	1.2	14,800	1.2
Total Regional Employment	1,222,800	100.0	1,509,600	100.0	1,368,300	100.0	1,267,500	100.0

[a] *Includes all nonmilitary government agencies and enterprises, regardless of SIC code.*

[b] *Includes agricultural services, forestry, commercial fishing, mining, and unclassified jobs.*

Source: U.S. Bureau of Economic Analysis and SEWRPC.

Commission projections for the year 2035 envision a continuation of historic change in the distribution of jobs within the Region but at a moderated pace. It is envisioned that Milwaukee County's share of total regional employment would decrease by just over 5 percentage points between 2000 and 2035, while Waukesha County's share would increase by just over 3 percentage points. It is further envisioned that Kenosha, Ozaukee, Walworth, and Washington Counties would experience increases in their share of total regional employment of less than 1 percentage point and that Racine County's relative share would remain essentially unchanged.

The sectoral changes—particularly, a shift from a goods producing economy to a services providing economy—that have occurred in the Region in recent decades are projected to continue (see Table 29). The general outlook for manufacturing in the Region does not appear promising, except for the printing and publishing sector. A key factor expected to impact the manufacturing sector in the Region, and for that matter the State and the Nation, is the movement of jobs overseas. Overseas labor, particularly in Asia, is substantially cheaper than the American counterpart. Low overseas labor costs more than offset the transportation costs of raw materials and finished goods to market. Some of this dynamic will change as the overseas demand for personnel and material raises prices, decreasing the margins for goods produced overseas. However, that shift is not expected to offset job losses in U.S. manufacturing over the foreseeable future. Also affecting manufacturing employment in the Region, State, and Nation is productivity gains in the sector. Manufacturing output continues to increase, but it is done with less labor. As a result, there is relatively less demand for manufacturing labor even within growing manufacturing industries.

Employment in the services sector may be expected to experience substantial growth, continuing a trend that is now decades old. Employment in the business services sector, in particular, may be expected to experience significant growth. As companies focus on core competencies, cost competition, and market expansion, many tasks that were completed in-house will be subcontracted to other firms specializing in auxiliary tasks such as marketing, payroll, human resources, and information technology. Employment in the health and social services sectors may also be expected to increase at relatively rapid rates. The most profound effect on health and social

Table 30

ACTUAL AND PROJECTED POPULATION IN THE REGION BY COUNTY: 2000-2035

Data Item	Kenosha County			Milwaukee County			Ozaukee County			Racine County		
Actual Population: 2000	149,600			940,200			82,300			188,800		
Percent of Region: 2000	7.7			48.7			4.2			9.8		
Projected Population:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	162,300	157,600	154,000	962,500	946,000	930,600	88,800	85,700	84,100	197,100	191,900	189,800
2010	173,600	166,100	160,500	978,900	953,900	921,000	93,400	88,700	86,100	205,400	195,200	190,800
2015	185,600	175,000	167,200	1,000,400	966,600	921,600	97,900	91,500	87,900	213,100	199,200	193,200
2020	198,100	184,300	174,000	1,020,600	977,800	922,600	102,900	94,600	89,900	220,900	203,200	195,500
2025	210,600	193,300	180,200	1,041,900	989,900	923,800	107,700	97,500	91,600	229,000	207,200	197,900
2030	223,100	201,900	186,000	1,060,300	999,100	925,100	112,000	99,800	92,800	236,400	210,600	199,500
2035	235,300	210,100	191,200	1,077,600	1,007,100	926,600	115,300	101,100	93,000	243,500	213,600	200,800
Projected Change: 2000-2035												
Population	85,700	60,500	41,600	137,400	66,900	-13,600	33,000	18,800	10,700	54,700	24,800	12,000
Percent	57.3	40.4	27.8	14.6	7.1	-1.4	40.1	22.8	13.0	29.0	13.1	6.4
Percent of Region: 2035	9.4	9.2	9.2	43.1	44.3	44.3	4.6	4.4	4.4	9.7	9.4	9.6

Data Item	Walworth County			Washington County			Waukesha County			Region		
Actual Population: 2000	92,000			117,500			360,800			1,931,200		
Percent of Region: 2000	4.8			6.1			18.7			100.0		
Projected Population:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	100,400	98,400	95,500	128,800	125,000	121,700	389,600	377,400	369,800	2,029,500	1,982,000	1,945,500
2010	108,100	105,300	100,600	137,700	131,800	127,100	410,600	391,500	379,800	2,107,700	2,032,500	1,965,900
2015	116,000	112,200	105,500	146,300	138,000	131,800	430,300	404,100	387,900	2,189,600	2,086,600	1,995,100
2020	124,200	119,400	110,400	154,900	144,100	136,400	451,300	417,400	396,500	2,272,900	2,140,800	2,025,300
2025	132,200	126,300	114,900	163,000	149,500	140,200	471,500	429,600	403,900	2,355,900	2,193,300	2,052,500
2030	140,400	133,300	119,300	170,400	154,200	143,200	490,400	440,300	409,500	2,433,000	2,239,200	2,075,400
2035	148,400	140,000	123,200	176,100	157,300	144,700	504,900	446,800	411,000	2,501,100	2,276,000	2,090,500
Projected Change: 2000-2035												
Population	56,400	48,000	31,200	58,600	39,800	27,200	144,100	86,000	50,200	569,900	344,800	159,300
Percent	61.3	52.2	33.9	49.9	33.9	23.1	39.9	23.8	13.9	29.5	17.9	8.2
Percent of Region: 2035	5.9	6.2	5.9	7.1	6.9	6.9	20.2	19.6	19.7	100.0	100.0	100.0

Source: U. S. Bureau of the Census and SEWRPC.

services in the Region will be the aging of the population. As the baby-boomers reach retirement age, health and social services will be in greater demand, directly affecting employment in these sectors. The outlook for entertainment services is also promising; rising personal income and retirees having more leisure time are expected to play a role in that growth.

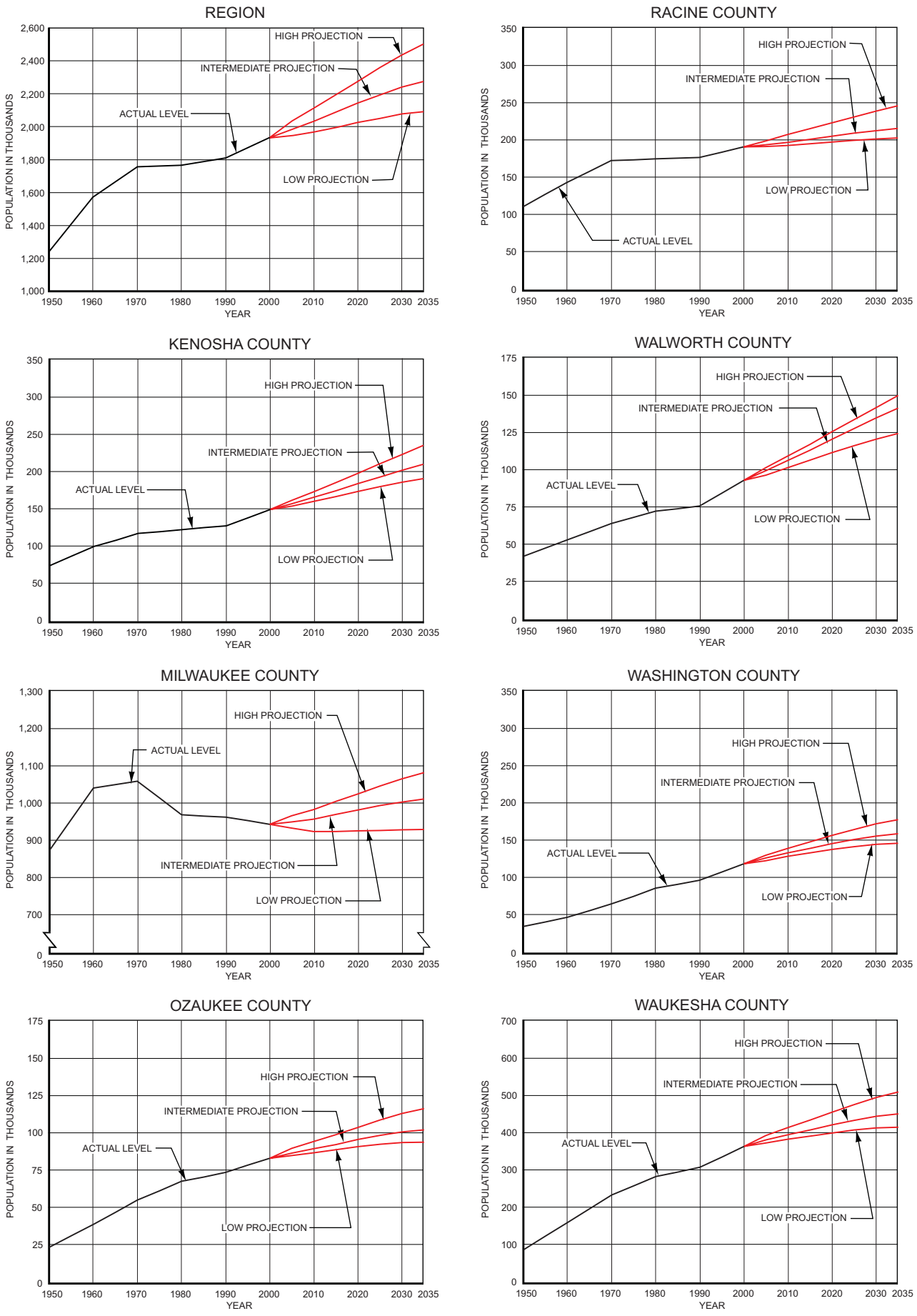
POPULATION PROJECTIONS

Commission population projections for the year 2035 are presented in Table 30 and in Figure 16. The intermediate projection envisions that the regional population would increase by 344,800 persons, or 18 percent, from 1,931,200 persons in 2000 to 2,276,000 persons in 2035.[5] Under the intermediate projection, population growth would range between 50,000 and 55,000 during each five-year period from 2000 to 2025, with slightly smaller increases projected for 2025 to 2035. The high projection indicates that the population of the Region could be as high as 2,501,100 persons in 2035, an increase of about 569,900 persons, or 30 percent, over the 2000 level; the high population projection for the year 2035 exceeds the intermediate projection by about 10 percent. Conversely, the low projection indicates that the regional population could be as low as 2,090,500 persons in 2035, an increase of 159,300 persons, or 8 percent, over 2000; the low population projection for the year 2035 is about 8 percent less than the intermediate projection.

[5] *The intermediate projection of an 18 percent increase in the regional population over the 35-year period from 2000 to 2035 compares to the forecast increase of 15 percent over the 30-year period from 1990 to 2020 indicated in the previous Commission forecast prepared in 1995. The intermediate population projection of 2,276,000 persons for the year 2035 is 10 percent greater than the figure of 2,077,900 persons for the year 2020 indicated in the previous forecast.*

Figure 16

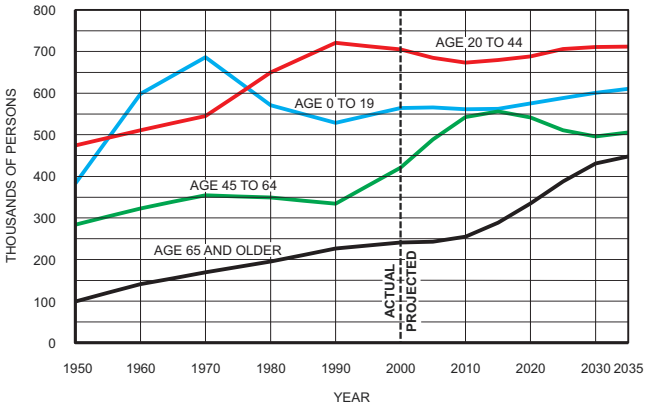
ACTUAL AND PROJECTED POPULATION IN THE REGION BY COUNTY: 1950-2035



Source: U.S. Bureau of the Census and SEWRPC.

Figure 17

ACTUAL AND PROJECTED POPULATION IN THE REGION BY GENERAL AGE GROUP: 1950-2035 (INTERMEDIATE PROJECTION)



Source: U.S. Bureau of the Census and SEWRPC.

Among the seven counties in the Region, population increases envisioned under the intermediate projections range from 18,800 persons in Ozaukee County to 86,000 persons in Waukesha County. The historic decline in Milwaukee County's relative share of the regional population would continue, but at a moderated rate in comparison to the historic trend. The projections envision a continuation of an "Illinois influence"—characterized by persons from Northeastern Illinois seeking residences in Wisconsin—on future population growth in Kenosha and Walworth Counties.

Commission projections envision change in the age composition of the regional population in the coming decades (see Figure 17). Particularly noteworthy is the expected influence of the large baby-boom generation on the future age structure. By 2030, essentially all baby-boomers will be over the age of 65. The intermediate population projection envisions percent of the total population in the year 2035, compared to about 13 percent in 2000. Changes in the age composition of the population may be expected to have a range of impacts, including, importantly, impacts on the available labor force in the Region, as baby-boomers move into their retirement years.

HOUSEHOLD PROJECTIONS

Commission household projections for the year 2035 are presented in Table 31 and in Figure 18. The intermediate projection envisions that the number of households in the Region would increase by 176,700, or 24 percent, from 749,000 households in 2000 to 925,700 households in 2035.[6] The high projection indicates that the number of households in the Region could be as high as 1,016,400 in 2035, an increase of 267,400 households, or 36 percent, over the 2000 level. The low projection indicates that the number of households could be as low as 850,300 in 2035, an increase of 101,300 households, or 14 percent, over 2000.

The intermediate projections envision a significant increase in the number of households in each county in the Region between 2000 and 2035. In each county, the relative increase in households is expected to exceed the relative increase in population, as household sizes continue to decline in each county (see Table 32).

RELATIONSHIP BETWEEN POPULATION AND EMPLOYMENT PROJECTIONS

As noted earlier, the processes of preparing projections of future population and employment levels were closely coordinated to ensure consistency between the resulting projections. Of primary concern in this regard is that the labor force trends which may be expected in light of projected changes in the regional population are consistent with the projected employment trends.

[6] *The intermediate projection of 24 percent in the Region's households over the 35-year period from 2000 to 2035 compares to the forecast increase of 22 percent over the 30-year period from 1990 to 2020 indicated in the previous Commission forecast prepared in 1995. The intermediate projection of 925,700 households for the year 2035 is 12 percent greater than the figure of 827,100 households for the year 2020 indicated in the previous forecast.*

Table 31

ACTUAL AND PROJECTED HOUSEHOLDS IN THE REGION BY COUNTY: 2000-2035

Data Item	Kenosha County			Milwaukee County			Ozaukee County			Racine County		
Actual Households: 2000	56,100			377,700			30,900			70,800		
Percent of Region: 2000	7.5			50.4			4.1			9.5		
Projected Households:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	61,600	59,800	58,500	392,300	385,600	379,300	33,800	32,700	32,000	75,100	73,100	72,300
2010	66,400	63,600	61,400	404,200	393,900	380,400	36,100	34,300	33,300	78,900	74,900	73,200
2015	71,700	67,600	64,600	417,000	403,000	384,200	38,300	35,800	34,400	82,500	77,100	74,800
2020	77,200	71,800	67,800	429,100	411,200	387,900	40,600	37,300	35,500	85,800	78,900	75,900
2025	82,700	75,800	70,700	439,400	417,500	389,600	42,800	38,800	36,400	89,600	81,000	77,400
2030	87,800	79,500	73,200	448,500	422,700	391,400	44,500	39,600	36,800	92,700	82,600	78,200
2035	92,900	82,900	75,500	457,400	427,500	393,300	45,600	40,000	36,800	95,700	84,000	78,900
Projected Change: 2000-2035												
Households	36,800	26,800	19,400	79,700	49,800	15,600	14,700	9,100	5,900	24,900	13,200	8,100
Percent	65.6	47.8	34.6	21.1	13.2	4.1	47.6	29.4	19.1	35.2	18.6	11.4
Percent of Region: 2035	9.1	8.9	8.9	45.0	46.2	46.3	4.5	4.3	4.3	9.4	9.1	9.3

Data Item	Walworth County			Washington County			Waukesha County			Region		
Actual Households: 2000	34,500			43,800			135,200			749,000		
Percent of Region: 2000	4.6			5.8			18.1			100.0		
Projected Households:	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low	High	Intermediate	Low
2005	38,400	37,600	36,500	49,000	47,500	46,300	149,000	144,300	141,400	799,200	780,600	766,300
2010	41,700	40,600	38,800	53,200	50,900	49,100	158,100	150,800	146,200	838,600	809,000	782,400
2015	44,900	43,500	40,800	57,300	54,000	51,600	166,900	156,700	150,400	878,600	837,700	800,800
2020	48,300	46,400	42,900	61,300	57,100	54,000	175,500	162,300	154,200	917,800	865,000	818,200
2025	51,500	49,200	44,800	65,100	59,800	56,100	183,800	167,400	157,400	954,900	889,500	832,400
2030	54,600	51,800	46,400	68,200	61,700	57,400	191,500	171,900	159,900	987,800	909,800	843,300
2035	57,700	54,400	47,900	70,400	62,800	57,800	196,700	174,100	160,100	1,016,400	925,700	850,300
Projected Change: 2000-2035												
Households	23,200	19,900	13,400	26,600	19,000	14,000	61,500	38,900	24,900	267,400	176,700	101,300
Percent	67.2	57.7	38.8	60.7	43.4	32.0	45.5	28.8	18.4	35.7	23.6	13.5
Percent of Region: 2035	5.7	5.9	5.6	6.9	6.8	6.8	19.4	18.8	18.8	100.0	100.0	100.0

Source: U. S. Bureau of the Census and SEWRPC.

Table 32

HOUSEHOLD SIZE IN THE REGION BY COUNTY: ACTUAL 2000 AND PROJECTED 2035

County	Actual 2000	Projected 2035
Kenosha	2.60	2.46
Milwaukee	2.43	2.29
Ozaukee	2.61	2.45
Racine	2.59	2.46
Walworth	2.57	2.47
Washington	2.65	2.45
Waukesha	2.63	2.50
Region	2.52	2.39

Source: U.S. Bureau of Census and SEWRPC.

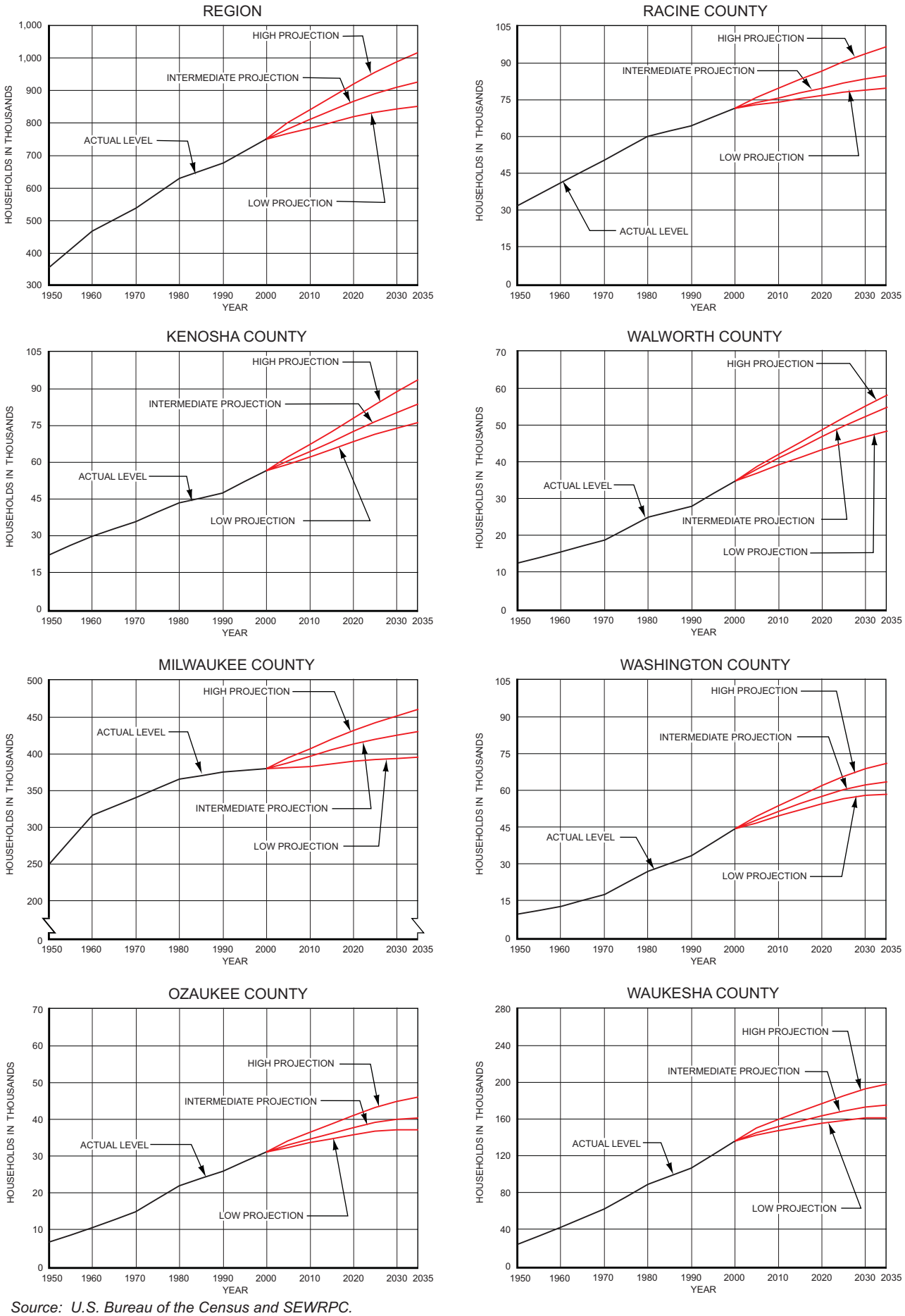
As part of the Commission's forecasting efforts, the regional labor force was projected based upon the high, intermediate, and low population projections and anticipated future labor force participation rates. The results indicate that, between 2000 and 2035, the regional labor force would increase by 14 percent under the intermediate projection, 25 percent under the high projection, and 4 percent under the low projection. The relative increases in employment—12 percent under an intermediate-growth scenario, 24 percent under a high-growth scenario, and 4 percent under a low-growth scenario—very closely approximate these projected labor force increases. This would indicate basic conformity between the regional employment projections and population projections.

SUMMARY

This chapter presents a set of population, household, and employment projections for the Region for the period from 2000 to 2035. The projections were prepared by the Commission as a basis for the preparation of the year 2035 regional land use plan and transportation plans and for updating other elements of the comprehensive plan for the Region. The new employment projections are fully documented in SEWRPC Technical Report No. 10 (4th Edition), *The Economy of Southeastern Wisconsin*. The new population and household projections are fully

Figure 18

ACTUAL AND PROJECTED HOUSEHOLDS IN THE REGION BY COUNTY: 1950-2035



Source: U.S. Bureau of the Census and SEWRPC.

documented in SEWRPC Technical Report No. 11 (4th Edition), *The Population of Southeastern Wisconsin*. These two reports were prepared in tandem to ensure consistency between the Commission's long-range population and employment projections.

As in prior similar studies, the Commission once again projected a range of future population, household, and employment levels—high, intermediate, and low—for the Region. This approach recognizes the uncertainty that surrounds any effort to predict future socioeconomic conditions. The intermediate projection is considered the most likely to be achieved for the Region overall, and, in this sense, constitutes the Commission's "forecast," intended to be used as a basis for the preparation of the regional land use and transportation plans. The high and low projections are intended to provide an indication of the range of population, household, and employment levels which could conceivably be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

A summary of the year 2035 population, household, and employment projections for the Region follows.

- Under the intermediate projection, total employment in the Region would recover from the reduced levels of the early 2000s, experiencing fairly strong growth until about the middle of the projection period. At that time, employment growth is projected to moderate, coinciding with an anticipated leveling-off in the labor force, particularly as large numbers of baby-boomers retire. Relatively modest employment growth is envisioned over the last 10 years of the projection period. The intermediate projection envisions total employment of 1,368,300 jobs in the Region in 2035, an increase of 145,500 jobs, or 12 percent, over the 2000 level of 1,222,800 jobs. The high projection indicates that employment in the Region could be as high as 1,509,600 jobs in 2035, an increase of about 286,800 jobs, or 24 percent, over the 2000 level. The low projection indicates that employment in the Region could be as low as 1,267,500 jobs in 2035, about 44,700 jobs, or 4 percent, over the 2000 level. The sectoral changes—particularly, a shift from a goods producing economy to a services providing economy—that have occurred in the Region in recent decades are projected to continue.

- The intermediate projection envisions that the regional population would increase by 344,800 persons, or 18 percent, from 1,931,200 persons in 2000 to 2,276,000 persons in 2035. Under the intermediate projection, population growth would range between 50,000 and 55,000 during each five-year period from 2000 to 2025, with slightly smaller increases projected for 2025 to 2035. The high projection indicates that the population of the Region could be as high as 2,501,100 persons in 2035, an increase of about 569,900 persons, or 30 percent, over the 2000 level. The low projection indicates that the regional population could be as low as 2,090,500 persons in 2035, an increase of 159,300 persons, or 8 percent, over 2000. Commission projections envision change in the age composition of the regional population in the coming decades. Particularly noteworthy is the expected influence of the large baby-boom generation on the future age structure. The intermediate projection envisions that persons age 65 year and older would comprise 20 percent of the total population in 2035, compared to 13 percent in 2000.

- The intermediate projection envisions that the number of households in the Region would increase by 176,700, or 24 percent, from 749,000 households in 2000 to 925,700 households in 2035. The high projection indicates that the number of households in the Region could be as high as 1,016,400 in 2035, an increase of 267,400 households, or 36 percent, over the 2000 level. The low projection indicates that the number of households could be as low as 850,300 in 2035, an increase of 101,300 households, or 14 percent, over 2000. The average household size in the Region is projected to continue its historic decline, with the rate of decline being somewhat moderated in the coming decades however.

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Chapter VI

RECOMMENDED LAND USE PLAN

INTRODUCTION

This chapter presents a land use plan for Southeastern Wisconsin looking forward to the year 2035. The land use plan presented herein is intended to accommodate projected growth in the regional population, households, and employment, as described in Chapter V of this report, in a manner that is consistent with the land use objectives and standards for the Region, as set forth in Chapter IV. The first section of this chapter presents a long-range vision for land use within the Region that is inherent in the land use objectives and standards. Subsequent sections describe the basic design concepts underlying the new regional land use plan, followed by a description of the plan itself.

The regional land use plan is intended to provide a guide, or overall framework, for future land use within the Region. Implementation of the plan depends upon the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector. Recommended plan implementation measures are presented in Chapter VII of this report.

A VISION FOR LAND USE IN SOUTHEASTERN WISCONSIN

As indicated in Chapter IV, under the guidance of the Advisory Committee on Regional Land Use Planning, nine land use objectives, each with a set of planning principles and standards, have been established for the Southeastern Wisconsin Region. The nine objectives are re-presented, for convenience, in Table 33. The objectives and related standards provide the underpinnings for the new regional plan. Most of the objectives are complementary in nature; that is, the achievement of one objective is consistent with, and contributes to, the achievement of others. Some of the objectives are conflicting, requiring reconciliation in the process of preparing the regional plan.

Inherent in the nine land use objectives is a long-range vision for land use in Southeastern Wisconsin, a vision that the new land use plan seeks to achieve. A capsule summary of that vision follows:

- Urban land would continue to increase as necessary to accommodate growth in the regional population and economic base. Most new urban development would be accommodated through the infilling and renewal of existing urban areas as well as through the orderly expansion of existing urban areas, resulting in a relatively compact and efficient overall settlement pattern, one that is readily served by basic urban services and facilities and that maximizes the use of existing urban service and facility systems. Development densities would be consistent with the efficient provision of urban services and facilities. Within urban areas, mixed use development would be accommodated in order to provide for convenience and efficiency in day-to-day activities, including ease and efficiency in travel.

Table 33

REGIONAL LAND USE OBJECTIVES

1. A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the regional population.
2. A spatial distribution of the various land uses which will result in a convenient and compatible arrangement of land uses.
3. A spatial distribution of the various land uses which maintains biodiversity and which will result in the preservation and wise use of the natural resources of the Region.
4. A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems in order to assure the economical provision of transportation, utility, and public facility services.
5. The development and preservation of residential areas within a physical environment that is healthy, safe, convenient, and attractive.
6. The preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.
7. The conservation, renewal, and full use of existing urban areas of the Region.
8. The preservation of productive agricultural land.
9. The preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and provide opportunities for a full range of outdoor recreational activities.

Note: Related principles and standards are set forth in Table 26 in Chapter IV.

Source: SEWRPC.

- Lands beyond planned urban service areas would be retained in essentially rural use, with highly productive farmlands preserved and with development limited to overall densities, and accommodated through designs, that are consistent with the maintenance of rural character and consistent as well with the capacities of existing street and other public facility and service systems in those areas.

- The land development needs of the Region would be met while preserving the best remaining elements of the natural resource base—most of which are located within environmental corridors and isolated natural resource areas—and preserving productive farmland, resulting in an interconnected, integrated system of open space lands within the Region.

REGIONAL LAND USE PLAN DESIGN CONCEPTS

This section describes the basic design concepts underlying the year 2035 regional land use plan. It is intended to convey how the land use objectives and standards were carried forward in the development of the new regional land use plan. This section begins with a definition of relevant terms and a discussion of the general nature of the regional plan. It then discusses key plan concepts including those related to development within planned urban service areas, development outside planned urban service areas, environmentally significant lands, and highly productive farmland. It also discusses the nature of the population, household, and employment projections used as a basis for the preparation of the plan.

Basic Definitions
For purposes of the regional land use plan, "urban land" or "urban development" is defined as an area devoted to urban-density residential, commercial, industrial, governmental and institutional, recreational, and utility and communication uses. "Urban-density" residential development includes the following density ranges: high-density (at least 7.0 dwelling units per net residential acre); medium-density (2.3 to 6.9 dwelling units per net acre); and low-density (0.7 to 2.2 dwelling units per net acre). The term "urban service area" refers to areas that are intended to accommodate urban development insofar as they are served by basic urban services and facilities, including public sanitary sewer service and typically also including public water supply service and a local park, school, and shopping area.

Under the plan, "sub-urban density" residential development is defined as residential development at a density of 0.2 to 0.6 dwelling unit per residential acre. Such development is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sewer and water supply service and other urban amenities. While such development occurs and accordingly must be accommodated in the regional plan, it is not recommended.

Under the plan, "rural density" residential development is defined as residential development at a density of no more than one dwelling unit per five acres. When accommodated through conservation subdivision designs, only a fraction of the total site area is intensively developed as homesites, the balance being retained in permanent open space use, achieving the overall rural density.

Nature of the Regional Plan
Operationally, the preparation of the regional plan involves allocating future increments in population, households, employment, and attendant increments in urban and rural land to urban and rural areas of the Region, with the amount of incremental population, households, and employment and attendant urban and rural land controlled to projected levels. In developing the plan, these allocations were made, insofar as practicable, in a manner that is consistent with the regional land use objectives and standards. The allocations took into account existing local land use plans and input received from local planning officials obtained as the plan was being prepared. The allocations also took into account commitments to development, particularly as evidenced by approved subdivision plats, already made at the time the plan was prepared—including committed development that is not consistent with the land use objectives.[1]

It is important to recognize that the regional land use plan is a systems-level plan. As such, it includes generalized boundaries for urban service areas; allocations of incremental population, households, and employment and associated land uses to urban and rural areas; and recommended density ranges for the urban service areas. The identification of precise urban service area boundaries and the actual design of neighborhoods and other development units is beyond the scope of the regional planning process and is properly accomplished through detailed local planning within the framework of the regional plan.

The regional land use plan was designed to accommodate most incremental development in planned urban service areas. In the design of the regional plan, the allocation of incremental development outside planned urban service areas was confined, for the most part, to areas where commitments to urban and sub-urban development had already been made, as well as to certain areas where limited rural density residential development could be accommodated. These plan design concepts are described further below.

Development Within Planned Urban Service Areas
In preparing the plan, to the extent practicable, new urban development was accommodated within existing urban service areas as infill development and through redevelopment, as appropriate. Input from local planning officials was particularly important in identifying opportunities for infill and redevelopment. Beyond this, additional urban

[1] *The extent of development that is not consistent with the regional land use objectives, as envisioned in the year 2035 land use plan, will be reported later in this chapter.*

development required to meet projected needs was accommodated on lands proximate to existing urban service areas where basic urban services and facilities can be readily provided, envisioning the orderly expansion of existing urban service areas.

Residential Development Within Planned Urban Service Areas

In the preparation of the regional land use plan, the allocations of incremental households and residential land to and within urban service areas was intended to accommodate urban residential development in predominantly residential neighborhoods as well as in more mixed-use settings. The plan envisions residential neighborhoods designed as cohesive units, properly related to the larger community of which they are a part, and served by an interconnected internal street, bicycle-way, and pedestrian system and by a neighborhood school, park, and shopping area. In addition to such neighborhood residential development, the regional plan envisions residential development in settings having an even greater mixture of land uses. Examples of such mixed-use settings include dwellings above the ground floor of commercial uses and residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or civic uses. The allocations of incremental households and residential land was also intended to provide opportunities for living in proximity to workplaces. This includes residential development appropriately integrated into, or located in proximity to, major economic activity centers.

The regional plan includes a recommended density range for the urban service areas envisioned in the plan. These represent overall densities that may be achieved within developing and redeveloping areas through various combinations of lot sizes and structure types over entire neighborhoods. The regional plan density ranges have been broadly defined so as to provide flexibility to local units of government as they prepare local land use plans and administer local land use regulations within the framework provided by the regional plan.

In the design of the regional plan, the identification of a recommended density range (i.e., high-, medium-, or low-density) for each urban service area considered the typical, or average, residential density permitted by the community concerned. The allocation of households and residential land to urban service areas under the plan generally reflected those average densities. The resulting regional plan envisions growth in residential land in each urban density category, but largely at medium and high densities. Overall, the plan envisions that 88 percent of new housing units would be accommodated in the medium- and high-density ranges. Development at these densities facilitates the efficient provision of basic urban facilities and services. Development at these densities also serves to moderate the amount of land needed to be converted to urban use in order to accommodate growth in population, households, and employment within the Region.

Other Urban Development Within Planned Urban Service Areas

The regional plan also includes allocations of incremental commercial, industrial, governmental-institutional, and recreational land—and, as appropriate, associated employment—to and within urban service areas. Included are allocations for neighborhood-scale development as well as for larger community- and regional-scale development. Allocations for community- and regional-scale commercial, industrial, governmental-institutional, and recreational uses were based in large part upon local land use plans and input from community planning officials.

The regional plan envisions the development and redevelopment as appropriate of a system of regional economic activity centers. These are defined as areas containing concentrations of commercial and/or industrial land having at least 3,500 total employees or 2,000 retail employees. With one exception, each of the major economic activity centers identified in the plan was developed, under development, or being redeveloped in 2005.

Development Outside Planned Urban Service Areas

Rural Residential Development Outside Planned Urban Service Areas

Under the regional plan, the anticipated continued demand for residential dwellings in an open space setting would be accommodated on a limited basis through rural-density residential development, defined as development at a density of no more than one dwelling unit per five acres. Especially when the planned residential dwellings are clustered using conservation subdivision design principles, development at this density can accommodate the demand for living in an open space setting while minimizing the impacts on the natural resource base and the overall character of the rural environment and avoiding excessive demands on rural public facility and service systems.

More specifically, the plan was designed to accommodate 2 percent of the projected increment in households in the Region between 2000 and 2035, or about 3,700 incremental households, at a rural density. Available data suggest that this is a slightly higher rate of increase than that of the recent past.[2] Under the assumption that most new rural development would utilize conservation subdivision designs, the plan envisions no more than one acre of residential land (that is, the house and yard area) would be created for each dwelling accommodated.

Under the regional plan, incremental rural residential development was allocated to areas located beyond planned urban service areas, excluding areas identified as environmental corridors or isolated natural resource areas and excluding as well farmland covered by highly productive soils (U.S. Natural Resources Conservation Service agricultural capability Class I and Class II soils).

Low-Density and Sub-urban Density Residential Development Outside Planned Urban Service Areas

In the design of the regional plan, residential development outside planned urban services, other than the incremental rural density residential development described above, was limited to that which was already committed through approved subdivision plats and certified surveys. The associated residential lots fall into the low-density category (0.7 to 2.2 dwelling units per acre) and sub-urban density category (0.2 to 0.6 dwelling unit per acre). While such development outside planned urban service areas is not consistent with the regional land use objectives, as a practical matter the regional plan had to recognize existing commitments to development and reflect the likelihood that such lots would be developed over time, accommodating a portion of the projected increase in population and households.

Other Development Outside Planned Urban Service Areas

In the design of the regional plan, other development beyond planned urban service areas was limited to highway-oriented business uses, utility uses, and recreational uses that may, of necessity, have to be located beyond planned urban service areas.

Environmentally Significant Lands

Environmental Corridors and Isolated Natural Resource Areas

The regional land use objectives and standards call for the preservation of primary environmental corridors in essentially natural, open uses; and the preservation of secondary environmental corridors and isolated natural resource areas in essentially natural, open uses to the extent practicable, as determined in county and local plans. The regional land use plan was designed in a manner consistent with the objectives and standards in this respect.

The process of delineating environmental corridors and isolated natural resource areas as areas encompassing concentrations of natural resource base features such as wetlands, woodlands, and wildlife habitat areas, along with the resulting configuration of environmental corridors and isolated natural resource areas, is described in Chapter II of this report. In the design of the regional plan, other than for a limited number of exceptions, incremental urban and rural development was not allocated to primary or secondary environmental corridor or isolated natural resource areas. The exceptions pertain to local commitments to development that are identified in local sanitary sewer service area plans adopted as part of the regional water quality management plan. The delineation of environmental corridors on the regional land use plan map reflects these relatively minor

[2]*Historic trend data regarding the extent of rural density residential development in the Region is very limited, and the future demand for such development is difficult to estimate. Commission monitoring of residential subdivision planning activity provides some insight, however. As indicated in Chapter III, such monitoring indicates that 630 residential lots were created through rural residential subdivisions platted in the Region from 1990 through 1999; this figure excludes rural residential lots created through certified surveys. To provide perspective, it should be noted that an estimated total of 88,500 dwelling units were built within the Region during the 1990s. This would suggest that rural residential dwellings accounted for less than one percent of all new housing units during the 1990s.*

commitments to development. Those delineations also include certain farmed floodplains and certain other lands which are expected to revert to more natural conditions over time, eventually becoming part of the adjacent environmental corridor—as envisioned in local sewer service area plans and county park and open space plans.[3]

While the design of the land use plan does not allocate incremental development to the environmental corridors and isolated natural resource areas, other than to reflect local commitments as noted above, the regional plan recognizes that certain development may be accommodated in such areas without jeopardizing their overall integrity. Guidelines pertaining to such development within environmental corridors are presented in Table 27 in Chapter IV. The guidelines recognize that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated in such areas. Under the guidelines, residential development would be limited to upland areas at an overall density of no more than one dwelling unit per five upland acres, with conservation subdivision designs strongly encouraged where rural density residential development is accommodated. Under the guidelines, in lieu of rural density residential development, up to 10 percent of the upland corridor area may be disturbed in order to accommodate urban-density residential, commercial, industrial, or other urban development.[4]

Natural Areas and Critical Species Habitat Sites

A comprehensive inventory of natural areas—tracts of land or water that contain plant and animal communities believed to be representative of the pre-European-settlement landscape—and critical species habitat areas—other areas that support endangered, threatened, or rare plant or animal species—was completed for the Region in 1994 as part of the regional natural areas and critical species habitat protection and management plan. The vast majority of the natural areas and critical species habitat sites are located within environmental corridors and isolated natural resource areas. The design of the regional land use plan envisions the preservation of all of the identified natural areas and critical species habitat sites.

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[3] *In addition to farmed floodlands as discussed above, the regional plan supports carefully planned efforts to restore other farmland and open space to more natural conditions, resulting in the re-establishment of wetlands, woodlands, prairies, grasslands, and forest interiors. An example of such a planned restoration effort is the Wisconsin Department of Natural Resources Turtle Valley Wildlife Area project, which will result in the re-establishment of wetlands and grasslands in the west central area of Walworth County. The expanded primary environmental corridor in the Turtle Valley Wildlife Area is reflected on the year 2035 regional land use plan map (Map 26). The delineation of environmental corridors and isolated natural resources areas will be modified as appropriate in subsequent generations of the regional plan to reflect the re-establishment of natural resource features resulting from such restoration efforts in other areas.*

[4] *Under the 2035 regional land use plan, the environmental corridor guidelines have been amended to include the allowance of a disturbance of up to 10 percent of the upland corridor area in a parcel in lieu of rural density residential development (one dwelling unit per five acres of upland) within upland corridors. Under the amended guidelines as set forth in Table 27, in lieu of rural density residential development, up to 10 percent of the upland corridor area in a parcel may be disturbed in order to accommodate urban residential, commercial, or other urban development under the following conditions: 1) the area to be disturbed is compact rather than scattered in nature; 2) the disturbance area is located on the edge of a corridor or on marginal resources within a corridor; 3) the development does not threaten the integrity of the remaining corridor; 4) the development does not result in significant adverse water quality impacts; and 5) the development of the remaining corridor lands is prohibited by a conservation easement or deed restriction. Each such proposal would be reviewed on a site-by-site basis. Under this arrangement, the developed area would no longer be part of the environmental corridor; however, the entirety of the remaining corridor would be permanently preserved from disturbance. From a resource preservation point of view, preserving a minimum of 90 percent of the environmental corridor in this manner may be preferable to accommodating scattered homesites and attendant access roads at a density of one dwelling unit per five acres within upland corridor areas.*

Highly Productive Agricultural Land
The regional land use objectives and standards call for the preservation, to the extent practicable, of the most productive farmland, identified as farmland covered by agricultural capability Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service. The regional land use plan was designed in a manner consistent with the objectives and standards in this respect. As previously indicated, in the design of the regional plan, the limited incremental rural density residential development envisioned under the plan was allocated to rural areas not comprised of Class I and Class II farmland. The plan thus seeks to accommodate incremental rural density residential development without adversely impacting highly productive farmland.

The design of the regional plan does envision that some Class I and Class II farmland that is located in the vicinity of existing urban service areas will be converted to urban use as a result of planned expansion of those urban service areas. This is a matter of balancing objectives for the preservation of productive farmland with objectives of meeting urban land needs as warranted by increases in population, households, and employment and objectives for the orderly and efficient provision of urban facilities and services.

As previously noted, the design of the regional plan also anticipates the development of lands beyond planned urban service areas that have been committed to low-density and sub-urban density residential development through subdivision plats and certified surveys. This may be expected to result in the additional loss of Class I and Class II farmland.

Population, Household, and Employment Projections
As indicated in Chapter V, the Commission in 2004 prepared a new set of population, household, and employment projections for the Region for the period 2000 to 2035. The Commission prepared a range of future population, household, and employment levels—high, intermediate, and low—for the Region. The intermediate projection is considered the most likely to be achieved for the Region overall, and, in this sense, constitutes the Commission's "forecast." The intermediate projection was selected for use as the basis for the preparation of the year 2035 regional land use plan. The high and low projections are intended to provide an indication of the range of population, household, and employment levels which could conceivably be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

Commission county-level projections envision that the historic trend in the decentralization of population, households, and employment relative to Milwaukee County within the Region would continue, but at a moderated rate in comparison to the historic trend. The intermediate population projection for Milwaukee County envisions that the recent decreases in population experienced by the County—a 0.6 percent loss during the of 1980s and a 2 percent loss during the 1990s—would be replaced by modest growth of 1.5 percent between 2000 and 2010 and growth of about 7 percent during the overall 35-year projection period from 2000 to 2035. The projections envision growth in households in Milwaukee County at rates somewhat faster than occurred during the 1980s and 1990s. These relatively positive projections for Milwaukee County assume substantial growth in the remaining undeveloped areas of the County and assume further that the City of Milwaukee and other communities in the County will be proactive and successful in efforts to maintain, renew, and revitalize as appropriate their existing developed areas.

The Commission projections also envision the continuation of an "Illinois influence" on future population and household levels in Kenosha and Walworth Counties. One facet of the "Illinois influence" involves persons from northeastern Illinois seeking residences in Wisconsin. Available data indicate a significant net movement of individuals from residences in northeastern Illinois to residences in Kenosha and Walworth Counties during the 1990s. Commission projections anticipate a continuation of this trend.

Water Supply Considerations
Water supply is an increasingly important consideration in land use planning. The residential, commercial, industrial, institutional, and agricultural land uses within the Region rely on two major sources for water supply—surface water supplied primarily from Lake Michigan, and groundwater supplied from both the deep and shallow aquifer systems underlying the Region. Groundwater is susceptible to depletion in quantity and deterioration in quality as a result of urban and rural development. While Lake Michigan is a major source of water, the use

of Lake Michigan as a source of supply to areas west of the subcontinental divide that bisects the Region is constrained by the costs of transmission and by legal constraints, rooted in State and Federal law and in international charter, on the diversion of water from the Great Lakes basin.

At the time that this regional land use plan was being prepared in 2005, the Commission had just initiated a regional water supply system planning program. This planning effort will develop and evaluate alternative system plans for addressing water supply needs in the Region; the alternatives may include proposals for the use of various combinations of groundwater sources of supply as well as for the expanded use of Lake Michigan as a source of supply, likely east of the subcontinental divide, as discussed above. Ultimately, a recommended water supply system plan will be selected; the recommended plan may be one of the alternatives plans considered, or may be a composite of the best features of two or more of the alternatives plan. The alternative and recommended water supply system plans will be designed to meet future water supply needs in the Region that may be expected under the new year 2035 regional land use plan.

As previously indicated, the regional land use plan was designed to accommodate most incremental development in planned urban service areas, where public water supply would generally be provided. In the design of the regional plan, the allocation of incremental development outside planned urban service areas (and thus outside areas served by public water supply systems) was confined, for the most part, to areas where commitments to urban and sub-urban development had already been made, as well as to certain areas where limited rural density residential development may be accommodated.

Timing arrangements did not permit the inventory and analysis findings or recommendations of the water supply system planning effort to be incorporated into the regional land use plan. In the design of the land use plan, the allocation of incremental population, households, and employment and attendant incremental urban land to urban service areas was not significantly influenced by source of water supply considerations. In the years ahead, however, future local and regional land use planning efforts will be able to draw upon the findings and recommendations of the regional water supply system planning program, enabling water supply issues to be explicitly considered in the design of future generations of these plans.

YEAR 2035 REGIONAL LAND USE PLAN

The year 2035 regional land use plan was developed to meet the established regional land use objectives insofar as practicable, following the plan design concepts set forth in the previous section of this chapter. The plan was designed to accommodate the intermediate population, household, and employment projections for the Region presented in Chapter V. In this respect, the plan was designed to accommodate an 18 percent increase in the resident population, a 24 percent increase in the number of households, and a 12 percent increase in the number of jobs in the Region between 2000 and 2035. Under the plan, growth in population, households, and employment would be accommodated through a 13 percent increase in the urban land area of the Region.

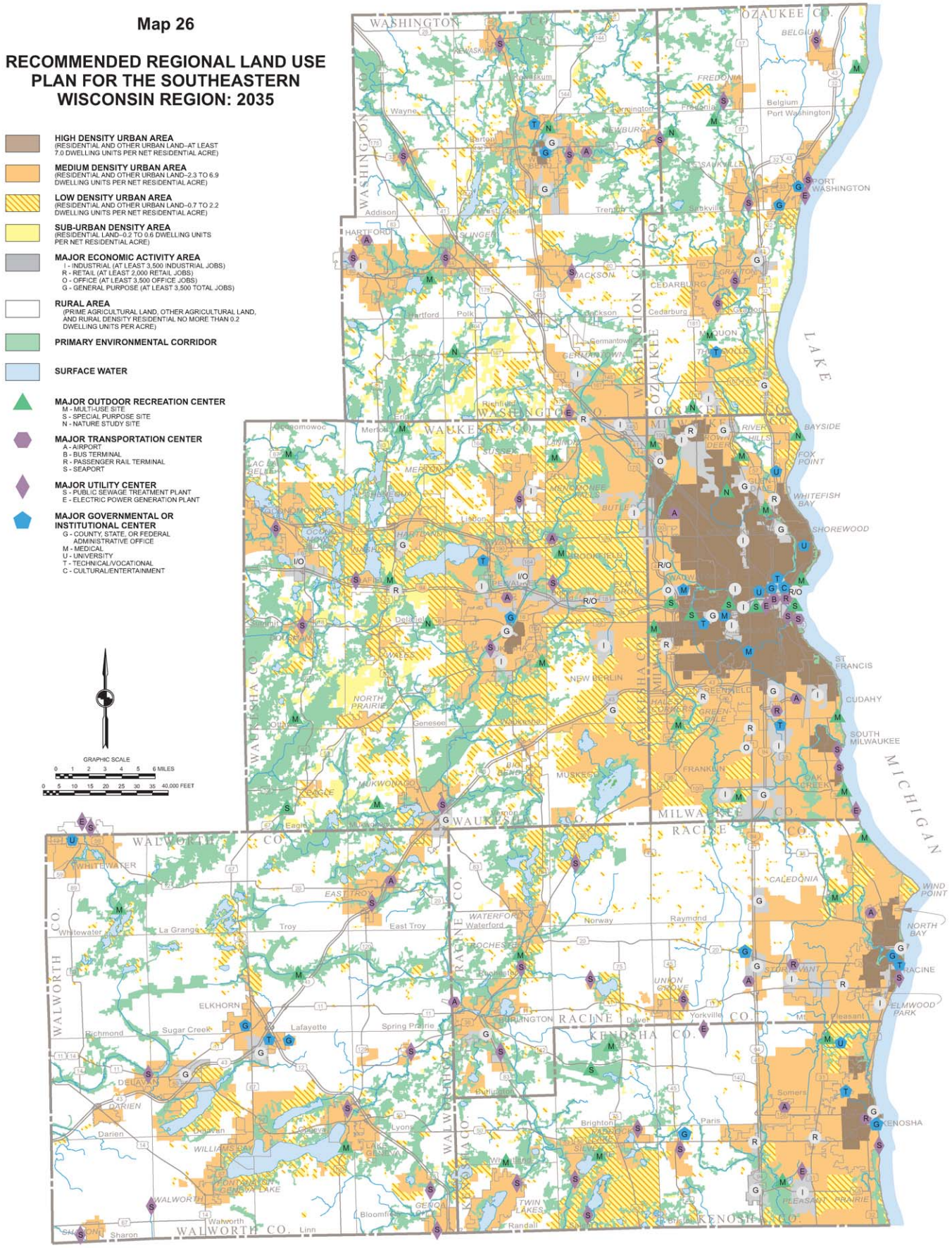
Map 26 provides an overview of the land use pattern for the Region in the year 2035 as envisioned under the new regional plan. This map shows urban areas in the Region as envisioned under the plan; sub-urban areas, which are neither truly urban or rural in character; primary environmental corridors—i.e., areas containing concentrations of the best remaining elements of the natural resource base—which are recommended for preservation in essentially natural open uses; and rural areas consisting of prime agricultural land, other agricultural land, rural-density residential land, and other open lands. The various components of the regional land use plan, as depicted on Map 26, are described in this section.

Urban Lands

As noted in the first part of this chapter, for purposes of the regional land use plan, “urban land” is defined as an area devoted to high, medium, and low density residential use as well as to commercial, industrial, governmental

Map 26

RECOMMENDED REGIONAL LAND USE PLAN FOR THE SOUTHEASTERN WISCONSIN REGION: 2035



Source: SEWRPC.

and institutional, recreational, and transportation, communication, and utility use.[5] Under the regional plan, the combined area in these urban use categories would increase from about 732 square miles in 2000 to about 825 square miles in 2035, an increase of 93 square miles or 13 percent. Under the plan, the urban land area of the Region would account for 31 percent of the total area of the Region in 2035, compared to 27 percent in 2000.

Under the regional plan, urban development would occur within urban service areas—areas that are intended to accommodate urban development insofar as they are served by basic urban services and facilities, including public sanitary sewer service and typically also including public water supply service and a local park, school, and shopping area.[6] To the extent practicable, urban land would be accommodated within existing urban service areas as infill development and through redevelopment as appropriate. This is intended to maintain and enhance the viability of existing urban areas, maximize the use of existing public infrastructure and services, and moderate the amount of open land converted to urban use. Other urban development required to meet projected needs of the growing Region would be accommodated on lands proximate to existing urban service areas where basic urban services and facilities can be readily provided, resulting in the orderly expansion of existing urban service areas.

Under the plan, urban development and redevelopment would be accommodated primarily within the areas identified on Map 26 as high, medium, and low density urban areas and major economic activity areas. With the exception of the outlying low density enclaves shown on the plan map, these areas are generally consistent with adopted sanitary sewer service areas, with the boundaries expanded in some cases, however, in anticipation of future needs.[7]

In reviewing Map 26, it should be recognized that many communities in the Region have established sewer service areas that would accommodate high-growth projections of population, households, and employment. This approach provides some flexibility to communities in determining the spatial distribution of new urban development and may enable communities to plan for entire neighborhood units rather than portions of neighborhoods. As a result of this approach, however, some of the urban areas shown on Map 26 may not be fully developed by 2035.

Urban Residential Land

Under the regional plan, urban residential land includes high density areas (at least 7.0 dwelling units per net residential acre), medium density areas (2.3 to 6.9 dwelling units per net residential acre), and low density areas

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[5] *"Urban-density" residential development includes the following density ranges: high density (at least 7.0 dwelling units per net residential acre); medium density (2.3 to 6.9 dwelling units per net residential acre); and low density (0.7 to 2.2 dwelling units per net residential acre).*

[6] *Under the regional plan, urban development beyond planned urban service areas would be limited to low density residential development in areas already committed to such use, along with highway-oriented business uses, utility uses, and recreational uses that may, of necessity, have to be located beyond planned urban service areas.*

[7] *Currently adopted planned sanitary sewer service areas—adopted as part of the regional water quality management plan in accordance with Chapter NR 121 of the* Wisconsin Administrative Code*—are described in Chapter II, with the boundaries of these areas being shown on Map 5 in Chapter II. The sanitary sewer service areas envisioned under the regional plan are shown on Map 31. It should be noted that, while the regional land use plan envisions the expansion of sanitary sewer service areas in some locations, any revision of an adopted sewer service area would have to be accomplished through a cooperative local planning process involving the locality concerned, the Regional Planning Commission, and the Wisconsin Department of Natural Resources in accordance with Chapter NR 121.*

Table 34

EXISTING AND PROPOSED LAND USE IN THE REGION: 2000 AND 2035 REGIONAL LAND USE PLAN

Land Use Category	Existing 2000		Planned Increment: 2000-2035		Planned 2035	
	Square Miles	Percent of Total	Square Miles	Percent	Square Miles	Percent of Total
Urban						
Residential						
High Density[a]	46.0	1.7	3.8	8.3	49.8	1.9
Medium Density[b]	109.0	4.1	52.8	48.4	161.8	6.0
Low Density[c]	178.0	6.6	12.0	6.7	190.0	7.1
Subtotal	333.0	12.4	68.6	20.6	401.6	15.0
Commercial	30.3	1.1	12.8	42.2	43.1	1.6
Industrial	32.9	1.2	5.3	16.1	38.2	1.4
Transportation, Communication, and Utilities	200.9	7.5	19.5	9.7	220.4	8.2
Governmental and Institutional[d]	33.7	1.2	2.2	6.5	35.9	1.3
Recreational[e]	50.4	1.9	7.7	15.3	58.1	2.2
Unused Urban	50.9	1.9	-23.4	-46.0	27.5	1.0
Urban Subtotal	732.1	27.2	92.7	12.7	824.8	30.7
Nonurban						
Sub-urban Density Residential[f]	29.1	1.1	9.0	30.9	38.1	1.4
Rural Density Residential[g]	- -	- -	5.9	- -	5.9	0.2
Agricultural	1,259.4	46.8	-103.9	-8.2	1,155.5	43.0
Other Open Land[h]	669.3	24.9	-3.7	-0.6	665.6	24.7
Nonurban Subtotal	1,957.8	72.8	-92.7	-4.7	1,865.1	69.3
Total	2,689.9	100.0	- -	- -	2,689.9	100.0

Note: Offstreet parking area is included with the associated land use.

[a] *7.0 or more dwelling units per net residential acre.*

[b] *2.3-6.9 dwelling units per net residential acre.*

[c] *0.7-2.2 dwelling units per net residential acre.*

[d] *Increment consists, for the most part, of the increase at public sites.*

[e] *Includes only that land that is intensively used for recreational purposes. Increment consists, for the most part, of the increase at public sites.*

[f] *0.2-0.6 dwelling unit per net residential acre.*

[g] *No more than 0.2 dwelling unit per acre. Only the planned incremental rural residential area is indicated on this table; the area associated with existing (2000) rural residential development is included in the urban and sub-urban residential land categories. The planned incremental rural residential area assumes that there would be one acre of developed homesite area per dwelling, the remainder of the required area being retained in open space use.*

[h] *Includes woodlands, water, wetlands, landfill sites, quarries, and unused rural lands.*

Source: SEWRPC.

(0.7 to 2.2 dwelling units per net residential acre).[8] The plan envisions that high, medium, and low density residential land would increase by a total of 69 square miles, or 21 percent, from 333 square miles in 2000 to 402 square miles in 2035 (see Tables 34 and 35). This includes increases of 4 square miles in high density residential land, 53 square miles in medium density residential land, and 12 square miles in low density residential land. About 154,800 housing units, or 88 percent of the total projected increase in housing units between 2000 and 2035, would occur at high and medium densities. About 14,800 housing units, or 8 percent of the projected

[8] *For purposes of the regional plan, residential densities are intended to be applied on an overall neighborhood, rather than a parcel-by-parcel, basis. The density categories represent overall densities that may be achieved within developing and redeveloping areas through various combinations of lot sizes and housing structure types over entire neighborhoods. The density ranges are broadly defined so as to provide flexibility to local units of government as they prepare local land use plans and administer local land use regulations within the framework of the regional plan. With regard to high density development, it is recognized that communities may choose to accommodate residential neighborhoods at densities substantially greater than the minimum threshold for the high density range, particularly in redevelopment situations. Accordingly, no maximum density—or upper limit—is specified for the high density category.*

Table 35

EXISTING AND PROPOSED LAND USE IN THE REGION BY COUNTY: 2000 AND 2035 REGIONAL LAND USE PLAN

Land Use Category	Kenosha County (square miles)			Milwaukee County (square miles)			Ozaukee County (square miles)			Racine County (square miles)		
	2000	Increment	2035	2000	Increment	2035	2000	Increment	2035	2000	Increment	2035
Urban												
Residential												
High Density[a]	2.8	0.6	3.4	37.0	2.8	39.8	0.1	- -	0.1	3.9	0.2	4.1
Medium Density[b]	12.5	8.6	21.1	28.2	8.8	37.0	7.4	3.5	10.9	14.5	4.8	19.3
Low Density[c]	12.3	1.8	14.1	12.2	-1.1	11.1	18.2	0.9	19.1	18.1	1.8	19.9
Subtotal	27.6	11.0	38.6	77.4	10.5	87.9	25.7	4.4	30.1	36.5	6.8	43.3
Commercial	2.3	1.5	3.8	11.2	2.9	14.1	1.5	0.9	2.4	3.0	1.3	4.3
Industrial	2.2	0.8	3.0	11.9	-0.3	11.6	1.7	0.5	2.2	3.8	0.8	4.6
Transportation, Communication, and Utilities	17.9	3.3	21.2	52.0	2.4	54.4	15.1	1.3	16.4	20.8	2.0	22.8
Governmental and Institutional[d]	2.6	0.5	3.1	12.8	0.2	13.0	2.0	0.1	2.1	3.6	0.3	3.9
Recreational[e]	5.3	0.9	6.2	12.1	1.2	13.3	3.8	0.4	4.2	4.7	0.7	5.4
Unused Urban	5.5	-2.8	2.7	16.7	-6.9	9.8	3.3	-1.5	1.8	6.1	-2.2	3.9
Urban Subtotal	63.4	15.2	78.6	194.1	10.0	204.1	53.1	6.1	59.2	78.5	9.7	88.2
Nonurban												
Sub-urban Density Residential[f]	0.9	0.2	1.1	1.9	0.1	2.0	2.8	1.2	4.0	0.2	0.2	0.4
Rural Density Residential[g]	- -	0.4	0.4	- -	- -	- -	- -	0.4	0.4	- -	0.5	0.5
Agricultural	148.0	-16.2	131.8	20.2	-8.6	11.6	127.0	-7.7	119.3	195.5	-10.8	184.7
Other Open Land[h]	66.1	0.4	66.5	26.5	-1.5	25.0	52.6	- -	52.6	66.4	0.4	66.8
Nonurban Subtotal	215.0	-15.2	199.8	48.6	-10.0	38.6	182.4	-6.1	176.3	262.1	-9.7	252.4
Total	278.4	- -	278.4	242.7	- -	242.7	235.5	- -	235.5	340.6	- -	340.6

Land Use Category	Walworth County (square miles)			Washington County (square miles)			Waukesha County (square miles)			Region (square miles)		
	2000	Increment	2035	2000	Increment	2035	2000	Increment	2035	2000	Increment	2035
Urban												
Residential												
High Density[a]	- -	- -	- -	0.7	- -	0.7	1.6	0.1	1.7	46.0	3.8	49.8
Medium Density[b]	10.2	7.6	17.8	8.5	7.0	15.5	27.8	12.2	40.0	109.0	52.8	161.8
Low Density[c]	20.1	1.1	21.2	24.6	-0.7	23.9	72.5	8.1	80.6	178.0	12.0	190.0
Subtotal	30.3	8.7	39.0	33.8	6.3	40.1	101.9	20.4	122.3	333.0	68.6	401.6
Commercial	2.0	1.1	3.1	2.0	1.5	3.5	8.4	3.5	11.9	30.3	12.8	43.1
Industrial	2.2	0.9	3.1	2.4	0.8	3.2	8.6	1.8	10.4	32.9	5.3	38.2
Transportation, Communication, and Utilities	23.8	2.5	26.3	24.4	2.7	27.1	46.9	5.2	52.1	200.9	19.5	220.4
Governmental and Institutional[d]	2.7	0.3	3.0	2.3	0.3	2.6	7.6	0.6	8.2	33.7	2.2	35.9
Recreational[e]	6.7	0.8	7.5	4.8	1.0	5.8	12.9	2.9	15.8	50.4	7.7	58.1
Unused Urban	3.7	-2.0	1.7	3.3	-1.8	1.5	12.2	-6.2	6.0	50.9	-23.4	27.5
Urban Subtotal	71.4	12.3	83.7	73.0	10.8	83.8	198.5	28.2	226.7	732.1	92.7	824.8
Nonurban												
Sub-urban Density Residential[f]	1.4	0.1	1.5	6.2	4.2	10.4	15.7	3.1	18.8	29.1	9.0	38.1
Rural Density Residential[g]	- -	1.0	1.0	--	1.5	1.5	--	2.1	2.1	- -	5.9	5.9
Agricultural	371.3	-13.1	358.2	221.6	-15.8	205.8	175.9	-31.6	144.3	1,259.4	-103.9	1,155.5
Other Open Land[h]	132.4	-0.3	132.1	134.8	-0.7	134.1	190.4	-1.8	188.6	669.3	-3.7	665.6
Nonurban Subtotal	505.1	-12.3	492.8	362.6	-10.8	351.8	382.0	-28.2	353.8	1,957.8	-92.7	1,865.1
Total	576.5	- -	576.5	435.6	- -	435.6	580.5	- -	580.5	2,689.9	- -	2,689.9

Note: Offstreet parking area is included with the associated land use.

[a] *7.0 or more dwelling units per net residential acre.*

[b] *2.3-6.9 dwelling units per net residential acre.*

[c] *0.7-2.2 dwelling units per net residential acre.*

[d] *Increment consists, for the most part, of the increase at public sites.*

[e] *Includes only that land that is intensively used for recreational purposes. Increment consists, for the most part, of the increase at public sites.*

[f] *0.2-0.6 dwelling unit per net residential acre.*

[g] *No more than 0.2 dwelling unit per acre. Only the planned incremental rural residential area is indicated on this table;. the area associated with existing (2000) rural residential development is included in the urban and sub-urban residential land categories. The planned incremental rural residential area assumes that there would be one acre of developed homesite area per dwelling, the remainder of the required area being retained in open space use.*

[h] *Includes woodlands, water, wetlands, landfill sites, quarries, and unused rural lands.*

Source: SEWRPC.

increase, would occur at low density. The remainder of the incremental housing units would be accommodated at sub-urban density (0.2 to 0.6 dwelling unit per acre) and rural density (no more than 0.2 dwelling unit per acre), as described later in this chapter.

The plan's emphasis on medium and high residential densities as indicated above is intended to facilitate the efficient provision of public utilities such as sanitary sewerage and water supply facilities and public services including schools, public safety services, and public transit. In addition, the plan emphasis on medium and high densities would serve to moderate the amount of open space required to be converted to urban use in order to accommodate growth in population, households, and employment in the Region.

The regional plan encourages residential development and redevelopment in predominantly residential neighborhoods as well as in more mixed-use settings. The plan envisions residential neighborhoods designed as cohesive units, properly related to the larger community of which they are a part, and served by an interconnected internal street, bicycle-way, and pedestrian system and by a neighborhood school, park, and shopping area.[9] In addition to such neighborhood residential development, the regional plan envisions residential development in settings having an even greater mixture of land uses. Examples of such mixed-use settings include dwellings above the ground floor of commercial uses and residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or civic uses.

As already noted, the low density range is defined under the plan as 0.7 to 2.2 dwelling units per net residential acre—equivalent to single-family lots of about 0.5 to 1.5 acres. The regional plan discourages development at the lower end of this density range within urban service areas, given the inefficiencies attendant to the provision of basic urban facilities and services to large residential lots. The plan further recommends that low (and sub-urban) density residential development beyond planned urban service areas be limited to that which is already committed in subdivision plats and certified surveys.

Commercial and Industrial Land

Under the regional land use plan, the total amount of commercial and industrial land in the Region would increase by 18 square miles, or 28 percent, from about 63 square miles in 2000 to 81 square miles in 2035. Commercial land accommodating retail and service activities would increase by 12.8 square miles; industrial land accommodating manufacturing, wholesaling, and construction activities would increase by 5.3 square miles.

The commercial and industrial land recommendations of the regional plan take into account the employment projections for the Region, including a projected continuing shift from a manufacturing-based to a service-based economy and anticipated reductions in employment densities (i.e., the number of jobs per acre) for industrial and retail activities. Recommendations of community land use plans regarding the development and redevelopment of commercial and industrial areas were also an important consideration in the design of the regional plan.

The regional plan envisions a range of commercial and industrial areas. Thus, the plan envisions neighborhood, community, and regional commercial centers, including both mixed-use areas with a residential component and areas devoted more exclusively to commercial uses. Likewise, the plan envisions both community-level and regional industrial centers. The plan envisions a continuation of the trend toward mixing industrial and commercial (especially service) activities within the same area.

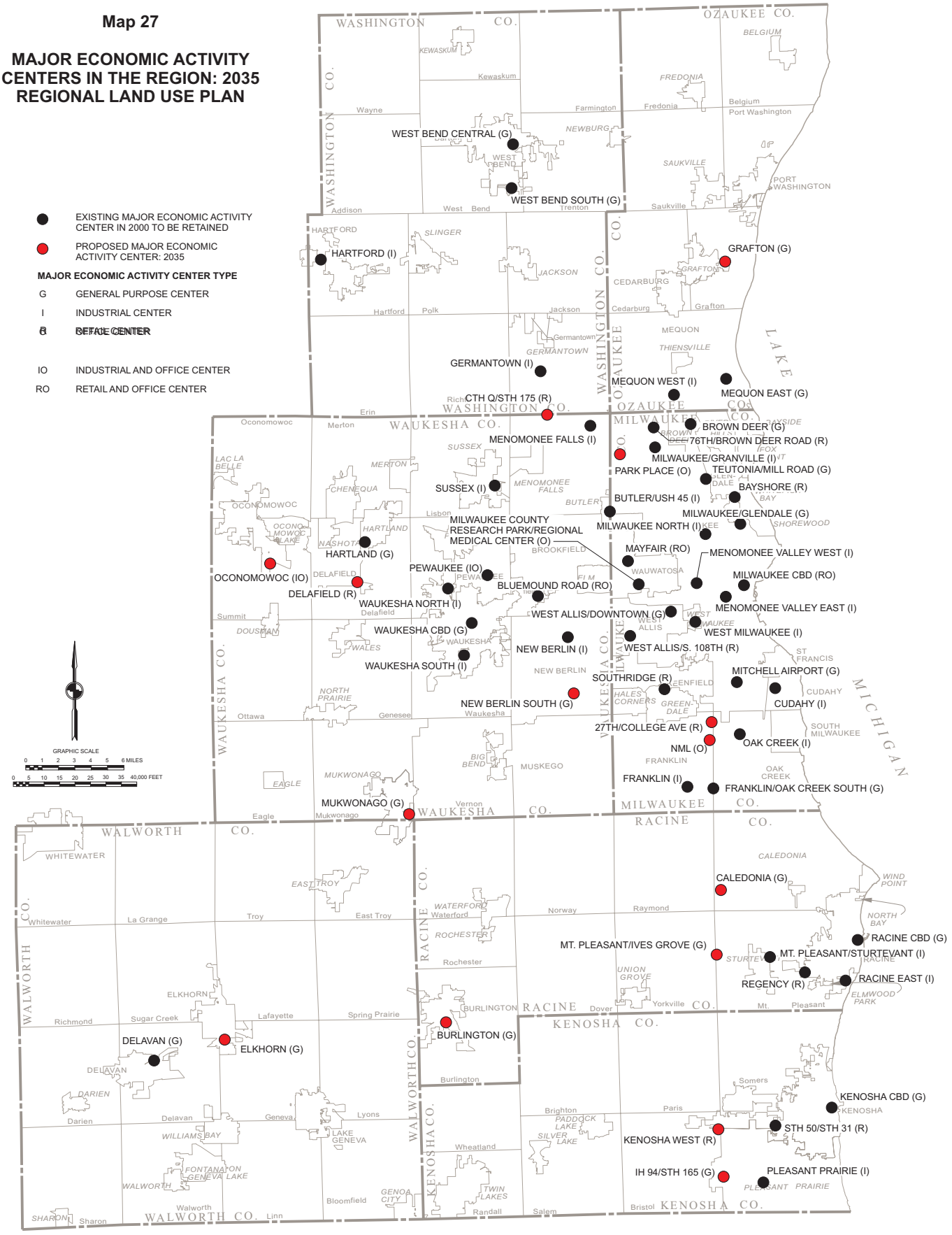
The largest commercial and industrial areas, in terms of employment levels, anticipated under the plan are identified as major economic activity centers. These are defined as areas containing a concentration of commercial and/or industrial land having at least 3,500 total jobs or 2,000 retail jobs. Major economic activity centers are further classified based upon their employment levels as follows: industrial center—at least 3,500 industrial jobs; office center—at least 3,500 office jobs; retail center—at least 2,000 retail jobs; and general purpose center—at least 3,500 total jobs (but not meeting the employment threshold for designation as a major industrial, retail, or office center). The designation of a site as a major industrial, retail, or office center is intended to indicate the predominant type of activity. It should be recognized, however, that many such sites accommodate a mixture of uses. A major industrial center may accommodate offices, service operations, and research facilities in addition to manufacturing, wholesaling, and distribution facilities. A major retail center may accommodate office and service uses in addition to retail operations. Some sites meet more than one of the afore-noted employment thresholds.

The regional plan envisions a total of 60 major economic activity centers in the Region in 2035 (see Map 27). This includes 45 centers that met the major economic activity center threshold in 2000 and 15 additional areas

[9] *As a practical matter, smaller household sizes and the attendant lower neighborhood population levels often require that an elementary school or retail and service area be provided to serve two or more contiguous neighborhoods, rather than a single neighborhood.*

Map 27

MAJOR ECONOMIC ACTIVITY CENTERS IN THE REGION: 2035 REGIONAL LAND USE PLAN



Source: SEWRPC.

that are envisioned to reach major center status by 2035. Included in the 45 existing centers are 14 general purpose centers, 20 industrial centers, six retail centers, one office center, three combined retail and office centers, and one combined industrial and office center. Included in the 15 proposed additional sites are eight general purpose centers, four retail centers, two office centers, and one combined industrial and office center. With the exception of a proposed site in the Village of Caledonia (Racine County), each of the major economic activity centers was developed, under development, or being redeveloped in 2005. The Village of Caledonia center is proposed in the Village land use plan.

The general boundaries of the major economic activity centers envisioned under the regional plan are delineated on the plan map (Map 26). The delineation of major centers on Map 26 is based largely upon a consideration of community land use plans and zoning as well as existing land use.

In response to the trend toward the mixing of various types of jobs within employment centers, the year 2035 regional plan identifies "general purpose" major economic activity centers as noted above. This is in addition to more narrowly defined "industrial," "retail," and "office" centers identified in previous generations of the regional plan. Because of this definitional change, the major center recommendations of the 2035 plan are not directly comparable with recommendations of prior plans. It should be noted, however, that all but seven of the 45 major industrial, retail, and office centers that had been recommended in the year 2020 plan are included in the year 2035 plan. The seven sites not carried forward into the 2035 land use plan include five industrial areas—one in the eastern portion of the City of Kenosha,[10] one in the western portion of the City of West Allis,[11] and three in the central portion of the City of Milwaukee (areas referred to as "Milwaukee South," "Milwaukee Near South," and "Milwaukee Near North" under the year 2020 plan[12]). The other two sites are the former Capitol Court shopping mall and the former Southgate-Loomis Center retail area; both of these areas are being redeveloped, but are not anticipated to achieve major center status.

Governmental and Institutional Land

The regional land use plan envisions the development of about two square miles of governmental and institutional land within the Region, increasing the total amount of such lands by 7 percent, from about 34 square miles to about 36 square miles. The planned increase consists, for the most part, of the increase at public sites. The major

[10] *While the eastern City of Kenosha area met major industrial center criteria in 2000, industrial employment decreased below the major industrial center threshold in the early 2000s and is not envisioned to increase under the plan.*

[11] *As envisioned in the 2020 regional plan, the western City of West Allis industrial area consisted of a number of industrial facilities located within a corridor along STH 100, from IH 94 on the north to W. Cleveland Avenue on the south. In light of the locally planned redevelopment of industrial lands to residential use in the southerly portion of this corridor, the area is not expected to meet the major industrial center criteria under plan conditions.*

[12] *The Milwaukee Near North and Milwaukee South areas no longer met the major industrial center criteria in 2000. The Milwaukee Near South area met the major industrial center criteria in 2000, primarily because of the concentration of related employment at the Rockwell Automation facilities. Under the 2035 regional plan, the area encompassing the Rockwell Automation facilities have been included as part of the Menomonee Valley East major economic activity center.*

governmental and institutional centers envisioned under the plan—including county courthouses and administrative offices, State and Federal office buildings, medical complexes,[13] universities,[14] technical colleges, and major cultural centers—are shown on Map 28. No new major governmental or institutional centers are envisioned.

Transportation, Communication, and Utility Land

The regional land use plan envisions that the areas devoted to transportation, communication, and utilities would increase by about 19 square miles, or 10 percent, from 201 square miles in 2000 to 220 square miles in 2035. Included in this planned increase are lands needed for streets and highways, airport expansions, and utility facilities such as sewage treatment plants. Major transportation and utility facilities envisioned under the plan—including public sewage treatment plants,[15] major electric power generation plants, major airports, major bus and railway passenger stations,[16] and the Milwaukee seaport—are shown on Map 29.

Recreational Land

The regional land use plan envisions the development of about eight square miles of recreational land in the Region, increasing the land area in outdoor recreational use from 50 square miles in 2000 to 58 square miles in 2035, or by 15 percent. The recreational land area pertains to "intensive use" areas—that is, land actually developed, or anticipated to be developed, as outdoor recreation facility areas. The planned increase in recreational land consists, for the most part, of the increase at public outdoor recreation sites.

The planned increase in recreation land is based in part upon neighborhood development standards that are intended to provide adequate neighborhood parkland in developing residential areas. The planned increase also reflects specific park site acquisition and development proposals set forth in county park and open space plans (which, taken together, comprise the regional park and open space plan) and in community park and open space plans.

The land use plans envisions a system of 32 major parks of regional size and significance. Such parks have an area of at least 250 acres and provide opportunities for a variety of resource-oriented outdoor recreational

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[13]*Includes those medical centers with 600 or more beds.*

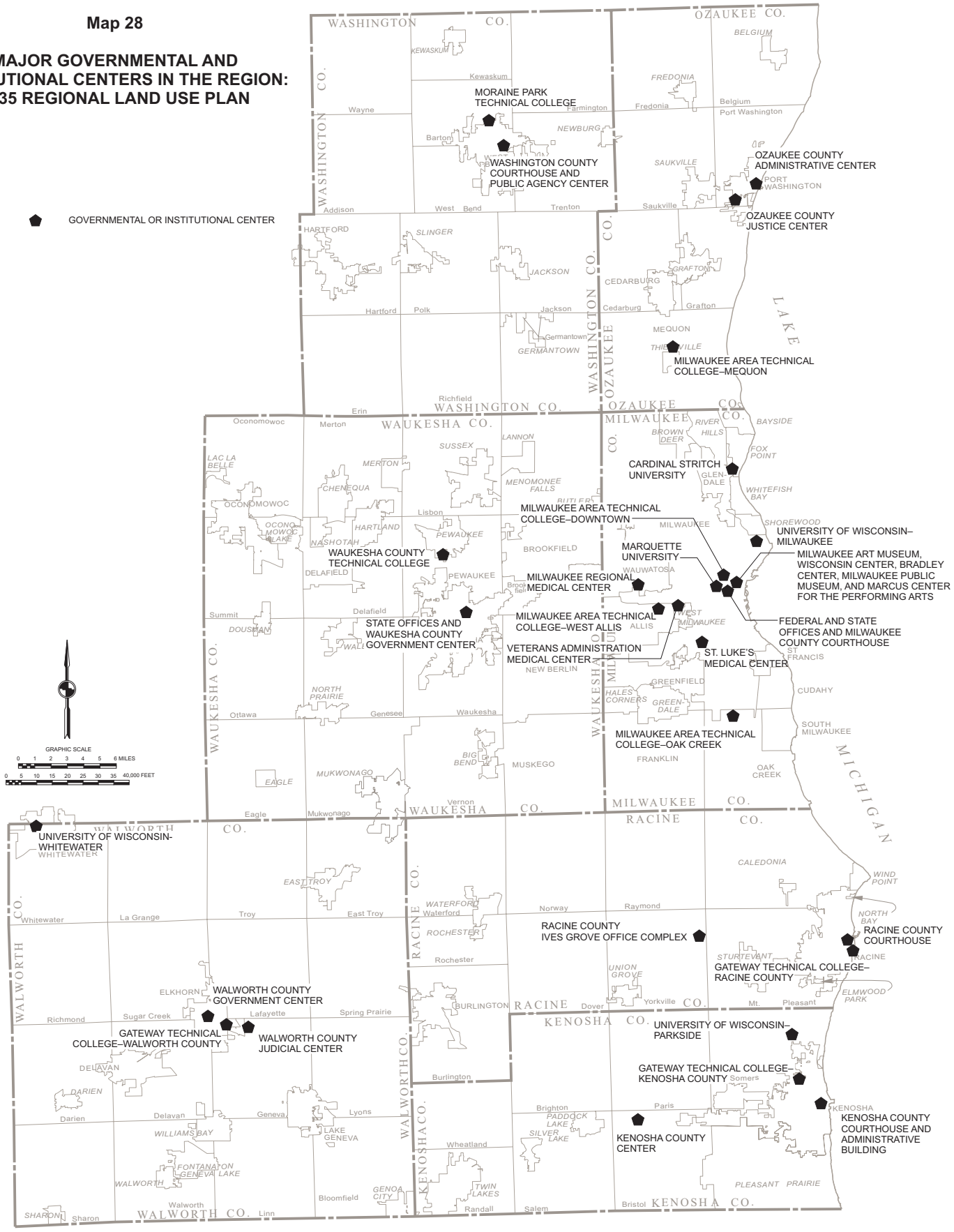
[14]*Includes institutions with accredited bachelor's degree programs that have a total enrollment of 4,500 or more students.*

[15]*It should be noted that the regional plan no longer envisions sewage treatment plants in the Village of Wales or the Village of North Prairie. An amendment to the regional water quality management plan adopted in 2001 (*"Amendment to the Regional Water Quality Management Plan—Northwestern Waukesha County," *dated March 2001), recommended that future sewer service to the Wales area be provided through the Delafield-Hartland Water Pollution Control Commission sewage treatment plant. A facilities plan for the Village of North Prairie ("Final Report, Village of North Prairie Wastewater Treatment Facility Plan," dated December 1989) concluded that the sewerage system needs in the North Prairie area can most cost-effectively be solved through onsite sewage disposal systems.*

[16] *The locations of existing railway passenger stations in downtown Milwaukee, at General Mitchell International Airport, and downtown Kenosha, along with the station under construction in Sturtevant, are shown on the regional plan map. Railway passenger stations associated with the potential Kenosha-Racine-Milwaukee commuter rail service are not shown on the plan map. Project planning for that service has not been completed, the project has not yet been endorsed by local governments or a project sponsor, and, as a result the regional transportation plan has not yet been amended to specifically recommend commuter rail service in the Kenosha-Racine-Milwaukee corridor.*

Map 28

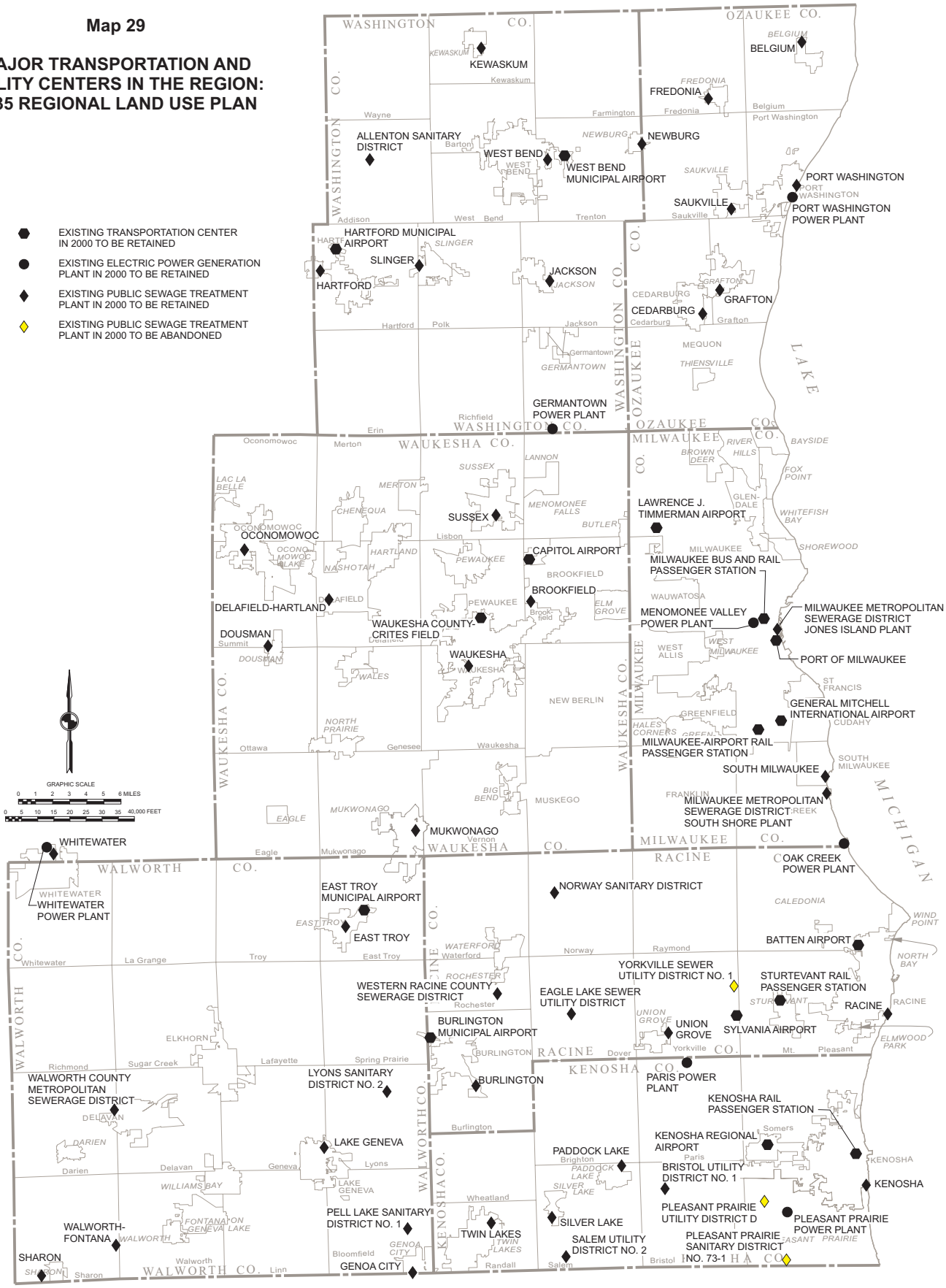
MAJOR GOVERNMENTAL AND INSTITUTIONAL CENTERS IN THE REGION: 2035 REGIONAL LAND USE PLAN



Source: SEWRPC.

Map 29

MAJOR TRANSPORTATION AND UTILITY CENTERS IN THE REGION: 2035 REGIONAL LAND USE PLAN



Source: SEWRPC.

activities. All of the proposed major parks were at least partially acquired as of 2005. The recommended major parks are shown on Map 30.[17] Also shown on Map 30 are existing major special-use outdoor recreation sites and existing major or proposed major nature study sites.[18]

The 2035 regional land use plan envisions two more major parks than the year 2020 plan, one in Kenosha County and the other in Waukesha County. Since the preparation of the 2020 regional plan, Kenosha County has acquired nearly one-half of a proposed approximately 500-acre park site in the Towns of Randall and Wheatland. With the development of recreational facilities in accordance with the Kenosha County park and open space plan, that site would serve as a major regional park in the western portion of Kenosha County. The second park, located in the Town of Oconomowoc, has been substantially acquired by Waukesha County, with 347 acres of a planned 500-acre park site acquired by 2004. Assuming recreational facility development in accordance with the Waukesha County park and open space plan, that site would serve as a major regional park in the northwestern portion of the County.

Sub-urban Density Residential Land

Under the regional plan, sub-urban density residential land is defined as residential development at a density of 0.2 to 0.6 dwelling unit per net residential acre. Such development is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sanitary sewer and water supply service and other urban amenities.

The regional land use plan recommends that sub-urban density residential land be restricted to that which is already committed through approved subdivision plats and certified surveys. In this respect, the plan envisions that the amount of sub-urban density residential land would increase by nine square miles, or by about 31 percent, between 2000 and 2035. This would accommodate about 3,400 households, or about 2 percent of the projected increase in households in the Region between 2000 and 2035. No additional sub-urban density residential land beyond the already committed areas is recommended.

Environmentally Significant Lands

The most important elements of the natural resource base of the Region, including the best remaining woodlands, wetlands, prairies, wildlife habitat, surface water and associated shorelands and floodlands, and related features, including existing park and open space sites, scenic views, and natural areas and critical species habitat sites, occur in linear patterns in the landscape, termed "environmental corridors." The most important of these have been identified as "primary environmental corridors," which are by definition at least two miles long, 200 feet wide, and 400 acres in area. Shown in green on the regional plan map (Map 26), primary environmental corridors in the Region are generally located along major stream valleys, along the Lake Michigan shoreline, around major inland lakes, and in the Kettle Moraine. The regional land use plan recommends the preservation of primary environmental corridors in essentially natural, open use. The preservation of these corridors is considered essential to the overall environmental quality of the Region and the maintenance of its unique cultural and natural heritage and natural beauty. Because these corridors are generally poorly suited for urban development owing to soil limitations, steep slopes, or flooding potential, their preservation will also help to avoid the creation of new environmental and developmental problems.

In addition to primary environmental corridors, other concentrations of natural resources—referred to as "secondary environmental corridors" and "isolated natural resource areas"—have been identified as warranting strong consideration for preservation. Secondary environmental corridors contain a variety of resource features

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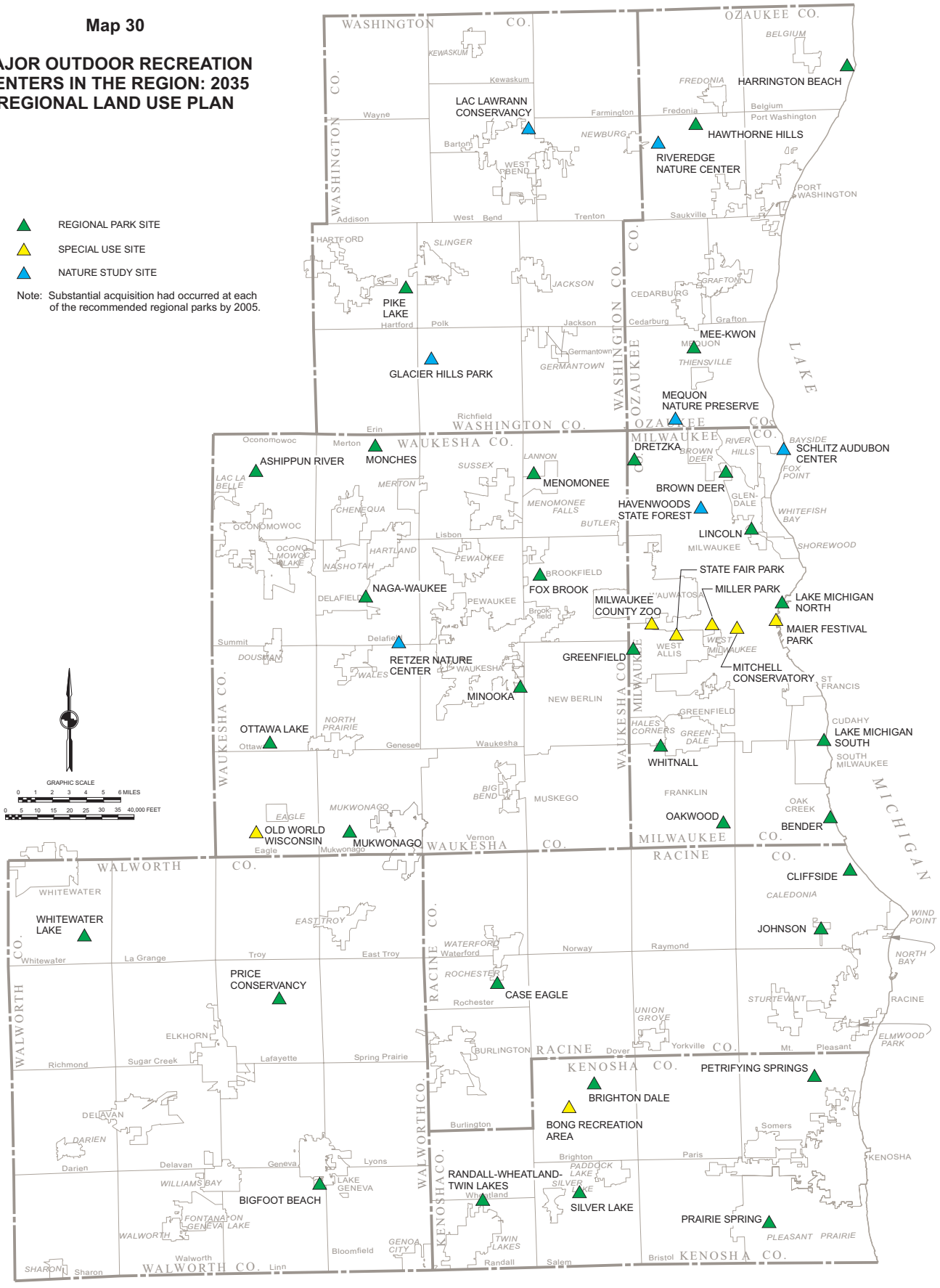
[17] *On Map 30, the sites in Milwaukee County identified as "Lake Michigan North" and "Lake Michigan South" refer to clusters of parks along the Lake Michigan shoreline. Lake Michigan North includes Back Bay, Juneau, Lake, McKinley, O'Donnell, and Veterans Parks and Bradford Beach. Lake Michigan South includes Bay View, Grant, Sheridan, South Shore, and Warnimont Parks.*

[18] *Major nature study sites are public or private sites, other than sites identified as regional park sites, that are at least 100 acres in size and that have, or are proposed to have, an indoor interpretive nature center.*

Map 30

MAJOR OUTDOOR RECREATION CENTERS IN THE REGION: 2035 REGIONAL LAND USE PLAN



Source: SEWRPC.

and are by definition at least one mile long and 100 acres in area. Isolated natural resource areas are concentrations of natural resources of at least five acres in size that have been separated from the environmental corridor network by urban or agricultural use. Existing secondary environmental corridors and isolated natural resource areas are identified on Map 10 in Chapter II of this report. The regional land use plan recommends that these areas be retained in natural open use as determined in county and local plans.

In the preparation of the regional plan, other than for a limited number of exceptions, incremental urban and rural development was not allocated to primary or secondary environmental corridors or isolated natural resource areas. The exceptions pertain to local commitments to development that have been identified in local sanitary sewer service area plans adopted as part of the regional water quality management plan.

While the design of the regional land use plan does not allocate incremental development to the environmental corridors and isolated natural resource areas, other than to reflect local commitments as noted above, the plan recognizes that certain development may be accommodated in such areas without jeopardizing their overall integrity. Guidelines pertaining to such development within environmental corridors are presented in Table 27 in Chapter IV. The guidelines recognize that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated in such areas. Under these guidelines, residential development in environmental corridors would be limited to upland environmental corridors at an overall density of no more than one dwelling unit per five upland acres. Conservation subdivision designs are strongly encouraged where such rural density residential development is accommodated. Under the guidelines, in lieu of rural density residential development, up to 10 percent of the upland corridor area may be disturbed in order to accommodate urban-density residential, commercial, industrial, or other urban development (see Footnote 4).

Under the regional plan, the existing (year 2000) configuration of environmental corridors and isolated natural resource areas would be modified slightly. These modifications include minor deletions attendant to prior local commitments to development as noted above, along with certain additions. The additions include currently farmed floodplains adjacent to existing environmental corridors within planned urban service areas that may be expected to revert to more natural conditions over time and become part of the corridor. The additions also include certain other open lands that are envisioned to revert to more natural conditions and become part of the environmental corridor as proposed in county park and open space plans.

As indicated in Table 36, under the regional land use plan, primary environmental corridors in the Region would encompass about 481 square miles, or 18 percent of the Region, in 2035. This represents a net increase of 18 square miles, or 4 percent, over the existing 2000 area. Secondary environmental corridors would encompass 77 square miles in 2035, a net increase of about two square miles, or 3 percent, over 2000. Isolated natural resource areas would encompass about 63 square miles in 2035, about the same as in 2000.

The regional land use plan supports carefully planned efforts—such as the Wisconsin Department of Natural Resources Turtle Valley Wildlife Area project in the west central area of Walworth County—to restore farmland and open space to more natural conditions, resulting in the re-establishment of wetlands, woodlands, prairies, grasslands, and forest interiors. Such efforts could expand the environmental corridor network in the Region. The results of such restoration efforts would be reflected in future generations of the regional land use plan.[19]

Finally, it is recommended that all remaining natural areas and critical species habitat sites identified in the regional natural areas and critical species habitat protection and management plan be preserved. Natural areas are tracts of land or water that contain plant and animal communities believed to be representative of the pre-European-settlement landscape; critical species habitat sites are other areas that support endangered, threatened,

[19] *The expanded primary environmental corridor within the Turtle Valley Wildlife Area is reflected on the regional land use plan map (Map 26) as well as in Table 36.*

Table 36

EXISTING AND PROPOSED ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN THE REGION BY COUNTY: 2000 AND 2035 REGIONAL LAND USE PLAN

	Primary Environmental Corridors					
	Existing 2000		Planned Increment: 2000-2035		Total 2035	
County	Square Miles	Percent of Total	Square Miles	Percent	Square Miles	Percent of Total
Kenosha	43.8	9.5	2.0	4.6	45.8	9.6
Milwaukee	14.5	3.1	2.3	15.9	16.8	3.5
Ozaukee	32.2	7.0	1.1	3.4	33.3	6.9
Racine	35.5	7.7	1.4	3.9	36.9	7.7
Walworth	99.2	21.4	2.8	2.8	102.0	21.2
Washington	94.2	20.4	3.0	3.2	97.2	20.2
Waukesha	142.8	30.9	5.7	4.0	148.5	30.9
Region	462.2	100.0	18.3	4.0	480.5	100.0

	Secondary Environmental Corridors					
	Existing 2000		Planned Increment: 2000-2035		Total 2035	
County	Square Miles	Percent of Total	Square Miles	Percent	Square Miles	Percent of Total
Kenosha	10.0	13.4	1.4	14.0	11.4	14.8
Milwaukee	5.2	6.9	-0.4	-7.7	4.8	6.3
Ozaukee	7.6	10.2	0.2	2.6	7.8	10.2
Racine	10.8	14.4	0.9	8.3	11.7	15.2
Walworth	14.6	19.5	-0.1	-0.7	14.5	18.9
Washington	15.4	20.6	0.2	1.3	15.6	20.3
Waukesha	11.2	15.0	-0.2	-1.8	11.0	14.3
Region	74.8	100.0	2.0	2.7	76.8	100.0

	Isolated Natural Resource Areas					
	Existing 2000		Planned Increment: 2000-2035		Total 2035	
County	Square Miles	Percent of Total	Square Miles	Percent	Square Miles	Percent of Total
Kenosha	6.0	9.5	- -	- -	6.0	9.6
Milwaukee	3.3	5.2	-0.1	-3.0	3.2	5.1
Ozaukee	5.6	8.9	-0.1	-1.8	5.5	8.8
Racine	12.0	19.1	0.2	1.7	12.2	19.5
Walworth	12.9	20.5	0.4	3.1	13.3	21.2
Washington	10.1	16.1	-0.1	-1.0	10.0	15.9
Waukesha	13.0	20.7	-0.5	-3.8	12.5	19.9
Region	62.9	100.0	-0.2	-0.3	62.7	100.0

Source: SEWRPC.

or rare plant or animal species. The location of these sites within the Region is shown on Map 9 in Chapter II of this report. Almost all of the natural area and critical species habitat sites are located within environmental corridors or isolated natural resource areas.

Rural Lands

The area of the Region shown as white on the regional plan map (Map 26) is recommended to remain in essentially rural use—primarily agriculture use and rural density residential use, the latter defined as residential development at a density of no more than one dwelling unit per five acres. Also included within the white area on Map 26 are secondary environmental corridors and isolated natural resource areas beyond the planned urban service areas; plan recommendations for secondary environmental corridors and isolated natural resource areas were described in the previous section of this chapter.

The regional plan recommends the preservation of prime agricultural land—land best suited for agricultural use. Prime agricultural lands should be identified based upon soil suitability for agriculture, with high priority placed on farmland covered by Natural Resources Conservation Service Class I and Class II soils. In addition to soil suitability, other factors—the size of individual farm units and overall size of the farming area, the availability of agricultural services, and the degree of encroachment from urban uses—may also be considered. The regional plan recommends that counties in the Region, in cooperation with the concerned local units of government, carry out planning programs to identify prime farmland. Most county planning in this regard was carried out more than 20 years ago with the advent of the Wisconsin Farmland Preservation program and needs to be reviewed and updated.[20] Prime farmland cooperatively identified by counties and the concerned communities should be preserved for agricultural use, with residential development generally limited to no more than one dwelling unit per 35 acres.

While much progress has been made in preserving primary environmental corridors and other environmentally significant lands in the Region, the preservation of prime farmland remains a difficult and challenging issue, one that involves the balancing of land use planning objectives and the economic realities faced by farmers. Historically, efforts to ensure the preservation of farmland within the Region have relied on zoning and other land use controls. Mechanisms designed to compensate landowners for committing their land to agricultural use—such as the purchase or transfer of development rights—have not yet been widely embraced within the Region. The regional plan thus reaffirms the importance of preserving prime agricultural land in Southeastern Wisconsin while acknowledging the difficulties inherent in achieving this goal.

The regional plan also encourages the preservation of nonprime farmland for agricultural use. This could be in the form of traditional agricultural use or alternative agricultural uses such as smaller hobby farms or specialty farms including community supported agricultural operations. The plan recommends that any development of nonprime farmland be limited to rural residential development at a 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 subdivision designs. Conservation subdivision designs generally involve locating dwelling units in clusters surrounded by open space, thereby achieving the desired density (no more than one dwelling unit per five acres) on an overall basis. The layout of lots and supporting streets is done in a manner that preserves the most significant natural resource features to the extent practicable. Farming activity may be continued on open space lands within conservation subdivisions.

Regional plan recommendations for nonprime farmland are intended to provide the opportunity for some development, with potential significant economic return, in a manner that is consistent with location in a rural area. The plan recommendation that development be limited to no more than one dwelling unit per five acres is intended to achieve a number of objectives—including minimizing traffic volumes; minimizing demands for public services, such as fire and emergency medical services, in outlying areas where a high level of such services may be difficult and costly to provide; preserving natural drainage systems; preserving open space and rural character; and minimizing the potential risk to the environment attendant to the widespread use of onsite sewage disposal systems.

The regional land use plan envisions that about 2 percent of the increment in households in the Region between 2000 and 2035, or about 3,700 households, would be accommodated through rural density residential development. In developing the plan, these households were generally not allocated to Class I and Class II farmland. The allocation of rural residential development to Class I and Class II farmland under the plan was limited to existing platted rural density lots.

[20] *Waukesha County revised the County criteria for identifying prime farmland in the process of preparing a county development plan in 1996.*

Overall, the regional plan envisions that the agricultural land base of the Region would decrease by about 104 square miles, or 8 percent, between 2000 and 2035 (see Tables 34 and 35 presented earlier in this chapter).

Public Sanitary Sewer and Water Supply Service

Under the regional land use plan, most new urban development would be served with public sanitary sewer and water supply facilities. In addition, public sanitary sewer and water supply service would be extended to certain existing urban areas currently lacking these facilities. In this regard, the plan envisions that most existing urban development which is served by onsite sewage disposal and water supply systems and located within planned urban service areas would eventually be connected to public sanitary sewer and water supply systems.

Areas of the Region within which public sanitary sewer and water supply facilities would be provided are shown on Map 31. In 2000, about 477 square miles, or 18 percent of the total area of the Region, and about 1.71 million persons, or 89 percent of the regional population, were served by public sanitary sewer facilities. About 390 square miles, or 15 percent of the total area of the Region, and about 1.58 million persons, or 82 percent of the regional population, were served by public water supply facilities. In 2035, under the regional land use plan, about 639 square miles, or 24 percent of the total area of the Region, and about 2.11 million persons, or 93 percent of the regional population, would be served by public sanitary sewer and water supply services. Public water supply would be provided in several small communities for which sanitary sewer service is not envisioned (see Tables 37 and 38).[21]

Under the regional plan, development beyond planned sewer and water service areas would be limited to low density and sub-urban density residential development—in areas where commitments to such development have already been made—as well as to rural residential development. About 5,400 households, or 3 percent of the incremental households envisioned under the plan, would be accommodated on existing platted lots at low and sub-urban densities beyond the planned urban service areas. The distribution of these lots within the Region is shown on Map 32. While such development is not consistent with regional development objectives, the regional plan recognizes existing commitments to such development and the likelihood that these lots will be developed over time.[22]

As noted earlier in this chapter, under the plan, it is envisioned that about 3,700 additional households would be accommodated in rural areas at a density of no more than one dwelling unit per five acres, consistent with the rural-area recommendations of the regional plan.

Population, Households, and Employment

The regional land use plan was designed to accommodate the intermediate projections of population, households, and employment for the Region prepared by the Regional Planning Commission in 2004, and re-presented in Chapter V of this report. Under the plan, the resident population of the Region would increase by 344,800 persons, or 18 percent, from 1,931,200 persons in 2000 to 2,276,000 persons in 2035. Under the plan, the regional population would be distributed among the seven counties as indicated in Table 39. Population increases between 2000 and 2035 would range from about 18,800 persons in Ozaukee County to 86,000 persons in Waukesha County. Comparatively high relative rates of increase for Kenosha and Walworth Counties between 2000 and 2035—40 percent and 52 percent, respectively—reflect an expected continuation of a strong "Illinois influence", characterized by persons from Northeastern Illinois seeking residences in Wisconsin.

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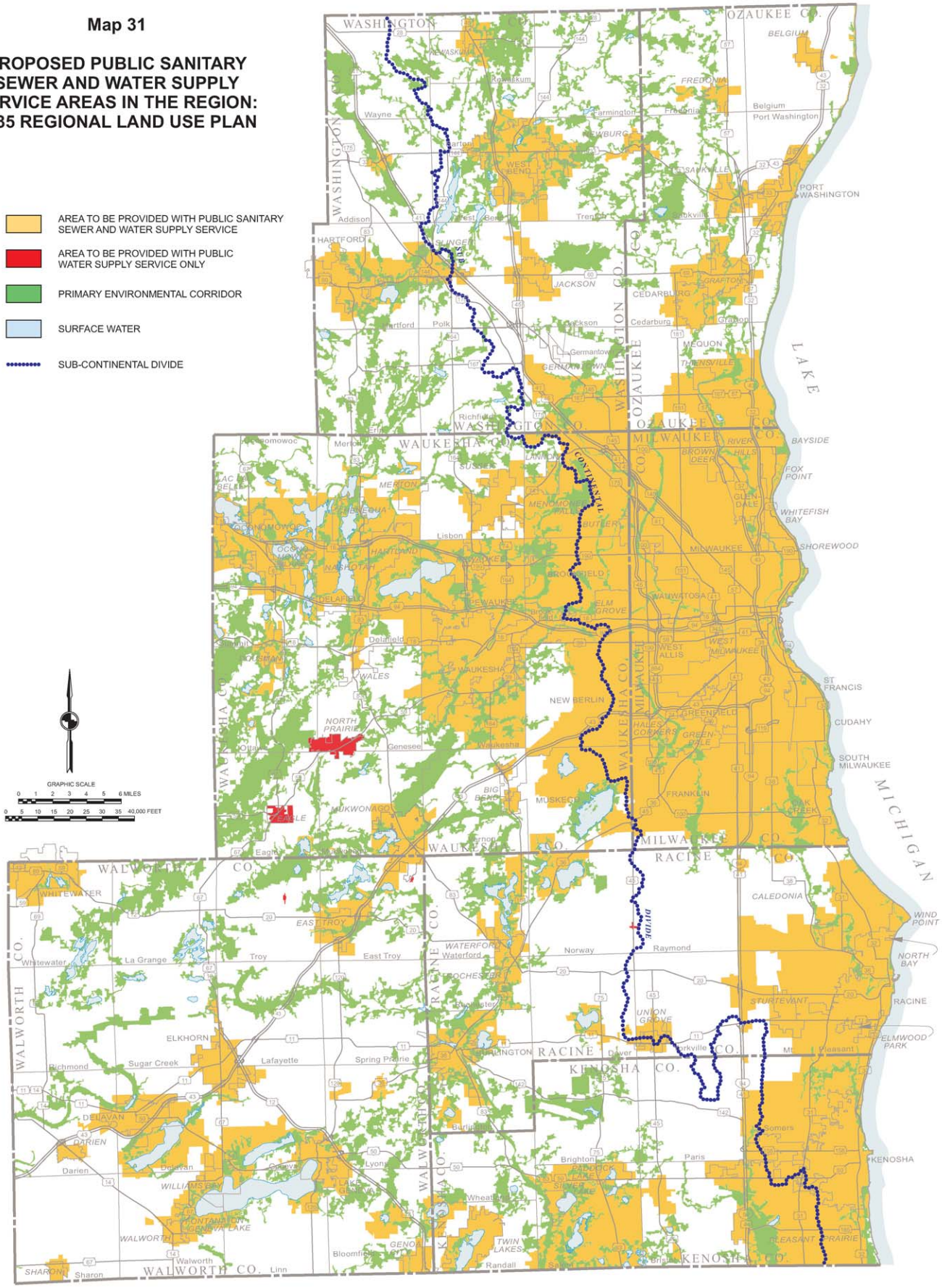
[21] *For purposes of the regional plan, the Prairie Village Water Trust, a private water supply system serving the North Prairie area in Waukesha County, has been considered a public water utility, since it functions essentially as a public water utility serving that area.*

[22] *In addition to the low and sub-urban density residential development outside planned sanitary sewer and water supply service areas indicated above, some residential development served by onsite sewage disposal systems and private wells may be expected within planned urban service areas, prior to the time that centralized utility services become available. The amount of such "premature" development will depend upon the demand for housing in such areas and community response to that demand, including the timing of utility extensions.*

Map 31

PROPOSED PUBLIC SANITARY SEWER AND WATER SUPPLY SERVICE AREAS IN THE REGION: 2035 REGIONAL LAND USE PLAN



Source: SEWRPC.

Table 37

AREA AND POPULATION SERVED BY PUBLIC SANITARY SEWER SERVICE IN THE REGION BY COUNTY: 2000 AND 2035 REGIONAL LAND USE PLAN

County	Area Served by Public Sanitary Sewers				Population Served by Public Sanitary Sewers			
	2000		2035		2000		2035	
	Square Miles	Percent of County/ Region Area	Square Miles	Percent of County/ Region Area	Persons	Percent of County/ Region Population	Persons	Percent of County/ Region Population
Kenosha	41.2	14.8	65.3	23.5	133,800	89.4	199,900	95.1
Milwaukee	193.2	79.6	205.8	84.8	938,800	99.9	1,007,000	99.9
Ozaukee	29.3	12.4	41.5	17.6	64,400	78.3	87,400	86.4
Racine	51.6	15.2	64.3	18.9	169,900	90.0	196,100	91.8
Walworth	27.6	4.8	46.5	8.1	62,100	67.5	111,900	79.9
Washington	23.2	5.3	40.5	9.3	71,500	60.9	113,000	71.8
Waukesha	110.7	19.1	175.4	30.2	272,200	75.4	391,500	87.6
Region	476.8	17.7	639.3	23.8	1,712,700	88.7	2,106,800	92.6

Source: SEWRPC.

Table 38

AREA AND POPULATION SERVED BY PUBLIC WATER SUPPLY IN THE REGION BY COUNTY: 2000 AND 2035 REGIONAL LAND USE PLAN

County	Area Served by Public Water Supply				Population Served by Public Water Supply			
	2000		2035		2000		2035	
	Square Miles	Percent of County/ Region Area	Square Miles	Percent of County/ Region Area	Persons	Percent of County/ Region Population	Persons	Percent of County/ Region Population
Kenosha	29.8	10.7	65.3	23.5	111,000	74.2	199,900	95.1
Milwaukee	180.9	74.5	205.8	84.8	927,300	98.6	1,007,000	99.9
Ozaukee	15.7	6.7	41.5	17.6	45,400	55.2	87,400	86.4
Racine	37.9	11.1	64.4	18.9	146,400	77.5	196,200	91.9
Walworth	22.0	3.8	46.7	8.1	56,200	61.1	112,100	80.1
Washington	21.4	4.9	40.5	9.3	66,800	56.9	113,000	71.8
Waukesha	82.3	14.2	178.9	30.8	228,100	63.2	396,200	88.7
Region	390.0	14.5	643.1	23.9	1,581,200	81.9	2,111,800	92.8

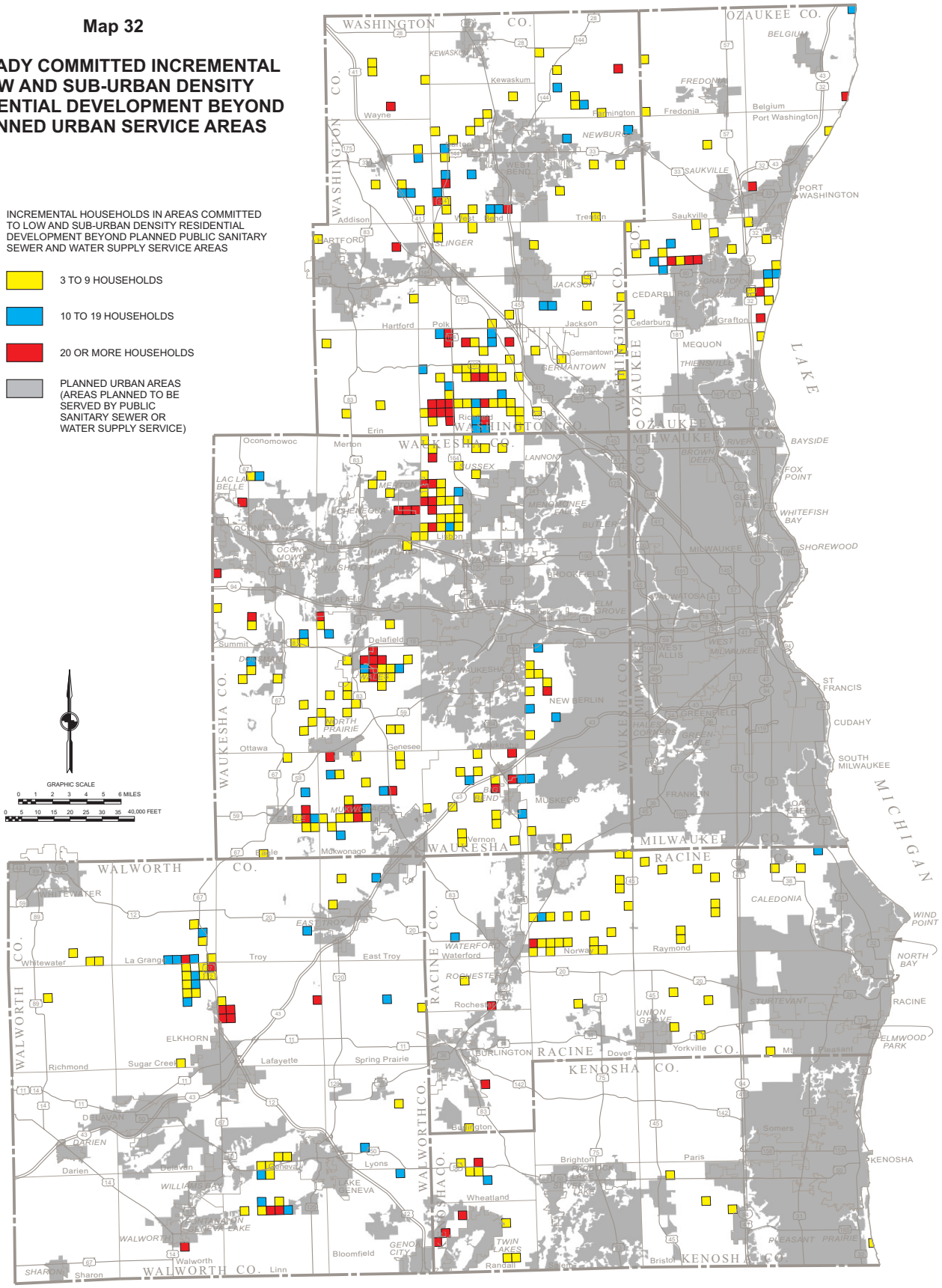
Source: SEWRPC.

Under the regional plan, the number of households in the Region would increase by 176,700, or 24 percent, from 749,000 households in 2000 to 925,700 households in 2035. Households would continue to increase at a faster relative rate than the regional population, with average household sizes continuing to decline somewhat. Among the seven counties in the Region, the increase in households would range from 9,100 in Ozaukee County to 49,800 in Milwaukee County (see Table 40).

As indicated in Table 41, total employment in the Region is estimated to have decreased from about 1,222,800 jobs in 2000 to 1,179,000 jobs in 2003. Employment is projected to increase to about 1,368,300 jobs by 2035, an increase of 189,300 jobs, or 16 percent over the estimated 2003 level. The future rate of employment growth in the Region is expected to be lower than occurred during the 1970s, 1980s, and 1990s, when jobs increased by an average of about 146,000 jobs per decade. Commission forecasts indicate that a leveling-off in the regional labor

Map 32

ALREADY COMMITTED INCREMENTAL LOW AND SUB-URBAN DENSITY RESIDENTIAL DEVELOPMENT BEYOND PLANNED URBAN SERVICE AREAS



The regional land use plan recognizes commitments that have been made to low and sub-urban density residential development beyond planned urban service areas. The regional plan envisions that about 5,400 households, or 3 percent of the incremental households envisioned under the plan, would be accommodated on existing platted lots, typically from one to three acres in size, located beyond planned urban service areas. While such development is not consistent with the regional development objectives, the regional plan recognizes prior local commitments to such development and the likelihood that these lots will be developed over time.

Source: SEWRPC.

Table 39

ACTUAL AND PLANNED POPULATION IN THE REGION BY COUNTY: 1970-2035

County	Population											
	Actual 1970		Actual 1980		Actual 1990		Actual 2000		Actual (Estimated) 2003		Planned 2035	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	117,917	6.7	123,137	7.0	128,181	7.1	149,577	7.7	154,200	7.9	210,100	9.2
Milwaukee	1,054,249	60.1	964,988	54.7	959,275	53.0	940,164	48.7	941,300	48.0	1,007,100	44.3
Ozaukee	54,461	3.1	66,981	3.8	72,831	4.0	82,317	4.2	84,500	4.3	101,100	4.4
Racine	170,838	9.7	173,132	9.8	175,034	9.7	188,831	9.8	191,100	9.8	213,600	9.4
Walworth	63,444	3.6	71,507	4.0	75,000	4.1	92,013	4.8	95,600	4.9	140,000	6.2
Washington	63,839	3.6	84,848	4.8	95,328	5.3	117,496	6.1	121,900	6.2	157,300	6.9
Waukesha	231,335	13.2	280,203	15.9	304,715	16.8	360,767	18.7	371,200	18.9	446,800	19.6
Region	1,756,083	100.0	1,764,796	100.0	1,810,364	100.0	1,931,165	100.0	1,959,800	100.0	2,276,000	100.0

County	Population Change									
	1970-1980		1980-1990		1990-2000		2000-2003		2003-2035	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	5,220	4.4	5,044	4.1	21,396	16.7	4,623	3.1	55,900	36.3
Milwaukee	-89,261	-8.5	-5,713	-0.6	-19,111	-2.0	1,136	0.1	65,800	7.0
Ozaukee	12,520	23.0	5,850	8.7	9,486	13.0	2,183	2.7	16,600	19.6
Racine	2,294	1.3	1,902	1.1	13,797	7.9	2,269	1.2	22,500	11.8
Walworth	8,063	12.7	3,493	4.9	17,013	22.7	3,587	3.9	44,400	46.4
Washington	21,009	32.9	10,480	12.4	22,168	23.3	4,404	3.7	35,400	29.0
Waukesha	48,868	21.1	24,512	8.7	56,052	18.4	10,433	2.9	75,600	20.4
Region	8,713	0.5	45,568	2.6	120,801	6.7	28,635	1.5	316,200	16.1

Source: U. S. Census Bureau; Wisconsin Department of Administration; and SEWRPC.

Table 40

ACTUAL AND PLANNED HOUSEHOLDS IN THE REGION BY COUNTY: 1970-2035

County	Households											
	Actual 1970		Actual 1980		Actual 1990		Actual 2000		Actual (Estimated) 2003		Planned 2035	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	35,468	6.6	43,064	6.9	47,029	6.9	56,057	7.5	58,900	7.6	82,900	8.9
Milwaukee	338,605	63.1	363,653	57.9	373,048	55.2	377,729	50.4	381,000	49.4	427,500	46.2
Ozaukee	14,753	2.8	21,763	3.5	25,707	3.8	30,857	4.1	32,500	4.2	40,000	4.3
Racine	49,796	9.3	59,418	9.5	63,736	9.4	70,819	9.5	72,900	9.5	84,000	9.1
Walworth	18,544	3.5	24,789	3.9	27,620	4.1	34,505	4.6	36,700	4.8	54,400	5.9
Washington	17,385	3.2	26,716	4.2	32,977	4.9	43,843	5.8	46,600	6.0	62,800	6.8
Waukesha	61,935	11.5	88,552	14.1	105,990	15.7	135,229	18.1	142,300	18.5	174,100	18.8
Region	536,486	100.0	627,955	100.0	676,107	100.0	749,039	100.0	770,900	100.0	925,700	100.0

County	Household Change									
	1970-1980		1980-1990		1990-2000		2000-2003		2003-2035	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	7,596	21.4	3,965	9.2	9,028	19.2	2,843	5.1	24,000	40.7
Milwaukee	25,048	7.4	9,395	2.6	4,681	1.3	3,271	0.9	46,500	12.2
Ozaukee	7,010	47.5	3,944	18.1	5,150	20.0	1,643	5.3	7,500	23.1
Racine	9,622	19.3	4,318	7.3	7,083	11.1	2,081	2.9	11,100	15.2
Walworth	6,245	33.7	2,831	11.4	6,885	24.9	2,195	6.4	17,700	48.2
Washington	9,331	53.7	6,261	23.4	10,866	32.9	2,757	6.3	16,200	34.8
Waukesha	26,617	43.0	17,438	19.7	29,239	27.6	7,071	5.2	31,800	22.3
Region	91,469	17.0	48,152	7.7	72,932	10.8	21,861	2.9	154,800	20.1

Source: U. S. Census Bureau; Wisconsin Department of Administration; and SEWRPC.

Table 41

ACTUAL AND PLANNED EMPLOYMENT IN THE REGION BY COUNTY: 1970-2035

County	Employment											
	Actual 1970		Actual 1980		Actual 1990		Actual 2000		Actual (Estimated) 2003		Planned 2035	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Kenosha	42,100	5.4	54,100	5.7	52,200	4.9	68,700	5.6	69,500	5.9	88,500	6.5
Milwaukee	525,200	66.9	583,200	61.5	609,800	57.4	624,600	51.1	589,800	50.0	628,900	45.9
Ozaukee	21,300	2.7	28,200	3.0	35,300	3.3	50,800	4.2	49,200	4.2	62,300	4.5
Racine	64,600	8.2	81,200	8.6	89,600	8.4	94,400	7.7	90,000	7.6	106,600	7.8
Walworth	26,400	3.4	33,500	3.5	39,900	3.8	51,800	4.2	52,300	4.4	69,400	5.1
Washington	24,300	3.1	35,200	3.7	46,100	4.3	61,700	5.0	61,800	5.3	78,900	5.8
Waukesha	81,000	10.3	132,800	14.0	189,700	17.9	270,800	22.2	266,400	22.6	333,700	24.4
Region	784,900	100.0	948,200	100.0	1,062,600	100.0	1,222,800	100.0	1,179,000	100.0	1,368,300	100.0

County	Employment Change									
	1970-1980		1980-1990		1990-2000		2000-2003		2003-2035	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha	12,000	28.5	-1,900	-3.5	16,500	31.6	800	1.2	19,000	27.3
Milwaukee	58,000	11.0	26,600	4.6	14,800	2.4	-34,800	-5.6	39,100	6.6
Ozaukee	6,900	32.4	7,100	25.2	15,500	43.9	-1,600	-3.1	13,100	26.6
Racine	16,600	25.7	8,400	10.3	4,800	5.4	-4,400	-4.7	16,600	18.4
Walworth	7,100	26.9	6,400	19.1	11,900	29.8	500	1.0	17,100	32.7
Washington	10,900	44.9	10,900	31.0	15,600	33.8	100	0.2	17,100	27.7
Waukesha	51,800	64.0	56,900	42.8	81,100	42.8	-4,400	-1.6	67,300	25.3
Region	163,300	20.8	114,400	12.1	160,200	15.1	-43,800	-3.6	189,300	16.1

Source: U. S. Bureau of Economic Analysis and SEWRPC.

force—persons available to fill jobs—may be expected beginning in about 2015, as much of the baby-boom generation (those born from 1946 through 1964) reaches retirement age. The aging of the population, along with relatively stable labor force participation rates, may be expected to moderate the number of jobs able to be accommodated in the Region without substantial in-migration.

As further indicated in Table 41, Milwaukee County lost an estimated 35,000 jobs between 2000 and 2003, far more than any other county in the Region. Under the regional plan, employment in Milwaukee County is expected to increase to about 628,900 jobs in 2035, about 39,100 above the 2003 level. Under the plan, employment growth between 2003 and 2035 would approximate 67,300 jobs in Waukesha County and would range from 13,000 to 19,000 jobs in Kenosha, Ozaukee, Racine, Walworth, and Washington Counties.[23]

The change in total employment for each county envisioned in the plan is the net effect of anticipated job decreases in some areas and increases in others. Some decreases in employment may be expected at existing industrial and commercial operations, as companies continue to embrace labor saving technologies. Thus, even where existing commercial and industrial operations continue, job reductions may be expected as firms produce

[23] *Total employment in the Region as envisioned under the regional plan is the same as the intermediate employment projection presented in Chapter V. However, county-level employment levels under the plan differ somewhat from the projected county employment levels. The planned county employment level is lower than the projected level in Waukesha County; higher than projected in Kenosha, Milwaukee, Racine, and Walworth Counties; and about the same as projected in Ozaukee and Washington Counties. The trend-based county employment projections were used as a starting point in preparing the regional land use plan; the variation from these projections under the regional plan is based upon a consideration of local land use plans.*

more goods and services with fewer employees. Technological change may be expected to have the most impact on employment levels in established urban areas, particularly Milwaukee County, that have extensive older commercial and industrial areas.

The regional plan envisions moderating the historic trend of decentralization of population, households, and employment relative to Milwaukee County within the Region. Milwaukee County's share of the total regional population would decrease from about 49 percent in 2000 to about 44 percent in 2035; this compares to a decrease in relative share of 11 percentage points during the previous 30-year period. Similarly, Milwaukee County's share of total regional employment would decrease from 51 percent in 2000 to 46 percent in 2035—compared to a decrease in relative share of about 16 percentage points over the previous 30 years.

PUBLIC REACTION TO THE LAND USE PLAN

A variety of means was employed to convey information regarding the regional land use planning effort to the public and to solicit public input at the outset of the planning program, during the preparation of the land use plan, and upon completion of the preliminary recommended plan. Four series of public informational meetings were held in each county in the Region; these meetings dealt with both regional land use and regional transportation planning. Public hearings on the preliminary recommended regional land use and transportation plans were held in conjunction with the fourth series of informational meetings in April 2006. Comments could be made orally or in written form at the informational meetings and hearings as well as by regular mail or e-mail at any time during the course of the planning effort. The public comments are documented in *Record of Public Comments—Review and Update of the Regional Land Use and Transportation System Plans for Southeastern Wisconsin*, Volumes One, Two, and Three.

A number of the comments received during the planning process indicated support for the recommended regional land use plan in general or for various aspects of the plan, including plan recommendations for centralized growth and mixed use development and preservation of environmental corridors and productive farmlands. Some of the comments were in opposition to the plan, suggested changes to the plan, or otherwise indicated concern about aspects of the plan; these can be summarized as follows.

- Comment: Growth should not be confined to urban service areas.

  Response: The regional plan recommends that new urban development occur in urban service areas provided with basic urban services and facilities, including public sanitary sewer service and typically also including public water supply service, local parks, schools, and shopping areas. These services and facilities can be most efficiently provided within relatively compact, contiguous urban areas. Indeed, certain facilities and services—such as neighborhood schools and transit service—can, as a practical matter, only be provided where there are sufficient concentrations of urban development at sufficiently high densities. Additionally, the higher densities that may be accommodated in urban service areas help to moderate the total amount of agricultural and other open land that is converted to urban use. The regional plan does recognize that there will continue to be a demand for residential dwellings in an open space setting beyond planned urban services. The plan recommends that this demand be accommodated through rural density residential development. Accordingly, no change to the plan is proposed.

- Comment: The recommended density of no more than one dwelling unit per five acres for rural residential development is too restrictive; a higher density, such as one dwelling unit per three acres, should be considered.

  Response: The regional plan recommends that residential development beyond planned urban service areas be located outside prime agricultural lands and limited to densities of no more than one dwelling unit per five acres, with conservation subdivision designs encouraged. The plan recommendations for nonprime farmland are intended to provide the opportunity for some development in a manner that is consistent with location in a rural area. The recommended maximum rural density of one dwelling unit

per five acres is intended to minimize traffic volumes, minimize demands for public services, such as fire and emergency medical services, in outlying areas where a high level of service can be difficult and costly to provide; preserve open space and rural character; and minimize the potential risk to the environment of widespread use of private onsite sewage disposal systems. The five-acre rural density is part of a planning and zoning culture accepted by many local units of government in the Region. Accordingly, no change to the plan is proposed.

- Comment: The plan accommodates too much conversion of farmland, about 104 square miles, over the planning period.

  Response: The amount of farmland in the Region decreased by over 300 square miles between 1970 and 2000. The regional plan seeks to reduce the loss of farmland over the planning period (2000 to 2035) to about one third of that experienced over the last three decades. The plan seeks to minimize the loss of prime agricultural lands, limiting that loss to areas required for the orderly expansion of existing urban areas. No change to the plan is proposed.

- Comment: Golf course development should not be located in environmental corridors.

  Response: The regional plan recognizes that certain uses may be accommodated within environmental corridors without jeopardizing their overall integrity. Guidelines in this respect are set forth in Table 27 in Chapter IV of this report. Included in the guidelines are provisions for recreational facility development including golf, trails, picnic areas, family camping facilities, ski hills, and other recreational facilities—but limited to no more than 20 percent of the corridor area, with the additional provision that no more than 20 percent of upland wildlife habitat and woodlands should be developed for such uses. The guidelines specifically acknowledge that wetlands may be incorporated as part of a golf course, provided there is no disturbance of the wetlands. No change to the plan is proposed.

- Comment: The regional land use plan should address affordable housing.

  Response: The Commission envisions the eventual preparation of a regional housing plan that would refine and detail the residential land component of the regional land use plan. The housing planning effort would be woven into the Commission's ongoing work program, taking into account existing project planning commitments.

Based upon the record of public comments, no substantive changes are deemed necessary to the year 2035 regional land use plan as presented at the final series of public informational meetings and hearings in April 2006 and documented in this chapter.

SUMMARY

This chapter has presented a land use plan for the Southeastern Wisconsin looking forward to the year 2035. The plan is intended to accommodate growth in the regional population, households, and employment in a manner consistent with the regional land use objectives and standards presented earlier in this report. The plan embodies the following vision for the Region over the course of the next three decades:

- Urban land would continue to increase as necessary to accommodate growth in the regional population and economy. Urban development would occur in urban service areas—areas that are intended to accommodate urban development insofar as they are served by basic urban services and facilities, including public sanitary sewer and typically also including public water supply and other urban facilities and services. New urban development would be accommodated through the infilling and renewal of existing urban service areas as well as through the orderly expansion of existing urban service areas,

resulting in a relatively compact and efficient overall settlement pattern, one that is readily served by basic urban services and facilities and that maximizes the use of existing urban service and facility systems.

- Urban residential development would occur in predominantly residential neighborhoods as well as in more mixed-use settings. Residential neighborhoods would be designed as cohesive units, properly related to the larger community of which they are a part, and served by an interconnected internal street, bicycle-way, and pedestrian system and by a neighborhood school, park, and shopping area. In addition to neighborhood development, other residential development would occur in settings having an even greater mixture of land uses. Examples of such mixed-use settings include dwellings above the ground floor of commercial uses and residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or civic uses. The bulk of residential development would occur at medium or higher densities, facilitating the efficient provision of public utilities and services and moderating the amount of open space required to be converted to urban use.

- Lands beyond planned urban service areas would be retained in essentially rural use, with highly productive farmlands preserved and with development limited to overall densities, and accommodated through designs, that are consistent with the maintenance of rural character and consistent as well with the capacities of existing street and other public facility and service systems in those areas.

- The land development needs of the Region would be met while preserving the best remaining elements of the natural resource base—most of which are located within environmental corridors and isolated natural resource areas—and preserving productive farmland, resulting in an interconnected, integrated system of open space lands within the Region.

The regional land use plan was designed to accommodate the intermediate population, household, and employment levels for the Region presented in Chapter V. Under the plan, the resident population of the Region would increase by 344,800 persons, or 18 percent, from 1,931,200 persons in 2000 to 2,276,000 persons in 2035. The number of households in the Region would increase by 176,700, or 24 percent, from 749,000 households in 2000 to 925,700 households in 2035. Households would continue to increase at a faster relative rate than the regional population, with average household sizes continuing to decline somewhat. Under the regional plan, total employment in the Region would increase by 145,500 jobs, or 12 percent, from 1,222,800 in 2000 to 1,368,300 jobs in 2035, with job types changing as the Region continues to experience a shift from a manufacturing-based to a service-based economy. The key features of the year 2035 regional land use plan are described as follows.

Urban Land

- Under regional the plan, urban land—defined as land devoted to high, medium, and low density residential use as well as commercial, industrial, governmental and institutional, recreational, and transportation, communication, and utility uses—would increase by 93 square miles, or 13 percent, from about 732 square miles in 2000 to 825 square miles in 2035. Urban development would occur within urban service areas served by public sanitary sewerage facilities and other public utilities and services. Urban development beyond planned urban service areas would be limited to low density residential development in areas already committed to such use, along with highway-oriented business uses, utility uses, and recreational uses that may, of necessity, have to be located beyond planned urban service areas.

- The regional plan envisions that urban residential land—that is, high, medium, and low density residential land—would increase by a total of 69 square miles, or 21 percent, from 333 square miles in 2000 to 402 square miles in 2035. This includes increases of 4 square miles in high density residential land, 53 square miles in medium density residential land, and 12 square miles in low density residential land. About 154,800 housing units, or 88 percent of the total projected increase in housing units between 2000 and 2035, would occur at high and medium densities. About 14,800 housing units, or 8 percent of the

projected increase, would occur at low density. As noted above, urban residential development would occur in residential neighborhoods providing a full complement of basic neighborhood amenities including a school, park, and shopping area, as well as in more mixed-use settings.

- Under the regional land use plan, the total amount of commercial and industrial land in the Region would increase by 18 square miles, or 28 percent, from about 63 square miles in 2000 to 81 square miles in 2035. The plan envisions a range of commercial and industrial areas. Thus, the plan envisions neighborhood, community, and regional commercial centers, including both mixed-use areas with a residential component and areas devoted more exclusively to commercial uses. Likewise, the plan envisions both community-level and regional industrial centers. The plan envisions a continuation of the trend toward mixing industrial and commercial activities in the same area. Under the plan, the largest commercial and industrial areas, in terms of employment levels, are identified as major economic activity centers. The plan envisions a total of 60 such major economic activity centers in the Region in 2035. This includes 45 centers that met major economic activity center employment thresholds in 2000 and 15 additional areas that are envisioned to reach major center status by 2035. With the exception of a proposed site in the Village of Caledonia in Racine County, each of the major economic activity centers was developed, under development, or being redeveloped in 2005.

- The regional plan envisions increases in other major urban land use categories over the 35-year planning period, including a 10 percent increase in transportation, communication, and utility lands; a 7 percent increase in governmental and institutional lands; and a 15 percent increase in outdoor recreational lands. The latter consists, for the most part, of anticipated increases in neighborhood, community, and regional parkland. The plan envisions a total of 32 regional parks—large parks of at least 250 acres in size that provide opportunities for a variety of resource-oriented outdoor recreational activities—within the Region.

Sub-urban Density Residential Land

- Under the regional plan, additional sub-urban density residential development—defined as residential development at a density of 0.2 to 0.6 dwelling unit per acre—would be restricted to areas that have already been committed to such use. Sub-urban density residential land is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sanitary sewer and water supply service and other urban amenities. Under the plan, the amount of sub-urban density residential land would increase by nine square miles, or by about 31 percent, between 2000 and 2035, accommodating about 3,400 households, or about 2 percent of the projected increase in households in the Region between 2000 and 2035. No additional sub-urban density residential land beyond the already committed area is recommended.

Environmentally Significant Lands

- The plan recommends the preservation of the Region's primary environmental corridors—elongated areas in the landscape encompassing the best remaining woodlands, wetlands, prairies, wildlife habitat, surface water and associated shorelands and floodlands, and related features, including existing park and open space sites, scenic views, and natural areas and critical species habitat sites. The planned primary environmental corridors encompass about 481 square miles, or 18 percent of the total area of the Region. The plan recommends that these corridors be preserved in essentially natural, open use, recognizing, however, that certain development may be accommodated in such areas without jeopardizing their overall integrity. Guidelines in this regard are presented in Table 27 in Chapter IV. These guidelines recognize that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated in such areas. Residential development in environmental corridors would be limited to upland environmental corridors at an overall density of no more than one dwelling unit per five upland acres, with conservation subdivision designs strongly encouraged where residential development is accommodated. Under the guidelines, in lieu of rural density residential development, up to 10 percent of the upland corridor area may be disturbed in order to accommodate urban-density residential, commercial, industrial, or other urban development.

- In addition to primary environmental corridors, other smaller concentrations of natural resources—referred to as "secondary environmental corridors" and "isolated natural resource areas"—have been identified as warranting strong consideration for preservation. The planned secondary environmental corridors encompass a total of 77 square miles, or 3 percent of the total area of the Region, while the planned isolated natural resource areas encompass 63 square miles, or 2 percent. The regional land use plan recommends that these areas be retained in natural open use as determined in county and local plans.

- The regional land use plan supports carefully planned efforts—such as the Wisconsin Department of Natural Resources Turtle Valley Wildlife Area project in the west central area of Walworth County—to restore farmland and other open space to more natural conditions, resulting in the re-establishment of wetlands, woodlands, prairies, grasslands, and forest interiors, potentially expanding the environmental corridor network in the Region.

- The regional plan recommends the preservation of all remaining natural areas and critical species habitat sites identified in the regional natural areas and critical species habitat protection and management plan. Natural areas are tracts of land or water that contain plant and animal communities believed to be representative of the pre-European-settlement landscape; critical species habitat sites are other areas that support endangered, threatened, or rare plant or animal species. Almost all of the natural area and critical species habitat sites are located within environmental corridors or isolated natural resource areas.

Rural Lands

- The area of the Region shown as white on the regional plan map is recommended to remain in essentially rural use—primarily agriculture use and rural density residential use. Prime agricultural land in this area—the land best suited for agricultural use—is recommended to be preserved for farming, with residential development generally limited to no more than one dwelling unit per 35 acres. The regional plan recommends that counties in the Region, in cooperation with the concerned local units of government, carry out planning programs to identify prime agricultural land. The regional plan holds out the preservation of the most productive soils—soils in U.S. Natural Resources Conservation Service Agricultural Capability Class I and Class II—as a key consideration in efforts to identify prime farmland, recognizing, however, that other factors, such as farm size and the overall size of the farming area, should also be considered. Most county planning in this regard was carried out more than 20 years ago and needs to be reviewed and updated.

- While much progress has been made in preserving primary environmental corridors and other environmentally significant lands in the Region, the preservation of prime farmland remains a difficult and challenging issue, one that involves the balancing of land use planning objectives and the economic realities faced by farmers. Historically, efforts to ensure the preservation of farmland within the Region have relied on zoning and other land use controls. Mechanisms designed to compensate landowners for committing their land to agricultural use—such as the purchase or transfer of development rights—have not yet been widely embraced within the Region. The regional plan thus reaffirms the importance of preserving prime agricultural land in Southeastern Wisconsin while acknowledging the difficulties inherent in achieving this goal.

- The regional plan also encourages the preservation of nonprime farmland for agricultural use. This could be in the form of traditional agricultural use or alternative agricultural uses such as smaller hobby farms or specialty farms including community supported agricultural operations. The regional plan recommends that any development of nonprime farmland be limited to rural residential development at a 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 subdivision designs. The regional land use plan envisions that about 2 percent of the increment in households in the Region between 2000 and 2035, or about 3,700 households, would be accommodated through rural density residential development.

- Overall, the regional plan envisions that the agricultural land base of the Region would decrease by about 104 square miles, or 8 percent, between 2000 and 2035.

Public Sanitary Sewer and Water Supply Service

- Under the regional land use plan, most new urban development would be served with public sanitary sewer and water supply facilities. Public sanitary sewer and water supply service would also be extended to certain existing urban areas currently lacking these facilities. In this regard, the plan envisions that most existing urban development which is served by onsite sewage disposal and water supply systems and located within planned urban service areas would eventually be connected to public sanitary sewer and water supply systems. In 2000, about 477 square miles, or 18 percent of the total area of the Region, and about 1.71 million persons, or 89 percent of the regional population, were served by public sanitary sewer facilities. About 390 square miles, or 15 percent of the total area of the Region, and about 1.58 million persons, or 82 percent of the regional population, were served by public water supply facilities. In 2035, under the regional land use plan, about 639 square miles, or 24 percent of the total area of the Region, and about 2.11 million persons, or 93 percent of the regional population, would be served by public sanitary sewer and water supply services. Public water supply would be provided in several small communities for which sanitary sewer service is not envisioned.

- Under the regional plan, development beyond planned sewer and water service areas would be limited to low density and sub-urban density residential development—in areas where commitments to such development have already been made—as well as to rural residential development. About 5,400 households, or 3 percent of the incremental households envisioned under the plan, would be accommodated on existing platted lots at low and sub-urban densities beyond the planned urban service areas. While such development is not consistent with regional development objectives, the regional plan recognizes existing commitments to such development and the likelihood that these lots will be developed over time.

Population, Household, and Employment Distribution

- The regional plan envisions moderating the historic trend of decentralization of population, households, and employment relative to Milwaukee County within the Region. Milwaukee County's share of the total regional population would decrease from about 49 percent in 2000 to about 44 percent in 2035; this compares to a decrease in relative share of 11 percentage points during the previous 30-year period. Similarly, Milwaukee County's share of total regional employment would decrease from 51 percent in 2000 to 46 percent in 2035—compared to a decrease in relative share of about 16 percentage points over the previous 30 years.

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Chapter VII

PLAN IMPLEMENTATION

INTRODUCTION

The recommended regional land use plan described in Chapter VI of this report provides a design for the attainment of the specific regional land use development objectives set forth in Chapter IV. In a practical sense, however, the plan is not complete until the steps required to implement the plan—that is, to convert the plan into action policies and programs—are specified. Accordingly, this chapter is presented as a guide for use in the implementation of the recommended land use plan.

More specifically, this chapter outlines the actions that should be taken by various agencies and units of government in efforts to implement the regional plan. Agencies and units of government that have a role in plan implementation are listed in Table 42. This chapter identifies the plan implementation measures available to those agencies and units of government and recommends the appropriate application of those measures to achieve the regional land use plan objectives.

While this chapter focuses on the role of the various units and agencies of government, it should be recognized that implementation of the regional plan depends as well upon the cooperation of a myriad of private interests. These private sector interests range from developers, builders, and engineering and design consultants—who have a major influence on development patterns in the Region—to private conservancy groups that play an increasingly important role in the protection and management of environmentally significant open spaces.

PLAN ENDORSEMENT AND INTEGRATION

Upon adoption of the new regional land use plan by formal resolution of the Southeastern Wisconsin Regional Planning Commission, in accordance with Section 66.0309(10) of the Wisconsin Statutes, the Commission will transmit a certified copy of the resolution and adopted plan to all local legislative bodies within the Region and to all concerned local, areawide, State and Federal agencies. It is recommended that each of the concerned agencies and units of government endorse the regional land use plan and integrate the findings and recommendations of the plan into their planning, regulatory, and other activities related to land use.

The importance of integrating the regional land use plan into county and community planning efforts, in particular, cannot be overstated. The State comprehensive planning law enacted in 1999 effectively requires that cities, villages, towns, and counties prepare and adopt long-range comprehensive plans—including nine prescribed plan elements[1]—

[1] *The nine required elements of comprehensive plans as prescribed in the State comprehensive planning law include the following: issues and opportunities; housing; transportation; utilities and community facilities; agricultural, natural, and cultural resources; economic development; intergovernmental cooperation; land use; and implementation.*

Table 42

SUMMARY OF REGIONAL LAND USE PLAN IMPLEMENTATION RESPONSIBILITIES FOR PUBLIC AGENCIES AND UNITS OF GOVERNMENT

Agencies	Plan Endorsement and Integration	Preparation of Local Refinements of Regional Plan	Administration of General Zoning, Land Division Regulations, and Official Mapping	Administration of Other Regulatory Mechanisms[a]	Coordination of Public Utilities/ Facilities	Park and Open Space Acquisition	Urban Revitalization: Planning and Administration of Related Support Programs	Planning-Related Financial and Technical Assistance	Planning-Related Education
Local Level Agencies									
County Boards of Supervisors	X	X	X	X	X	X	X	X	X
County Planning Committees and Park and Planning Commissions	X	X	X	X	X	X	X	X	X
County Land Conservation Committees	X	--	--	--	--	--	--	X	--
City Councils, Village Boards, and Town Boards	X	X	X	X	X	X	X	X	X
City, Village, and Town Plan Commissions	X	X	X	X	--	--	X	X	X
County Drainage Boards and Drainage Districts	X	--	--	--	X	--	--	--	--
Sanitary and Utility Districts	X	--	--	--	X	--	--	--	--
Community Development Authorities	X	--	--	--	--	--	X	--	--
Lake Management Districts	X	--	--	--	X	X	--	--	--
County Economic Development Corporations	X	--	--	--	--	--	X	X	--
Areawide Agencies									
Metropolitan Sewerage Districts	X	--	--	--	X	X	--	X	--
Cooperative Contract Commissions	X	--	--	--	X	--	--	--	--
Regional Planning Commission	X	--	--	--	X	--	--	X	X
State-Level Agencies									
University of Wisconsin-Extension	X	--	--	--	--	--	--	X	X
Wisconsin Department of Administration	X	--	--	--	--	--	--	X	--
Wisconsin Department of Agriculture, Trade and Consumer Protection	X	--	--	--	--	--	--	--	X
Wisconsin Department of Commerce	X	--	--	X	X	--	--	--	--
Wisconsin Department of Natural Resources	X	--	--	X	X	X	X	X	--
Wisconsin Department of Transportation	X	--	--	--	X	--	--	--	--
Wisconsin Land Council	X	--	--	--	--	--	--	X	X
Federal Level Agencies									
U. S. Department of Agriculture, Natural Resources Conservation Service	X	--	--	--	--	X	--	X	--
U. S. Department of Agriculture, Farm Service Agency	X	--	--	--	--	--	--	--	--
U. S. Department of Commerce, Economic Development Administration	X	--	--	--	--	--	X	--	--
U. S. Department of Housing and Urban Development	X	--	--	--	--	--	X	--	--
U. S. Army Corps of Engineers	X	--	--	X	--	--	--	--	--
Federal Emergency Management Agency	X	--	--	X	--	--	--	--	--

[a] *Includes State-local floodland and shoreland zoning; State-local oversight of public sanitary sewerage facilities and private sewage systems; and the Federal wetland regulatory program.*

Source: SEWRPC.

and further specifies that, beginning in 2010, zoning, land subdivision regulations, and official mapping regulations must be consistent with such plans. The year 2035 regional land use plan is intended to serve as a regional framework for the required planning. The regional land use plan includes recommendations that relate directly to a number of the required local comprehensive plan elements, including the land use element, the agricultural, natural and cultural resources element, and the utilities and community facilities element. The State comprehensive planning law does not mandate consistency between local comprehensive plans and the regional land use plan.[2] It is, nonetheless, strongly recommended that cities, villages, towns, and counties use the regional land use plan as a framework for the preparation of their comprehensive plans, integrating the findings and recommendations of the regional land use plan into those plans as appropriate. Additional guidance in this regard is provided throughout this chapter.

PLAN IMPLEMENTATION MEASURES

Implementation of the regional land use plan depends upon the judicious application of a variety of plan implementation measures and cooperation among the local units of government and the areawide, State, and Federal agencies involved in the application of those measures. The most important land use plan implementation measures are dealt with in this section. For convenience in presentation and use, this section has been divided into the following subject areas:

- County and community comprehensive plans
    - Planning in urban areas
    - Planning in rural areas
    - Planning in environmentally significant areas

- Local regulatory measures
    - Zoning ordinances
        - Zoning in urban areas
        - Zoning in rural areas
        - Zoning in environmentally significant areas
    - Land division ordinances
    - Official mapping

- State and Federal regulatory measures
    - State-local floodplain and shoreland regulations
    - Federal wetland regulatory program
    - Regulation of public sanitary sewerage systems
    - Regulation of private sewage disposal systems

- Park and open space acquisition/conservation easements

- Purchase of development rights

- Transfer of development rights

- Municipal boundary and utility extension agreements

- Municipal revenue sharing

[2] *Under the State comprehensive planning law, local comprehensive plans must incorporate regional transportation plans. This is the only consistency requirement between local comprehensive plans and regional plans specified in the State comprehensive planning law.*

- Capital improvement programming
- Brownfield redevelopment
- Development design standards
- Sound land and water management practices
- Educational activities
- Technical and financial assistance for planning

County and Community Comprehensive Plans

The regional land use plan is a systems level plan. As such, it includes generalized boundaries for urban service areas; allocations of population, households, and employment, and associated land uses to urban and rural areas; and recommended density ranges for urban service areas. The systems level regional plan thus provides an overall regional land use planning framework that needs refinement and detailing through county and community planning. The vehicle for such refinement and detailing of the regional plan is the local comprehensive plan that is effectively required of all counties, cities, villages, and towns under the State comprehensive planning law.

The balance of this section provides guidance to counties and communities in the Region as they prepare local comprehensive plans within the framework of the regional plan. It includes a discussion of planning for urban areas and rural areas, as well as for environmentally significant areas, which are found within both urban and rural areas.

Planning in Urban Areas

Community-level Planning

Community-level comprehensive plans[3] should refine and detail the regional plan recommendations for urban areas. While such plans may vary in format and level of detail, they should generally do the following:

- Precisely identify boundaries of urban service areas.
- Identify residential neighborhoods and special planning districts within urban service areas.
- Recommend an overall density for each residential neighborhood within the broad density range recommended in the regional plan.
- Identify general site locations for needed neighborhood and community facilities.
- Identify environmentally significant lands to be preserved consistent with the recommendations of the regional land use plan.
- Include, as appropriate, an indication of the staging of development in subareas of the community over time. Staging recommendations should be based upon anticipated market demands, the availability of utilities and basic urban services and facilities, and other factors.

[3] *The discussion of community-level plans here pertains to all community-level comprehensive plans, whether prepared by individual cities, villages, and towns or prepared cooperatively as part of a county-wide or other multi-jurisdictional comprehensive planning effort.*

Neighborhood and Special District Planning

Within the context of community-level plans, detailed neighborhood development plans should be prepared for each residential neighborhood or special district where significant growth is expected. While such plans may also vary in format and level of detail, they should generally do the following:

- Designate future collector and land access street locations and alignments, pedestrian paths and bicycle ways, and, as appropriate, the configuration of individual blocks and lots.

- Further classify residential areas as to structure type and density, with the mix of housing structure types and lot sizes resulting in an overall density for the neighborhood consistent with that recommended in the community-level and regional plan.

- Identify specific sites for neighborhood parks, schools, and retail and service centers which are recommended on a general-site-location basis in the community-level plan.

- Identify environmentally significant areas to be preserved consistent with the community-level plan and regional plan.

- Indicate areas to be reserved for stormwater management and utility easements.

The neighborhood planning process should make full use of the many design concepts that can enhance the living environment and increase efficiency in the provision of urban services and facilities and in travel patterns. Among these design concepts are the following:

- Mixed-Used Development: Residential development in mixed use settings can provide a desirable environment for a variety of household types seeking the benefits of proximity to places of employment as well as civic, cultural, commercial, and other urban amenities. Examples of mixed use settings include dwellings above the ground floor of commercial uses and residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or other civic uses.

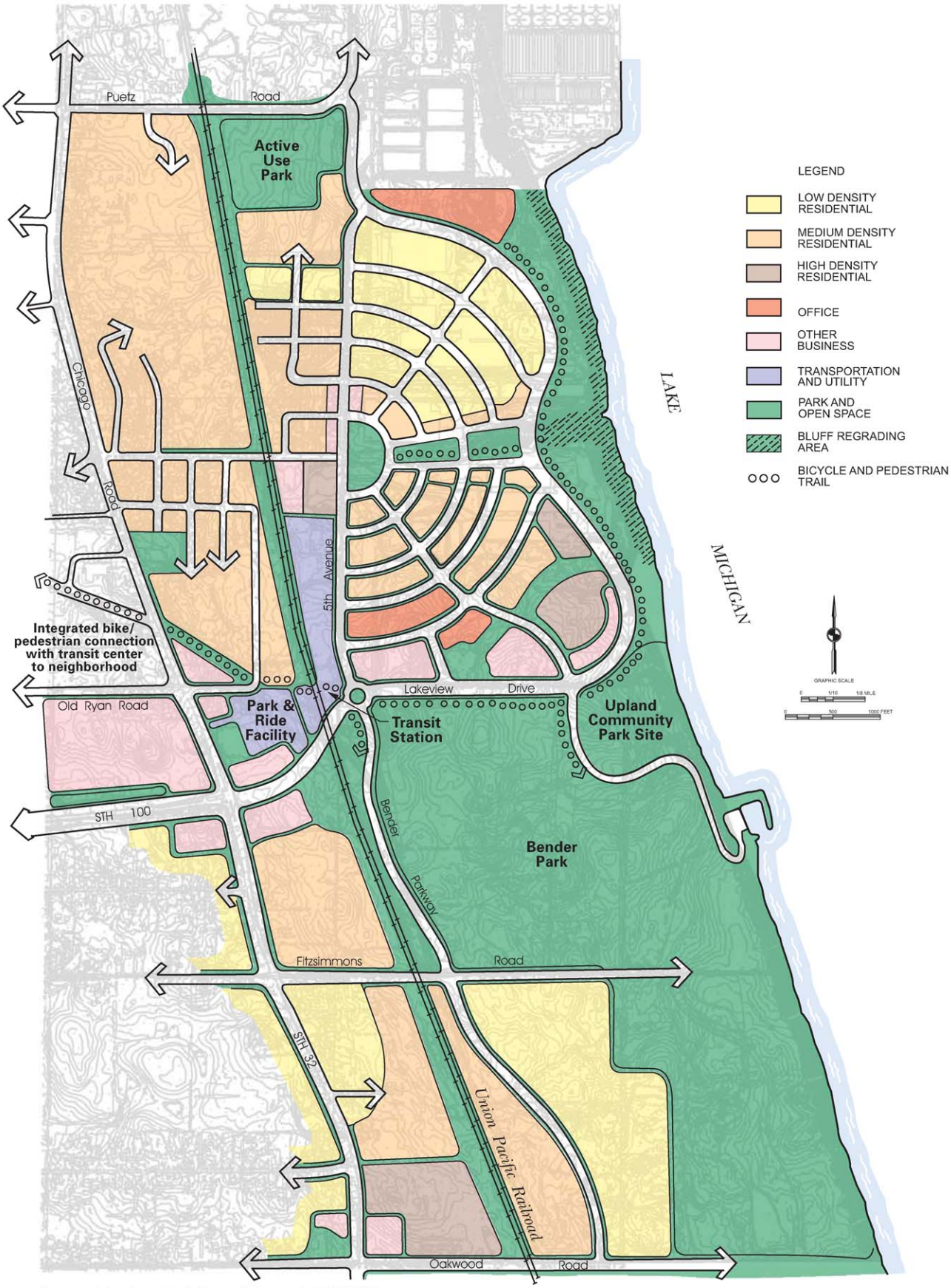
- Traditional Neighborhood Development: The term "traditional neighborhood development" refers to very compact, pedestrian-oriented, mixed-use neighborhoods typically characterized by a gridlike street system and street-oriented setbacks and building designs. The overall design, including the layout of streets and sidewalks, encourages walking and bicycling as alternatives to automobile transportation within the neighborhood.

- Transit-Oriented Development: The term "transit-oriented development" refers to compact, mixed-use development whose internal design is intended to maximize access to a transit stop located within or adjacent to the development. Within the development, commercial uses and higher-density residential uses are located near the transit stop. The layout of streets and sidewalks provides convenient walking and bicycling access to the transit stop. Figure 19 provides an example of a neighborhood plan that embodies mixed-use, transit-oriented design concepts.

In addition to plans for developing neighborhoods, detailed plans should also be prepared for mature neighborhoods or special-purpose districts showing signs of land use instability or deterioration. Such plans should identify areas recommended for redevelopment to a different use, areas recommended for rehabilitation, any local street re-alignments or improvements, and other public utility and facility improvements. Special consideration should be given in such planning to overcoming contamination problems at, and reuse of, brownfields. Redevelopment plans should seek to preserve those historic, cultural, and natural features and features of the urban landscape which provide for neighborhood identity within the larger urban complex. Such plans should maximize opportunities for the provision of living arrangements and amenities that are unique to older cities in the Region, such as "downtown" housing and urban waterfront development.

Figure 19

EXAMPLE OF A NEIGHBORHOOD DEVELOPMENT PLAN INCORPORATING TRANSIT-ORIENTED DESIGN PRINCIPLES (CITY OF OAK CREEK)



Source: Vandewalle & Associates and SEWRPC.

The regional land use plan seeks to maintain the viability of major industrial centers and other economic activity centers in the older urban areas of the Region and to moderate the historical loss in employment at these centers. Cities with aging industrial centers should undertake strategic and physical planning efforts for each center. Such planning should include a determination of the potential for assembling marketable sites and assessment of any contamination problems. Cities should make full use of—and assist private developers in securing—all State and Federal financial assistance available, be it for environmental cleanup, blight elimination, or other renewal activities, in support of the reuse and revitalization of these sites.

Planning in Rural Areas

Comprehensive plans prepared by county and local units of government should also incorporate, refine, and detail the recommendations of the regional land use plan for rural areas—that is, those areas that are located beyond the recommended urban service areas—including prime agricultural lands and other rural lands.

Prime Agricultural Land

In preparing their comprehensive plans, counties in the Region, in cooperation with the concerned communities, should identify prime agricultural land—lands best suited for agricultural use. Most county planning in this regard was carried out more than 20 years ago and needs to be updated. Such planning should place an emphasis upon the preservation of the most productive soils—soils in U.S. Natural Resources Conservation Service Capability Class I and Class II soils.[4] Such planning should also consider other factors—such as the size of farm units, the overall size of the farming area, the availability of farm implement dealers, and conflicts between farming operations and urban activities. Based upon these factors, it may be determined that certain Class I and Class II farmland ought not to be identified as prime.

Except as needed to accommodate the planned expansion of urban service areas, prime agricultural land identified in this manner should be designated for continued agricultural use in local comprehensive plans, with development limited to no more than one dwelling unit per 35 acres.

Other Rural Land

Local comprehensive plans should incorporate the regional plan recommendation that other rural lands—comprised, for the most part, of non-prime farmland—be retained in rural use. This could be in the form of continued agricultural activity (traditional agricultural activity, hobby farms, equestrian farms, or community-supported agricultural operations) or in the form of rural density residential development (no more than one dwelling unit per five acres). Other development should generally be limited to uses that are consistent with the rural character of the area or otherwise needed within the area, such as animal hospitals, veterinary clinics, and riding stables. In general, office, industrial, and institutional development and the types of retail and service uses that are provided as a matter of convenience and necessity in urban residential neighborhoods should not be accommodated within rural planning areas.

Local comprehensive plans should emphasize the use of conservation subdivision designs where rural density residential development is to be accommodated. Conservation subdivision designs generally involve locating dwelling units in clusters surrounded by open space, thereby achieving the desired overall density. In the conservation subdivision design process, open space preservation areas should be delineated first, with residential clusters designed around those areas. Designs for residential clusters should be integrated with topographic and other natural features,

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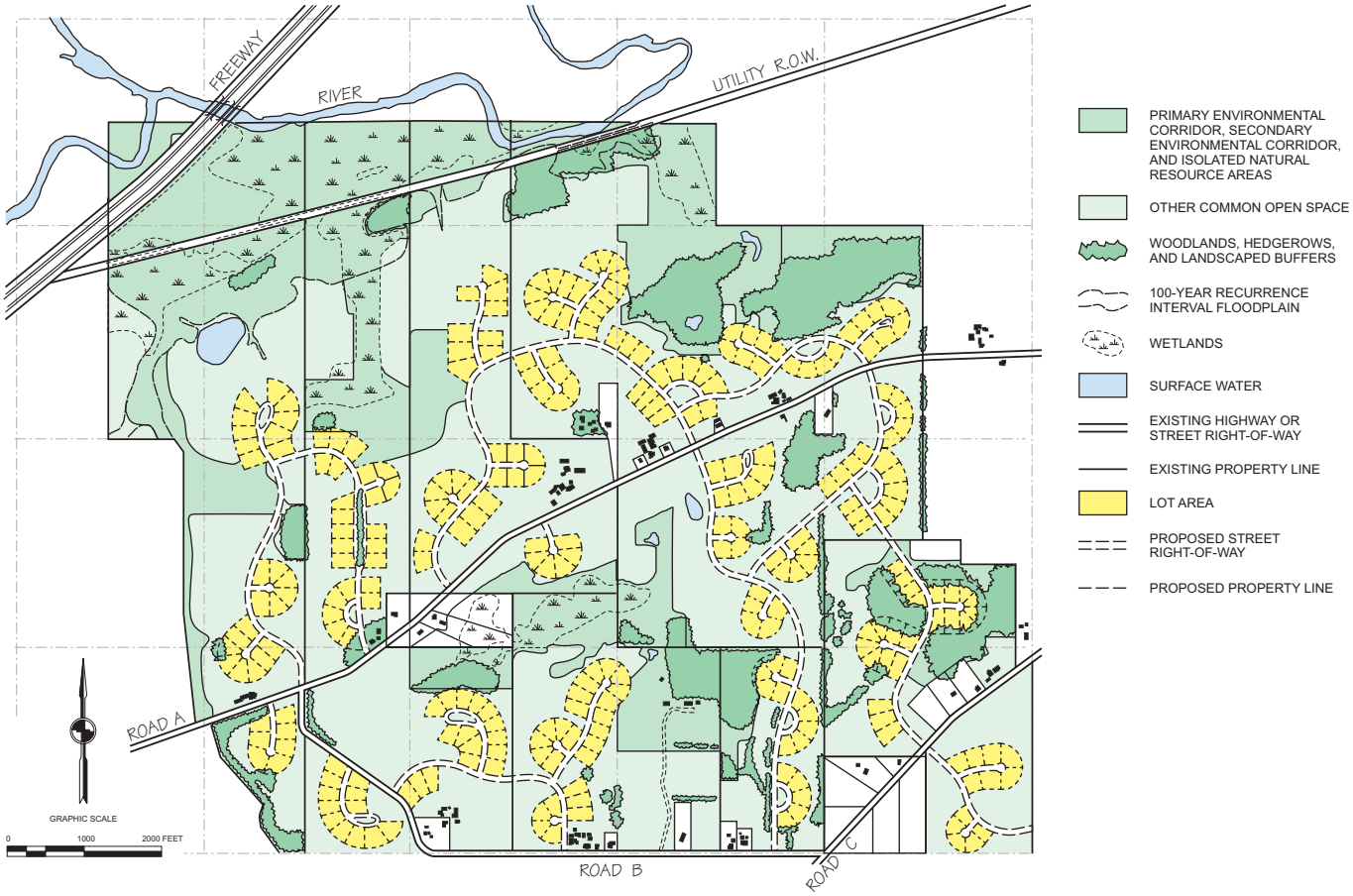
[4] *As an alternative to the U.S. Natural Resources Conservation Service agricultural capability class system, counties may choose to use the "land evaluation" system, also developed by the Natural Resources Conservation Service, to identify prime farmland. The land evaluation system provides a rating of farmland derived from soil-based factors. That rating may be combined with site assessment factors that are not related to soil characteristics, through a land evaluation and site assessment system ("LESA" system) that integrates various soil-based and non-soil-based factors for evaluating farmland. Site assessment factors may include the level of on-farm investment, compatibility with adjacent uses, proximity to urban development, distance to public utilities, and others.*

Figure 20

EXAMPLE OF A RURAL-AREA PLAN INCORPORATING CONSERVATION SUBDIVISION DESIGN PRINCIPLES



Source: SEWRPC.

taking full advantage of the settings provided by those features without causing undue disturbance. Designed in this manner, conservation subdivision designs can minimize the visual impact of the permitted residential development; preserve significant natural features and, in some cases, agricultural lands; and increase the efficiency of infrastructure development and maintenance, including a potential reduction in the length of needed access streets.[5]

Similar to the preparation of detailed plans for neighborhoods within urban areas, consideration should be given to planning for " rural neighborhoods." This approach would be appropriate for larger non-prime farming areas where a decision has been made to accommodate rural density residential development. As a practical matter, rural neighborhoods or planning units will be several square miles in size and may encompass large portions of a civil town. Planning for a rural neighborhood, as opposed to planning on a parcel-by-parcel basis, can result in more integrated designs that better preserve existing natural features and the rural landscape. Figure 20 presents an example of a neighborhood-scale plan for a rural area, incorporating conservation subdivision design principles.

[5] *The conservation subdivision design process is described in detail in SEWRPC Planning Guide No. 7,* Rural Cluster Development Guide*, December 1996.*

It should be recognized that the recommended density of no more than one dwelling unit per five acres can be achieved in a number of ways. To a large extent, the density would be achieved through conservation subdivision designs, as noted above. In addition, local planning may call for some accretion-like growth on smaller lots around small cross-road communities and other existing settlements, creating a hamlet-like environment within the rural area. The density calculation should be done on an overall basis for the rural neighborhood or planning area, taking into account dwellings to be accommodated in conservation subdivisions, in hamlets, or in other settings. Figure 21 presents an example of a rural area plan featuring a small hamlet and other forms of rural development.

Planning in Environmentally Significant Areas

Local comprehensive plans should incorporate the regional plan recommendations for environmentally significant areas. At a minimum, local comprehensive plans should incorporate the primary environmental corridor delineations set forth in the regional plan and recommend the preservation of those corridors in accordance with the guidelines presented in Table 27 in Chapter IV. In addition, county and local units of government are encouraged to include recommendations for the preservation of secondary environmental corridors and isolated natural resource areas in their comprehensive plans, applying the guidelines of Table 27 to those areas as well.

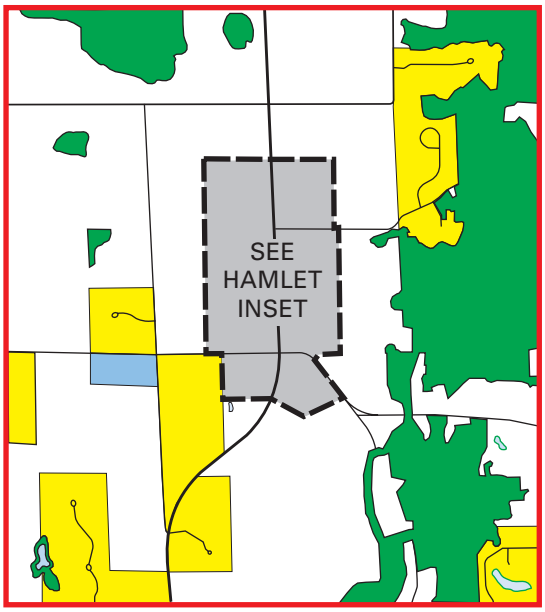
The planning guidelines set forth in Table 27 in Chapter IV are an integral part of the regional land use plan. These guidelines recognize that certain development can be accommodated within environmental corridors and isolated natural resource areas without jeopardizing their overall integrity. They recognize that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated within such areas. Under the guidelines, residential development would be limited to upland areas at an overall density of no more than one dwelling unit per five upland acres, with conservation subdivision designs strongly encouraged where rural density residential development is accommodated.[6] Under the guidelines, in lieu of rural density residential development, up to 10 percent of the upland corridor area in a parcel may be disturbed in order to accommodate urban-density residential, commercial, industrial, or other urban development.

The afore-referenced guideline allowing for a disturbance area of up to 10 percent of the upland environmental corridor in a parcel is a new provision under the year 2035 regional land use plan. The environmental corridor guidelines set forth in Table 27 in Chapter IV include an allowance for a disturbance of up to 10 percent of the upland corridor area in a parcel in order to accommodate urban residential, commercial, or other urban development, provided that the balance of the corridor area is protected from any future disturbance. This allowance would be in lieu of the rural density residential development permitted under prior guidelines. The allowance would be granted only under the following conditions: 1) the area to be disturbed is compact rather than scattered in nature; 2) the disturbance area is located on the edge of a corridor or on marginal resources within a corridor; 3) the development does not threaten the integrity of the remaining corridor; 4) the development does not result in significant adverse water quality impacts; and 5) the development of the remainder of the parcel is prohibited by a conservation easement or deed restriction. All such proposals would be reviewed on a site-by-site basis. The allowance recognizes that, from a resource preservation point of view, preserving a minimum of 90 percent of the environmental corridor in this manner may be preferable to accommodating rural density residential development in the form of scattered homesites and attendant access roads at a density of up to one dwelling unit per five acres within upland corridor areas.

[6] *It is recommended that the number of dwelling units to be accommodated be limited to no more than one dwelling unit per five acres of upland corridor in the parcel. It is recognized that, in some situations, it may be appropriate to include certain lowland corridor area in calculating the number of dwellings to be accommodated, particularly where the lowland area comprises a relatively insignificant portion of the development parcel. In such cases the number of dwelling units should not exceed one dwelling unit per five acres of lowland and upland corridor combined.*

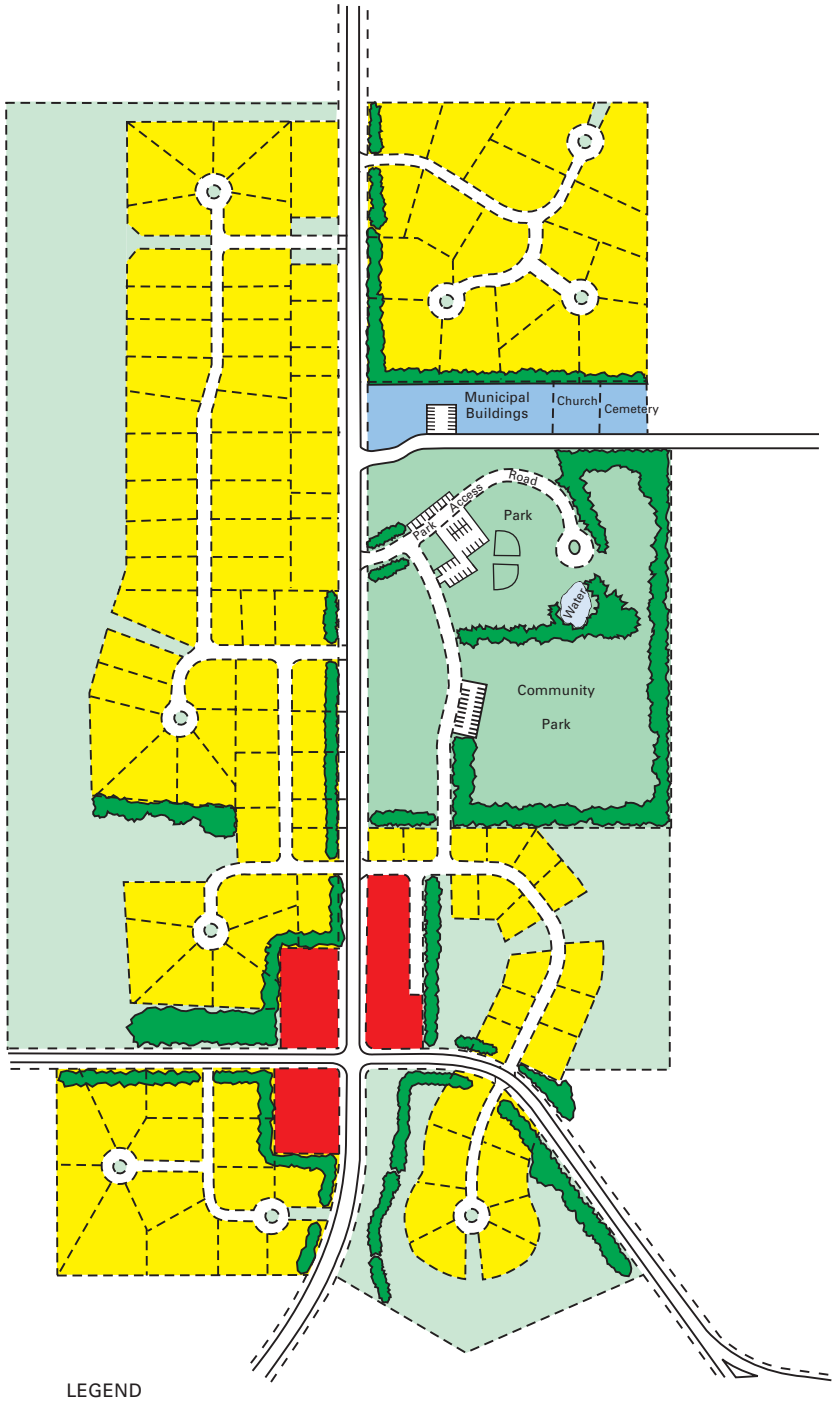
Figure 21

EXAMPLE OF RURAL-AREA PLAN INCORPORATING HAMLET DESIGN PRINCIPLES



LEGEND

- RURAL DENSITY RESIDENTIAL (ONE DWELLING UNIT PER FIVE ACRES)
- GOVERNMENTAL/INSTITUTIONAL
- ENVIRONMENTAL CORRIDOR OR ISOLATED NATURAL RESOURCE AREA
- SURFACE WATER
- AGRICULTURAL



LEGEND

- PROPERTY LINES
- HIGHWAY OR STREET RIGHT-OF-WAY
- RESIDENTIAL
- COMMERCIAL
- GOVERNMENTAL/ INSTITUTIONAL
- RECREATION
- COMMON OPEN SPACE
- WOODLANDS, HEDGEROWS, AND LANDSCAPED BUFFERS
- SURFACE WATER
- AGRICULTURAL

Source: SEWRPC.

It is not the intent of the regional land use plan to encourage the types of development specified in Table 27 within environmentally significant areas. Rather, the limited development specified in Table 27 is an accommodation that seeks to balance landowner interests in development with natural resource base preservation objectives.

Local Regulatory Measures

Land use regulatory ordinances are an important means available to county and local units of government to shape growth and development in accordance with local and regional land use objectives. Under the State comprehensive planning law, beginning on January 1, 2010, key local land use regulatory ordinances—zoning ordinances, land division ordinances, and official map ordinances—must be consistent with the local comprehensive plan. Accordingly, upon completion of their comprehensive plans, counties, cities, villages, and towns will have to review their ordinances and adjust them as necessary for consistency with their plans. To the extent that counties, cities, villages, and towns incorporate the regional land use plan into their comprehensive plans, the regional land use plan may be expected to be reflected in their various land use regulations. Guidance with respect to local review and adjustment of zoning, land division, and official map ordinances within the framework of the regional land use plan follows.

Zoning Ordinances

Of all the land use plan implementation devices presently available, perhaps the most important and most versatile is the application of local police power to regulate land use development through the adoption of zoning ordinances, including zoning district regulations and zoning district maps. Cities and villages are authorized under the *Wisconsin Statutes* to adopt and administer general zoning within their corporate limits. Counties are authorized to adopt and administer general zoning throughout their unincorporated areas; a county ordinance becomes effective within a given town only after approval by the town board. Towns which are not under county zoning may exercise village powers and thereby adopt and administer general zoning; however, in counties having a county zoning ordinance, no such town ordinance or ordinance amendment may be adopted unless approved by the county board. Towns in counties which have not enacted a county zoning ordinance may also adopt their own zoning ordinances under powers specifically granted to towns, provided that the town first petitions the county to enact a county ordinance and the county fails to do so.[7]

Zoning in Urban Areas

Zoning in urban areas should be administered in accordance with county and local comprehensive plans which refine the urban-area recommendations of the regional land use plan.

The application of zoning districts that accommodate residential, commercial, industrial, and other urban development should be done in a manner that is consistent with any recommendations in the local comprehensive plan regarding the staging of development over the course of the plan period. Where the local comprehensive plan includes staging provisions, the application of zoning districts that accommodate the planned urban uses should be done incrementally in accordance with the timeframe set forth in the comprehensive plan. In the interim, the lands concerned should be placed in zoning districts consistent with their existing use, or, alternatively, placed in an urban land holding district or transition district. This approach can help to avoid premature development and the creation of isolated urban enclaves and incomplete neighborhoods.

[7] *The* Wisconsin Statutes *enable cities and villages to exercise extraterritorial zoning power within unincorporated town areas located within specified distances of their corporate limits—three miles from the corporate limits of a first-, second-, or third-class city, and one and one-half miles from the limits of a fourth-class city or a village. This extraterritorial zoning power must be exercised through a joint six-member committee composed equally of representatives of the city or village and the concerned town. By statute, the establishment of extraterritorial zoning district regulations and zoning district boundaries and any subsequent amendments requires the favorable vote of a majority of the joint extraterritorial zoning committee*.

Zoning ordinances should include provisions that allow for a range of development designs, including mixed-use development, traditional neighborhood development, and transit-oriented development, as discussed earlier in this chapter. Such flexibility in design can be achieved through the inclusion of planned unit development provisions as a basic district or an overlay district in the zoning ordinance. Planned unit development provisions can enable coordinated site planning, allowing for latitude in the location and type of structures and for a mixture of compatible residential, commercial, institutional, and open space uses.

It is important to recognize that residential zoning regulations may have a significant influence on housing costs and the supply of affordable housing. In order to enable the provision of affordable housing, all urban communities, especially "developing" communities, should incorporate provisions for a full range of residential structure types—single-family, two-family, and multi-family—as well as a reasonable range of housing sizes within their zoning ordinances. Moreover, urban communities should incorporate provisions for a full range of residential lot sizes and include one or more residential districts specifying lot sizes of no more than 7,200 square feet for single-family detached housing units and 8,000 square feet for two-family structures.

Zoning in Rural Areas

Zoning in rural areas should be administered in accordance with county and local comprehensive plans which refine the rural-area recommendations of the regional land use plan. The following is recommended:

- Prime agricultural lands identified in county and local comprehensive plans should be placed into an exclusive agricultural zoning district which essentially permits only agricultural and agriculture-related uses. Such a district should provide for a residential density of no more than one dwelling unit per 35 acres and should prohibit incompatible urban development.

- Other areas identified for continued agricultural use in county and local comprehensive plans should be placed into exclusive agricultural districts as defined above or into general agricultural districts with smaller minimum parcel sizes as may be appropriate for smaller agricultural operations, such as hobby farms or other specialty farms.

- Areas recommended in county and local comprehensive plans for rural residential development should be placed into a rural residential zoning district that limits development to no more than one dwelling unit per five acres and that encourages, or even requires, the use of conservation subdivision designs to accommodate the permitted development.

Zoning in Environmentally Significant Areas

Zoning of environmentally significant lands, including primary environmental corridors, secondary environmental corridors, and isolated natural resource areas, should be administered in accordance with county and local comprehensive plans that refine the regional land use plan. At a minimum, zoning should be applied to protect primary environmental corridors; zoning should also be applied to protect secondary environmental corridors and isolated natural resource areas in a manner consistent with county and local comprehensive plans.

In order to protect environmental corridors and isolated natural resource areas, the component lakes, rivers, and streams, wetlands, and associated undeveloped floodplains and shorelands should be placed in lowland conservancy or floodplain protection districts. Upland wooded areas and areas of steep slope should be placed in appropriate upland conservancy or park and recreation districts. These various districts should be designed in accordance with the guidelines presented in Table 27 of Chapter IV. As previously noted, under those guidelines, development would be confined to necessary transportation and utility uses; limited recreational uses; rural density residential development limited to no more than one dwelling unit per five upland acres; or, in lieu of such rural density residential development, limited urban development confined to no more than 10 percent of the upland area.

Land Division Ordinances

The regulation of land divisions is another important means for shaping development in accordance with adopted plans. Basic regulations governing the division of land are set forth in Chapter 236 of the *Wisconsin Statutes*. Chapter 236 defines the term "subdivision" as a division of a lot, parcel, or tract of land where the act of division creates five or more parcels or building sites of one and one-half acres each or less in area—or where five or more parcels or building sites of one and one-half acres each or less in area are created by successive divisions within a period of five years. Chapter 236 requires that any division of land which results in a subdivision shall be, and provides that any other division may be, surveyed and a plat thereof approved and recorded. Chapter 236 empowers cities, villages, towns, and counties which have established planning agencies to adopt land division ordinances which are more restrictive than the *Wisconsin Statutes*, enabling county and local units of government to regulate all land divisions.[8]

Section 236.10 of the *Wisconsin Statutes* indicates that a plat may not be recorded unless approved by the following:

- If within a city or village: the governing body of the city or village.
- If within a town, outside the extraterritorial plat approval jurisdiction area of a city or village: the town board and the county planning agency, if there is one.
- If within a town, inside the extraterritorial plat approval jurisdiction area of a city or village: the town board; the governing body of the concerned city or village, if it has adopted a land division ordinance or an official map; and the county planning agency if that agency employs full-time staff for the purpose of administering zoning or other planning legislation.

Section 236.12 identifies certain other agencies as having the power to object to a plat. A plat may not be approved until any objections have been satisfied. Section 236.12 designates two State agencies, the Wisconsin Departments of Commerce and Transportation, as objecting agencies. County planning agencies are objecting agencies to plats located in cities and villages provided that they employ full-time staff for the purpose of administering planning legislation and provided further that they adopt a policy requiring submission of plats to the planning agency. County planning agencies review proposed plats for potential conflicts with parks, parkways, expressways, major highways, airports, drainage channels, schools, or other planned public developments.

As noted above, cities, villages, towns, and counties that have established planning agencies are authorized to adopt land division ordinances more restrictive than the provisions of Chapter 236. For example, county and local ordinances may adopt a more inclusive definition of the term "subdivision" and may require the recording of certified surveys for land divisions not defined as subdivisions. Such ordinances may establish design guidelines and public improvement requirements consistent with local development objectives. Local units of government may choose to integrate the local regulation of condominium developments, as defined under Chapter 703 of the *Wisconsin Statutes*, into comprehensive land division and land development control ordinances.

County and local units of government should administer their local land division ordinances in a manner consistent with their comprehensive plans prepared within the framework of the regional land use plan.

Official Mapping

Official mapping powers granted to cities under Section 62.23(6) of the *Wisconsin Statutes*, by reference under Section 61.35 to villages, and by reference under Section 60.22(3) to towns which have adopted village powers, provide a means for reserving land for future public use as streets, highways, waterways, railways, transit facilities, and parkways. The enabling statutes generally prohibit the issuance of building permits for the construction or enlarging of buildings within the limits of such areas as shown on the official map. However, the statutes include provision for issuance of building permits where it is demonstrated that the lands within the areas designated

[8] *Land division control powers and procedures are described in detail in SEWRPC Planning Guide No. 1 (2nd Edition),* Land Division Control Guide*, July 2001.*

for future public use are not yielding a fair return. Official maps may show areas designated for future parks and playgrounds, but the enabling legislation does not mention them as protected mapped facilities. State law provides that cities and villages may extend official maps beyond their corporate limits to areas within which they have been granted extraterritorial subdivision plat approval power under Chapter 236 of the *Wisconsin Statutes*.[9]

Official mapping powers represent an effective means of reserving land for future public use in accordance with local comprehensive plans which refine the regional land use plan. It is recommended that all cities, villages, and towns in the Region prepare and adopt official maps, showing thereon as proposed parkways those environmental corridors which may be proposed for public acquisition along with other proposed public lands as authorized by State statute.

Section 66.1031 of the *Wisconsin Statutes* confers what are, in effect, limited official map powers on counties. County highway width maps adopted under Section 66.1031 may be used to show the proposed widening of existing streets and highways and to show the location and width of proposed future streets and highways. Such maps must have the approval of the governing body of the municipality in which the mapped streets and highways are located. The scope of facilities to be mapped under this statute does not extend beyond streets and highways. This statute does not include the prohibitions on issuance of building permits which are established in the local official mapping statutes. County highway width maps can, nevertheless, help to ensure that planned arterial street and highway improvements are properly taken into account in county and local land use decision-making.

State and Federal Regulatory Measures

State-Local Floodplain and Shoreland Regulations

Section 87.30 of the *Wisconsin Statutes* mandates that cities and villages, as well as counties with respect to unincorporated areas, adopt appropriate floodplain zoning regulations, basing such regulations on the hydrologic, hydraulic, and other engineering data required to appropriately define flood hazard areas. Minimum standards which city, village, and county floodplain ordinances must meet are set forth in Chapter NR 116 of the *Wisconsin Administrative Code*. All such regulations must govern filling and development activity within the 100-year recurrence interval floodplain. Under minimum State requirements, local floodplain zoning regulations must prohibit nearly all forms of development within the floodway—that is, the area of the floodplain required to convey the 100-year recurrence interval peak flood flow. Local regulation must also restrict filling and development within the flood fringe, or that portion of the floodplain located outside the floodway that would be covered by floodwater during a 100-year flood event. Marginal modifications may be made to flood fringe areas if provided for in local ordinances. It is recommended that, where such modifications are allowed, there be a policy or corresponding regulatory provision requiring no loss in floodwater storage volume.

Section 59.692 of the *Wisconsin Statutes* requires that counties in Wisconsin adopt special regulations governing development within shoreland areas. By statutory definition, shoreland areas are lands within 1,000 feet of a navigable lake, pond, or flowage, or within 300 feet of a navigable stream or to the landward side of the floodplain, whichever distance is greater. Minimum standards for county shoreland regulations are set forth in Chapter NR 115 of the *Wisconsin Administrative Code*. Shoreland regulations include minimum requirements for lot size and building setbacks as well as restrictions on removal of vegetation. In addition, the State regulations require that counties place all wetlands at least five acres in size lying in shoreland areas into a protective conservancy zoning district. Under Sections 62.231 and 61.351, respectively, of the *Wisconsin Statutes*, cities and villages in Wisconsin are also required to enact zoning regulations to protect wetlands five acres or greater in size lying in shoreland areas. Administrative rules pertaining to city and village shoreland-wetland conservancy zoning are set forth in Chapter NR 117 of the *Wisconsin Administrative Code*.

[9] *Official mapping powers and procedures are described in detail in SEWRPC Planning Guide No. 2 (2nd Edition),* Official Mapping Guide*, June 1996.*

Floodplain and shoreland regulations have been applied by counties, cities, and villages throughout the Region in accordance with the *Wisconsin Statutes* and *Administrative Code.* These regulations serve to protect many of the wetlands and other low-lying areas within environmental corridors and isolated natural resource areas, as recommended in the regional land use plan.

Federal Wetland Regulatory Program

Under Section 404 of the Clean Water Act as amended, the U.S. Congress has provided for the regulation of most of the wetlands of the Nation. That statute requires the U.S. Army Corps of Engineers, working in cooperation with the U.S. Environmental Protection Agency, to regulate the discharge of dredged and fill materials into the waters of the United States, including lakes, rivers, and wetlands. In carrying out this responsibility, the Corps of Engineers identifies waters of the United States, including wetlands, and determines when permits are required for the discharge of dredged and fill material.

Federal law provides for the involvement of states in the Section 404 program. The Wisconsin Department of Natural Resources may deny or grant certification of any proposed discharge of dredged or fill material into a wetland. In considering such certifications, the Department applies the wetland preservation policies and standards set forth in Section NR 1.95 and Chapter NR 103 of the *Wisconsin Administrative Code* and under 2001 Wisconsin Act 6 requirements. If the State denies certification, then Federal law requires that the U. S. Army Corps of Engineers deny the requested Section 404 permit.

The Section 404 regulatory program represents an important means for protecting and preserving wetlands. The continued steadfast administration of this program can contribute significantly to implementation of the regional land use plan recommendations regarding preservation of environmentally sensitive lands.

Regulation of Public Sanitary Sewerage Systems: Sanitary Sewer Service Areas

In Wisconsin, the comprehensive water quality management planning program has led to the development of State regulations which have the effect of requiring the preparation of sanitary sewer service area plans for each public sewage treatment plant. In the Region, these plans are prepared cooperatively by the concerned local unit of government and the Regional Planning Commission, with ultimate approval authority resting with the Wisconsin Department of Natural Resources. Sewer service area plans have now been prepared for nearly all of the public sanitary sewerage systems in the Region.[10] These plans define sewer service limits and delineate environmentally sensitive lands within those service limits to which service should not be provided. Chapter NR 110 and Chapter Comm 82 of the *Wisconsin Administrative Code* require that the Wisconsin Department of Natural Resources, with respect to public sanitary sewers, and the Wisconsin Department of Commerce, with respect to private sanitary sewers, make a finding that all proposed sanitary sewer extensions are in conformance with adopted areawide water quality management plans and the sanitary sewer service areas identified in such plans before approving such extensions.

Under Chapter NR 121, sewer service areas must be sized in a manner that is consistent with long-range population projections. As a practical matter, this requirement is considered to be met if the buildout population of the sewer service area—that is, the population that could be accommodated if the sewer service area were completely developed at locally planned residential densities—is within the projection range envisioned under the regional land use plan. In sizing their sewer service areas, many communities choose to plan for the high end of the projected population range in order to retain flexibility in terms of the location of future urban growth. The projected population ranges for sewer service areas in the Region under the year 2035 regional land use plan are set forth in Appendix F.

Historically, communities in the Region, with the assistance of the Regional Planning Commission, have amended their sewer service area plans from time to time in response to changing needs and conditions. This may be expected to continue in the years ahead, particularly as communities complete their required local comprehensive plans.

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[10] *The urban service areas shown on the regional land use plan map reflect currently adopted sewer service areas, expanded in some cases in anticipation of future needs.*

As noted above, sanitary sewer service area plans are an important part of the basis for State agency review and approval of proposed sewer extensions. Policies adhered to by the Wisconsin Department of Natural Resources and Department of Commerce prohibit or otherwise limit the extension of sanitary sewers to serve development in certain environmentally significant lands identified in local sewer service area plans. The following restrictions were in effect at the time the regional land use plan was completed in 2006:

- The extension of sanitary sewers to serve new development in primary environmental corridors is confined to limited recreational and institutional uses and rural-density residential development (maximum of one dwelling unit per five acres) in areas other than wetlands, floodplain, shorelands,[11] and steep slope (12 percent or greater).

- The extension of sanitary sewers to serve development in portions of secondary environmental corridors and isolated natural resource areas comprised of wetlands, floodplains, shorelands, or steep slope is not permitted.

It should be noted that, under current rules, building sewers that are intended to serve buildings that have fewer than 54 drainage fixture units are exempt from the water quality management plan conformance review process. This provision effectively eliminates from that review process one- and two-family homes and some commercial buildings, potentially including large warehouses. It is recommended that the Wisconsin Department of Commerce, which has oversight with respect to private sewer extensions, effect an administrative rule change which would eliminate this "loophole"—at least as related to nonresidential buildings.

Regulation of Private Sewage Disposal Systems

Low and sub-urban density residential development—that is, development on lots of one-half acre to less than five acres—in outlying areas of the Region, removed from established urban service areas and reliant upon onsite disposal systems for wastewater treatment and disposal, is in conflict with the regional land use plan. Such development was once constrained in many areas of the Region owing to soil limitations which prevented such systems from functioning properly. New onsite sewage disposal systems designed to operate in once-limiting soil conditions, along with regulatory changes favorable to the use of the new systems, have increased the area subject to unsewered residential development.

Under Sections 59.70 and 145.01 of the *Wisconsin Statutes*, all counties in Wisconsin except Milwaukee County are required to adopt and enforce a comprehensive private sewage system ordinance which governs the installation and maintenance of onsite sewage disposal systems and sewage holding tanks. Within Milwaukee County, this regulatory responsibility is assigned to cities and villages. Under State law, the county and local ordinances generally cannot be more restrictive than the State plumbing code, which has been revised to allow for a greater variety of onsite sewage disposal systems under a wider range of conditions.

Clearly, soil limitations and regulations governing the use of onsite sewage disposal systems have become much less of a constraint on low and sub-urban density residential development in outlying areas detached from planned urban service areas. This situation underscores the importance of local planning and zoning as the primary means to minimize such development.

As an alternative to outlying low and sub-urban density residential development, the regional land use plan recommends meeting the expected continued demand for country living through rural-density residential development (no more than one dwelling unit per five acres), with conservation subdivision designs encouraged to accommodate such development. Sewage treatment for such development could be provided through individual onsite sewage

[11] *As identified for purposes of delineating environmental corridors, shorelands include a band 50 feet in depth along both sides of intermittent streams; a band 75 feet in depth along both sides of perennial streams; a band 75 feet in depth around lakes; and a band 200 feet in depth along the Lake Michigan shoreline.*

disposal systems or through a larger scale common system or series of such systems serving the entire development. Where larger scale common systems are utilized, it is recommended that they be owned and operated by a local sanitary or utility district.

Park and Open Space Acquisition/Conservation Easements

Achievement of the outdoor recreation and open space preservation objectives of the regional land use plan requires continued public interest acquisition of land for outdoor recreation and open space uses. The regional park and open space plan, as refined in county park and open space plans, recommends public interest acquisition (that is, acquisition by local, county, State and Federal government and by private conservancy interests) of substantial amounts of land for recreation and resource protection purposes.[12] The regional natural areas and critical species habitat protection and management plan also includes recommendations for public interest acquisition for most of the natural areas and critical species habitat sites identified in that plan.[13] Moreover, cities, villages, and towns may acquire other lands for park and open space purposes as recommended in local comprehensive or park and open space plans. Each of the concerned units and agencies of government should continue or begin land acquisition programs in accordance with such plans. Private conservancy organizations are encouraged to supplement public open space acquisition efforts, as appropriate, to ensure the preservation of important natural areas.

Purchase of less than fee simple interest in park and open space lands may be less costly than acquisition of the entire interest. Acquisition of less than fee simple interest may include conservation easements ensuring that the land remains in open space use, easements permitting public access for recreational use, and easements permitting public site management. Easements may achieve the desired recreational and open space preservation objectives at lower cost, with the property concerned remaining on the local tax roll and continuing to generate property tax revenue.

As noted above, specific recommendations for open space acquisition—in fee simple or less than fee simple (easement) interest—are set forth for State, county, and local units of government and private conservancy interests in the regional- county park and open space plan and in the regional natural areas and critical species habitat protection and management plan. The State Stewardship Fund, administered by the Wisconsin Department of Natural Resources, includes a number of programs which can provide funding for park and open space land acquisition. Easement programs administered by the U.S. Natural Resources Conservation Service (NRCS) can also help ensure the long-term protection and enhancement of open space lands. The NRCS Wetland Reserve Program provides financial incentives, through the purchase of easements or cost-share agreements, to landowners to restore and protect wetlands in marginal farming areas. The NRCS Farm and Ranch Lands Protection Program provides financial assistance to states, tribes, local governments, and nonprofit entities in the acquisition of conservation easements or development rights on productive farmland in order to keep such land in agricultural use.

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[12] *SEWRPC Community Assistance Planning Report No.131,* A Park and Open Space Plan for Kenosha County*, November 1987; SEWRPC Community Assistance Planning Report No. 132,* A Park and Open Space Plan for Milwaukee County*, November 1991; SEWRPC Community Assistance Planning Report No. 133 (2nd Edition),* A Park and Open Space Plan for Ozaukee County*, June 2001; SEWRPC Community Assistance Planning Report No.134 (2nd Edition),* A Park and Open Space Plan for Racine County*, July 2001; SEWRPC Community Assistance Planning Report No. 135 (2nd Edition),* A Park and Open Space Plan for Walworth County*, September 2000; SEWRPC Community Assistance Planning Report No. 136 (3rd Edition),* A Park and Open Space Plan for Washington County*, March 2004; and Chapter XIII, "Park and Open Space Plan," of SEWRPC Community Assistance Planning Report No. 209,* A Development Plan for Waukesha County, Wisconsin*, August 1996.*

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

Purchase of Development Rights[14]

Purchase-of-development-rights programs, or "PDR" programs, represent another potential means to ensure the preservation of agricultural lands. Under a PDR program, landowners are compensated for permanently committing their land to agricultural and open space use. Deed restrictions or easements are used to ensure that the lands concerned remain in agricultural or other open use. Such restrictions are attached to the land and remain in effect regardless of future sale or other transfer of the land.

PDR programs may be administered and funded by State, county, or local units of government, land trusts and other private organizations, or combinations of these. The amounts paid to farmland owners under PDR programs may be calculated on the basis of the number of dwelling units permitted under existing zoning, on the basis of the difference between the market value of the land and its value solely for agricultural purposes, or on some other basis.

PDR programs provide assurance that farmland will be permanently retained in open use. Landowners receive a potentially substantial cash payment while retaining all other rights to the land, including the right to continue farming. The money paid to the landowner may be used for any purpose, such as debt reduction, capital improvement to the farm, or retirement income. Lands included in a PDR program remain on the tax roll and continue to generate property taxes. Since the land remains in private ownership, the public sector does not incur any land management responsibilities.

PDR programs have not been widely embraced within the Region to this point. The primary drawback of PDR programs is the potentially high cost. Given the attendant costs, PDR programs should be strategically targeted toward agricultural lands where long-term preservation is particularly important. A PDR program could, for example, be directed at existing farmland surrounding a public nature preserve or major park in order to ensure a permanent open space buffer around the park or nature preserve.

Transfer of Development Rights

Under transfer-of-development-rights programs, or "TDR" programs, the right to develop a specified number of dwelling units under existing zoning may be transferred from one parcel, which would be maintained in open space use, to a different parcel, where the number of dwelling units permitted would be correspondingly increased. When the parcels are held by the same owner, the development rights are, in effect, simply transferred from one parcel to the other by the owner; when the parcels are held by different landowners, the transfer of development rights involves a sale of rights from one owner to another, at fair market value. In either case, the result is a shift in density away from areas proposed to be maintained in farming or other open use toward areas recommended for development. The transfer of development rights may be permanent or may be for a specific period of time or set of conditions.

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[14] *Purchase-of-development-rights (PDR) and transfer-of-development-rights (TDR) programs are based upon the premise that development rights are distinct attributes of land ownership that can be sold or otherwise transferred. No widespread agreement exists on the nature or extent of development rights that may be inherent in fee simple ownership of land. There is general agreement that landowners have the right to use their land with the limits set by public regulation. Such regulation must be defensible from a constitutional law standpoint, leaving landowners a reasonable use of their land so as not to constitute a public taking of the land without payment of just compensation.*

Some individuals maintain that since zoning ordinances and other land use regulations may legally be, and indeed, historically have been, amended to become more restrictive, there are no development rights inherent in land ownership, the owner being entitled only to a continuation of existing use. Others argue that where zoning and other public land use controls have been in place for a long period of time, a right to develop in accordance with such longstanding zoning regulations becomes effectively attached to the land and that the removal of such development rights—rights which are commonly taken for granted by landowners—through downzoning would constitute a "taking." While the latter position is frequently taken in a political context—as many local elected officials believe that such a position is fair and equitable—the Wisconsin Supreme Court has taken the position that a landowner has no vested right in zoning until proper development and/or building permit applications have been filed.

The transfer of development rights may be implemented only if authorized under county or local zoning. To enable the transfer of development rights, the zoning ordinance must establish procedures by which the TDR technique will be administered, including the formula for calculating the number of residential dwelling units which may be transferred from the "sending" area to the "receiving" area. The zoning district map must identify the sending and receiving areas, or at least identify the districts within which development rights can be transferred from one parcel to another.

While the creation and administration of a TDR program is somewhat complicated, the technique remains a potentially effective means for preserving open space and maintaining rural densities, while directing development to areas where it may best be accommodated.

Municipal Boundary and Utility Extension Agreements

The recommendations of the regional land use plan concerning the location and density of new urban development are formulated without regard to the location of city, village, and town boundaries. Rather, those plan recommendations are based upon a consideration of such factors as the location of existing utility infrastructure, including public sanitary sewer and water supply systems; the location of environmentally sensitive lands; and the availability of lands considered to be suitable for urban development. Where cities and villages own and operate essential public utilities not provided by adjacent towns, the regional plan assumes that cities and villages will either annex unincorporated territory recommended in the plan for urban development and provide extensions of essential utility services to serve such development, or that the cities and villages will reach agreement with adjacent unincorporated towns on the extension of those essential services without the need for annexation and municipal boundary change.

The *Wisconsin Statutes* establish a number of arrangements for cooperation among communities with regard to sharing of municipal services and cooperatively determining community boundaries, as indicated below:

- Section 66.0301: This section of the Statutes provides broad authority for intergovernmental cooperation among local units of government with respect to the provision and receipt of services and the joint exercise of their powers and duties.

- Section 66.0307: This section of the Statutes allows any combination of cities, villages, and towns to determine the boundary lines between themselves under a cooperative plan, subject to oversight by the Wisconsin Department of Administration. Section 66.0307 envisions the cooperative preparation of a comprehensive plan for the affected area by the concerned local units of government and prescribes in detail the contents of the cooperative plan. Importantly, the cooperative plan must identify any boundary change and any existing boundary that may not be changed during the planning period; identify any conditions that must be met before a boundary change may occur; include a schedule of the period during which a boundary change shall or may occur; and specify arrangements for the provision of urban services to the territory covered by the plan.

- Section 66.0225: This section of the Statutes allows two abutting communities that are parties to a court action regarding an annexation, incorporation, consolidation, or detachment, to enter into a written stipulation compromising and settling the litigation and determining a common boundary between the communities.

Cooperative approaches to the identification of future corporate limits and the extension of urban services can contribute significantly to attainment of the compact, centralized urban growth recommended in the regional land use plan. Conversely, failure of neighboring civil divisions to reach agreement on boundary and service extension matters may result in development at variance with the regional plan—for example, by causing new development to leap past logical urban growth areas where corporate limits are contested, to outlying areas where sewer and water supply service are not available. Accordingly, it is recommended that neighboring incorporated and unincorporated communities cooperatively plan for future land use, civil division boundaries, and the provision of urban services, as provided for under the *Wisconsin Statutes*, within the framework of the regional land use plan.

Municipal Revenue Sharing
Additional opportunity for intergovernmental cooperation is provided under Section 66.0305 of the *Wisconsin Statutes*, entitled "Municipal Revenue Sharing." Under this statute, two or more cities, villages, and towns may enter into revenue sharing agreements, providing for the sharing of revenues derived from taxes and special charges. The agreements may address matters other than revenue sharing, including municipal services and municipal boundaries. Municipal revenue sharing can provide for a more equitable distribution of the property tax revenue generated from new commercial and industrial development within metropolitan areas and help reduce tax-base competition among communities, competition that can work against the best interests of the metropolitan area as a whole.

A good example of municipal revenue sharing under this statute is the revenue sharing agreement included in the Racine Area Intergovernmental Sanitary Sewer Service, Revenue Sharing, Cooperation and Settlement Agreement entered into by the City of Racine and neighboring communities in 2002. Under this agreement, the City of Racine receives shared revenue payments from neighboring communities for use in renovating older residential areas, redeveloping brownfield sites, and supporting regional facilities like the City zoo, fine arts museum, and library. In return, the City of Racine agreed to support the incorporation of the two adjacent Towns of Caledonia and Mt. Pleasant; refrain from annexations without the consent of the Towns; refrain from using extraterritorial zoning and plat review powers; and move ahead with sewerage system improvements that will accommodate growth in the Towns. It should be noted that the Towns of Mt. Pleasant and Caledonia were incorporated as villages in 2003 and 2005, respectively.

Capital Improvement Programming
The ability of county and local units of government to implement the regional land use plan as refined and detailed in county and community comprehensive plans depends in part upon the proper timing and coordination of major capital improvements, including major streets and highways, major utility facilities, parks, libraries, and other major public facilities. This can best be accomplished through systematic capital improvement programming, a process involving the scheduling of major public improvements over a specified period of time, taking into account the relative importance of, and need for, those improvements and the financial resources anticipated to be available. Although procedures vary, this process typically involves the preparation of a capital improvement budget for the next fiscal year and a capital improvement program indicating improvements planned for the following four or five years. It is common for the improvement budget to be prepared and the capital improvement program to be revised annually. As part of the capital improvement programming process, every effort should be made to relate major capital improvement to the development objectives set forth in county and local plans which refine the regional land use plan.

Brownfield Redevelopment
The Southeastern Wisconsin Region, like many urbanizing regions throughout the Nation, has experienced an increase in vacant or underutilized sites once devoted to industrial, commercial, and related uses. Factors contributing to the abandonment or underutilization of older commercial and industrial sites vary from site to site but often include structures which are obsolete in terms of accommodating current manufacturing, warehousing, and office needs; inadequate site access to the freeway system; and insufficient site area for horizontally-oriented structures, contemporary parking and loading requirements, and possible future plant expansion needs.

Once abandoned, the re-use of former commercial and industrial sites is frequently constrained by contamination problems created by past industrial and commercial activities, giving rise to the term "brownfields"—sites which are underutilized or abandoned due to known or suspected environmental contamination. While brownfields tend to be concentrated in older central-city areas, they also occur in outlying urban areas. Redevelopment of brownfields is often hindered by high cleanup costs, and, even where contamination is only suspected, the potential for high cleanup costs tends to dampen private-sector interest in redevelopment.

Maintaining the viability of existing urban areas of the Region as recommended in the regional land use plan will require special efforts to promote the reuse of brownfields. Local units of government should include the cleanup and re-use of brownfields as a key element in their planning for the revitalization of urban areas and promote such re-use

through such tools as tax-incremental financing. Limited State and Federal financial assistance has been made available in support of the cleanup and re-use of contaminated sites. Local units of government should make full use of, and assist private developers in securing, available State and Federal financial assistance.

The re-use of brownfield sites need not be limited to industrial use, but may include a mix of residential, commercial, recreational, and other development, in accordance with local development objectives. Properly carried out, the cleanup and re-use of brownfields has many potential benefits in addition to the underlying environmental benefits: elimination of blight, increase in the property-tax base, expansion of the housing stock, provision of jobs in close proximity to concentrations of the labor force, and increased use of existing public infrastructure.

Development Design Standards

Achievement of a settlement pattern that is functional, safe, and attractive, as recommended in the regional plan, ultimately depends upon good design of individual development sites. Local units of government can promote good site design through the establishment of design standards to be adhered to in private-sector development. Adherence to soundly conceived design standards can enhance the visual character of the developed areas, contribute to the long-term stability of the developed areas and the maintenance of property values, and protect the public investment in supporting infrastructure systems.

Design standards should reflect both regional and local development objectives. Regional concerns that should be addressed in such standards include transit serviceability, proper access to arterial streets and highways, and protection of the natural resource base. Local concerns which may be addressed in such standards include, among others, the layout of lots and blocks; provision of off-street parking; building mass, facades, and materials; solar access; grading; drainage; screening or buffering of building appurtenances; landscaping; open space reserves; controlled outdoor lighting; pedestrian and bicycle circulation; access to public transit; and buffering and screening of new development along freeways and other major highways. Some of the design standards may be quantitative in nature, so that compliance is directly measurable. Other standards may be qualitative in nature, so that determination of compliance involves experienced judgment.

Perhaps the best way to ensure compliance with design standards is to incorporate those standards into local land use controls—particularly zoning and land division control ordinances. Zoning ordinances can be expanded by requiring that site plans and building plans be prepared for each proposed development and by specifying the standards which the plans must meet. Land division control ordinances may be expanded to stipulate additional design standards required to be met in the land development process. Freestanding architectural control ordinances may also be used to codify building-related design standards.

With respect to zoning, design standards can be incorporated in several ways. For example, where a zoning ordinance requires site and building plan review by the local plan commission, specific design standards can be included in that section of the ordinance. Design standards can also be incorporated as part of 'form-based' zoning provisions. Still an emerging concept, form-based zoning generally places more emphasis on physical building and site design attributes and less emphasis on the regulation of specific uses than conventional zoning. The use of form-based zoning is likely to have most application to situations where it is desired to accommodate a diversity of uses and to allow buildings to accommodate different uses over time.

It is recommended that each county and local unit of government in the Region consider the formulation of a comprehensive set of design standards reflecting regional and local development objectives and determine whether and how existing local land use controls should be amended to ensure adherence to those standards.

Sound Land and Water Management Practices

As previously noted, the regional land use plan is a system-level plan. It includes recommendations regarding the general location and intensity of urban lands, the preservation of environmentally significant lands, the preservation of prime agricultural land, and the appropriate use of land in other rural areas. As the regional land use plan is implemented in the years ahead, it is essential that appropriate land and water management practices be planned for

and applied, as a complement to the regional plan. A detailed discussion in this regard is beyond the scope of this report. This report can only highlight the types of planning and related management practices that should be considered in planned urban and rural areas.[15]

Stormwater runoff pollution performance standards for new development, existing urban areas, and transportation facilities are set forth in Chapters NR 151 and NR 216 of the *Wisconsin Administrative Code*. Each municipality in the Region should develop a stormwater management plan and adopt a stormwater management ordinance to achieve the standards set forth in the Administrative Code. Stormwater management practices appropriate for each urban area can best be developed through the preparation of a management plan. These practices should be developed in a manner that integrates development needs and environmental protection, including integrated water resources protection. Such practices should reflect both stormwater runoff quantity and quality considerations, as well as groundwater quantity and quality protection. Practices that are designed to maintain the natural hydrology should be considered.

Chapter NR 151 of the *Wisconsin Administrative Code*, along with the Wisconsin Uniform Dwelling Code, sets forth regulations relating to construction site erosion. Construction site erosion is one of the leading causes of siltation in waterways. It is recommended that each municipality adopt a construction site erosion control ordinance which incorporates the sound erosion control techniques outlined in the rules noted above.

Chapter NR 151 of the *Wisconsin Administrative Code* also includes performance standards in relation to stormwater runoff in agricultural areas. Runoff from agricultural lands may include significant nonpoint source pollutant loadings. In addition, the control of erosion on agricultural lands is important for long-term soil productivity. Consequently, the use of land and water management practices in rural areas is an important adjunct to the recommended land use plan. The management practices to be implemented in agricultural areas should be developed through the preparation of farm plans on a site-specific basis and should be prepared in a manner consistent with each county's land and water resources management plan.

Educational Activities

Planning-related educational efforts directed at county and local units of government and private interests are important to regional land use plan implementation. Recognizing this, the Regional Planning Commission undertakes a variety of educational efforts to promote implementation of the regional land use plan. These efforts include the following: informational meetings and formal public hearings on the regional plan; presentations to county and local planning committees and commissions; classroom presentations; preparation of a series of planning guides intended to serve as manuals of sound planning practice; sponsorship of conferences and workshops related to special planning and plan implementation issues; publication of newsletters describing Commission planning programs and current issues in planning; publication of an annual report which includes an overview of current Commission planning activities and presents data gathered on an annual basis to help monitor regional plan implementation; and cooperation with the University of Wisconsin-Extension, including assignment of a full-time Extension agent to work directly with the Commission staff on activities relating to plan implementation.

In the past several years, the Regional Planning Commission's internet website has become an important part of the Commission's education and public information effort. All new Commission publications, and many past publications, are available online through the website. In addition, all draft report materials and advisory committee minutes for ongoing regional planning projects are also available on the website.

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[15] *Detailed information and recommendations regarding land and water management practices are presented in other Regional Planning Commission reports and will be presented in the report documenting the update of the regional water quality management plan currently under preparation. In addition, information regarding land and water management practices is included in reports and other informational materials prepared by county land and water conservation committees, the Milwaukee Metropolitan Sewerage District, the Wisconsin Department of Natural Resources, and the U.S. Natural Resources Conservation Service.*

The University of Wisconsin-Extension also undertakes a variety of planning-related educational activities which promote implementation of the regional plan and support local planning efforts to refine the regional plan. Such efforts, frequently undertaken in cooperation with the Regional Planning Commission, include sponsorship of planning conferences, publication of informational materials on various planning topics, and support of county and local planning activities through Extension community development agents and other specialists.

Technical and Financial Assistance for Planning

As noted above, an important step in the implementation of the regional land use plan is the refinement and detailing of that plan through the preparation of county and local comprehensive plans. This should be followed by adjustment of zoning and other local land use controls and administration of such controls in accordance with the plan over time. A number of public agencies provide technical assistance to local units of government in support of such local planning efforts, including county planning agencies, the University of Wisconsin-Extension, and the Regional Planning Commission. Specialized technical assistance on natural resource base-related planning matters may be obtained from county land conservation departments and the U. S. Natural Resources Conservation Service. Limited guidance and assistance may be obtained without cost or for a nominal fee. In some cases, cities, villages, and towns may contract with an agency for extensive technical assistance services. In addition to the aforementioned public agencies, county and local units of government may turn to a number of qualified planning and engineering firms for technical assistance in support of local planning activities.

A number of planning guides have been prepared specifically to assist county and local units of government in the preparation of local comprehensive plans. These guides have been prepared by various agencies, including the Wisconsin Departments of Administration, Transportation, Natural Resources, and Agriculture, Trade, and Consumer protection; The Historical Society of Wisconsin; the University of Wisconsin-Extension; and the Wisconsin Economic Development Institute. To date, guides have been prepared for the housing, land use, transportation, economic development, intergovernmental cooperation, and agricultural, natural, and cultural resources elements of the comprehensive plan.

For the most part, county and local units of government must bear at least a portion of the costs of their local planning activities. There is limited funding available through the State comprehensive planning grant program in support of county, local, and multi-jurisdictional comprehensive planning.

SUMMARY

The recommended regional land use plan described in Chapter VI of this report provides a design for the attainment of the adopted regional land use objectives. This chapter, Chapter VII, has been presented as a guide for use in the implementation of the recommended plan. It indicates the actions which should be taken by various agencies and units of government in efforts to implement the plan.

Following adoption of the year 2035 regional land use plan as part of the overall plan for the physical development of the Region, the Regional Planning Commission will certify the plan to all local legislative bodies within the Region and to all concerned local, areawide, State, and Federal agencies. It is recommended that each of the concerned agencies and units of government endorse the regional land use plan and integrate the findings and recommendations of the plan into their planning, regulatory, and other activities related to land use.

Local Comprehensive Planning Within the Framework of the Regional Plan

Operationally, the first major step in plan implementation involves local refinement and detailing of the regional plan. The vehicle for this is the local comprehensive plan. The State comprehensive planning law enacted in 1999 effectively requires that cities, villages, towns, and counties prepare and adopt long-range comprehensive plans and further specifies that, beginning in 2010, their basic land use regulations must be consistent with such plans. The year 2035 regional land use plan is intended to serve as a regional framework for the required county and local planning. The regional land use plan includes recommendations that relate directly to a number of the required local

comprehensive plan elements, including the land use element, the agricultural, natural and cultural resources element, and the utilities and community facilities element. The State comprehensive planning law does not mandate consistency between local comprehensive plans and the regional land use plan. It is, nonetheless, strongly recommended that cities, villages, towns, and counties use the regional land use plan as a framework for the preparation of their comprehensive plans, integrating the findings and recommendations of the regional land use plan into those plans as appropriate.

This chapter provides guidance as to how the regional plan should be integrated into county and local comprehensive plans. It includes guidance with respect to the preparation of community-level comprehensive plans and to neighborhood plans prepared within the context of the community-level plan. It indicates how the regional plan can be integrated into local planning for urban, rural, and environmentally significant areas. Details in this regard are set forth in the section of this chapter entitled "County and Community Comprehensive Plans."

Regulatory Plan Implementation Measures

Land use regulatory ordinances are an important means available to county and local units of government to shape growth and development in accordance with local and regional land use objectives. Under the State comprehensive planning law, beginning on January 1, 2010, key local land use regulatory ordinances—zoning ordinances, land division ordinances, and official map ordinances—must be consistent with the local comprehensive plan. To the extent that counties, cities, villages, and towns incorporate the regional land use plan into their local comprehensive plans, the regional land use plan may be expected to be reflected in their various land use regulations.

This chapter indicates how local zoning can best integrate the recommendations of the regional land use plan—as refined in local comprehensive plans—for urban areas, rural areas, and environmentally significant areas, and also describes the role of land division regulations and official mapping regulations in plan implementation. In addition, this chapter describes the role of relevant State and Federal regulatory programs in implementation of the regional land use plan, including programs mandated by the State for administration by county and local units of government, including State-mandated floodplain and shoreland regulations. Details in this respect are set forth in the sections of this chapter entitled "Local Regulatory Measures" and "State and Federal Regulatory Measures."

Other Plan Implementation Measures

This chapter also describes a variety of other measures and programs that may contribute to implementation of the regional land use plan as refined and detailed in local comprehensive plans. These include park and open space acquisition and the acquisition of conservation easements; the purchase or transfer of development rights; municipal boundary and utility extension agreements; municipal revenue sharing; local capital improvement programming; and others. These measures and programs, and their relationship to the regional land use plan, are described in individual sections in the latter half of this chapter.

Conclusion

As noted above, the State comprehensive planning law enacted in 1999 effectively requires that cities, villages, towns, and counties prepare and adopt long-range comprehensive plans and requires further that they adjust their basic land use regulations to be consistent with those plans. Completion of the regional land use plan comes at time when most county and local units of government in the Region are initiating or organizing the work needed to fulfill the comprehensive planning requirements. The mandated planning provides the opportunity for county and local units of government to review their existing plans and land use regulations in light of the regional land use plan and to adjust them as appropriate to integrate regional plan recommendations.

Chapter VIII

SUMMARY

This report documents the year 2035 regional land use plan for Southeastern Wisconsin and the process used to arrive at that plan. The year 2035 plan is intended to serve as a guide to land use development and open space preservation in the Region in the decades ahead. The plan provides the basis for the companion year 2035 regional transportation system plan,[1] and provides a basis for continuing regional park and open space planning, regional water quality management planning, regional water supply system planning, and other regional planning programs. The regional land use plan is also intended to serve as a framework for county and local comprehensive planning within the Region.

The year 2035 regional land use plan is a fifth generation plan. The Commission adopted the first regional land use plan in 1966; that plan had a design year of 1990. In subsequent planning efforts, the Commission updated and extended the land use plan to 2000 (adopted in 1977), to 2010 (adopted in 1992), and to 2020 (adopted in 1997). The new plan for the year 2035 reflects changes in the Region that have occurred since the preparation of the year 2020 plan and projections of population, households, and employment within the Region extended to the year 2035.

The work leading to the preparation of the year 2035 regional land use plan was carried out under the guidance of the Commission's Advisory Committee on Regional Land Use Planning. Membership on that Committee consists primarily of planning officials from counties and communities from throughout the Southeastern Wisconsin Region, as well as representatives of concerned State agencies, including the Wisconsin Departments of Natural Resources and Transportation. Also, during the course of the study, the Commission staff worked with a number of interests through individual and group meetings, providing information about, and obtaining input on, the plan and the planning process. These interests included agricultural interests, environmental interests, builders and realtors, and minority and low-income populations.

Prior chapters of this report describe the regional land use planning process; describe existing conditions and historic trends in the Region; review the previous year 2020 regional plan and status of plan implementation; present forecasts of population, households, and employment levels for the year 2035; set forth regional land use objectives, principles, and standards; describe the regional land use plan for the year 2035; and indicate the steps that should be taken by various units and agencies of government to implement the plan. The major findings and recommendations of the planning effort are presented in summary form in this chapter.

[1] *The year 2035 transportation system plan is documented in SEWRPC Planning Report No. 49,* A Regional Transportation System Plan for Southeastern Wisconsin: 2035.

EXISTING CONDITIONS AND TRENDS

A major effort to update the regional planning database was carried out by the Regional Planning Commission in the early 2000s in support of the preparation of the new land use plan. Key inventory findings are presented below.

Demographic and Economic Base

- The population of the Region increased by 120,800 persons, or 7 percent, from 1,810,400 persons in 1990 to 1,931,200 persons in 2000. Of the total population increase of 120,800 persons during the 1990s, 116,900 can be attributed to natural increase; the balance can be attributed to a modest net in-migration—about 3,900 persons—into the Region.

- The number of households, or occupied housing units, in the Region increased by 72,900, from 676,100 households in 1990 to 749,000 households in 2000. In relative terms, the rate of growth in households in the Region during the 1990s, 11 percent, exceeded the rate of growth in the total population, 7 percent. Similar patterns have been observed over each of the four previous decades. The differential growth rates in households and population are reflected in a declining average household size. During the 1990s, the average household size in the Region decreased from 2.62 persons in 1990 to 2.52 persons in 2000.

- Total employment in the Region increased by 160,200 jobs, or 15 percent, from 1,062,600 jobs in 1990 to 1,222,800 jobs in 2000. Historically, employment levels, both nationally and within the Region, tend to fluctuate in the short-term, rising and falling in accordance with business cycles. The long period of nearly uninterrupted job growth between 1983 and 2000 is unusual in this respect. Nationally and within the Region, total employment increased each year during that time, with the exception of a slight decrease in 1991. The extended period of employment growth in the Region ended after 2000, with total employment in the Region decreasing each year between 2000 and 2003.

- The 1990s saw a continuation of a shift in the regional economy from a manufacturing to a service orientation. Manufacturing employment was virtually unchanged in the Region during the 1990s, while service employment increased by 33 percent. Over the past 3 decades, the proportion of manufacturing jobs relative to total jobs in the Region decreased from 32 percent to 18 percent, while service-related employment increased from 18 percent to 33 percent.

Land Use

- Urban land uses as identified in the Commission's regional land use inventory encompassed about 761 square miles, or 28 percent of the total area of the Region, in 2000. Urban lands were classified as follows: residential land[2]—362 square miles, or 48 percent of all urban land; commercial and industrial lands—63 square miles, or 8 percent; governmental and institutional land—34 square miles, or 4 percent; recreational land—50 square miles, or 7 percent; transportation, communication, and utility land—201 square miles, or 26 percent; and unused urban lands—51 square miles, or 7 percent. The urban land area of the Region increased by about 110 square miles, or 17 percent, during the 1990s.

- In 2000, nonurban lands as identified in the regional land use inventory encompassed about 1,929 square miles, or 72 percent of the total area of the Region. Nonurban lands were classified as follows: agricultural land—1,259 square miles, or 65 percent of all nonurban land; wetlands, woodlands, and surface water—536 square miles, or 28 percent; and other nonurban lands (extractive, landfill, and unused rural lands)—134 square miles, or 7 percent.

[2] *Includes sub-urban density residential land.*

Public Utilities

- Areas served by public sanitary sewers in 2000 encompassed about 477 square miles, or about 18 percent of the total area of the Region—compared to about 394 square miles, or about 15 percent of the Region in 1990. An estimated 1.71 million persons, or 89 percent of the regional population, were served by public sanitary sewers in 2000, compared to 1.59 million persons, representing 88 percent of the regional population, in 1990. The increase in the land area and population served reflects both new development designed to be served by sanitary sewerage facilities and as well the retrofitting of existing urban areas initially developed with onsite sewage disposal systems.

- Areas served by public water utilities in 2000 encompassed about 390 square miles, or about 15 percent of the total area of the Region—compared to about 316 square miles, or about 12 percent of the Region, in 1990. An estimated 1.58 million persons, or 82 percent of the regional population, were served by public water utilities in 2000, compared to 1.47 million persons, representing 81 percent of the regional population, in 1990. In addition to publicly-owned water utilities, there are numerous privately or cooperatively owned water systems that serve residential subdivisions, apartment or condominium developments, mobile home parks, and institutions; these systems served a total of about 37,000 persons in the Region in 2000.

Environmentally Significant Areas

- The most important elements of the natural resource base and features closely related to that base—including wetlands, woodlands, prairies, wildlife habitat, major lakes and streams and associated shorelands and floodlands, and historic, scenic, and recreational sites—tend to be concentrated in elongated areas in the landscape of the Region. One of the most important tasks completed under the regional planning program has been the identification and delineation of these areas, which have been termed "environmental corridors." "Primary" environmental corridors—which are by definition at least 400 acres in area, two miles long, and 200 feet in width—are located along major stream valleys, around major lakes, and along the Kettle Moraine. Primary environmental corridors encompassed about 462 square miles, or 17 percent of the Region in 2000. "Secondary" environmental corridors—which are by definition at least 100 acres in area and one mile long—are generally located along smaller perennial streams and intermittent streams in the Region. Secondary environmental corridors encompassed 75 square miles, or 3 percent of the Region in 2000. Smaller resource areas that have been separated from the environmental corridors have been identified as "isolated natural resource areas." By definition at least five acres in size, isolated natural resource areas encompassed 63 square miles, or 2 percent of the Region, in 2000.

- There were small net changes in the areas encompassed by primary environmental corridors, secondary environmental corridors, and isolated natural resource areas in the Region between 1990 and 2000. Primary and secondary environmental corridors increased by 0.2 percent and 0.3 percent, respectively; isolated natural resource areas decreased by 0.6 percent. The changes in area are the net result of increases in environmental corridor and isolated natural resource area lands in certain areas of the Region and decreases in other areas. Decreases in environmental corridors and isolated natural resource areas occur, for the most part, as a result of conversion to urban or agricultural use. Increases may occur as a result of managed restoration efforts and as a result of situations where lands, such as farmed floodplains or wetlands, are simply allowed to revert to a more natural condition.

Agricultural Resource Base

- Agricultural land in the Region has decreased significantly over the past four decades. It is estimated that lands devoted to agricultural use decreased by 22 percent between 1963 and 2000, including a decrease of about 8 percent during the 1990s. Despite this decrease, a large portion of the total area of the Region remains in agricultural use, and agriculture remains an important component of the regional economy. Based upon the Commission's regional land use inventory, about 1,259 square miles, or 47 percent of the

total area of the Region, were in agricultural use in 2000. Of this total, about 945 square miles, or 75 percent, were covered by highly productive soils—agricultural capability Class I and Class II soils, as identified by the U.S. Natural Resources Conservation Service.

Local Zoning Regulations

- A Commission inventory of county and local zoning for the year 2000 indicates that 837 square miles, or 31 percent of the Region, have been placed in zoning districts which permit urban residential development, defined as residential development at a density of more than one dwelling unit per five acres. Of this total, 584 square miles have been placed in residential zoning districts explicitly intended to accommodate urban residential development; the remaining 253 square miles have been placed in nominal agricultural and conservancy zoning districts—that is, districts which are referred to as "agricultural" or "conservancy" districts in local zoning ordinances, but which allow urban residential development as a principal permitted use. The extent of other generalized zoning categories in the Region in 2000 was as follows: commercial—67 square miles, or 3 percent of the Region; industrial—115 square miles, or 4 percent; governmental-institutional and recreational, combined—125 square miles, or 5 percent; extractive—21 square miles, or 1 percent; conservancy—440 square miles, or 16 percent; agricultural and rural residential 1,020 square miles, or 38 percent; and surface water—65 square miles, or 2 percent.

- The year 2000 inventory of local zoning is the fourth such inventory conducted by the Commission, prior inventories having been conducted for the years 1964, 1972, and 1985. The period between the 1972 and 1985 inventories, in particular, saw major changes in zoning patterns within the Region. That period saw the widespread application of exclusive agricultural zoning, with a minimum parcel size of 35 acres. In addition, that period saw a substantial increase in conservancy zoning, much of the increase being in the form of State-mandated floodplain and shoreland zoning. In comparison to the changes that occurred between 1972 and 1985, zoning changes in the Region since 1985 may be characterized as marginal in nature.

REVIEW OF THE 2020 REGIONAL LAND USE PLAN

The regional land use planning effort included an analysis of the implementation status of the year 2020 regional land use plan. Key findings in this regard are presented below.

- Current population, household, and employment levels for the Region overall closely approximate the forecasts levels on which the year 2020 plan is based. In this respect, actual population, household, and employment levels for the Region in 2003 were within 2 percent of the forecast levels for 2003 embodied in the regional plan. Among the counties in the Region, the forecast 2003 population and household levels were generally within 5 percent of the actual 2003 levels; the forecast 2003 employment levels were generally within 10 to 15 percent of the actual 2003 levels.

- Under the 2020 regional land use plan, about 35 square miles of land were recommended to be converted to urban (high-, medium-, and low-density) residential use during the 1990s. Commission land use inventories indicate that about 48 square miles of land were converted to urban residential use between 1990 and 2000, about 13 square miles more than planned. The plan envisioned increases of 3 square miles in high density residential land, 26 square miles in medium density residential land, and 6 square miles in low density residential land during the 1990s; the actual increases were just under 2 square miles, 19 square miles, and 28 square miles, respectively. About 77 percent of all new housing units in the Region during the 1990s was developed at medium or high density, compared to about 88 percent recommended in the plan.

- The 2020 plan recommended that new sub-urban residential development, typified by lots of 1.5 acres up to five acres, be limited to areas already committed to such use in subdivision plats—about two square miles in 1990. During the 1990s, about 14 square miles of land in the Region were developed at sub-urban density.

- The 2020 plan recommended that most residential development be provided with public sanitary sewerage service. In fact, the vast majority of housing units constructed in the Region between 1990 and 2000—an estimated 71,500 housing units, or about 81 percent of the estimated total of 88,500 new housing units—was provided with public sanitary sewer service in accordance with the regional plan. The balance of about 17,000 housing units, or about 19 percent of the total, was served by onsite sewage disposal systems. The majority of new housing served by onsite sewage disposal systems was developed in areas not recommended for such development in the regional plan.

- The 2020 plan proposed a total of 45 major commercial and industrial centers in the Region, having a minimum of 2,000 retail jobs, 3,500 office jobs, or 3,500 industrial jobs. The plan recommended the maintenance, including redevelopment as needed, and expansion of 36 existing major centers and the further development of nine partially developed centers. By 2000, five of the nine proposed new sites had reached major center status; the other four were substantially developed but had not yet achieved major center status. Of the 36 centers that existed in 1990, four sites—the former Capitol Court and Southgate shopping centers and the Milwaukee South and Milwaukee Near North industrial centers failed to meet major center employment levels in 2000. Three areas—industrial centers in Germantown and Mequon and a retail center in the City of Kenosha—grew faster than envisioned under the 2020 plan and reached major center status by 2000. Six other areas, not envisioned under the year 2020 plan, may be expected to achieve major center status in the years ahead.

- The 2020 plan recommended that 30 major parks serve the Region. Such parks have an area of at least 250 acres and provide opportunities for a variety of resource-oriented outdoor recreation activities. The 1990s saw significant additional recreational facility development at the recommended sites, in accordance with the plan. In addition, the recommended new site along Sugar Creek in Walworth County was partially acquired for park purposes. The acquisition of that site, the Price Conservancy, is in keeping with a longstanding recommendation—made in the initial regional land use plan adopted in 1966—for a major regional park in the resource-rich Sugar Creek corridor. In addition to the 30 major parks identified in the 2020 regional plan, Kenosha County and Waukesha County have acquired large sites located in the Towns of Randall and Wheatland and the Town of Oconomowoc, respectively; both sites have the potential to serve as major regional parks.

- The 2020 plan recommended the preservation of primary environmental corridors in essentially natural open uses, and encouraged as well the preservation of secondary environmental corridors and isolated natural resource areas, with decisions in that respect to be made in county and local planning. As previously indicated, gains and losses in environmental corridors and isolated natural resource areas during the 1990s were essentially off-setting, and there was little net change in the total area of environmental corridors and isolated natural resource areas in the Region.

- A number of important measures that help to ensure the preservation of environmentally significant areas had already been put in place by 1990 and remain in effect today. About 183 square miles, or 40 percent of the primary environmental corridors in the Region, were protected through public interest ownership in 2000. An additional 243 square miles, or 52 percent of the primary environmental corridors, were effectively protected from inappropriate urban development through various land use regulations. In total, then, about 426 square miles, representing 92 percent of the primary environmental corridors in the Region, were substantially protected from incompatible urban development in 2000. The remaining 36 square miles, or 8 percent, are essentially unprotected primary environmental corridors, consisting largely of upland corridor lands in rural portions of the Region.

- The 2020 plan recognized that the orderly growth and development of the Region would require the conversion of some agricultural lands to urban use. The plan envisioned that about 32 square miles of agricultural land would be converted to urban use between 1990 and 2000. It is estimated that lands devoted to agricultural use decreased by about 115 square miles, or 8 percent, during the 1990s. This decrease reflects the conversion of agricultural land to urban use and reflects as well agricultural lands taken out of production for other reasons and agricultural lands that reverted to wetlands and other open uses.

- The 2020 plan recommended that the most productive soils for agricultural purposes—capability Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service—be preserved for agricultural use insofar as practicable. Under the plan, the conversion of Class I and Class II agricultural land to urban use would be confined, for the most part, to locations within planned urban service areas. Monitoring data indicate that about 24 square miles of Class I and Class II agricultural land were converted to urban use during the 1990s in locations consistent with the regional plan, with most of these conversions occurring within planned urban service areas. The data further indicate that about 9 square miles of Class I and Class II agricultural land were converted to urban use in locations inconsistent with the regional plan.

The review of the year 2020 regional land use plan in light of actual development trends in the Region during the 1990s indicates both areas of progress toward, and departure from, the regional plan. The findings of this review are similar in many respects to the findings of earlier reviews of prior generations of the regional land use plan. Nothing in these review findings, however, would suggest the need for a substantive change in the basic concepts underlying the regional land use plan.

LAND USE OBJECTIVES, PRINCIPLES, AND STANDARDS

In its most basic sense, planning is a rational process for establishing and meeting objectives. The formulation of objectives is, therefore, an essential task to be undertaken before plans can be prepared. The objectives guide the design and preparation of the plan and, when converted to standards, provide the criteria for plan evaluation. The nine land use objectives for the year 2035 regional land use plan are as follows:

- A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the regional population.

- A spatial distribution of the various land uses which will result in a convenient and compatible arrangement of land uses.

- A spatial distribution of the various land uses which maintains biodiversity and which will result in the preservation and wise use of the natural resources of the Region.

- A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems in order to assure the economical provision of transportation, utility, and public facility services.

- The development and preservation of residential areas within a physical environment that is healthy, safe, convenient, and attractive.

- The preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.

- The conservation, renewal, and full use of existing urban areas of the Region.

- The preservation of productive agricultural land.

- The preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and provide opportunities for a full range of outdoor recreational activities.

Complementing each of the foregoing land use objectives are one or more planning principles and a set of planning standards. Each set of standards is directly related to a planning principle, as well as to the objective. The standards facilitate application of the objectives in plan design and evaluation. The principles and standards related to the land use objectives are presented in Table 26 in Chapter IV of this report.

YEAR 2035 POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS

The Commission has prepared a range of future population, household, and employment levels—high, intermediate, and low—for the Region for the period from 2000 to 2035. This approach recognizes the uncertainty that surrounds any effort to predict future socioeconomic conditions. The intermediate projection is considered the most likely to be achieved for the Region overall, and it was used as the basis for the preparation of the regional land use plan. The high and low projections are intended to provide an indication of the range of population, household, and employment levels which could conceivably be achieved under significantly higher and lower, but nevertheless plausible, growth scenarios for the Region.

- Under the intermediate projection, total employment in the Region would recover from the reduced levels of the early 2000s, experiencing fairly strong growth until about the middle of the projection period. At that time, employment growth is projected to moderate, coinciding with an anticipated leveling-off in the labor force, particularly as large numbers of baby-boomers retire. Relatively modest employment growth is envisioned over the last 10 years of the projection period. The intermediate projection envisions total employment of 1,368,300 jobs in the Region in 2035, an increase of 145,500 jobs, or 12 percent, over the 2000 level of 1,222,800 jobs. The high projection indicates that employment in the Region could be as high as 1,509,600 jobs in 2035, a 24 percent increase over 2000. The low projection indicates that employment in the Region could be as low as 1,267,500 jobs in 2035, a 4 percent increase. The sectoral changes—particularly, a shift from a goods producing economy to a services providing economy—that have occurred in the Region in recent decades are projected to continue.

- The intermediate projection envisions that the regional population would increase by 344,800 persons, or 18 percent, from 1,931,200 persons in 2000 to 2,276,000 persons in 2035. Under the intermediate projection, population growth would range between 50,000 and 55,000 during each five-year period from 2000 to 2025, with slightly smaller increases projected for 2025 to 2035. The high projection indicates that the population of the Region could be as high as 2,501,100 persons in 2035, a 30 percent increase over the 2000 level. The low projection indicates that the regional population could be as low as 2,090,500 persons in 2035, an increase of 8 percent. Commission projections envision change in the age composition of the regional population in the coming decades. Particularly noteworthy is the expected influence of the large baby-boom generation on the future age structure. The intermediate projection envisions that persons age 65 years and older would comprise 20 percent of the total population in 2035, compared to 13 percent in 2000.

- The intermediate projection envisions that the number of households in the Region would increase by 176,700, or 24 percent, from 749,000 households in 2000 to 925,700 households in 2035. The high projection indicates that the number of households in the Region could be as high as 1,016,400 in 2035, an increase of 36 percent over the 2000. The low projection indicates that the number of households could be as low as 850,300 in 2035, an increase of 14 percent. The average household size in the Region is projected to continue its historic decline, with the rate of decline being somewhat moderated in the coming decades however.

RECOMMENDED YEAR 2035 REGIONAL LAND USE PLAN

The year 2035 regional land use plan is intended to accommodate growth in population, households, and employment in a manner consistent with the regional land use objectives and standards. The plan embodies the following vision for the Region over the course of the next three decades:

- New urban land would be provided through the infilling and renewal of existing urban areas and through the orderly outward expansion of existing urban areas—resulting in a more compact and efficient urban settlement pattern, one that is readily served by basic urban services and facilities and that maximizes the use of existing urban service and facility systems.

- Residential development and redevelopment would occur in a variety of residential neighborhood types and in mixed use settings—with an emphasis on medium and high residential densities.

- Growth in the economic base of the Region would be accommodated through the development and redevelopment of major economic activity centers as well as community-level and neighborhood-level centers.

- The land development needs of the Region would be met while preserving the best remaining elements of the natural resource base—most of which are located within the environmental corridors and isolated natural resource areas—and preserving the most productive farmland.

The regional land use plan was designed to accommodate growth in population, households, and employment in the Region envisioned under the Commission's intermediate growth projections, including an 18 percent increase in population, a 24 percent increase in households, and a 12 percent increase in employment in the Region through the year 2035.

The year 2035 regional land use plan is presented graphically on Map 26 in Chapter VI of this report. The key features of the plan are described as follows.

Urban Land

- Under the year 2035 regional land use plan, urban land—defined as land devoted to high, medium, and low density residential use as well as to commercial, industrial, governmental and institutional, recreational, and transportation, communication, and utility uses—would increase by 93 square miles, or 13 percent, from about 732 square miles in 2000 to 825 square miles in 2035. Urban development would occur within urban service areas served by public sanitary sewerage facilities and other public utilities and services. Urban development beyond planned urban service areas would be limited to low density residential development in areas already committed to such use, along with highway-oriented business uses, utility uses, and recreational uses that may, of necessity, have to be located beyond planned urban service areas.

- The regional plan envisions that urban residential land—including high, medium, and low density residential land, but excluding sub-urban density residential land—would increase by a total of 69 square miles, or 21 percent, from 333 square miles in 2000 to 402 square miles in 2035. This includes increases of 4 square miles in high density residential land, 53 square miles in medium density residential land, and 12 square miles in low density residential land. About 154,800 housing units, or 88 percent of the total projected increase in housing units between 2000 and 2035, would occur at high and medium densities. About 14,800 housing units, or 8 percent of the projected increase, would occur at low density. Urban residential development would occur in a variety of residential neighborhoods providing a full complement of basic neighborhood amenities including a school, park, and shopping area, as well as in more mixed-use settings.

- Under the regional land use plan, the total amount of commercial and industrial land in the Region would increase by 18 square miles, or 28 percent, from about 63 square miles in 2000 to 81 square miles in 2035. The plan envisions a range of commercial and industrial areas. Thus, the plan envisions neighborhood, community, and regional commercial centers, including both mixed-use areas with a residential component and areas devoted more exclusively to commercial uses. Likewise, the plan envisions both community-level and regional industrial centers. The plan envisions a continuation of the trend toward mixing industrial and commercial activities in the same area. Under the plan, the largest commercial and industrial areas are identified as major economic activity centers—areas with concentrations of commercial and/or industrial land that would accommodate at least 3,500 total jobs or 2,000 retail jobs. The plan envisions a total of 60 such major economic activity centers in the Region in 2035. This includes 45 centers that met major economic activity center employment thresholds in 2000 and 15 additional areas that are envisioned to reach major center status by 2035. With the exception of a proposed site in the Village of Caledonia in Racine County, each of the major economic activity centers was developed, under development, or being redeveloped in 2005.

- The regional plan envisions increases in other urban land use categories over the 35-year planning period, including a 10 percent increase in transportation, communication, and utility lands; a 7 percent increase in governmental and institutional lands; and a 15 percent increase in outdoor recreational lands. The latter consists, for the most part, of anticipated increases in neighborhood, community, and regional parkland. The plan envisions a total of 32 regional parks—large parks of at least 250 acres in size that provide opportunities for a variety of resource-oriented outdoor recreational activities—within the Region.

Sub-urban Density Residential Land

- Under the year 2035 regional land use plan, additional sub-urban density residential development—defined as residential development at a density of 0.2 to 0.6 dwelling unit per acre—would be restricted to areas that have already been committed to such use through subdivision plats and certified surveys. Sub-urban density residential land is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sanitary sewer and water supply service and other urban amenities. Under the plan, the amount of sub-urban density residential land would increase by nine square miles, or by about 31 percent, between 2000 and 2035, accommodating about 3,400 households, or about 2 percent of the projected increase in households in the Region between 2000 and 2035. No additional sub-urban density residential land beyond the already committed area is recommended.

Environmentally Significant Lands

- The year 2035 regional land use plan recommends the preservation of the Region's primary environmental corridors in essentially natural, open use. The plan further recommends the preservation of secondary environmental corridors and isolated natural resource areas, as determined in county and local plans. The plan recognizes that certain development may be accommodated in such areas without jeopardizing their overall integrity. Guidelines in this regard are presented in Table 27 in Chapter IV. These guidelines recognize that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated in such areas. Residential development in environmental corridors would be limited to upland environmental corridors at an overall density of no more than one dwelling unit per five upland acres, with conservation subdivision designs strongly encouraged where residential development is accommodated. Under the guidelines, in lieu of rural density residential development, up to 10 percent of the upland corridor area may be disturbed in order to accommodate urban-density residential, commercial, industrial, or other urban development.

- Under the regional plan, the existing (year 2000) configuration of environmental corridors and isolated natural resource areas would be modified slightly. These modifications include minor deletions attendant to prior local commitments to development, along with certain additions. The additions include currently farmed floodplains adjacent to existing environmental corridors within planned urban service areas that may be expected to revert to more natural conditions over time and become part of the corridor. The

additions also include certain other open lands that are envisioned to revert to more natural conditions and become part of the environmental corridor as proposed in county park and open space plans. Under the regional land use plan, primary environmental corridors in the Region would encompass about 481 square miles, or 18 percent of the Region, in 2035. This represents a net increase of 18 square miles, or 4 percent, over the existing 2000 area. Secondary environmental corridors would encompass 77 square miles in 2035, a net increase of about two square miles, or 3 percent, over 2000. Isolated natural resource areas would encompass about 63 square miles in 2035, about the same as in 2000.

- The regional plan recommends the preservation of all remaining natural areas and critical species habitat sites identified in the regional natural areas and critical species habitat protection and management plan. Almost all of these sites are located within environmental corridors or isolated natural resource areas.

Rural Lands

- Under the year 2035 regional land use plan, areas of the Region beyond the planned urban service areas (shown in white on the regional plan map) are recommended to remain in essentially rural use—primarily agricultural use and rural density residential use. Prime agricultural land in this area—the land best suited for agricultural use—is recommended to be preserved for farming, with residential development generally limited to no more than one dwelling unit per 35 acres. The regional plan recommends that counties in the Region, in cooperation with the concerned local units of government, carry out planning programs to identify prime agricultural land. The regional plan holds out the preservation of the most productive soils—soils in U.S. Natural Resources Conservation Service Agricultural Capability Class I and Class II—as a key consideration in efforts to identify prime farmland, recognizing, however, that other factors, such as farm size and the overall size of the farming area, should also be considered. Most county planning in this regard was carried out more than 20 years ago and needs to be reviewed and updated.

- While much progress has been made in preserving primary environmental corridors and other environmentally significant lands in the Region, the preservation of prime farmland remains a difficult and challenging issue, one that involves the balancing of land use planning objectives and the economic realities faced by farmers. Historically, efforts to ensure the preservation of farmland within the Region have relied on zoning and other land use controls. Mechanisms designed to compensate landowners for committing their land to agricultural use—such as the purchase or transfer of development rights—have not yet been widely embraced within the Region. The regional plan thus reaffirms the importance of preserving prime agricultural land in Southeastern Wisconsin while acknowledging the difficulties inherent in achieving this goal.

- The regional plan also encourages the preservation of nonprime farmland for agricultural use. This could be in the form of traditional agricultural use or alternative agricultural uses such as smaller hobby farms or specialty farms including community supported agricultural operations. The regional plan recommends that the development of nonprime farmland in planned rural areas be limited to rural residential development at a 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 subdivision designs. The regional land use plan envisions that about 2 percent of the increment in households in the Region between 2000 and 2035, or about 3,700 households, would be accommodated through rural density residential development.

Public Sanitary Sewer and Water Supply Service

- Under the year 2035 regional land use plan, most new urban development would be served with public sanitary sewer and water supply facilities. Public sanitary sewer and water supply service would also be extended to certain existing urban areas currently lacking these facilities. In this regard, the plan envisions that most existing urban development which is served by onsite sewage disposal and water supply systems and located within planned urban service areas would eventually be connected to public sanitary sewer and water supply systems. In 2000, about 477 square miles, or 18 percent of the total area of the Region, and about 1.71 million persons, or 89 percent of the regional population, were served by public

sanitary sewer facilities. About 390 square miles, or 15 percent of the total area of the Region, and about 1.58 million persons, or 82 percent of the regional population, were served by public water supply facilities. In 2035, under the regional land use plan, about 639 square miles, or 24 percent of the total area of the Region, and about 2.11 million persons, or 93 percent of the regional population, would be served by public sanitary sewer and water supply services. Public water supply would be provided in several small communities for which sanitary sewer service is not envisioned.

- Under the regional plan, development beyond planned sewer and water service areas would be limited to low density and sub-urban density residential development—in areas where commitments to such development have already been made—as well as to the afore-referenced rural residential development. About 5,400 households, or 3 percent of the incremental households envisioned under the plan, would be accommodated on existing platted lots at low and sub-urban densities beyond the planned urban service areas. While such development is not consistent with regional development objectives, the regional plan recognizes existing commitments to such development and the likelihood that these lots will be developed over time.

Population, Households, and Employment Distribution

- The year 2035 regional land use plan envisions moderating the historic trend of decentralization of population, households, and employment relative to Milwaukee County within the Region. Milwaukee County's share of the total regional population would decrease from about 49 percent in 2000 to about 44 percent in 2035; this compares to a decrease in relative share of 11 percentage points during the previous 30-year period. Similarly, Milwaukee County's share of total regional employment would decrease from 51 percent in 2000 to 46 percent in 2035—compared to a decrease in relative share of about 16 percentage points over the previous 30 years.

PLAN IMPLEMENTATION

Following adoption of the year 2035 regional land use plan as part of the overall plan for the physical development of the Region, the Regional Planning Commission will certify the plan to all local legislative bodies within the Region and to all concerned local, areawide, State, and Federal agencies, along with a recommendation to endorse the regional land use plan and integrate the findings and recommendations of the plan into their planning, regulatory, and other activities related to land use.

Operationally, the first major step in plan implementation involves local refinement and detailing of the regional plan. The vehicle for this is the local comprehensive plan. The State comprehensive planning law enacted in 1999 effectively requires that cities, villages, towns, and counties prepare and adopt long-range comprehensive plans by 2010. The year 2035 regional land use plan is intended to serve as a regional framework for the required county and local planning. The regional land use plan includes recommendations that relate directly to a number of the required local comprehensive plan elements, including the land use element, the agricultural, natural and cultural resources element, and the utilities and community facilities element. The State comprehensive planning law does not mandate consistency between local comprehensive plans and the regional land use plan. It is, nonetheless, strongly recommended that cities, villages, towns, and counties use the regional land use plan as a framework for the preparation of their comprehensive plans, integrating the findings and recommendations of the regional land use plan into those plans as appropriate.

Successful implementation of the land use plan requires the judicious application of a variety of land use regulatory measures in accordance with the regional plan and local refinements of the regional plan. Under the State comprehensive planning law, beginning on January 1, 2010, key local land use regulatory ordinances—zoning ordinances, land division ordinances, and official map ordinances—must be consistent with the local comprehensive plan. To the extent that counties, cities, villages, and towns incorporate the regional land use plan into their local comprehensive plans, the regional land use plan may be expected to be reflected in their various land use regulations. In addition to local land use regulations, implementation of the regional land use plan

depends upon the steadfast administration of related State and Federal regulatory programs—including State-local floodplain and shoreland regulations; State regulation of public sewerage systems and private sewage disposal systems; and the Federal wetland regulatory program.

A number of nonregulatory measures are available to county and local units of government in efforts to implement aspects of the regional plan. These include park and open space acquisition; conservation easements; purchase of development rights; transfer of development rights; municipal boundary and utility extension agreements to facilitate orderly growth in areas of mutual interest to neighboring communities; municipal revenue sharing; capital improvement programming; and establishment of development design standards.

It should be recognized that implementation of the regional plan depends as well upon the cooperation of a myriad of private interests. These private sector interests range from developers, builders, and engineering and design consultants—who have a major influence on development patterns in the Region—to private conservancy groups that play an increasingly important role in the protection and management of environmentally significant open spaces.

Appendix A

LAND USE IN THE REGION BY COUNTY: 1963, 1970, 1980, 1990, AND 2000

This appendix presents the results of regional land use inventories conducted by the Regional Planning Commission for the years 1963, 1970, 1980, 1990, and 2000. As part of the regional land use inventory for the year 2000, the delineation of existing land use was referenced to real property boundary information not available for prior inventories. This change increases the precision of the land use inventory and makes it more usable to public agencies and private interests throughout the Region. As a result of the change, however, year 2000 land use inventory data are not strictly comparable with data from the 1990 and prior inventories. At the county level, the most significant effect of the change is to increase the transportation, communication, and utilities category—the result of the use of actual street and highway rights-of-way as part of the 2000 land use inventory, as opposed to the use of narrower estimated rights-of-way in prior inventories. This treatment of streets and highways generally diminishes the area of adjacent land uses traversed by those streets and highways in the 2000 land use inventory relative to prior inventories.

Table A-1

LAND USE IN THE REGION: 1963, 1970, 1980, 1990, AND 2000

	Existing Land Use									
	1963		1970		1980		1990		2000	
Land Use Category[a]	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	115,170	6.7	134,890	7.8	172,222	10.0	192,267	11.2	231,737	13.5
Commercial	7,390	0.4	9,494	0.6	12,360	0.7	15,788	0.9	19,397	1.1
Industrial	8,651	0.5	11,093	0.6	14,100	0.8	16,707	1.0	21,053	1.2
Transportation, Communication, and Utilities	86,366	5.0	96,019	5.6	106,305	6.2	109,934	6.4	128,570	7.5
Governmental and Institutional	13,980	0.8	17,410	1.0	19,181	1.1	19,710	1.1	21,543	1.3
Recreational	16,669	1.0	21,215	1.2	25,176	1.5	27,061	1.6	32,245	1.9
Unused Urban Land	34,895	2.0	32,617	1.9	28,798	1.7	25,939	1.5	32,566	1.9
Subtotal Urban	283,123	16.4	322,738	18.7	378,142	22.0	407,407	23.7	487,111	28.4
Nonurban										
Natural Areas										
Surface Water	45,794	2.7	47,339	2.8	48,769	2.8	49,228	2.9	49,566	2.9
Wetlands	175,564	10.2	172,994	10.0	170,623	9.9	171,963	10.0	176,450	10.2
Woodlands	119,583	6.9	117,979	6.9	116,396	6.8	118,954	6.9	116,905	6.8
Subtotal Natural Areas	340,941	19.8	338,312	19.7	335,789	19.5	340,145	19.8	342,921	19.9
Agricultural	1,047,740	60.9	1,001,399	58.2	944,236	54.8	893,025	51.8	806,011	46.8
Unused Rural and Other Open Land	49,378	2.9	58,602	3.4	62,949	3.7	80,629	4.7	85,413	4.9
Subtotal Nonurban	1,438,059	83.6	1,398,313	81.3	1,342,974	78.0	1,313,799	76.3	1,234,345	71.6
Total	1,721,182	100.0	1,721,051	100.0	1,721,116	100.0	1,721,206	100.0	1,721,456	100.0

[a] *Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-2

LAND USE IN KENOSHA COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	9,726	5.5	10,985	6.2	13,651	7.7	15,083	8.5	18,190	10.2
Commercial	581	0.3	710	0.4	867	0.5	1,094	0.6	1,443	0.8
Industrial	767	0.4	844	0.5	1,013	0.6	919	0.5	1,436	0.8
Transportation, Communication, and Utilities	7,838	4.4	8,169	4.6	8,894	5.0	9,588	5.4	11,475	6.4
Governmental and Institutional	907	0.5	1,203	0.7	1,492	0.8	1,531	0.9	1,691	0.9
Recreational	1,862	1.0	2,088	1.2	2,531	1.4	2,793	1.6	3,409	1.9
Unused Urban Land	2,238	1.3	2,537	1.4	2,654	1.5	2,443	1.4	3,547	2.0
Subtotal Urban	23,919	13.4	26,535	15.0	31,103	17.5	33,452	18.9	41,191	23.0
Nonurban										
Natural Areas										
Surface Water	4,351	2.4	4,683	2.6	4,826	2.7	4,963	2.8	5,056	2.8
Wetlands	16,518	9.3	16,066	9.0	15,612	8.8	15,352	8.6	16,068	9.0
Woodlands	9,907	5.6	9,735	5.5	9,572	5.4	9,719	5.5	9,243	5.2
Subtotal Natural Areas	30,777	17.3	30,484	17.1	30,010	16.9	30,033	16.9	30,367	17.0
Agricultural	114,041	64.0	111,190	62.3	107,301	60.1	102,371	57.4	94,715	53.3
Unused Rural and Other Open Land	9,492	5.3	9,963	5.6	9,761	5.5	12,308	6.8	11,929	6.7
Subtotal Nonurban	154,310	86.6	151,636	85.0	147,072	82.5	144,712	81.1	137,012	77.0
Total	178,229	100.0	178,171	100.0	178,174	100.0	178,164	100.0	178,202	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-3

LAND USE IN MILWAUKEE COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	40,273	26.0	43,101	27.8	47,016	30.3	48,968	31.5	50,774	32.7
Commercial	3,569	2.3	4,308	2.8	5,266	3.4	6,405	4.1	7,141	4.6
Industrial	5,128	3.3	5,692	3.7	6,516	4.2	7,160	4.6	7,610	4.9
Transportation, Communication, and Utilities	25,664	16.5	29,211	18.8	30,374	19.6	30,728	19.8	33,252	21.4
Governmental and Institutional	6,646	4.3	7,523	4.8	7,902	5.1	8,042	5.2	8,214	5.3
Recreational	6,012	3.9	6,829	4.4	7,314	4.7	7,615	4.9	7,764	5.0
Unused Urban Land	17,153	11.1	13,598	8.8	10,838	7.0	9,617	6.2	10,669	6.9
Subtotal Urban	104,445	67.4	110,262	71.1	115,226	74.3	118,536	76.3	125,424	80.8
Nonurban										
Natural Areas										
Surface Water	1,193	0.8	1,261	0.8	1,327	0.9	1,317	0.8	1,298	0.8
Wetlands	4,176	2.7	4,139	2.7	4,129	2.7	4,702	3.0	5,298	3.4
Woodlands	5,467	3.5	5,087	3.3	4,856	3.1	4,773	3.1	4,550	2.9
Subtotal Natural Areas	10,836	7.0	10,487	6.8	10,311	6.7	10,792	6.9	11,146	7.1
Agricultural	34,046	21.9	27,801	17.9	23,051	14.8	18,767	12.2	12,933	8.3
Unused Rural and Other Open Land	5,750	3.7	6,586	4.2	6,605	4.2	7,164	4.6	5,830	3.8
Subtotal Nonurban	50,632	32.6	44,874	28.9	39,967	25.7	36,724	23.7	29,910	19.2
Total	155,077	100.0	155,136	100.0	155,193	100.0	155,259	100.0	155,333	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-4

LAND USE IN OZAUKEE COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	7,000	4.6	9,190	6.1	12,706	8.4	14,503	9.6	18,256	12.1
Commercial	321	0.2	424	0.3	594	0.4	793	0.5	975	0.6
Industrial	313	0.2	463	0.3	655	0.4	813	0.5	1,084	0.7
Transportation, Communication, and Utilities	5,807	3.9	6,654	4.4	8,053	5.4	8,397	5.6	9,685	6.4
Governmental and Institutional	745	0.5	957	0.6	1,122	0.7	1,213	0.8	1,263	0.8
Recreational	825	0.5	1,460	1.0	1,780	1.2	1,866	1.2	2,436	1.6
Unused Urban Land	1,479	1.0	1,840	1.2	1,629	1.1	1,570	1.0	2,134	1.4
Subtotal Urban	16,489	10.9	20,987	13.9	26,540	17.6	29,154	19.2	35,833	23.6
Nonurban										
Natural Areas										
Surface Water	1,723	1.1	1,823	1.2	1,986	1.3	2,063	1.4	2,147	1.4
Wetlands	16,357	10.9	16,274	10.8	15,988	10.6	16,334	10.9	16,914	11.2
Woodlands	6,805	4.5	6,664	4.4	6,620	4.4	6,993	4.6	7,150	4.7
Subtotal Natural Areas	24,884	16.5	24,761	16.4	24,594	16.3	25,390	16.9	26,211	17.3
Agricultural	104,153	69.3	99,162	66.0	93,833	62.5	89,410	59.5	81,201	54.0
Unused Rural and Other Open Land	5,015	3.3	5,546	3.7	5,489	3.6	6,504	4.4	7,463	5.1
Subtotal Nonurban	134,053	89.1	129,468	86.1	123,916	82.4	121,304	80.8	114,875	76.4
Total	150,542	100.0	150,455	100.0	150,456	100.0	150,458	100.0	150,708	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-5

LAND USE IN RACINE COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	12,373	5.7	14,944	6.9	18,183	8.3	19,580	9.0	23,447	10.8
Commercial	722	0.3	954	0.4	1,220	0.6	1,621	0.7	1,929	0.9
Industrial	797	0.4	1,302	0.6	1,642	0.8	1,915	0.9	2,429	1.1
Transportation, Communication, and Utilities	10,321	4.7	11,029	5.1	11,631	5.3	11,837	5.4	13,335	6.1
Governmental and Institutional	1,340	0.6	1,880	0.9	2,025	0.9	2,028	0.9	2,278	1.0
Recreational	1,659	0.8	1,908	0.9	2,429	1.1	2,592	1.2	3,008	1.4
Unused Urban Land	2,365	1.1	2,745	1.3	2,434	1.1	2,019	0.9	3,901	1.8
Subtotal Urban	29,578	13.6	34,763	16.1	39,565	18.1	41,591	19.0	50,327	23.1
Nonurban										
Natural Areas										
Surface Water	4,772	2.2	5,002	2.3	5,173	2.4	5,203	2.4	5,201	2.4
Wetlands	15,443	7.1	15,398	7.1	15,083	6.9	15,422	7.1	15,883	7.3
Woodlands	13,699	6.3	13,234	6.1	12,953	5.9	13,348	6.1	12,679	5.8
Subtotal Natural Areas	33,913	15.6	33,634	15.5	33,209	15.2	33,973	15.6	33,763	15.5
Agricultural	148,719	68.2	142,184	65.1	138,260	63.5	134,501	61.8	125,124	57.4
Unused Rural and Other Open Land	5,744	2.6	7,329	3.3	6,879	3.2	7,881	3.6	8,755	4.0
Subtotal Nonurban	188,377	86.4	183,146	83.9	178,348	81.9	176,354	81.0	167,642	76.9
Total	217,954	100.0	217,909	100.0	217,913	100.0	217,945	100.0	217,969	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-6

LAND USE IN WALWORTH COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	10,592	2.9	11,783	3.2	14,973	4.1	16,438	4.5	20,259	5.5
Commercial	655	0.2	776	0.2	931	0.3	1,088	0.3	1,248	0.3
Industrial	381	0.1	512	0.1	701	0.2	964	0.3	1,420	0.4
Transportation, Communication, and Utilities	10,628	2.9	11,774	3.2	13,893	3.8	14,022	3.8	15,206	4.1
Governmental and Institutional	1,060	0.3	1,279	0.3	1,379	0.4	1,393	0.4	1,734	0.5
Recreational	2,037	0.6	3,004	0.8	3,538	1.0	3,553	1.0	4,307	1.2
Unused Urban Land	2,235	0.6	2,136	0.6	2,039	0.6	1,745	0.5	2,380	0.6
Subtotal Urban	27,587	7.6	31,265	8.4	37,453	10.4	39,203	10.8	46,553	12.6
Nonurban										
Natural Areas										
Surface Water	13,769	3.7	14,025	3.8	14,394	3.9	14,439	3.9	14,466	3.9
Wetlands	28,688	7.8	27,679	7.5	26,669	7.2	26,147	7.1	26,854	7.3
Woodlands	31,516	8.5	31,535	8.5	31,382	8.5	31,942	8.7	31,294	8.5
Subtotal Natural Areas	73,973	20.0	73,239	19.8	72,445	19.6	72,528	19.7	72,613	19.7
Agricultural	260,647	70.6	257,702	69.9	250,659	67.8	247,015	66.8	237,671	64.4
Unused Rural and Other Open Land	6,749	1.8	6,750	1.9	8,400	2.2	10,210	2.7	12,113	3.3
Subtotal Nonurban	341,369	92.4	337,691	91.6	331,503	89.6	329,753	89.2	322,398	87.4
Total	368,956	100.0	368,956	100.0	368,956	100.0	368,956	100.0	368,951	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-7

LAND USE IN WASHINGTON COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	7,058	2.5	9,410	3.4	14,947	5.4	18,449	6.6	25,590	9.2
Commercial	346	0.1	491	0.2	727	0.3	960	0.3	1,311	0.5
Industrial	342	0.1	522	0.2	826	0.3	1,135	0.4	1,549	0.6
Transportation, Communication, and Utilities	10,029	3.6	10,636	3.8	11,593	4.2	12,557	4.5	15,617	5.6
Governmental and Institutional	733	0.3	981	0.4	1,224	0.4	1,287	0.5	1,477	0.5
Recreational	964	0.3	1,322	0.5	1,829	0.7	2,177	0.8	3,067	1.1
Unused Urban Land	916	0.3	1,246	0.4	1,187	0.4	1,521	0.5	2,129	0.8
Subtotal Urban	20,388	7.2	24,607	8.9	32,333	11.7	38,086	13.6	50,739	18.3
Nonurban										
Natural Areas										
Surface Water	3,910	1.4	4,085	1.5	4,311	1.5	4,366	1.6	4,507	1.6
Wetlands	41,794	15.0	41,779	15.0	41,910	15.0	42,029	15.1	42,771	15.3
Woodlands	21,008	7.5	20,905	7.5	21,540	7.7	22,595	8.1	23,057	8.3
Subtotal Natural Areas	66,712	23.9	66,768	24.0	67,762	24.2	68,990	24.8	70,336	25.2
Agricultural	185,893	66.8	178,972	64.1	169,574	60.8	158,532	56.9	141,755	50.8
Unused Rural and Other Open Land	5,840	2.1	8,485	3.0	9,164	3.3	13,225	4.7	15,927	5.7
Subtotal Nonurban	258,445	92.8	254,226	91.1	246,500	88.3	240,747	86.4	228,017	81.7
Total	278,833	100.0	278,833	100.0	278,833	100.0	278,833	100.0	278,756	100.0

[a]*Off-street parking is included with the associated land use.*

Source: SEWRPC.

Table A-8

LAND USE IN WAUKESHA COUNTY: 1963, 1970, 1980, 1990, AND 2000

Land Use Category[a]	Existing Land Use									
	1963		1970		1980		1990		2000	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Urban										
Residential	28,148	7.6	35,476	9.5	50,745	13.7	59,247	15.9	75,221	20.2
Commercial	1,197	0.3	1,831	0.5	2,754	0.7	3,827	1.0	5,351	1.4
Industrial	924	0.2	1,758	0.5	2,747	0.7	3,802	1.0	5,525	1.5
Transportation, Communication, and Utilities	16,079	4.3	18,545	5.0	21,867	5.9	22,805	6.1	30,001	8.1
Governmental and Institutional	2,550	0.7	3,587	1.0	4,037	1.1	4,215	1.1	4,887	1.3
Recreational	3,311	0.9	4,605	1.2	5,756	1.5	6,465	1.7	8,253	2.2
Unused Urban Land	8,509	2.3	8,516	2.3	8,017	2.2	7,025	1.9	7,806	2.1
Subtotal Urban	60,717	16.3	74,319	20.0	95,923	25.8	107,386	28.7	137,045	36.8
Nonurban										
Natural Areas										
Surface Water	16,076	4.3	16,461	4.4	16,753	4.5	16,878	4.5	16,892	4.5
Wetlands	52,588	14.2	51,660	13.9	51,233	13.8	51,978	14.0	52,661	14.2
Woodlands	31,181	8.4	30,818	8.3	29,472	7.9	29,584	8.0	28,932	7.8
Subtotal Natural Areas	99,846	26.9	98,939	26.6	97,458	26.2	98,439	26.5	98,484	26.5
Agricultural	200,242	53.9	184,389	49.6	161,558	43.5	142,429	38.4	112,611	30.4
Unused Rural and Other Open Land	10,786	2.9	13,943	3.8	16,651	4.5	23,336	6.4	23,397	6.3
Subtotal Nonurban	310,873	83.7	297,271	80.0	275,668	74.2	264,205	71.3	234,492	63.2
Total	371,591	100.0	371,591	100.0	371,591	100.0	371,591	100.0	371,537	100.0

[a] *Off-street parking is included with the associated land use.*

Source: SEWRPC.

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Appendix B

CITY, VILLAGE, AND TOWN LAND USE PLANS IN THE REGION: 2004

The following table and the accompanying footnotes indicate land use plans prepared or under preparation by cities, villages, and towns in the Region at the time of the Commission's regional community plans and zoning inventory update completed in 2004. Included are community land use plans and land use plan elements of broader master or comprehensive plans. Also listed are communities that, in lieu of a community-wide land use plan, have approached planning on a neighborhood-by-neighborhood basis, where the composite of the neighborhood plans effectively serves as a community plan.

County	Community	Plan Document[a]	Year Plan Adopted
Kenosha	Kenosha Urban Planning District (City of Kenosha, Village of Pleasant Prairie, Town of Somers)	SEWRPC Community Assistance Planning Report No. 212, *A Comprehensive Plan for the Kenosha Urban Planning District*	Pleasant Prairie: 1996, Somers: 1996
	City of Kenosha	Series of Sub-Area Plans	- -[b]
	Village of Paddock Lake[c]	Village of Paddock Lake Development Plan Update	1997
	Village of Silver Lake	None	- -
	Village of Twin Lakes[d]	None	- -
	Town of Brighton	None	- -
	Town of Bristol	Town of Bristol Land Use Plan	2002
	Town of Paris	Town of Paris Land Use Plan	1995
	Town of Randall[d]	None	- -
	Town of Salem	Town of Salem Land Use Plan: 2020	1999
	Town of Wheatland	None	- -
Milwaukee	City of Cudahy	City of Cudahy Comprehensive Development Plan	1994
	City of Franklin	City of Franklin Comprehensive Master Plan	1992
	City of Glendale	Series of Sub-Area Plans	- -[e]
	City of Greenfield	City of Greenfield Comprehensive Land Use Plan	1992
	City of Milwaukee	Series of Sub-Area Plans	- -[f]
	City of Oak Creek	A Comprehensive Plan for the City of Oak Creek: 2020 Vision	2002
	City of St. Francis	City of St. Francis Comprehensive "Smart Growth" Plan	2003
	City of South Milwaukee[g]	City of South Milwaukee Comprehensive Plan Report	Not adopted
	City of Wauwatosa	City of Wauwatosa Comprehensive Plan Report	1977
	City of West Allis	City of West Allis Comprehensive Land Use Plan 1990-2010	1991
	Village of Bayside	None	- -
	Village of Brown Deer	Village of Brown Deer Master Plan	1975
	Village of Fox Point	None	- -
	Village of Greendale	Master Plan Update	Not adopted
	Village of Hales Corners	None	- -
	Village of River Hills	Village of River Hills Report on Comprehensive Plan	1958
	Village of Shorewood	Comprehensive Plan Map	1981
	Village of West Milwaukee	Village of West Milwaukee Comprehensive (Master) Development Plan	Not adopted
	Village of Whitefish Bay	None	- -
Ozaukee	City of Cedarburg	SEWRPC Community Assistance Planning Report No. 144, *A Development Plan for the City of Cedarburg: 2010*	1989
	City of Mequon	City of Mequon Environmental Plan and Land Use Plan	1983
	City of Port Washington	Year 2020 City Plan, 1962-1997 Update	1997
	Village of Belgium	Ten Year Comprehensive Plan Update, Village of Belgium	1999
	Village of Fredonia	Village of Fredonia Comprehensive Plan – 2020	2003
	Village of Grafton	Comprehensive (Master) Plan 2010, Village of Grafton	1995
	Village of Saukville	SEWRPC Community Assistance Planning Report No. 234, *A Land Use Plan for the Village of Saukville: 2010*	1998
	Village of Thiensville	Master Plan for the Village of Thiensville, 1990-2010	1991
	Town of Belgium	SEWRPC Community Assistance Planning Report No. 248, *A Master Plan for the Town of Belgium: 2020*	2000
	Town of Cedarburg	Comprehensive Plan, Town of Cedarburg	1999
	Town of Fredonia	SEWRPC Community Assistance Planning Report No. 33, 2nd Edition, *A Land Use Plan for the Town of Fredonia: 2010*	1999
	Town of Grafton	Town of Grafton Land Use and Transportation Plan	2001
	Town of Port Washington	Town of Port Washington Land Use Plan: 2010	1995
	Town of Saukville	SEWRPC Community Assistance Planning Report No. 232, *A Land Use Plan for the Town of Saukville: 2010*	1998

Appendix B (continued)

County	Community	Plan Document[a]	Year Plan Adopted
Racine	Racine Urban Planning District (Area of Racine County east of IH 94) [h]	SEWRPC Community Assistance Planning Report No. 14, *A Comprehensive Plan for the Racine Urban Planning District;* Volume 1, *Inventory Findings and Forecast;* Volume 2, *The Recommended Comprehensive Plan;* Volume 3, *Model Plan Implementation Ordinance*	Not adopted
	City of Burlington	City of Burlington Master Plan; Series of Neighborhood Plans	- -[i]
	City of Racine	Land Use Plan Map	1975
	Village of Mt. Pleasant	Mt. Pleasant Master Plan for Land Use and Transportation – 2030	2003
	Village of Rochester	SEWRPC Community Assistance Planning Report No. 237, *A Land Use Plan for the Town and Village of Rochester: 2020*	1999
	Village of Union Grove	SEWRPC Community Assistance Planning Report No. 277, *A Land Use Plan for the Village of Union Grove and Town of Yorkville: 2020*	2003
	Village of Waterford	Village of Waterford Master Plan	1998
	Town of Burlington[j]	Town of Burlington Land Use Plan	1999
	Town of Caledonia	Town of Caledonia Land Use Plan; Series of Sub-Area Plans	- -[k]
	Town of Dover	SEWRPC Community Assistance Planning Report No. 243, *A Land Use Plan for the Town of Dover: 2020*	1999
	Town of Norway	None	- -
	Town of Raymond[l]	Town of Raymond Land Use Master Plan	1997
	Town of Rochester	SEWRPC Community Assistance Planning Report No. 237, *A Land Use Plan for the Town and Village of Rochester: 2020*	1999
	Town of Waterford	SEWRPC Community Assistance Planning Report No. 217, *A Land Use Plan for the Town of Waterford: 2010;* and 2020 Land Use Plan Amendment	1994; 2001
	Town of Yorkville	SEWRPC Community Assistance Planning Report No. 277, *A Land Use Plan for the Village of Union Grove and Town of Yorkville: 2020*	2003
Walworth	City of Delavan	City of Delavan Comprehensive Master Plan Update	1999
	City of Elkhorn	The Elkhorn 2020 Community Development Plan	2000
	City of Lake Geneva	City of Lake Geneva Comprehensive Master Plan	1999
	City of Whitewater	East Whitewater Neighborhood Development Plan; West Whitewater Neighborhood Development Plan	1999; 2002
	Village of Darien	Village of Darien Comprehensive Master Plan	1998
	Village of East Troy	Village of East Troy Comprehensive Land Use Plan: 2020	2000
	Village of Fontana	Village of Fontana-on-Geneva Lake Comprehensive Plan	2001
	Village of Genoa City[m]	Village of Genoa City Comprehensive Planning Program	Not adopted
	Village of Sharon[n]	Village of Sharon Comprehensive Planning Program	Not adopted
	Village of Walworth	Village of Walworth Comprehensive Plan	2001
	Village of Williams Bay	The Comprehensive Plan of Williams Bay	1999
	Town of Bloomfield	SEWRPC Community Assistance Planning Report No. 268, *A Land Use Plan for the Town of Bloomfield: 2020*	2003
	Town of Darien	None	- -
	Town of Delavan	Town of Delavan Master Plan Update	1995
	Town of East Troy	Town of East Troy Land Use Plan	1994
	Town of Geneva	SEWRPC Community Assistance Planning Report No. 211, *A Land Use Plan for the Town of Geneva: 2010*	1997
	Town of LaFayette[o]	None	- -
	Town of LaGrange	SEWRPC Community Assistance Planning Report No. 168, *A Land Use Plan for the Town of LaGrange: 2010*	1990
	Town of Linn[p]	Town of Linn Land Use Plan	1993
	Town of Lyons	SEWRPC Community Assistance Planning Report No. 249, *A Land Use Plan for the Town of Lyons: 2020*	2000
	Town of Richmond	None	- -
	Town of Sharon	SEWRPC Community Assistance Planning Report No. 228, *A Land Use Plan for the Town of Sharon: 2010*	1998
	Town of Spring Prairie	SEWRPC Community Assistance Planning Report No. 251, *A Master Plan for the Town of Spring Prairie: 2020*	2000
	Town of Sugar Creek	SEWRPC Community Assistance Planning Report No. 220, *A Land Use Plan for the Town of Sugar Creek: 2010*	1995

Appendix B (continued)

County	Community	Plan Document[a]	Year Plan Adopted
Walworth (continued)	Town of Troy	SEWRPC Community Assistance Planning Report No. 229, *A Land Use Plan for the Town of Troy: 2020*	1998
	Town of Walworth	None	- -
	Town of Whitewater	None	- -
Washington	City of Hartford	City of Hartford Neighborhood Plans	1995
	City of West Bend	2020 Comprehensive Plan for the City of West Bend, Washington County, Wisconsin	2004
	Village of Germantown[q]	Comprehensive Master Plan, Village of Germantown, WI	1993
	Village of Jackson	Village of Jackson and Town of Jackson Revenue Sharing Agreement and Cooperative Boundary Plan	1999
	Village of Kewaskum	SEWRPC Community Assistance Planning Report No. 214, *A Land Use and Street System Plan for the Village of Kewaskum*	1997
	Village of Newburg	Village of Newburg Comprehensive Master Plan	1992
	Village of Slinger[r]	SEWRPC Community Assistance Planning Report No. 186, *A Land Use and Street System Plan for the Village of Slinger*	1995
	Town of Addison	Town of Addison Land Use Plan: 2015	1996
	Town of Barton	Town of Barton Land Use Plan: 2010	1995
	Town of Farmington	None	- -
	Town of Erin	Town of Erin Land Use Plan	2003
	Town of Germantown	None	- -
	Town of Hartford	Town of Hartford Land Use Plan	1996
	Town of Jackson	None	- -
	Town of Kewaskum	Town of Kewaskum Land Use Plan	1996
	Town of Polk	None	- -
	Town of Richfield[s]	Town of Richfield Today and Tomorrow (Revisited)	1996
	Town of Trenton	SEWRPC Community Assistance Planning Report No. 238, *A Land Use Plan for the Town of Trenton: 2010*	1997
	Town of Wayne	SEWRPC Community Assistance Planning Report No. 235, *A Land Use Plan for the Town of Wayne: 2020*	1998
	Town of West Bend	The Town of West Bend Official Land Use Plan	1998
Waukesha	City of Brookfield	City of Brookfield Year 2020 Master Plan Document	1999
	City of Delafield	Comprehensive Plan, City of Delafield	1991
	City of Muskego	City of Muskego 2010 Comprehensive Plan	2001
	City of New Berlin	Growth and Development Master Plan Update, City of New Berlin	2000
	City of Oconomowoc	City of Oconomowoc Comprehensive Master Plan 1994-2010	1994
	City of Pewaukee	SEWRPC Community Assistance Planning Report No. 209, *Waukesha County Development Plan*	- -[t]
	City of Waukesha	SEWRPC Community Assistance Planning Report No. 169, *A Land Use Plan for the City of Waukesha Planning Area: 2010*	1993
	Village of Big Bend	Village of Big Bend Comprehensive Land Use Plan: Opportunities 2020	1998
	Village of Butler	A Master Plan for the Village of Butler	1967
	Village of Chenequa	None	- -
	Village of Dousman	Village of Dousman Land Use Master Plan	1999
	Village of Eagle	SEWRPC Community Assistance Planning Report No. 85, *A Land Use Plan for the Village of Eagle: 2000*	1983
	Village of Elm Grove	None	- -
	Village of Hartland[u]	SEWRPC Community Assistance Planning Report No. 49, *A Land Use and Traffic Circulation Plan for the Village of Hartland: 2000*	1991
	Village of Lac La Belle	Master Plan, Village of Lac La Belle	1979
	Village of Lannon	Village of Lannon Comprehensive Land Use Plan: 2020 "Vision Beyond 2000"	1999
	Village of Menomonee Falls	SEWRPC Community Assistance Planning Report No. 163, *A Land Use and Transportation System Plan for the Village of Menomonee Falls: 2010*	1989; 2004[v]
	Village of Merton	Year 2022 Comprehensive Plan for the Village of Merton	2002
	Village of Mukwonago	Designing Mukwonago: Comprehensive/Master Plan for the Village of Mukwonago; Amendment to the Residential Designations and Densities in the Village of Mukwonago's Comprehensive/Master Plan	2000; 2003
	Village of Nashotah	Village of Nashotah Comprehensive Land Use Plan	1995

Appendix B (continued)

County	Community	Plan Document[a]	Year Plan Adopted
Waukesha (continued)	Village of North Prairie	Village of North Prairie Master Land Use and Transportation Plan	1999
	Village of Oconomowoc Lake	Village of Oconomowoc Lake Master Plan	1990
	Village of Pewaukee	Village of Pewaukee Master Plan	1998
	Village of Sussex	Village of Sussex Comprehensive Plan: 2020	2003
	Village of Wales	SEWRPC Community Assistance Planning Report No. 256, *A Master Plan for the Village of Wales: 2020*	2003
	Town of Brookfield	None	- -
	Town of Delafield	Land Use Plan, Town of Delafield	1999
	Town of Eagle	Town of Eagle Land Use Plan	1983
	Town of Genesee	Alternative and Recommended Land Use Plans for the Town of Genesee – 2000	Not adopted
	Town of Lisbon	Town of Lisbon Land Use Plan	1996
	Town of Merton	Town of Merton 2010 Master Land Use Plan	Not adopted
	Town of Mukwonago	Town of Mukwonago Master Plan	2000
	Town of Oconomowoc	Town of Oconomowoc Master Land Use Plan	1993
	Town of Ottawa	Town of Ottawa Master Land Use Plan	1994
	Town of Summit	Town of Summit Master Plan: 2010	2001
	Town of Vernon	Town of Vernon Master Plan	1994
	Town of Waukesha	Town of Waukesha Master Land Use Plan	1994

[a]*Name of land use plan or name of master or comprehensive plan which includes the land use plan.*

[b]*The City of Kenosha has adopted a number of land use plans for sub-areas of the City.*

[c]*The Village of Paddock Lake was preparing a comprehensive plan with assistance from Vandewalle & Associates, Inc. in 2004.*

[d]*The Village of Twin Lakes and the Town of Randall were preparing a joint comprehensive plan with assistance from Mid-America Planning Services in 2004.*

[e]*The City of Glendale has adopted a number of sub-area plans which together constitute the overall plan for the City.*

[f]*The City of Milwaukee has adopted a number of sub-area plans which together constitute the overall plan for the City.*

[g]*The City of South Milwaukee was preparing a comprehensive plan with assistance from HNTB in 2004.*

[h]*A comprehensive plan was prepared for the area of Racine County located east of IH 94 in 1972. This plan was never adopted by any of the concerned communities. Subsequently, land use plans were prepared and adopted by three of the communities in this area–the City of Racine, the Village of Mt. Pleasant, and the Town of Caledonia.*

[i]*The City of Burlington has adopted a number of sub-area plans which refine and detail the master plan of the City.*

[j]*The Town of Burlington was updating its land use plan in 2004.*

[k]*The Town of Caledonia has adopted a land use plan and a number of neighborhood plans. Additional neighborhood planning was underway in 2004.*

[l]*The Town of Raymond was updating its plan with assistance from Ruekert & Mielke in 2004.*

[m]*The Village of Genoa City was preparing a land use plan with assistance from Teska Associates, Inc. in 2004.*

[n]*The Village of Sharon was preparing a comprehensive plan with assistance from MSA Professional Services in 2004.*

[o]*The Town of LaFayette was preparing a master plan with assistance from SEWRPC in 2004.*

[p]*The Town of Linn was preparing a comprehensive plan with assistance from Foth and Van Dyke in 2004.*

[q]*The Village of Germantown was preparing a comprehensive plan with assistance from Smith Group-JJR in 2004.*

[r]*The Village of Slinger was preparing a comprehensive plan with assistance from Omni Associates in 2004.*

[s]*The Town of Richfield was preparing a comprehensive plan with assistance from Omni Associates in 2004.*

[t]*The City of Pewaukee adopted the land use plan map in the Waukesha County development plan, with seven modifications.*

[u]*The Village of Hartland plan was being updated with assistance from SEWRPC in 2004.*

[v]*The Village of Menomonee Falls adopted a land use and transportation plan in 1989 and amended the land use plan in 2004.*

Source: SEWRPC.

Appendix C

RESIDENTIAL PLANNING UNIT DEVELOPMENT STANDARDS FOR URBAN LOW-, URBAN MEDIUM-, AND URBAN HIGH-DENSITY RESIDENTIAL DEVELOPMENT

Residential Density Class	Number	Acres	Percent	Acres	Percent
Urban Low-Density					
Gross Residential Area	--	--	--	2,560.0	100.0
Public Elementary School (K-6) Area	--	12.8	0.5	--	--
Public Park and Parkway Area	--	38.4	1.5	--	--
Neighborhood Commercial Area	--	12.8	0.5	--	--
Street Area	--	512.0	20.0	--	--
Other Public and Quasi-Public Area	--	25.6	1.0	--	--
Net Residential Area	--	--	--	1,958.4	76.5
Single-Family Area	--	1,958.4	76.5	--	--
Number of Dwelling Units	2,350.0	--	--	--	--
Dwelling Units per Net Residential Acre	1.2	--	--	--	--
Multi-Family Area	--	None	--	--	--
Urban Medium-Density					
Gross Residential Area	--	--	--	640.0	100.0
Public Elementary School (K-6) Area	--	9.6	1.5	--	--
Public Park and Parkway Area	--	16.0	2.5	--	--
Neighborhood Commercial Area	--	6.4	1.0	--	--
Street Area	--	147.2	23.0	--	--
Other Public and Quasi-Public Area	--	6.4	1.0	--	--
Net Residential Area	--	--	--	454.4	71.0
Single-Family Area	--	416.0	65.0	--	--
Number of Dwelling Units	1,615.0	--	--	--	--
Dwelling Units per Net Residential Acre	3.9	--	--	--	--
Multi-Family Area	--	38.4	6.0	--	--
Number of Dwelling Units	355.0	--	--	--	--
Dwelling Units per Net Residential Acre	9.2	--	--	--	--
Urban High-Density					
Gross Residential Area	--	--	--	160.0	100.0
Public Elementary School (K-6) Area	--	4.0	2.5	--	--
Public Park and Parkway Area	--	5.6	3.5	--	--
Neighborhood Commercial Area	--	2.4	1.5	--	--
Street Area	--	40.0	25.0	--	--
Other Public and Quasi-Public Area	--	2.4	1.5	--	--
Net Residential Area	--	--	--	105.6	66.0
Single-Family Area	--	94.4	59.0	--	--
Number of Dwelling Units	566.0	--	--	--	--
Dwelling Units per Net Residential Acre	5.9	--	--	--	--
Multi-Family Area	--	11.2	7.0	--	--
Number of Dwelling Units	698.0	--	--	--	--
Dwelling Units per Net Residential Acre	62.3	--	--	--	--

Source: SEWRPC.

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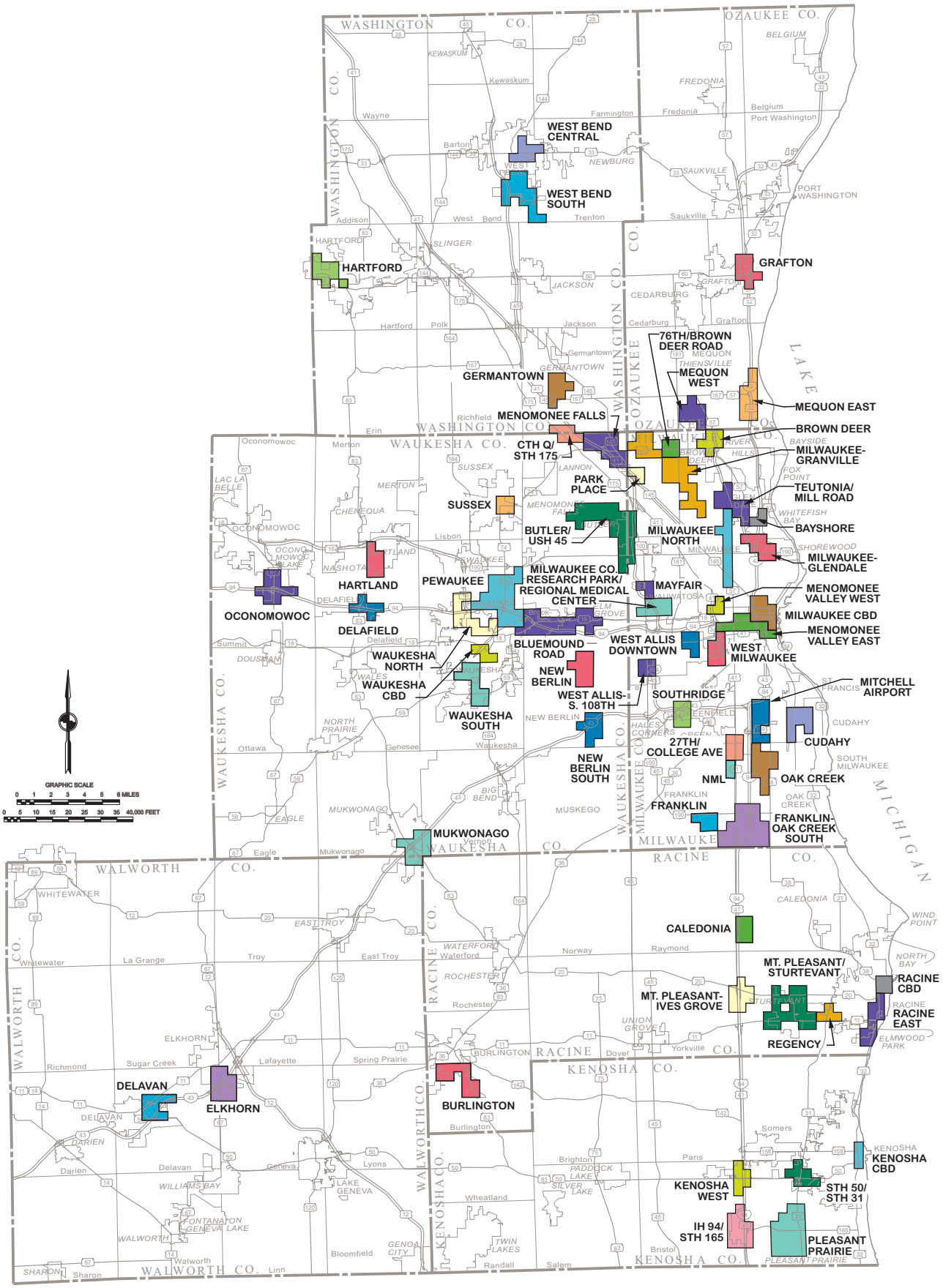
Appendix D

QUARTER SECTION APPROXIMATION OF THE 60 MAJOR ECONOMIC ACTIVITY CENTERS ENVISIONED UNDER THE 2035 RECOMMENDED REGIONAL LAND USE PLAN



Source: SEWRPC.

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Appendix E

POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN THE REGION UNDER THE 2035 REGIONAL LAND USE PLAN

Table E-1

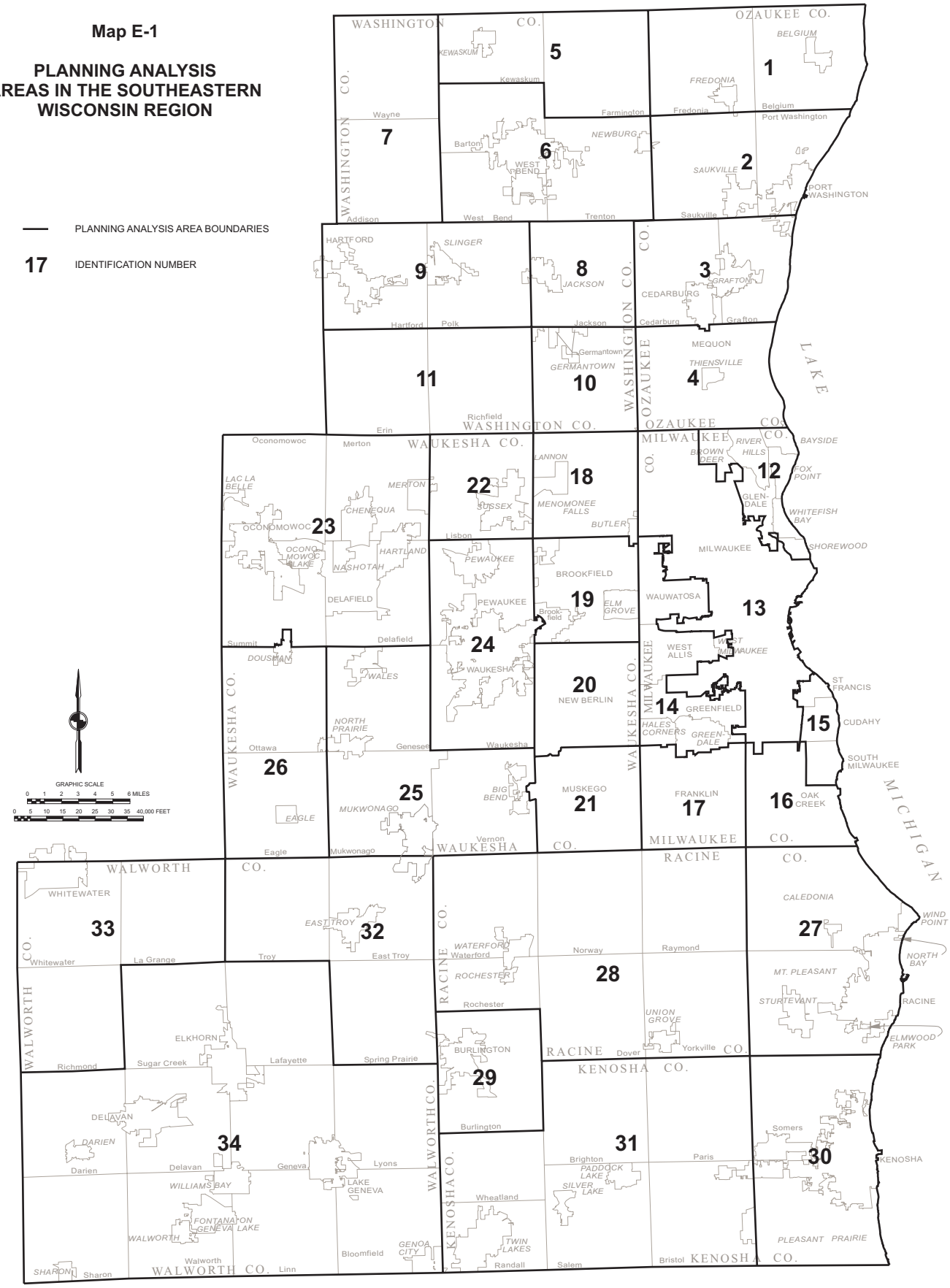
EXISTING 2000 AND PLANNED 2035 POPULATION, HOUSEHOLDS, AND EMPLOYMENT BY PLANNING ANALYSIS AREA

County and Planning Analysis Area (See Map E-1)	Population				Households				Employment			
	Existing 2000	Planned Increment: 2000 - 2035		Total 2035	Existing 2000	Planned Increment: 2000 - 2035		Total 2035	Existing 2000	Planned Increment: 2000 - 2035		Total 2035
		Number	Percent			Number	Percent			Number	Percent	
Ozaukee												
1	7,200	1,500	20.8	8,700	2,600	700	26.9	3,300	2,800	2,000	71.4	4,800
2	18,000	2,700	15.0	20,700	7,000	1,400	20.0	8,400	11,600	3,000	25.9	14,600
3	31,100	9,500	30.5	40,600	11,900	4,700	39.5	16,600	18,300	4,000	21.9	22,300
4	26,000	5,100	19.6	31,100	9,400	2,300	24.5	11,700	18,100	2,500	13.8	20,600
Subtotal	82,300	18,800	22.8	101,100	30,900	9,100	29.4	40,000	50,800	11,500	22.6	62,300
Washington												
5	7,600	2,200	28.9	9,800	2,700	1,000	37.0	3,700	2,900	700	24.1	3,600
6	41,000	13,800	33.7	54,800	15,800	6,700	42.4	22,500	22,700	4,500	19.8	27,200
7	5,100	800	15.7	5,900	1,700	500	29.4	2,200	2,600	100	3.8	2,700
8	8,400	4,200	50.0	12,600	3,100	2,000	64.5	5,100	3,300	600	18.2	3,900
9	22,900	8,800	38.4	31,700	8,600	4,100	47.7	12,700	14,200	6,400	45.1	20,600
10	18,500	7,600	41.1	26,100	7,000	3,400	48.6	10,400	13,000	4,700	36.2	17,700
11	14,000	2,400	17.1	16,400	4,900	1,300	26.5	6,200	3,000	200	6.7	3,200
Subtotal	117,500	39,800	33.9	157,300	43,800	19,000	43.4	62,800	61,700	17,200	27.9	78,900
Milwaukee												
12	67,100	600	0.9	67,700	28,500	1,800	6.3	30,300	51,400	-900	-1.8	50,500
13	596,700	7,600	1.3	604,300	231,700	17,100	7.4	248,800	380,000	-7,300	-1.9	372,700
14	168,100	11,400	6.8	179,500	74,200	9,300	12.5	83,500	135,400	-6,300	-4.7	129,100
15	48,500	4,400	9.1	52,900	20,700	3,100	15.0	23,800	22,900	-300	-1.3	22,600
16	28,800	23,100	80.2	51,900	11,400	10,000	87.7	21,400	21,200	7,700	36.3	28,900
17	31,000	19,800	63.9	50,800	11,200	8,500	75.9	19,700	13,700	11,400	83.2	25,100
Subtotal	940,200	66,900	7.1	1,007,100	377,700	49,800	13.2	427,500	624,600	4,300	0.7	628,900
Waukesha												
18	35,500	9,200	25.9	44,700	14,200	4,300	30.3	18,500	43,800	9,800	22.4	53,600
19	50,900	6,300	12.4	57,200	19,000	3,200	16.8	22,200	58,500	6,500	11.1	65,000
20	38,200	7,200	18.8	45,400	14,500	3,400	23.4	17,900	27,000	7,400	27.4	34,400
21	21,400	9,400	43.9	30,800	7,500	3,800	50.7	11,300	7,400	1,300	17.6	8,700
22	18,400	7,200	39.1	25,600	6,600	3,100	47.0	9,700	9,300	4,300	46.2	13,600
23	59,400	16,300	27.4	75,700	21,800	7,100	32.6	28,900	31,500	13,400	42.5	44,900
24	93,800	20,500	21.9	114,300	36,800	9,600	26.1	46,400	78,900	10,400	13.2	89,300
25	32,900	7,300	22.2	40,200	11,200	3,200	28.6	14,400	11,500	7,800	67.8	19,300
26	10,300	2,600	25.2	12,900	3,600	1,200	33.3	4,800	2,900	2,000	69.0	4,900
Subtotal	360,800	86,000	23.8	446,800	135,200	38,900	28.8	174,100	270,800	62,900	23.2	333,700
Racine												
27	136,500	15,500	11.4	152,000	51,900	8,700	16.8	60,600	72,200	4,700	6.5	76,900
28	36,000	6,600	18.3	42,600	12,700	3,100	24.4	15,800	12,300	4,900	39.8	17,200
29	16,300	2,700	16.6	19,000	6,200	1,400	22.6	7,600	9,900	2,600	26.3	12,500
Subtotal	188,800	24,800	13.1	213,600	70,800	13,200	18.6	84,000	94,400	12,200	12.9	106,600
Kenosha												
30	115,600	36,100	31.2	151,700	43,700	16,400	37.5	60,100	57,400	11,200	19.5	68,600
31	34,000	24,400	71.8	58,400	12,400	10,400	83.9	22,800	11,300	8,600	76.1	19,900
Subtotal	149,600	60,500	40.4	210,100	56,100	26,800	47.8	82,900	68,700	19,800	28.8	88,500
Walworth												
32	11,800	7,700	65.3	19,500	4,300	3,200	74.4	7,500	4,400	2,500	56.8	6,900
33	16,500	5,600	33.9	22,100	5,900	2,300	39.0	8,200	8,500	2,100	24.7	10,600
34	63,700	34,700	54.5	98,400	24,300	14,400	59.3	38,700	38,900	13,000	33.4	51,900
Subtotal	92,000	48,000	52.2	140,000	34,500	19,900	57.7	54,400	51,800	17,600	34.0	69,400
Region Total	1,931,200	344,800	17.9	2,276,000	749,000	176,700	23.6	925,700	1,222,800	145,500	11.9	1,368,300

Source: SEWRPC.

Map E-1

PLANNING ANALYSIS AREAS IN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

Appendix F

POPULATION IN THE REGION BY SEWER SERVICE AREA: EXISTING 2000, 2035 RECOMMENDED PLAN, AND 2035 HIGH-GROWTH SCENARIO

County and Sewer Service Area Name	Existing Population: 2000			Sewered Population: 2035 Recommended Plan			Sewered Population: 2035 High-Growth Scenario		
					Change			Change	
	Sewered	Unsewered[a]	Total	2035	Number	Percent	2035	Number	Percent
Kenosha County									
Bristol[b]	1,680	490	2,170	4,060	2,380	141.7	7,140	5,460	>300.0
Kenosha	111,680	2,780	114,460	155,760	44,080	39.5	179,300	67,620	60.5
Paddock Lake	3,010	50	3,060	5,040	2,030	67.4	7,870	4,860	161.5
Powers Lake (part)	-	1,310	1,310	1,660	1,660	-	2,520	2,520	-
Racine (part)	880	-	880	1,280	400	45.5	1,280	400	45.5
Salem	8,990	700	9,690	18,030	9,040	100.6	23,210	14,220	158.2
Silver Lake	2,290	690	2,980	4,620	2,330	101.7	5,200	2,910	127.1
Twin Lakes	5,270	270	5,540	9,460	4,190	79.5	11,880	6,610	125.4
Milwaukee County									
Franklin	29,740	1,060	30,800	50,660	20,920	70.3	55,210	25,470	85.6
Oak Creek	28,700	140	28,840	51,920	23,220	80.9	55,870	27,170	94.7
South Milwaukee	21,190	-	21,190	21,870	680	3.2	22,270	1,080	5.1
Balance of Milwaukee County	859,180	10	859,190	882,530	23,350	2.7	945,820	86,640	10.1
Ozaukee County									
Belgium	1,710	30	1,740	2,260	550	32.2	5,150	3,440	201.2
Cedarburg	11,430	1,980	13,410	15,680	4,250	37.2	24,050	12,620	110.4
Fredonia	1,990	20	2,010	2,900	910	45.7	6,200	4,210	211.6
Grafton	11,030	840	11,870	16,330	5,300	48.1	23,050	12,020	109.0
Lake Church	-	510	510	520	520	-	520	520	-
Mequon/Thiensville	23,710	170	23,880	28,830	5,120	21.6	33,310	9,600	40.5
Newburg (part)	110	10	120	240	130	118.2	630	520	>300.0
Port Washington	10,390	650	11,040	14,470	4,080	39.3	18,350	7,960	76.6
Saukville	4,080	520	4,600	5,700	1,620	39.7	8,650	4,570	112.0
Waubeka	-	470	470	510	510	-	510	510	-
Racine County									
Bohner Lake	1,910	140	2,050	2,140	230	12.0	2,540	630	33.0
Burlington[c]	12,480	350	12,830	15,300	2,820	22.6	20,400	7,920	63.5
Caddy Vista	720	80	800	1,250	530	73.6	1,950	1,230	170.8
Eagle Lake	1,560	50	1,610	1,930	370	23.7	3,550	1,990	127.6
Ives Grove	240	80	320	390	150	62.5	540	300	125.0
Racine (part)	131,940	1,320	133,260	148,080	16,140	12.2	193,550	61,610	46.7
Union Grove[d]	5,270	110	5,380	6,510	1,240	23.5	10,200	4,930	93.5
Western Racine County Sewerage District	10,280	540	10,820	14,660	4,380	42.6	20,780	10,500	102.1
Wind Lake	5,490	-	5,490	5,860	370	6.7	8,200	2,710	49.4
Walworth County									
Darien	1,630	50	1,680	2,800	1,170	71.8	3,930	2,300	141.1
Delavan/Delavan Lake	11,950	490	12,440	19,960	8,010	67.0	36,170	24,220	202.7
East Troy[e]	4,510	820	5,330	11,170	6,660	147.7	13,710	9,200	204.0
Elkhorn	7,960	340	8,300	14,920	6,960	87.4	20,290	12,330	154.9
Fontana/Walworth	4,340	270	4,610	6,990	2,650	61.1	11,930	7,590	174.9
Geneva National/Lake Como	2,080	290	2,370	3,920	1,840	88.5	5,180	3,100	149.0
Genoa City	1,990	80	2,070	4,300	2,310	116.1	7,160	5,170	259.8
Lake Geneva	8,320	850	9,170	14,440	6,120	73.6	17,180	8,860	106.5
Lyons[f]	1,360	170	1,530	2,740	1,380	101.5	3,460	2,100	154.4
Mukwonago (part)	-	60	60	1,570	1,570	-	2,860	2,860	-
Pell Lake	2,970	30	3,000	4,700	1,730	58.2	6,220	3,250	109.4
Powers Lake (part)	-	550	550	1,140	1,140	-	1,140	1,140	-
Sharon	1,600	-	1,600	2,580	980	61.3	3,230	1,630	101.9
Whitewater (part)	10,820	150	10,970	15,980	5,160	47.7	19,790	8,970	82.9
Williams Bay	2,560	490	3,050	4,710	2,150	84.0	6,130	3,570	139.5

Appendix F (continued)

County and Sewer Service Area Name	Existing Population: 2000			Sewered Population: 2035 Recommended Plan			Sewered Population: 2035 High-Growth Scenario		
					Change			Change	
	Sewered	Unsewered[a]	Total	2035	Number	Percent	2035	Number	Percent
Washington County									
Allenton	740	120	860	1,480	740	100.0	3,560	2,820	>300.0
Germantown	14,850	1,400	16,250	23,810	8,960	60.3	34,400	19,550	131.6
Hartford (part)	11,690	1,060	12,750	18,110	6,420	54.9	31,160	19,470	166.6
Jackson	5,010	480	5,490	9,890	4,880	97.4	13,520	8,510	169.9
Kewaskum	3,310	140	3,450	5,440	2,130	64.4	9,980	6,670	201.5
Newburg (part)	1,050	290	1,340	1,660	610	58.1	2,920	1,870	178.1
Slinger	4,470	610	5,080	8,040	3,570	79.9	11,710	7,240	162.0
West Bend	30,360	1,360	31,720	44,590	14,230	46.9	58,310	27,950	92.1
Waukesha County									
Big Bend	-	1,860	1,860	1,930	1,930	-	3,000	3,000	-
Brookfield East[g]	18,430	-	18,430	20,380	1,950	10.6	21,880	3,450	18.7
Brookfield West[h]	27,740	360	28,100	32,580	4,840	17.4	33,950	6,210	22.4
Butler	1,840	-	1,840	1,880	40	2.2	1,890	50	2.7
Delafield[i]	5,940	4,680	10,620	12,800	6,860	115.5	14,660	8,720	146.8
Dousman[j]	1,960	1,690	3,650	4,960	3,000	153.1	9,150	7,190	>300.0
Eagle Spring Lake/ Mukwonago Park/ Rainbow Springs	-	460	460	450	450	-	450	450	-
Elm Grove	5,570	-	5,570	5,770	200	3.6	6,840	1,270	22.8
Golden Lake	-	180	180	190	190	-	190	190	-
Hartland	8,770	260	9,030	11,310	2,540	29.0	13,270	4,500	51.3
Lake Country[k]	1,280	11,110	12,390	14,080	12,800	>300.0	16,790	15,510	>300.0
Lannon	1,210	80	1,290	1,900	690	57.0	3,510	2,300	190.1
Menomonee Falls East[l]	28,740	840	29,580	34,410	5,670	19.7	39,970	11,230	39.1
Menomonee Falls West[m]	480	1,040	1,520	4,910	4,430	>300.0	11,820	11,340	>300.0
Mukwonago (part)	6,260	1,090	7,350	11,260	5,000	79.9	14,470	8,210	131.2
Muskego[n]	19,090	350	19,440	28,610	9,520	49.9	38,310	19,220	100.7
Muskego South[o]	1,090	40	1,130	1,240	150	13.8	2,000	910	83.5
New Berlin[p]	31,970	2,500	34,470	41,190	9,220	28.8	42,940	10,970	34.3
Oconomowoc[q]	13,750	1,810	15,560	21,380	7,630	55.5	35,840	22,090	160.7
Pewaukee[r]	20,560	1,900	22,460	32,140	11,580	56.3	38,720	18,160	88.3
Sussex/Lisbon	10,270	1,660	11,930	17,770	7,500	73.0	24,860	14,590	142.1
Wales	-	1,600	1,600	1,950	1,950	-	2,680	2,680	-
Waukesha	67,300	8,410	75,710	88,440	21,140	31.4	107,830	40,530	60.2

[a] Existing 2000 unsewered population within sewer service areas envisioned under the recommended year 2035 regional land use plan—proposed to be sewered under plan conditions.
[b] Includes George Lake Sewer Service Area.
[c] Includes Browns Lake Sewer Service Area.
[d] Includes Southern Wisconsin Center area.
[e] Includes Alpine Valley and Potter Lake Sewer Service Areas.
[f] Includes Country Estates Sanitary District Sewer Service Area.
[g] Includes area of the City of Brookfield tributary to the Milwaukee Metropolitan Sewerage District.
[h] Includes area of the City of Brookfield tributary to the Fox River Water Pollution Control Commission sewage treatment plant, along with small areas of the Village of Menomonee Falls and the City of New Berlin tributary to that treatment plant.
[i] Includes Village of Nashotah and Nemahbin Lakes Sewer Service Area.
[j] Includes Lower Genesee Lake, Pretty Lake, and School Section Lake Sewer Service Areas.
[k] Includes the following sewer service areas located generally east of the City of Oconomowoc: Ashippun Lake, Beaver Lake, Lake Keesus, North Lake, Oconomowoc Lake, Okauchee Lake, Pine Lake, and the Village of Merton.
[l] Includes area of the Village of Menomonee Falls tributary to the Milwaukee Metropolitan Sewerage District.
[m] Includes area of the Village of Menomonee Falls tributary to the Sussex sewage treatment plant.
[n] Includes area of the City of Muskego tributary to the Milwaukee Metropolitan Sewerage District.
[o] Includes area of the City of Muskego tributary to the Town of Norway Sanitary District No. 1 sewage treatment plant.
[p] Includes area of the City of New Berlin tributary to the Milwaukee Metropolitan Sewerage District.
[q] Includes the Village of Lac la Belle Sewer Service Area.
[r] Includes the City and Village of Pewaukee and Pewaukee Lake Sewer Service Areas.