TECHNICAL REPORT NUMBER 29

INDUSTRIAL LAND USE IN SOUTHEASTERN WISCONSIN

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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INDUSTRIAL LAND USE IN SOUTHEASTERN WISCONSIN

Prepared by the

Southeastern Wisconsin Regional Planning Commission
in Cooperation with the Wisconsin Electric Power Company

P. O. Box 769
Old Courthouse
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November 1984

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Outside Region	$10.00

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STATEMENT OF THE EXECUTIVE DIRECTOR

A strong industrial base has long been a key component of the economy of the Southeastern Wisconsin Region. The maintenance of this base has become a matter of increasing concern to both public and private interests within the Region. Perceiving a need for special efforts to maintain and enhance the regional industrial base, the Wisconsin Electric Power Company in 1983 asked the Southeastern Wisconsin Regional Planning Commission to undertake a special study of industrial land use in the Southeastern Wisconsin Region.

The findings of that study as documented in this technical report provide current information on historic and probable future economic activity levels; historic trends in industrial land absorption; the amount of land currently zoned for industrial use; and probable future industrial land needs. The study identifies additional sites within the Southeastern Wisconsin Region which may be suitable for industrial development. The study not only fills an important gap in the data base required for the conduct of industrial development programs at the county and community level in the seven-county Southeastern Wisconsin Region, but also provides data useful in other local and areawide planning efforts.

The study was conducted under the guidance of a technical advisory committee consisting of individuals with knowledge and experience in industrial development-related matters, including representatives of the county and local units of government, the Wisconsin Department of Development, public utilities, railroad companies, and industrial development firms.

The study indicates that one of the strengths of the Southeastern Wisconsin Region is the broad choice in industrial facilities and sites which this Region offers a potential industrial client seeking to locate a new, or to expand an existing, operation. The range of potential industrial facilities and sites includes vacant but sound industrial facilities which are ready for immediate use and which possess not only the necessary infrastructure improvements such as public sanitary sewer, water supply, mass transit service, and power and communication facilities, but other site amenities such as associated office space and materials-handling equipment such as heavy lift cranes and conveyors. Vacant, properly zoned sites are also readily available within the Region, and able to accommodate a full spectrum of industrial types, from small developing industries to large industrial complexes. Some of these sites are located within industrial parks which not only possess all the necessary infrastructure improvements, but have industrial park deed restrictions and special covenants to protect the substantial investment made by industrial entrepreneurs in site acquisition, development, and expansion within the industrial park. The study also identifies other large vacant industrially zoned areas, as well as nonindustrially zoned areas which are considered to have industrial development potential by local units of government.

While future economic conditions within the Southeastern Wisconsin Region will be determined in part by external factors over which public and private decision-makers within the Region have little or no influence, such conditions will also be influenced, in part, by the effectiveness of state, regional, and local economic development programs undertaken to maintain and enhance the economic vitality of subareas of the State. The effectiveness of such economic development programs should be enhanced by the fact that the area has an adequate supply of sites which are suitable for and can readily be made available to industrial development.

While the Region offers a broad choice of facilities and sites for potential industrial use able to accommodate a long-term increase of 65,000 jobs in industrial employment, substantial periods of time may be required to develop large industrial parks which meet one important component of the potential demand. In addition, some of the identified industrial sites which are immediately available may not possess all of the amenities which would satisfy the specific site requirements of certain industries which are seeking to locate or relocate in the Southeastern Wisconsin Region.

Public or private industrial development programs within the Region should, therefore, among other efforts, seek to provide industrial sites located in well-designed industrial parks, as well as some larger individual industrial sites in suitable locations which are ready for immediate industrial use. The vacant suitable industrial sites identified in this study constitute a valuable economic resource, a resource which should be protected to assure the continued availability of suitable industrial land which can be utilized to retain those industries seeking to expand within the Region, as well as to attract new industries to the Region.

Respectfully submitted,

Kurt W. Bauer
Executive Director

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Chapter I

INTRODUCTION

BACKGROUND

A strong industrial base has been one of the key components of the economy of the Southeastern Wisconsin Region. There are, however, indications that this industrial base has been weakened because of the severity and duration of the recent recession. Consequently, the maintenance of that base has become a matter of increasing concern to both public and private interests in the Region.

Perceiving a need for special efforts to maintain and enhance the regional industrial base, the Wisconsin Electric Power Company (WEPCO) late in 1982 initiated a program to attract and encourage industrial development in the Region. In undertaking the program, the power company found that there was a lack of information regarding industrial land use in the Region, information important to the development program. Specifically, the WEPCO found that a comprehensive, areawide inventory of existing industrial land and of additional lands suitable for industrial development did not exist. Recognizing that such information would be essential to an effective industrial development program, and recognizing that such information would be useful in areawide and local public planning efforts, the WEPCO requested the assistance of the Regional Planning Commission in the conduct of a study of industrial land use in southeastern Wisconsin. The WEPCO and Commission decisions to cooperate in the study stemmed from a belief that the study would be of potentially widespread benefit, not only by providing part of the base data required for an industrial development program in the seven-county Southeastern Wisconsin Region, but by providing data useful in other efforts to promote the orderly growth of the Region.

The industrial land use study was conducted jointly by the staffs of the Wisconsin Electric Power Company and the Regional Planning Commission beginning in March 1983. The cost of the study was shared equally by the WEPCO and the Commission and was conducted under the guidance of a technical advisory committee consisting of individuals with strong interest, knowledge, and experience in industrial development-related matters—including representatives of local units of government, the Wisconsin Department of Development, public utilities, railroad companies, and industrial development companies. The members of this technical advisory committee are listed on the inside front cover of this report.

MAJOR ELEMENTS OF THE STUDY

The primary purpose of the industrial land use study was to develop current information on a uniform, areawide basis on existing industrial land in southeastern Wisconsin and on additional sites within the Region which may be suitable for, and could be made available to, industrial development. In addition, the study was intended to document the historic trend in industrial land absorption in the Region, to analyze historic and probable future economic activity levels within the Region, and to assess probable future industrial land needs. To these ends, the following major work elements were conducted under the industrial land use study:

1. Inventory of Economic Activity
   The study included an analysis of economic activity in the Region, including an analysis of employment levels, the spatial distribution of employment in the Region, and the composition of employment by major employment categories. The level of manufacturing employment which may be expected under alternative future growth scenarios for the Region and attendant industrial land development needs were also examined.

2. Inventory of Historic and Current Industrial Land Use
   An inventory was conducted of existing industrial land use within the seven-county Region, resulting in a description of the amount and spatial distribution of industrial land, and an analysis of the size and pertinent characteristics of existing industrial sites. The amount and spatial distribution of industrial land within planned industrial park settings versus industrial land outside such settings were identified. Information regarding existing industrial land use was collated from the Commission's 1980 land

use inventory. In addition, changes in industrial land use between the Commission's initial 1963 land use inventory and the 1980 land use inventory were identified, thereby facilitating an analysis of historic rates of industrial land use development in the Region.

3. Inventory of Zoned Industrial Land
   The study included an inventory of all land within the Region that has been placed in industrial zoning districts under local zoning ordinances, and identified the current use of such land.

4. Industrial Site Evaluation
   The study included an evaluation of the suitability for industrial development of all open sites of 40 acres or more in size which have been reserved for industrial use through local zoning. The study also identified and analyzed other sites of at least 40 acres in size which are currently in open use and which were considered by local units and agencies of government to have industrial development potential. While the industrial site evaluation was generally restricted to sites of at least 40 acres in area, certain smaller sites which are particularly well suited for industrial use were also considered. Factors considered in evaluating site suitability for industrial development included, among others, soil suitability, topography, susceptibility to special hazards such as flooding, access to the regional highway and railway systems, the availability of public sanitary sewer service, and relationship to adjacent land uses. In addition, the study identified existing large, vacant industrial installations and evaluated their general suitability for continued industrial use.

RELATIONSHIP TO THE REGIONAL LAND USE PLAN

For more than two decades the Regional Planning Commission has worked to promote sound economic growth within southeastern Wisconsin at a rate consistent with regional land, labor, and capital resources. The regional land use plan prepared and adopted by the Commission as a guide to the physical and economic development of the Region through the year 2000 is predicated on a strong regional industrial base. The regional land use plan proposes an increase of more than 10 square miles of industrial land in the Region between 1970 and the year 2000. This increase would meet the land requirements of the manufacturing and wholesaling employment anticipated under a moderate regional growth scenario, and would be distributed so as to protect and enhance the efficient operation of the regional industrial sector. Under the plan, about six square miles, or 60 percent, of the proposed increase in industrial lands would occur in one of 22 major industrial centers identified in the plan. About four square miles, or 40 percent of the proposed increase, would occur within community level industrial areas throughout the Region. It should be noted that the regional land use plan is an areawide plan which provides a general guide to urban growth and development within the Southeastern Wisconsin Region. As such, the plan identifies general areas, rather than specific sites, within which community level industrial centers should be developed. The generalized industrial development recommendations of the regional land use plan, like other regional plan elements, require refinement and detailing through local level planning.

The industrial land study complements the regional land use plan in two important ways. The industrial land use study identifies specific sites which are particularly well suited for industrial use and which could, depending upon local community development objectives, be developed for use as community level industrial centers in conformance with the generalized industrial development framework set forth in the regional land use plan. The industrial land study also identifies certain large sites which are particularly well suited for industrial use and which could be developed for use as major industrial centers should the need for one or more additional such centers in the Region become apparent.

SCHEME OF PRESENTATION

The findings of the study of industrial lands are documented in this report. Following this introductory chapter, Chapter II, "Description of the Region," presents a description of the Southeastern Wisconsin Region, focusing on those attributes which most significantly affect its industrial growth potential. Chapter III, "Economic Activity Trends," describes economic activity trends in the Region and includes an analysis of historic employment levels, focusing on manufacturing employment. Chapter III also provides an assessment of the manner in which alternative future

growth scenarios for the Region would affect future industrial land development needs. Chapter IV, "Industrial Land Development Trends," describes the amount, characteristics, and distribution of industrial land in the Region in 1980 and changes in industrial land in the Region between 1963 and 1980. Chapter V, "Zoned Industrial Land," describes the amount and spatial distribution of industrially zoned land and indicates the extent of development within such areas. Chapter VI, "Industrial Site Evaluation," presents an evaluation of the suitability for industrial use of vacant, industrially zoned parcels of land; other parcels of land currently in open use which were considered by local units and agencies of government to have industrial development potential; and large existing vacant industrial installations. Chapter VII, "Summary and Conclusions," summarizes the major findings and conclusions of the industrial land use study.

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Chapter II

DESCRIPTION OF THE REGION

INTRODUCTION

As noted in Chapter I of this report, a strong industrial base has historically been a key component of the economy of southeastern Wisconsin. This chapter provides a description of the Southeastern Wisconsin Region, focusing on those features of the Region which fostered the development of that industrial base and which support its continued viability and expansion. More specifically, following a general overview of the Region, including a summary of the economic history of the Region, this chapter describes the regional transportation system, the regional public utility base, and the major educational, cultural, and recreational amenities of the Region. Other aspects of the Region—including the regional economic base, industrial land use in the Region, and industrially zoned lands in the Region—are described in Chapters III, IV, and V, respectively, of this report.

OVERVIEW OF THE REGION

Geographically, the Southeastern Wisconsin Region —which consists of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in Wisconsin—is located in a relatively good position for continued growth and development. It is bounded on the east by Lake Michigan, which provides an ample supply of fresh water for both domestic and industrial use, as well as being an integral part of a major international transportation network. It is bounded on the south by the rapidly expanding northeastern Illinois metropolitan region, and on the west and on the north by the fertile agricultural land and desirable recreational areas of the rest of the State of Wisconsin. As shown on Map 1, many of the most important industrial areas and heaviest population concentrations in the Midwest are within 350 miles of the Region.

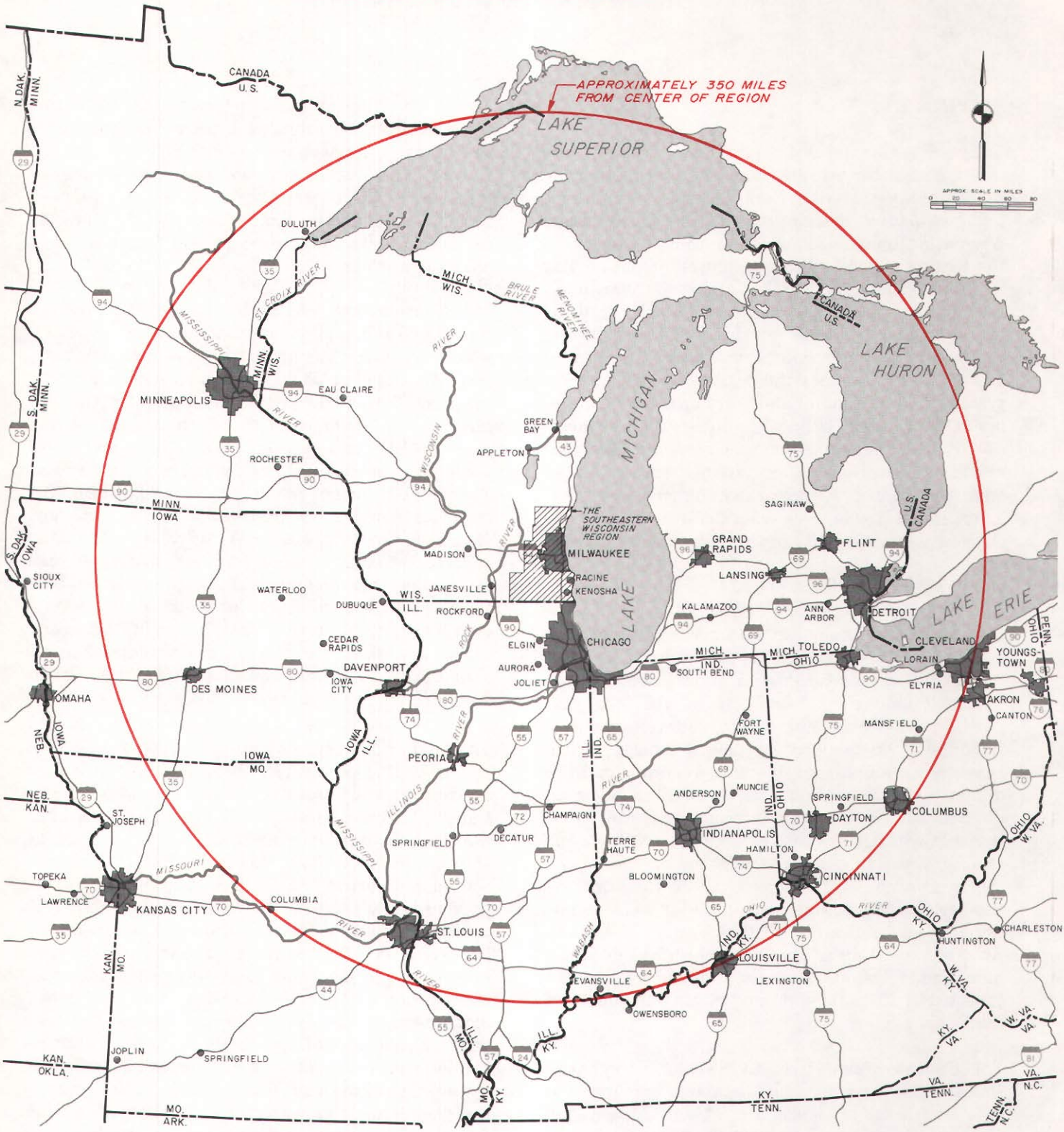
The Southeastern Wisconsin Region encompasses about 2,689 square miles, or about 5 percent of the total area of Wisconsin. About 1.8 million persons, however, or about 38 percent of the total population of the State, reside in the Region. The Region contains about 37 percent of the tangible wealth in Wisconsin, as measured by equalized assessed property value, and about 38 percent of the state labor force is employed within the Region. The Region contains 154 general-purpose local units of government—including 7 counties, 28 cities, 54 villages, and 65 towns—in addition to numerous school districts and other special-purpose districts.

The Southeastern Wisconsin Region encompasses three large and expanding urbanized areas, together with a number of smaller, free-standing communities. The Region also encompasses substantial areas of prime farmlands and a rich base of attractive recreational resources in the form of Lake Michigan, 100 large inland lakes, streams and waterways, wetlands, woodlands, and wildlife habitat areas. The largest urban centers include the Kenosha urbanized area in Kenosha County, the Racine urbanized area in Racine County, and the Milwaukee urbanized area which extends beyond Milwaukee County into Ozaukee, Washington, and Waukesha Counties. Concentrations of urban land uses within the Southeastern Wisconsin Region are shown on Map 2, together with concentrations of agricultural lands and environmentally significant areas of high value for recreational uses.

The modern history of the Region dates from 1795 when the first permanent European settlement was established in Milwaukee by Jacques Vieau, a fur trader. The movement of European settlers into the Region was well underway by the 1830's. During the mid-1800's, the City of Milwaukee, the economic heart of the Region, sought commercial prosperity by trade and depended on its rich agricultural hinterland for the products which were to be exported. The industrial growth and development of the Region were fostered by the continued in-migration of skilled European artisans, mechanics, metal workers, and brewers; by good waterway and railway linkages to the rest of the nation; and by the availability of raw materials supplied by nearby farms and forests. The availability of raw materials was especially important to the flour milling, meat packing, tanning, and brewing industries as well as to the iron and steel and related metal-working industries which relied upon

Map 1

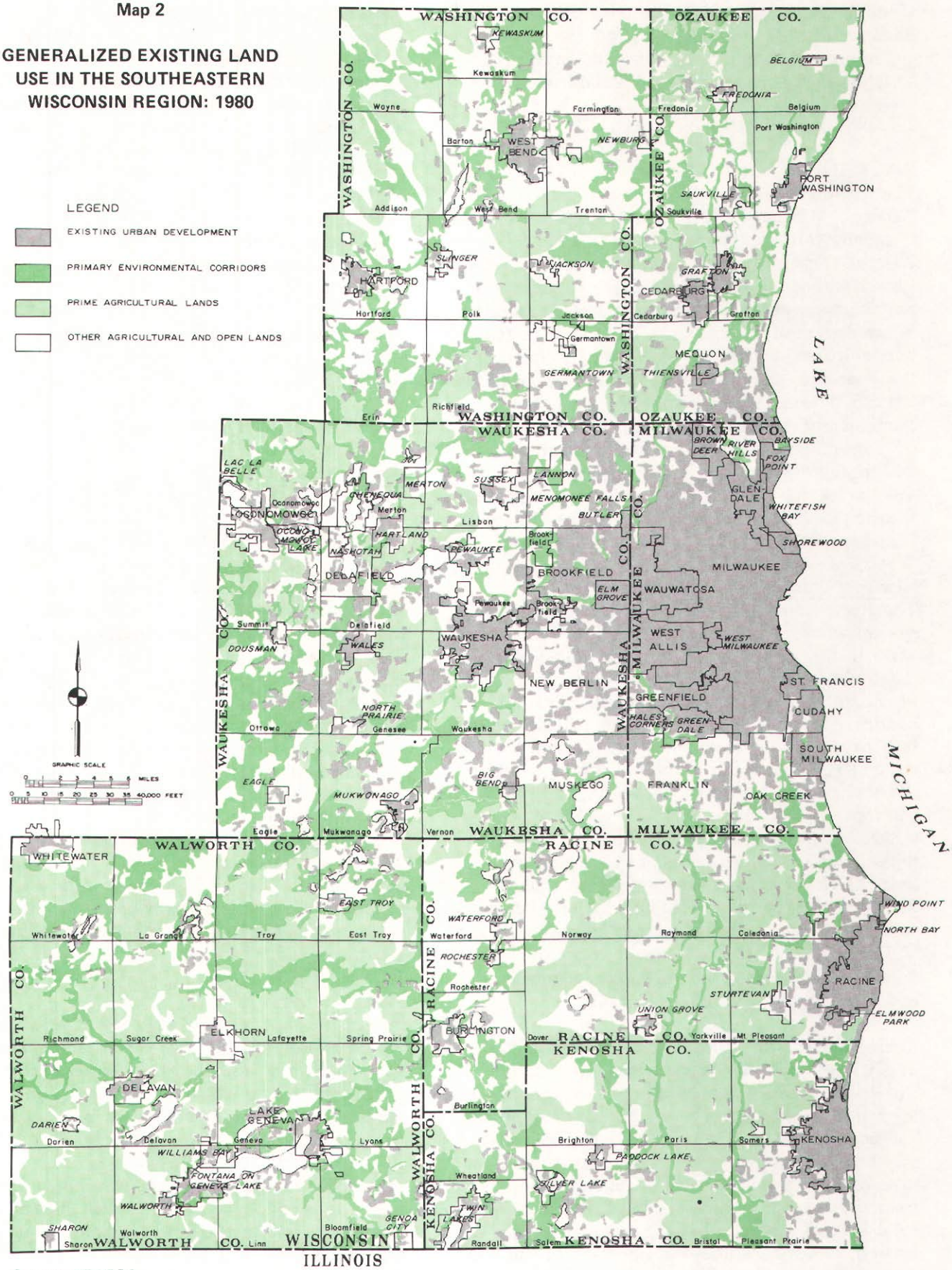
THE REGIONAL SETTING IN THE MIDWEST



Source: SEWRPC.

Map 2

GENERALIZED EXISTING LAND USE IN THE SOUTHEASTERN WISCONSIN REGION: 1980



Source: SEWRPC.

a supply of iron mined in the Lake Superior area. Such traditional manufacturing operations remain an important component of what has become a highly diversified regional industrial base.

TRANSPORTATION FACILITIES

Freight Railway Facilities

The Region is served by three major railroads: the Chicago, Milwaukee, St. Paul & Pacific Railroad Company (Milwaukee Road); the Chicago & North Western Transportation Company; and the Soo Line Railroad Company. In addition, three shortline railroads serve the Region, connecting a number of smaller rural communities to the major trunkline railroads. These three shortline railroads are the Wisconsin & Southern Railroad Company, the Central Wisconsin Railroad Company, and the Municipality of East Troy Wisconsin Railroad. As of December 31, 1983, railway freight service within the Region was provided over a total of 497 miles of railway main line by the above-mentioned railroad companies and the Village of East Troy (see Map 3).

Highway Transportation Facilities

The Region is also served by an excellent highway system whose development in modern form began early in the 1920's. The Region is linked to other areas of the State and nation via major links of the interstate highway system. To the south, IH 94 connects Chicago and Milwaukee, historically the hub of economic activity in the Region. To the west, IH 94 connects Milwaukee with Madison, other portions of western Wisconsin, and states to the west. To the north, IH 43 links Milwaukee with Green Bay and northeastern Wisconsin. Other major highway routes which connect the Region to other areas of Wisconsin and adjoining states include the STH 15 freeway, which connects Milwaukee with western Wisconsin and northern Illinois, and the USH 41 and USH 45 freeway and expressway, which provide links from Milwaukee to areas north and south of the Region (see Map 4).

There are 10,730 miles of streets and highways of all kinds open to traffic within the Region. Of this total, 3,230 miles, or 30 percent, function as arterial streets and highways. The freeway system has become the backbone of the regional arterial street and highway system in terms of the proportion of total vehicle miles of travel carried. The freeway system comprises only 7 percent of the total arterial street and system mileage within the Region, but carries about 32 percent of the total arterial vehicle miles of travel.

Air Transportation Facilities

There are currently a total of 81 publicly and privately owned airports within the Southeastern Wisconsin Region, of which 23 are available for use by the general public. Fourteen of these airports, identified on Map 3, comprise the regional airport system plan adopted by the Regional Planning Commission in 1976. General Mitchell Field in Milwaukee County is the airport providing commercial airline service to the general public on a regularly scheduled basis. As the Region's single airport providing scheduled airline service, Mitchell Field constitutes a major regional transportation terminal handling relatively large volumes of passengers, mail, and cargo in large, high-performance aircraft. This airport is located close to the central business district of Milwaukee and, being served by its own freeway spur from IH 94, is readily accessible from all parts of the Region.

Water Transportation Facilities

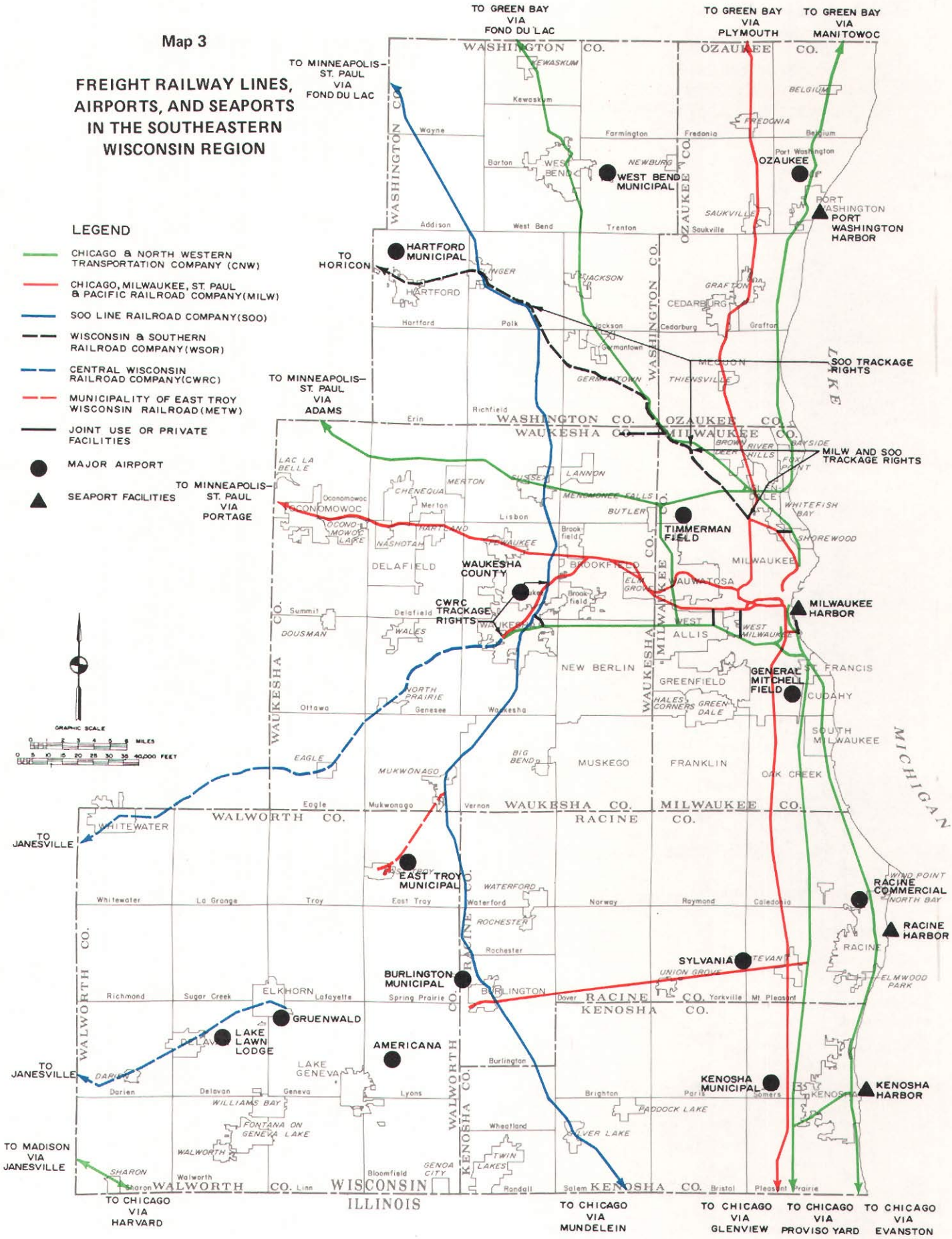
Bounded on the east by Lake Michigan, the Southeastern Wisconsin Region has ready access to a major international transportation system—the Great Lakes-St. Lawrence Seaway—which extends from the Great Lakes to the Gulf of St. Lawrence on the Atlantic Ocean. Major harbor facilities, dockage, and heavy cargo-handling equipment are concentrated in the Port of Milwaukee. Facilities of a lesser scale are available in the Port of Kenosha. Port Washington in Ozaukee County is principally a port for fishing and pleasure craft, but coal is also delivered there for utility use. The Port of Racine in Racine County is also used primarily by pleasure craft, although some commercial cargo is delivered there. Scheduled automobile-passenger ferry service across Lake Michigan between Milwaukee and Ludington, Michigan, was re-instituted in July 1983. The Michigan-Wisconsin Transportation Company presently provides round-trip service between the two cities five days per week, but plans to offer the service during the summer season only.

Public Transit

Public transit service availability is an important consideration in industrial development planning, particularly for large industrial employers, because of the uncertainty surrounding the future cost and availability of petroleum for personal automobile transportation. Public transit service within the Region consists primarily of motor bus service provided over streets and highways, including freeways. Intraregional transit service includes local bus service within the largest urban centers of the Region, express bus lines operating over selected routes in the Region, and Freeway Flyer service

Map 3

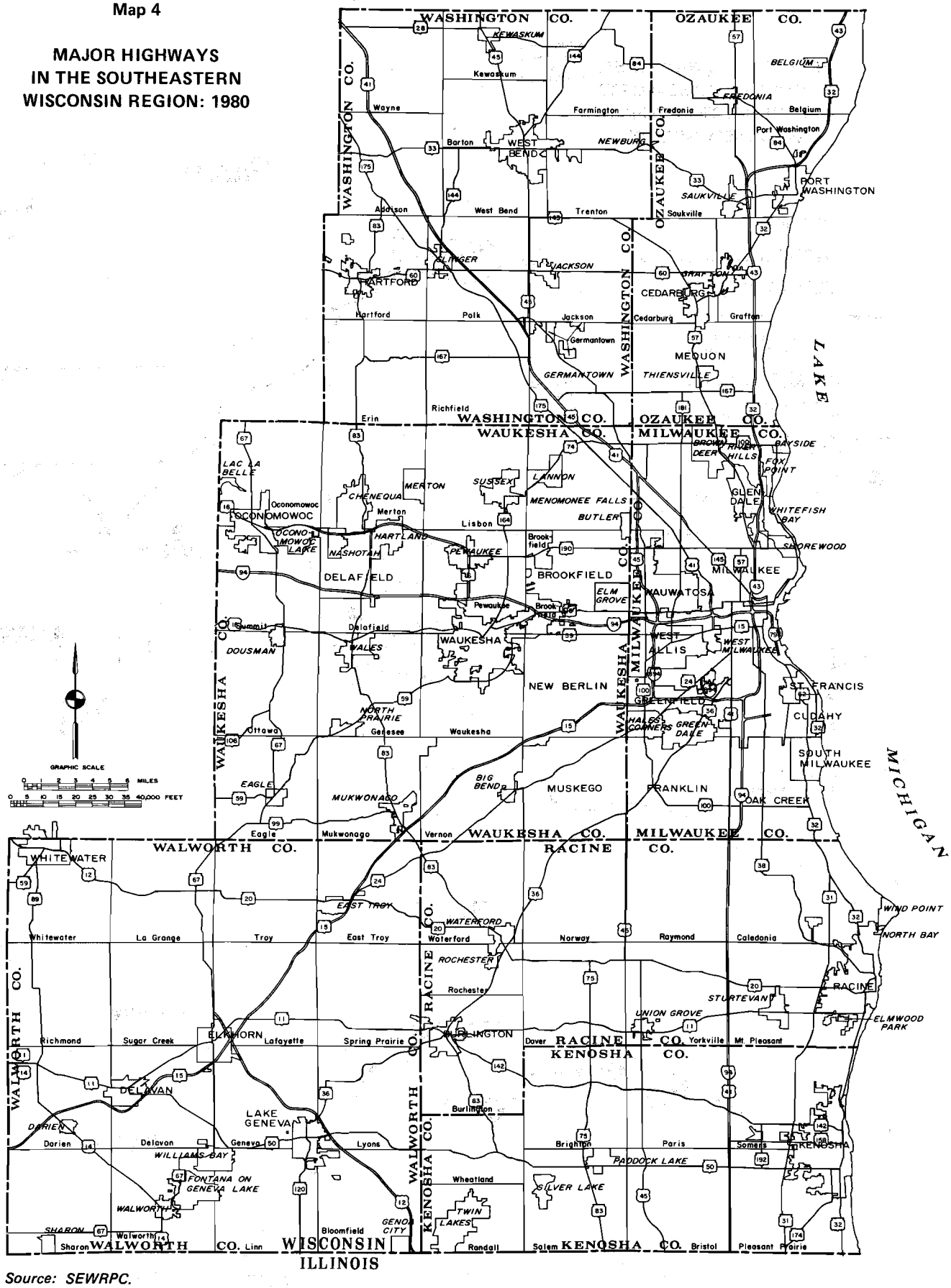
FREIGHT RAILWAY LINES, AIRPORTS, AND SEAPORTS IN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

Map 4

MAJOR HIGHWAYS IN THE SOUTHEASTERN WISCONSIN REGION: 1980



Source: SEWRPC.

within the Milwaukee urbanized area. As shown on Map 5, local bus service is provided in the Kenosha and Racine urbanized areas and in the Milwaukee urbanized area, which includes the City of Waukesha. About 79 percent of the population of the Milwaukee urbanized area, 96 percent of the population of the Kenosha urbanized area, and 88 percent of the population of the Racine urbanized area reside within the local bus service areas. Also shown on Map 5 are the express bus lines operated by Wisconsin Coach Lines, Inc., and by the Milwaukee County Transit System, and the Freeway Flyer bus lines operated by the Milwaukee County Transit System. The Freeway Flyer system, a modified rapid transit system, is the highest level of transit service provided in the Region. This service consists of freeway bus routes connecting 20 outlying park-ride lots, by nonstop service, to the Milwaukee central business district. A carpooling promotion program and a related system of 15 park-and-pool lots complements the motor bus transit service system, and further facilitates the movement of commuters to and from Milwaukee.

Interregional bus service is provided within several major travel corridors of the Region. The most frequent interregional bus service is provided in the Milwaukee-Chicago corridor, and relatively frequent service is also provided in the Milwaukee-Madison and Milwaukee-Green Bay corridors.

Interregional railway passenger train service is provided by one private railroad and by the quasi-public National Railroad Passenger Corporation (Amtrak). Amtrak provides regular service between the Cities of Milwaukee and Chicago over the trackage of the Milwaukee Road. The Chicago & North Western Transportation Company provides commuter-oriented service between the Cities of Kenosha and Chicago.

PUBLIC UTILITIES

Public utility systems are one of the important elements affecting urban growth and development. Industrial development and other forms of urban development are highly dependent upon these utility systems, which provide the individual land uses with power, light, communications, heat, water, and sewerage. The expanding public utility base—including sanitary sewer, water supply, gas, and electric utilities—provides the necessary infrastructure for the continued industrial growth and development of the Southeastern Wisconsin Region.

Sanitary Sewerage Utilities

There are a total of 103 centralized public sanitary sewerage systems operated by utilities in the Region. A total of 58 sewage treatment facilities are operated by utilities owning, operating, and maintaining the 103 public sanitary sewerage systems, with many of the utilities contracting with adjoining utilities for sewage treatment purposes (see Map 6). In addition, there are 47 privately owned treatment plants in operation within the Region. These generally serve isolated enclaves associated with relatively large industrial, commercial, and recreational enterprises.

Many communities in the Region are in the second stage of sewage treatment facility development. A total of 39 communities have undertaken, or are in the process of undertaking, sewage treatment facility rehabilitation or expansion programs. These efforts have typically resulted both in expanded sewage treatment capacity and in improved treatment levels, and, therefore, in improved water quality. Forty-six sewage treatment facilities in the Region presently have excess treatment capacity. Many of those plants without excess capacity are scheduled for abandonment. Such systems will then be connected to larger public sanitary sewerage systems having capacity to accommodate them.

Water Utilities

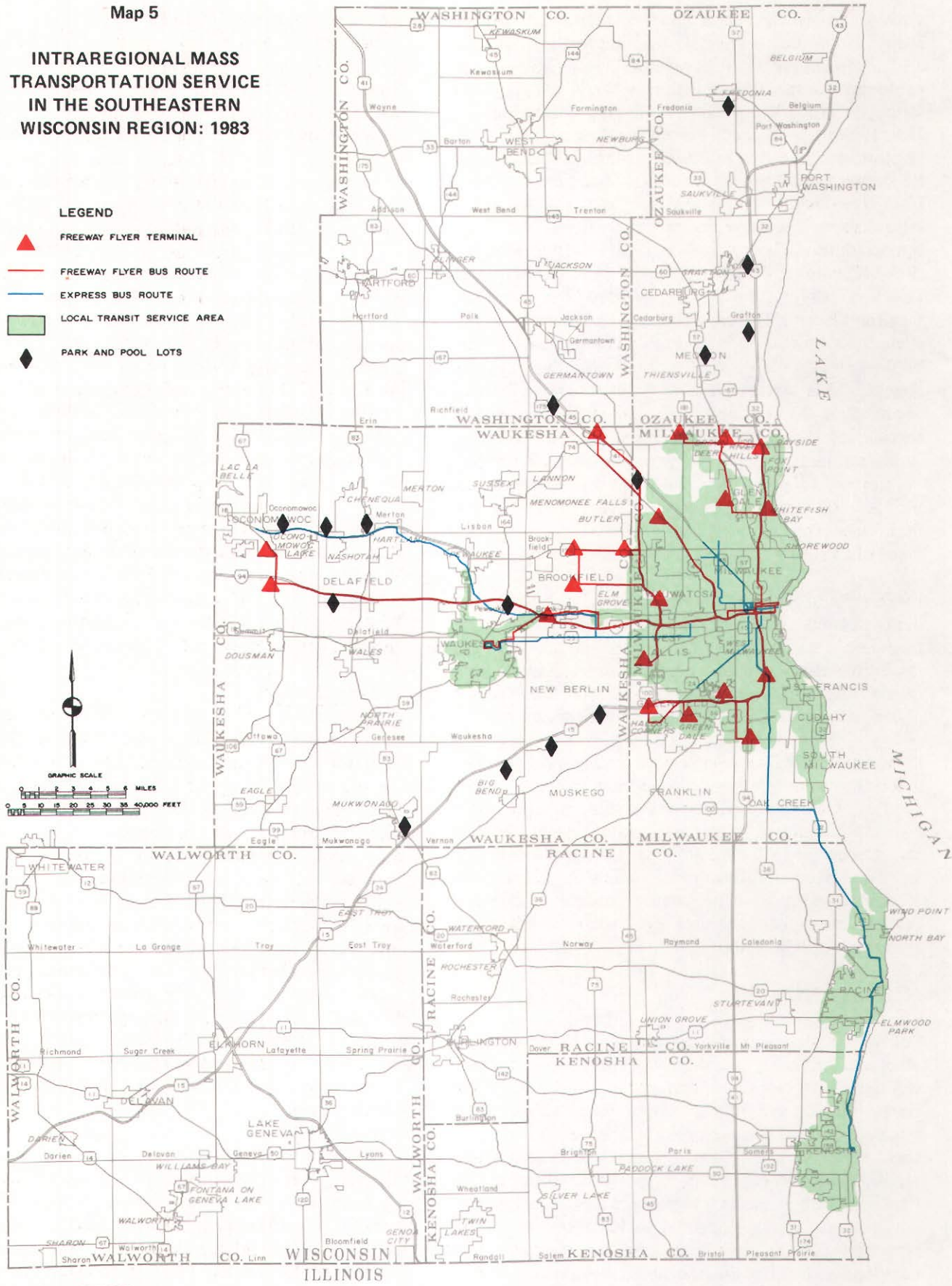
Most of the water supply service within the Region is provided by public water utilities. There are 73 publicly owned water utilities in southeastern Wisconsin (see Map 7). All water supplied by publicly owned water utilities is drawn either from Lake Michigan, which represents an abundant source of high-quality fresh water, or from two groundwater aquifers underlying the Region. One of these aquifers, the deep sandstone aquifer, is an excellent source of cool, high-quality water for municipal and industrial use, and is used as a major source of supply by the northeastern Illinois region, as well as by the Southeastern Wisconsin Region. In addition to the publicly owned water utilities, there are 79 known private or cooperatively owned water systems in operation in the Region, many of which serve isolated residential enclaves.

Gas Utilities

Three gas utilities operate within the Region and provide all public gas service therein. The Wisconsin Gas Company is authorized to operate in parts of Milwaukee, Ozaukee, Washington, and Waukesha Counties. The Wisconsin Natural Gas

Map 5

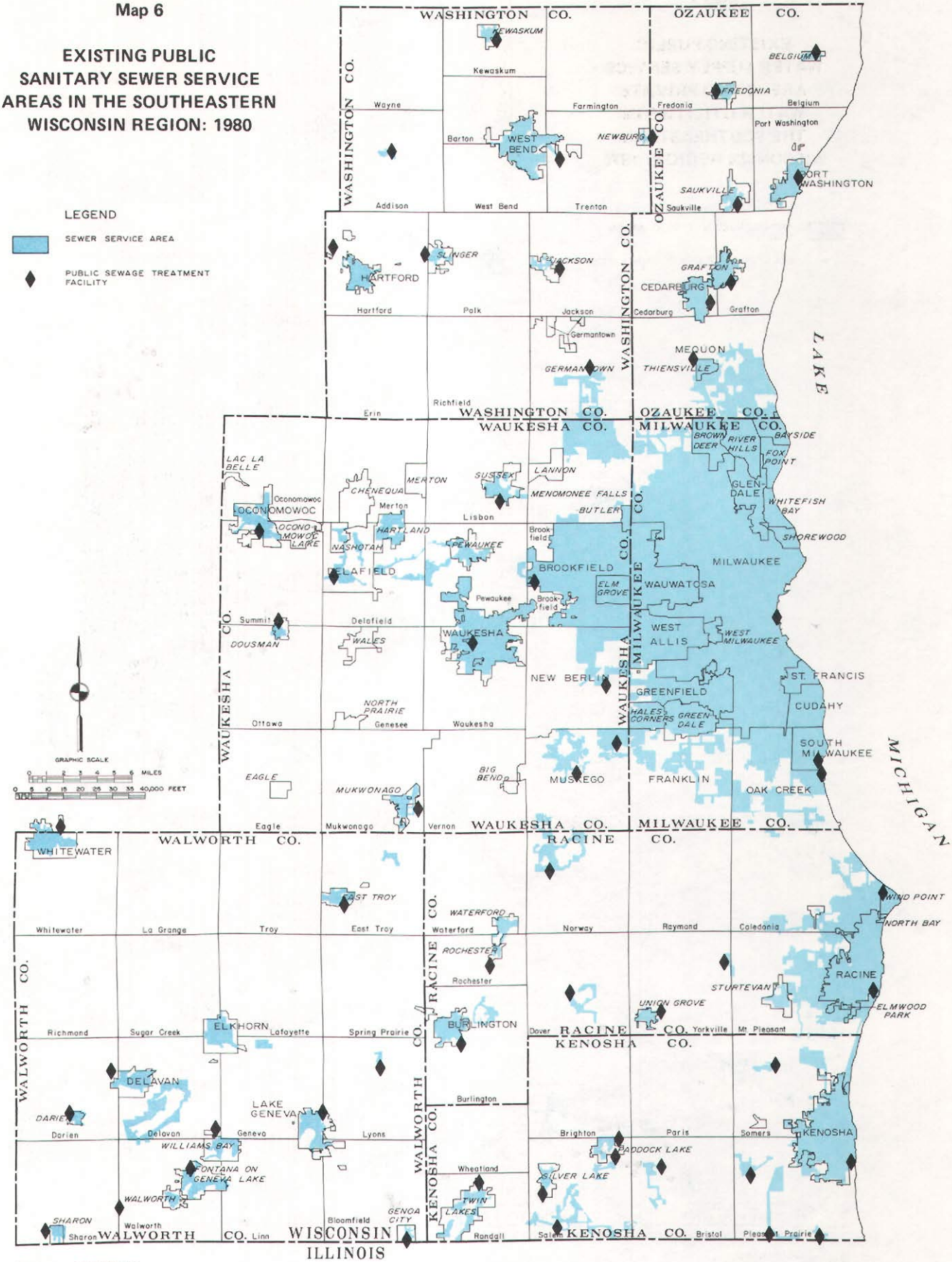
INTRAREGIONAL MASS TRANSPORTATION SERVICE IN THE SOUTHEASTERN WISCONSIN REGION: 1983



Source: SEWRPC.

Map 6

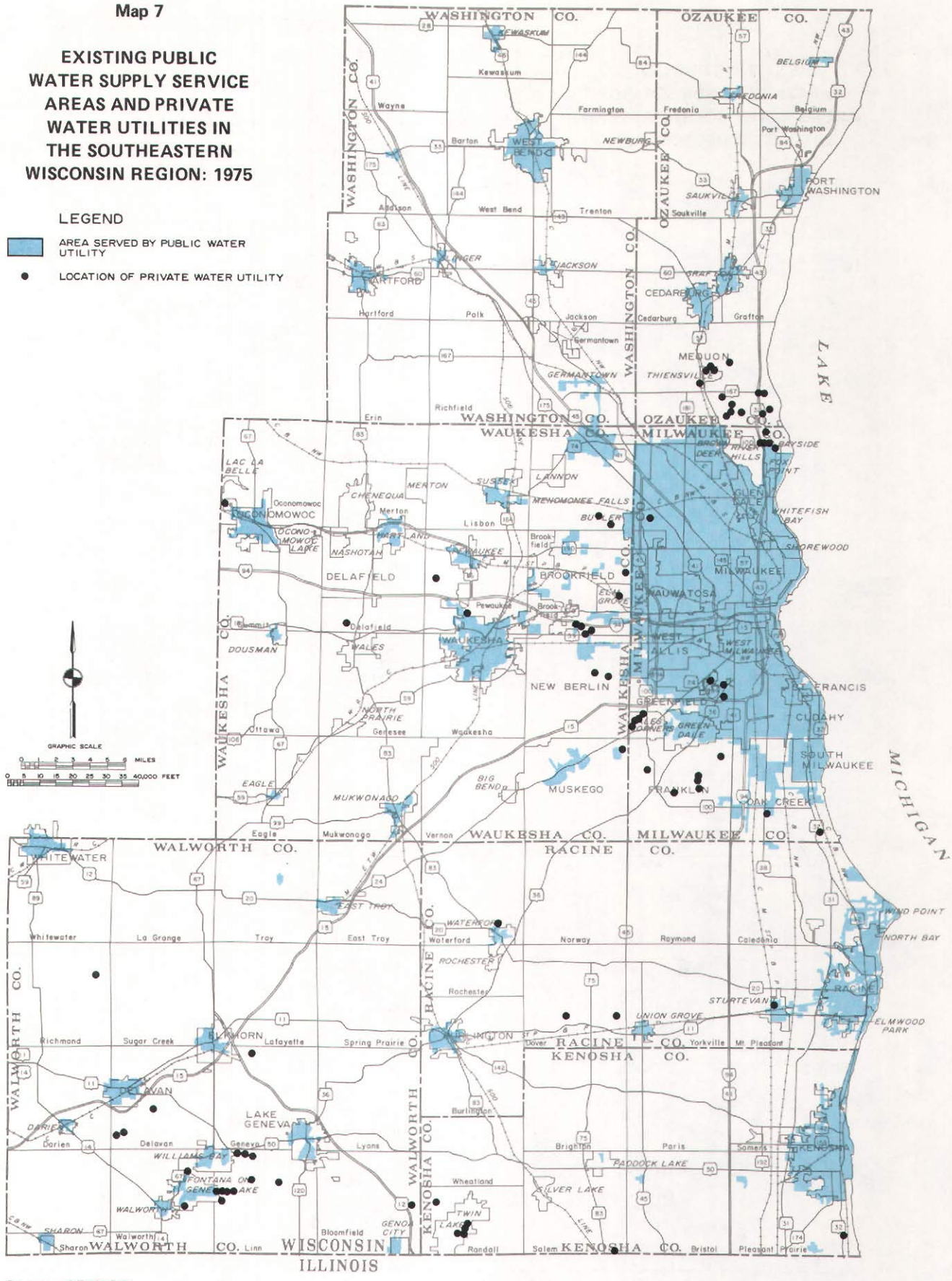
EXISTING PUBLIC SANITARY SEWER SERVICE AREAS IN THE SOUTHEASTERN WISCONSIN REGION: 1980



Source. SEWRPC.

Map 7

EXISTING PUBLIC WATER SUPPLY SERVICE AREAS AND PRIVATE WATER UTILITIES IN THE SOUTHEASTERN WISCONSIN REGION: 1975



Source: SEWRPC.

Company is authorized to operate in parts of Kenosha, Milwaukee, Racine, Walworth, and Waukesha Counties. The Wisconsin Southern Gas Company is authorized to operate in parts of Kenosha, Racine, and Walworth Counties. Only in the Towns of Erin and Wayne, both in Washington County, is there no gas utility presently authorized to operate. Natural gas is supplied to the three gas utilities by the Michigan-Wisconsin Pipeline Company and the Natural Gas Pipeline Company of America. An adequate and reliable supply of natural gas is provided throughout the Region. Generally, natural gas is available to serve residential, commercial, and industrial uses anywhere within the Region. Availability of gas service is not a major constraint on the location and intensity of industrial or other forms of urban development in the Region.

Electric Utilities

Two major investor-owned electric utilities operate within the Region which, together with five small municipal utilities, provide service to the entire Region. The Wisconsin Electric Power Company is authorized to operate throughout nearly the entire Region. The Wisconsin Power and Light Company is authorized to operate in parts of Kenosha and Walworth Counties. Municipal electric power utilities are operated by the Cities of Cedarburg, Elkhorn, Hartford, and Oconomowoc, and the Village of Slinger. An adequate and reliable supply of electric power is provided throughout the Region. Generally, electric power is available on demand at various voltages to serve residential, commercial, and industrial uses anywhere within the Region. Electric rates in the Region are among the lowest in the nation when compared with rates in effect in the 25 largest U. S. cities. Availability of electric power service is not a major constraint on the location and intensity of industrial or other forms of development in the Region.

EDUCATIONAL FACILITIES

A strong post-secondary education system is a prerequisite for the industrial growth and development of any region, both to assure the availability of a properly educated and trained work force and to provide an environment within which research of potential benefit to industry can flourish. The State of Wisconsin and the Southeastern Wisconsin Region are well served by a statewide vocational, technical, and adult education system, a state university system, and private colleges and universities.

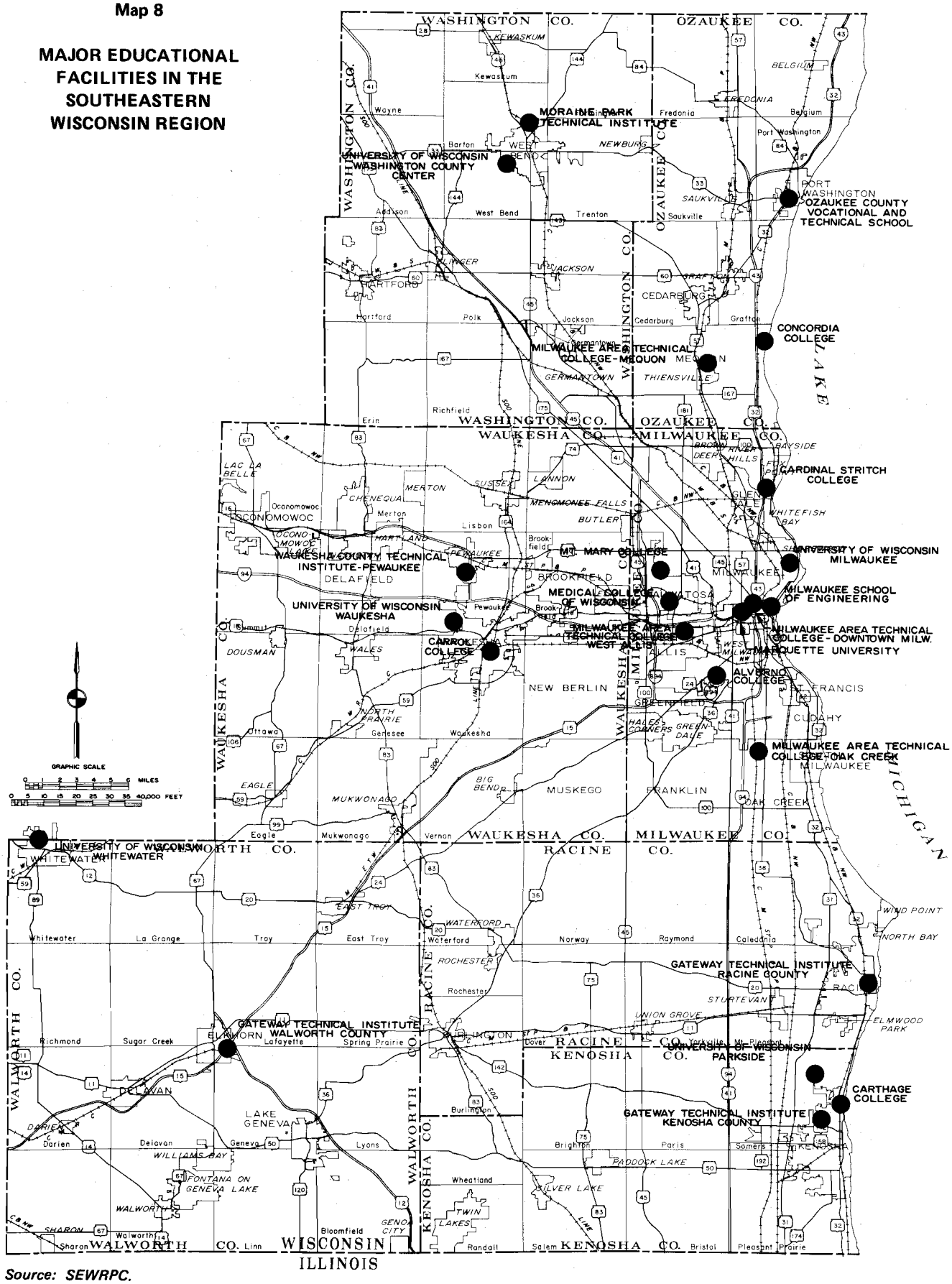
The State of Wisconsin established a vocational, technical, and adult education (VTAE) system in 1911. The primary goal of the system is to provide programs for education, training, and upgrading of the State's human resources. The schools have played a significant role in the area's industrial and business growth by anticipating the kinds of skills employees will need and developing programs to teach these skills. High technology skills are integrated into existing or newly developed courses and programs. Continuing education allows employees to develop or enhance business and industrial skills. Customized training specific to the needs of an individual company is developed and offered at the school or on-site on the company location. The vocational, technical, and adult education system of the Region has had a long-standing partnership with area firms. This partnership has contributed to improved productivity, enhanced quality, and advancement in technology, and has helped to promote the economy of the area.

The Region is served by all or portions of five of the 16 VTAE districts in the State. The Milwaukee District, which includes all of Milwaukee County, most of Ozaukee County, and small portions of Washington and Waukesha Counties, has the largest enrollment and provides the widest range of course offerings of the 16 VTAE districts.

At the college and university level, the Southeastern Wisconsin Region is the home of three campuses of the University of Wisconsin system (Milwaukee, Whitewater, and Kenosha-Parkside); Marquette University; the Milwaukee School of Engineering; the Medical College of Wisconsin; two-year University of Wisconsin Centers at Waukesha and West Bend; and a number of liberal arts colleges, including Alverno, Cardinal Stritch, Carroll, Carthage, Concordia, and Mount Mary (see Map 8). In addition, the central campus of the University of Wisconsin is located outside the Region in Madison, about 75 miles from downtown Milwaukee. These institutions provide a range of degree programs, help meet the demand for technical and professional personnel in southeastern Wisconsin, and significantly enhance the cultural opportunities available in the Region. In addition, the technological research capabilities of these institutions—particularly the University of Wisconsin-Milwaukee, the University of Wisconsin-Madison, and Marquette University, each of which has undergraduate and graduate engineering and

Map 8

MAJOR EDUCATIONAL FACILITIES IN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

science departments, as well as the Medical College of Wisconsin—may be expected to have an important bearing on the overall rate of industrial growth and development of the Region and State in a time of rapid technological change.

CULTURAL AND RECREATIONAL FACILITIES

The growth and development of the Southeastern Wisconsin Region over time can be attributed in part to the overall attractiveness of the Region as a place in which to live and work. The quality of life in southeastern Wisconsin is directly related to the abundance of recreational and cultural opportunities which the Region provides.

Despite significant urbanization, the Region encompasses an abundance of high-quality natural areas which provide an ideal setting for a wide range of outdoor recreational activities. Opportunities for camping and hiking within a wilderness environment can be found within a 30-minute drive from downtown Milwaukee. The Region's 100 major lakes, Lake Michigan, and numerous rivers and streams provide ample opportunity for boating, fishing, and other aquatic activities. Pleasure driving, particularly over designated scenic routes in outlying areas, is also a popular way of enjoying the natural beauty and unique cultural heritage of the Region.

County and local units of government in southeastern Wisconsin have historically attached major importance to the provision of public outdoor recreation and open space sites. Milwaukee County in particular has developed one of the finest county park and parkway systems in the nation. Today, the Southeastern Wisconsin Region encompasses a system of well-distributed regional outdoor recreational sites as well as community level and neighborhood park sites, providing opportunities for a broad range of recreational activities. The 31 major outdoor recreation sites in the Region include 24 "multi-use" sites which provide opportunities for a variety of activities, including golf, fishing, camping, swimming, and skiing, as well as several special-purpose sites—such as the Milwaukee County Zoo, Milwaukee County Stadium, the Mitchell Park Conservatory, and Old World Wisconsin—which provide opportunities for educational, cultural, sight-seeing, and spectator sports activities within attractive settings (see Map 9). In addition to these public facilities, many private facilities in the Region provide opportunities for camping, golf, aquatic activities, and other outdoor recreation activities.

The Southeastern Wisconsin Region provides facilities capable of accommodating a full range of conferences and conventions. More than 40 hotels and motels in the Region offer meeting rooms and/or convention facilities. The largest convention center—the Milwaukee Exposition and Convention Center and Arena (MECCA)—is located in downtown Milwaukee, where it is well served by hotels in the downtown area, as well as by abundant shopping and service facilities, including the recently developed Grand Avenue shopping mall.

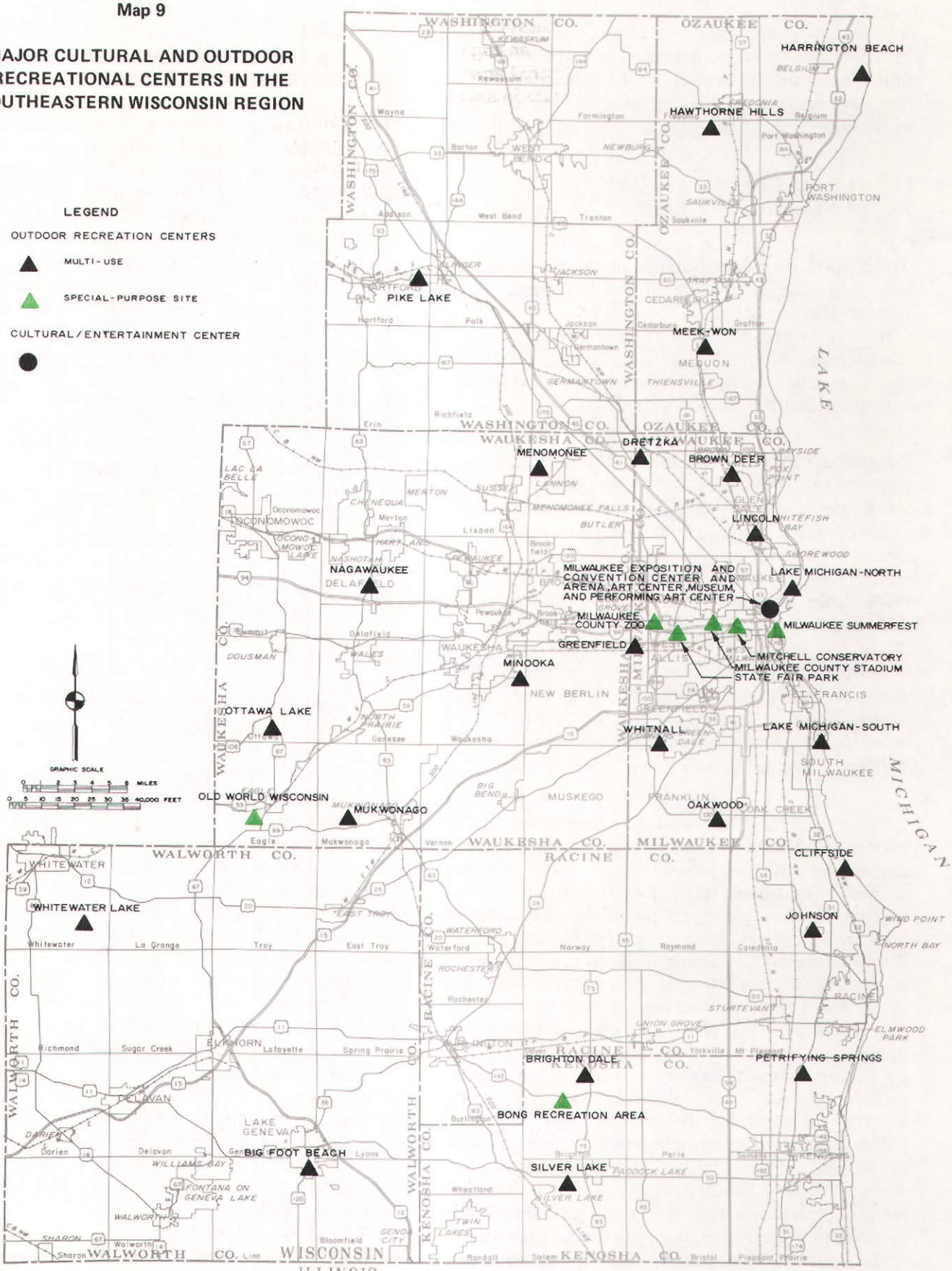
It should be noted that, in addition to the wide range of cultural and recreational opportunities in southeastern Wisconsin, residents of the Region have ready access to an abundance of cultural and recreational attractions in other parts of the State. Attractions ranging from the sea coast environment of Door County to the wilderness areas of northern Wisconsin are within one day's drive of the Region and further enhance the quality of life for residents of southeastern Wisconsin.

SUMMARY

Encompassing 38 percent of the state labor force, 38 percent of the state population, and 37 percent of the tangible wealth in the State, the Southeastern Wisconsin Region is truly the economic heart of the State of Wisconsin. Historically, the economic growth of the Southeastern Wisconsin Region was fostered by a ready supply of raw materials from nearby farms and forests, and iron mined in the Lake Superior area; by the influx of European immigrants who provided the Region with a strong base of skilled labor; and by a favorable location for serving growing eastern and midwestern markets. Moreover, the economic growth and development of the Region has been, and continues to be, supported by the development of sound regional highway, airway, railway, and seaway transportation systems; by the ready availability of essential public utilities including sewer, water supply, and power utilities; by an excellent post-secondary education system which contributes to the maintenance of a properly educated and trained work force and which provides an environment within which research of potential benefit to industry can flourish; and by cultural and recreational amenities which make the Region a highly attractive place in which to live and work.

Map 9

MAJOR CULTURAL AND OUTDOOR RECREATIONAL CENTERS IN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

Chapter III

ECONOMIC ACTIVITY TRENDS

Over much of the period since its settlement by European immigrants in the early 1800's, the Southeastern Wisconsin Region has been in a favorable position for industrial growth and development. During the past decade, however, there have been signs of a deterioration in the industrial base of the Region. This chapter describes recent economic trends in southeastern Wisconsin focusing on changes in the manufacturing sector. It also describes those national economic trends which significantly affect the Region. In addition, this chapter examines alternative economic activity growth scenarios for the Region and provides a general assessment of related industrial development needs.

NATIONAL ECONOMIC TRENDS

An understanding of national economic trends can provide important insight into current economic activity patterns in the State and in the Southeastern Wisconsin Region. Two national economic trends appear to have a direct bearing on economic activity patterns in the State and the Region—namely, the changing distribution of economic activity among the various multi-state and urban regions of the nation, and the changing structure of the national economy. The changing distribution of economic activity within the nation is evident in the economic growth indicators presented in Table 1. As indicated in Table 1, the economic growth indicators of the north-central region—which includes Wisconsin—and the northeastern region of the United States, including the relative change in population, personal income, and employment, have consistently lagged behind those of the southern and western regions. Of particular importance is the relative change in employment levels. Total employment in the southern and western regions of the nation increase by 39 percent and 49 percent, respectively, between 1970 and 1980, in comparison to relative increases of

Table 1

ECONOMIC INDICATORS FOR REGIONS OF THE UNITED STATES

Economic Indicator	United States Region[a]							
	Northeast		North-Central		South		West	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Population Change								
1960-1970	4,383,000	9.8	4,970,000	9.6	7,839,000	14.3	6,785,000	24.2
1970-1980	74,000	0.2	2,277,000	4.0	12,560,000	20.0	8,334,000	23.9
Net Population Migration								
1970-1980	- 1,917,000	- 3.9	- 1,429,000	- 2.5	7,560,000	12.0	5,023,000	14.4
Per Capita Income Change (constant 1972 dollars)								
1970-1980	878	18.3	1,080	25.0	1,143	31.1	1,192	26.1
Employment Change: 1970-1980								
Total Employment	2,122,500	11.0	3,867,600	17.9	8,880,900	39.0	6,214,800	48.4
Manufacturing Employment	- 275,300	- 4.8	189,100	2.9	1,251,000	23.7	912,700	37.1
Services Employment	1,406,100	27.8	1,683,800	31.7	2,800,900	47.0	2,011,700	53.9

[a] *The northeast region includes the States of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The southern region includes the States of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia, and the District of Columbia. The north-central region includes the States of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The western region includes the States of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.*

Source: U. S. Department of Commerce, Bureau of the Census and Bureau of Economic Analysis; U. S. Department of Labor, Bureau of Labor Statistics; and SEWRPC.

18 percent and 11 percent for the north-central and northeastern regions, respectively. Manufacturing employment increased by 37 percent in the West and 24 percent in the South between 1970 and 1980, while manufacturing employment increased by only 3 percent in the north-central region and actually decreased by about 5 percent in the northeastern region during this time.

The second recent national economic trend that is important to the future economic growth of the Southeastern Wisconsin Region is the changing structure of the national economy and, specifically, the declining importance of the manufacturing industry to future employment growth. Growth in manufacturing industries has traditionally been viewed as the most effective means for creating jobs and ensuring long-term economic growth. However, the rate of increase in manufacturing employment in the nation has declined significantly during the past two decades. Nationally, manufacturing employment increased by only about 13 percent during the 1960's, and by only about 11 percent during the 1970's, compared with about 19 percent during the 1950's. As a result, the nation's manufacturing employment declined from about 27 percent of total employment in 1960 to about 22 percent of total employment in 1980.

Basic structural change in the national economy is also evidenced by a shift in the nature of manufacturing activities, with "high technology" industries accounting for a continually increasing portion of all manufacturing jobs. In this regard, it has been estimated that high technology jobs accounted for 69 percent of the total increase in manufacturing jobs in the nation between 1955 and 1979; as a result, high technology industry's share of all manufacturing jobs increased significantly, from 33 percent in 1955 to 40 percent in 1979. The western and New England regions have experienced the highest growth in high technology jobs in recent years, while the Great Lakes region has lagged behind the national average growth rate.[1]

The foregoing national economic activity trends—particularly, the structural change in the economy—are partly attributable to changing world economic conditions and world markets. American industries face continually increasing competition in markets which the nation once dominated. United States production of steel has decreased from 47 percent of world production in 1950 to 20 percent in 1970 and, further, to 14 percent in 1980. The domination of the United States in the automobile industry has ended, with Japan producing more passenger cars than the United States for the first time in 1980. United States domination of the semi-conductor industry, which began with the inception of the industry in the 1950's, is also being challenged by Japan, which accounted for 30 percent of the world market in 1982. Such changes in world markets may be expected to have a strong bearing on the future size and structure of the national economy as well as the economy of the Southeastern Wisconsin Region.

STATE ECONOMIC TRENDS

Certain structural changes occurring in the national economy are also evident in the State of Wisconsin. Following national economic trends, manufacturing employment in the State increased less rapidly than did total state employment between 1960 and 1980. As a result, after a slight increase between 1950 and 1960, manufacturing employment's relative share of total employment in the State declined from 33.0 percent in 1960 to 28.5 percent in 1980 (see Table 2). It should be noted that the relative increase in manufacturing employment in the State between 1950 and 1980, 44.5 percent, is only slightly lower than the relative increase in manufacturing employment in the nation, 49.2 per-

[1] *Joint Economic Committee, Congress of the United States, Location of High Technology Firms and Regional Economic Development, 1982. While recognizing that there is no general agreement on a definition of high technology industries, this study estimates high technology employment levels by analyzing selected Standard Industrial Classification (SIC) groups believed to be representative of high technology industries, including chemicals and allied products (SIC 28); machinery, except electrical (SIC 35); electrical and electronic machinery, equipment, and supplies (SIC 36); transportation equipment (SIC 37); and measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks (SIC 38). It is important to recognize that the Standard Industrial Classification system is not specifically designed to quantify high technology industry employment. Consequently, not all of the jobs in the foregoing SIC groups can rightfully be categorized as high technology jobs and, conversely, the foregoing SIC groups do not include all high technology jobs.*

Table 2

CIVILIAN LABOR FORCE EMPLOYMENT BY MAJOR CATEGORY IN WISCONSIN: 1950, 1960, 1970, and 1980

Employment Category	1950		1960		1970		1980		Percent Change			
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	1950-1960	1960-1970	1970-1980	1950-1980
Agriculture, Forestry, Fishing, and Mining	257,000	19.0	171,900	11.7	114,000	6.7	121,100	5.7	-33.1	-33.7	6.2	-52.9
Construction	66,600	4.9	71,700	4.9	85,800	5.1	94,500	4.5	7.7	19.7	10.1	41.9
Manufacturing	416,900	30.8	483,800	33.0	528,400	31.0	602,500	28.5	16.0	9.2	14.0	44.5
Durable	249,600	18.4	303,900	20.7	346,000	20.3	402,900	19.1	21.8	13.9	16.4	61.4
Nondurable	167,300	12.4	179,900	12.3	182,400	10.7	199,600	9.4	7.5	1.4	9.4	19.3
Transportation, Communication, and Utilities	86,500	6.4	82,300	5.6	88,900	5.2	121,000	5.7	-4.9	8.0	36.1	39.9
Wholesale Trade	39,100	2.9	40,100	2.7	59,500	3.5	79,300	3.7	2.6	48.4	33.3	102.8
Retail Trade	193,000	14.2	217,900	14.8	280,000	16.4	348,200	16.5	12.9	28.5	24.4	80.4
Finance, Insurance, and Real Estate	32,900	2.4	45,200	3.1	64,600	3.8	105,000	5.0	37.4	42.9	62.5	219.1
Services	204,000	15.1	261,300	17.8	417,600	24.5	566,900	26.8	28.1	59.8	35.8	177.9
Public Administration	40,900	3.0	51,800	3.5	64,800	3.8	76,000	3.6	26.7	25.1	17.3	85.8
Not Reported	17,700	1.3	42,600	2.9	--	--	--	--	140.7	-100.0	--	-100.0
Total State Employment	1,354,600	100.0	1,468,600	100.0	1,703,600	100.0	2,114,500	100.0	8.4	16.0	24.1	56.1

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

cent—despite the comparatively slow growth in manufacturing employment in the Southeastern Wisconsin Region, described later in this chapter. Consequently, the State's share of total manufacturing employment in the nation has remained almost constant, declining very slightly from 2.84 percent in 1950 to 2.75 percent in 1980.

Two major employment categories—construction, and transportation, communications, and utilities—increased by 41.9 percent and 39.9 percent, respectively, between 1950 and 1980, somewhat less than the 56.1 percent increase in total state employment during this time. Moreover, a third category—agriculture, forestry, fishing, and mining—experienced a 52.9 percent decrease in employment between 1950 and 1980. As a result, the proportionate share of total employment in agriculture, forestry, fishing, and mining declined by 13.3 percentage points between 1950 and 1980, while the proportionate share of total employment in the construction and transportation, communications, and utilities categories declined by 0.4 percentage point and 0.7 percentage point, respectively.

Consistent with national trends, the share of total state employment in the service sector increased substantially—from 15.1 percent of total state employment in 1950 to 26.8 percent in 1980. Other major employment categories which grew proportionately faster than total state employment between 1950 and 1980 include trade; finance, insurance, and real estate; and public administration. The share of total employment in the wholesale and retail trade sectors in combination increased from 17.1 percent in 1950 to 20.2 percent in 1980. The share of state employment in the finance, insurance, and real estate sector increased from 2.4 percent in 1950 to 5.0 percent in 1980. Employment in public administration increased slightly, from 3.0 percent of total state employment in 1950 to 3.6 percent in 1980.

REGIONAL ECONOMIC TRENDS

A strong manufacturing sector has historically been the cornerstone of the economy of southeastern Wisconsin, and manufacturing industry employment still accounts for a large portion of the total regional employment. The national economic trends described above—namely, the increased competition for economic activity, especially from the southern and western regions, and structural change in the national economy away from traditional manufacturing activities—have particularly important implications for the economy of southeastern Wisconsin because of its high dependence on manufacturing activities.

Table 3

CIVILIAN LABOR FORCE EMPLOYMENT IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950, 1960, 1970, AND 1980

Area	Civilian Labor Force Employment							
	Number (in thousands)				Percent Change			
	1950	1960	1970	1980	1950-1960	1960-1970	1970-1980	1950-1980
Southeastern Wisconsin	524.6	612.7	708.8	826.5	16.8	15.7	16.6	57.5
Wisconsin	1,354.6	1,468.6	1,703.6	2,114.5	8.4	16.0	24.1	56.1
United States	56,435.3	64,639.2	76,553.6	97,639.4	14.5	18.4	27.5	73.0

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

The following section describes recent economic activity trends in southeastern Wisconsin by examining trends in the size of the regional labor force, in the spatial distribution of jobs within the Region, and in the structure of the regional economy as indicated by changes in major employment categories.

Trends in the Regional Labor Force

The trend in the size of the employed and unemployed civilian labor force (CLF) is one good indication of overall economic activity trends within a region. The civilian labor force is defined as those civilian residents who are employed at one or more jobs or are actively seeking employment. It is the employed portion of the labor force which provides the economic support for the total population.[2] As indicated in Table 3, between 1950 and 1980, the Region experienced a relative increase in the employed labor force of 58 percent. This growth rate is slightly higher than that for the State overall—56 percent—but lower than that for the nation—73 percent—over the same period.

As further indicated in Table 3, the slower rate of CLF employment growth of the Region in comparison to that of the nation is, for the most part, a result of the lack of growth in CLF employment during the most recent 10-year period. Between 1950 and 1960, the relative increase in the Region's total employment—17 percent—was greater than that for the State—8 percent—and the United States—15 percent. The Region's relative increase in total employment of 16 percent between 1960 and 1970 approximated that for the State and was slightly lower than that for the United States, 18 percent. However, between 1970 and 1980, the relative increase in regional employment—17 percent—was 7 percentage points lower than that for the State—24 percent—and 11 percentage points lower than that for the United States, 28 percent.

While recent growth in the Region's CLF employment has lagged behind the national rate, the unemployed portion of the Region's civilian labor force, as a percentage of the total civilian labor force, has only recently approached the levels indicated for the State and the United States. As shown in Table 4, the Region's unemployment rate was below that for the State and the United States between 1950 and 1980. Only in 1982, with the continued decline of the Region's economy due, in part, to the continuing national economic recession that began in 1980, did the Region's unemployment rate—10.8 percent—exceed that for the State—10.7 percent—and the United States—9.7 percent. It has been argued that the ability of the State's unemployment rate and, as shown above, the Region's unemployment rate to remain below that for the nation is an indication of the strength of the State's economy, which has only become depressed with the onset of a national

[2] *The size of the employed labor force cannot be equated with the number of jobs in the Region, since some resident labor force members are employed at jobs located outside the Region; some nonresidents are employed within the Region; and some members of the regional labor force are employed at two or more places.*

Table 4

AVERAGE ANNUAL UNEMPLOYMENT RATES IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950-1982

Year	Unemployment Rate (percent)[a]		
	Southeastern Wisconsin	Wisconsin	United States
1950	2.6	2.9	4.8
1960	3.8	3.9	5.1
1970	3.7	4.0	4.4
1980	5.7	6.6	6.5
1981	7.7	7.8	7.6
1982	10.8	10.7	9.7

[a] *The unemployment rates presented herein represent the unemployed portion of the civilian labor force as a percentage of the total civilian labor force.*

Source: U. S. Bureau of the Census; Wisconsin Department of Industry, Labor and Human Relations; and SEWRPC.

Table 5

PERCENTAGE DISTRIBUTION OF JOBS BY COUNTY IN THE SOUTHEASTERN WISCONSIN REGION: 1950-1980

County	Percent of Total Jobs in the Region				Percent Change 1950-1980
	1950	1960	1970	1980	
Kenosha	5.0	6.2	5.3	5.6	0.6
Milwaukee . . .	79.3	75.0	67.3	62.0	-17.3
Ozaukee	1.1	1.5	2.6	2.8	1.7
Racine	7.8	7.5	8.3	8.9	1.1
Walworth. . . .	2.2	2.8	3.3	3.6	1.4
Washington . .	1.8	2.2	3.1	3.6	1.8
Waukesha . . .	2.8	4.8	10.1	13.5	10.7
Total	100.0	100.0	100.0	100.0	--

Source: Bureau of Economic Analysis, U. S. Department of Commerce; Wisconsin Department of Industry, Labor and Human Relations; and SEWRPC.

recession marked by high interest rates which, as they persist, negatively affect the durable goods manufacturing industry in the Region.[3]

Distribution of Economic Activity

There has been a significant change in the spatial distribution, as well as in the overall level, of economic activity within the Region during the past three decades. Particularly evident is the change in the distribution of jobs, or employment opportunities, provided in the Region. It should be noted that, in contrast to the labor force, which is enumerated by place of residence, jobs are enumerated by place of employment.

Table 5 indicates a general shift in economic activity toward the suburban and rural counties of the Region. The most notable changes have occurred in Waukesha and Milwaukee Counties. Waukesha County's share of all jobs in the Region increased dramatically from 2.8 percent in 1950 to 13.5 percent in 1980. Conversely, Milwaukee County's share of all jobs in the Region decreased from 79.3 percent to 62.0 percent during the same period.

[3] *William A. Strang, Wisconsin's Economy in 1990: Our History, Our Present, Our Future, 1982.*

Structure of the Economy

The changing nature of the national economy is reflected in the changing structure of the Region's economy. Table 6 shows the change in major employment categories for the employed portion of the Region's civilian labor force from 1950 through 1980. As indicated in Table 6, manufacturing employment as a proportion of total regional employment declined by 9.4 percent between 1950 and 1980—from 42.6 percent in 1950 to 33.2 percent in 1980—with durable goods manufacturing declining 4.2 percent and nondurable goods manufacturing declining 5.2 percent. Other employment categories that showed a decline in their percentage of the regional employment from 1950 through 1980 include agriculture, forestry, fishing, and mining—3.0 percent; construction—1.4 percent; transportation, communications, and utilities—0.7 percent; and public administration—0.3 percent.

While the influence of the above-mentioned employment categories on the regional economy declined between 1950 and 1980, the Region's service and trade sectors, following national trends, assumed greater importance. The percentage of regional employment in the service sector increased by 11.8 percent, from 15.2 percent of regional employment to 27.0 percent. The service sector

Table 6

CIVILIAN LABOR FORCE EMPLOYMENT BY MAJOR CATEGORY IN THE REGION: 1950-1980

Employment Category	1950		1960		1970		1980		Percent Change			
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	1950-1960	1960-1970	1970-1980	1950-1980
Agriculture, Forestry, Fishing, and Mining	22,100	4.2	14,000	2.3	11,300	1.6	10,100	1.2	-36.7	-19.3	-10.6	-54.3
Construction	26,800	5.1	28,800	4.7	30,900	4.4	30,600	3.7	7.5	7.3	- 1.0	14.2
Manufacturing	223,000	42.6	253,300	41.3	256,800	36.2	273,900	33.2	13.6	1.4	6.7	22.8
Durable	155,600	29.7	188,600	30.8	194,100	27.4	210,500	25.5	21.2	2.9	8.4	35.3
Nondurable	67,400	12.9	64,700	10.5	62,700	8.8	63,400	7.7	- 4.0	- 3.1	1.1	- 5.9
Transportation, Communication, and Utilities	35,700	6.8	35,500	5.8	37,800	5.3	50,500	6.1	- 0.6	6.5	33.6	41.5
Wholesale Trade	17,600	3.4	18,700	3.1	29,800	4.2	32,800	4.0	6.3	59.4	10.1	86.4
Retail Trade	78,900	15.0	90,200	14.7	114,800	16.2	134,300	16.2	14.3	27.3	17.0	70.2
Finance, Insurance, and Real Estate	16,800	3.2	23,000	3.8	31,700	4.5	45,800	5.5	36.9	37.8	44.5	172.6
Services	79,700	15.2	104,300	17.0	168,700	23.8	223,200	27.0	30.9	61.7	32.3	180.1
Public Administration	18,000	3.4	22,700	3.7	27,000	3.8	25,300	3.1	26.1	18.9	- 6.3	40.6
Not Reported	6,000	1.1	22,200	3.6	--	--	--	--	270.0	-100.0	--	-100.0
Total Regional Employment	524,600	100.0	612,700	100.0	708,800	100.0	826,500	100.0	16.8	15.7	16.6	57.5

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

now employs about 223,200 workers, about equal to the number of workers in the Region's manufacturing sector in 1950. The share of regionall employment in the finance, insurance, and real estate sector also increased—from 3.2 percent in 1950 to 5.5 percent in 1980—while the percentage of regional employment in the wholesale trade and retail trade sectors in combination increased from 18.4 percent in 1950 to 20.2 percent in 1980 (see Table 6).

Because manufacturing employment experienced a comparatively modest increase in the Region during the past three decades, the Region's relative share of manufacturing employment in the State and nation has decreased (see Table 7). Manufacturing employment in the Region increased by 23 percent between 1950 and 1980, compared to relative increases of 45 percent and 49 percent for the State and nation, respectively, during this time. The relative increase in manufacturing employment in the Region was less than that for the State and nation during the 1950's, 1960's, and 1970's. As a result, the Region's share of the State's manufacturing employment decreased from about 53 percent in 1950 to about 45 percent in 1980. The Region's share of the national manufacturing employment also decreased, from about 1.5 percent to less than 1.3 percent, during this time.

Overall, the changes in major employment categories that have taken place in the Region between 1950 and 1980 indicate that the changes in the structure of the nation's economy are also evident in the Region. These changes—particularly the decline in the relative importance of manufacturing jobs—have important implications for the future economic viability of the Region owing to its historic dependence on the manufacturing industry for its economic base. The remainder of this chapter examines alternative future economic activity growth scenarios for the Southeastern Wisconsin Region.

FUTURE ECONOMIC ACTIVITY LEVELS

Any attempt to forecast future conditions, including future economic activity and population levels, involves uncertainty. Uncertainty is inherent in the process of forecasting economic activity and population levels even in periods of relative social and economic stability, when historic trends may be anticipated to continue relatively unchanged over the forecast period. In periods of major social and economic change, the degree of uncertainty inherent in forecasts of economic activity levels becomes even greater. As already discussed, the past decade has been marked by major shifts in economic activity patterns, including increased

Table 7

MANUFACTURING EMPLOYMENT IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950-1980

Year	Southeastern Wisconsin Region			Wisconsin			United States			Region as a Percent of Wisconsin	Region as a Percent of United States
	Number	Change From Preceding Period		Number	Change From Preceding Period		Number	Change From Preceding Period			
		Number	Percent		Number	Percent		Number	Percent		
1950	223,000	--	--	416,900	--	--	14,685,500	--	--	53.49	1.52
1960	253,300	30,300	13.6	483,800	66,900	16.0	17,513,100	2,827,600	19.3	52.36	1.45
1970	256,800	3,500	1.4	528,400	44,600	9.2	19,837,200	2,324,100	13.3	48.60	1.29
1980	273,900	17,100	6.7	602,500	74,100	14.0	21,914,800	2,077,600	10.5	45.46	1.25

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

competition for economic activity among the multi-state regions of the United States; by a decline in manufacturing employment relative to total employment both nationally and within the Region; and by a change in the nature of manufacturing operations as reflected by the growth of high technology industries. Recognizing the increasing uncertainty involved in forecasting economic activity and population levels, the Regional Planning Commission in the mid-1970's began incorporating an "alternative futures" approach into its planning programs. Under this approach, the design and evaluation of alternative regional plans is based not upon a single, most probable forecast of future conditions, but upon a set of alternative "futures" chosen to represent a range of future conditions which may be expected to occur during the time period concerned. For economic development planning purposes, two alternative scenarios for regional growth and change, each involving different assumptions regarding the major external factors affecting the growth and development of the Region, have been defined by the Commission. These scenarios postulate a range of future population and employment levels and provide a framework within which future industrial land development needs within the Region can be assessed. The alternative future growth scenarios and related employment projections for the Southeastern Wisconsin Region are described below.[4]

[4] *Additional documentation about the alternative future growth scenarios in southeastern Wisconsin is presented in SEWRPC Technical Report No. 25, Alternative Futures for Southeastern Wisconsin.*

Alternative Future Growth Scenarios

The development of alternative future growth scenarios entails the identification of possible future change in factors which, while operating largely external to the area concerned, may affect the socioeconomic development of the area. Such factors are termed "external" because they are variables over which public and private decision-makers within the area may be expected to have little or no influence, and are variables to which the area must respond in the future. In the development of alternative futures for southeastern Wisconsin, it was determined that the future socioeconomic development of the Region is particularly uncertain with respect to such largely external factors as the cost and availability of energy, population lifestyles, and national and world economic conditions. Two alternative future scenarios were developed by the Regional Planning Commission to represent a reasonable range of conditions attendant to these external factors. The major assumptions associated with these external factors are indicated in Table 8. These scenarios differ significantly with respect to future regional population and economic growth, with one scenario pointing toward moderate population and economic growth in the Region, and the other pointing toward a stable economy and a declining population in the Region.

The moderate regional growth scenario assumes that the Region will be able to compete with other areas of the nation and preserve and expand its economic base, while the stable regional growth scenario assumes an inability of the regional

Table 8

ALTERNATIVE FUTURES: KEY EXTERNAL FACTORS

Key External Factor	Moderate Growth Scenario	Stable or Declining Growth Scenario
Energy		
The future cost and availability of energy, particularly of petroleum	Oil price to converge with world oil price, which will increase at 5 percent annual rate to $72 per barrel in the year 2000 (1979 dollars) Petroleum-based motor fuel to increase to $2.30 per gallon by the year 2000 (1979 dollars) Assumes some potential for major and continuing disruptions in oil supply	Oil price to converge with world oil price, which will increase at 2 percent annual rate to $39 per barrel in the year 2000 (1979 dollars) Petroleum-based motor fuel to increase to $1.50 per gallon by the year 2000 (1979 dollars) Assumes no major or continued disruptions in oil supply
The degree to which energy conservation measures are implemented, particularly with respect to the automobile	Low degree of conservation in all sectors, resulting in increase in energy use of 3 percent Automobile fuel efficiency of 27.5 miles per gallon	High degree of conservation in all sectors, resulting in increase in energy use of 2 percent or less Automobile fuel efficiency of 32 miles per gallon
Population Lifestyles		
The degree to which the changing role of women affects the composition of the labor force	Female labor force increases to 50 to 55 percent and total labor force participation is 60 to 65 percent	Female labor force increases to 65 to 70 percent and total labor force participation is 70 to 75 percent
The future change in fertility rates	A continuation of below-replacement-level fertility rates during the next decade, followed by an increase to replacement level by the year 2000	A continuation of below-replacement-level fertility rates to the year 2000
The future change in household sizes	Average household size stabilizes	Average household size continues to decline
Economic Conditions		
The degree to which the Region will be able to compete with other areas of the nation for the preservation and expansion of its economic base	Region is considered to have relatively high attractiveness and competitiveness	Region is considered to have relatively low attractiveness and competitiveness
The future change of real income	Per capita and household income increase envisioned as a result of the attractiveness and competitiveness of Region, an increased proportion of the population being of work force age, and increased population labor force participation	Per capita increase likely but no household income increase envisioned as a result of the lack of attractiveness and competitiveness of Region, but increased proportion of the population is of work force age, and there is increased population labor force participation

Source: SEWRPC.

economy to remain competitive. It is impossible, given current trends, to predict with certainty which set of assumptions will more closely approximate future economic conditions. A continuation of the movement of population and job opportunities to the sunbelt, for example, would support the stable growth scenario as the better representation of future economic conditions. Conversely, a slowdown in the trend toward development in the sunbelt—resulting from possible future changes in the relative cost of labor, in tax structures, in water availability, and in other factors—would support the moderate regional growth scenario. The uncertainty surrounding future economic conditions is compounded by certain recently emerging trends, the ultimate effects of which are unknown. Advances in communications systems and computer technology, for example, may have major, but presently unforeseen, impacts on regional and national economic conditions.

Moderate Regional Growth Scenario: The moderate regional growth scenario envisions the continuation of the types of population change experienced in the Region during the 1960's and early part of the 1970's. A partial return to a family-oriented lifestyle is assumed, as is a desire by many persons now in their 20's or early 30's to form traditional families. Under this scenario, fertility rates continue at below-replacement levels into the 1980's, followed by a slight increase to replacement level by the year 2000. In addition, there is a balance between in- and out-migration of population between 1970 and the year 2000. These fertility rates, coupled with a general aging of the population, are expected to create significant shifts in the age composition of the resident population, with a small decrease in the number of school-age children and major increases in the numbers of people in the work force- and retirement-age groups. Under the moderate regional growth scenario, the resident population of the Region is expected to increase by about 463,200 persons, or about 26 percent, between 1970 and 2000—from 1,756,100 persons in 1970 to about 2,219,300 persons in the year 2000.

The economic changes that may be expected to occur under the moderate growth scenario represent a continuation of the types of changes that have occurred historically in the regional economy. This scenario is characterized by long-term economic growth at a rate at or slightly below national averages. Growth in the regional economy would result from the interaction of several factors assumed under the moderate growth scenario, including a growing demand for goods and services resulting from an increase in the resident population; a growing regional labor force resulting in an increase in the proportion of the resident population in the work force age groups and an increase in the number of females in the labor force; and an increase in the economic competitiveness and attractiveness of the Region relative to other parts of the nation. Implicit in the moderate regional growth scenario is the assumption of moderate growth in both the national and world economies.

The change in the number of jobs in the Region anticipated under the moderate regional growth scenario is indicated in Table 9 by major employment category. Under the moderate regional growth scenario, the number of jobs available in the Region is anticipated to increase from the 1970 level of about 741,600 to about 1,016,000 in the year 2000, an increase of about 274,400 jobs, or 37 percent. Employment in the trade, government and education services, and private services categories would be expected to show greater relative increases than the anticipated overall regional employment increase of 37 percent between 1970 and 2000. These anticipated changes are consistent both with historic trends in these groups and with the increased demands for services that will be generated by an increasing regional population level.

Manufacturing employment, while increasing at a rate approximately 10 percent below the anticipated regional employment growth rate, would continue to be the largest regional employment group, with about 320,300 jobs anticipated in the year 2000—an increase of about 69,300 jobs, or about 28 percent, over the 1970 level of 251,000 jobs. The relatively high competitiveness and attractiveness of the Region under the moderate regional growth scenario would enable the manufacturing sector to continue to be a dominant component of the Region's economy, accounting for about 32 percent of all regional jobs in the year 2000.

As further indicated in Table 9, in addition to manufacturing employment, employment in construction and in the transportation, communications, and utilities group would be expected to increase at a lower rate than overall regional employment growth rate between 1970 and 2000. Moreover, one major employment category, agriculture, would be expected to decline in employment by 3,100 jobs, or 29 percent, during this period. This decline would be a continuation of an existing trend and would be due in part to the mechanization of farming processes, as well as to the loss of farmland in the Region through the continued conversion of land from agricultural to urban uses.

Stable Regional Growth Scenario: The stable regional growth scenario can best be characterized as an acceleration of the regional population change experienced in the late 1970's, when the Region experienced a decline in its rate of growth. Fertility rates at below-replacement levels are assumed to continue to the year 2000. This assumption, combined with a rate of net out-migration sufficiently large to offset all natural increases in regional population, would produce a slight population decrease in the Region by the year 2000. Continued low fertility rates in concert with the general aging of the population, and with high

Table 9

ANTICIPATED EMPLOYMENT LEVELS IN THE REGION UNDER A MODERATE REGIONAL GROWTH SCENARIO: 1970-2000

Major Industry Group	Number of Jobs (thousands)		Change 1970-2000	
	1970	2000	Number (thousands)	Percent
Agriculture	10.6	7.5	- 3.1	- 29.2
Construction	24.0	30.1	6.1	25.4
Manufacturing	251.0	320.3	69.3	27.6
Trade	143.2	206.4	63.2	44.1
Transportation, Communication, and Utilities	36.0	43.7	7.7	21.4
Private Services	198.1	276.8	78.7	39.7
Government and Education Services	78.7	131.2	52.5	66.7
Total	741.6	1,016.0	274.4	37.0

Source: SEWRPC.

levels of regional out-migration in age groups below 45 years of age, would create significant shifts in the age composition of the resident population, with major decreases in the school-age population and slight increases in the work force-age and retirement-age population. Under the stable regional growth scenario, the resident population of the Region would decrease by about 66,100 persons, or about 4 percent, between 1970 and 2000—from about 1,756,100 persons in 1970 to about 1,690,000 persons in the year 2000.

In contrast to the moderate regional growth scenario, the stable regional growth scenario envisions an inert regional economy resulting from the interaction of several factors assumed as part of this scenario, including a declining future population level and an inability of the Region to preserve and expand its economic base and thus remain competitive with other regions of the nation. Under this scenario, the rate of increase in regional employment would be significantly below national rates of increase, particularly after the mid-1980's. Only modest employment growth would result from increases in the labor force participation rate as well as from a general aging of the population, such that a larger proportion of the population would be in the labor force age groups. In comparison to the moderate regional growth scenario, the stable regional growth scenario assumes relatively modest growth in both the national and world economies.

As indicated in Table 10, under the stable regional growth scenario, the number of jobs available in the Region would increase moderately, from about 741,600 in 1970 to about 887,000 in the year 2000—an increase of about 145,400 jobs, or about 20 percent. Employment in the trade and private services categories would be expected to show greater relative increases than the regional employment increase of 20 percent between 1970 and 2000. The sizable employment gains in these sectors is expected because they rely upon a more local market, and because, with the high labor force participation rates assumed under this scenario, many households may necessarily resort to the purchase of traditional types of household functions such as food preparation and household cleaning and maintenance.

The Region's loss of competitiveness assumed under this scenario may be expected to lead to virtual stagnation in employment growth in manufacturing. By the year 2000, manufacturing employment may be expected to total about 266,300 jobs—only about 15,300 jobs, or about 6 percent, above the 1970 level of about 251,000 jobs. As a result of the substantial increase in private service jobs and the very modest increase in manufacturing jobs, employment in private services would be expected to approximately equal manufacturing employment in importance in the regional economy by the year 2000.

Table 10

ANTICIPATED EMPLOYMENT LEVELS IN THE REGION UNDER A STABLE REGIONAL GROWTH SCENARIO: 1970-2000

Major Industry Group	Number of Jobs (thousands)		Change 1970-2000	
	1970	2000	Number (thousands)	Percent
Agriculture	10.6	7.5	- 3.1	- 29.2
Construction	24.0	26.1	2.1	8.8
Manufacturing	251.0	266.3	15.3	6.1
Trade	143.2	185.9	42.7	29.8
Transportation, Communication, and Utilities	36.0	38.9	2.9	8.1
Private Services	198.1	269.8	71.7	36.2
Government and Education Services	78.7	92.5	13.8	17.5
Total	741.6	887.0	145.4	19.6

Source: SEWRPC.

Comparison of Actual Employment Levels With Employment Levels Anticipated Under the Alternative Regional Growth Scenarios

Comparisons of actual 1981 employment levels and 1981 employment levels anticipated under the moderate regional growth scenario and the stable regional growth scenario are presented in Tables 11 and 12, respectively. As indicated in Tables 11 and 12, the actual 1981 total regional employment exceeded the employment level anticipated under the moderate regional growth scenario by about 1 percent, and exceeded the employment level anticipated under the stable regional growth scenario by about 7 percent. Significantly, actual total employment for the Region in 1981 exceeded the 1981 employment levels envisioned under both regional growth scenarios despite a decrease of more than 20,000 jobs between 1980 and 1981, largely a result of the nationwide recession.

As further indicated in Tables 11 and 12, actual manufacturing employment in the Region in 1981 lagged behind the 1981 manufacturing employment levels envisioned under the moderate regional growth scenario and stable regional growth scenario by about 10 percent and 3 percent, respectively. These deviations are attributable to, among other factors, the structural changes in the economy as well as to the nationwide recession. It should be noted that in 1980, the actual manufacturing employment level for the Region was only about 4 percent lower than the level envisioned under the moderate regional growth scenario, and exceeded that envisioned under the stable regional growth scenario by about 3 percent.

Industrial Land Requirements Under Alternative Growth Scenarios

Traditionally in physical development planning, forecasts of manufacturing employment levels have been used as one of the bases for estimating the scale of industrial land development necessary within an area during a forecast period. The manufacturing and manufacturing-related employment levels presented in Tables 9 and 10 thus provide a basis for estimating the amount of additional industrial land that would be required within the Region under alternative regional growth scenarios. In this regard, regional land use plan design standards—standards developed by the Regional Planning Commission in the preparation of the initial regional land use plan adopted by the Commission in 1966 and subsequently reevaluated and reaffirmed in the preparation of the second generation land use plan adopted by the Commission in 1978—indicate that seven acres of industrial land should be reserved for each 100 additional industrial employees anticipated in the Region. The application of this standard to the anticipated increase in the number of jobs in the industry-related employment categories provides an estimate of the additional land which could be expected

Table 11

COMPARISON OF ACTUAL EMPLOYMENT LEVELS AND EMPLOYMENT LEVELS ANTICIPATED UNDER THE MODERATE REGIONAL GROWTH SCENARIO FOR SOUTHEASTERN WISCONSIN: 1980-1981

Year	Employment Category	Number of Jobs Anticipated Under Moderate Regional Growth Scenario (thousands)	Actual Number of Jobs (thousands)	Difference	
				Number (thousands)	Percent
1980	Manufacturing.	274.1	262.5	- 11.6	- 4.2
	Other Employment. . . .	559.0	612.2	53.2	9.5
	Total	833.1	874.7	41.6	5.0
1981	Manufacturing.	276.4	249.5	- 26.9	- 9.7
	Other Employment. . . .	565.8	604.6	38.8	6.9
	Total	842.2	854.1	11.9	1.4

Source: Wisconsin Department of Industry, Labor and Human Relations, and SEWRPC.

Table 12

COMPARISON OF ACTUAL EMPLOYMENT LEVELS AND EMPLOYMENT LEVELS ANTICIPATED UNDER THE STABLE REGIONAL GROWTH SCENARIO FOR SOUTHEASTERN WISCONSIN: 1980-1981

Year	Employment Category	Number of Jobs Anticipated Under Stable Regional Growth Scenario (thousands)	Actual Number of Jobs (thousands)	Difference	
				Number (thousands)	Percent
1980	Manufacturing.	256.1	262.5	6.4	2.5
	Other Employment. . . .	534.0	612.2	78.2	14.6
	Total	790.1	874.7	84.6	10.7
1981	Manufacturing.	256.6	249.5	- 7.1	- 2.8
	Other Employment. . . .	538.3	604.6	66.3	12.3
	Total	794.9	854.1	59.2	7.4

Source: Wisconsin Department of Industry, Labor and Human Relations, and SEWRPC.

to be required under alternative regional growth scenarios through the end of this century.[5]

Under a moderate regional growth scenario, the number of jobs in industry-related employment categories[6] is anticipated to increase from about 333,500 in 1980 to about 398,600 in the year 2000—an increase of 65,100 jobs, or about 20 percent. Application of the above-mentioned standard to this anticipated increase suggests the need for approximately 4,600 acres, or about 7.2 square miles, of additional industrial land in the Region between 1980 and 2000 under the moderate regional growth scenario. This land would be needed solely to accommodate the anticipated increase in industry-related employment in this Region. Additional land would be necessary to accommodate the changing distribution of industrial operations which could be expected to occur in the Region even if there were no change in overall industry-related employment levels.

[5] *The land consumption ratio presented herein pertains to the actual site area devoted to industrial use and consists of the ground-floor site area occupied by buildings plus related yards, but excludes off-street parking.*

[6] *Industry-related employment categories include manufacturing, wholesale trade, and construction.*

Under a stable regional growth scenario, industry-related employment is anticipated to increase from about 307,000 jobs in 1970 to about 334,200 jobs in the year 2000, with most of this increase expected to occur between 1970 and 1980. The actual number of industry-related jobs in the Region in 1980—333,500—did, in fact, approximate the year 2000 industrial employment level envisioned under the stable regional growth scenario, and no material increase in industry-related employment is envisioned between 1980 and the year 2000 under this scenario. This suggests that, under the stable growth scenario, there would be no need for additional industrial land between 1980 and 2000, except for that which is necessary to accommodate the changing distribution of industrial operations within the Region.

It should be noted that the regional land use plan design standard of seven acres of industrial land per 100 additional industrial employees reflects the overall land consumption patterns of industrial operations engaged primarily in the production of durable and nondurable goods and developed within the Region in the 1960's and early 1970's. A change in this land consumption ratio could significantly affect the amount of industrial land needed in the Region through the year 2000. An increase in the level of automation in traditional manufacturing operations, for example, could be expected to increase the overall industrial land area/employee ratio. In this case, the estimate of the need for industrial land based upon the historic industrial land consumption ratio would tend to be conservative, although the conservative bias may be offset by the probable decrease in the number of employees within the industries most affected by automation. In addition, a shift in the type of industrial operations in the Region away from traditional manufacturing activities—for example, a shift to high technology industries—could also be expected to affect the overall land consumption ratio, although the magnitude and direction of such a change remains a matter of conjecture.

It should also be noted that efforts to estimate the future industrial land needs in the Region are further complicated by the increasing overlap in the types of land use which may be accommodated in industrial parks, research parks, and office parks. Research divisions of industrial firms may be located in all three types of parks. Industrial firms may locate working quarters for certain administrative and management personnel in office parks, or similar settings, away from the industrial plant itself. Certain retail and wholesale trade activities and service activities may be appropriately developed in those industrial parks where uses are restricted to light industrial and selected commercial activities. These overlapping use situations underscore the uncertainty inherent in any efforts to estimate future industrial land development needs.

SUMMARY

This chapter has described recent economic activity trends in southeastern Wisconsin within the context of major national economic trends, and has examined alternative future economic growth scenarios for the Region. A summary of the most important findings of this chapter is presented below:

1. Two national economic trends—the changing distribution of economic activity among the various multi-state regions of the United States and the changing structure of the national economy—have an important bearing on economic activity in southeastern Wisconsin. The distribution of economic activity in the nation has changed significantly, with population, employment, and real personal income growing faster in the South and West than in the northeast and north-central regions of the nation during the last two decades. The changing distribution of economic activity has been accompanied by a decline in the relative importance of manufacturing employment to the nation's economy. Nationally, manufacturing employment increased by only about 13 percent in the 1960's and by about 11 percent in the 1970's, compared to about 19 percent during the 1950's. As a result, the nation's manufacturing employment declined from about 27 percent of total employment in 1960 to about 22 percent of total employment in 1980. Basic structural change in the national economy is also evidenced by a shift in the nature of manufacturing activities, with high technology industries accounting for a continually increasing portion of manufacturing jobs.

2. Following national economic trends, manufacturing employment in the State of Wisconsin increased less rapidly than total employment between 1960 and 1980. As a result, after a slight increase between 1950 and 1960, manufacturing employment's

relative share of total employment in the State declined from 33.0 percent in 1960 to 28.5 percent in 1980. The State's share of total manufacturing employment in the nation, however, has remained relatively constant, declining very slightly from 2.84 percent in 1950 to 2.75 percent in 1980.

3. Within southeastern Wisconsin, the employed civilian labor force increased from about 524,600 in 1950 to about 826,500 in 1980, a relative increase of 58 percent. This growth rate is slightly higher than that for the State overall—56 percent—but less than that for the nation—73 percent—over the same period.

4. The decline in the relative importance of manufacturing employment described above for the State and the nation has also occurred in the Southeastern Wisconsin Region. Manufacturing employment as a proportion of total regional employment declined by 9.4 percent, from 42.6 percent in 1950 to 33.2 percent in 1980. In contrast, the relative share of regional employment in the services sector increased by 11.8 percent, from 15.2 percent in 1950 to 27.0 percent in 1980.

5. There has been a significant change in the spatial distribution of economic activity, as well as in the overall level and structure of the regional economy, during the past three decades. In particular, there has been a shift in economic activity, as measured by jobs, toward the suburban and rural counties of the Region. Waukesha County's share of all jobs in the Region increased dramatically, from 2.8 percent in 1950 to 13.5 percent in 1980. Conversely, Milwaukee County's share of all jobs decreased from 79.3 percent in 1950 to 62.0 percent in 1980.

6. As a result of the increasing uncertainty inherent in forecasting future conditions, including future economic activity and population levels, the Commission in the mid-1970's began incorporating an "alternative futures" approach into its planning programs. As part of this effort, the Commission prepared alternative future growth scenarios for the Southeastern Wisconsin Region, representing a range of future conditions which may be expected to occur through the end of this century. These scenarios differ significantly with respect to future regional population and economic growth, with one scenario pointing toward moderate population and economic growth in the Region, and the other pointing toward a stable economy and a declining population in the Region. These scenarios postulate a range of future population and employment levels and provide a framework within which future industrial land development needs in the Region can be assessed.

7. The economic changes that may be expected to occur under a moderate regional growth scenario represent a continuation of the types of changes that have occurred historically in the regional economy, with long-term economic growth at a rate at or slightly below national averages. Growth in the regional economy would result from the interaction of several factors assumed as part of the moderate growth scenario, including a growing demand for goods and services resulting from an increase in the resident population; a growing regional labor force resulting from an increase in the portion of the resident population in the work force age groups, and an increase in the female labor force participation rate; and an increase in the economic competitiveness and attractiveness of the Region, relative to other parts of the nation. Under the moderate regional growth scenario, the number of jobs available in the Region would increase from a 1970 level of about 741,600 to about 1,016,000 in the year 2000, an increase of 37 percent. Manufacturing employment would continue to be the largest regional group, with about 320,300 jobs anticipated in the year 2000, an increase of about 28 percent over the 1970 level of 251,000 jobs.

8. In contrast to the moderate regional growth scenario, the stable regional growth scenario envisions an inert regional economy resulting from the interaction of several factors assumed as part of this scenario, including a declining future population level and an inability of the Region to preserve and expand its economic base and thus remain competitive with other regions of the nation. Under this scenario, the rate of increase in regional employment would be significantly below national rates of increase, particularly after the mid-1980's. Only modest employ-

ment growth would result from the increase in the labor force participation rate as well as from a general aging of the population, such that a larger proportion of the population would be in the labor force age group. Under the stable regional growth scenario, the number of jobs available in the Region is anticipated to increase modestly, from about 741,600 in 1970 to about 887,000 in the year 2000—an increase of about 20 percent. The Region's loss of competitiveness assumed under this scenario may be expected to lead to virtual stagnation in manufacturing employment. By the year 2000, manufacturing employment may be expected to total about 266,300 jobs, only 6 percent above the 1970 level of 251,000 jobs.

9. Actual 1981 total regional employment exceeded the employment level envisioned under the moderate regional growth scenario by about 1 percent, and exceeded the employment level envisioned under the stable regional growth scenario by about 7 percent. However, actual manufacturing employment in the Region in 1981 lagged behind the 1981 manufacturing employment levels envisioned under the moderate regional growth scenario and the stable regional growth scenario by about 10 percent and about 3 percent, respectively. These deviations are attributable to, among other factors, structural changes in the economy and to the nationwide recession. In 1980, actual manufacturing employment was only about 4 percent lower than the level envisioned under the moderate regional growth scenario, while actual manufacturing employment exceeded that envisioned under the stable regional growth scenario by about 3 percent.

10. The alternative regional growth scenarios could be expected to generate substantially different industrial land development needs in the Region through the year 2000. Under the moderate regional growth scenario, industry-related employment—including employment in manufacturing, wholesale trade, and construction—would increase from about 333,500 jobs in 1980 to about 398,600 jobs in the year 2000, an increase of 65,100 jobs, or 20 percent. This increase in industrial activity could be expected to generate the need for at least 4,600 acres, or about 7.2 square miles, of additional industrial land in the Region between 1980 and 2000. In contrast, the stable regional growth scenario does not envision any material increase in industrial employment in the Region between 1980 and 2000; the actual number of industry-related jobs in the Region in 1980—333,500—approximates the year 2000 industrial employment level envisioned under the stable growth scenario. This suggests that under the stable regional growth scenario, there would be no need for additional industrial l land byond that necessary to accommodate the changing distribution of industrial operations in the Region.

CONCLUSION

As indicated in this chapter, the past decade has been marked by major shifts in economic activity patterns, including changes in the distribution of economic activity both nationally and within the Southeastern Wisconsin Region, and by structural change in the economy, as evidenced by a decline in manufacturing employment relative to total employment and by a change in the nature of manufacturing activities as reflected in the growth of high technology industries. Such rapidly changing economic conditions make the task of forecasting future economic activity levels in the Region increasingly difficult and full of uncertainty.

The alternative future growth scenarios described in this chapter postulate a range of future economic activity levels for the Southeastern Wisconsin Region. These scenarios were developed not as forecasts per se, but as a framework bracketing future economic conditions which could materialize within the Region. The moderate regional growth scenario envisions an expanding regional economy, including a 20 percent increase in industrial employment in the Region between 1980 and the year 2000. The moderate regional growth scenario could be expected to generate the need for at least 4,600 acres, or 7.2 square miles, of additional industrial land in the Region during this time. Conversely, the stable regional growth scenario does not envision any material increase in industrial employment between 1980 and 2000, suggesting that there would be no need for additional industrial land except for that which may be required to accommodate change in the distribution of industrial activity in the Region.

It is impossible to predict with certainty whether economic growth in the Region will more closely approximate conditions anticipated under the moderate regional growth scenario or the stable regional growth scenario during the balance of this century. It is important to note, however, that the Regional Planning Commission has selected the moderate regional growth scenario as the basis for the formulation of an evolving set of functional plans to guide physical development of the Region. In so doing, the Commission has affirmed that economic activity levels postulated by the moderate regional growth scenario represent reasonable goals toward which regional growth and development should be directed, and has indicated further that the pessimistic economic conditions postulated by the stable regional growth scenario—particularly the virtual stagnation of manufacturing employment, historically the largest employment group in the Region—are unacceptable goals for regional economic development.

As noted in this chapter, future economic conditions in the Region will be determined in part by external factors over which public and private decision-makers within the Region have little or no influence. Future economic conditions, however, will also be influenced in part by the effectiveness of state, regional, and local economic development programs undertaken to maintain and enhance the economic vitality of the State and subareas of the State. The effectiveness of such economic development programs will be enhanced if it can be demonstrated that the area concerned has an adequate supply of sites which are suitable for, and which can readily be made available to, industrial development.

Within the Southeastern Wisconsin Region, the supply of sites which are suitable for, and which can be made available to, industrial development should, at a minimum, be sufficient to meet the staged industrial land development requirements associated with a moderate regional growth scenario for the Region, as embodied in the adopted regional land use plan. It is also desirable that additional potential sites—exceeding the area requirements attendant to a moderate regional growth scenario—be identified in order to ensure that the Region can readily respond to unforeseen industrial development needs, as well as to accommodate the free operation of the land market.

Chapter IV

INDUSTRIAL LAND DEVELOPMENT TRENDS

The Southeastern Wisconsin Region contains a diversity of industrial areas, ranging from isolated sites occupied by individual manufacturing firms, to large industrial corridors which historically evolved along rail lines and waterways, to modern, planned industrial parks. This chapter describes the existing (1980) industrial land use base of the Region, and changes in that base since 1963. More specifically, the first section of this chapter describes the amount and spatial distribution of industrial land in the Region in 1980, along with changes in industrial land between 1963 and 1980. The second section discusses the industrial land development which has occurred within planned industrial park settings as opposed to such development outside such settings. The final section presents industrial employment densities within the Region, describing, in particular, the ratio between industrial land use and industrial employment levels in 1980 and changes in that ratio between 1963 and 1980.

INDUSTRIAL LAND USE

The information on industrial land use presented in this chapter was collated from the Regional Planning Commission land use inventories for the years 1963 and 1980. Within the context of those inventories, industrial land is defined as land which is used for the manufacture of durable and nondurable goods and land which is used for wholesaling and storage activities. Net industrial land is defined as the actual site area devoted to such uses--that is, the ground floor area occupied by any buildings, plus outside storage areas and related yards. Gross industrial land is defined as net industrial land plus associated off-street parking.

In 1980, net industrial land use in southeastern Wisconsin totaled 10,687 acres, or less than 1 percent of the total area of the Region. The net industrial land use in 1980 consisted of 5,436 acres devoted to manufacturing uses and 5,251 acres devoted to wholesaling and storage uses. Gross industrial land in the Region—consisting, as already noted, of net industrial land plus related off-street parking—totaled 13,448 acres (see Table 13).

Net industrial land in the Region increased by 4,319 acres, or 68 percent, between 1963 and 1980. This represents an annual average increase of 254 acres over the 17-year period. Gross industrial land in the Region increased by 6,077 acres, or 82 percent, between 1963 and 1980. This represents an annual average increase over this time.

Between 1963 and 1980, industrial land development in the Region occurred at a somewhat higher relative rate than the overall rate of urban development. Consequently, the ratio of industrial land to total urban land in the Region increased slightly during this time. In this regard, industrial land comprised 3.8 percent of all urban land in the Region in 1980, slightly higher than the figure of 3.5 percent in 1963. Gross industrial land in the Region accounted for 4.8 percent of urban land in the Region in 1980, a slight increase from 4.1 percent in 1963.[1]

There was considerable variation in the rate of industrial development among the seven counties in southeastern Wisconsin between 1963 and 1980. The amount of increase in gross industrial land use ranged from a low of 330 acres in Walworth County to a high 1,803 acres in Milwaukee County during this time. The rate of increase in gross industrial land ranged from a low of 40 percent in Milwaukee County to a high of 245 percent in Waukesha County.

As a result of these differing county growth rates, the distribution of industrial land use in the Region changed significantly during the 1960's and 1970's, the most dramatic change occurring in Waukesha and Milwaukee Counties (see Table 14 and Maps

[1] *For the purposes of this analysis, urban development is defined as a concentration of residential, commercial, industrial, governmental, or institutional buildings or structures with their associated yards, parking, and service areas having a combined area of five acres or more in size. In the case of residential uses, such areas include at least 10 structures—over a maximum distance of one-half mile—located along a linear feature such as a roadway or a lakeshore, or at least 10 structures located in a relatively compact group in a residential subdivision.*

Table 13

INDUSTRIAL LAND IN THE REGION BY COUNTY: 1963 AND 1980

County	Type of Industrial Use	Industrial Land			
		1963 (acres)	1980 (acres)	Change: 1963-1980	
				Acres	Percent
Kenosha	Manufacturing	219	314	95	43.4
	Wholesaling and Storage	346	555	209	60.4
	Net Industrial	565	869	304	53.8
	Related Parking	43	119	76	176.7
	Gross Industrial	608	988	380	62.5
Milwaukee	Manufacturing	2,045	2,644	599	29.3
	Wholesaling and Storage	1,796	2,264	468	26.1
	Net Industrial	3,841	4,908	1,067	27.8
	Related Parking	677	1,413	736	108.7
	Gross Industrial	4,518	6,321	1,803	39.9
Ozaukee	Manufacturing	158	320	162	102.5
	Wholesaling and Storage	77	212	135	175.3
	Net Industrial	235	532	297	126.4
	Related Parking	33	112	79	239.4
	Gross Industrial	268	644	376	140.3
Racine	Manufacturing	361	751	390	108.0
	Wholesaling and Storage	200	498	298	149.0
	Net Industrial	561	1,249	688	122.6
	Related Parking	85	292	207	243.5
	Gross Industrial	646	1,541	895	138.5
Walworth	Manufacturing	85	202	117	137.6
	Wholesaling and Storage	205	366	161	78.5
	Net Industrial	290	568	278	95.9
	Related Parking	36	88	52	144.4
	Gross Industrial	326	656	330	101.2
Washington	Manufacturing	129	315	186	144.2
	Wholesaling and Storage	117	312	195	166.7
	Net Industrial	246	627	381	154.9
	Related Parking	37	178	141	381.1
	Gross Industrial	283	805	522	184.5
Waukesha	Manufacturing	287	890	603	210.1
	Wholesaling and Storage	343	1,044	701	204.4
	Net Industrial	630	1,934	1,304	207.0
	Related Parking	92	559	467	507.6
	Gross Industrial	722	2,493	1,771	245.3
Region	Manufacturing	3,284	5,436	2,152	65.5
	Wholesaling and Storage	3,084	5,251	2,167	70.3
	Net Industrial	6,368	10,687	4,319	67.8
	Related Parking	1,003	2,761	1,758	175.3
	Gross Industrial	7,371	13,448	6,077	82.4

Source: SEWRPC.

Table 14

PERCENTAGE DISTRIBUTION OF INDUSTRIAL LAND IN THE REGION BY COUNTY: 1963 AND 1980

County	Gross Industrial Land[a]					
	1963		1980		Change: 1963-1980	
	Acres	Percent of Region	Acres	Percent of Region	Acres	Percent
Kenosha	608	8.3	988	7.3	380	62.5
Milwaukee	4,518	61.3	6,321	47.0	1,803	39.9
Ozaukee	268	3.6	644	4.8	376	140.3
Racine	646	8.8	1,541	11.5	895	138.5
Walworth	326	4.4	656	4.9	330	101.2
Washington	283	3.8	805	6.0	522	184.5
Waukesha	722	9.8	2,493	18.5	1,771	245.3
Region	7,371	100.0	13,448	100.0	6,077	82.4

[a] *Includes lands used for manufacturing, wholesaling and storage, and related parking.*

Source: SEWRPC.

10 and 11). In 1963, Milwaukee County accounted for 61.3 percent of all industrial land in the Region. Kenosha, Racine, and Waukesha Counties accounted for 8.3, 8.8, and 9.8 percent, respectively. Ozaukee, Walworth, and Washington Counties each accounted for less than 5.0 percent of the regional total. By 1980, Milwaukee County's share of industrial land in the Region had decreased to 47.0 percent, while Waukesha County's share had increased to 18.5 percent. The proportionate share of industrial land in the Region also increased in Ozaukee, Racine, Walworth, and Washington Counties between 1963 and 1980, while Kenosha County's share of the regional total decreased slightly during this time. The decentralization of industrial land in the Region evident in Table 14 parallels the decentralization in total employment during the 1960's and 1970's described in Chapter III of this report.

INDUSTRIAL PARKS

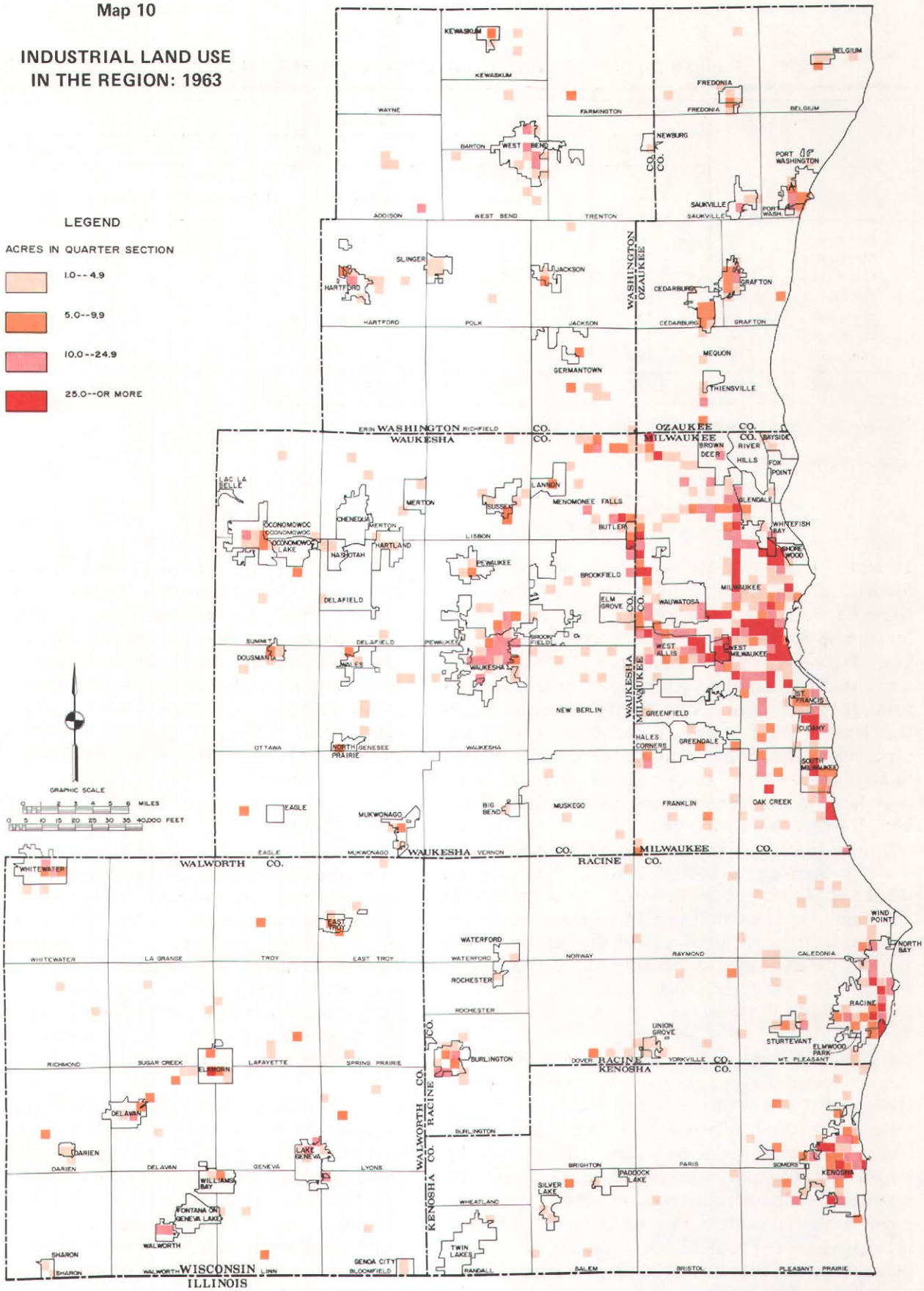
As previously noted, the Southeastern Wisconsin Region encompasses a diversity of industrial areas. Historically, many of the largest concentrations of industry evolved adjacent to railways and waterways. These industrial areas are characterized by a high level of site coverage and, in some cases, by a mixture of industrial and other urban uses. These older industrial centers, located in the most heavily urbanized areas of the Region, remain an integral part of the regional industrial base. During the past several decades, however, new industrial activities have increasingly been located within planned industrial areas, commonly referred to as industrial parks, which are designed and situated so as to provide ready access to highway and, particularly, freeway facilities; adequate utility and other essential facilities and services; and basic compatibility with adjacent portions of the community. This section of the report presents an analysis of the amount of industrial land development in the Region which has occurred within industrial parks versus the amount which has occurred outside such settings.

The analysis involved an inspection of all industrial areas in the Region shown on 1980 aerial photographs to identify those which displayed the physical features characteristic of industrial parks. Industrial areas were analyzed in terms of the criteria set forth in Table 15. Specifically, industrial parks were identified as those industrial areas meeting criteria nos. 1 to 4 and at least three of the four criteria nos. 5 to 8.

As indicated in Table 15, an industrial park size threshhold of 80 acres was selected for the purposes of this analysis. Nationally, there is considerable variation in the size of industrial parks. A 1961 survey conducted by the Urban Land Institute indicated that the average size of planned industrial parks nationally was 319 acres. Of the 272 industrial parks included in the Urban Land Institute survey, 13 percent were less than 50 acres

Map 10

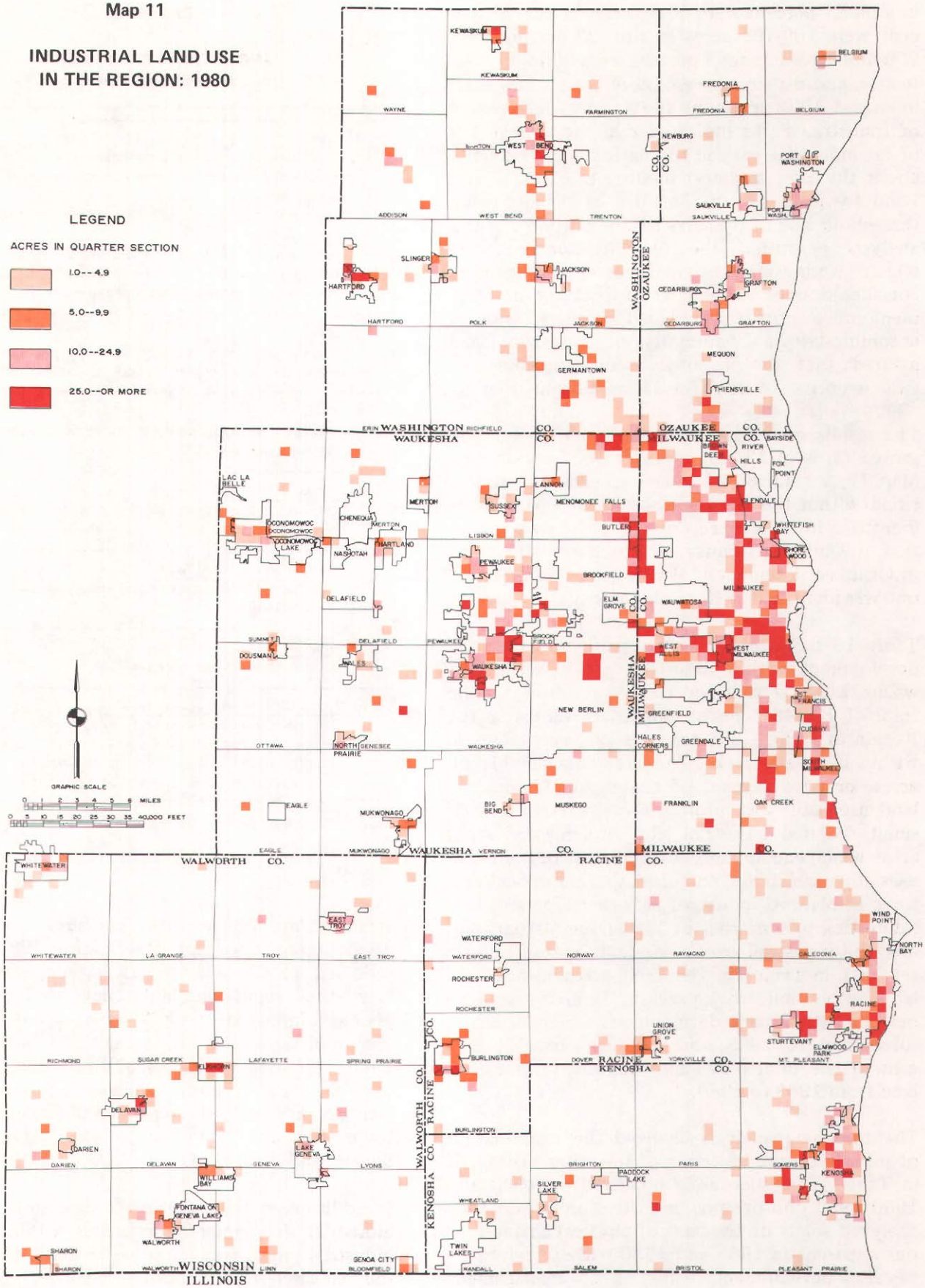
INDUSTRIAL LAND USE IN THE REGION: 1963



Source: SEWRPC.

Map 11

INDUSTRIAL LAND USE IN THE REGION: 1980



Source: SEWRPC.

in size; 21 percent were 50-99 acres in size; 25 percent were 100-199 acres in size; 23 percent were 200-499 acres in size; 9 percent were 500-999 acres in size; and 9 percent were more than 1,000 acres in size. A 1972 survey by the National Association of Industrial Parks indicated that the average size of an industrial park in the nation was 312 acres, about the same as determined by the 1961 Urban Land Institute survey. The use of the minimum threshhold size of 80 acres for the purposes of this analysis permitted the identification of sites which, while small by national standards, were considered large enough to support the development of a properly designed industrial site to accommodate a community of industries, and assured that the inventory would include the vast majority of such areas within the Region.

The results of the industrial park analysis are presented on Map 12 and in Table 16. As shown on Map 12, a total of 27 industrial parks were identified within the Region. Twelve such parks were identified in Milwaukee County, eight were identified in Waukesha County, two each were identified in Ozaukee, Racine, and Washington Counties, and one was identified in Kenosha County.

Table 16 indicates the amount of industrial land development within industrial parks versus that within other settings in 1963 and 1980. Of the total of 13,448 acres of industrial land use in the Region in 1980, 1,696 acres, or 12.6 percent, were within industrial parks. The large balance—11,752 acres, or 87.4 percent of the regional industrial land use base--was in other settings, ranging from small, isolated industrial sites to large industrial areas which encompass concentrations of industrial uses, but which do not display the physical features of planned industrial park development. It is interesting to note that in 1963 no industrial areas met the industrial park site identification criteria set forth in Table 15. The 1,696 acres of industrial land within industrial parks in 1980 is therefore new industrial park development which occurred subsequent to 1963, and represents over 26 percent of the total 6,077-acre increase in industrial land from 1963 to 1980.

The foregoing analysis involved the examination of industrial areas in terms of the criteria set forth in Table 15 as such areas appeared on 1963 and 1980 aerial photographs. Industrial areas were thus analyzed solely on the basis of physical characteristics apparent in 1963 and 1980 without reference to site development plans or to management

Table 15

INDUSTRIAL PARK SITE IDENTIFICATION CRITERIA

1. Use The site is designed to accommodate a multiplicity of industrial firms and supporting transportation and utility uses.
2. Street System The site is served by an internal street system which provides convenient access from individual parcels in the site to the arterial street and highway system.
3. Size The size of the site, as evidenced by the area directly served by the internal street system, is at least 80 acres.
4. Utilities The site is served by public sanitary sewerage and public water supply services.
5. Setbacks, Yards Uniform street setbacks and side yards are provided, contributing to an open, park-like environment.
6. Parking and Loading Areas Adequate off-street parking and loading areas are provided.
7. Storage Storage areas are generally enclosed.
8. Compatibility with Adjacent Areas The use is compatible with adjacent portions of the community. Compatibility is achieved by the use of boundaries such as arterial streets, railways, riverine areas, and parks, which provide desirable buffering.

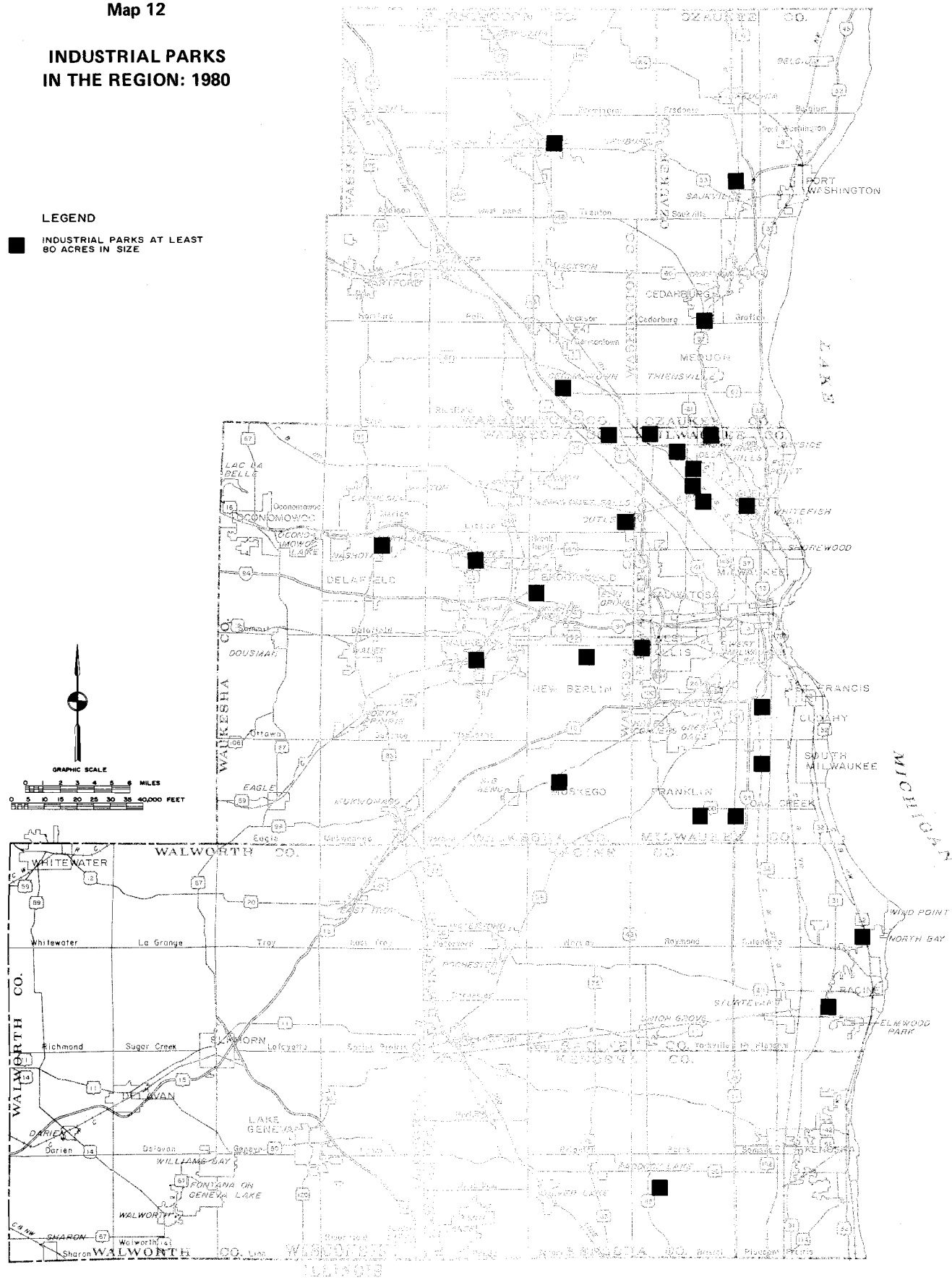
Source: Wisconsin Electric Power Company and SEWRPC.

arrangements of the sites concerned. Industrial development occurring after April 1980 is not reflected in the analysis. It is recognized, however, that significant industrial development in planned industrial parks has occurred in some communities within the Region subsequent to 1980, including the Cities of Brookfield, Burlington, Elkhorn, Kenosha, Milwaukee, New Berlin, Oak Creek, and Waukesha, and Villages of Germantown, Hartland, Menomonee Falls, Mukwonago, Sussex, and Waterford.

In addition to the relatively recent trend of new industrial development occurring within planned industrial parks, there is some evidence to indicate the emergence of another trend in industrial

Map 12

INDUSTRIAL PARKS IN THE REGION: 1980



Source: Wisconsin Electric Power Company and SEWRPC.

Table 16

INDUSTRIAL LAND WITHIN INDUSTRIAL PARKS AND OTHER INDUSTRIAL AREAS: 1963 AND 1980

County	Location of Industrial Land	Industrial Land Use			
		1963		1980	
		Acres	Percent	Acres	Percent
Kenosha	In Industrial Park	0	0.0	32	3.2
	In Other Area	608	100.0	956	96.8
	Total	608	100.0	988	100.0
Milwaukee	In Industrial Park	0	0.0	695	11.0
	In Other Area	4,518	100.0	5,626	89.0
	Total	4,518	100.0	6,321	100.0
Ozaukee	In Industrial Park	0	0.0	63	9.8
	In Other Area	268	100.0	581	90.2
	Total	268	100.0	644	100.0
Racine	In Industrial Park	0	0.0	93	6.0
	In Other Area	646	100.0	1,448	94.0
	Total	646	100.0	1,541	100.0
Walworth	In Industrial Park	0	0.0	0	0.0
	In Other Area	326	100.0	656	100.0
	Total	326	100.0	656	100.0
Washington	In Industrial Park	0	0.0	93	11.6
	In Other Area	283	100.0	712	88.4
	Total	283	100.0	805	100.0
Waukesha	In Industrial Park	0	0.0	720	28.9
	In Other Area	722	100.0	1,773	71.1
	Total	722	100.0	2,493	100.0
Region	In Industrial Park	0	0.0	1,696	12.6
	In Other Area	7,371	100.0	11,752	87.4
	Total	7,371	100.0	13,448	100.0

Source: SEWRPC.

development—namely, a trend toward "site banking" by industrial firms seeking new sites for plant locations. "Site banking" is simply a strategy whereby industrial firms purchase a site larger than their immediate needs to accommodate significant, but currently unplanned for, expansion of operations. In a 1977 survey conducted by the Industrial Development Research Council (IDRC) of its active members and research associates nationwide, 44 respondents, or about 57 percent of the 77 survey respondents, indicated that they had adopted or were considering the adoption of a "site banking" strategy in the purchase of new industrial sites to ensure adequate land availability in the future and to guard against rising land acquisition costs.

INDUSTRIAL EMPLOYMENT DENSITIES

The changes in the amount and spatial distribution of industrial development in the Region during the 1960's and 1970's have been accompanied by a change in overall industrial employment densities. Industrial employment densities—calculated as the number of acres of industrial land use per 100 industrial employees—are presented on a net and gross basis for the years 1963 and 1980 in Table 17.

As indicated in Table 17, the ratio of net industrial land to total industrial employment increased in the Region overall between 1963 and 1980—from 2.2 acres per 100 employees in 1963 to 3.2 acres

per 100 employees in 1980, an increase of about 46 percent. Similarly, the ratio of gross industrial land to total industrial employment increased from 2.5 acres per 100 employees in 1963 to 4.0 acres per 100 employees in 1980, or by about 60 percent during the 17-year period. As further indicated in Table 17, increases in the industrial land/employee ratio occurred in each of the seven counties in the Region between 1963 and 1980.

The observed increases in industrial land/employee ratios—or stated another way, the decrease in industrial employment densities—may be attributed to, among other factors, a shift toward low-rise industrial installations; the development of industrial sites with larger yards and setbacks and more open space; and, in the case of the gross industrial land/employee ratio, an increase in the provision of off-street parking. The increase in the industrial land/employee ratio also undoubtedly reflects basic changes in manufacturing processes, in particular a shift toward more automated, less labor-intensive industrial operations.

Table 17

INDUSTRIAL EMPLOYMENT DENSITY IN THE REGION BY COUNTY: 1963 AND 1980

County	Acres of Industrial Land per 100 Industrial Employees[a]			
	1963		1980	
	Gross	Net	Gross	Net
Kenosha	2.7	2.5	5.3	4.6
Milwaukee	2.1	1.8	3.2	2.5
Ozaukee	4.4	3.9	5.2	4.3
Racine	2.6	2.3	4.5	3.7
Walworth	5.7	5.0	7.3	6.3
Washington	4.2	3.6	5.9	4.6
Waukesha	4.6	4.1	5.0	3.8
Region	2.5	2.2	4.0	3.2

[a] *Employment densities for 1980 were obtained by dividing the amount of industrial land in 1980 (acres) by the three-year average industrial employment level for 1979, 1980, and 1981 as derived from data published by the U. S. Bureau of the Census. Employment densities for 1963 were obtained by dividing the amount of industrial land in 1963 (acres) by the average industrial employment level for 1962 and 1964. Industrial employment data were not published by the Census Bureau for 1963.*

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

SUMMARY

This chapter has described recent industrial development trends within the Southeastern Wisconsin Region. Below is a summary of the most important findings of the chapter.

1. Net industrial land, consisting of land devoted to manufacturing, wholesaling, and storage uses, totaled 10,687 acres, or less than 1 percent of the total area of the Region, in 1980. Net industrial land in the Region increased by 4,319 acres, or 68 percent, between 1963 and 1980—an annual average increase of 254 acres.

2. Gross industrial land, consisting of net industrial land plus related parking, totaled 13,448 acres, or also less than 1 percent of the total area of the Region, in 1980. Gross industrial land in the Region increased by 6,077 acres, or 82 percent, between 1963 and 1980—an annual average increase of 357 acres.

3. There was considerable variation in the rate of industrial development among the seven counties in southeastern Wisconsin between 1963 and 1980. The amount of increase in gross industrial land use ranged from a low of 330 acres in Walworth County to a high of about 1,803 acres in Milwaukee County. In relative terms, however, the rate of increase in gross industrial land ranged from a low of 40 percent in Milwaukee County to a high of 245 percent in Waukesha County. These differing growth rates resulted in a significant change in the distribution of industrial land within the Region. The most dramatic changes in this regard occurred in Milwaukee and Waukesha Counties. Waukesha County's share of industrial land in the Region increased from 9.8 percent in 1963 to 18.5 percent in 1980, while Milwaukee County's share decreased from 61.3 percent to 47.0 percent during this time.

4. During the past several decades, increasing emphasis has been placed upon the location of industrial activities within planned industrial areas, commonly referred to as industrial parks, which are designed and situated so as to provide ready access to highway facilities and adequate utility and other essential facilities and services. Important

features of industrial park development include an internal street system which provides convenient access from individual parcels in the site to the arterial street and highway system; uniform setbacks and yards, which maintain an open, parklike environment; adequate off-street parking and loading areas; and basic compatibility between the industrial park and adjacent parts of the community. It was found that of the 13,448 acres of gross industrial land in the Region in 1980, 1,696 acres, or about 13 percent, were within industrial parks. The large balance—11,754 acres, or about 87 percent of the regional industrial land use base—was within other settings, ranging from small, isolated industrial sites to large industrial areas which encompass concentrations of industrial uses but which do not display the physical features characteristic of industrial park development. There were no industrial parks in the Region in 1963. The 1,696 acres of industrial land within industrial parks in 1980 thus is new industrial park development which occurred subsequent to 1963, and represents over 26 percent of the total 6,077-acre increase in industrial land from 1963 to 1980.

5. Changes in the amount and spatial distribution of industrial development in the Region during the 1960's and 1970's were accompanied by changes in industrial employment densities. The ratio of net industrial land to total industrial employment increased from 2.2 acres per 100 employees in 1963 to 3.2 acres per 100 employees in 1980. The ratio of gross industrial land to total industrial employment increased from 2.5 acres per 100 employees in 1963 to 4.0 acres per 100 employees in 1980. These changes may be attributed to a variety of factors, including a shift toward low-rise industrial installations, the provision of larger yards and more open space at industrial sites, the provision of more off-street parking, and changes in basic manufacturing processes, including a shift toward more automated, less labor-intensive operations.

Chapter V

ZONED INDUSTRIAL LAND

Among the various land use controls available to local units of government in Wisconsin, perhaps the most effective in guiding and shaping land use patterns in conformance with local and areawide land use objectives is comprehensive zoning. With respect to industrial development, the local zoning authority can be used both to protect and preserve existing industrial areas and to reserve open lands for future industrial use. This chapter presents the results of an inventory of industrial zoning in southeastern Wisconsin conducted under the industrial land use study. Specifically, this chapter describes the amount and spatial distribution of land zoned for industry, and indicates the extent of development within lands which have been placed in industrial zoning districts.

LANDS ZONED FOR INDUSTRIAL USE

The inventory of zoned industrial land in the Region includes all land that has been placed in zoning districts which permit industry-related activities, including manufacturing, warehousing, and wholesaling activities. Included are lands which have been placed in traditional industrial zoning districts as well as lands which have been placed in commercial and light manufacturing districts and similar districts which typically accommodate a mixture of manufacturing and commercial uses, including office uses. Land zoned for quarrying and other mineral extraction uses was not included in the inventory.

The results of the inventory of industrially zoned land are summarized graphically on Map 13 and quantitatively in Table 18. As indicated in Table 18, 71,355 acres, or 4.1 percent of the total area of the Southeastern Wisconsin Region, were zoned for industrial use in 1983. The largest concentrations of industrially zoned land in 1983 were in the Milwaukee urbanized area—which includes Milwaukee County and adjacent portions of Ozaukee, Washington, and Waukesha Counties—and in the Kenosha and Racine urbanized areas. There were smaller concentrations in many outlying cities and villages. On a county basis, Milwaukee County, with 27,080 acres, and Waukesha County, with 16,435 acres, accounted for a large proportion of all industrially zoned land in the Region, 38 percent and 23 percent, respectively. At the other extreme, Walworth County, with 3,071 acres, accounted for only 4.3 percent of all industrially zoned land.

Table 18

AREAS ZONED FOR INDUSTRIAL USE BY COUNTY IN THE REGION: 1983

County	Area Zoned for Industrial Use	
	Acres	Percent of Region
Kenosha	6,174[a]	8.7
Milwaukee	27,080	37.9
Ozaukee	5,184	7.3
Racine	7,768	10.9
Walworth	3,071	4.3
Washington	5,643	7.9
Waukesha	16,435	23.0
Region	71,355	100.0

[a] *Reflects adoption of updated county zoning by Towns of Pleasant Prairie, Randall, Somers, and Wheatland.*

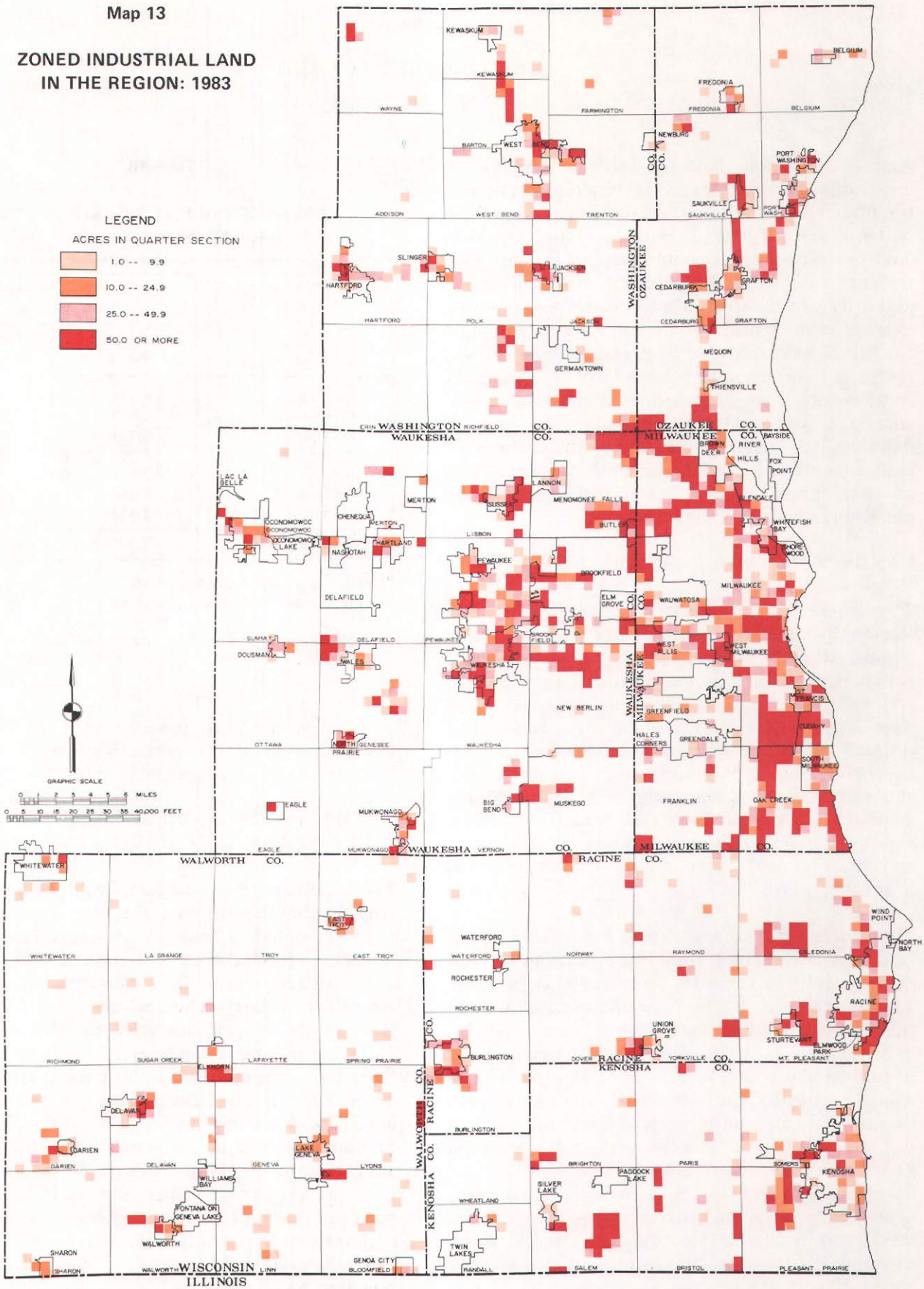
Source: Wisconsin Electric Power Company and SEWRPC.

GENERALIZED LAND USE WITHIN INDUSTRIAL ZONING DISTRICTS

The total area of the Region zoned for industry is considerably larger than the area actually being used for industry. Table 19 indicates the extent of industrial development and other urban development within areas of the Region which have been zoned for industry. The analysis of total industrial land in the Region involved the delineation of industrial zoning districts as of 1983 on Regional Planning Commission aerial photographs dated 1980, and the identification and measurement of actual land use—as reflected on the 1980 aerial photographs—within the zoned areas. The discrepancy in inventory base years would tend to understate the amount of industrially zoned land which has been developed and to overstate the amount of undeveloped land within industrial zoning districts. The effects of the difference in base years, should, however, be minimal.

Map 13

ZONED INDUSTRIAL LAND IN THE REGION: 1983



Source: Wisconsin Electric Power Company and SEWRPC.

The analysis indicated that land in industrial use—including land used for manufacturing, wholesaling, and storage activities and related parking—comprised 11,979 acres, or 17 percent of the total area of 71,355 acres which was zoned for industry in 1983.[1] Land in other urban and urban-related uses totaled 23,686 acres and accounted for 33 percent of all land zoned for industrial use. Included in this category are retail and service uses; utility uses; transportation uses including streets, railways, harbor facilities, airports, and truck terminals; quarries; and landfill sites. Undeveloped land accounted for the balance—35,690 acres, or 50 percent—of all industrially zoned land in the Region. Undeveloped industrially zoned land encompassed 2.1 percent of the total area of the Region.

Of particular concern in the industrial land use study is the amount, spatial distribution, and quality of undeveloped land zoned for industry. Milwaukee and Waukesha Counties in combination account for about 18,400 acres of undeveloped industrially zoned land, just over one-half the regional total (see Table 20). As indicated on Map 14, the largest

[1] *As indicated in Chapter IV, total land used for manufacturing, wholesaling, and storage activities and related parking stood at 13,448 acres in 1980. Of this total, 11,979 acres have been placed in industrial zoning districts and 1,469 acres have been placed in business, agricultural, quarrying, and other zoning districts.*

Table 19

GENERALIZED LAND USE WITHIN INDUSTRIAL ZONING DISTRICTS IN SOUTHEASTERN WISCONSIN[a]

Generalized Land Use Category	Area Within Industrial Zoning Districts	
	Acres	Percent of Total
Industrial Use (includes manufacturing, wholesaling, storage, and related parking)	11,979	16.8
Other Urban and Urban-Related Uses (includes retail and service uses; utilities; transportation facilities including streets, railways, harbor facilities, airports, and truck terminals; quarries; and landfill sites)	23,686	33.2
Undeveloped Land	35,690	50.0
Total	71,355	100.0

[a] *The analysis summarized in this table involved the delineation of industrial zoning districts as of 1983 on aerial photographs dated 1980 and the identification and measurement of actual land uses, as reflected on 1980 aerial photographs, within the zoned areas. This table reflects the adoption of updated county zoning by the Towns of Pleasant Prairie, Randall, Somers, and Wheatland in Kenosha County.*

Source: Wisconsin Electric Power Company and SEWRPC.

Table 20

GENERALIZED LAND USE WITHIN INDUSTRIAL DISTRICTS[a]

County	Area Within Industrial Zoning Districts							
	Area in Industrial Use[b]		Area in Other Urban and Urban-Related Land Uses[c]		Undeveloped Area		Total	
	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total	Acres	Percent of Total
Kenosha	781	6.5	1,103	4.7	4,290	12.0	6,174	8.7
Milwaukee	6,084	50.8	11,887	50.2	9,109	25.5	27,080	37.9
Ozaukee	521	4.3	1,021	4.3	3,642	10.2	5,184	7.3
Racine	1,292	10.8	2,020	8.5	4,456	12.5	7,768	10.9
Walworth	498	4.2	1,187	5.0	1,386	4.0	3,071	4.3
Washington	613	5.1	1,534	6.5	3,496	9.8	5,643	7.9
Waukesha	2,190	18.3	4,934	20.8	9,311	26.0	16,435	23.0
Region	11,979	100.0	23,686	100.0	35,690	100.0	71,355	100.0

[a] *The analysis summarized in this table involved the delineation of industrial zoning districts as of 1983 on aerial photographs dated 1980 and the identification and measurement of actual land use, as reflected on 1980 aerial photographs, within the zoned areas. This table reflects the adoption of updated county zoning by the Towns of Pleasant Prairie, Randall, Somers, and Wheatland in Kenosha County.*

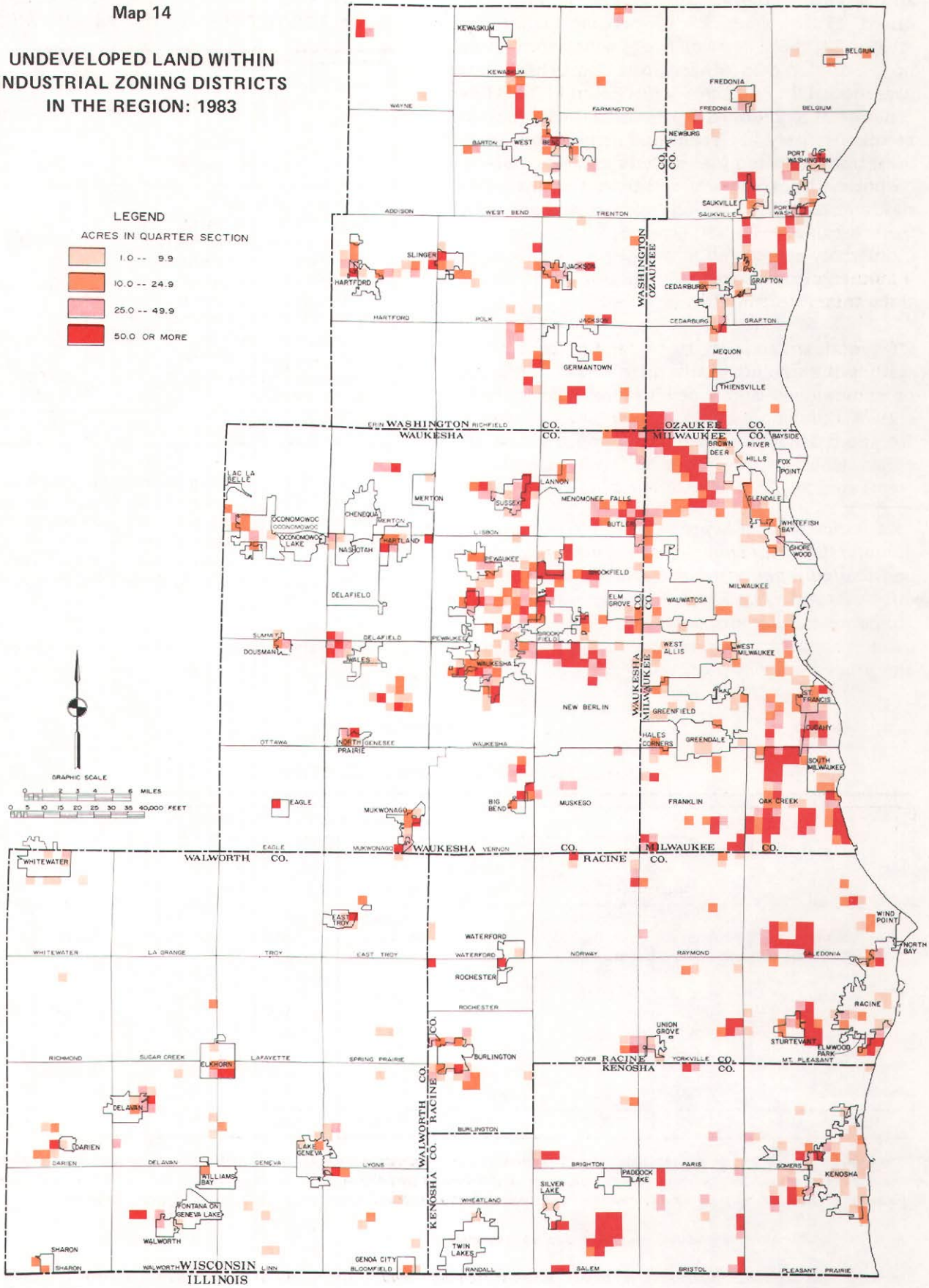
[b] *Includes manufacturing, wholesaling, storage, and related parking.*

[c] *Includes retail and service uses; utilities; transportation facilities including streets, railways, harbor facilities, airports, and truck terminals; quarries; and landfill sites.*

Source: Wisconsin Electric Power Company and SEWRPC.

Map 14

UNDEVELOPED LAND WITHIN INDUSTRIAL ZONING DISTRICTS IN THE REGION: 1983



Source: Wisconsin Electric Power Company and SEWRPC.

concentrations of undeveloped industrially zoned land were located in central Kenosha County; eastern Racine County, southeastern Milwaukee County; northwestern Milwaukee County and adjacent portions of Ozaukee County; and eastern Waukesha County. As further shown on Map 14, there are also significant amounts of undeveloped industrially zoned land in many of the outlying communities of the Region.

SUMMARY

This chapter has described the amount and spatial distribution of land zoned for industry in southeastern Wisconsin. A total of 71,355 acres, or 4.1 percent of the total area of the Southeastern Wisconsin Region, was zoned for industrial use in 1983. Among the seven counties in southeastern Wisconsin, the area zoned for industrial use ranged from a low of 3,071 acres in Walworth County to a high of 27,080 acres in Milwaukee County. Industrial land use—including land used for manufacturing, wholesaling, and storage activities and related parking—comprised 11,979 acres, or 17 percent of the total area zoned for industry in 1983. Land in other urban and urban-related uses totaled 23,686 acres and accounted for 33 percent of all land zoned for industrial use. Undeveloped land accounted for the balance—35,690 acres, or 50 percent of all land zoned for industry.

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Chapter VI

INDUSTRIAL SITE EVALUATION

Chapter IV of this report presented information on the amount and spatial distribution of existing industrial land use in southeastern Wisconsin. Such uses were found to occupy approximately 10,700 acres of land within the Region. Certain of the industrial land use areas identified in Chapter IV are vacant industrial buildings and structures which could be utilized to meet future industrial needs. The suitability of such installations for continued industrial use, however, is dependent upon such factors as the location of these installations and the age, condition, and functional utility of such installations. Chapter V of this report presented information on the amount and spatial distribution of lands placed within industrial zoning districts by the county and local units of government within southeastern Wisconsin. As noted in Chapter V, the county and local zoning ordinances and district maps have identified approximately 35,700 acres of vacant land for future industrial development, or more than three times the amount of land currently in industrial use. Not all of the undeveloped land that has been placed in industrial zoning districts, however, is in fact suitable for industrial development. Such zoned areas may possess physical limitations which economically preclude industrial development, or may not be readily accessible to transportation facilities or needed urban services such as public sanitary sewers and water supply facilities.

In addition to existing vacant industrial installations, and vacant land designated for industrial use through county and local zoning ordinances and district maps, there are other areas which may be considered to have potential for industrial development. These areas include vacant lands which are not currently zoned for industrial use, but either are identified in local land use plans for future industrial development or are otherwise being considered for industrial development by the local units of government. Like some of the industrially zoned areas, certain of the lands proposed for industrial development by local units of government may, in fact, be unsuitable for industrial use.

The information in this chapter is intended to facilitate the determination of the amount and spatial distribution of areas within the Region which are, as a practical matter, suitable for industrial development. Specifically, this chapter provides information which can be used to help determine the relative suitability of existing large, vacant industrial installations for re-occupation by active industries. This chapter also evaluates the suitability for industrial development of large, vacant, industrially zoned areas, as well as large, vacant, nonindustrially zoned areas considered to have potential for industrial development by local units of government. Finally, this chapter analyzes the relative capability of the vacant industrial installations, as well as suitable vacant industrially zoned and industrially proposed sites, to accommodate industrial employment in the Region to the year 2000.

EXISTING VACANT INDUSTRIAL INSTALLATIONS

Existing, vacant industrial installations can serve as suitable locations for new or relocating businesses seeking industrial sites within southeastern Wisconsin. Accordingly, information is presented herein on the known vacant industrial installations within the Southeastern Wisconsin Region. The Wisconsin Electric Power Company currently maintains an inventory of such installations as part of its on-going industrial attraction and retention program in the Region.

It must be recognized that the number and type of vacant industrial installations available for lease or purchase in the Region will vary over time. Nevertheless, the inventory presented herein provides an indication of the number and spatial distribution of vacant industrial installations which may be expected to be typically available for lease or purchase within the Region.

Table 21 provides information on the number and size of industrial installations by county, while Table 22 provides more detailed information on the very large—100,000 square feet or larger—vacant industrial installations in the Region. While there may be some actual, as well as perceived, disadvantages with some vacant industrial installations, including a lack of off-street parking, lack of site area for expansion, and functionally

Table 21

VACANT INDUSTRIAL INSTALLATIONS IN THE REGION: 1984

County	Buildings With Less Than 10,000 Square Feet		Buildings With 10,000-49,999 Square Feet		Buildings With 50,000-99,999 Square Feet		Buildings With 100,000 or More Square Feet		Total	
	Number of Buildings	Floor Area	Number of Buildings	Floor Area	Number of Buildings	Floor Area	Number of Buildings	Floor Area	Number of Buildings	Floor Area
Kenosha	6	26,900	7	206,754	--	--	2	270,000	15	503,654
Milwaukee	19	94,424	72	2,049,613	21	1,434,024	27	5,200,900	139	8,778,961
Ozaukee	--	--	1	13,000	5	333,210	--	--	6	346,210
Racine	4	19,536	5	99,950	6	449,276	1	307,300	16	876,062
Walworth	2	18,166	8	119,708	2	102,063	1	265,000	13	504,937
Washington	3	15,272	9	173,306	3	173,000	3	348,600	18	710,178
Waukesha	18	99,096	40	1,075,130	4	312,462	--	--	62	1,486,688
Region	52	273,394	142	3,737,461	41	2,804,035	34	6,391,800	269	13,206,690

Source: Wisconsin Electric Power Company and SEWRPC.

obsolete buildings which may be costly to renovate for a specific industrial use, many of the vacant industrial installations offer distinct advantages as well. The sites, for example, are typically provided with public sanitary sewer and water supply facilities; are, with few exceptions, properly zoned for industrial use; and are ready for immediate occupancy. In many cases, the buildings are equipped with cranes and other materials-handling equipment, and some include adjacent office space. Due, in part, to the age of such installations, they typically can be purchased or leased at costs substantially below those for new industrial installations. Such vacant industrial installations can, therefore, serve as a valuable reservoir of sites and buildings to accommodate expanding industrial operations or for the relocation of existing industrial operations within the Southeastern Wisconsin Region.

As indicated in Table 21, there were 269 vacant industrial installations encompassing over 13.2 million square feet of building floor area within the Southeastern Wisconsin Region in 1984. Milwaukee County, with 139 vacant industrial installations encompassing almost 8.8 million square feet of building floor area, recorded the most vacant industrial installations and most building floor area of any county, while Ozaukee County, with six vacant industrial installations encompassing about 350,000 square feet of building floor area, recorded the least vacant industrial installations and building floor area within the Region. There were 52 vacant industrial installations encompassing over 270,000 square feet of building floor area in buildings less than 10,000 square feet in size; 142 installations with 3.7 million square feet of building floor area in buildings 10,000 to 49,999 square feet in size; 41 installations with 2.8 million square feet of building floor area in buildings 50,000 to 99,999 square feet in size; and 34 vacant industrial installations with almost 6.4 million square feet of building floor area in buildings 100,000 square feet or greater in size.

Detailed information on the very large vacant industrial installations in the Region is provided in Table 22. The table indicates the site number of very large industrial installations in the Region, which is cross-referenced to Map 15; the site location as identified by street address and civil division; the size, as indicated by the number of square feet of building area for each site; the approximate year of construction; the type of construction; the number of floors; access to certain transportation facilities; and adjacent land uses.

As indicated in Table 22 and on Map 15, there were 34 large vacant industrial installations encompassing approximately 6.4 million square feet of building area within the Southeastern Wisconsin Region in 1984. Such large installations represent less than 15 percent of the total number of vacant industrial installations in the Region but they contain almost 50 percent of the total floor area of all such installations. Twenty-seven of these 34 sites,

Table 22

EXISTING LARGE VACANT INDUSTRIAL INSTALLATIONS IN THE REGION: 1984

Site Number	Location	Size[a] (square feet)	Year of Construction	Type of Construction	Number of Floors	Transportation Access	Adjacent Land Uses
1	2100 Northwestern Avenue City of West Bend	129,300	Prior to 1950	Masonry/ Metal	N/A	Highway: STH 144 - 0.25 mile USH 45 - 0.5 mile Rail: C&NW - Adjacent Airport: West Bend - 4 miles Mitchell Field - 47 miles	Industrial/ Residential
2	2100 Northwestern Avenue City of West Bend	105,000	1920-1970	Concrete/ Block	2	Highway: STH 144 - 0.25 mile USH 45 - 0.5 mile Rail: C&NW - Adjacent Airport: West Bend - 4 miles Mitchell Field - 47 miles	Industrial/ Residential
3	N168 W21455 Main Street Village of Jackson	114,300	1967-1975	Masonry/ Steel	1	Highway: STH 60 - Adjacent USH 45 - 0.5 mile Rail: C&NW - 0.5 mile Airport: West Bend - 9 miles Mitchell Field - 39 miles	Agricultural/ Residential
4	9400 W. Flagg Street City of Milwaukee	102,000	1962-1972	Masonry	1-2	Highway: STH 145 - 0.5 mile USH 41 - 0.5 mile Rail: C&NW - Adjacent Airport: Timmerman Field - 0.5 mile Mitchell Field - 17 miles	Industrial/ Residential
5	3500 W. Douglas Avenue City of Milwaukee	142,500	1952-1957	Masonry	1	Highway: IH 43 - 2.5 miles STH 57 - 1.5 miles Rail: C&NW - Adjacent Airport: Timmerman Field - 4 miles Mitchell Field - 14 miles	Transportation Industrial/ Residential
6	5023 N. 35th Street City of Milwaukee	278,000	1862-1968	Brick/ Masonry	1-2	Highway: IH 43 - 3 miles STH 190 - 1.5 miles Rail: CMStP&P - Adjacent Airport: Timmerman Field - 4 miles Mitchell Field - 13 miles	Industrial
7	3450 W. Hopkins Street City of Milwaukee	177,000	1940	Masonry	1	Highway: IH 43 - 2 miles STH 190 - 0.5 mile Rail: CMStP&P - Adjacent Airport: Timmerman Field - 4 miles Mitchell Field - 12 miles	Industrial/ Transportation
8	3201 W. Hampton Avenue City of Milwaukee	560,000	1920's	Brick	3-4	Highway: IH 43 - 2 miles STH 190: 1 mile Rail: CMStP&P - Adjacent Airport: Timmerman Field - 3.5 miles Mitchell Field - 12. 5 miles	Industrial/ Residential
9	424 E. Capitol Drive City of Milwaukee	150,000	1940	Masonry	2	Highway: IH 43 - 1 mile STH 190 - Adjacent Rail: C&NW - Adjacent CMStP&P - Adjacent Airport: Timmerman Field - 7.5 miles Mitchell Field - 9.5 miles	Industrial/ Commercial
10	3218 W. Fond du Lac Avenue City of Milwaukee	110,000	Prior to 1950	Metal	4	Highway: IH 43 - 2 miles STH 145 - Adjacent Rail: CMStP&P - Adjacent Airport: Timmerman Field - 5 miles Mitchell Field - 10 miles	Industrial/ Transportation
11	3107 W. Galena Street City of Milwaukee	115,700	1900	Masonry	2	Highway: USH 18 - 0.5 mile USH 41 - 1.5 miles Rail: CMStP&P - Adjacent Airport: Timmerman Field - 8 miles Mitchell Field - 8.5 miles	Industrial/ Residential
12	4212 W. Highland Boulevard City of Milwaukee	313,600	1912	Brick	1-3	Highway: USH 18 - 0.5 mile USH 41 - 0.5 mile Rail: CMStP&P - Adjacent Airport: Timmerman Field - 8 miles Mitchell Field - 8.5 miles	Industrial/ Residential

Table 22 (continued)

Site Number	Location	Size[a] (square feet)	Year of Construction	Type of Construction	Number of Floors	Transportation Access	Adjacent Land Uses
13	944 N. 46th Street City of Milwaukee	190,000	1920's	Brick/ Concrete	1-4	Highway: IH 94 - 1.0 mile USH 41 - 0.1 mile Rail: CMStP&P - Adjacent Airport: Timmerman Field - 8 miles Mitchell Field - 8.5 miles	Industrial/ Residential/ Transportation
14	2463 W. St. Paul Avenue City of Milwaukee	108,700	Prior to 1950	N/A	N/A	Highway: IH 94 - 0.1 mile USH 41 - 0.5 mile Rail: CMStP&P - Adjacent Airport: Mitchell Field - 7 miles	Industrial/ Transportation
15	1357-1439 W. St. Paul Avenue City of Milwaukee	165,000	1904	Masonry/ Metal/ Brick	1-4	Highway: IH 94 - 0.1 mile STH 15 - 1 mile Rail: CMStP&P - Adjacent Airport - Mitchell Field - 7 miles	Industrial
16	103-133 W. Oregon Street City of Milwaukee	170,000	1920's	Brick	2-5	Highway: IH 94 - 0.5 mile STH 32 - Adjacent Rail: CMStP&P - Adjacent Airport: Mitchell Field - 5 miles	Industrial
17	17th and Bruce Street City of Milwaukee	180,000	1955	Masonry	5	Highway: IH 94 - 1 mile STH 15 - 0.1 mile Rail: CMStP&P - 0.25 mile Airport: Mitchell Field - 6 miles	Industrial/ Commercial
18	809 W. Cleveland Avenue City of Milwaukee	250,000	1904	Block/ Steel	1-4	Highway: IH 94 - 0.5 mile STH 38 - 0.5 mile Rail: C&NW - Adjacent Airport: Mitchell Field - 3 miles	Industrial/ Residential
19	500 W. Oklahoma Avenue City of Milwaukee	280,000	1930's	Masonry	1-3	Highway: IH 94 - 0.5 mile STH 38 - 0.5 mile Rail: C&NW - Adjacent CMStP&P - Adjacent Airport: Mitchell Field - 2.5 miles	Industrial
20	3073 S. Chase Avenue City of Milwaukee	135,000	1967	Masonry/ Metal	3	Highway: IH 94 - 0.5 mile STH 38 - Adjacent Rail: CMStP&P - Adjacent Airport: Mitchell Field - 2.5 miles	Transportation/ Industrial/ Residential
21[b]	333 S. 108th Street City of West Allis	130,000	1960's	Masonry/ Metal	1	Highway: STH 100 - Adjacent IH 94 - 0.1 mile Rail: CMStP&P - Adjacent C&NW - 0.1 mile Airport: Timmerman Field - 6 miles Mitchell Field - 12 miles	Industrial/ Transportation/ Utility
22[c]	67th and Greenfield Avenue City of West Allis	311,800	1902-1942	Brick/ Steel	2	Highway: IH 94 - 0.5 mile STH 59 - Adjacent Rail: CMStP&P - Adjacent C&NW - Adjacent Airport: Timmerman Field - 7 miles Mitchell Field - 8 miles	Industrial
23[c]	801 S. 60th Street City of West Allis	340,900	1909-1972	Masonry/ Brick/ Metal	2	Highway: IH 94 - 0.5 mile STH's 15 & 59 - 0.5 mile Rail: CMStP&P - Adjacent C&NW - 0.1 mile Airport: Timmerman Field - 7 miles Mitchell Field - 8 miles	Industrial/ Residential
24[c]	67th and Greenfield Avenue City of West Allis	191,700	1902-1916	Brick/ Steel	2	Highway: IH 94 - 0.5 mile STH 59 - Adjacent Rail: CMStP&P - Adjacent C&NW - Adjacent Airport: Timmerman Field - 7 miles Mitchell Field - 8 miles	Industrial
25	2207 S. 114th Street City of West Allis	120,000	1950's	Masonry	1	Highway: USH 45 - 1 mile STH 100 - 0.5 mile Rail: C&NW - 0.5 mile Airport: Timmerman Field - 8 miles Mitchell Field - 10 miles	Industrial/ Commercial/ Institutional/ Open Land
26[b]	110th and Cleveland Avenue City of West Allis	154,000	1965	Masonry	1	Highway: USH 45 - 1 mile STH 100 - 0.1 mile Rail: C&NW - 1 mile Airport: Timmerman Field - 8.5 miles Mitchell Field - 9.5 miles	Commercial/ Residential/ Open Land

Table 22 (continued)

Site Number	Location	Size[a] (square feet)	Year of Construction	Type of Construction	Number of Floors	Transportation Access	Adjacent Land Uses
27	5235 W. Rogers Street City of West Allis	135,000	1920	Brick/ Steel	1	Highway: USH 41 - 1.5 miles STH's 15 & 59 - 1 mile Rail: C&NW - 0.25 mile Airport: Mitchell Field - 7 miles	Industrial/ Residential/ Open Land
28	4601 W. Lincoln Avenue Village of West Milwaukee	100,000	1942-1958	Block/ Steel	2	Highway: USH 41 - 1 mile IH 94 - 2 miles Rail: C&NW - Adjacent Airport: Mitchell Field - 6 miles	Industrial/ Open Land
29	Meyer Place South of Layton Avenue City of Cudahy	170,000	1930's	Masonry	1	Highway: IH 94 - 4 miles STH 32 - 1 mile Rail: C&NW - Adjacent Airport: Mitchell Field - 1 mile	Industrial/ Residential
30	7655 S. 6th Street City of Oak Creek	120,000	1960's	Cement Block	1	Highway: IH 94 - 1 mile Rail: CMStP&P - Adjacent Airport: Mitchell Field - 2 miles	Industrial/ Open Land
31	2188 S. Church Street Village of East Troy	265,000	1944	Masonry/ Metal	2	Highway: STH 20 - 0.5 mile STH 15 - 0.5 mile Rail: METW - 0.25 mile Airport: Burlington - 11 miles Mitchell Field - 30 miles	Natural Area/ Industrial/ Residential
32	1509 Rapids Drive City of Racine	307,300	1913-1954	Masonry	3	Highway: IH 94 - 9 miles STH 32 - 0.25 mile Rail: C&NW - Adjacent Airport: Racine - 1 mile Mitchell Field - 18 miles	Industrial/ Commercial/ Residential
33	2809 60th Street City of Kenosha	143,000	1900's	Brick	2	Highway: IH 94 - 6 miles STH 50 - 1 mile Rail: C&NW - Adjacent Airport: Kenosha - 4 miles Mitchell Field - 26 miles	Industrial
34	2809 60th Street City of Kenosha	127,000	1900's	Masonry	2	Highway: IH 94 - 6 miles STH 50 - 1 mile Rail: C&NW - Adjacent Airport: Kenosha - 4 miles Mitchell Field - 26 miles	Industrial

NOTE: N/A indicates data not available.

[a] *Indicates the total size of the building. The actual area available for lease or purchase may vary.*

[b] *Not zoned industrial.*

[c] *Part of the West Allis industrial center.*

Source: Wisconsin Electric Power Company, Wisconsin Department of Development, and SEWRPC.

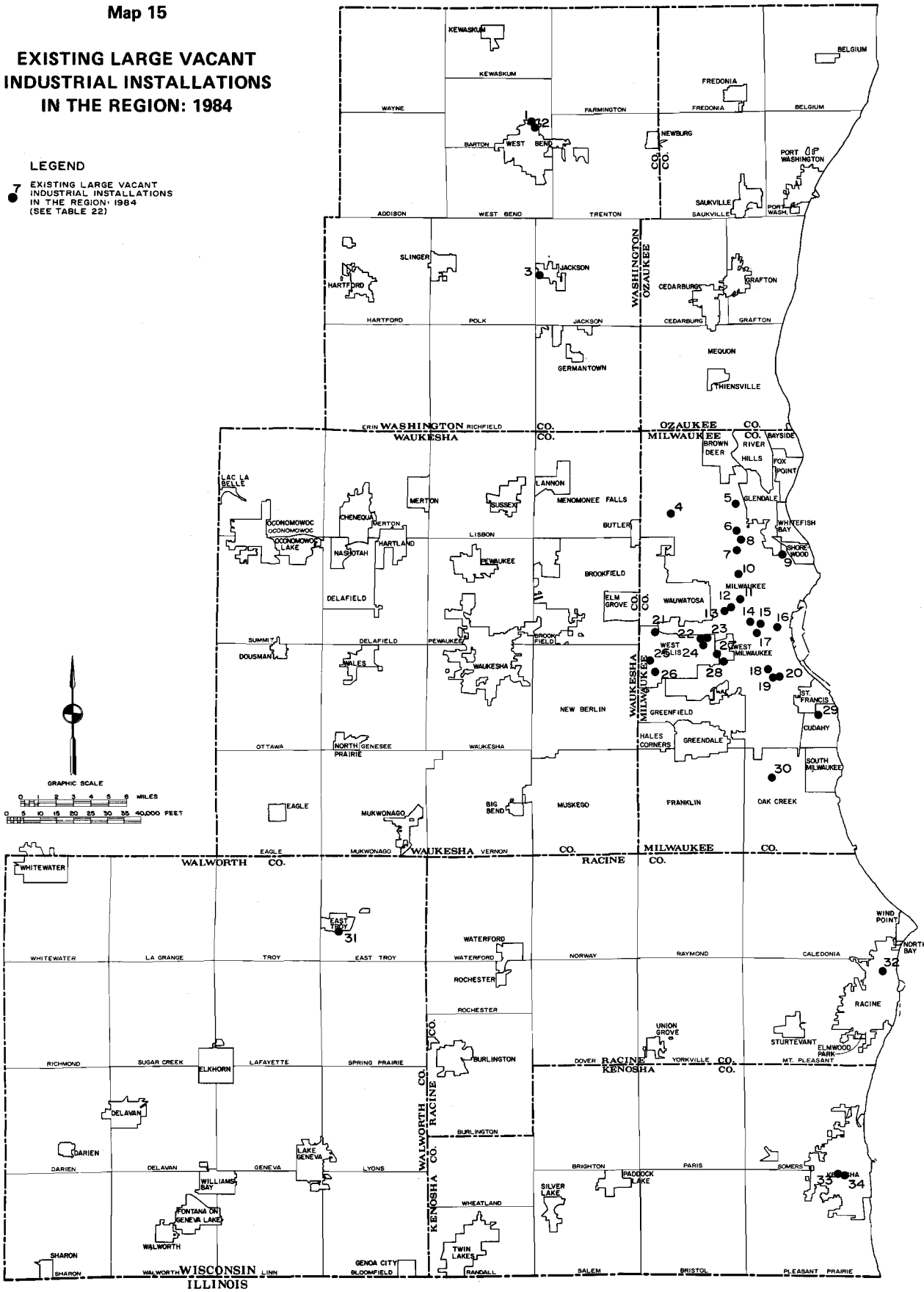
and over 5.2 million of 6.4 million square feet, or more than 81 percent of the area of such installations, were located within Milwaukee County. Three of the 34 sites encompassing approximately 348,000 square feet, or about 5 percent of the total square footage, were located in Washington County. One site, encompassing 307,000 square feet, was located in Racine County, and one site, encompassing 265,000 square feet, was located in Walworth County, while two sites encompassing 270,000 square feet were located in Kenosha County. Twenty-five sites encompassing 5.2 million square feet of building area, or 81 percent of the total square footage of large vacant industrial installations, were developed prior to 1950. It should be noted that all inventoried large vacant industrial installations listed in Table 22 were provided with public sanitary sewer and water supply facilities, and all but two sites were zoned for industrial use.

EVALUATION OF POTENTIAL INDUSTRIAL SITES

This portion of the chapter evaluates the suitability of industrially zoned areas having at least 40 contiguous acres of vacant land, as well as other vacant, nonindustrially zoned areas at least

Map 15

EXISTING LARGE VACANT INDUSTRIAL INSTALLATIONS IN THE REGION: 1984



Source: Wisconsin Electric Power Company and SEWRPC.

40 acres in size, considered to have potential for industrial development by local units of government. A 40-acre minimum size was judged by the technical advisory committee to represent a reasonable minimum size for the development of a community industrial area, and it recognizes the influence of the U. S. Public Land Survey in the determination of real property boundaries—the 40 acres being equivalent to a quarter quarter-section. It should be noted that vacant industrially zoned land within the identified 40-acre and larger parcels represents over 80 percent of the total acreage of all vacant, industrially zoned lands in the Region.

The potential industrial sites within southeastern Wisconsin were evaluated in the following manner. All industrially zoned areas containing at least 40 contiguous acres of vacant land were inventoried, as were other vacant, nonindustrially zoned areas at least 40 acres in size considered to have industrial development potential by local units of government. The identified sites were then analyzed to determine those sites which could, indeed, be considered suitable for industrial development. Based upon this analysis, each suitable site was classified according to its relative capability for immediate industrial use. Finally, a description of each identified suitable industrial site was prepared.

Inventory of Potential Industrial Sites

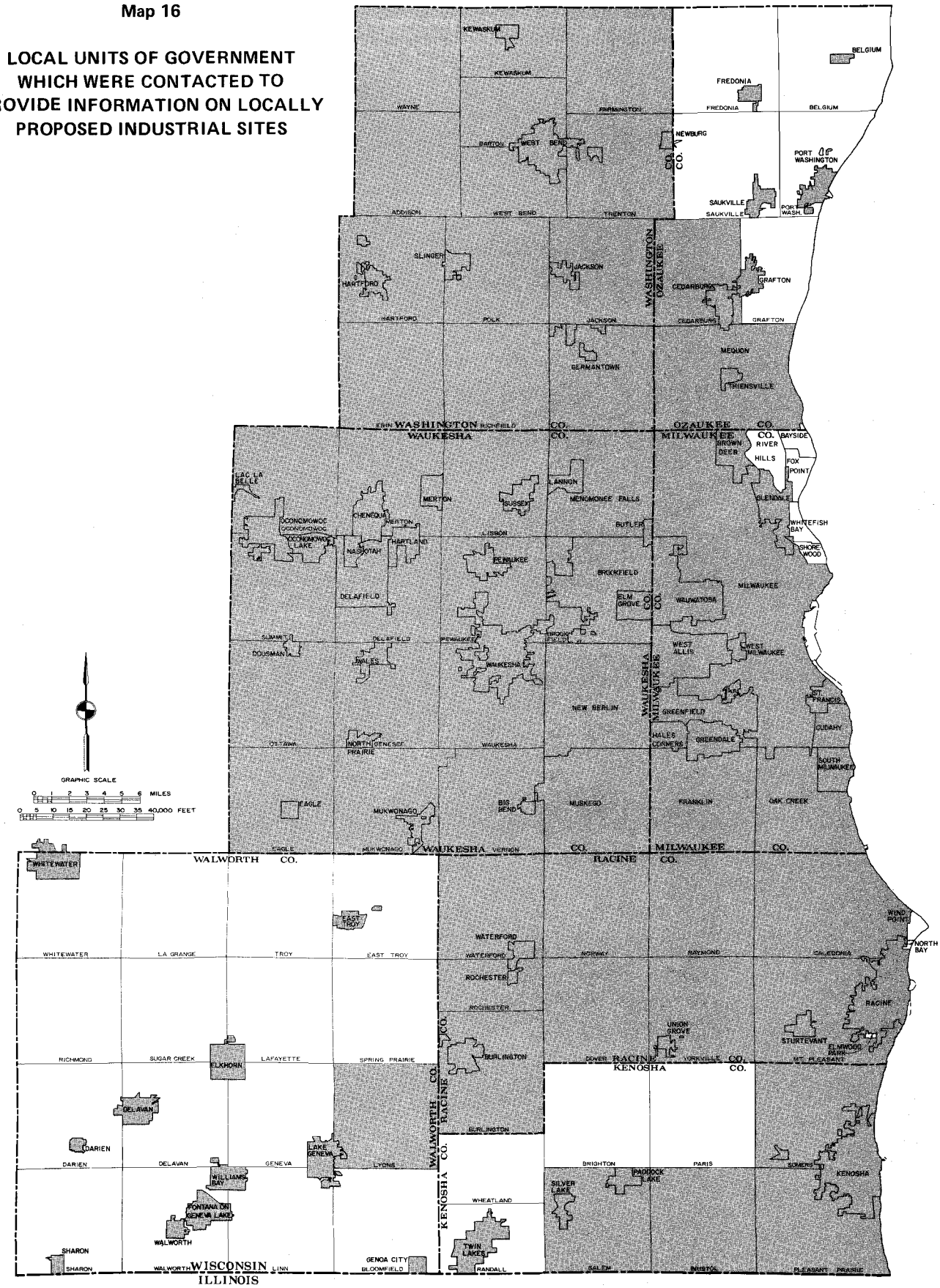
As already noted, potential industrial sites were defined for the purposes of this study to include all industrially zoned areas containing at least 40 contiguous acres of vacant land, as well as other vacant, nonindustrially zoned areas at least 40 acres in size considered to have potential for industrial development by the local units of government concerned. The identification of industrially zoned areas containing at least 40 contiguous acres of vacant land was accomplished by photo-interpretation, utilizing Commission 1980 1 inch equals 400 feet scale, ratioed and rectified aerial photographs with industrial zoning districts delineated thereon.

The vacant, nonindustrially zoned areas at least 40 acres in size considered to have potential for industrial development by the local units of government concerned were identified by contacting those local units of government believed to have an interest in industrial development. A letter requesting information on community-proposed industrial areas was transmitted to 115 of the 147 local units of government within the Region. These units of government are shown on Map 16. The local units of government in the Region which the technical advisory committee determined should not receive the letter included eight urban villages having virtually no vacant land available for industrial use, as well as 24 rural towns which were predominantly agricultural in nature and believed by the technical advisory committee to have no interest in industrial development. Of the 115 communities contacted, 52 communities, or 45 percent, provided information on proposed industrial sites. The letter that was transmitted to the communities requested that they identify vacant lands of at least 40 acres in size not currently zoned for industrial use, but which were considered to have potential for such use. The letter also suggested that the proposed sites generally be suitable for industrial development; that is, the sites preferably should be in single ownership with good access to the arterial street and highway network; should have ready access to public sanitary sewer and water supply facilities; and should not pose any known serious physical limitations for industrial development. It should be noted that local units of government responding to the Commission's letter identified sites which were adjacent to, as well as within, their corporate limits.

The results of the inventory of potential industrial sites are summarized in Table 23 and on Map 17. As indicated in Table 23, a total of 274 sites encompassing about 38,300 acres of land were identified as having potential for industrial use within the Region. Of this total, Waukesha County, with 79 sites and approximately 9,900 acres, represented the largest proportion—almost 26 percent—of the total acreage of potential industrial sites within southeastern Wisconsin. Walworth County, with only 19 sites totaling about 2,300 acres, had the smallest acreage of potential industrial sites—6 percent of the regional total. Almost 75 percent, or about 28,700 acres, of the total 38,300 acres of potential industrial sites in the Region were zoned for industrial use, while approximately 9,600 acres, or about 25 percent, were not zoned for industrial use but were considered by local units of government to have the potential for industrial development. Waukesha County contained both the largest acreage of zoned potential industrial sites—7,015 acres—and the largest acreage of proposed industrial sites—2,905 acres; Walworth County contained the least acreage of zoned potential industrial sites—1,335 acres—and Milwaukee County contained the least acreage of proposed industrial sites—only 470 acres.

Map 16

LOCAL UNITS OF GOVERNMENT WHICH WERE CONTACTED TO PROVIDE INFORMATION ON LOCALLY PROPOSED INDUSTRIAL SITES



Source: SEWRPC.

Suitability of Potential Industrial Sites

Each potential industrial site identified in the inventory was analyzed to determine its suitability for industrial development. Many criteria could be used to determine whether or not a particular site is suitable for industrial development. Such criteria could include, among others: proximity to certain transportation facilities; the availability of urban services such as public sanitary sewer and water supply; the size of the site; physical conditions which would affect the cost of industrial development; zoning; and adjacent land uses. In considering such criteria, the technical advisory committee determined that for the purposes of this study, potential industrial sites would be considered suitable for industrial development if they met the following two criteria: 1) The site was wholly or partially within the proposed year 2000 sanitary sewer service area as identified in the Commission-adopted areawide water quality management plan; and 2) the site contained at least 40 contiguous acres of land having no significant physical limitations for industrial development.[1]

While other criteria were considered by the Committee to be very important to industrial development, including zoning, adjacent land uses, community planning—including plans for the preservation of agricultural lands—and access to transportation facilities such as freeways and state trunk highways, the Committee did not wish to use such criteria as a basis for judging a site unsuitable for industrial development. The Committee suggested, however, that such information be incorporated into a factual description of each potential industrial site which met the above-mentioned two suitability criteria, reasoning that an individual could use such information to determine for himself the suitability of the potential industrial site for his particular needs.

The potential industrial sites meeting the two agreed-upon criteria are listed in Table 24 and their locations are shown on Map 17. As indicated in Table 24, 180 sites, or 66 percent of the 274 potential industrial sites, were determined to meet the industrial site suitability criteria. These sites totaled 24,450 acres, or about 64 percent of the 38,315 acres of identified potential industrial sites in the Region. Waukesha County with 6,715 acres and Milwaukee County with 5,530 acres of suitable industrial sites collectively accounted for over 50 percent of the total acreage of suitable industrial sites in the Region. A total of 15,910 acres, or approximately 65 percent of all of the suitable industrial site acreage, are currently zoned for industrial use. Milwaukee and Waukesha Counties, with 5,060 and 4,080 acres, respectively, accounted for the majority of zoned acreage of suitable industrial sites, while Washington County, with 2,500 acres, and Waukesha County, with 2,635 acres, accounted for the majority of proposed acreage of suitable industrial sites in the Region.

The suitable industrial sites identified on the basis of the two basic criteria were further classified according to their potential for immediate industrial use. Three additional criteria were used by the Advisory Committee to determine this classification: 1) the current zoning of the site; 2) the actual availability of public sanitary sewer service; and 3) the availability of improved streets for site access. Using these three additional criteria, all the sites meeting the two basic site suitability criteria were grouped into one of three classes. Class I sites were defined as sites which are zoned for industrial use; have public sanitary sewer facilities available within the site, requiring only the construction of a building service sewer to effect a connection; and have improved streets in place for site access. Class II sites were defined as sites which are zoned for industrial use and have public sanitary sewer service available, but which would require the construction of improved streets and associated common sewers within the site if the site were being developed into an industrial park, or was available for a building connection for a large industrial installation. Class III sites were defined as sites which are not zoned for industrial use or which do not have public sanitary sewer service available at the site and lack internal streets for site access. Under this classification system, Class I sites are ready for actual industrial use, with internal sewers and streets in place, characteristic of "industrial parks." Class II sites are ready for industrial development, but require internal sewers and street improvements; and Class III sites require additional

[1] *Physical development limitations were deemed to include: soils classified in the regional soil survey as having very severe limitations for the construction of light industrial and commercial buildings, or for the location of highway or railway facilities; areas designated as wetlands by the Wisconsin Department of Natural Resources; areas designated as primary environmental corridors by the Southeastern Wisconsin Regional Planning Commission; areas with slope in excess of 12 percent; and areas located within the 100-year recurrence interval flood hazard area.*

Table 23

POTENTIAL VACANT INDUSTRIAL SITES IN THE REGION: 1983

County	Potential Industrial Sites						Percent of Region
	Zoned[a]		Proposed[b]		Total		
	Sites	Acres	Sites	Acres	Sites	Acres	
Kenosha	19	3,900	3	965	22	4,865	12.7
Milwaukee	51	6,655	3	470	54	7,125	18.6
Ozaukee	20	3,180	7	810	27	3,990	10.4
Racine	25	3,840	5	755	30	4,595	12.0
Walworth	8	1,335	11	945	19	2,280	5.9
Washington	26	2,760	17	2,780	43	5,540	14.5
Waukesha	64	7,015	15	2,905	79	9,920	25.9
Region	213	28,685	61	9,630	274	38,315	100.0

[a] *Includes all industrially zoned areas containing at least 40 contiguous acres of vacant land.*

[b] *Includes nonindustrially zoned vacant lands of at least 40 acres in size considered to have potential for industrial development by local units of government.*

Source: SEWRPC.

Table 24

SUITABLE VACANT INDUSTRIAL SITES IN THE REGION: 1983

County	Sites Meeting Minimum Industrial Site Suitability Criteria[a]						Percent of Region
	Zoned[b]		Proposed[c]		Total		
	Sites	Acres	Sites	Acres	Sites	Acres	
Kenosha	3	460	3	965	6	1,425	5.8
Milwaukee	42	5,060	3	470	45	5,530	22.6
Ozaukee	12	1,670	5	615	17	2,285	9.4
Racine	15	2,405	3	555	18	2,960	12.1
Walworth	7	1,285	9	800	16	2,085	8.5
Washington	11	950	15	2,500	26	3,450	14.1
Waukesha	39	4,080	13	2,635	52	6,715	27.5
Region	129	15,910	51	8,540	180	24,450	100.0

[a] *Potential industrial sites meeting minimum industrial site suitability criteria include those sites which are proposed to be served with public sanitary sewers by the year 2000 and contain at least 40 contiguous acres of land having no significant physical limitations for industrial development. For purposes of this report, significant physical development limitations include: soils classified in the regional soil survey as having very severe limitations for the construction of light industrial or commercial building or for the location of highway or railway facilities; areas designated as wetlands by the Wisconsin Department of Natural Resources; areas designated as primary environmental corridors by the Southeastern Wisconsin Regional Planning Commission; areas with slopes in excess of 12 percent; and areas located within the 100-year recurrence interval flood hazard area.*

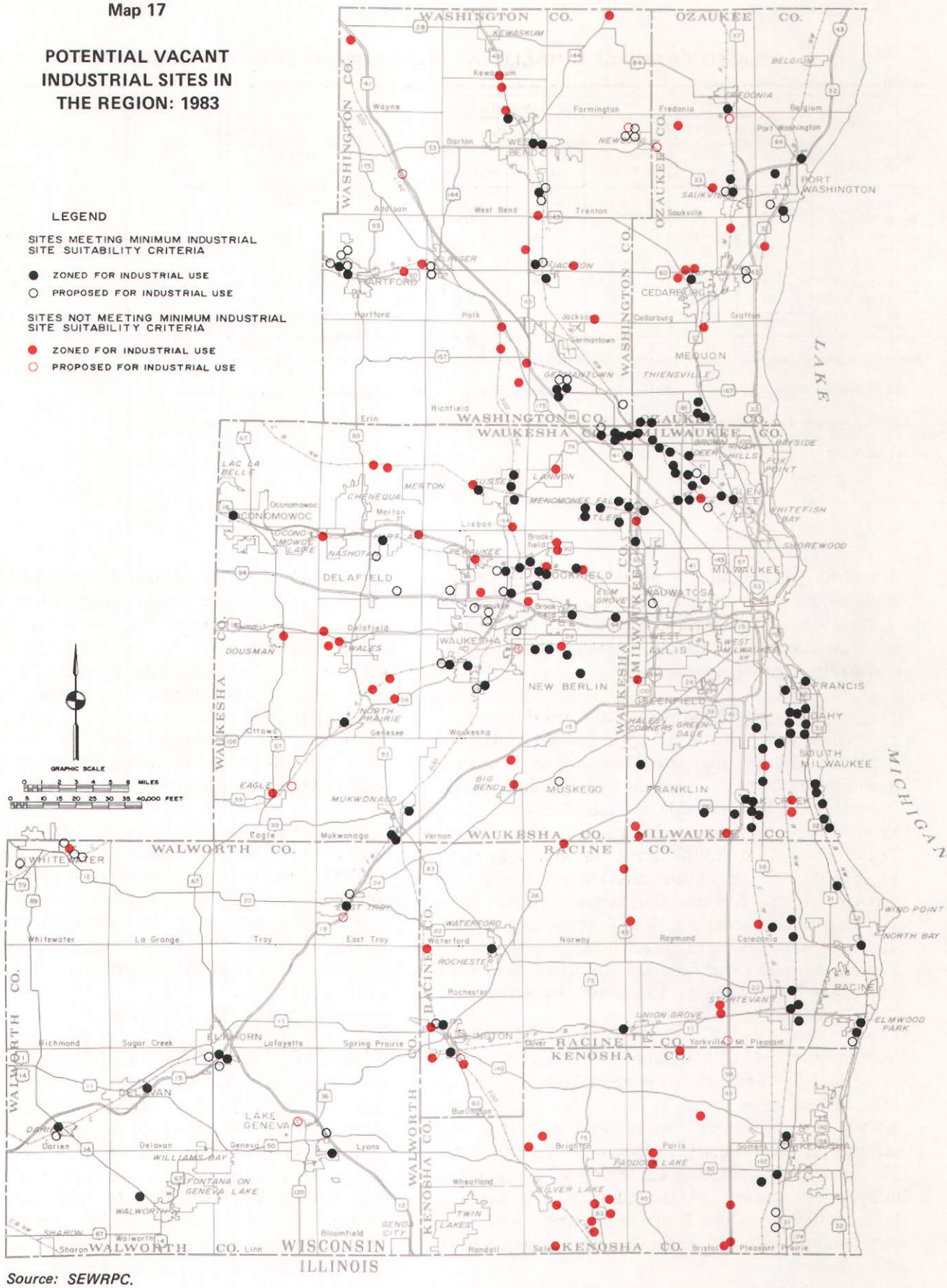
[b] *Zoned for industrial use.*

[c] *Not zoned for industrial use, but considered to have potential for industrial development by local units of government.*

Source: SEWRPC.

Map 17

POTENTIAL VACANT INDUSTRIAL SITES IN THE REGION: 1983



Source: SEWRPC.

Table 25

CLASSIFICATION OF SUITABLE VACANT INDUSTRIAL SITES IN THE REGION: 1983

County	Industrial Site Classification									Total Suitable Sites		
	Class I Sites[a]			Class II Sites[b]			Class III Sites[c]					
	Number	Acres	Percent of Region	Number	Acres	Percent of Region	Number	Acres	Percent of Region	Number	Acres	Percent of Region
Kenosha	1	175	6.4	1	95	1.0	4	1,155	9.5	6	1,425	5.8
Milwaukee . . .	3	495	18.0	37	4,275	44.7	5	760	6.3	45	5,530	22.6
Ozaukee	1	175	6.4	8	1,195	12.5	8	915	7.5	17	2,285	9.4
Racine	3	220	8.0	10	1,980	20.7	5	760	6.3	18	2,960	12.1
Walworth. . . .	1	225	8.2	5	475	4.9	10	1,385	11.4	16	2,085	8.5
Washington . .	3	225	8.2	7	575	6.0	16	2,650	21.9	26	3,450	14.1
Waukesha . . .	10	1,235	44.8	12	975	10.2	30	4,505	37.1	52	6,715	27.5
Region	22	2,750	100.0	80	9,570	100.0	78	12,130	100.0	180	24,450	100.0

[a] *Sites are zoned for industrial use, have public sanitary sewer service available within the site, and have internal streets for site access.*

[b] *Sites are zoned for industrial use and have public sanitary sewer service available at the site, but lack internal streets for site access.*

[c] *Sites are not zoned for industrial use or do not have public sanitary sewer service available at the site, and lack internal streets for site access.*

Source: SEWRPC.

measures to become available for development such as rezoning or the construction of a trunk sewer to bring sewer service to the site, as well as the construction of common sewers within the site, and street improvements.

The resulting classification of the suitable vacant industrial sites in the Region is set forth in Table 25, and the spatial distribution of such sites is shown on Map 18. As indicated in Table 25, of the total of 180 suitable industrial sites, 22, or about 12 percent, were identified as Class I sites. These sites total 2,750 acres, or approximately 11 percent of the total suitable industrial site acreage in the Region. Waukesha County, with 10 Class I sites totaling 1,235 acres, has almost 45 percent of the total Class I site acreage in the Region. Kenosha and Ozaukee Counties, each with one Class I site totaling 175 acres, have the least Class I site acreage.

Of the total of 180 suitable industrial sites, 80, or about 45 percent, were identified as Class II sites. These sites total 9,570 acres, or approximately 39 percent of the suitable industrial site acreage in the Region. Milwaukee County, with 37 Class II sites totaling 4,275 acres, has approximately 45 percent of the Class II site acreage in the Region, while Kenosha County, with one site totaling only 95 acres, has the least Class II site acreage.

A total of 78 of the 180 suitable industrial sites, or about 43 percent, were identified as Class III sites. These sites total 12,130 acres, or about 50 percent of the suitable industrial site acreage in the Region. Waukesha County, with 30 Class III sites totaling 4,505 acres, accounts for over one-third of the Class III industrial site acreage in the Region, while Milwaukee and Racine Counties, each with five sites totaling 760 acres, have the least Class III site acreage.

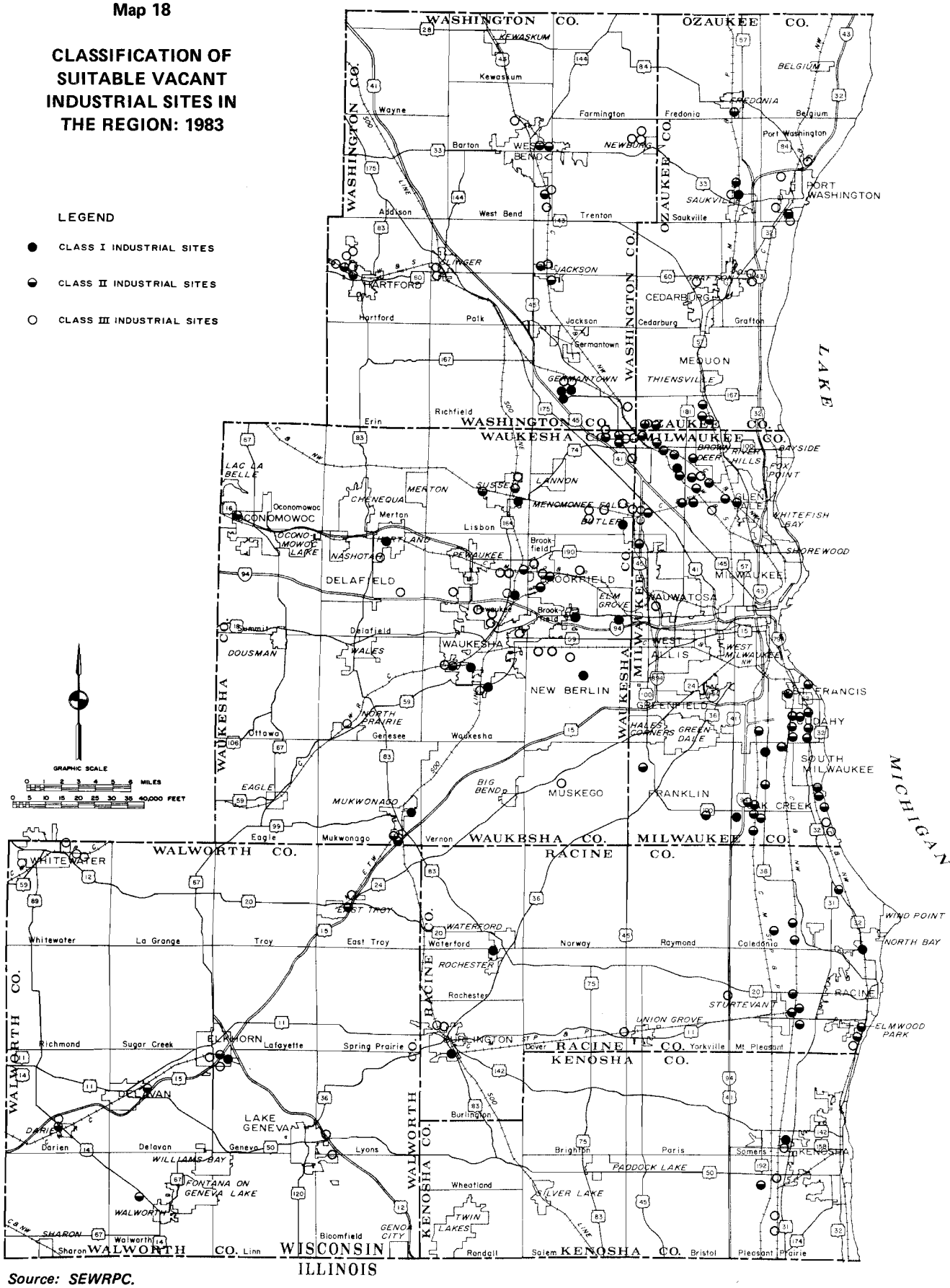
It is interesting to note that Class I and Class II sites encompass a total combined area of more than 12,500 acres, or approximately 50 percent of the suitable industrial site acreage in the Region. Thus, in effect, 50 percent of the suitable industrial site acreage in the Region is either under development or ready for immediate industrial development.

Proper Industrial Site Planning and Design Considerations

As previously noted, 158 of the identified 180 suitable potential industrial sites are currently undeveloped. It is likely that many of these sites will eventually be developed as community industrial parks. Once a site is selected for the development of an industrial park in a community a good site plan should be developed for the park, which involves careful consideration of factors such as soil suitability, land slopes, drainage patterns, flood hazards, woodland and wetland cover, existing and

Map 18

CLASSIFICATION OF SUITABLE VACANT INDUSTRIAL SITES IN THE REGION: 1983



Source: SEWRPC.

proposed land uses, and real property boundaries. In addition, after the site plan has been prepared and the infrastructure put in place, including the required streets, public sanitary sewer and water, power and communications, and drainage facilities, the appropriate legal mechanisms which foster good industrial growth at the park site need to be developed and administered. These mechanisms should include, at a minimum, a zoning ordinance, land division ordinance, industrial park control board, and appropriate industrial park deed restrictions and protective covenants.

Appendix A of this report presents a recommended process and attendant site design guidelines for site planning of both an industrial park and an individual industrial lot located within the industrial park. Appendix A illustrates this process and the application of industrial site design guidelines using a hypothetical site located in southeastern Wisconsin, and is illustrated with appropriate site design sketches.

Appendix B of this report, in addition to presenting funding sources which are available to develop industrial parks, provides model guides for the formulation of the legal instruments necessary to implement an industrial park site plan. These instruments include a model plan commission resolution adopting an industrial park master plan (Appendix B-1), a model common council resolution for adopting an industrial park master plan (Appendix B-2), a model ordinance for creating an industrial park control board (Appendix B-3), and model industrial park deed restrictions and protective covenants (Appendix B-4). The models presented in Appendix B are intended to be used as guides in the formulation of local legal instruments of these types. Competent legal assistance should be sought in conjunction with their use.

Description of Suitable Industrial Sites

Appendix C provides a brief description of each of the identified suitable industrial sites. The information provided for each site includes the site number, location, size, industrial site classification, zoning, availability of public sanitary sewer and water facilities, transportation access, adjacent land uses, number of owners, and physical limitations to site development.

POTENTIAL SUITABLE INDUSTRIAL SITES—EMPLOYMENT ABSORPTION CAPABILITIES

This final section addresses the relative capability of vacant industrial installations, as well as of suitable vacant industrially zoned or industrially proposed sites, to accommodate the increase in industrial employment in the Region anticipated to the year 2000. Chapter III of this report noted that, under the moderate regional growth scenario—the most optimistic scenario for economic development—industry-related employment could be expected to increase from about 333,500 jobs in 1980 to about 398,600 jobs by the year 2000, an increase of about 65,100 jobs, or 20 percent, over the 20-year period.[2] Total employment over the same time period under this scenario could be expected to increase from 833,100 jobs to 1,016,000 jobs, an increase of 182,900 jobs, or 22 percent.

Table 26 provides data on the relative capability of vacant industrial installations, and suitable industrially zoned or industrially proposed land, to accommodate this anticipated increase. Regarding the vacant land areas noted in Table 26, only the net suitable lands were considered for future industrial development—that is, those lands which are currently undeveloped and pose no significant physical limitations for industrial development. In addition, it should be noted that the Commission-adopted regional land use plan design standard utilized in this analysis—seven acres of industrial land for each 100 additional industrial employees—is a net standard relating only to the actual intensively used area, excluding parking, large landscaped areas, or site areas which may be held for aesthetic or other open space purposes. Total industrial site area, including buildings, driveways, parking, landscaping, and other open space lands, could be three to five times the net building area. Therefore, both a 5:1 land-to-building ratio and a 3:1 land-to-building ratio were assumed in determining the number of employees that could be accommodated on the identified industrial lands noted in Table 26. The industrial employment absorption capabilities of the industrial lands inventoried in this study, as noted in Table 26, would thus range from 74,970 employees under a 5:1 land-to-building ratio to 122,110 employees under a 3:1 land-to-building ratio.

SUMMARY

This chapter has presented information on the number and spatial distribution of existing vacant industrial installations, as well as more detailed

[2] *The preliminary revised year 2010 forecast of industry-related employment under a moderate regional growth scenario is 439,700 jobs.*

Table 26

POTENTIAL SUITABLE INDUSTRIAL SITES--EMPLOYMENT ABSORPTION CAPABILITIES: 1983

Industrial Area	Industrial Site Area (acres)		Building Area (acres)		Employee Absorption Potential[j]	
	Gross	Net	3:1 Net Land-to-Building Ratio	5:1 Net Land-to-Building Ratio	3:1 Net Land-to-Building Ratio	5:1 Net Land-to-Building Ratio
Existing Vacant Industrial Installations[a]	--	--	303	303	4,330	4,330
Suitable Large Vacant Industrial Site[b]						
Class I[c]	2,750[f]	2,025[g]	675	405	9,640	5,780
Class II[d]	9,570[f]	8,430[g]	2,810	1,685	40,140	24,070
Class III[e]	12,130[f]	10,770[g]	3,590	2,155	51,290	30,790
Subtotal	24,450	21,225	7,075	4,245	101,070	60,640
Other Small Vacant Industrially Zoned Area	7,000[h]	3,500[i]	1,170	700	16,710	10,000
Total	31,450	24,725	8,548	5,248	122,110	74,970

[a] *Includes existing vacant industrial installations as of June 1984.*

[b] *Industrially zoned or industrial proposed sites which are proposed to be served with public sanitary sewers by the year 2000 and contain at least 40 contiguous acres of vacant land having no significant physical limitations for industrial development.*

[c] *Sites which are zoned for industrial use, have public sanitary sewer facilities available within the site, and have internal streets for industrial parcel access.*

[d] *Sites which are zoned for industrial use and have public sanitary sewer facilities available at the site, but which lack internal streets for site access.*

[e] *Sites which are not zoned for industrial use or which do not have public sanitary sewer facilities available, and which lack internal streets for site access.*

[f] *Includes the undeveloped portion of industrially zoned or locally proposed industrial areas as identified on 1 inch equals 400 feet scale, 1980 aerial photographs.*

[g] *Includes the gross site area less any new industrial development which occurred between 1980 and 1984, and less the undeveloped portion of the site determined to have significant physical limitations for industrial development.*

[h] *Includes all industrially zoned areas containing fewer than 40 contiguous acres of vacant land.*

[i] *Assumes 50 percent of vacant industrially zoned land is suitable for industrial development.*

[j] *Utilize SEWRPC regional land use plan design standard of seven acres of net industrial land per 100 employees.*

Source: SEWRPC.

information on the very large—100,000 square feet or greater—industrial installations in the Region. In addition, this chapter has evaluated the suitability for industrial development of large, vacant, industrially zoned areas, as well as nonindustrially zoned areas, considered to have potential for industrial development by the local units of government in the seven-county Region. Information was provided on the relative capability of these industrial buildings and sites to accommodate anticipated increases in industry-related employment in the Region to the year 2000. The findings of the analyses and evaluation are summarized below:

1. There were 269 vacant industrial installations encompassing more than 13.2 million square feet of building floor area within the Southeastern Wisconsin Region in 1984. Milwaukee County, with 139 vacant industrial installations, accounted for almost 8.8 million

square feet of building floor area, or 67 percent of the total square footage of vacant industrial installations. The very large vacant industrial installations—namely, those installations with a floor area of 100,000 or more square feet—contained almost 6.4 million square feet, or about 50 percent of the total square footage of vacant industrial installations in the Region. Over 5.2 million square feet, or 81 percent of the area of the large vacant installations, were located in Milwaukee County. Twenty-five sites encompassing approximately 5.2 million square feet of building floor area, or 81 percent of the total square footage of the large vacant industrial installations, were constructed prior to 1950.

2. Two hundred and seventy-four sites, encompassing 38,315 acres of land, were identified as having the potential for industrial use within the Region. Potential industrial sites included all industrially zoned areas containing at least 40 contiguous acres of vacant land, as well as other vacant, nonindustrially zoned areas at least 40 acres in size considered to have potential for industrial development by local units of government. About 28,700 acres, or approximately 75 percent of the total potential industrial site acreage, were zoned for industrial use, while 9,600 acres, or about 25 percent, were currently not zoned for industrial use, but were considered to have potential for industrial development by local units of government.

3. One hundred and eighty sites, totaling 24,450 acres, or about 64 percent of the total 38,315 acres of potential industrial sites, were considered suitable for industrial development. Suitable industrial sites were defined as sites which are proposed to be served with public sanitary sewer service by the year 2000 and contain at least 40 contiguous acres of land having no significant physical limitations for industrial development. Waukesha County with 6,700 acres and Milwaukee County with 5,500 acres of suitable industrial sites collectively accounted for over 50 percent of the total suitable industrial site acreage in the Region. Almost 16,000 acres, or about 65 percent of the suitable industrial site acreage, were currently zoned for industrial use.

4. Suitable industrial sites were divided into three classes. Class I industrial sites were defined as sites which are zoned for industrial use, have public sanitary sewer facilities available within the site, and have improved streets for internal site access. Such sites total 2,750 acres, or about 11 percent of the total suitable industrial site acreage in the Region. Waukesha County, with 1,200 acres of Class I sites, has almost 45 percent of the Class I site acreage in the Region. Class II industrial sites—that is, sites which are zoned for industrial use and have public sanitary sewer facilities available at the site, but which lack improved streets for internal site access—total almost 9,600 acres, or approximately 39 percent of the suitable industrial site acreage in the Region. Milwaukee County, with 4,300 acres of Class II sites, has approximately 45 percent of the Class II site acreage in the Region. Class III industrial sites—that is, sites which are not zoned for industrial use or which do not have public sanitary sewer facilities available, and which lack improved streets for internal site access—12,100 acres, or about 50 percent of the suitable industrial site acreage in the Region. Waukesha County, with about 4,500 acres of Class III sites, has approximately 37 percent of the Class III site acreage in the Region.

5. Industry-related employment under the moderate regional growth scenario, the most optimistic scenario for economic development proposed for the Region, would increase from about 333,500 jobs in 1980 to about 398,600 jobs in the year 2000, an increase of about 65,100 jobs, or 20 percent. The employment absorption capabilities of the suitable industrial installations and sites inventoried would range from 74,970 employees under a 5:1 land-to-building ratio to 122,110 employees under a 3:1 land-to-building ratio.

CONCLUSIONS

On a regional basis, it would appear that sufficient industrial areas are available to accommodate the 65,100 increase in industry-related employment anticipated to the year 2000. However, there may be a shortage of developed industrial sites ready for immediate use. While 274 potential industrial sites encompassing more than 38,000 acres were iden-

tified as part of the potential industrial site inventory, only 180 sites encompassing 24,450 acres were determined to be suitable for industrial development and, more importantly, only 22 sites characteristic of industrial parks and encompassing about 2,750 acres were ready for immediate industrial use. These 22 industrial park sites could accommodate from 5,780 to 9,640 employees, depending upon the land-to-building ratio assumed. If the anticipated 65,100 increase in industry-related employment is accommodated uniformly over the 20-year period 1980-2000, approximately 3,250 new employees would have to be accommodated within the Region each year. Thus, the 22 industrial park sites which are ready for immediate use could, depending on the land-to-building ratio assumed, accommodate a two- to three-year growth in industry-related employment. The number of immediate available sites may, therefore, be insufficient, considering that within the Region two to five years are typically required to design and develop a large new industrial park.

It is also likely that some of the 22 sites which are immediately available may not possess all of the amenities necessary to satisfy the specific site requirements of certain industries which may seek to locate or relocate within the Region. Such requirements may include, but are not limited to, a large industrial site which can accommodate initial construction, desired additional open space, and future industrial expansion needs; a prominent location with high visibility; direct access to freeway or railway service; a full range of public services, including public sanitary sewer and water supply, stormwater drainage, and communication facilities; or simply being within an attractive, well-designed and developed industrial park with architectural controls which offer protection for the sizable investments that industries make in land and improvements.

It may be concluded that, while there is sufficient industrial land available in the long term to accommodate the anticipated increase in industry-related employment, there are relatively few suitable sites available for immediate industrial use, and such sites may, in fact, be deficient in size, type, and location in meeting the specific needs of industries seeking to locate or relocate within the Region.

Public or private industrial attraction and retention programs within the Region should, among other efforts, seek to provide industrial sites located in well-designed industrial parks, as well as some larger individual industrial sites in suitable locations which are ready for immediate industrial use. The inventory of potential industrial sites conducted as part of this study should facilitate such efforts. The provision of such industrial parks or large industrial sites may, because of the potential costs involved, require new initiatives, funding sources, or possibly joint public-private ventures.

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Chapter VII

SUMMARY AND CONCLUSIONS

INTRODUCTION

A strong industrial base has been one of the key components of the economy of the Southeastern Wisconsin Region. There are, however, indications that this industrial base has been weakened because of the severity and duration of the recent recession. Consequently, the maintenance of this base has become a matter of increasing concern to both public and private interests in the Region.

Perceiving a need for special efforts to maintain and enhance the regional industrial base, the Wisconsin Electric Power Company (WEPCO) late in 1982 initiated a program to attract and encourage industrial development in the Region. In undertaking the program, the company found that there was a lack of information regarding industrial lands in the Region. Specifically, WEPCO found that a comprehensive, areawide inventory of lands which are suitable for industrial development did not exist. Recognizing that such information would be essential to an effective industrial development program, and recognizing that such information would be useful in areawide and local planning efforts, WEPCO requested the assistance of the Regional Planning Commission in the conduct of a study of industrial land use in southeastern Wisconsin.

The industrial land use study was conducted jointly by the staffs of the Wisconsin Electric Power Company and the Regional Planning Commission under the guidance of a technical advisory committee consisting of individuals who had strong interest, knowledge, and experience in industrial development-related matters, including representatives from local units of government, the Wisconsin Department of Development, public utilities, railroad companies, and industrial development companies.

OVERVIEW OF THE REGION

Geographically, the Southeastern Wisconsin Region, which consists of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in Wisconsin, is located in relatively good position for continued growth and development. It is bounded on the east by Lake Michigan, which provides an ample supply of fresh water for both domestic and industrial use, as well as being an integral part of the major national transportation network. It is bounded on the south by the rapidly expanding northeast Illinois metropolitan region, and on the west and the north by the fertile agricultural land and desirable recreational areas of the State of Wisconsin.

The Region encompasses approximately 2,689 square miles, or about 5 percent of the total area of the State. The Region, however, provides about 38 percent of the jobs in the State and contains about 38 percent of the population. The Southeastern Wisconsin Region truly comprises the economic and industrial heart of the State. Historically, economic growth in the Region was fostered by a ready supply of raw materials from nearby farms and forests; by the influx of European immigrants who provided the Region with a strong base of highly skilled labor; and by a favorable location for serving growing eastern and midwestern markets. The economic growth and development of the Region was, and continues to be, supported by well-developed highway, airway, railway, and seaway transportation systems; by the ready availability of essential public utilities, including sanitary sewerage, water supply, and electric power; by an excellent post-secondary educational system which contributes to the maintenance of a properly educated and trained work force, and which provides an environment within which research of potential benefit to industry can flourish; and by cultural and recreational amenities which make the Region a highly attractive place in which to live and work.

ECONOMIC ACTIVITY TRENDS

Two national economic trends—the changing distribution of economic activity among the various multi-state regions of the United States and the changing structure of the national economy—have an important bearing on economic activity in southeastern Wisconsin. The distribution of economic activity in the nation has changed significantly, with population, employment, and real personal income growing faster in the southern and

western regions than in the northeastern and north-central regions of the nation during the last two decades. The changing distribution of economic activity has been accompanied by the decline in relative importance of manufacturing employment in the national economy. Nationally, manufacturing employment increased by only about 13 percent during the 1960's and by about 11 percent during the 1970's, compared with about 19 percent during the 1950's. As a result, the nation's manufacturing employment declined from about 27 percent of total employment in 1960 to about 22 percent of total employment in 1980. Basic structural change in the national economy is also evidenced by a shift in the nature of manufacturing activities, with high technology industries accounting for a continually increasing portion of manufacturing jobs.

Following national economic trends, manufacturing employment in the State of Wisconsin increased less rapidly than did total employment between 1960 and 1980. As a result, after a slight increase between 1950 and 1960, the relative share of manufacturing employment to total employment in the State declined from 33 percent in 1960 to about 28 percent in 1980. The State's share of total manufacturing employment in the nation, however, has remained relatively constant, declining slightly from 2.84 percent in 1950 to 2.75 percent in 1980.

Within southeastern Wisconsin, the employed civilian labor force increased from about 524,600 in 1950 to about 826,500 in 1980, a relative increase of 58 percent. This growth rate is slightly higher than that for the State as a whole—56 percent—but less than for the nation—73 percent—over the same time period.

The decline in the relative importance of manufacturing employment experienced in the State and the nation has also occurred in the Southeastern Wisconsin Region. Manufacturing employment as a proportion of total regional employment declined by about 10 percentage points—from about 43 percent in 1950 to about 33 percent in 1980. In contrast, the relative share of the regional employment in the services sector increased by almost 12 percentage points—from about 15 percent in 1950 to about 27 percent in 1980.

There has been a significant change in the spatial distribution of economic activity, as well as in the overall level and structure of the regional economy, during the past three decades. In particular, there has been a shift in economic activity as measured by jobs toward the suburban and rural-urban counties of the Region. Waukesha County's share of all jobs in the Region increased dramatically from less than 3 percent in 1950 to almost 14 percent in 1980. Conversely, Milwaukee County's share of all jobs declined from about 79 percent in 1950 to about 62 percent in 1980.

As a result of the increasing uncertainty inherent in forecasting future conditions, including future economic activity and population levels, the Commission in the mid-1970's began incorporating an "alternative futures" approach into its planning program. Using this approach, the Commission prepared alternative future scenarios for the Southeastern Wisconsin Region, representing a range of possible future conditions which may be reasonably expected to occur through the end of this century. These scenarios differ significantly with respect to future regional population and economic growth, with one scenario pointing toward moderate population and economic growth in the Region and the other pointing toward a stable economy and a declining population in the Region. These scenarios postulate a range of future population and employment levels and provide a framework within which future industrial land development needs can be assessed.

The economic changes that may be expected to occur under a moderate growth scenario represent a continuation of the types of changes that have occurred historically in the regional economy, with long-term economic growth at a rate at or slightly below national averages. Under the moderate economic growth scenario, the number of jobs available in the Region would increase from a 1970 level of about 741,600 to about 1,016,000 in the year 2000, an increase of about 37 percent. In contrast, the stable economic growth scenario envisions an inert regional economy, with the number of jobs available in the Region increasing only modestly from 741,600 in 1970 to about 887,000 in the year 2000, an increase of about 20 percent.

Actual 1981 total regional employment exceeded the employment level envisioned under the moderate growth scenario by about 1 percent and exceeded the employment level envisioned under the stable growth scenario by about 7 percent.

The alternative regional growth scenarios could be expected to generate substantially different industrial land development needs in the Region through the year 2000. Under the moderate growth

scenario, industry-related employment, including employment in manufacturing, wholesale trade, and construction, would increase from about 333,500 jobs in 1980 to about 398,600 jobs in the year 2000, an increase of 65,100 jobs, or about 20 percent. In contrast, the stable growth scenario does not envision any significant increase in industrial employment in the Region between 1980 and 2000. This scenario envisions about the same number of industry-related jobs in the Region in the year 2000 as there were in 1980—333,500.

INDUSTRIAL LAND DEVELOPMENT TRENDS

Net industrial land, consisting of land devoted to manufacturing, wholesaling, and storage uses, totaled about 10,700 acres in 1980, or less than 1 percent of the total area of the Region. Net industrial land in the Region increased by about 4,300 acres, or 68 percent, between 1963 and 1980, with an annual average increase of about 250 acres.

Gross industrial land, consisting of net industrial land plus related parking, totaled about 13,500 acres in 1980, also less than 1 percent of the total area of the Region. Gross industrial land in the Region increased by approximately 6,100 acres, or 82 percent, between 1963 and 1980, an annual average increase of about 350 acres.

There was considerable variation in the rate of industrial development among the seven counties of the Region between 1963 and 1980. The amount of increase in gross industrial land ranged from a low of 330 acres in Walworth County to a high of about 1,800 acres in Milwaukee County. In relative terms, however, the rate of increase in gross industrial land ranged from a low of about 40 percent in Milwaukee County to a high of about 245 percent in Waukesha County. These differing growth rates result in a significant change in the distribution of industrial land in the Region, with the most dramatic changes occurring in Waukesha County. Waukesha County's share of industrial land in the Region increased from about 10 percent in 1963 to about 18 percent in 1980, while Milwaukee County's share decreased from about 61 percent to about 47 percent during the same period.

During the past several decades, emphasis has been placed upon the location of industrial activities within planned industrial areas, commonly referred to as industrial parks, which are designed and situated so as to provide ready access to highway facilities and adequate utilities and services. Important features of industrial park development are an internal street system which provides convenient access to the arterial street and highway system; uniform setbacks and yards, which maintain an open, parklike environment; adequate off-street parking and loading areas; and basic compatibility between the industrial parks and adjacent parts of the community. Within southeastern Wisconsin, it was found that of the 13,500 acres of gross industrial land in the Region in 1980, approximately 1,700 acres, or about 13 percent, were within industrial parks. The large balance, about 11,800 acres, or about 87 percent, were within other settings, ranging from small, isolated industrial sites to large industrial areas which encompass concentrations of industrial uses, but which do not display the physical features characteristic of industrial park development. Because there were no industrial parks in 1963, the 1,700 acres of industrial parks in 1980 represent new industrial development occurring subsequent to 1963, and represent over 26 percent of the total 6,100-acre increase in industrial land from 1963 to 1980.

Changes in the spatial distribution of industrial development in the Region during the 1960's and 1970's were accompanied by significant changes in industrial employment densities. The ratio of net industrial land to total industrial employment increased from 2.2 acres per 100 employees in 1963 to 3.2 acres per 100 employees in 1980. The ratio of gross industrial land to total industrial employment increased from 2.5 acres per 100 employees in 1963 to 4.0 acres per 100 employees in 1980. These changes may be attributed to a variety of factors, including a shift toward low-rise industrial installations, the provision of larger yards and more open space at industrial sites, the provision of more off-street parking, and changes in basic manufacturing processes, including a shift toward more automated, less labor-intensive operations.

ZONED INDUSTRIAL LAND

A total of about 71,400 acres, or 4.1 percent of the total area of the Region, were zoned for industrial use in 1983. Among the seven counties in the Region, the area zoned for industrial use ranged from a low of 3,100 acres in Walworth County to a high of about 27,100 acres in Milwaukee County.

Industrial land use—including land used for manufacturing, wholesaling, and storage activities and related parking—comprised about 12,000 acres, or

17 percent of the total area zoned for industry in 1983. Land in other urban and urban-related uses totaled approximately 23,700 acres, and accounted for 33 percent of all land zoned for industrial use. Undeveloped land accounted for the balance—35,700 acres, or 50 percent of all land zoned for industry.

INDUSTRIAL SITE EVALUATION

This report has provided information on the number and spatial distribution of existing vacant industrial installations in the Region. In addition, more detailed information has been provided on the relative suitability of large, vacant industrial installations for continued industrial use. Finally, the suitability of large, vacant, industrially zoned areas for industrial development was examined, as was the suitability of nonindustrially zoned areas considered to have potential for industrial development by local units of government. The relative capability of these industrial buildings and sites to accommodate the anticipated increase in industry-related employment in the Region to the year 2000 was assessed. The findings of this analysis are summarized below.

There were 269 vacant industrial installations encompassing over 13.2 million square feet of building floor area within the Region in 1984. Milwaukee County, with 139 vacant industrial installations, accounted for almost 8.8 million square feet of building floor area, or 67 percent of the total square footage of vacant industrial installations. The very large vacant industrial installations—namely, those installations with a floor area of 100,000 or more square feet—contained almost 6.4 million square feet, or about 50 percent of the total square footage of vacant industrial installations in the Region. Over 5.2 million square feet, or 81 percent of the area of the large vacant installations, were located in Milwaukee County. Twenty-five sites encompassing approximately 5.2 million square feet of building floor area, or 81 percent of the total square footage of the large, vacant industrial installations, were constructed prior to 1950.

Two hundred and seventy-four sites encompassing about 38,300 acres of land were identified as having the potential for industrial use within the Region. Potential industrial sites included all industrially zoned areas containing at least 40 contiguous acres of vacant land, as well as other vacant, nonindustrially zoned areas at least 40 acres in size considered to have potential for industrial development by local units of government. About 28,700 acres, or approximately 75 percent of the total potential industrial site acreage, were zoned for industrial use, while 9,600 acres, or about 25 percent, were currently not zoned for industrial use, but were considered to have potential for industrial development by local units of government.

One hundred and eighty sites, totaling 24,450 acres, or about 64 percent of the total 38,300 acres of potential industrial sites, were considered suitable for industrial development. Suitable industrial sites were defined as sites which are proposed to be served with public sanitary sewer service by the year 2000 and contain at least 40 contiguous acres of land having no significant physical limitations for industrial development. Waukesha County with 6,700 acres and Milwaukee County with 5,500 acres of suitable industrial sites collectively accounted for over 50 percent of the total suitable industrial site acreage in the Region. Almost 16,000 acres, or about 65 percent of the suitable industrial site acreage, were currently zoned for industrial use.

Suitable industrial sites were divided into three classes. Class I industrial sites were defined as sites which are zoned for industrial use, have public sanitary sewer facilities available within the site, and have improved streets for internal site access. Such sites total 2,750 acres, or about 11 percent of the suitable industrial site acreage in the Region. Waukesha County, with 1,200 acres of Class I sites, has almost 45 percent of the Class I site acreage in the Region. Class II industrial sites—that is, sites which are zoned for industrial use and have public sanitary sewer facilities available at the site, but which lack improved streets for internal site access—total almost 9,600 acres, or approximately 39 percent of the suitable industrial site acreage in the Region. Milwaukee County, with 4,300 acres of Class II sites, has approximately 45 percent of the Class II site acreage in the Region. Class III industrial sites—that is, sites which are not zoned for industrial use or which do not have public sanitary sewer facilities available, and which lack improved streets for internal site access—total 12,100 acres, or about 50 percent of the total suitable industrial site acreage in the Region. Waukesha County, with about 4,500 acres of Class III sites, has approximately 37 percent of the Class III site acreage in the Region.

Industry-related employment under the moderate regional growth scenario, the most optimistic scenario for economic development considered for the Region, would increase from about 333,500 jobs in 1980 to about 398,600 jobs in the year 2000, an increase of about 65,100 jobs, or 20 percent. The employment absorption capabilities of the suitable industrial installations and sites inventoried would range from 74,970 employees under a 5:1 land-to-building ratio to 122,110 employees under a 3:1 land-to-building ratio.

CONCLUSIONS

The past decade has been marked by major shifts in economic activity patterns, including changes in the distribution of economic activity, both nationally and within the Southeastern Wisconsin Region, and by structural change in the economy as evidenced by the decline in manufacturing employment relative to total employment, and by change in the nature of manufacturing activities as reflected in the growth of high technology industries. Such rapidly changing economic conditions make the task of forecasting future economic activity levels for the Region increasingly difficult and full of uncertainty.

The alternative future growth scenarios described in this report postulate a range of future economic activity levels in the Southeastern Wisconsin Region. These scenarios were developed not as forecasts, per se, but as a framework bracketing future economic conditions which could materialize within the Region. The moderate regional growth scenario envisions an expanding regional economy, including a 20 percent increase in industrial employment in the Region between 1980 and the year 2000. Conversely, the stable regional growth scenario does not envision any material increase in industrial employment between 1980 and 2000, suggesting that there would be no need for additional industrial land except that which may be required to accommodate change in the distribution of industrial activity within the Region.

It is impossible at this time to predict with certainty whether economic growth in the Region will more closely approximate conditions anticipated under the moderate growth scenario or the stable growth scenario during the balance of the century. The Regional Planning Commission, however, has selected the moderate regional growth scenario as the basis for the formulation of an evolving set of functional plans to guide the physical development of the Region. In so doing, the Commission has affirmed that the economic activity levels postulated by the moderate growth scenario represent regional goals toward which regional growth and development should be directed, and has indicated that the pessimistic economic conditions postulated by the stable growth scenario—particularly the virtual stagnation of manufacturing employment, historically the largest employment group in the Region—are unacceptable goals for regional economic development.

While future economic conditions in the Region will be determined, in part, by external factors over which public and private decision-makers within the Region have little or no influence, such conditions may also be influenced in part by the effectiveness of state, regional, and local level economic development programs undertaken to maintain and enhance the economic vitality of subareas of the State. The effectiveness of such economic development programs will be enhanced if it can be demonstrated that the area concerned has an adequate supply of sites which are suitable for, and can readily be made available to, industrial development.

While, on a regional basis, it would appear that sufficient industrial areas are available to accommodate the 65,100 increase in industry-related employment anticipated to the year 2000, there may be a shortage of developed industrial sites ready for immediate industrial use. Two hundred and seventy-four potential industrial sites encompassing over 38,300 acres were identified as part of the industrial site inventory, but only 180 sites encompassing 24,450 acres were determined to be suitable for industrial development and, more importantly, only 22 sites characteristic of industrial parks, encompassing 2,750 acres, were ready for immediate industrial use. Such sites would accommodate from 5,780 to 9,640 employees, depending upon the land-to-building ratio assumed. If the anticipated 65,100 increase in industry-related employment is accommodated uniformly over the 20-year period from 1980 to the year 2000, approximately 3,250 new employees would have to be accommodated within the Region each year. Thus, the 22 industrial park sites which are ready for immediate use could, depending on

the land-to-building ratio assumed, accommodate a two- to three-year growth in industry-related employment. The number of immediately available sites may, therefore, be insufficient, considering that, within the Region, two to five years are typically required to design and develop a large industrial park.

It is also likely that some of the 22 sites which are immediately available do not possess all of the amenities necessary to satisfy the specific site requirements of certain industries which may seek to locate or relocate within the Region. Such requirements may include, but are not limited to, a large industrial site which can accommodate initial construction, desired additional open space, and future industrial expansion needs; a prominent location with high visibility; direct access to freeway or railway service; a full range of public services, including public sanitary sewer, water supply, stormwater drainage, and communication facilities; or simply being within an attractive, well-designed industrial park with architectural controls which offer protection for the sizable investments industries make in land and improvements.

It may thus be concluded that, while there is sufficient industrial land available in the long term to accommodate the anticipated increase in industry-related employment, there are relatively few suitable sites available for immediate industrial use and such sites may, in fact, be deficient in size, type, and location in meeting the specific needs of industries seeking to locate or relocate in the Region.

Public or private industrial development programs within the Region should, among other efforts, seek to provide industrial sites located in well-designed industrial parks, as well as some larger individual industrial sites in suitable locations which are ready for immediate industrial use. The provision of such sites may, because of the potential costs involved, require new initiatives, funding sources, or possibly joint public-private ventures. In addition, the supply of such sites should, at a minimum, be sufficient to meet the staged industrial land development requirements associated with the moderate regional growth scenario, as embodied in the adopted regional land use plan. It would also be desirable that additional potential industrial sites exceeding the area requirements attendant to the moderate regional growth scenario be identified in order to assure that the Region can readily respond to unforeseen industrial development needs, as well as to accommodate the free operation of the land market. The vacant suitable industrial sites identified as part of this study constitute a valuable economic resource which should be protected to assure the availability of a continuous supply of suitable industrial land which can be utilized to retain those industries seeking to expand within the Region, as well as to attract new industries to the Region.

APPENDICES

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Appendix A

GUIDELINES FOR THE SITE PLANNING OF INDUSTRIAL PARKS

INTRODUCTION

The Southeastern Wisconsin Regional Planning Commission, since its inception in 1960, has urged local plan commissions to consider the preparation of detailed urban development plans as an important means of guiding and shaping urban land use development and redevelopment in the public interest. SEWRPC Planning Guide No. 1, Land Development Guide, published in November 1963, discussed the importance of detailed development planning to the attainment of good land subdivision. This guide indicated that effective public regulation of the important process of land subdivision—a process through which much of the form and character of a community are determined—requires the preparation of detailed urban development plans. The regional land use plan adopted by the Commission in December 1966 for the year 1990 more specifically recommended that local plan commissions identify neighborhood units, including industrial parks, within areas of existing or proposed urban use, and prepare detailed plans for the development of these units and industrial parks. This recommendation was also a part of the more recently adopted regional land use plan for the year 2000.

The Regional Planning Commission's recommendation that detailed development plans be prepared by local plan commissions is based upon the concept that an urban area should be formed of, and developed in, a number of individual cellular units and not as a single, large, formless mass. These cellular units may be categorized by their primary or predominant land use and, as such, may be residential, commercial, institutional, or industrial. Insofar as possible, each development area should be bounded by arterial streets; major park, parkway, or institutional lands; bodies of water; or other natural or cultural features which serve to clearly and physically separate each development area from surrounding development areas. This concept is intended to facilitate the difficult task of good land subdivision design. The proper relationship of land divisions to areawide features, to existing and proposed land uses, and to other subdivisions can best be achieved through a precise plan.

Unlike the community comprehensive, or master, plan which should be quite general, the site plan for an industrial development should be quite precise. It should explicitly depict a practical development pattern which meets such needs as traffic circulation, stormwater drainage, sanitary sewerage, water supply, and a sound arrangement of industrial land uses. Industrial site planning, therefore, must involve careful consideration of such factors as soil suitability, land slopes, drainage patterns, flood hazards, woodland and wetland cover, existing and proposed land uses, and real property boundaries. When properly executed, such planning results in the creation of "industrial parks" as defined below. Such plans should be developed and advanced jointly by both the private and public sectors in order to draw upon the experience of industry and government to achieve mutual goals.

The purpose of this guide is to present a recommended process and attendant site design guidelines for the effective planning of an industrial park by local units and agencies of government, as well as private developers. The guide illustrates this process and the application of attendant site design guidelines using a hypothetical site located in southeastern Wisconsin. It should be noted that the design criteria presented herein should be considered desirable rather than minimum or maximum criteria. Each community or private developer should carefully adapt the criteria to meet the market needs and the specific objectives of the local community concerned.

WHAT IS AN INDUSTRIAL PARK?

An industrial park may be defined as an area under single control properly planned and developed to provide good sites for business and industry. Such parks should be planned and developed in a manner consistent with community development objectives, and so as to provide for efficient business and

industrial operations, to assure compatibility with the surrounding cultural and natural environment, and to achieve and sustain the value of the land and improvements concerned over time.

A well-planned and -developed industrial park should have paved streets and adequate drainage and utility systems; use intensity regulations, including adequate yard or setback requirements; attractive landscaping; adequate paved off-street parking; and good siting and design of buildings and structures. An industrial park should also have certain operational characteristics. The park should be under one management, have a master plan for physical development, and effective means for control of the siting and architectural design of buildings and structures, including the materials used and signs.

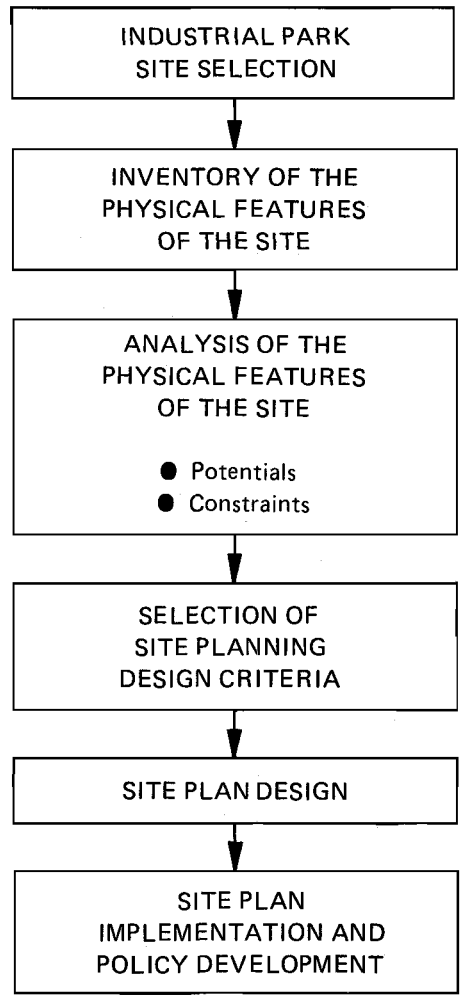
This appendix deals primarily with the desirable physical characteristics of an industrial park and related proper site planning and design. Appendices B-3 and B-4 deal with certain operational characteristics of an industrial park such as an industrial park control board and industrial park deed restrictions and protective covenants.

THE INDUSTRIAL PARK PLANNING PROCESS

The industrial park planning process consists of the following steps: 1) site selection; 2) inventory of the physical features of the site; 3) analysis of the physical features of the site and the identification of site design potentials and constraints; 4) formulation of site planning design criteria to guide plan preparation; 5) design of the site development plan; and 6) plan implementation and related policy development. This process is outlined graphically in Figure A-1.

Figure A-1

THE INDUSTRIAL SITE PLANNING PROCESS



Source: SEWRPC.

Industrial Park Site Selection

Industrial parks should, to the extent practicable, be bounded by arterial streets; major park, parkway, or institutional lands; bodies of water; or other natural or cultural features which serve to clearly and physically separate the industrial park from surrounding areas. In addition to being based on the areal and locational criteria discussed in Chapters IV and VI of this report, the location and extent of an industrial park should be in conformance with the community comprehensive plan.

Inventory and Analysis of the Physical Features of an Industrial Park Site

Reliable, basic site planning data are absolutely essential to the formulation of good industrial park site development plans. Consequently, inventory and analysis of these data constitute important steps in the site planning process. The crucial nature of factual information in the site planning process should be evident, since no intelligent decisions can be made, or alternatives evaluated, without definitive knowledge of the characteristics of the site being planned. The sound design of an industrial park site plan requires that factual data be compiled on the existing land use pattern of the site and its environs, on the supporting transportation and utility systems, and on the underlying natural resource base. The necessary analysis of these data provides a basis for identifying the existing and potential problems which must be overcome in the design and the development potentials which can be capitalized upon in the design.

Selection of Site Planning Design Criteria and Site Plan Design

Design criteria constitute a body of information which can be applied in solving specific design problems. Site planning design criteria serve as a valuable guide in the preparation of industrial park site plans. The final industrial park site development plan should reflect good site planning design criteria.

Site Plan Implementation and Policy Development

Site plan implementation for an industrial park requires the use of several planning tools of a legal nature. These tools include, but are not limited to, public land subdivision control and comprehensive zoning which are designed to safeguard broad community interests; and private deed restrictions and protective covenants (see Appendix B-4) which are designed to safeguard the investment an individual or firm makes in both the land and buildings within an industrial park. The industrial park deed restrictions and protective covenants should be administered by an industrial park control board (see Appendix B-3).

THE PREDEVELOPMENT CONDITIONS OF THE MODEL INDUSTRIAL PARK SITE

As already noted, the site planning process and application of site design criteria are herein illustrated by example using a hypothetical site. The site is shown in Figure A-2 and consists of about 640 acres. The site is bounded on the north and east by arterial highways, on the west by agricultural lands, and on the south by an environmentally sensitive area known as a primary environmental corridor. Existing land uses on the site include four single-family residential uses located near the northern boundary of the site and a commercial land use in the northeastern portion of the site, with the balance of the site being in agricultural or other open uses. Two significant man-made features on the site are a 100-foot-wide easement for an electric power transmission line located in the northwestern portion of the site, and a 100-foot-wide railway right-of-way in the western portion of the site. The general topography of the site is level to gently rolling, with slopes not exceeding 6 percent. Surface drainage is to the environmental corridor area located on the southern portion of the site. The summer winds are predominantly from the southwest and the winter winds are predominantly from the west.

Figure A-3 illustrates the results of an analysis of the predevelopment conditions of the site. Noted in Figure A-3 are the development constraints imposed by the 100-foot-wide utility easement, 100-foot-wide railway right-of-way, and primary environmental corridor. The incompatible single-family residential land uses along the northern boundary of the site will have to be either removed or adequately buffered from the proposed industrial uses. Access to the two arterial streets serving the site by intersecting collector or land access streets would not be permitted for a distance of 1,200 feet from the intersection of these two streets. In addition, the aesthetically pleasing view toward the environmental corridor is noted so that it can be capitalized upon in the site planning process.

INDUSTRIAL PARK SITE PLANNING DESIGN CRITERIA

As already noted, specific site design determinations should be based, in part, upon site planning design criteria. Such criteria should relate to the type, location, and extent of the various land uses, environmental protection, user motor vehicle characteristics, street facility design, railway facility design, industrial park automobile parking facility design, truck service area facility design, railway loading/unloading facility design, easements, stormwater drainage, erosion/sedimentation control, and landscaping.

Location and Extent of the Various Land Uses

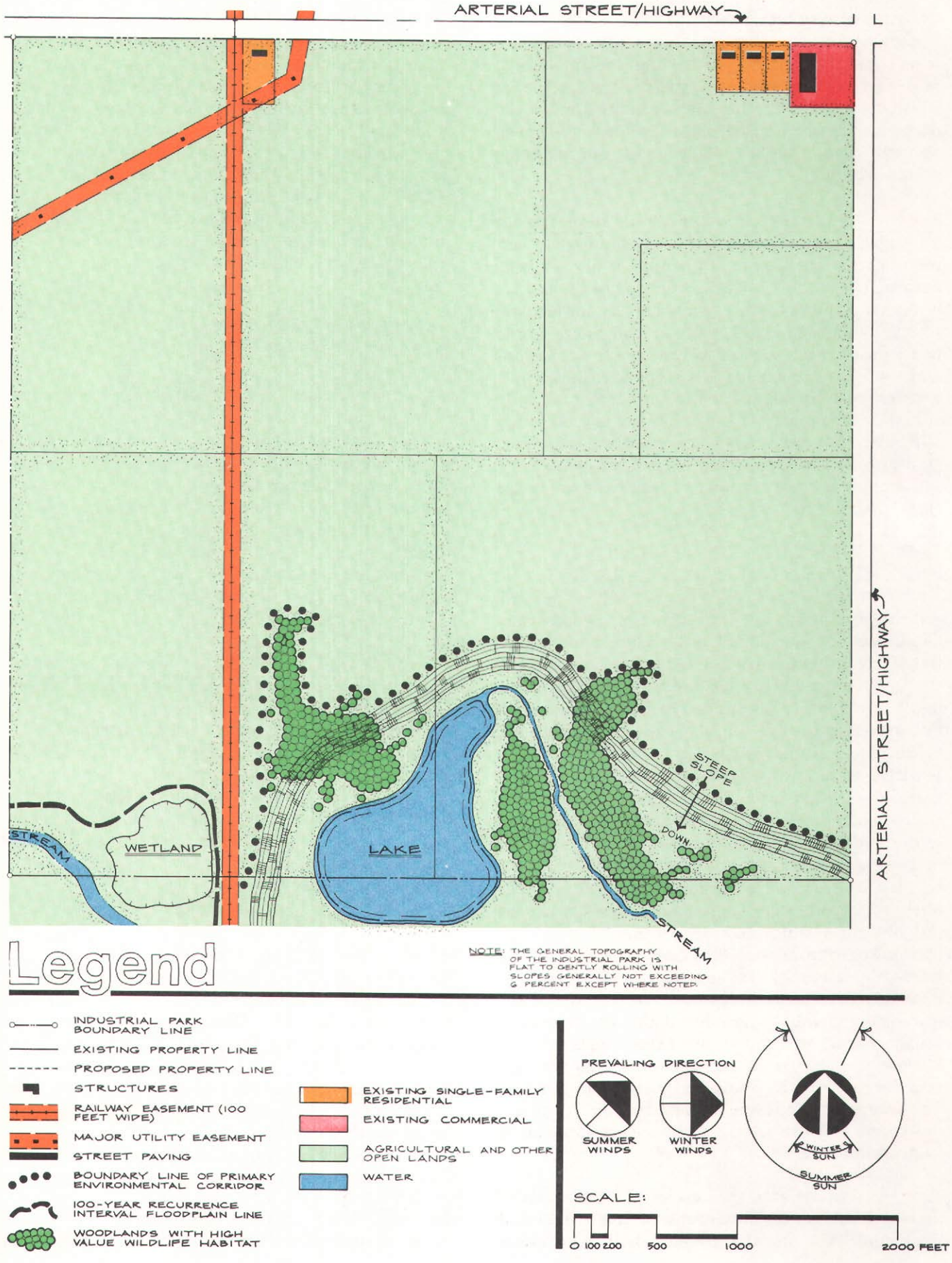
Land Use: Land uses should be limited to manufacturing and warehousing, together with essential supporting uses such as street and railway rights-of-way, utility sites and rights-of-way, drainageways, and stormwater retention or detention areas. Uses for residential purposes should be expressly prohibited, as should the retail sale of any merchandise or service other than retail sales by park occupants of those products which they manufacture or handle at wholesale.

Industry Clustering: Industries with similar characteristics generally should form clusters in the industrial park; thus, light industrial uses should be grouped in one area of the park, and heavy industrial uses in another. Clustering industries in this fashion permits adaptation of the site layout and design to the requirements of the intended uses. The light industries, which typically require smaller lot sizes than the heavy industries, should be clustered so as to provide easy access to the arterial street system which serves the park.

Buffers: Industrial land uses should be effectively buffered from adjacent incompatible land uses such as residential, commercial, and institutional

Figure A-2

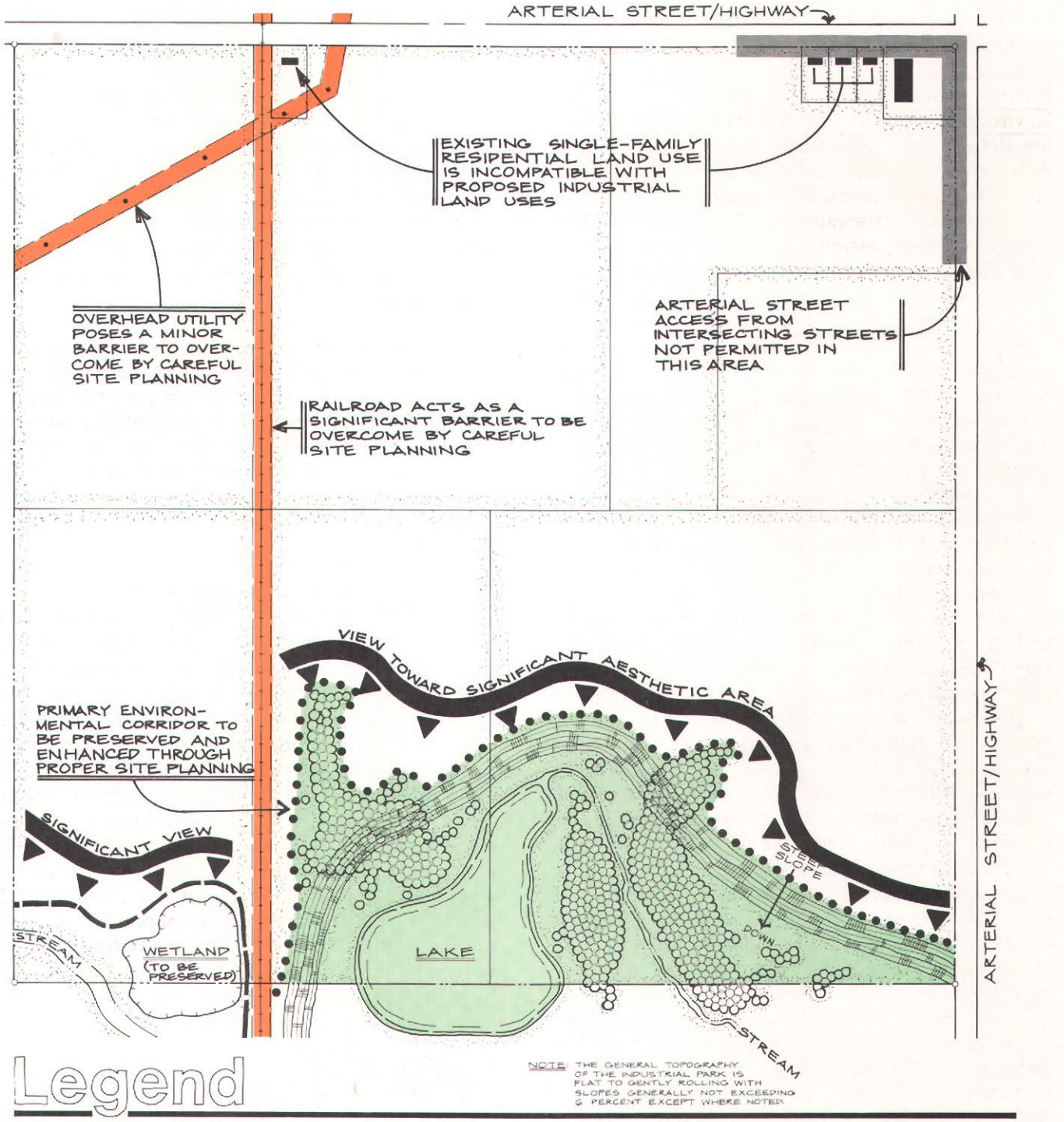
INVENTORY OF THE PREDEVELOPMENT CONDITIONS OF THE MODEL REGIONAL INDUSTRIAL PARK SITE



Source: SEWRPC.

Figure A-3

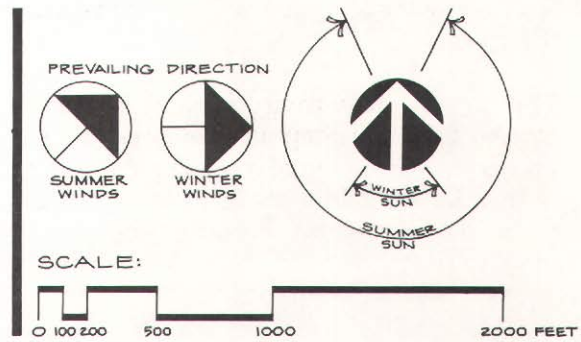
SITE ANALYSIS OF THE PREDEVELOPMENT CONDITIONS OF THE MODEL REGIONAL INDUSTRIAL PARK SITE



Legend

NOTE: THE GENERAL TOPOGRAPHY OF THE INDUSTRIAL PARK IS FLAT TO GENTLY ROLLING WITH SLOPES GENERALLY NOT EXCEEDING 6 PERCENT EXCEPT WHERE NOTED.

- INDUSTRIAL PARK BOUNDARY LINE
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- STRUCTURES
- RAILWAY EASEMENT (100 FEET WIDE)
- MAJOR UTILITY EASEMENT
- STREET PAVING
- BOUNDARY LINE OF PRIMARY ENVIRONMENTAL CORRIDOR
- 100-YEAR RECURRENCE INTERVAL FLOODPLAIN LINE
- WOODLANDS WITH HIGH VALUE WILDLIFE HABITAT



Source: SEWRPC.

uses by means such as landscaping or fencing, or by maintaining an adequate distance between the incompatible uses.

Environmental Protection

Environmental Corridors: Environmental corridors are defined by the Regional Planning Commission as linear areas in the landscape which contain concentrations of high-value elements of the natural resource base. Preservation of the natural resource base and related elements, especially where these elements are concentrated in identifiable geographic areas, is essential to the maintenance of the overall environmental quality of an area, to the continued provision of certain amenities that provide a high quality of life for the resident population, and to the avoidance of the excessive costs associated with the development and operation and maintenance of industrial land uses in environmental corridor areas.

Seven elements of the natural resource base are considered by the Regional Planning Commission to be important to the maintenance of the ecological balance and overall quality of life in an area. These elements include: 1) lakes, rivers, streams, and the associated undeveloped shorelands and floodlands; 2) wetlands; 3) areas covered by wet, poorly drained, and organic soils; 4) woodlands; 5) prairies; 6) wildlife habitat areas; and 7) rugged terrain and high-relief topography having slopes exceeding 12 percent. There are certain other elements which, although not a part of the natural resource base per se, are closely related to, or centered on, that base. These elements include: 1) existing parks and outdoor recreation sites; 2) potential park, outdoor recreation, and related open space sites; 3) historic sites and structures; 4) areas having scientific value; and 5) scenic areas and vistas or viewpoints. Scenic areas and vistas or viewpoints are defined as areas with a local relief greater than 30 feet and a slope of 12 percent or more having a ridge of at least 200 feet in length, and a view of at least three natural resource features such as surface water, wetlands, woodlands, agricultural lands, or other significant geological features within approximately one-half mile of the ridge.

The highest value environmental corridors defined by the Regional Planning Commission are termed primary environmental corridors. Secondary environmental corridors are not as important as primary environmental corridors because of their smaller size; however, such areas should be considered for retention in park and open space use, particularly within industrial park areas, as greenways, drainageways, stormwater detention and retention areas, and public and private open spaces. Isolated natural areas are physically separated from the primary and secondary environmental corridors. These areas may provide good locations for open space and add to the aesthetic character and natural diversity of an area. In some instances, these areas have sufficient natural resource value to warrant conservancy zoning protection and preservation in natural, open uses in conjunction with industrial uses.

Soils: The proper relation of industrial land use development to soil type and distribution can serve to avoid the creation of costly environmental problems and promote the wise use of an irreplaceable resource. Industrial development should not be located in areas covered by soils identified in the regional detailed operational soil survey as having severe or very severe limitations for such development.

User Motor Vehicle Characteristics

Streets and parking and loading areas should be designed to accommodate motor vehicles of the type expected to be operated by occupants of the park. These types of motor vehicles include the passenger car, single-unit truck, intermediate size semitrailer combination, large size semitrailer combination, and semitrailer-fulltrailer combination. The vehicle dimensions or specifications important to effective site planning for these types of vehicles are summarized in Table A-1 and in Figure A-4. The vehicle dimensions are shown for the typical wheelbase, front overhang, rear overhang, overall length, overall width, height, minimum outside turning radius to the path of the left front wheel, and minimum inside turning radius to the path of the right rear wheel.

Street Facility Design

Limitation of Access to Arterial Streets: Whenever proposed industrial parks abut an arterial street or highway, access from abutting park uses should be limited to adequately protect the arterial facility. This protection can be accomplished through the separation of through and local traffic, where possible, by use of reversed frontage lots. Provision should be made for a planting screen or landscaping in a nonaccess reservation located along the rear property line of all such reversed frontage lots. The landscape planting reservation strip should be a minimum of 20 feet wide and provide a mixture

Table A-1

SITE-RELATED PHYSICAL CHARACTERISTICS OF MOTOR VEHICLES TYPICALLY USED IN AN INDUSTRIAL PARK

Type of Motor Vehicle	Typical Dimensions in Feet[a]							
	Wheelbase	Front Overhang	Rear Overhang	Overall Length	Overall Width	Height	Minimum Outside Turning Radius[b]	Minimum Inside Turning Radius[c]
Passenger Car	11	3	5	19	7	--	24	14.9
Single-Unit Truck . . .	20	4	6	30	8.5	13.5	42	27.8
Intermediate Size Semitrailer Combination	13 + 27 = 40	4	6	50	8.5	13.5	40	17.7
Large Size Semitrailer Combination	20 + 30 = 50	3	2	55	8.5	13.5	45	16.6
Semitrailer-Fulltrailer Combination	9.7 + 20.0 + 9.4[d] + 20.9 = 60	2	3	65	8.5	13.5	45	21.4

[a] *These may, of course, very slightly depending upon the vehicle manufacturer.*

[b] *To the path of the left front wheel.*

[c] *To the path of the right rear wheel.*

[d] *Distance between rear wheels of front trailer and front wheels of rear trailer.*

Source: Homburger, Wolfgang S. (Editor), Transportation and Traffic Engineering Handbook—Second Edition, Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1982; and SEWRPC.

of conifers and deciduous planting materials, providing a sight-proof landscape screen. Figure A-5 shows three alternative planting designs for this type of screen.

Street Cross-Sections: Street cross-section design criteria for industrial parks are graphically shown in Figure A-6. It is recommended that a minimum right-of-way width of 80 feet be used.

Turning Roadway Pavement Design: Figure A-7 illustrates minimum edge-of-pavement design criteria for 50-foot-long intermediate size semitrailer combination trucks and 55-foot-long large size semitrailer combination trucks.

Street Grades: Unless necessitated by exceptional topography, the maximum grade of any street in an industrial park should not exceed 3 percent. In addition, the grade of any street should not be less than five-tenths of 1 percent. Street grades should be established so as to avoid excessive grading, the promiscuous removal of ground cover and tree growth, and unnecessary leveling of the topography.

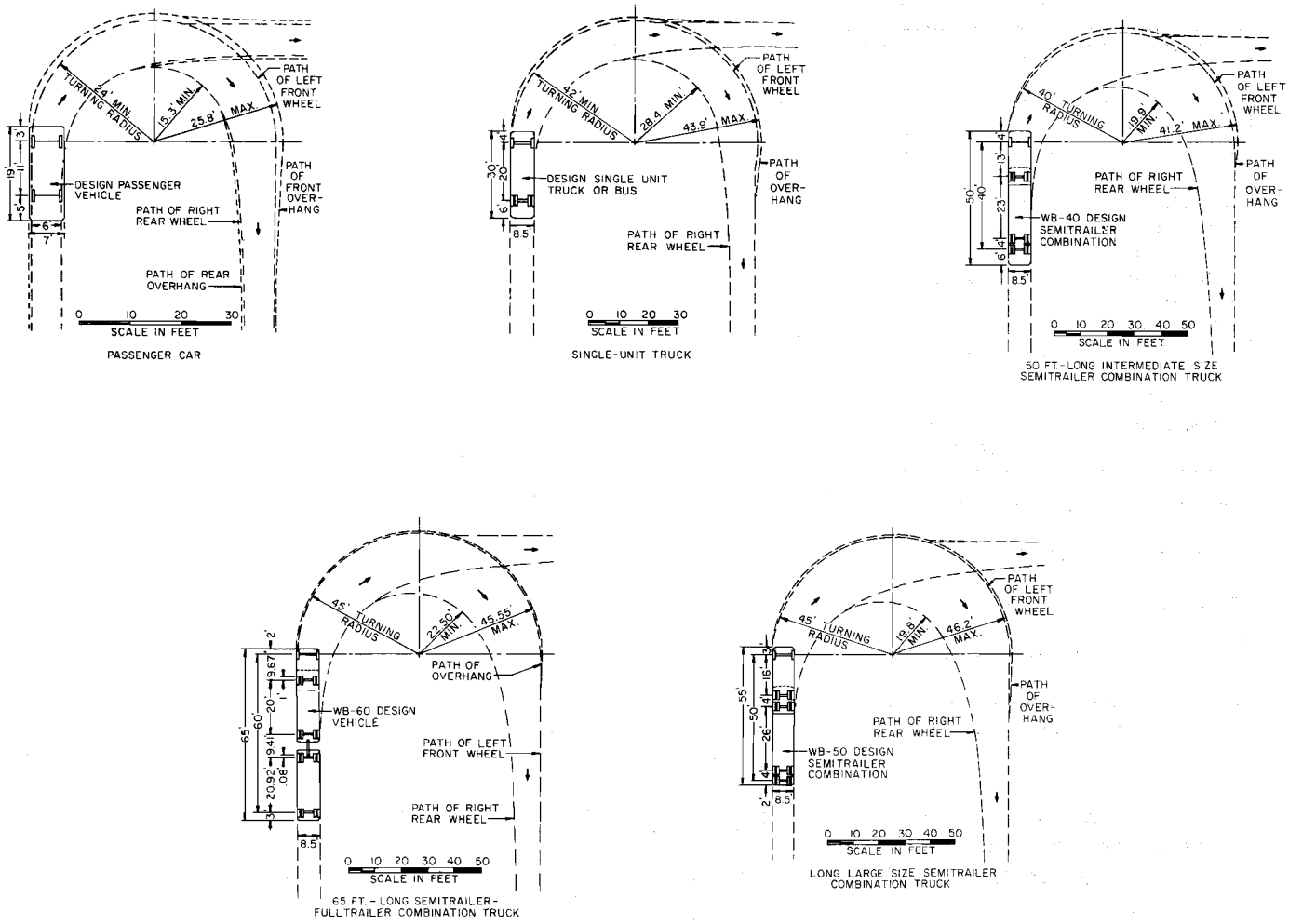
Stormwater Drainage and Street Location: Wherever practical, streets should follow natural lines of stormwater drainage.

Street Intersections: Streets should intersect each other at as nearly right angles as topography and other limiting factors of good design permit. In addition, the number of streets converging at one intersection should be held to a minimum, and the distance between intersections should, generally, not be less than 1,200 feet. Minor street or land access street openings onto arterial streets should be minimized to improve traffic flow and reduce traffic hazard. Property lines at street intersections should be rounded with a minimum radius of 15 feet, or should be cut off by a straight line through the joints of tangency of an arc having a radius of 15 feet.

When a continuous street centerline deflects at any point by more than 10 degrees, a circular curve should be introduced having a radius curvature on the centerline of not less than the following: arterial streets, 500 feet; collector and industrial parkland access streets, 300 feet. A tangent of at

Figure A-4

TURNING RADII OF SELECTED MOTOR VEHICLES



Source: SEWRPC.

least 100 feet in length should be provided between reverse curves on arterial, collector, and industrial parkland access streets. Minor and collector streets should not necessarily continue across arterial streets. If the distance between the centerline intersection of any street and the centerline intersection of any intersecting street is less than 250 feet, measured along the centerline of the intersecting street, then the street location should be adjusted so that the distance is increased or the connection across the intersecting street is continuous in alignment, thus avoiding a jog in the flow of traffic.

Half Streets: The platting of half streets should be avoided. Half streets put an unrealistic reliance on the chance that adjacent property owners will develop their adjacent properties at the same time. If half streets are allowed and then improved, their narrow width may result in street maintenance and traffic circulation problems.

Cul-de-sacs: Cul-de-sac or dead end streets should not be permitted in an industrial park because of the severe problems associated with the typical bulb design radii of large trucks.

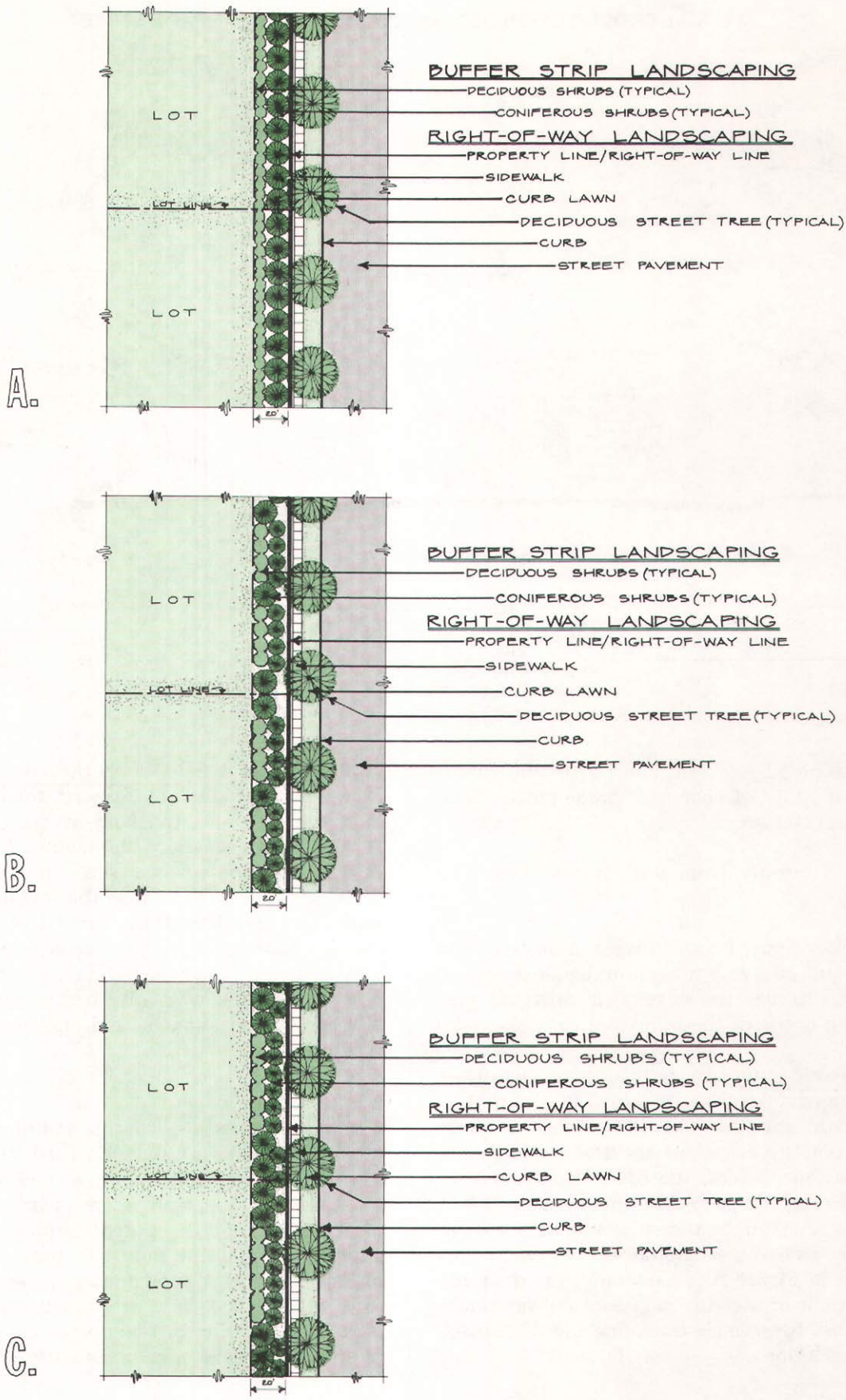
Railway Facility Design

Horizontal Alignment: The horizontal alignment of railroad tracks generally should be limited to 12^{o} maximum curvature, or about 500 feet.

Vertical Alignment: The vertical alignment of railroad tracks generally should not exceed a maxi-

Figure A-5

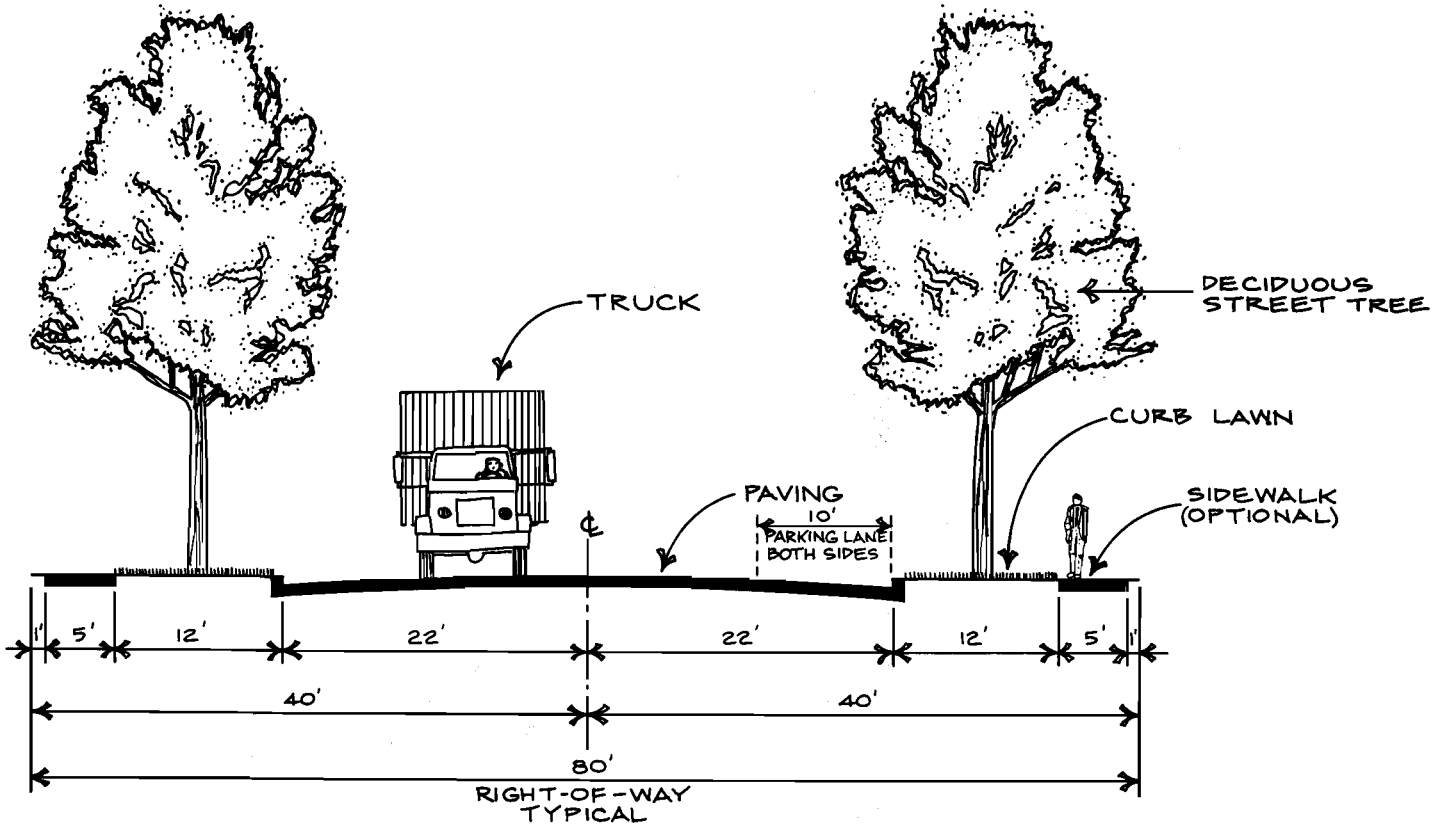
ALTERNATIVE 20-FOOT-WIDE PLANTING SCREEN FOR REVERSED FRONTAGE LOTS IN INDUSTRIAL PARKS



Source: SEWRPC.

Figure A-6

TYPICAL CROSS-SECTION DESIGN FOR AN INDUSTRIAL PARK STREET



Source: SEWRPC.

mum grade of 1.5 percent, and no vertical curves should have a rate of change of grade greater than 1 percent per station.

Turnouts: Turnouts from lead tracks should be No. 8 or greater.

Spur Tracks: Spur tracks serving industrial lots should be laid out, at a minimum, as illustrated in Figure A-8. Storage tracks may be provided pursuant to the needs of the industrial park clientele.

Typical Cross-Section: A typical cross-section of industrial railway trackage is shown in Figure A-9. The subgrade shoulder should not be less than 12 feet from the center of the track. In cuts or fills of less than 2 feet, the roadbed should have a V-shaped ditch on each side not less than 2 feet deep below the top of the subgrade, as shown in Figure A-9. Side slopes should be one on two, as also shown in Figure A-9. Generally, the desirable minimum right-of-way for industrial railway trackage is 24 feet for a single-track line and 38 feet for a double-track line.

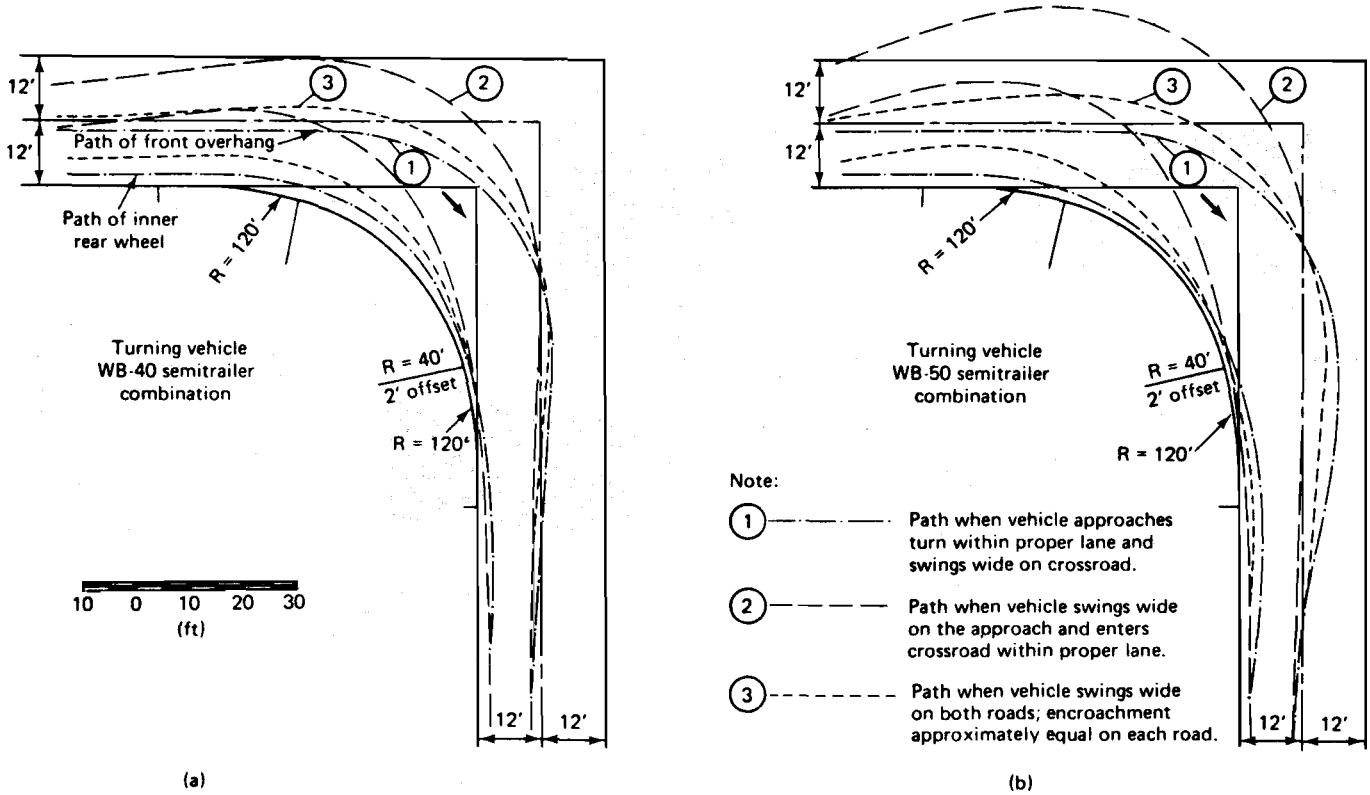
Distance from Land Access Streets: The distance between an industrial railway track serving an industrial lot and the land access street serving the same lot generally should not be more than 600 feet except where a single principal building is to be accommodated on the lot. Industrial railway trackage should be located at or near the rear lot lines of industrial lots in order to visually screen the tracks from public view, as well as to prevent potential vehicular traffic congestion due to conflicts in railway and motor vehicle traffic movements.

Industrial Park Layout

General: The widths, lengths, and shapes of blocks of industrial lots should be suited to the planned use of the land; community zoning requirements; the need for convenient access, control, and safety of street traffic; the potential phasing or staged growth of the entire industrial park; and the limitations of and opportunities presented by the topography. The size, shape, and orientation of industrial lots should be appropriate for the type of industrial development and use contemplated,

Figure A-7

MINIMUM EDGE-OF-PAVEMENT DESIGN CRITERIA FOR TURNING ROADWAYS IN INDUSTRIAL PARKS



50 FT.-LONG INTERMEDIATE SIZE SEMITRAILER COMBINATION TRUCK

55 FT.- LONG LARGE SIZE SEMITRAILER COMBINATION TRUCK

Source: American Association of State Highway Officials, A Policy on Geometric Design of Rural Highways, Washington, D. C., 1965, pp. 314 and 316; and SEWRPC.

and facilitate assembly of smaller lots into larger parcels. Lots should be designed to provide an aesthetically pleasing building site and a proper architectural setting for the building contemplated. Also, the overall topography of the lot should not exceed slopes of about 6 percent, depending on the industry proposed to use the lot.

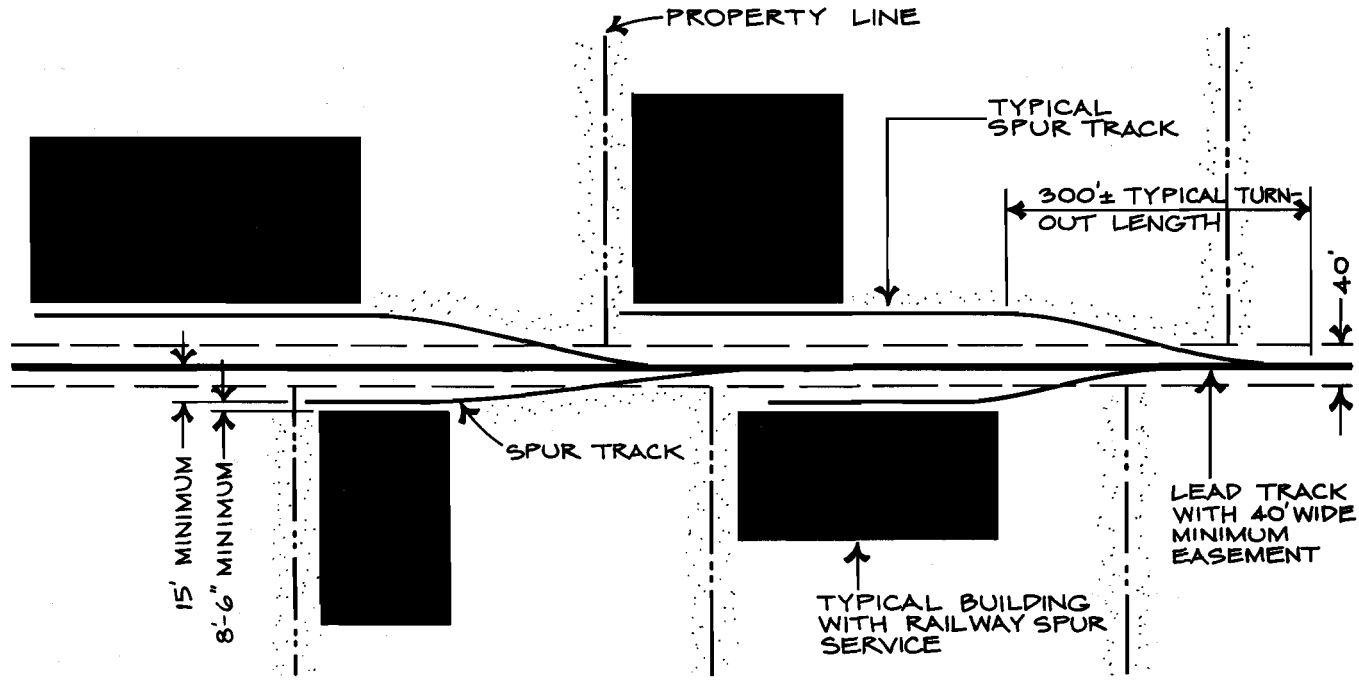
Block Width: Blocks should be wide enough to provide for, generally, two tiers of industrial lots of appropriate depth. The width of lots or parcels reserved or designated for industrial use should be adequate to provide for the off-street service and parking required by the use contemplated and the area zoning restrictions for such use.

Side Lot Lines: Side lot lines should be at right angles to the straight street lines or radial to the curved street lines which the lots face. Lot lines should follow municipal boundary lines rather than cross them.

Double Frontage Lots: Double frontage or "through" lots should be avoided except where necessary to provide for separation of industrial development from arterial traffic or to overcome specific disadvantages of topography and orientation. Where double frontage lots prove to be a necessary design feature of the industrial park, the lots should have access to a minor land access street only.

Figure A-8

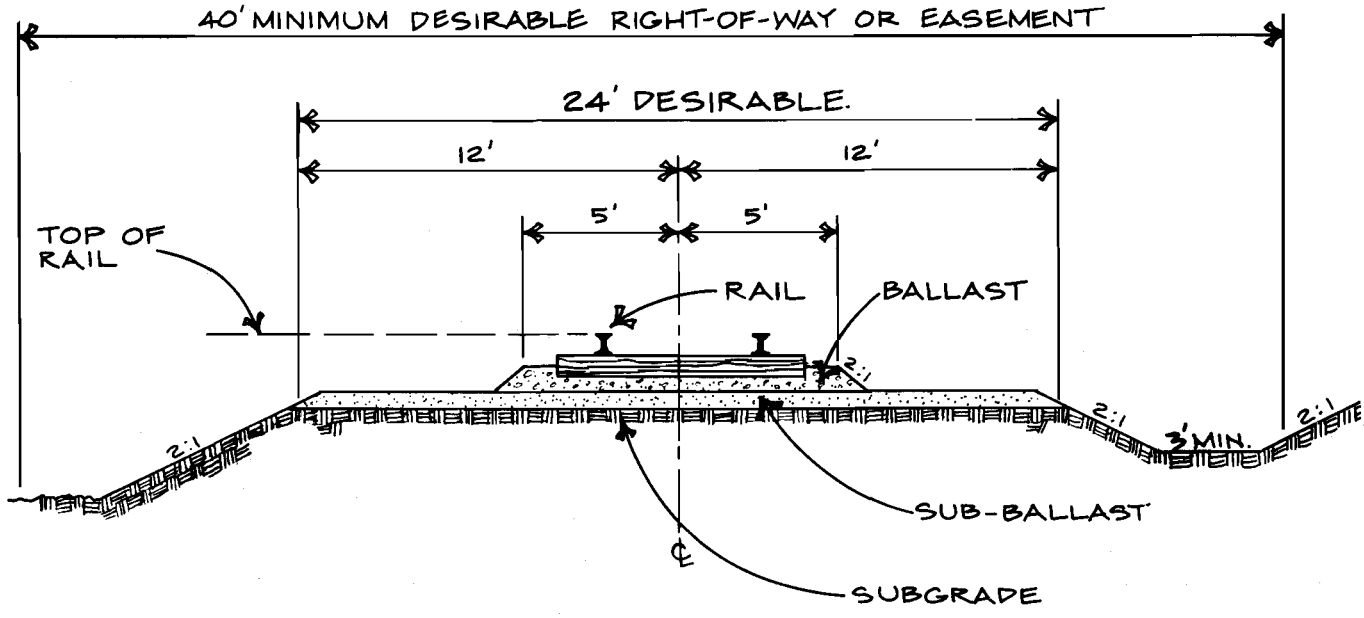
TYPICAL LAYOUT OF SPUR TRACKS SERVING INDUSTRIAL LOTS



Source: SEWRPC.

Figure A-9

CROSS-SECTION DESIGN OF SINGLE-TRACK INDUSTRIAL PARK RAILWAY TRACKAGE



Source: SEWRPC.

Street/Lot Access: Every lot should front or abut a public street in the industrial park. Lots generally should not have direct access to the arterial street system.

Lot Size: Area and dimensions of all industrial lots should conform, at a minimum, to the requirements of the local municipal zoning ordinance for industrial uses. The minimum permitted lot area in an industrial park should be about one acre.

Lot Shape: The shape or configuration of an industrial lot should not be so irregular as to hamper efficient development of individual sites. The shape of the lot should facilitate the development required by the industry locating on it, and should assist in promoting the assembly of individual lots into larger parcels of industrial property under one ownership.

Lot Depth: The depth of lots designated for industrial use should be adequate to provide for the off-street service and parking required by the use contemplated. Industrial lots backing onto lands of a lesser intensity of land use should have adequate depth to permit landscape plantings or other means to serve as a buffer between the two land uses. Lot depths which permit the assembly of individual lots into larger parcels of industrial property under one ownership should be encouraged. Minimum permitted lot depth should be 200 feet.

Lot Width: Lots within the interior of an industrial block should have the minimum average width required in the municipal zoning district.

Front Yards: Buildings and structures should not be located nearer than 30 feet from the front lot line of any industrial lot. Parking should not be permitted in the front yard except under special conditions.

Side Yards: Buildings and structures on interior lots should have side yards of at least 10 percent of the lot width, or a minimum of 10 feet, whichever is greater. Side yards on all street sides of corner lots should be at least 30 feet. The parking or storage of trucks, products, or equipment should be prohibited in any side yard.

Rear Yards: Buildings and structures should not be located nearer than 25 feet to any rear lot line unless they are buildings or structures used for outside railway car-loading or -unloading facilities.

Automobile Parking Facility Design

Placement of Off-Street Automobile Parking on Lots: Employee off-street parking should not be permitted within the front yards of lots. However, visitor or customer parking may be allowed in such yards.

Automobile Parking Spaces: One parking stall of not less than 180 square feet, excluding drives and parking stall access area, should be provided on each industrial property for each 1,000 square feet of building area, or for every two employees on the two largest shifts combined, whichever amount constitutes the greater number of parking stalls. Additional parking stalls should be provided on each property as needed to accommodate all employees as building facilities expand. Automobile parking spaces should also be provided for the handicapped pursuant to American National Standards Institute standards and the state building code.

Automobile Parking Lot Drive Width: Automobile parking lot drives should be a minimum of 24 feet wide for two-way traffic and a minimum of 12 feet wide for one-way traffic.

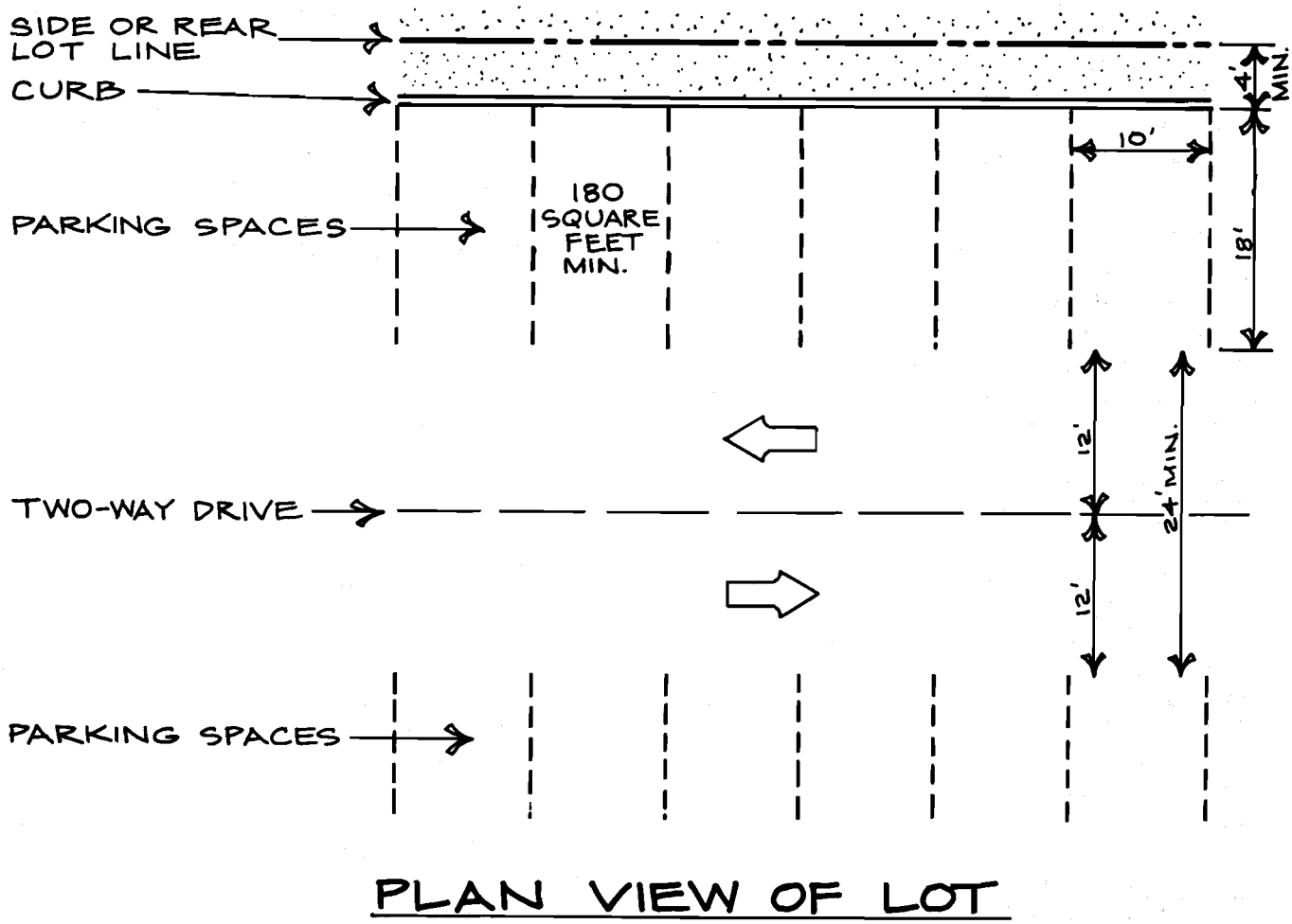
Automobile Parking Lot Surfacing: All off-street automobile parking areas should be graded and hard surfaced so as to be dust free and properly drained. Automobile parking areas for more than five vehicles should have the aisles and parking spaces clearly marked in order to distinguish between parking stalls and vehicular circulation areas. Recommended minimum dimensions for automobile parking lots are shown in Figure A-10.

Automobile Parking Curbs and Barriers Near Side and Rear Lot Lines: Curbs or barriers should be installed a minimum of four feet from side and rear property lines so as to prevent the parked vehicles from extending over any lot lines and to provide space for visual screening when needed, as indicated in Figure A-10.

Automobile Parking Lot Landscaping: Landscaping should be provided for automobile parking lots. Off-street parking areas which serve five or more vehicles should be provided with accessory landscape areas totaling not less than 5 percent of the surfaced area. Figure A-11 illustrates the effective screening of parking lots from neighboring street rights-of-way through the use of plant materials and earth berms. Also, a minimum of one planting island per 10 automobile parking spaces, as shown

Figure A-10

MINIMUM DESIGN DIMENSIONS FOR AUTOMOBILE PARKING LOTS ON INDUSTRIAL LOTS IN INDUSTRIAL PARKS



Source: SEWRPC.

in Figure A-11, should be provided to break up the visual monotony of the parking lot, as well as to add color, texture, interest, scale, and shade. In addition, ground cover, shrubs, and trees should be introduced on the borders of the paved parking areas. Landscaping materials should be placed so as not to interfere with parking lot maintenance, vehicular egress and ingress, and snow removal.

Drive and Parking Lot Lighting: Parking lot lighting should serve four purposes. First, the lighting should facilitate the safe movement of pedestrian and vehicular traffic. Second, it should promote security and crime prevention. Third, it should aid in creating an aesthetically pleasing nighttime environment. Fourth, it should facilitate nighttime use of the industrial facilities. Parking areas should be provided with an illumination of about 1.0 footcandle. Drives should be provided with an illumination of about 0.6 footcandle. The illumination should be designed with careful attention to luminaire height, luminaire spacing, transverse location of luminaires, luminaire selection, traffic conflict areas, glare onto adjacent parcels, and transition lighting requirements.

Automobile Parking Lot Location: Automobile parking lots should be so located so as to minimize both employee and visitor walking distances to the facility which the parking lot is intended to serve.

Onsite Access and Egress Automobile Space: There should be sufficient onsite space to accommodate at least three queued automobiles waiting to enter or exit an automobile parking lot without using any portion of the land access street or collector street which the lot fronts or otherwise interfering with street traffic.

Truck Service Area Facility Design

General Truck Access: The distance which trucks travel after entering an industrial lot should be minimized. The length of the service drive entering the lot from land access or collector streets should be at least twice as long as the length of the longest truck anticipated to serve the industrial use, thus allowing for onsite vehicle queuing.

Truck Service Drives: Truck service drives should have a width of at least 12 feet for one-way traffic and 24 feet for two-way traffic. If required, pedestrian paths along service drives should have a width of at least four feet and should be separated from the vehicular drive by a curb lawn at least nine feet wide. Design cross-sections of one-way truck service drives, two-way truck service drives, and two-way truck service drives with pedestrian circulation are illustrated in Figure A-12.

Truck Service Drive Landscaping: Suggested landscaping of truck service drives is shown in Figures A-12 and A-13. Such landscaping can include an array of plant materials including trees, shrubs, and ground covers as well as earthen berms.

Truck Circulation: Onsite truck traffic should generally follow a counterclockwise pattern of flow to enhance visibility, safety, and efficiency.

Required Number of Truck Loading/Unloading Docks: Truck loading and unloading docks for manufacturing and warehouse uses should be provided at a minimum rate of one berth for the first 5,000 square feet of gross building floor area and one berth for each additional 40,000 square feet of gross building floor area. Truck loading and unloading docks for storage uses should be provided at a minimum rate of one berth for the first 10,000 square feet of gross building floor area and one berth for each additional 25,000 square feet of gross building floor area.

Truck Loading/Unloading Dock Location: Facilities for truck loading and unloading should be placed and/or screened so as not to be visible from public street rights-of-way.

Truck Loading/Unloading Dock Design: Truck loading and unloading dock design should incorporate the minimum design standards set forth in both Figure A-14 and Table A-2.

Railway Loading/Unloading Facility Design

Site Clearances from Railway Track: The minimum clearance for buildings or other obstructions from the centerline of a track tangent to the building or obstruction should be 8 feet, 6 inches. On curved track, these lateral clearances should be increased on each side of the track by 1 inch for each degree of curvature. As shown in Figure A-15, a minimum overhead clearance of 22 feet from the top of the rail should be provided.

Railway Loading/Unloading Dock Location: Facilities for railway car loading and unloading should be placed so as not to be visible from public street rights-of-way.

Easements

Utility Cables: Underground locations for all utility lines should be considered, since poles and overhead wires detract from the overall appearance of the industrial park.

Utility Easements: Utility easements of widths adequate for the intended purpose, but not less than five feet along each side of all rear lot lines and along side lot lines, should be provided for electric power and communication wires and conduits; storm and sanitary sewers; and gas, water, and other utility lines.

Where traversed by a watercourse or drainageway, an easement of adequate width should be provided for drainage purposes.

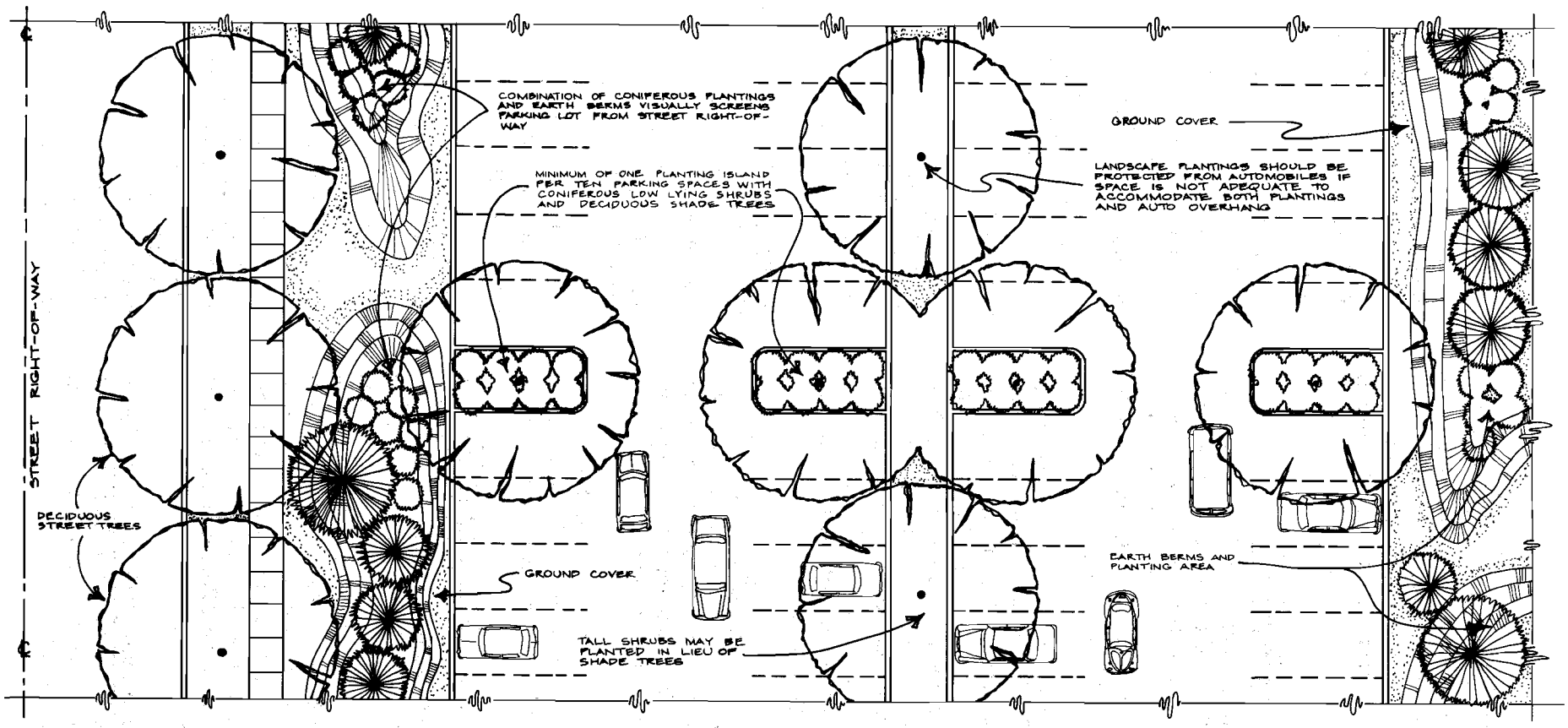
Pedestrian Ways: Pedestrian ways in wooded, wetland, and other open areas of the industrial park should have a minimum width of 10 feet and should be located and constructed so as to result in the minimum disturbance of the natural soil, and minimum impairment of the natural beauty.

Stormwater Drainage and Erosion/Sedimentation Control

Stormwater drainage facilities may include curbs and gutters, catch basins and inlets, storm sewer roadway ditches, culverts, open channels, and water detention and retention basins. The facilities should be of adequate size and grade to hydraulically accommodate the design volumes of flow through, and from within, the development, and

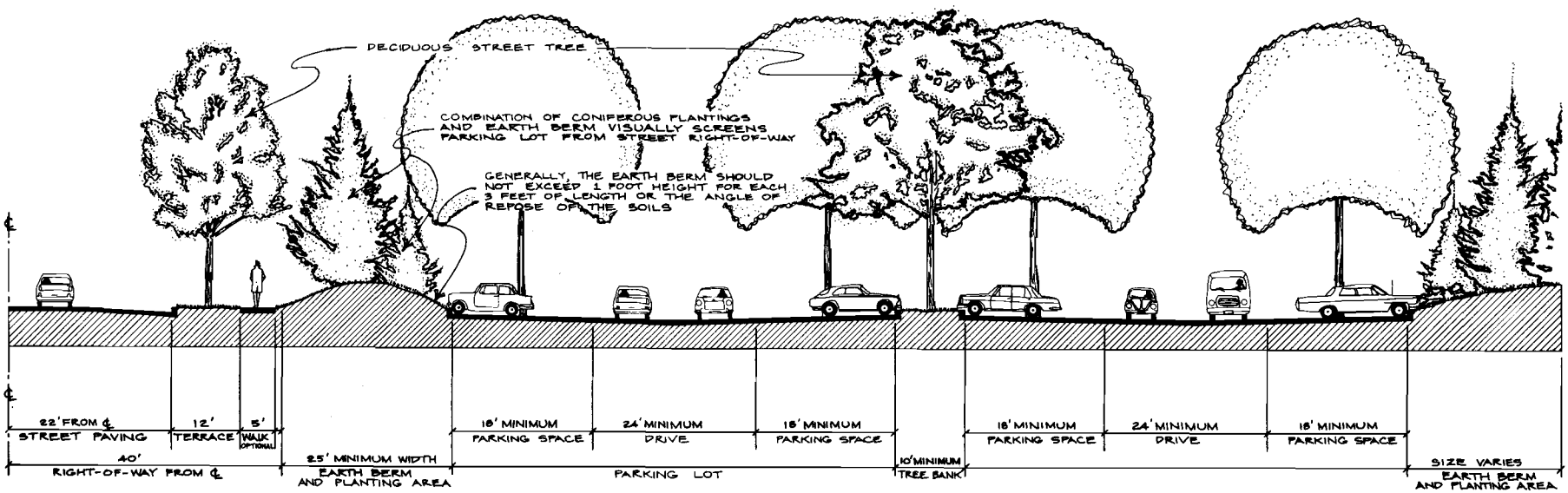
Figure A-11

LANDSCAPING OF INDUSTRIAL-RELATED AUTOMOBILE PARKING LOTS



PLAN

Figure A-11 (continued)

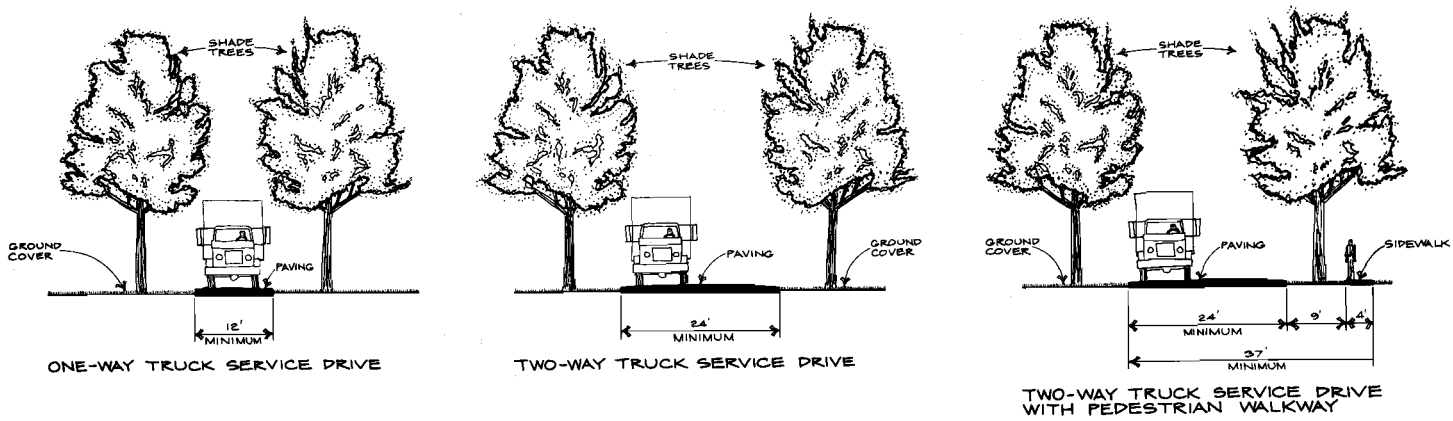


SECTION

Source: SEWRPC.

Figure A-12

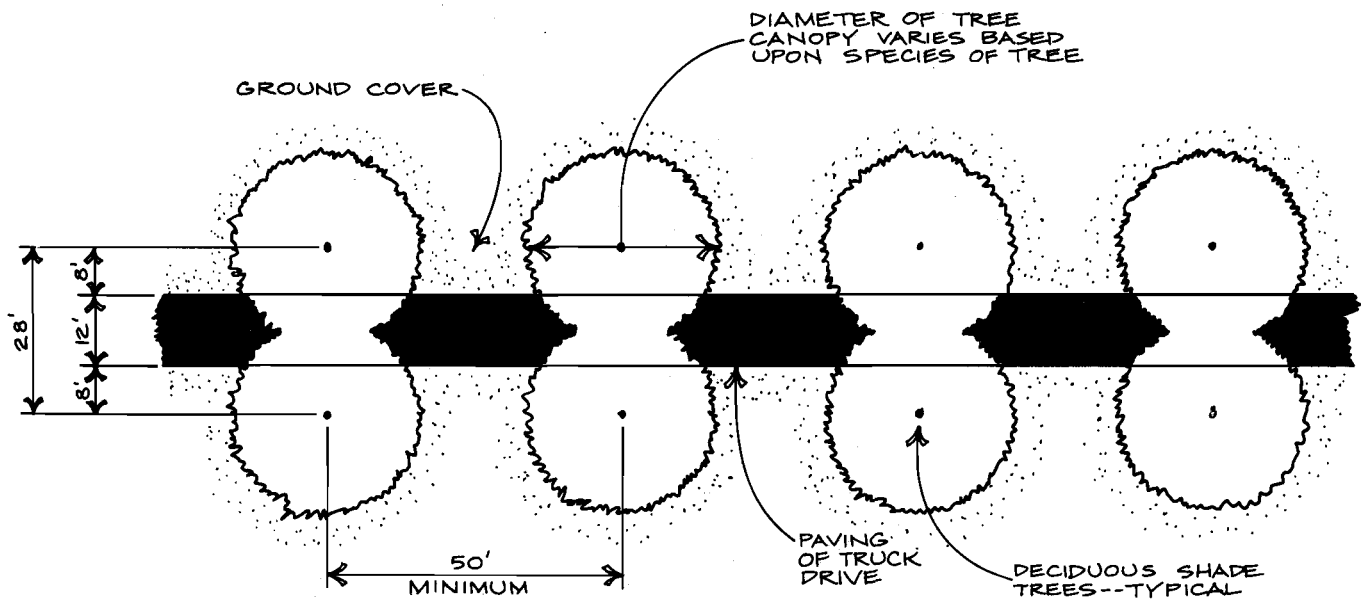
MINIMUM CROSS-SECTION DESIGN OF ONE-WAY, TWO-WAY, AND TWO-WAY WITH PEDESTRIAN CIRCULATION TRUCK SERVICE DRIVES IN INDUSTRIAL PARKS



Source: SEWRPC.

Figure A-13

SUGGESTED LANDSCAPING OF A TYPICAL TRUCK SERVICE DRIVE IN AN INDUSTRIAL PARK



Source: SEWRPC.

Table A-2

RECOMMENDED MINIMUM TRUCK LOADING/UNLOADING DOCK DESIGN STANDARDS

Overall Length of Truck (feet)	Truck Berth Width (feet)	Recommended Truck Apron Length (feet)[a]	Recommended Dock Approach (feet)
40	10	46	86
	12	43	83
	14	39	79
45	10	52	97
	12	49	94
	14	46	91
50	10	60	110
	12	57	107
	14	54	104
55	10	65	120
	12	62	117
	14	58	113
60	10	72	132
	12	63	123
	14	60	120

[a]*Note that additional truck apron length may be needed, depending upon the location and design of the service drive, in order to accommodate truck turning movements.*

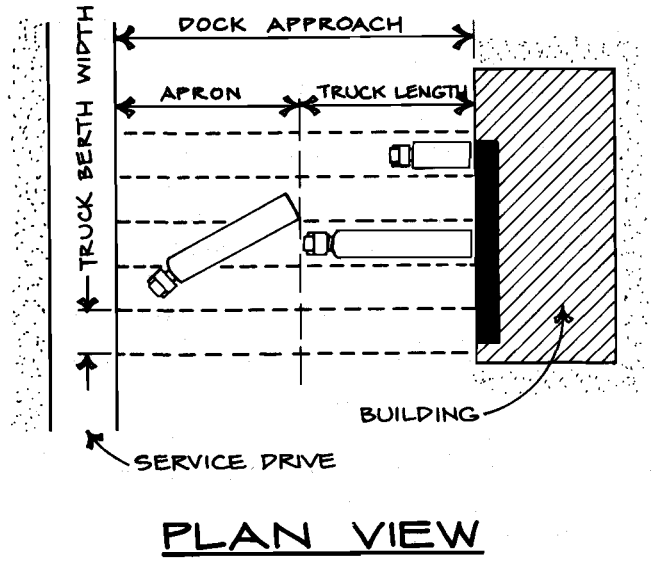
Source: R. H. Haskell, "Recommended Yard and Dock Standards," Transportation and Distribution Management, October 1966, p. 27; and SEWRPC.

should be so designed as to prevent and control soil erosion and sedimentation and to minimize hazards to life or property. Where possible, stormwater drainage should be maintained by landscaped open channels or swales of adequate size and grade.

Earth-moving activities such as topsoil removal, excavation and grading, waterway construction or enlargement, channel clearing, ditching, drain tile laying, dredging, and lagooning should be so conducted as to prevent erosion and sedimentation and to least disturb the natural fauna, flora, water regimen, and topography. Cut and filled lands outside of street rights-of-way should be graded to a maximum slope of one on four, or to the angle of repose of the soil. The industrial park should have grasses, trees, and vines and other protective and rehabilitative measures as may be necessary to prevent soil erosion and sedimentation. Erosion control plans should incorporate the best management practices to reduce soil loss during construction.

Figure A-14

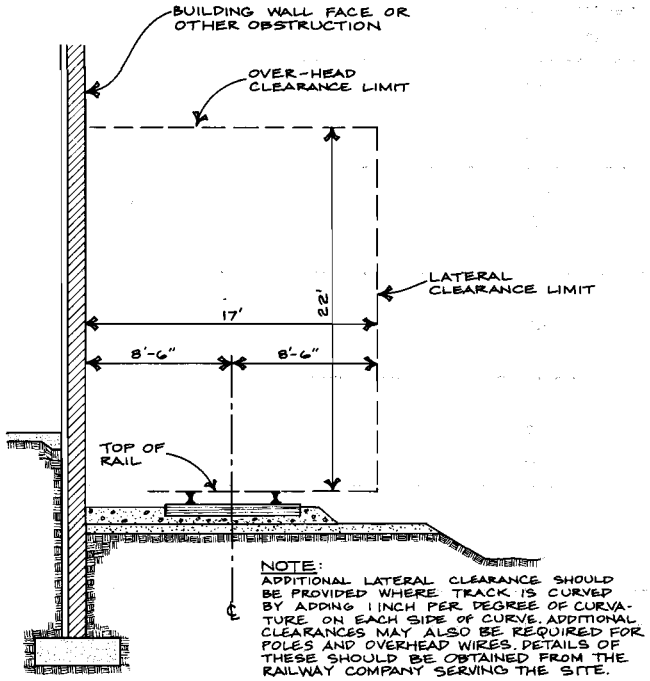
ELEMENTS OF TRUCK LOADING/UNLOADING DOCK DESIGN FOR AN INDUSTRIAL LOT



Source: SEWRPC.

Figure A-15

MINIMUM SITE CLEARANCES FROM RAILWAY TRACK ON INDUSTRIAL LOTS



Source: SEWRPC.

General Landscaping

Areas of Vegetation: Every effort should be made to protect and retain all existing trees, shrubbery, vines, and grasses not actually located in public roadways, drainageways, paths, and trails. Trees should be protected and preserved during construction in accordance with sound conservation practices, including the preservation of trees by use of constructed wells, islands, or retaining walls whenever abutting grades are altered to the extent that existing trees could be damaged.

Soils and Landscape Planting: General landscape guides for the planting and selection of various trees, shrubs, and vines to perform a variety of functions such as shade, street landscaping, lawn landscaping, hedges, screens, and windbreaks for an industrial park can be found in SEWRPC Planning Report No. 8, Soils of Southeastern Wisconsin.

The landscape guides are based upon soil types found in the Region, and show the various types of trees, shrubs, and vines which can be accommodated for a variety of landscape planting uses. The various soils found in the Region have been grouped into categories termed "woodland suitability groups," based upon their response and suitability to various tree, shrub, and vine species. The woodland suitability groups have been numbered according to a statewide classification system.

Street Trees: At least one street tree of an approved species and of at least six feet in height should be planted for each 50 feet of frontage on proposed streets and private drives. However, the placement and selection of street tree species should not hamper or interfere with access to natural light and air for nearby industrial lots and structures. Tree species should be selected, in part, based upon soil conditions and species hardiness to soil conditions. Columnar varieties of street trees may require shorter distances between plantings. Street trees should be located so as to be a minimum of 10 feet from a street light, five feet from a fire hydrant, five feet from a driveway, and five feet from any public sidewalk, as illustrated in Figure A-16.

Wind and Landscape Planting: Landscaping should be done in such a way as to minimize winter wind and promote summer wind effects on structures. Winter wind protection is afforded by planting landscaping, desirably evergreen plant materials, of an adequate height on the west side of structures. However, if sunlight would be blocked, low shrubs should be used to divert or enhance winds. An optimum distance beween a winter windbreak and a structure is approximately twice the tree height.

Sunlight and Landscape Planting: With respect to sunlight, landscaping planted to the south of structures should be short, broad, deciduous species with open twig patterns, affording the passage of light through the branch structure in the winter.

Sunlight and Open Space: In industrial parks, the location of open space should be such that whenever possible, the open space acts as a buffer between low structures and the shadows cast by neighboring structures or landscape materials. Sunlight should be afforded each industrial building in order to permit potential solar energy use.

Noise and Landscape Planting: Groups of trees, shrubs, and other masses such as earth berms can serve as noise barriers and should be utilized where noise could create problems for neighboring land uses. Such landscaped noise barriers are most effective when the barrier is near the noise source or receiver. Landscape plantings should provide for noise reductions.

THE SITE DEVELOPMENT PLAN FOR THE MODEL REGIONAL INDUSTRIAL PARK

Based upon the industrial park site planning design criteria previously discussed, as well as the physical characteristics and predevelopment conditions of the site for the model regional industrial park, a detailed development plan was prepared for the site and is shown in Figure A-17. Figure A-18 illustrates the application of some of the industrial park site planning design criteria to the plan.

The site is divided into 86 light industrial lots ranging in size from 1.0 acre to 3.4 acres, and 86 heavy industrial lots ranging in size from 2.0 acres to 6.4 acres. The lots are narrow and long to facilitate lot amassing to fit individual client needs for space. Light industrial land uses occupy the northeastern portion of the site, facilitating easy indirect access from the park to the arterial street system. The park is serviced by a collector and minor land access street system, as well as by a railway lead spur. The primary environmental corridor area located at the southern portion of the site is preserved, and industrial lots have been placed contiguous to this area along the northern boundary of the corridor to facilitate an aesthetically pleasing view of the environmental corridor area from adjoining lots and buildings. Existing single-family residential and commercial land uses on the northern portion of the site have been retained and properly buffered from the industrial development through the use of landscaped earth berms. This type of landscaping treatment is illustrated in Figures A-5 and A-11.

Railway service is provided at the rear lot lines of 51 lots. The railway trackage serving the park is located so as to minimize conflicts with vehicular traffic along the street system serving the park.

The street system, as already noted, is composed of collector and minor land access streets. All streets have an 80-foot-wide right-of-way with a 44-foot-wide paved area for vehicular traffic, and areas for tree planting, as indicated in Figure A-6. The collector streets are centrally located within the park site and provide future access to westerly abutting properties.

DETAILED SITE PLANNING FOR AN INDUSTRIAL PARK LOT

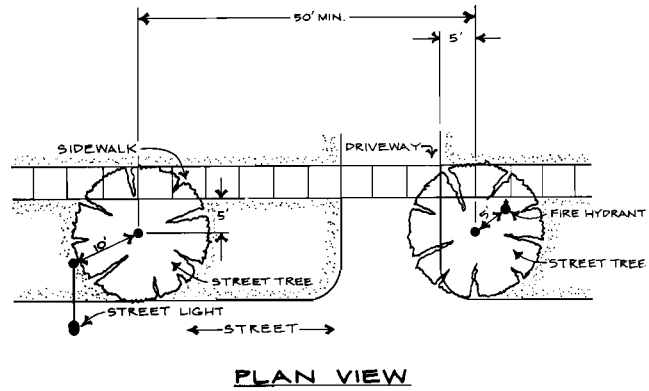
Functional Considerations of the Site

A typical industrial site must provide areas for the performance of many functions, including the proper location and setting for the buildings and the entrances to the buildings, off-street parking, automobile drives, truck service drives, truck loading/unloading, outdoor storage, railway service, railway car loading/unloading, and landscaping. Figure A-19 is a matrix illustrating the various functional relationships between site uses and spaces; these relationships are defined as high, medium, or low spatial relationships. The matrix should assist the site planner in laying out the various functional areas of an industrial site in an orderly manner.

Offsite nearby uses which play a significant role in organizing the industrial site itself are the public land access street and the industrial park railway service spur. The public land access street is the most critical factor affecting the overall industrial site plan, since the public image of the industry is projected to this publicly used area. That image can be manipulated by the site planner, primarily through the location of the main building; parking, loading, and storage areas; and drives at the site. Figure A-20 illustrates three alternative orientations of these uses on the industrial site. Type A in Figure A-20 shows the main building as the dominant site feature located in the front of the site, being highly visible from the public street; Type B shows the main building located on one side of the lot and automobile parking on the other. Type C shows the parking lot located along the front of the site and the main building adjacent to the parking lot. Each of these generalized schemes is

Figure A-16

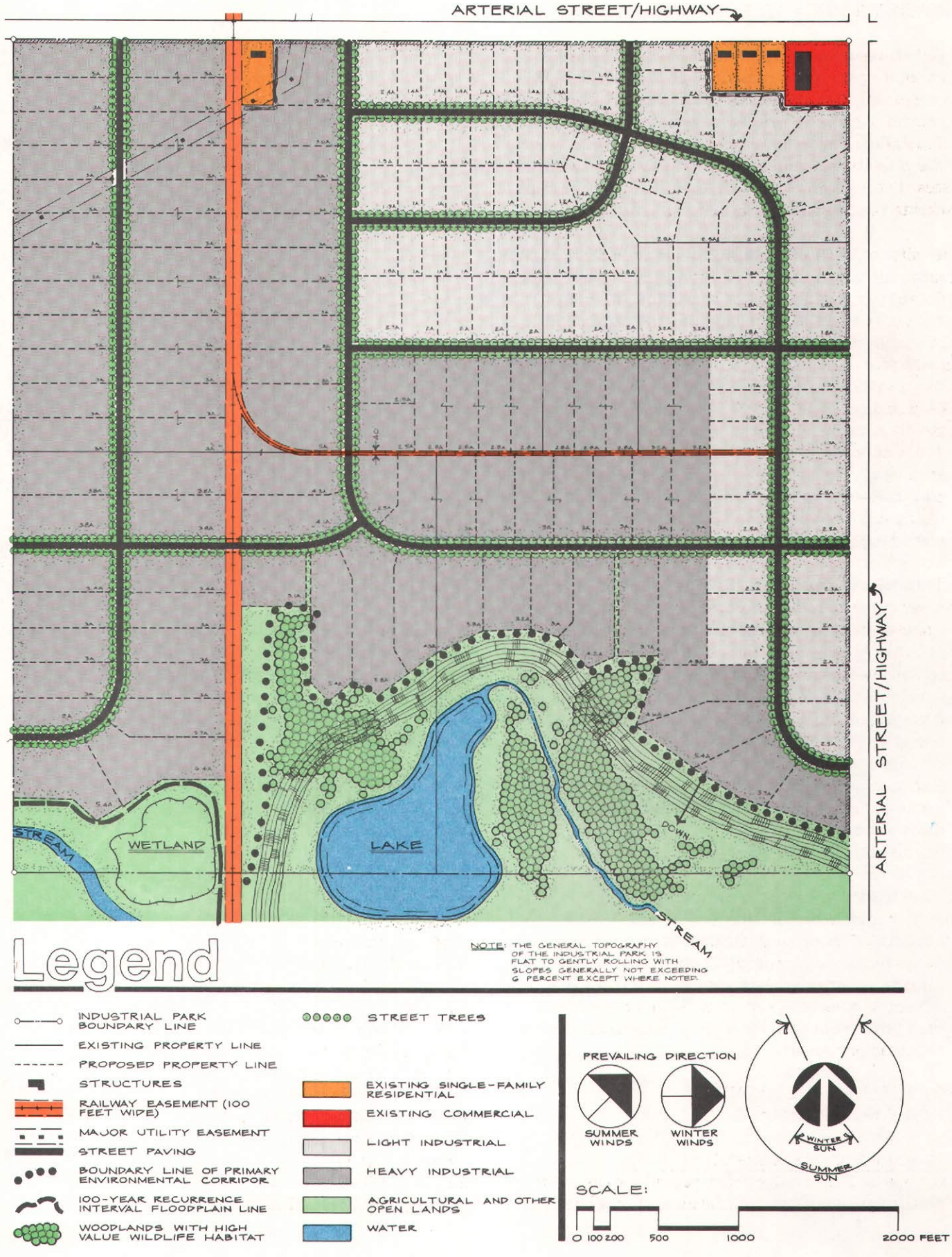
MINIMUM STREET TREE PLANTING DISTANCES IN PUBLIC RIGHTS-OF-WAY IN INDUSTRIAL PARKS



Source: SEWRPC.

Figure A-17

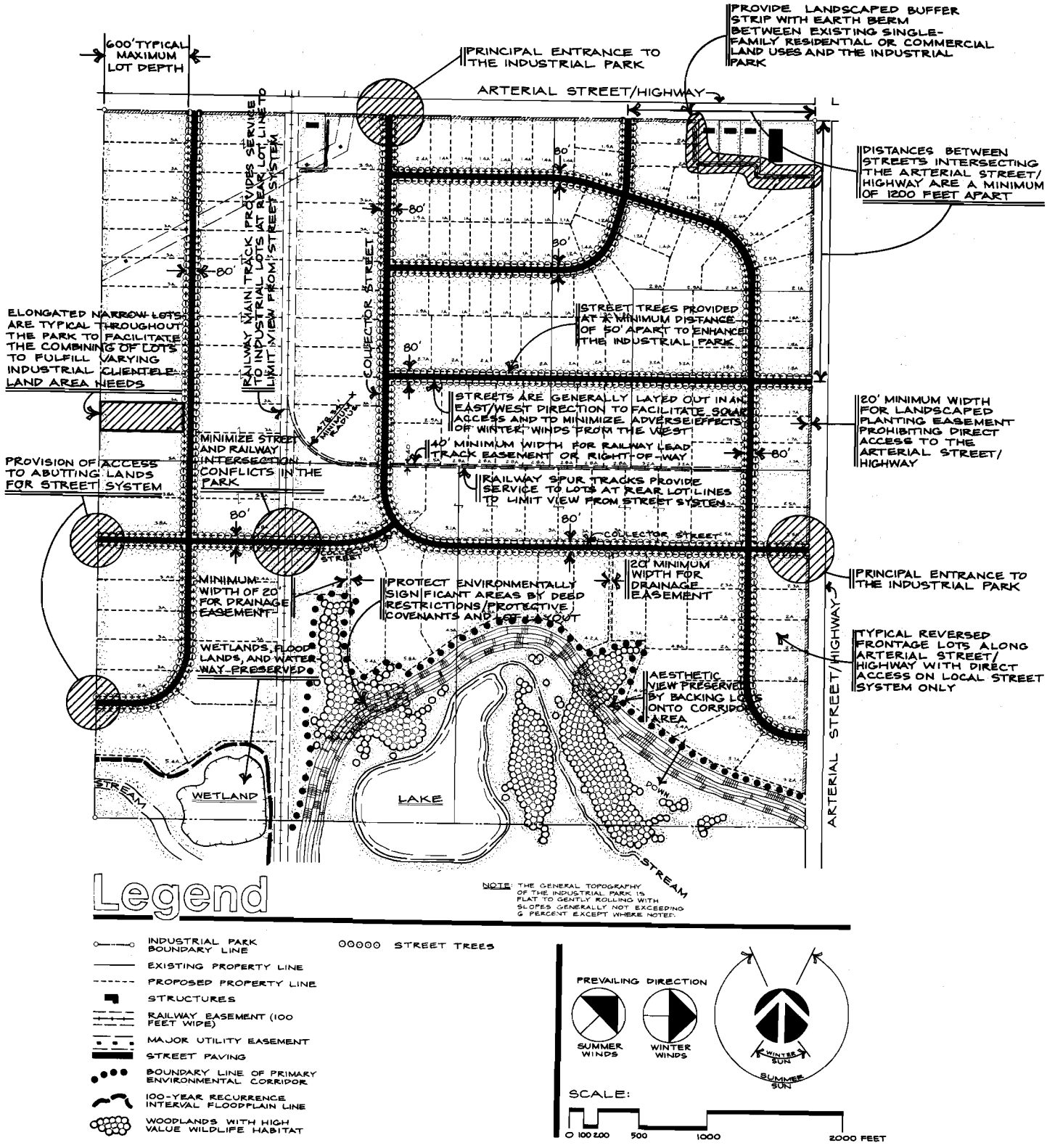
DEVELOPMENT PLAN FOR THE MODEL REGIONAL INDUSTRIAL PARK



Source: SEWRPC.

Figure A-18

APPLICATION OF DESIGN CRITERIA TO THE MODEL INDUSTRIAL PARK DEVELOPMENT PLAN



Source: SEWRPC.

a viable alternative influencing the character and image of the industry occupying a site in the park. Also, each scheme can be greatly influenced by the ultimate landscaping of the site.

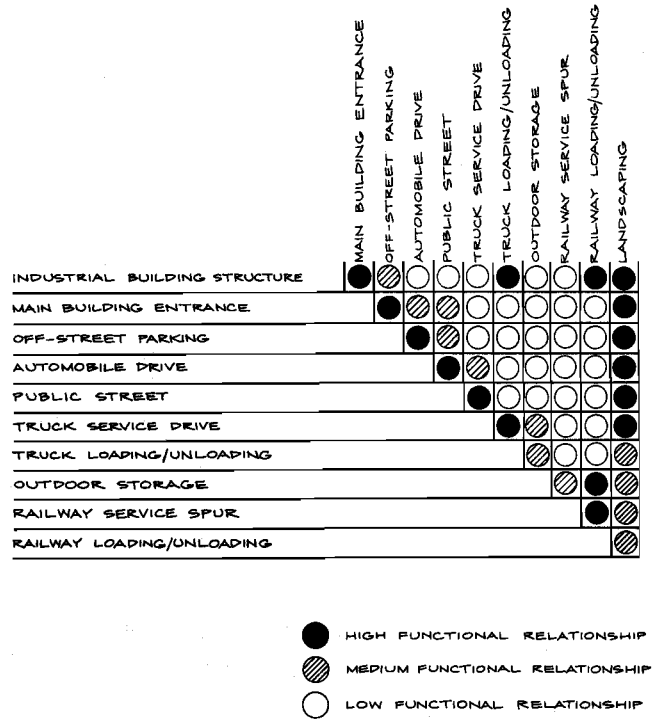
Detailed Site Plan for an Industrial Lot

Based upon the conceptual scheme of an industrial site plan illustrated by Type C in Figure A-20, a detailed site plan was prepared for two adjoining three-acre lots based upon the previously discussed site planning design criteria. This plan is shown in Figure A-21. These two lots are proposed to be under one ownership and have been amassed to accommodate a single industrial use. Figure A-22 illustrates specific applications of some of the industrial park site planning design criteria to the detailed site plan.

The industrial site plan illustrated in Figure A-21 shows a six-acre parcel of land accommodating a 93,500-square-foot building, 94 ancillary automobile parking spaces, a truck service drive, a truck loading/unloading area, outdoor storage, and ancillary railway car loading/unloading at the building. Employee and visitor automobile parking is provided between the public street and the industrial building, with a landscaped earth berm lying between the street and the parking area in order to visually screen the parked automobiles from the public street. In addition, the loading, unloading, and storage areas are effectively hidden from public view at the rear of the parcel behind the building. Landscape planting materials are provided at the site to improve the overall aesthetic quality of the development.

Figure A-19

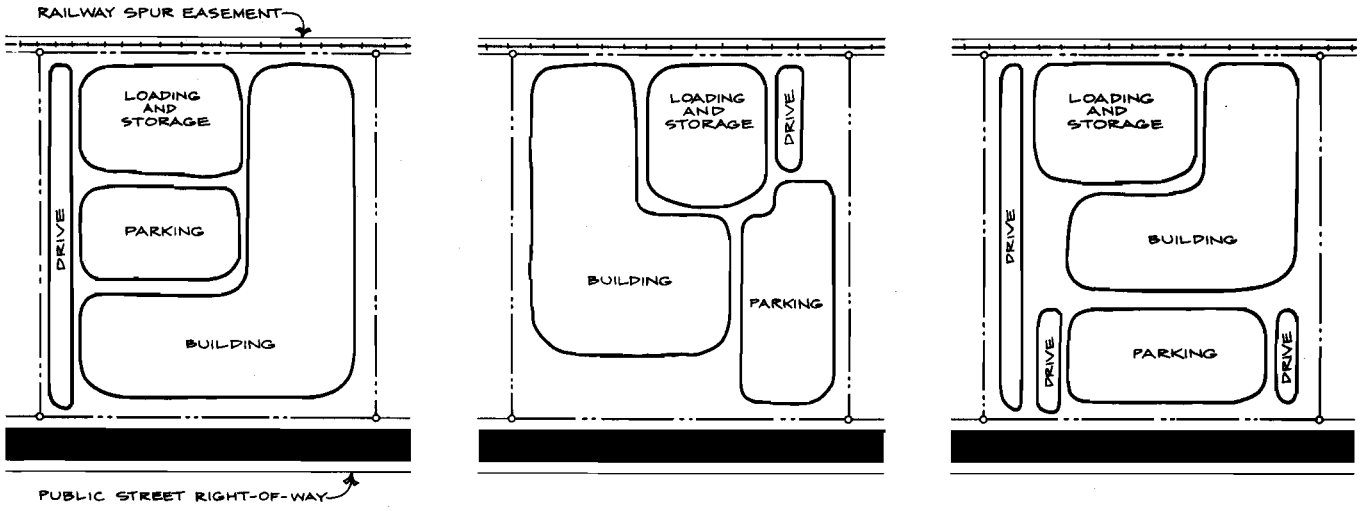
FUNCTIONAL RELATIONSHIPS BETWEEN INDUSTRIAL SITE SPACES AND USES



Source: SEWRPC.

Figure A-20

ALTERNATIVE CONCEPTUAL SCHEMES FOR ORGANIZING AN INDUSTRIAL SITE



TYPE A:
BUILDING IN FRONT PORTION OF LOT AND AUTOMOBILE PARKING IN THE REAR. SHARED TRUCK AND AUTOMOBILE DRIVE.

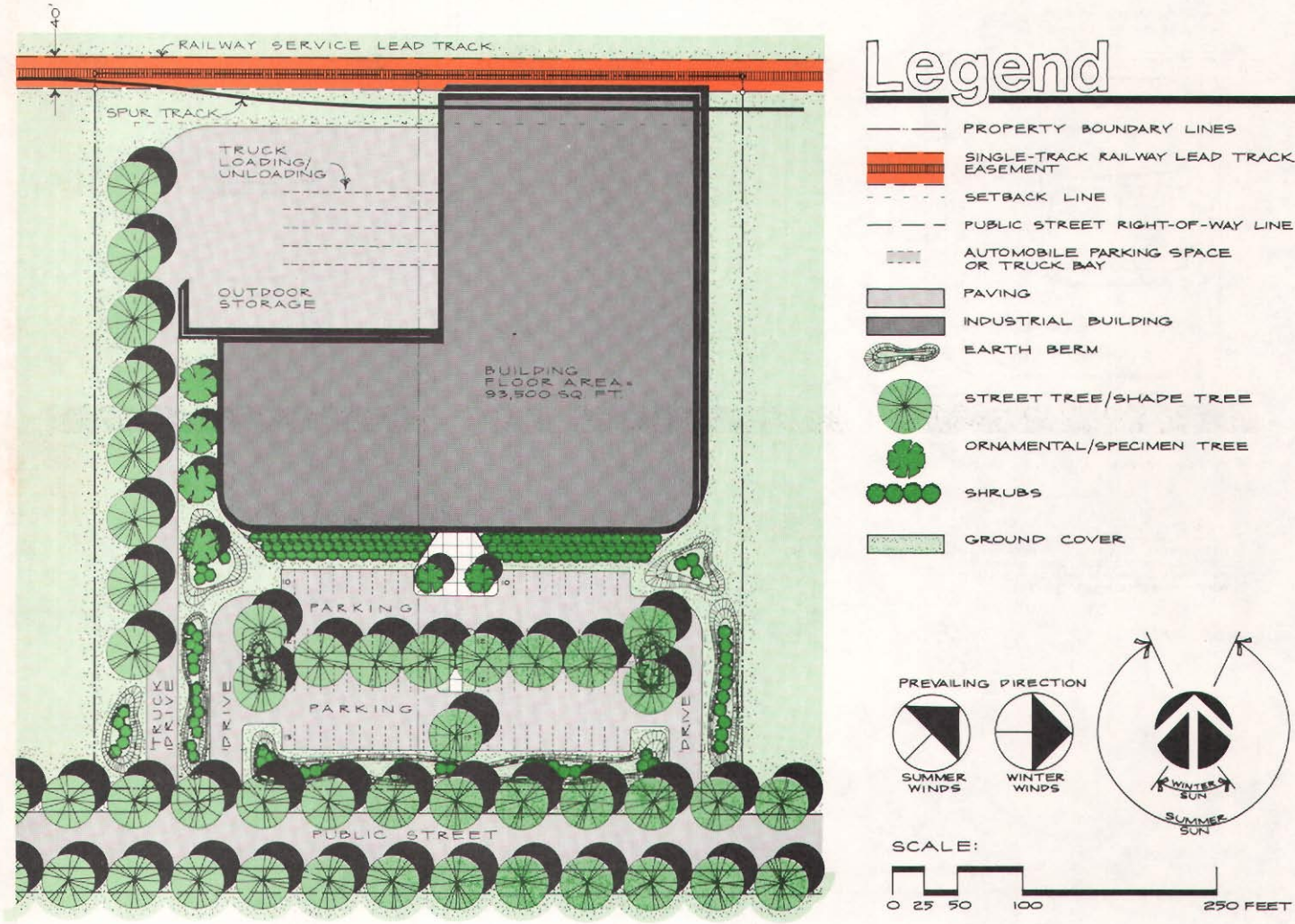
TYPE B:
BUILDING LOCATED ON SIDE OF LOT AND AUTOMOBILE PARKING LOCATED ON SIDE OF LOT. SHARED TRUCK AND AUTOMOBILE DRIVE.

TYPE C:
PARKING LOCATED IN FRONT PORTION OF LOT WITH BUILDING BEHIND THE PARKING AREA. SEGREGATED AUTOMOBILE AND TRUCK DRIVES.

Source: SEWRPC.

Figure A-21

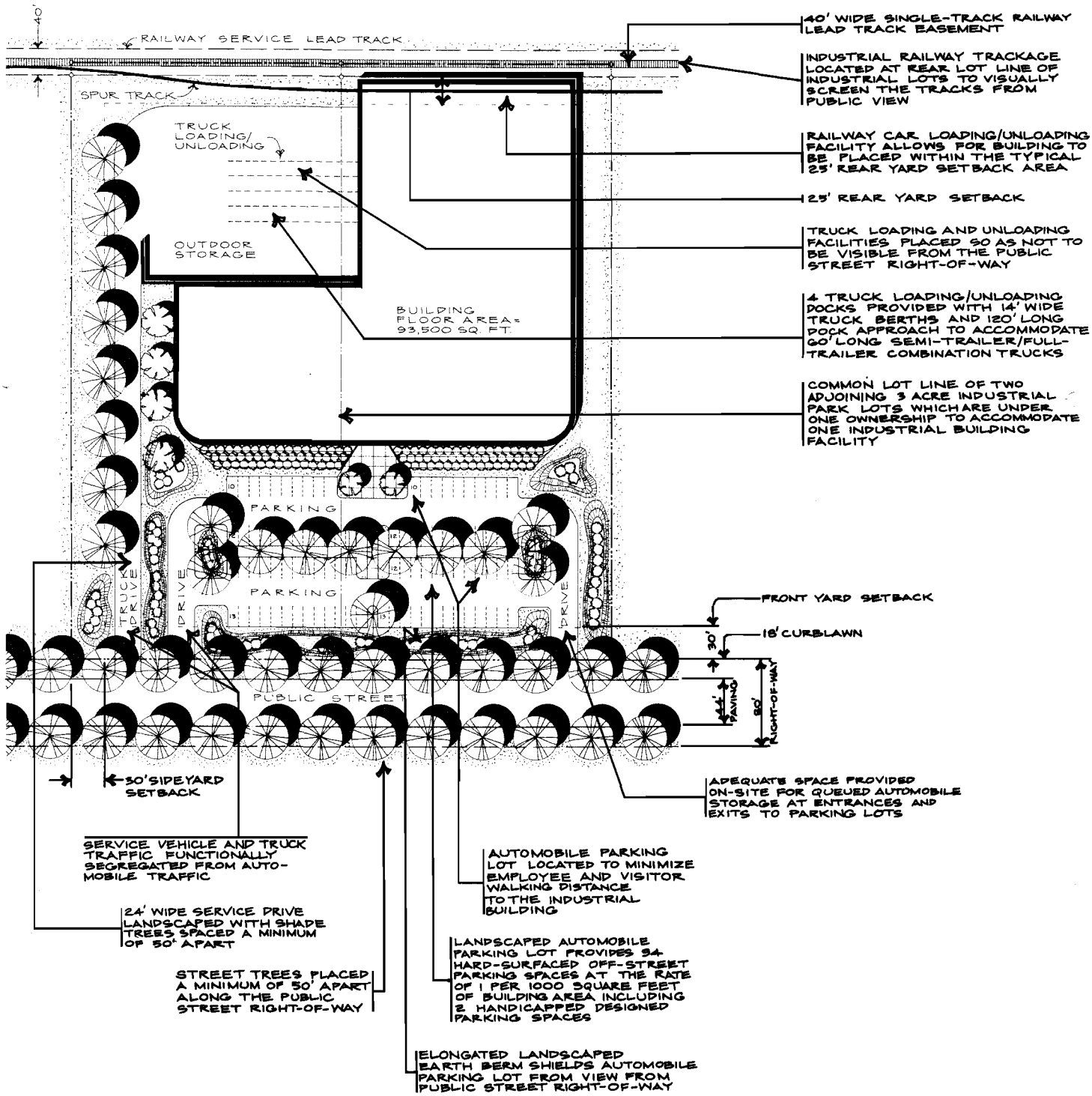
DETAILED SITE PLAN FOR TWO ADJOINING LOTS IN THE MODEL REGIONAL INDUSTRIAL PARK



Source: SEWRPC.

Figure A-22

APPLICATION OF DESIGN CRITERIA TO THE DETAILED SITE PLAN FOR TWO ADJOINING LOTS IN THE MODEL REGIONAL INDUSTRIAL PARK



Source: SEWRPC.

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Appendix B

INDUSTRIAL PARK PLAN IMPLEMENTATION

INTRODUCTION

Site planning is only the first in a series of both public and private actions required for the ultimate development of an industrial park in accordance with its master plan. The attainment of an industrial park master plan requires the application of new plan implementation instruments and perhaps the modification of existing plan implementation instruments. Plan implementation instruments include an adopted industrial park master plan; an industrial park control board; zoning districts and zoning district regulations applicable to the industrial park; deed restrictions and protective covenants for the industrial park; an adopted official map to implement the industrial park master plan with respect to the location of streets, highways, and parkways; subdivision plat review; and the community capital improvements program.

An important aspect of plan implementation is the installation of the public utility and facility infrastucture such as streets, curbs and gutters, sanitary sewers, water mains, and the like in a manner characteristic of a properly designed and developed industrial park. The appearance and proper design of the industrial site, consistent with the site planning design criteria outlined herein, will ensure park marketability, and will stabilize or increase property values for the good of both the community and the individual property owner.

PUBLIC INFORMATIONAL MEETING AND HEARING

Although the state municipal planning enabling legislation does not require local plan commissions to hold public hearings on proposed plan elements such as an industrial park master plan prior to adoption of those elements, it is nevertheless recommended that, in order to promote active citizen participation in the planning process, the local plan commission hold one or more public informational meetings and a formal public hearing to acquaint residents, landowners, and persons interested in industrial development with all details of the proposed industrial park master plan and to solicit public reaction to the plan proposals. The plan should be modified to incorporate any desirable new ideas which may be advanced at the meetings and hearing.

INDUSTRIAL PARK MASTER PLAN ADOPTION

An important step in industrial park master plan implementation is the formal adoption of the plan by the local plan commission and certification of the adopted plan to the governing body of the municipality pursuant to state enabling legislation. Upon such adoption, the industrial park master plan becomes the official guide to the making of decisions concerning the development of the park by local officials. Sample resolutions of industrial park master plan adoption for a City Plan Commission and Common Council are provided in Appendices B-1 and B-2, respectively. These resolutions can be readily adapted for use by villages and towns as well.

CREATION OF AN INDUSTRIAL PARK CONTROL BOARD

A seven-member Industrial Park Control Board should be established for municipal-owned industrial parks. An Industrial Park Control Board is established to ensure that property owners in the industrial park have an active role in its governance and to ensure the proper enforcement of the industrial park deed restrictions and protective covenants. A model ordinance for creating an industrial park control board is set forth in Appendix B-3. The membership of the Industrial Park Control Board, as illustrated in Appendix B-3, consists of the Mayor, the City Engineer, the City Attorney, and four citizen members with known interest in local industrial development. The duty of the Industrial Park Control Board is to promote the sound long-term development and maintenance of the industrial park. Specific responsibilities include enforcement of deed restrictions and protective covenants, including the review and approval of land use, site, and landscaping plans, building plans, building setbacks, architectural appearance,

landscaping maintenance, off-street parking and loading, outdoor storage, waste incineration, security fencing, signs and billboards, utility control, easements, and drainage.

ZONING

Following adoption of the industrial park master plan by the City Plan Commission and certification to the Common Council, the City Plan Commission should initiate amendments to the city zoning ordinance and district map to bring them into conformance with the proposals contained in the industrial park master plan. The zoning district map and the text of the zoning ordinance, as they pertain to industry, should be tailored to the individual industrial needs of the community they are to serve. Careful attention should be given these needs when amending the zoning ordinance for industrial park purposes.

INDUSTRIAL PARK DEED RESTRICTIONS AND PROTECTIVE COVENANTS

Deed restrictions and protective covenants can be defined as the limitations placed upon the use of real property in the writing of a deed. Deed restrictions and protective covenants are governed by the law of contracts, and the legal presumption is in favor of the free exercise of the right to contract. This generalization is subject to two important limitations: 1) contracts may not be contrary to public policy; and 2) contracts must not be unreasonable. The industrial park deed restrictions and protective covenants are intended to supplement public land use controls.

Industrial park deed restrictions and protective covenants should be designed to protect the investments of occupants of the park and the general community interest, and to ensure that property in the park will retain value. In addition, protective convenants should ensure that industrial clientele locating in the industrial park improve their property in accordance with established standards and that individual site development will be in harmony with the overall development of the industrial park.

There are several reasons why deed restrictions and protective covenants represent a valuable industrial land development control tool and are frequently preferred to zoning regulations. Perhaps the most important of these is promotion of the physical needs of a particular industrial park. Public zoning regulations set out standards for the development of industrial districts which must be suitable for a generalized application in the municipality. Industrial clientele may desire more restrictive requirements tailored for specific use in the particular industrial park concerned.

Items which should be taken into account by these deed restrictions and protective covenants for the benefit of both the industrial client and the community are the use of land, site plan and building plan approval, landscaping, off-street automobile parking, fencing, environmental control, signs, and maintenance. A model set of industrial park deed restrictions is provided in Appendix B-4.

OFFICIAL MAPPING

Following the adoption of the industrial park master plan, existing and proposed streets, highways, and parks and parkways on the plan should be incorporated into an Official Map for the municipality. Section 62.23(6) of the Wisconsin Statutes provides that the Common Council of any city may establish an Official Map for the precise designation of right-of-way lines and site boundaries of streets, highways, parkways, parks, and playgrounds. Such a map has all the force of law and is deemed to be final and conclusive with respect to the location and width of both existing and proposed streets, highways, and parkways, and the location and extent of existing and proposed parks. The Statutes further provide that the Official Map may be extended to include areas beyond the corporate limits but within the extraterritorial plat approval jurisdiction of the municipality.

One of the basic purposes of the Official Map is to prohibit the construction of buildings or structures and their associated improvements on land that has been designated for current or future public use. Furthermore, the Official Map is the only arterial street and highway system plan implementation device that operates on an areawide basis in advance of land development, and can thereby effectively assure the integrated development of the street and highway system. And, unlike subdivision control which operates on a plat-by-plat basis, the industrial park master plan with the Official Map as one of its implementation instruments can operate over a wide planning area well in advance of development proposals. The Official Map is a useful device to achieve public acceptance of long-range plans in that it serves legal notice of the government's intention to all parties concerned well in advance

of any actual improvements. It thereby avoids the altogether too common situation of development being undertaken without knowledge or regard for the long-range plan, and thereby does much to avoid local resistance when plan implementation becomes imminent.

SUBDIVISION PLAT REVIEW

The industrial park master plan should serve as a basis for the preparation of preliminary and final land division plats within the park. In this respect, the industrial park master plan should be viewed as a point of departure for the precise layout of land divisions based upon the land needs of the various industrial clientele. Approval of the land divisions in the industrial park automatically amends the municipality's Official Map.

THE CAPITAL IMPROVEMENTS PROGRAM

A capital improvements program is simply a list of fundable major public improvements—such as an industrial park and its associated infrastructure—needed in a community over the next five years, arranged in order of preference, to assure that the improvements are carried out in priority of need and in accord with the community's ability to pay. A capital improvements program is intended to promote well-balanced community development without overemphasis on any particular phase of development, and to promote coordinated development. With such a program, required bond issues and tax revenues can be foreseen and provisions made. Land needed for projects can be acquired in a timely fashion, and staged construction can be facilitated. Without such a coordinated program for the industrial park, the improvement and sale of industrial parklands may not be completed.

The general procedure for the preparation of a capital improvements program is as follows. An initial list of the improvements believed to be needed over the next five years is compiled. This list is then evaluated to determine the relative importance and desirability of each proposed improvement. This evaluation should initially be divorced completely from the issue of funding availability. Criteria which may be helpful in assigning an order of priority to the list of projects include: protection of life, maintenance of public health, protection of property, conservation of resources, maintenance of property, provision of essential public services, and reduction in operating costs.

When the relative need or desirability of the various proposed projects has been determined—that is, when the list of projects has been arranged in priority order—the available financial resources of the community can be analyzed, and the funds which may be expected to become available for the proposed improvements over the five-year period can be determined. The projects are then selected and scheduled for construction in accordance with their priority order and the funds available. The projects recommended for the first year of the five-year schedule are then included in the capital budget for the ensuing year and the recommended program given legislative consideration. At the end of the first year, the program is again reviewed. Any new projects which appear to be needed are shifted in position in the schedule as new information may dictate; an additional year is added to replace the year completed; and the revised list of projects is again scheduled over the full period of the program. Thus, a carefully conceived public improvement program is always available and in readiness for use but with only one year of the program being actually committed at any time. Since, as the process becomes established, proposed projects are evaluated year after year before ultimately reaching actual authorization, a safeguard is provided against hasty or ill-conceived actions.

The capital improvements program should be presented in a well-arranged tabular form listing projects in the proposed order of construction and in the order of year scheduled. The estimated cost of the proposed projects, together with attendant charges for operation and maintenance, should be shown. Where a project extends over more than one year, costs should be distributed accordingly. Proposed methods of financing should be indicated, and explanations regarding urgency of need provided. A financial summary sheet should be prepared showing the effect of the proposed program upon the finances of the community, and particularly upon taxes.

SOURCES OF FUNDING FOR INDUSTRIAL PARK IMPROVEMENTS

A number of local, state, and federal economic development financing tools are available to local units of government to fund industrial park improvements.

Local financing sources include tax incremental financing and general obligation bonds. Tax incremental financing (TIF) is a local government

financing program authorized by Wisconsin Statute Section 66.46 that allows a city or village to designate a portion of its area as a tax incremental financing district. At least 50 percent of the property within the district must be blighted, in need of redevelopment, or suitable for industrial sites; and the district must be a contiguous geographic area.

Creation of a TIF district allows a municipality to finance urban redevelopment and industrial development projects within the boundaries of a TIF district through the taxes collected on the increase in value of the taxable property resulting from the proposed projects. The taxes collected from the base value of the properties within the district at the time of its creation are distributed among all taxing jurisdictions just as the taxes from properties outside the district are distributed. However, the incremental tax revenues received from the increased values of properties within the district, as a result of completed development on them, are allocated to a special fund to be used by the city or village for the payment of costs associated with the completion of projects as listed in the community district project plan. The TIF district terminates when all the costs of all projects are paid or 15 years following the last expenditure identified in the community's project plan. Activities that are a part of a community's project plan could include:

- Land acquisition for an industrial park.
- Enlargement of sewer lines serving the proposed new development.
- Improvements to the water system for better fire protection.

Local units of government can issue general obligation bonds to finance the purchase of land for an industrial park, as well as to finance the infrastructure improvements for an industrial land area.

The primary state financing source for industrial park development and improvement is the Small Cities Community Development Block Grant (CDBG) program. The Wisconsin Department of Development (DOD) administers the Wisconsin Small Cities Community Development Block Grant program for the U. S. Department of Housing and Urban Development (HUD). Eligible applicants under the program are limited to general-purpose local units of government, including towns, villages, cities, and counties that are not an entitlement city or a part of an eligible urban county. In the Southeastern Wisconsin Region, all local governments outside the designated urban county of Milwaukee County other than the entitlement cities of Kenosha, Milwaukee, Racine, and Waukesha are eligible to apply. The program, however, is extremely competitive and potential applicants are urged to contact the Wisconsin DOD staff to determine likelihood of receiving approval for any grant application.

Activities that are eligible for funding under the CDBG program include:

- Acquisition of real property.
- Acquisition, construction, reconstruction, or installation of public works facilities, and site or other improvements.
- The construction of new buildings, rehabilitation of existing buildings, and purchase of machinery and equipment.

Federal financing sources include the Community Development Block Grant (CDBG) program; the U. S. Department of Commerce, Economic Development Administration (EDA); Urban Development Action Grants (UDAG) through the U. S. Department of Housing and Urban Development (HUD); and the Farmers Home Administration (FmHA) of the U. S. Department of Agriculture. The Department of Housing and Urban Development provides funds to entitlement cities and urban counties. In the Southeastern Wisconsin Region, the Cities of Kenosha, Milwaukee, Racine, and Waukesha and Milwaukee County receive these funds on an annual basis. The same types of industrial development activities are eligible under this program as indicated above for the Wisconsin Small Cities CDBG program.

Local units of government that are located in counties or special impact areas that are designated by the Economic Development Administration (EDA) as redevelopment areas are eligible to apply to the EDA for funding to purchase industrial land and to provide the necessary infrastructure for this land. In the Southeastern Wisconsin Region, local units of government located in the Counties of Kenosha, Racine, and Walworth, as well as the City of Milwaukee, are eligible to apply for EDA funding. In addition, local units of government in Milwaukee County outside the City of Milwaukee, Washington County, and Waukesha County, have

been recognized as eligible to begin the economic development planning process that would lead to eligibility for EDA project funding.

The U. S. Department of Housing and Urban Development annually designates areas that are eligible to apply for Urban Development Action Grants (UDAG). Eligible applicants for this program are any city or urban county that meets required criteria demonstrating physical and economic distress and that has a record of providing low- and moderate-income housing and employment programs. The communities eligible for this program in southeastern Wisconsin include: the large Cities of Kenosha, Milwaukee, and Racine; the City of Whitewater; and the Village of Walworth. Urban Development Action Grant funds may be used for virtually any capital improvement expenditure (e.g., construction, renovation, site work, capital equipment). UDAG funds may not be used for working capital, retirement of existing debts, operating expenditures, movable equipment, and buy-outs or flips.

The Farmers Home Administration provides community facility loans and funds for new or improved water and waste disposal systems for rural communities. Eligible applicants for community facility loans in southeastern Wisconsin are public bodies and nonprofit corporations serving residents in rural communities, including towns with populations under 20,000. Activities that are eligible for these loans include construction, enlargement, or improvement of community facilities providing essential services to rural areas such as fire protection, health care, industrial parks, and community, social, or cultural services. Applicants eligible for funds for water and waste disposal systems in southeastern Wisconsin include public bodies such as municipalities, counties, districts, authorities, or other political subdivisions of the State, and nonprofit organizations in rural areas and towns having less than 10,000 population. Eligible activities include the construction, repair, improvement, expansion, or modification of rural water and waste disposal facilities.

SOURCES OF FUNDING FOR BUSINESS DEVELOPMENT ASSISTANCE

The above-mentioned sources of public funding can provide a local unit of government with alternative methods of financing the necessary infrastructure improvements for an industrial park. However, it is also desirable for local units of government to be aware of the sources of public and private financial assistance for business development that can be provided to a business to encourage establishment in a new location, to expand in an existing location, or to develop a new product or service. Below is a summary of available public and private business development assistance.

Public Business Development Assistance

U. S. Department of Commerce, Small Business Administration: The U. S. Department of Commerce, Small Business Administration (SBA), can assist small businesses in financing plant construction, conversion, and/or expansion through business loan guarantees and direct and immediate participation loans. In addition, funding is available to acquire equipment, facilities, materials, and supplies, as well as for working capital. The Administration can guarantee a loan only when private lenders refuse to provide a loan to a business. For more information on such loans contact:

U. S. Department of Commerce
Small Business Administration
310 W. Wisconsin Avenue
Milwaukee, Wisconsin 53203
Telephone: (414) 291-3941

U. S. Department of Commerce, Small Business Administration, Section 503: Certified Development Company Program: Certified development companies organized under provisions set forth by the U. S. Department of Commerce, Small Business Administration, provide long-term, fixed-asset financing for the acquisition of land; building construction, expansion, and renovation; and the purchase of equipment. Loans are usually available for up to 25 years at below-market rates. For additional information contact:

Wisconsin Business Development
Finance Corporation
217 S. Hamilton Building
Suite 405
Madison, Wisconsin 53701
Telephone: (608) 258-8830

Greater Kenosha
Development Corporation
812 56th Street
Kenosha, Wisconsin 53140
Telephone: (414) 656-8064

Milwaukee Economic
Development Corporation
P. O. Box 324
Milwaukee, Wisconsin 53233
Telephone: (414) 223-5840

Community Development Block Grant (Large Cities): Cities that are located in Standard Metropolitan Statistical Areas that have populations of more than 50,000 persons receive annual block grants from the U. S. Department of Housing and Urban Development. The cities can utilize a portion of the block grant funds to finance commercial and industrial building construction and rehabilitation. Interested persons should contact the planning department in the cities meeting the above-mentioned criteria to determine funding availability.

Community Development Block Grants (Small Cities): General-purpose local units of government of less than 50,000 population may apply to the Wisconsin Department of Development for funds to meet the needs of local business. Generally, grants are awarded to the local unit of government, which then lends the money to a business for the construction, renovation, or expansion of a building; purchase of land; or purchase of machinery and equipment. The application process is very competitive, with about one-third of all grant applications receiving approval annually. For more information contact:

Southeastern Wisconsin Regional
Planning Commission
Economic Development Division
P. O. Box 769
Waukesha, Wisconsin 53187-1607
Telephone: (414) 547-6721

U. S. Department of Agriculture, Farmers Home Administration: The U. S. Department of Agriculture, Farmers Home Administration (FmHA), provides loan guarantees for the construction, conversion, and modernization of property; the purchase of land, equipment, and supplies; and working capital. Applicants can include individuals and public and private organizations in any area outside a city of 50,000 population or more and its adjacent urban area having a population density of more than 100 persons per square mile. For more information contact:

U. S. Department of Agriculture
Farmers Home Administration
1257 Main Street
Stevens Point, Wisconsin 54481
Telephone: (715) 341-5900

Industrial Revenue Bonds: An industrial revenue bond is defined as a long-term bond issued by a local unit of government to provide assistance to a business in financing real property investments for construction, enlargement, or equipment. The local government loans the proceeds of the bond issue to the business. For more information contact:

Wisconsin Department of Development
P. O. Box 7970
Madison, Wisconsin 53707
Telephone: (608) 266-1018

U. S. Department of Commerce, Economic Development Administration: The U. S. Department of Commerce, Economic Development Administration, provides loan guarantees to banks that are making loans to businesses for expansion projects. For more information contact a local financial institution or:

U. S. Department of Commerce
Economic Development Administration
175 W. Jackson Street
Chicago, Illinois 60604
Telephone: (312) 353-7706

Urban Development Action Grants (UDAG): A city designated as eligible by the U. S. Department of Housing and Urban Development can apply for an Urban Development Action Grant which the city then can lend to a private business or developer for such projects as job creation and the rehabilitation and/or construction of public, commercial, industrial, and residential structures. For more information contact:

U. S. Department of Housing
and Urban Development
310 W. Wisconsin Avenue
Suite 1380
Milwaukee, Wisconsin 53203
Telephone: (414) 291-3355

Small Business Development Centers: The University of Wisconsin through its extension services has created a number of centers of business management and development assistance at campuses across the State. The centers provide information on sources of business financing, as well as on how to solve business management problems and problems related to new business start-ups. For more information contact:

University of Wisconsin-Extension
North Hall
929 N. 6th Street
Milwaukee, Wisconsin 53203
Telephone: (414) 224-4758

University of Wisconsin-Whitewater
Whitewater, Wisconsin 53190
Telephone: (414) 472-3217

University of Wisconsin-Parkside
P. O. Box 2000
Kenosha, Wisconsin 53141
Telephone: (414) 553-2047

Minority Enterprise Small Business Investment Company (MESBIC): A Minority Enterprise Small Business Investment Company is a privately owned and operated company which has been licensed by the U. S. Department of Commerce, Small Business Administration, to provide equity capital and long-term loans to small minority businesses. For more information contact:

Wisconsin MESBIC, Inc.
780 N. Water Street
Milwaukee, Wisconsin 53202
Telephone: (414) 277-5000

Small Business Investment Company (SBIC): A Small Business Investment Company is a privately owned and operated company which has been licensed by the U. S. Department of Commerce, Small Business Administration, to provide equity capital and long-term loans to small businesses. For more information contact:

Marine Venture Capital, Inc.
c/o Marine Bank (N.A.)
111 E. Wisconsin Avenue
P. O. Box 2033
Milwaukee, Wisconsin 53201
Telephone: (414) 765-3000

Moramerica Capital Corporation
600 E. Mason Street
Milwaukee, Wisconsin 53202
Telephone: (414) 276-3839

Capital Investments, Inc.
515 W. Wells Street
Milwaukee, Wisconsin 53203
Telephone: (414) 273-6560

Bando-McGlocklin
Investment Company, Inc.
13555 Bishops Court, Suite 205
Brookfield, Wisconsin 53005
Telephone: (414) 784-9010

Bankit Financial Corporation
777 E. Wisconsin Avenue, Suite 3440
Milwaukee, Wisconsin 53202
Telephone: (414) 271-5050
(Grocery Stores)

Certco Capital Corporation
6150 McKee Road
Madison, Wisconsin 53711
Telephone: (608) 271-4500
(Retail Grocers)

Madison Capital Corporation
c/o Madison Development Corporation
102 State Street
Madison, Wisconsin 53703
Telephone: (608) 256-8185

Super Market Investors, Inc.
11300 W. Burleigh Street
Wauwatosa, Wisconsin 53201
(Mail to: P. O. Box 473
Milwaukee, Wisconsin 53202)
(Retail Grocers)
Telephone: (414) 453-6211

Job Training Partnership Act (JTPA): The U. S. Department of Labor provides funding through the Job Training Partnership Act (JTPA) to local private industry councils (PIC's) that provide employment training services to eligible persons. Funding is available for work experience programs whereby a portion of the wages paid to an employee by a business are reimbursed by the council. For more information contact:

Governor's Employment
and Training Office
101 S. Webster Street
P. O. Box 7972
Madison, Wisconsin 53707

Wisconsin Housing and Economic Development Administration (WHEDA): The Wisconsin Housing and Economic Development Administration provides low-interest financing to businesses and individuals with current annual sales of $35 million or less. Loan preference is given to businesses with less than $5 million in annual sales, 25 or fewer employees, or 50 percent ownership or control by women or minorities, and to businesses having their principal operation in Wisconsin. For more information contact:

Wisconsin Housing and Economic
Development Authority
131 W. Wilson Street, Suite 300
P. O. Box 1728
Madison, Wisconsin 53701
Telephone: (608) 266-7884

Technology Development Fund: Funding can be provided to a consortium composed of a company headquartered in Wisconsin and an institution that is a part of the University of Wisconsin system, or another Wisconsin institution of higher learning. Grants are made in support of research and development of new products. For more information contact:

Technology Development Fund
c/o Wisconsin Department
of Development
P. O. Box 7970
Madison, Wisconsin 53707
Telephone: (608) 266-9869

Private Business Development Assistance

Local Financial Institutions: Recently, many local financial institutions have expanded the business services provided to their business customers. In addition to financing for business projects, many institutions offer counseling and information on business problems. For more information contact your local financial institution.

Venture Capital Funds: A number of venture capital groups have been formed to assist new businesses in projects that are of high risk but have the ability to provide long-term, above-average growth potential. Each investment by a venture capital group is individually structured and could include subordinated debt with warrants and/or conversion rights, income participation debentures, preferred stock, and common stock. For more information contact:

Lubar & Company
3060 First Wisconsin Center
Milwaukee, Wisconsin 53202
Telephone: (414) 291-9000

Marine Venture Capital, Inc.
c/o Marine Bank (N.A.)
111 E. Wisconsin Avenue
P. O. Box 2033
Milwaukee, Wisconsin 53201
Telephone: (414) 765-3000

Wind Point Partners
1525 Howe Street
Racine, Wisconsin 53403
Telephone: (414) 631-4030

Madison Capital Corporation
c/o Madison Development Corporation
102 State Street
Madison, Wisconsin 53703
Telephone: (608) 256-8185

Innovative Approaches to
Business Development Assistance

A number of state and local units of government across the country have developed new and innovative approaches to address economic development issues and concerns. Listed below are a number of these approaches, some of which may require changes in the existing Wisconsin Statutes in order to be implemented in Wisconsin. In addition, the overall ability of these approaches to encourage economic development and/or business expansion has not, in all cases, been fully determined. Therefore, additional research may be necessary in order to determine the appropriateness of these approaches in various economic development circumstances.

1. Marketing and sale of surplus municipal property, with the proceeds of these sales placed in a low-interest, revolving business loan fund.

2. The abatement of local property taxes and corporate income taxes for businesses in targeted growth industries.

3. State tax credits to businesses in return for the business's investment in research and development, machinery and equipment, or a new building or building renovation.

4. Direct government participation in the construction and/or renovation of buildings.

5. Formation of private, nonprofit, or for-profit local development corporations with the authority to issue debentures and receive private donations to be used for economic development projects.

6. State and local government interest write-down payments to financial institutions for a business loan in order to reduce the cost of financing a business development project.

7. State and local government grants and loans, and leasing of government-owned land and buildings to business for business development projects.

THE LEGAL TOOLS OF INDUSTRIAL PARK IMPLEMENTATION

Appendices B-1 through B-4 have been drafted for a city form of government. These appendices can be readily modified to apply to the village and town forms of government as well. In these appendices, where the word city appears the word village or town may be substituted; where the words Common Council appear the words Village Board or Town Board may be substituted; where the word Mayor appears the words President or Chairman may be substituted; and where the words Plan Commission appear the words Park Commission or Zoning Committee may be substituted as appropriate. In addition, reference to statutory authority must be appropriately modified. Words, terms, and paragraphs may be changed or omitted to best meet the desires and needs of individual communities. The models presented are intended to be used as guides in the formation of local legal instruments of these types. Competent legal assistance should be sought in conjunction with their use. Appendices B-1 through B-4 also provide private sector developers with insight into the steps that could be involved in seeking approval of plans for an industrial park development.

Appendix B-1

MODEL PLAN COMMISSION RESOLUTION FOR ADOPTING AN INDUSTRIAL PARK MASTER PLAN

WHEREAS, the City of_____ Plan Commission, pursuant to the provisions of Section 62.23 of the Wisconsin Statutes, has the function and duty of making and adopting a master plan for the physical development of the City; and

WHEREAS, the City of_____ Plan Commission has:

1. Adopted the regional land use and transportation system plans for southeastern Wisconsin, as prepared by the Southeastern Wisconsin Regional Planning Commission;

2. Prepared and adopted a local land use plan for the City; and

3. Adopted a plan for the delineation of residential, commercial, and industrial park neighborhood units for the City; and

WHEREAS, the City of_____ Plan Commission has proceeded to prepare a precise plan to guide the future physical development of the property known as the City of_____ Industrial Park generally located in the_____
_____
_____; and

WHEREAS, the City of_____ Plan Commission on _____, 19__, has held a public informational meeting and public hearing on the plan for the Industrial Park; and

WHEREAS, the City of_____ Plan Commission has carefully considered the plan, together with the comments, statements, and other information submitted at the aforereferenced public hearing.

NOW, THEREFORE, BE IT RESOLVED THAT:

Pursuant to Section 62.23 of the Wisconsin Statutes, the City Plan Commission on the_____ day of _____, 19__, hereby adopts the City of_____ Industrial Park Master Plan as described in the published document entitled_____
_____
as a guide for the future physical development of the City of_____ Industrial Park; this plan shall be further deemed to be a part of the master plan for the City of_____.

BE IT FURTHER RESOLVED:

That the Secretary of the Plan Commission transmit a certified copy of this Resolution to the Common Council of the City of_____.

_____
Chairman, City of_____ Plan Commission

ATTESTATION:

_____
Secretary, City of_____ Plan Commission

Appendix B-2

MODEL COMMON COUNCIL RESOLUTION FOR ADOPTING AN INDUSTRIAL PARK MASTER PLAN

WHEREAS, the City of _____ Plan Commission, pursuant to the provisions of Section 62.23(1) of the Wisconsin Statutes, has created a City Plan Commission; and

WHEREAS, the City Plan Commission has prepared a precise plan to guide the future physical development of the property known as the City of _____ Industrial Park as described in the published document entitled _____; and

WHEREAS, the City Plan Commission on the _____ day of _____, 19__, adopted the published document entitled _____
_____
_____ and has submitted a certified copy of that resolution to the Common Council of the City of _____; and

WHEREAS, the Common Council of the City of _____ concurs with the City Plan Commission and the objectives and policies set forth in the published document entitled _____
_____
_____
for the physical development of the City of _____ Industrial Park.

NOW, THEREFORE, BE IT RESOLVED that the Common Council of the City of _____, on the _____ day of _____, 19__, hereby adopts the City of _____ Industrial Park Master Plan as described in the published document entitled _____
_____
_____
as a guide for the future physical development of the City of _____ Industrial Park.

_____
Mayor
City of _____

ATTESTATION:

_____
Clerk
City of _____

Appendix B-3

MODEL ORDINANCE CREATING AN INDUSTRIAL PARK CONTROL BOARD

SECTION 1. INTRODUCTION

WHEREAS, the Common Council of the City of _____, after recommendation by the City Plan Commission, has heretofore adopted on _____, 19__, SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, as a general guide for community development in the City of _____; and

WHEREAS, the City of _____ has prepared a detailed plan for the physical development of the City of _____ and its environs, said plan embodied in _____

_____

and which plan illustrates the location, nature, and extent of future industrial-related growth for the City of _____; and

WHEREAS, the City Plan Commission has prepared and adopted a comprehensive plan for the development of the City, including a plan for the City of _____ Industrial Park and environs, including industrial areas, and has submitted such plan to the Common Council of the City of _____; and

WHEREAS, the Common Council of the City of _____ concurs with the City Plan Commission and the industrial development objectives and policies set forth in _____

_____

_____; and

WHEREAS, the Common Council of the City of _____ has determined that it is necessary for the proper physical development of industrial lands in the City of _____ to establish an Industrial Park Control Board for the City of _____.

NOW, THEREFORE, the Common Council of the City of _____, Wisconsin, do ordain as follows:

SECTION 2. ESTABLISHMENT

There is hereby established an Industrial Park Control Board for the City of _____ for the purpose of administrating and enforcing the City Industrial Park and all deed restrictions and protective covenants associated therewith.

SECTION 3. MEMBERSHIP

The Industrial Park Control Board shall consist of seven members. Of the membership, one shall be the Mayor; one shall be the City Engineer; one shall be the City Attorney; and the Mayor shall appoint four citizen members with known interest in local industrial development. The Mayor shall make appointments at least one month prior to the meeting at which they are to be confirmed.

Terms of the four appointed members shall be for staggered three-year periods, except that of those first appointed: one shall serve for one year, one shall serve for two years, and two shall serve for three years.

Chairman shall be the Mayor.

Secretary shall be the City Engineer.

Official Oaths shall be taken by all members in accordance with Section 19.01 of the Wisconsin Statutes within 10 days of receiving notice of their appointment.

Vacancies shall be filled for the unexpired term in the same manner as appointments for the full term.

SECTION 4. ORGANIZATION

The Common Council herein adopts rules for the conduct of the business of the Industrial Park Control Board in accordance with the provisions of this section. The Board may adopt further rules as necessary.

Meetings shall be held at the call of the Chairman or when requested by the Common Council or City Plan Commission or by three members of the Board and shall be open to the public.

Minutes shall be kept showing all actions taken and shall be a public record. The grounds for every decision shall be stated in the minutes.

Quorum shall be five members, and all actions shall require the concurring vote of at least five members.

SECTION 5. POWERS

The Industrial Park Control Board shall have the following powers:

Administrate and Enforce the "Declaration of Restrictions and Convenants" and other applicable laws associated with the City of _____ Industrial Park, including the review and approval of industrial parkland use, site and landscape plans, building plans, building setback requirements, architectural control and appearance, landscaping and landscaping maintenance, off-street parking and loading, outdoor storage, waste incineration, security fencing, signs and billboards, utility control, easements, and drainage.

Variances. Hear and authorize certain variances from the "Declaration of Restrictions and Covenants" where, in the judgment of the Industrial Park Control Board, it would be inappropriate to apply literally the provisions of said "Declaration" because exceptional or undue hardship would result. Such variance shall not be contrary to the public interest and the public health, safety, and welfare or to the zoning and land division ordinances and all other applicable codes and ordinances.

Recommend, as provided for in the "Declaration of Restrictions and Covenants," to the City Plan Commission or Common Council approval, conditional approval, or denial of certain applications.

Request assistance from other city officers, departments, commissions, and boards.

Request the applicant to furnish additional information.

Oaths may be administered by the Chairman, who may compel the attendance of witnesses.

SECTION 6. APPLICATIONS

Applications for review by the Industrial Park Control Board shall be made to the City Engineer and shall be accompanied by plans for the building or improvements, including site plan, landscape plan, and building plans which show floor plans as well as all exterior building elevations, or facades of existing and proposed structures indicating the proposed exterior building facade materials and floor grades, and a list of the names and addresses of the parties in interest.

SECTION 7. ENFORCEMENT

It shall be the duty of the City Building Inspector and the Chief of Police to enforce the provisions of this Ordinance.

SECTION 8. PENALTIES

Any person, firm, or corporation that fails to comply with the provisions of this Ordinance shall, upon conviction thereof, forfeit not more than two hundred dollars ($200) and not less than fifty dollars ($50) and cost of prosecution for each violation, and in default of payment of such forfeiture and costs shall be imprisoned in the county jail until payment thereof but not exceeding 30 days. Each day a violation exists or continues shall constitute a separate offense.

SECTION 9. SEVERABILITY AND CONFLICT

If any section or part of this Ordinance is adjudged unconstitutional or invalid by any court of competent jurisdiction, the remainder of this Ordinance shall not be affected thereby. All other ordinances or parts of ordinances of the City inconsistent with this Ordinance to the extent of the inconsistency only are hereby repealed.

SECTION 10. EFFECTIVE DATE

This Ordinance shall be effective after adoption by the Common Council and publication or posting as provided by law.

Adopted _____

Published _____

Effective _____

_____

Mayor

Countersigned:

_____

City Clerk

Appendix B-4

MODEL INDUSTRIAL PARK DEED RESTRICTIONS AND PROTECTIVE COVENANTS

WHEREAS, the undersigned, CITY OF_____ , _____County, Wisconsin, a municipal corporation, is the owner of that certain parcel of land more particularly described as:

(Insert Legal Description of Industrial Parklands Here)

WHEREAS, the undersigned is undertaking and intends to divide and improve or cause to be improved the above-described parcel of land for use as an industrial park to be known as the City of_____ Industrial Park.

NOW THEREFORE, in consideration of the aforesaid and for the purpose of preserving the value of the lots contained within the City of _____ Industrial Park as well as all land located in the general vicinity of the City of _____ Industrial Park, the undersigned hereby declare and provide that the entire area known as the City of _____ Industrial Park shall be subject to the following restrictions, covenants, and conditions to-wit:

1. USE OF LAND

It is the intention of the City of _____that the City of _____ Industrial Park be developed to enhance the future industrial growth of the City in a planned development for a general mix of heavy and light industry, distribution, and limited retail operations if the latter are an integral part of the manufacturing or distribution process. The type of industry or industry "mix" will be subject to the review and approval of the Industrial Park Control Board.

2. AREA OF LOTS

No lot in the City of_____ Industrial Park shall be created which is less than one acre in area.

3. SUBMISSION OF PLANS

No building or improvement shall be erected, placed, or altered on any lot in the City of _____ Industrial Park until the plans for such building or improvement, including site plan, landscape plan, and building plan and specifications, have been approved by the Industrial Park Control Board. Said Board shall review and approve, approve conditionally, or disapprove such plans with respect to conformity with these restrictions and other applicable enactments of the City, and with respect to harmony of external design and land use as it affects property within and adjacent to the City of _____Industrial Park. Failure of the aforesaid Board to act upon such building or improvement plans within 60 days after submission to the City of_____ , City Clerk, shall be deemed to constitute approval of such plans.

4. BUILDING SETBACK REQUIREMENTS

(a) FRONT YARD: No portion or part of any building shall be erected, constructed, or extended nearer than 30 feet from the street right-of-way line, or both street right-of-way lines on a corner lot of any lot in said industrial park. Parking of employee-owned motor vehicles shall be prohibited within 25 feet of front yard lot line. Visitor or customer parking may be allowed within 25 feet of the street right-of-way line upon approval of the Industrial Park Control Board.

(b) REAR YARD: No part or portion of any building shall be erected, constructed, or extended nearer than 25 feet to any rear lot line except in the case of the erection or construction of any building or structure used for outside railway car loading or unloading facilities, to which this restriction shall not apply.

(c) SIDE YARD: No part or portion of any building shall be erected, constructed, or extended nearer than 10 feet to any side lot line. The combined total of side yards for any parcel shall not be less than 30 feet. Corner lots shall be deemed to have two side lot lines.

5. ARCHITECTURAL CONTROL AND APPEARANCE

The front of all buildings—that is, the side facing the street on which the building is deemed to front—shall be faced with concrete or brick masonry, stone, or other material approved by the Industrial Park Control Board and said facing shall extend across the full front of the building and also extend a distance of not less than 20 feet on each side of the front of the building. That portion of any building facing a street other than the street on which the building fronts shall be finished in an attractive manner in keeping with the accepted standards used for industrial buildings, but need not be finished in a like manner as that portion of the building referred to as the front. It is the intent of these provisions that all structures shall be designed and constructed in such a manner as to provide an aesthetically pleasing and harmonious overall development of the industrial park.

Except as otherwise provided herein, the sides and rear of all buildings shall be finished in an attractive manner in keeping with the accepted standards used for industrial buildings subject to the approval of the Industrial Park Control Board. All faces of all buildings must be kept in good repair and appearance at all times. All buildings must be of approved construction in conformance with all applicable building codes. Buildings shall not exceed 50 feet in height.

6. LANDSCAPING AND LANDSCAPING MAINTENANCE

Every effort shall be made to protect and retain all existing trees, shrubbery, vines, and grasses not actually lying in public roadways, drainageways, paths, and trails. Trees shall be protected and preserved during construction in accordance with sound conservation practices, including the preservation of trees by use of wells, islands, or retaining walls whenever abutting grades are altered to the extent that an existing tree could be damaged.

As least one street tree of an approved species and of at least six feet in height shall be planted for each 50 feet of frontage on proposed public streets and private drives. However, the placement and selection of street tree species shall not hamper or interfere with access to natural light and air for nearby industrial lots and structures. Tree species shall be selected, in part, based upon soil conditions and species hardiness to soil conditions. Columnar varieties of street trees may require shorter distances between plantings. Street trees shall be located so as to be a minimum of 10 feet from a street light, five feet from a fire hydrant, five feet from a driveway, and five feet from any public sidewalk.

All off-street parking areas which serve five vehicles or more shall be provided with accessory landscape areas totaling not less than 5 percent of the surfaced area. The minimum size of each landscape area shall not be less than 100 square feet. Location of landscape areas and plant materials, and protection afforded the plantings, including curbing and provision for maintenance, shall be subject to approval by the Industrial Park Control Board. The preservation of existing trees, shrubs, and other natural vegetation in the off-street parking area may be included in the calculation of the required minimum landscape area. Those off-street parking areas of five or more vehicles, if located adjoining a residential area, shall be screened from such area by a solid wall or fence or by evergreen planting of adequate visual density, built and maintained at a minimum height of six feet.

All grass, trees, and shrubbery shall be kept watered in dry weather and in good appearance at all times. All grass shall be cut as necessary to maintain an attractive appearance. If grass is not cut, or the trees and shrubbery not properly maintained, the City may serve notice, and if not complied with in 10 calendar days, the City may maintain same and add the cost incurred to the lot owner's annual real estate tax bill.

All such landscaping, drives, and walks shall be completed at the time of issuance of a building occupancy permit and zoning certificate of compliance.

7. OFF-STREET PARKING AND LOADING

(a) PARKING LOT DRIVES: Parking lot drives should be a minimum of 24 feet wide for two-way traffic and at least 12 feet wide for one-way traffic.

(b) PARKING SPACES AND LOCATION: At least one parking space of not less than 180 square feet, excluding driveway and approaches, shall be required for each two employees on the two largest shifts combined to provide a sufficient number of off-street parking spaces to accommodate the maximum number of vehicles of employees and visitors expected on the site during peak hours of utilization. Employee or truck parking shall not be allowed within the front yard building setback area. Additional parking shall be provided on each property as required by the Industrial Park Control Board as necessary to accommodate all employees and visitors.

Any parking area for five or more vehicles shall have the aisles and spaces clearly marked.

(c) LOADING: In addition to employee and visitor parking, there shall be space provided as necessary for the parking of trucks and trailers. Truck loading berths shall be prohibited in the front yard of all building lots unless the face of each truck loading berth is set back from the street right-of-way line and suitable maneuvering area is provided trucks. Truck loading docks for manufacturing and warehouse uses shall be provided at a minimum rate of one berth for the first 5,000 square feet of gross building floor area and one berth for each additional 40,000 square feet of gross building floor area thereafter. Truck loading and unloading docks for storage uses shall be provided at a minimum rate of one berth for the first 10,000 square feet of gross building floor area and one berth for each additional 25,000 square feet of gross building floor area thereafter.

Facilities for handling truck loading/unloading shall be placed on the industrial park lot so as not to be visible from any public street right-of-way.

(d) CONSTRUCTION: All walks, driveways, parking lots, and loading areas will be surfaced with bituminous concrete or Portland cement concrete extending to the public street pavement.

8. OUTDOOR STORAGE

All materials, products, or solid or liquid waste materials stored outside buildings shall be kept behind the building setback line, and shall be screened from view from the street and adjoining properties with a solid wall or fence or other screening approved by the Industrial Park Control Board. Walls and fences must be kept painted or have such other finish so as to provide a good appearance. Wire fence is not acceptable for this purpose.

9. WASTE INCINERATION

No waste material shall be burned on the premises except in an incinerator especially designed and constructed for such purpose.

10. SECURITY FENCING

Lots within the City of _____ Industrial Park may be fenced subject to the following terms and conditions:

(a) TYPE: Fences shall be of chain-link design and may have located on the top thereof a barbed wire Y or angle securing band not to exceed 18 inches in height.

(b) HEIGHT: Fences shall not exceed 10 feet in height, including the security band along the top.

(c) MAINTENANCE: All fences shall be maintained in good condition, including painting as required.

(d) PLACEMENT: Fences shall not be permitted in the front yard building setback area.

11. SIGNS AND BILLBOARDS

No signs other than company and product identification and directional signs are permitted. The type, location, and placement of signs shall be approved by the City Plan Commission and Industrial Park Control Board.

12. UTILITY CONTROL

All utilities, including all electric power, telephone, gas, water and storm and sanitary sewers, but excepting electric power lines exceeding 12,000 volts, shall be underground. The location of the utility shall be subject to approval by the Industrial Park Control Board and City Plan Commission.

13. COOPERATION FOR EASEMENTS

All owners and occupants of parcels within the City of _____ Industrial Park shall cooperate with the City and other owners and occupants within said industrial park in the planning and granting of all necessary and reasonable easements for gas, electric, telephone, sewer, water, access roads, railway spurs, and loading tracks to the extent that such easements do not interfere with the existing uses of the land or unduly restrict future use or development. Nothing contained in this section shall be deemed to require the purchaser to grant any specific easement, nor grant easements or rights-of-way, without reasonable compensation therefore.

14. DRAINAGE CONTROL

No land shall be developed and no use shall be permitted that results in flooding, erosion, or sedimentation to adjacent properties. All runoff shall be properly channeled into a storm drain, watercourse, storage area, or other stormwater management facility.

15. NUISANCE CONTROL

No operation, process, manufacturing, or building use in said industrial park shall produce or create excessive noise, light, odors, smoke, dust, gas, vibration, heat, industrial waste, toxic matter, or other excessive measurable external nuisance to an extent greater than the following maximum allowable levels:

(a) AIR POLLUTION: No person or activity shall emit any fly ash, dust, fumes, vapors, mists, or gases in such quantities as to substantially contribute to exceeding established state or federal air pollution standards.

(b) FIRE AND EXPLOSIVE HAZARDS: All activities involving the manufacturing, utilization, processing, or storage of flammable and explosive materials shall be provided with adequate safety devices against the hazard of fire and explosion and with adequate fire-fighting and fire-

suppression equipment and devices that are standard in the industry. All materials that range from active to intense burning shall be manufactured, utilized, processed, and stored only in completely enclosed buildings which have incombustible exterior walls and an automatic fire-extinguishing system. The above-ground storage capacity of materials that produce flammable or explosive vapors shall not exceed 200,000 gallons.

(c) GLARE AND HEAT: No activity shall emit glare or heat that is visible or measurable outside its premises except activities which may emit direct or sky-reflected glare which shall not be visible outside their district. All operations producing intense glare or heat shall be conducted within a completely enclosed building. Exposed sources of light shall be shielded so as not to be visible outside their premises.

(d) WATER QUALITY PROTECTION: No activity shall store or discharge, or permit the discharge of, any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxiousness, toxicity, or temperature that might run off, seep, percolate, or wash into surface or subsurface waters so as to contaminate, pollute, or harm such waters or cause nuisances such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.

(e) NOISE: All noise shall be so muffled or otherwise controlled as not to become objectionable due to intermittence, duration, beat frequency, impulse character, periodic character, or shrillness.

(f) ODORS: No activity shall emit any odorous matter of such nature or quantity as to be offensive, obnoxious, or unhealthful outside its premises.

(g) RADIOACTIVITY AND ELECTRICAL DISTURBANCES: No activity shall emit radioactivity or electrical disturbances outside its premises that are dangerous or adversely affect the use of neighboring premises.

(h) VIBRATION: No activity shall emit vibrations which are discernible without instruments outside its premises.

16. RECAPTURE AND RESALE OF LAND

(a) If a buyer of any lot does not commence construction of a building or buildings thereon within 12 months after the date of purchase and complete the construction of a building or buildings thereon within two years after the date of purchase, the City shall have the option to repurchase the property. Exercise of the option shall be affected by resolution adopted by the Common Council. Such option shall be exercisable upon delivery in writing of a notice to the buyer within six months after the expiration of such 12-month or two-year period. Closing shall take place within 60 days following the exercise of such option on such date as shall be designated by the City specified in such notice. The purchase price to be paid by the City upon the exercise of such option shall be the sum of the following:

(1) The purchase price paid for the land by the buyer.
(2) The current market value of all improvements thereon paid by the buyer.
(3) All special assessments which may have been paid by the buyer or levied against the premises during the period of such buyer's ownership.

less the sum of the following:

(1) Unpaid real estate taxes.
(2) Proration of current year's real estate taxes to date of closing.
(3) Title insurance policy premium.
(4) Liens and encumbrances on the property of a definite or ascertainable amount.

Conveyance shall be by warranty deed, free and clear of all liens and encumbrances except those in existence prior to the buyer's ownership of the property, and subject to municipal and zoning and land division ordinances, recorded easements for public utilities, and recorded Declaration of Restrictions and Covenants and amendments thereto. Seller shall furnish title insurance policy at seller's expense for full amount of purchase price.

(b) In the event a buyer elects to sell all or any part of any parcel which is vacant, the same shall first be offered for sale, in writing, to the City at a price per acre computed as set forth in Subsection (a) above. The City shall have 60 days from the receipt of such offer to accept or reject same. Acceptance or rejection of such offer shall be effected by resolution adopted by the Common Council. Upon acceptance by the City, conveyance shall be by warranty deed free and clear of all liens and encumbrances except those in existence prior to the buyer's ownership of the property, and subject to municipal and zoning and land division ordinances, easements for public utilities, and building restrictions and ordinances. The seller shall furnish title insurance policy at seller's expense.

(c) If the City fails to timely exercise the option described in Subsection (a) above or rejects said offer, buyer may then sell such property to any other buyer and the City shall have no further interest therein, except that any use of said property by any subsequent buyer shall be subject to applicable zoning and land division ordinances, restrictions, and regulations of the City relating to the use of said property at the time of such sale and to the provisions of this Declaration of Restrictions and Covenants.

(d) Nothing contained herein shall be deemed to give the City a right of first refusal or option in the event that a buyer of a parcel who has improved the same by construction of a building or buildings thereon shall propose to sell all of such property as one parcel together with the improvements thereon, it being intended that the provisions of this shall apply only to the resale of vacant parcels.

17. NUMBER OF YEARS RESTRICTIONS AND COVENANTS TO RUN WITH THE LAND

Each lot shall be conveyed subject to the restrictions and convenants set forth herein, all of which are to run with the land and shall be binding on all parties and all persons claiming them for a period of 10 years from the date this Declaration of Restrictions and Covenants is recorded, after which time said restrictions and covenants as are then in force and effect shall be automatically extended for successive periods of 10 years each, unless an instrument terminating such restrictions and covenants by the Common Council as evidenced by a resolution is duly adopted by at least three-fourths favorable vote of all members of the Common Council.

18. MODIFICATION AND AMENDMENT OF DECLARATION OF RESTRICTIONS AND COVENANTS

The restrictions and convenants set forth herein, except the provisions of Paragraph 16 of these restrictions, may be modified and amended only upon the execution and recording of a written instrument to said effect by the majority of the Common Council as evidenced by a resolution duly adopted by at least three-fourths favorable vote of all members of the Common Council at any time.

19. ENFORCEMENT

The enforcement of the restrictions and covenants contained in this Declaration of Restrictions and Covenants shall be by proceedings at law or equity against any person or persons violating or attempting to violate any restrictions or covenants, to restrain violation, obtain substantial compliance, and recover any damages. Such proceedings may be commenced by the City of _____or by any owner or owners of lots in said industrial park.

20. SEVERABILITY

Invalidation of any one of the restrictions or convenants contained within this Declaration of Restrictions and Covenants, by judgment or court order, shall in no way affect any of the other provisions hereof which shall remain in full force and effect.

21. OTHER APPLICABLE LAWS

Notwithstanding the provisions contained herein in this Declaration of Restrictions and Covenants, all development within the City of_____ Industrial Park shall be in accordance with all applicable local, state, and federal laws.

IN WITNESS WHEREOF, the said City of_____ has caused these presents to be signed by _____, its Mayor, and_____, its Clerk, and its corporate seal to be hereonto affixed this_____ day of_____, 19__.

Approved by Common Council
City of_____

_____, 19__

By:_____
Mayor

ATTESTATION:

_____
City Clerk

State of Wisconsin

_____ County

NOTARIZATION:

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Appendix C

DESCRIPTION OF SUITABLE INDUSTRIAL SITES

A brief description of each suitable industrial site is provided in this appendix. Maps C-1 through C-7 indicate the spatial distribution of the sites within each county, and Tables C-1 through C-7 present the site description data by county. The following information is provided for each site.

Site Number—Site identification numbers in each county table correspond to the site numbers located on the respective county map.

Location—Site location information includes the civil division in which the site is located, as well as the physical features such as roads, railways, or named rivers which bound the site. In addition, U. S. Public Land Survey locational information is provided.

Size—The size of the site is provided in gross and net acres rounded to the nearest five acres. The gross acreage is defined as the area of the undeveloped portion of industrially zoned or locally proposed industrial areas, as identified and measured on Commission one inch equals 400 feet scale, ratioed and rectified 1980 aerial photographs. The net industrial site acreage is defined as the gross area less any industrial development occurring on the site between 1980 and 1984, and less undeveloped portions of the site determined to have significant physical limitations for industrial development.

Industrial Site Classification—The industrial site classification—identified by Roman numerals I, II, or III—indicates the site's relative potential for immediate industrial use. Class I sites are ready for actual industrial use, have public sanitary sewers and streets in place, and are characteristic of industrial parks. Class II sites are ready for industrial development, but require street improvements and associated internal sewers. Class III sites require additional measures to become available for development such as rezoning for industrial use or provision of public sanitary sewer service, and street improvements.

Zoning—The zoning data indicate whether or not the site is zoned for industrial use.

Sanitary Sewer and Water Supply—The sewer and water service data indicate the approximate distance to the nearest sanitary sewer line and water line.

Transportation Access—The transportation access data indicate the approximate distance to the nearest freeway and to the nearest non-freeway-type state trunk highway. Railway accessibility is also noted. The distance to General Mitchell Field, the principal commercial airport in the Region, is indicated. The distance to other general aviation airports in the vicinity of the site which are open to the public, attended to all year, and capable of handling corporate aircraft is also indicated.

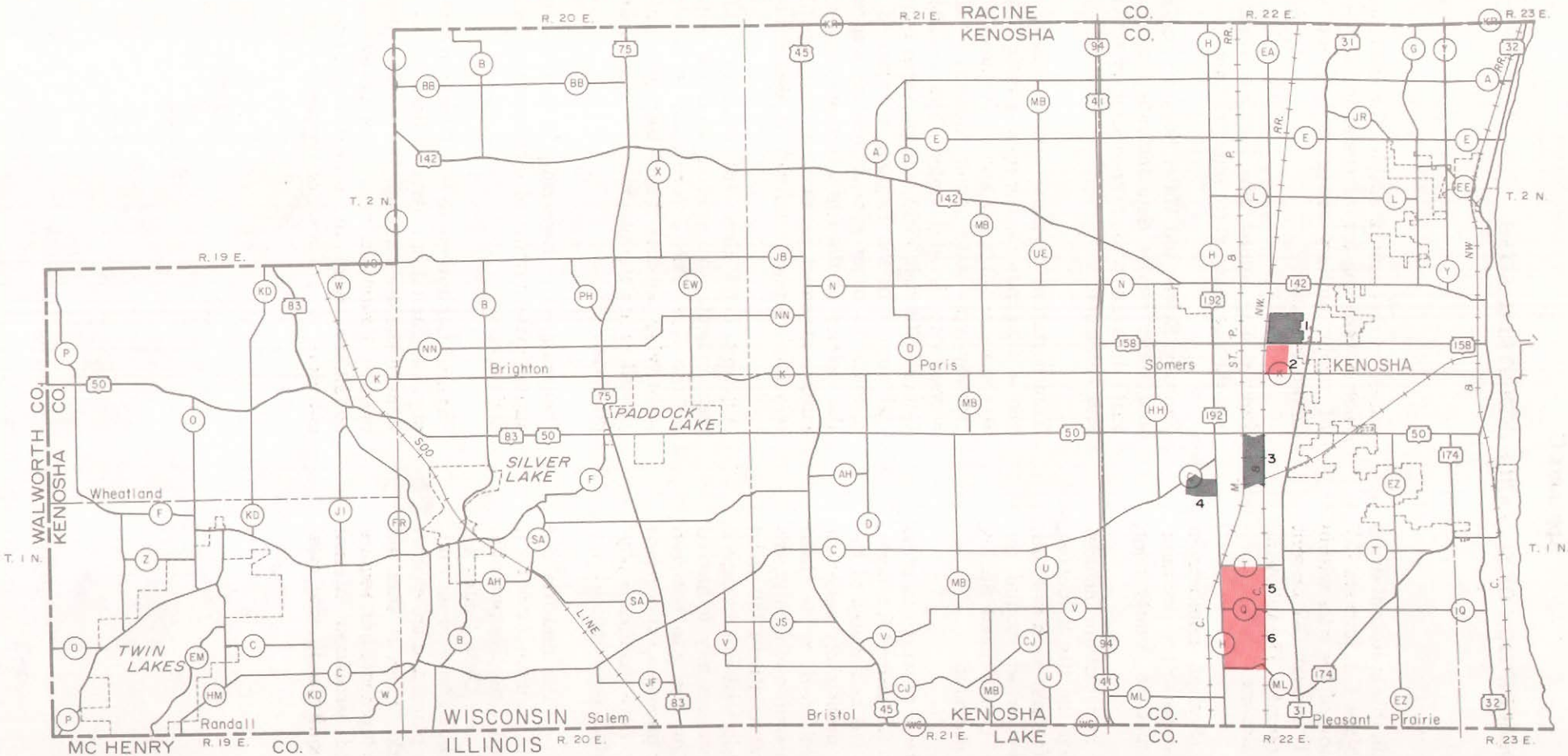
Adjacent Land Uses—The adjacent land use data indicate the existing land use adjacent to the site. This information is helpful in identifying possible future land use conflicts, as well as in determining future site expansion potential.

Ownership—The ownership data indicate the approximate number of owners comprising the delineated site.

Physical Limitations to Site Development—The physical limitations data indicate those portions of the site which may have physical development limitations because of unsuitable soil conditions, wetlands, primary environmental corridors, steep slopes, or floodlands.

Map C-1

LOCATION OF SUITABLE INDUSTRIAL SITES IN KENOSHA COUNTY



LEGEND

ZONED FOR INDUSTRIAL USE

PROPOSED FOR INDUSTRIAL USE

GRAPHIC SCALE

0 1/2 1 2 MILES

0 4000 8000 12000 FEET

Source: SEWRPC.

Table C-1

POTENTIAL INDUSTRIAL SITES: KENOSHA COUNTY

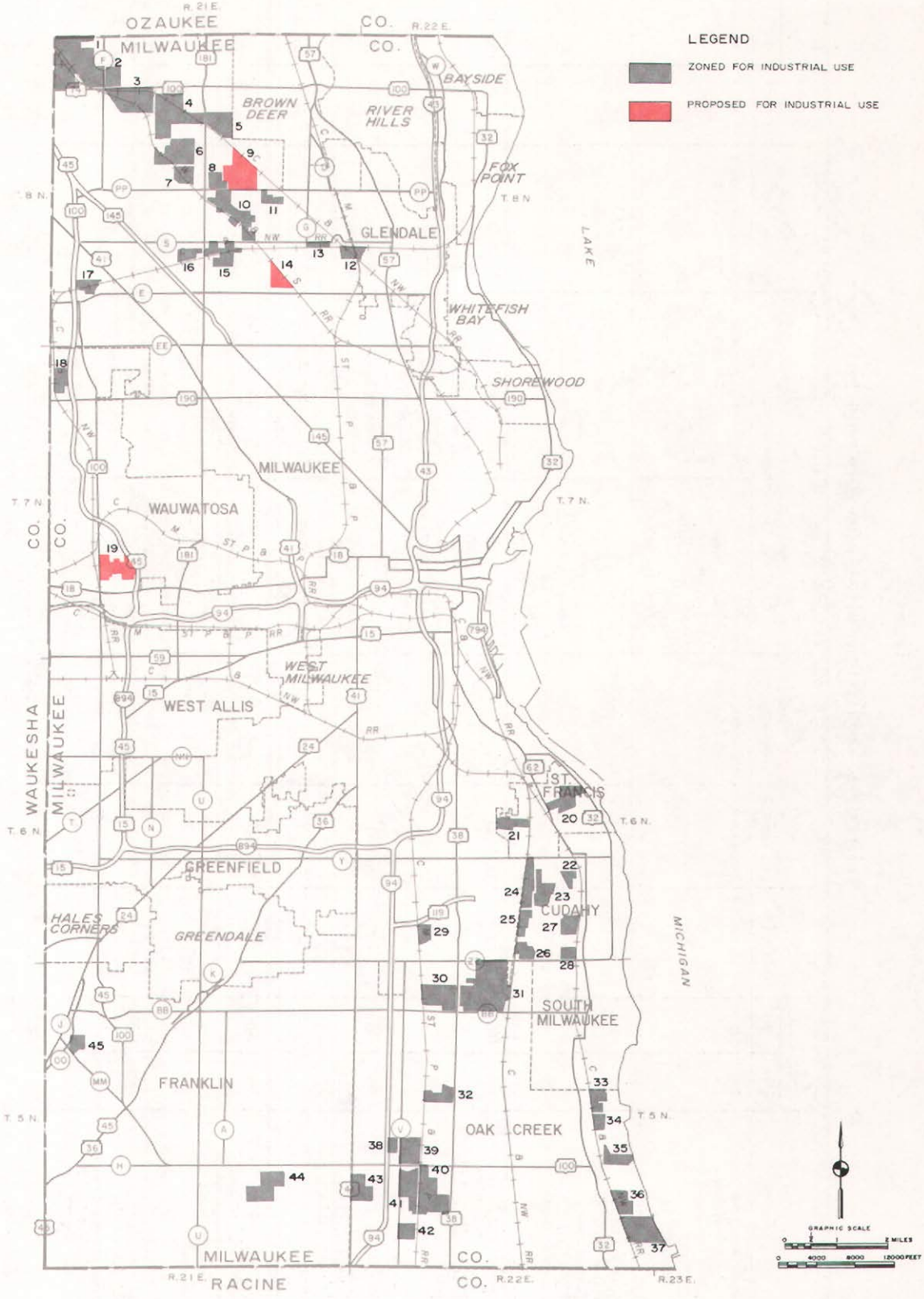
Number on Map C-1	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	North of STH 158 East of C&NW Railway City of Kenosha T2N R22 E, Sections 33/34	175	135[a]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 3 miles - IH 94 Adjacent - STH 158 Rail: Adjacent - C&NW 0.25 mile - CMStP&P	Airport: 1 mile - Kenosha 24 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	75% Agricultural 25% Residential	4 - 6	100-year floodplain Wetlands	30
2	South of STH 158 East of C&NW Railway Town of Somers T2N R22E, Sections 33/34	125	125	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 3 miles - IH 94 Adjacent - STH 158 Rail: Adjacent - C&NW 0.25 mile - CMStP&P	Airport: 1 mile - Kenosha 24 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	75% Agricultural 25% Residential	1 - 3	--	--
3	South of STH 50 West of C&NW Railway Town of Pleasant Prairie T1N R22E, Section 9	190	160	III	Industrial	Sewer - 0.5 mile Water - 0.5 mile	Existing Freeway/Highway: 2.5 miles - IH 94 Adjacent - STH 50 Rail: Adjacent - C&NW/ CMStP&P	Airport: 2.5 miles - Kenosha 25 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	40% Agricultural 25% Utility 15% Industrial 10% Residential 10% Open Land	1 - 3	100-year floodplain	30
4	West of CTH H South of CTH C Town of Pleasant Prairie T1N R22 E, Sections 8/17	95	90	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1.5 miles - IH 94 1 mile - STH 50 Rail: 1 mile - C&NW/ CMStP&P	Airport: 2.5 miles - Kenosha 25 miles - Mitchell Field Proposed Freeway/Highway: 1.5 miles - Lake Arterial	50% Agricultural 40% Residential 10% Industrial	1 - 3	Wetlands	5
5	East of CTH H North of CTH Q Town of Pleasant Prairie T1N R22E, Section 21	360	360	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 3 miles - IH 94 0.5 mile - STH 31 Rail: Adjacent - C&NW/ CMStP&P	Airport: 4 miles - Kenosha 28 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	75% Agricultural 25% Utility	4 - 6	--	--
6	East of CTH H South of CTH Q Town of Pleasant Prairie T1N R22E, Section 28	480	470	III	Nonindustrial	Sewer - Adjacent Water - 0.5 mile	Existing Freeway/Highway: 3 miles - IH 94 0.5 mile - STH 31 Rail: Adjacent - C&NW 0.25 mile - CMStP&P	Airport: 5 miles - Kenosha 29 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	100% Agricultural	7 +	Wetlands Very severe soils	10

[a] *Excludes 10 acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC.

Map C-2

LOCATION OF SUITABLE INDUSTRIAL SITES IN MILWAUKEE COUNTY



Source: SEWRPC.

Table C-2

POTENTIAL INDUSTRIAL SITES: MILWAUKEE COUNTY

Number on Map C-2	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	North of Brown Deer Road East of Boundary Road City of Milwaukee T8N R21E, Section 6	460	330	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 74 1.5 miles - USH 41/45 Rail: Onsite - WSOR/C&NW	Airport: 4.5 miles - Timmerman Field 21 miles - Mitchell Field Proposed	40% Industrial 40% Agricultural 10% Open Land 10% Residential	7 +	Wetlands Steep slope 100-year floodplain	130
2	North of Brown Deer Road East of 107th Street City of Milwaukee T8N R21E, Section 5	50	30	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 100 2 miles - USH 41/45 Rail: 0.1 mile - WSOR 0.1 mile - C&NW	Airport: 4.5 miles - Timmerman Field 21 miles - Mitchell Field	50% Open Land 25% Natural Area 20% Agricultural 5% Industrial	1 - 3	Primary environmental corridor Wetlands	20
3	South of Brown Deer Road East of Granville Road City of Milwaukee T8N R21E, Section 8	280	215	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 100 2 miles - USH 41/45 Rail: Onsite - WSOR/C&NW	Airport: 4 miles - Timmerman Field 20 miles - Mitchell Field	60% Residential 20% Agricultural 10% Commercial 10% Natural Area	7 +	Primary environmental corridor Wetlands 100-year floodplain	65
4	North of Bradley Road East of 91st Street City of Milwaukee T8N R21E, Section 9	290	265[a]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 181 2 miles - USH 41/45 Rail: Onsite - C&NW	Airport: 4 miles - Timmerman Field 19 miles - Mitchell Field	30% Industrial 30% Open Land 20% Residential 20% Commercial	7 +	Steep slope	20
5	North of Bradley Road East of 76th Street City of Milwaukee T8N R21E, Section 10	130	130	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 181 3 miles - USH/45 Rail: Adjacent - C&NW	Airport: 5 miles - Timmerman Field 19 miles - Mitchell Field	50% Residential 30% Industrial 20% Open Land	7 +	--	--
6	South of Bradley Road East of 91st Street City of Milwaukee T8N R21E, Section 16	190	145[b]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.25 - mile - STH 181 2 miles - USH 41/45 Rail: Onsite - WSOR	Airport: 3 miles - Timmerman Field 18 miles - Mitchell Field	60% Residential 20% Industrial 20% Open Land	7 +	Wetlands	5
7	South of Calumet Road West of 79th Street City of Milwaukee T8N R21E, Section 16	80	70[c]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 181 2 miles - USH 41/45 Rail: Onsite - WSOR	Airport: 3 miles - Timmerman Field 18 miles - Mitchell Field	80% Industrial 20% Residential	4 - 6	Wetlands	5
8	North of Good Hope Road East of 76th Street City of Milwaukee T8N R21E, Section 15	65	65	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - STH 181 2 miles - USH 41/45 Rail: 0.25 mile - WSOR	Airport: 3.5 miles - Timmerman Field 18 miles - Mitchell Field	30% Commercial 25% Industrial 25% Recreational 20% Open Land	7 +	--	--
9	North of Good Hope Road West of 60th Street City of Milwaukee T8N R21E, Section 15	240	240	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 181 2.5 miles - USH 41/45 Rail: Adjacent - C&NW	Airport: 3.5 miles - Timmerman Field 18 miles - Mitchell Field	30% Industrial 25% Agricultural 25% Open Land 20% Residential	1 - 3	--	--
10	North of Mill Road West of 60th Street City of Milwaukee T8N R21E, Section 22	205	205	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 181 2 miles - USH 41/45 Rail: Onsite - WSOR	Airport: 3 miles Timmerman Field 17 miles - Mitchell Field	45% Residential 25% Industrial 20% Commercial 10% Open Land	7 +	--	--

Table C-2 (continued)

Number on Map C-2	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
11	South of Good Hope Road East of 58th Street City of Milwaukee T8N R21E, Section 23	40	40	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 181 3 miles - IH 43 Rail: 0.1 mile - C&NW	Airport: 4.5 miles - Timmerman Field 18 miles - Mitchell Field	50% Open Land 40% Industrial 10% Commercial	4 - 6	--	--
12	South of C&NW East of Teutonia Avenue City of Milwaukee-Glendale T8N R21/22E, Sections 25/30	65	65	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 57 1.5 miles - IH 43 Rail: Onsite - CMStP&P/C&NW	Airport: 5 miles - Timmerman Field 17 miles - Mitchell Field	55% Industrial 20% Commercial 20% Open Land 5% Utility	4 - 6	--	--
13	South of Mill Road East of Sherman Boulevard City of Milwaukee T8N R21E, Section 25	40	40	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 57 2 miles - IH 43 Rail: Onsite - C&NW	Airport: 4.5 miles - Timmerman Field 16 miles - Mitchell Field	75% Industrial 20% Open Land 5% Residential	7 +	--	--
14	North of Silver Spring Drive East of 55th Street City of Milwaukee T8N R21E, Section 26	80	55	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1.5 miles - STH 145 2.5 miles - IH 43 Rail: Adjacent - WSOR	Airport: 2.5 miles - Timmerman Field 16 miles - Mitchell Field	45% Open Land 25% Institutional 20% Industrial 10% Residential	1 - 3	100-year floodplain	25
15	South of Mill Road East of 76th Street City of Milwaukee T8N R21E, Section 27	130	130	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 181 1 mile - STH 145 Rail: Onsite - C&NW	Airport: 2 miles - Timmerman Field 15 miles - Mitchell Field	50% Residential 40% Industrial 5% Commercial 5% Utility	7 +	--	--
16	South of Bender Avenue East of 84th Street City of Milwaukee T8N R21E, Section 28	45	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 181 0.5 mile - STH 145 Rail: Adjacent - C&NW	Airport: 2 miles - Timmerman Field 15 miles - Mitchell Field	45% Industrial 45% Residential 10% Utility	1 - 3	--	--
17	North of Silver Spring Drive East of Lovers Lane Road City of Milwaukee T8N R21E, Section 30	50	35[d]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - USH 45 0.25 mile - USH 41 Rail: Onsite - C&NW	Airport: 1 mile - Timmerman Field 15 miles - Mitchell Field	35% Industrial 25% Natural Area 20% Open Land 20% Residential	4 - 6	Primary environmental corridor Wetland Steep slope	10
18	North of Capitol Drive West of USH 45 City of Wauwatosa T7N R21E, Section 6	50	50	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - USH 45 0.5 mile - STH 190 Rail: Adjacent - C&NW	Airport: 1 mile - Timmerman Field 15 miles - Mitchell Field	70% Transportation 25% Industrial 5% Utility	4 - 6	--	--
19	South of Watertown Plank Road East of Mayfair Road City of Wauwatosa T7N R21E, Section 29	150	150	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - USH 45 0.25 mile - USH 18 Rail: 0.1 mile - CMStP&P/C&NW	Airport: 5 miles - Timmerman Field 13 miles - Mitchell Field	30% Institutional 25% Transportation 25% Residential 20% Commercial	1 - 3	--	--

Table C-2 (continued)

Number on Map C-2	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
20	North of Thompson East of Kinnickinnic Avenue City of St. Francis T6N R22E, Sections 14/15/22/23	115	105	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 32 2 miles - IH 94 Rail: 0.1 mile - C&NW	Airport: 2 miles - Mitchell Field	40% Residential 25% Institutional 20% Industrial 15% Natural Area	1 - 3	Primary environmental corridor Wetlands	10
21	North of Bolivar Avenue East of Clement Avenue City of St. Francis T6N R22E, Sections 21/22	55	55	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 38 1.25 miles - IH 94 Rail: Adjacent - C&NW	Airport: 1 mile - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	50% Residential 30% Industrial 20% Transportation	7 +	--	--
22	South of Carpenter Avenue Extended East of Whitnall Avenue City of Cudahy T6N R22E, Section 26	40	35	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 62 3 miles - IH 94 Rail: 0.1 mile - C&NW	Airport: 1 mile - Mitchell Field	75% Industrial 15% Commercial 10% Residential	4 - 6	Wetland	5
23	North of Grange Avenue East of Pennsylvania Avenue City of Cudahy T6N R22E, Section 27	115	110	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 62 2.5 miles - IH 94 Rail: 0.25 mile - C&NW	Airport: 1 mile - Mitchell Field	80% Residential 15% Open Land 5% Transportation	7 +	Wetlands	5
24	North of Grange Avenue West of Pennsylvania Avenue City of Cudahy T6N R22E, Section 27	110	105	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 62 2.5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 1 mile - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	40% Transportation 30% Residential 30% Open Land	7 +	Wetlands	5
25	South of Grange Avenue West of Pennsylvania Avenue City of Cudahy T6N R22E, Section 34	60	45[e]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 62 2.5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 1 mile - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	50% Industrial 25% Transportation 25% Residential	7 +	Wetlands 100-year floodplain	10
26	North of College Avenue West of Pennsylvania Avenue City of Cudahy T6N R22E, Section 34	50	45[f]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 38 2 miles - IH 94 Rail: Adjacent - C&NW	Airport - 1 mile - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	35% Industrial 35% Transportation 15% Residential 15% Open Land	7 +	--	--
27	North of Ramsey Avenue East of Barland Avenue City of Cudahy T6N R22E, Section 35	80	65	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - STH 62 3.5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 3 miles - Mitchell Field	50% Residential 45% Industrial 5% Recreational	1 - 3	Wetlands 100-year floodplain	15
28	North of College Avenue East of Barland Avenue City of Cudahy T6N R22E, Section 35	45	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - STH 62 3 miles - IH 94 Rail: Adjacent - C&NW	Airport - 2 miles - Mitchell Field	35% Commercial 30% Residential 30% Open Land 5% Industrial	4 - 6	--	--

Table C-2 (continued)

Number on Map C-2	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
29	South of STH 119 West of 6th Street City of Milwaukee T6N R22E, Section 32	60	60	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 38 1 mile - IH 94 Rail: Adjacent - CMStP&P	Airport: 0.5 mile - Mitchell Field	50% Industrial 50% Transportation	1 - 3	--	--
30	North of Rawson Avenue West of Howell Avenue City of Oak Creek T5N R22E, Section 5	180	150[g]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 38 0.5 mile - IH 94 Rail: Adjacent - CMStP&P	Airport: 1 mile - Mitchell Field	30% Industrial 30% Institutional 25% Commercial 15% Open Land	7 +	Wetlands Very severe soils	20[h]
31	South of College Avenue East of Howell Avenue City of Oak Creek T5N R22E, Section 4	470	465[i]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 38 1.25 miles - IH 94 Rail: Adjacent - C&NW	Airport - 1 mile - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	40% Open Land 30% Residential 25% Transportation 5% Industrial	7 +	--	--
32	South of Forest Hill Avenue West of Howell Avenue City of Oak Creek T5N R22E, Section 17	60	55[j]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 38 2 miles - IH 94 Rail: Adjacent - CMStP&P	Airport: 3 miles - Mitchell Field	50% Agricultural 25% Industrial 25% Residential	4 - 6	--	--
33	North of Puetz Road West of 5th Avenue City of Oak Creek T5N R22E, Section 14	65	50[k]	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 32 4 miles - IH 94 Rail: Adjacent - C&NW	Airport: 7 miles - Mitchell field	40% Residential 30% Industrial 15% Open Land 15% Utility	7 +	Wetlands	10
34	South of Puetz Road West of 5th Avenue City of Oak Creek T5N R22E, Section 23	45	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 32 4 miles - IH 94 Rail: Adjacent - C&NW	Airport: 7 miles - Mitchell Field	40% Open Land 20% Industrial 20% Residential 20% Utility	1 - 3	--	--
35	North of Ryan Road East of 5th Avenue City of Oak Creek T5N R22E, Section 24	80	50	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway 0.25 mile - STH 32 4 miles - IH 94 Rail: 0.1 mile - C&NW	Airport: 8 miles - Mitchell Field	50% Open Land 25% Industrial 15% Water 10% Agricultural	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	30
36	North of Oakwood Road East of C&NW Railway City of Oak Creek T5N, R22E, Section 25	90	80[l]	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: 0.25 mile - STH 32 5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 8 miles - Mitchell Field	60% Open Land 35% Agricultural 5% Natural Area	1 - 3	Steep slope	5

Table C-2 (continued)

Number on Map C-2	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
37	North of Elm Road East of C&NW Railway City of Oak Creek T5N R22E, Section 36	200	120	III	Industrial	Sewer - 0.5 mile Water - 0.25 mile	Existing Freeway/Highway: 0.25 mile - STH 32 5.5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 9 miles - Mitchell Field	65% Open Land 25% Water 10% Residential	7 +	Primary environmental corridor Very severe soils	80
38	North of Ryan Road East of IH 94 City of Oak Creek T5N R22E, Section 19	40	40	II	Industrial	Sewer - Adjacent Water - Onsite	Existing Freeway/Highway: 0.1 mile - STH 100 Adjacent - IH 94 Rail: 0.5 mile - CMStP&P	Airport: 6 miles - Mitchell Field	50% Agricultural 25% Commercial 25% Transportation	1 - 3	--	--
39	North of Ryan Road East of 13th Street City of Oak Creek T5N R22E, Section 20	125	115	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 100 Adjacent - IH 94 Rail: Adjacent - CMStP&P	Airport: 6 miles - Mitchell Field	50% Agricultural 25% Open Land 15% Commercial 5% Residential 5% Natural Area	4 - 6	100-year floodplain Steep slope	10
40	South of Ryan Road East of CMStP&P Railroad City of Oak Creek T5N R22E, Section 29	235	210	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 100 0.5 mile - IH 94 Rail: Adjacent - CMStP&P	Airport: 6 miles - Mitchell Field	75% Agricultural 15% Residential 10% Industrial	7 +	Wetlands Very severe soils Steep slope 100-year floodplain	25
41	South of Ryan Road West of CMStP&P Railroad City of Oak Creek T5N R22E, Section 29	155	125	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - STH 100 0.1 mile - IH 94 Rail: Adjacent - CMStP&P	Airport: 6 miles - Mitchell Field	85% Agricultural 15% Residential	4 - 6	Wetlands Very severe soils Steep slope 100-year floodplain	30
42	North of Elm Road Extended East of 13th Street City of Oak Creek T5N R22E, Section 32	55	50	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 38 1.5 miles - IH 94 Rail: Adjacent - CMStP&P	Airport: 7 miles - Mitchell Field	40% Agricultural 25% Industrial 25% Natural Area 10% Residential	1 - 3	Primary environmental corridor Wetland	5
43	North and South of South Branch Boulevard East of 27th Street City of Oak Creek T5N R22E, Section 30	125	115[m]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - USH 41 0.25 mile - IH 94 Rail: 1 mile - CMStP&P	Airport: 6 miles - Mitchell Field	25% Residential 25% Agricultural 25% Open Land 20% Industrial 5% Commercial	7 +	100-year floodplain	5
44	South of Airways Avenue East of 60th Street City of Franklin T5N R21E, Section 26	185	180	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 100 2 miles - IH 94 Rail: 3 miles - CMStP&P	Airport: 8 miles - Mitchell Field	65% Agricultural 30% Industrial 5% Residential	1 - 3	Wetlands	5
45	Northeast of CTH MM East of Forest Home City of Franklin T5N R21E, Section 7	50	40	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - USH 45 6.5 miles - IH 94 Rail: 7 miles - CMStP&P	Airport: 9 miles - Mitchell Field	75% Residential 25% Open Land	1 - 3	Wetlands Very severe soils	10

[a] *Excludes five acres of development as of 1984.*

[b] *Excludes 40 acres of development as of 1984.*

[c] *Excludes five acres of development as of 1984.*

[d] *Excludes five acres of development as of 1984.*

[e] *Excludes five acres of development as of 1984.*

[f] *Excludes five acres of development as of 1984.*

[g] *Excludes 10 acres of development as of 1984.*

[h] *Though no acreage was accounted for, it should be noted that the Oak Creek channel adjacent to S. 6th Street bisects the west portion of the site.*

[i] *Excludes five acres of development as of 1984.*

[j] *Excludes five acres of development as of 1984.*

[k] *Excludes five acres of development as of 1984.*

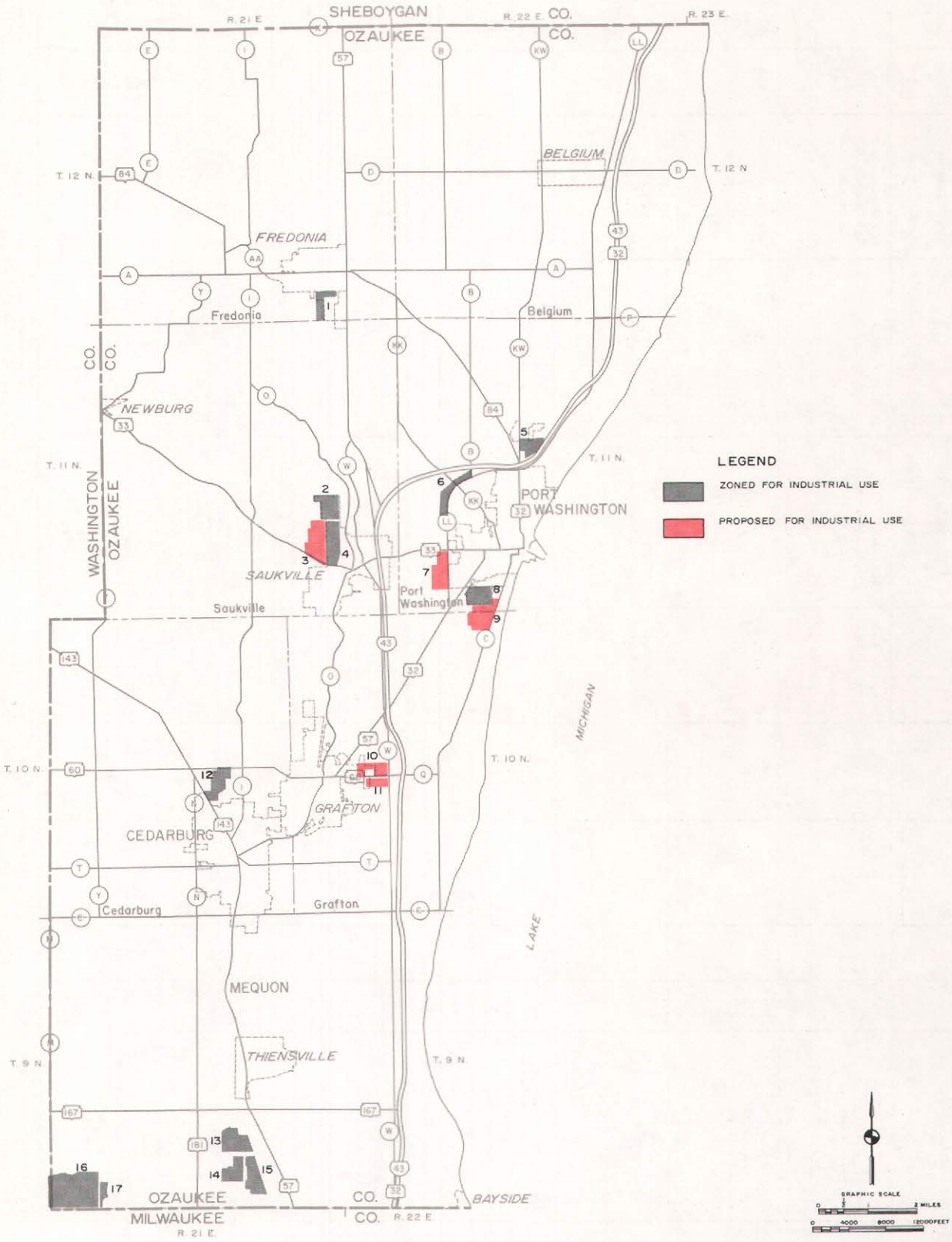
[l] *Excludes five acres of development as of 1984.*

[m] *Excludes five acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC

Map C-3

LOCATION OF SUITABLE INDUSTRIAL SITES IN OZAUKEE COUNTY



Source: SEWRPC.

Table C-3

POTENTIAL INDUSTRIAL SITES: OZAUKEE COUNTY

Number on Map C-3	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	North of Meadow Lark Road West of Milwaukee Road Town and Village of Fredonia T12N R22E, Section 35	80	70	II	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.5 mile - STH 57 6 miles - IH 43 Rail: Adjacent - CMStP&P	Airport: 12 miles - West Bend 40 miles - Mitchell Field	50% Agricultural 40% Natural Area 10% Residential	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	10
2	North of Cold Springs Road West of CMStP&P Railroad Village of Saukville T11N R21E, Section 23	145	110[a]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 33 2 miles - IH 43 Rail: Adjacent - CMStP&P	Airport: 9 miles - West Bend 32 miles - Mitchell Field	90% Agricultural 10% Natural Area	1 - 3	Wetlands Very severe soils Steep slope	25
3	North of STH 33 West of Village of Saukville Town of Saukville T11N R21E, Section 26	170	150	III	Nonindustrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: Adjacent - STH 33 1.5 miles - IH 43 Rail: 0.25 mile - CMStP&P	Airport: 9 miles - West Bend 32 miles - Mitchell Field	75% Agricultural 25% Natural Area	4 - 6	Wetlands Very severe soils	20
4	South of Cold Springs Drive East and West of Progress Road Village of Saukville T11N R21E, Section 26	175	175	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.1 mile - STH 33 1 mile - IH 43 Rail: Adjacent - CMStP&P	Airport: 9 miles - West Bend 32 miles - Mitchell Field	40% Agricultural 40% Residential 20% Industrial	1 - 3	--	--
5	North of Highland Drive East of CTH KW Town of Port Washington T11N R22E, Section 16	80	80	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: Adjacent - STH 84 Adjacent - IH 43 Rail: 0.25 mile - C&NW	Airport: 14 miles - West Bend 34 miles - Mitchell Field	45% Agricultural 45% Transportation 10% Industrial	1 - 3	--	--
6	South of IH 43 North and West of CTH LL Town of Port Washington T11N R22E, Sections 19/20	110	105	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 0.75 mile - STH 33 Adjacent - IH 43 Rail: 0.5 mile - C&NW	Airport: 13 miles - West Bend 33 miles - Mitchell Field	80% Agricultural 20% Residential	4 - 6	Steep slope	5
7	South of STH 33 West of CTH LL Town of Port Washington T11N R22E, Sections 30/31	145	135	III	Nonindustrial	Sewer - 0.1 mile Water - 0.1 mile	Existing Freeway/Highway: Adjacent - STH 33 1 mile - IH 43 Rail: 0.5 mile - C&NW	Airport: 11 miles - West Bend 32 miles - Mitchell Field	90% Agricultural 10% Residential	4 - 6	Steep slope	10
8	South of CTH CC East of C&NW Railway City of Port Washington T11N R22E, Section 32	100	80[b]	II	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 32 2 miles - IH 43 Rail: Adjacent - C&NW	Airport: 11.5 miles - West Bend 32.5 miles - Mitchell Field	30% Agricultural 30% Natural Area 25% Open Land 15% Industrial	1 - 3	Wetlands Steep slope	15

Table C-3 (continued)

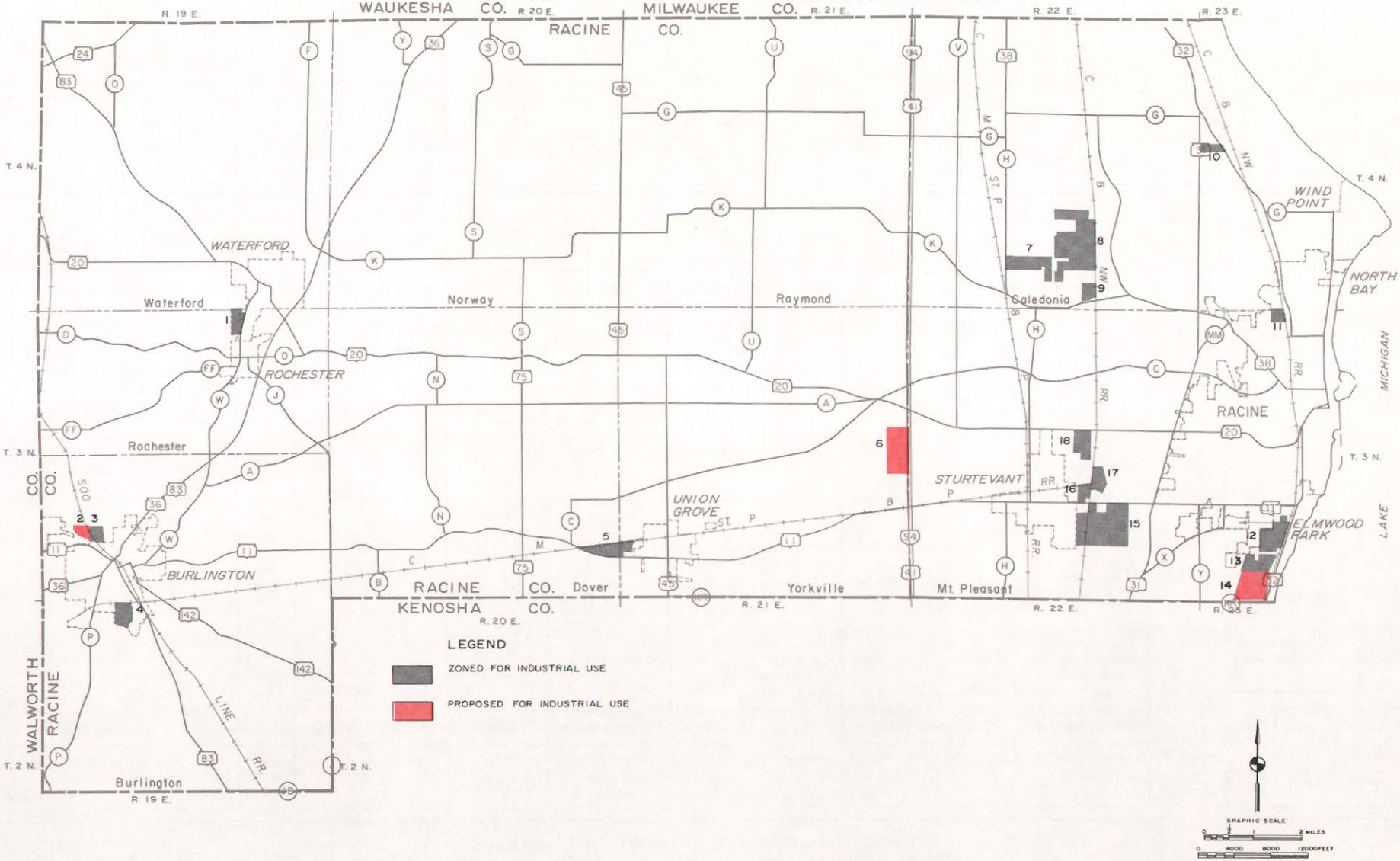
Number on Map C-3	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
9	West of CTH C 0.25 mile South of CTH CC Towns of Port Washington and Grafton T11N R22E, Section 32 T10 N R22E, Sections 3/4	150	145	III	Nonindustrial	Sewer - 0.1 mile Water - 0.1 mile	Existing Freeway/Highway: 0.5 mile - STH 32 2.5 miles - IH 43 Rail: 0.5 mile - C&NW	Airport: 11.5 miles - West Bend 32.5 miles - Mitchell Field	70% Agricultural 25% Natural Area 5% Residential	7 +	Wetlands Very severe soils	5
10	North of STH 60 West of CTH W Town of Grafton T10N R22E, Section 18	75	75	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 60 0.25 mile - IH 43 Rail: 0.5 mile - C&NW	Airport: 13 miles - West Bend 27 miles - Mitchell Field	65% Agricultural 15% Institutional 5% Natural Area 15% Industrial	1 - 3	--	--
11	South of STH 60 West of CTH W Town of Grafton T10N R22E, Section 19	75	75	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 60 0.25 mile - IH 43 Rail: 0.5 mile - C&NW	Airport: 13 miles - West Bend 27 miles - Mitchell Field	80% Agricultural 20% Industrial	1 - 3	--	--
12	South of STH 60 East of STH 143 Town of Cedarburg T10N R21E, Section 22	110	105	III	Industrial	Sewer - 0.1 mile Water - 0.1 mile	Existing Freeway/Highway: Adjacent - STH 60 3.5 miles - IH 43 Rail: 2 miles - CMStP&P	Airport: 11 miles - West Bend 26 miles - Mitchell Field	45% Industrial 30% Agricultural 15% Residential 5% Recreational 5% Transportation	1 - 3	Wetlands	5
13	North of Donges Bay Road West of CMStP&P Railroad City of Mequon T9N R21E, Sections 26/27	135	135	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 0.25 mile - STH 57 4 miles - IH 43 Rail: Adjacent - CMStP&P	Airport: 11 miles - Timmerman Field 20 miles - Mitchell Field	70% Agricultural 20% Industrial 10% Institutional	7 +	--	--
14	South of Donges Bay Road West of Baehr Road City of Mequon T9N R21E, Section 34	130	120	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 0.5 mile - STH 57 4 miles - IH 43 Rail: 0.25 mile - CMStP&P	Airport: 11 miles - Timmerman Field 20 miles - Mitchell Field	40% Agricultural 30% Residential 15% Industiral 15% Natural Area	1 - 3	Wetlands	10
15	South of Donges Bay Road East of Baehr Road City of Mequon T9N R21E, Section 35	125	85	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 0.25 mile - STH 57 4 miles - IH 43 Rail: Adjacent - CMStP&P	Airport: 11 miles - Timmerman Field 20 miles - Mitchell Field	35% Residential 35% Agricultural 30% Industrial	1 - 3	Wetlands 100-year floodplain	40
16	North of County Line Road West of Granville Road City of Mequon T9N R21E, Section 31	435	400	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 1.5 miles - STH 167 3 miles - USH 41/45 Rail: Adjacent - C&NW Adjacent - WSOR	Airport: 5 miles - Timmerman Field 24 miles - Mitchell Field	80% Agricultural 20% Industrial	7 +	Wetlands Very severe soils	35
17	North of County Line Road East of Granville Road City of Mequon T9N R21E, Section 32	45	40	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 1.5 miles - STH 167 4 miles - USH 41/45 Rail: 1 mile - C&NW 1 mile - WSOR	Airport: 5 miles - Timmerman Field 24 miles - Mitchell Field	80% Agricultural 15% Natural Area 5% Residential	7 +	100-year floodplain	5

[a] *Excludes 10 acres of development as of 1984.*

[b] *Excludes five acres of development as of 1984.*

Map C-4

LOCATION OF SUITABLE INDUSTRIAL SITES IN RACINE COUNTY



Source: SEWRPC.

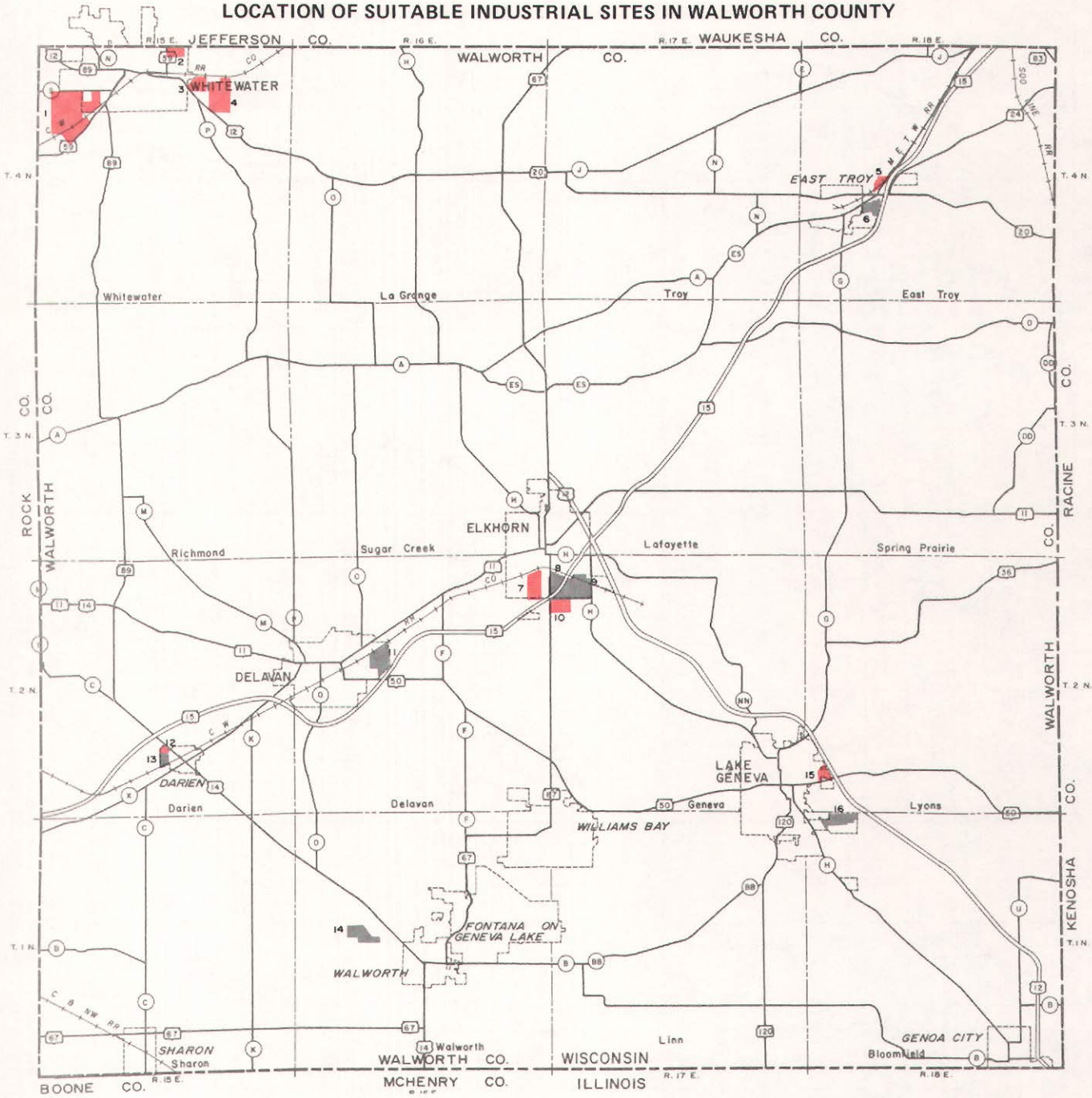
Table C-4

POTENTIAL INDUSTRIAL SITES: RACINE COUNTY

Number on Map C-4	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	West of CTH W South of Bakke Avenue Village of Waterford T3N R19E, Section 2	70	45[a]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 1 mile - STH 83/36 1.5 miles - STH 20 Rail: 4 miles - Soo Line	Airport: 7.5 miles - Burlington- 20 miles - Mitchell Field	25% Agricultural 25% Residential 15% Industrial 10% Commercial 25% Natural Area	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	20
2	West of Soo Line Railroad North of Echo Lake Town of Burlington T3N R19E, Section 30	35	30	III	Nonindustrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 0.75 mile - STH 83/36 1 mile - STH 11 Rail: Adjacent - Soo Line	Airport: 2 miles - Burlington 27 miles - Mitchell Field	50% Water 30% Natural Area 10% Open Land 10% Agricultural	1 - 3	Primary environmental corridor	5
3	West of Honey Lake Road North of Echo Lake Town of Burlington T3N R19E, Section 29	45	35	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 0.5 mile - STH 83/36 1 mile - STH 11 Rail: Onsite - Soo Line	Airport: 1.5 miles - Burlington 27 miles - Mitchell Field	25% Water 25% Natural Area 25% Agricultural 15% Recreational 10% Residential	1 - 3	Primary environmental corridor	10
4	South of CMStP&P Railroad West of STH 83 City of Burlington T2N R19E, Section 5	100	55[b]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.5 mile - STH 83 1.5 miles - STH 142 Rail: Adjacent - CMStP&P	Airport: 3 miles - Burlington 30 miles - Mitchell Field	50% Natural Area 35% Industrial 15% Residential	1 - 3	Primary environmental corridor Wetlands Steep slope 100-year floodplain	25
5	North of STH 11 West of Village of Union Grove Towns of Dover and Yorkville T3N R20E, Sections 25/26 T3N R21E, Sections 30/31	160	150	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: Adjacent - STH 11 0.5 mile - USH 45 Rail: Adjacent - CMStP&P	Airport: 11 miles - Burlington 24 miles - Mitchell Field	55% Agricultural 30% Institutional 10% Residential 5% Industrial	1 - 3	Wetlands	10
6	North of 56th Road West of IH 94 Town of Yorkville T3N R21E, Sections 13/24	300	295	III	Nonindustrial	Sewer - 0.5 mile Water - Not Available	Existing Freeway/Highway: Adjacent - IH 94 0.25 - mile - STH 20 Rail: 0.5 mile - CMStP&P	Airport: 8 miles - Racine 18 miles - Mitchell Field	50% Agricultural 40% Transportation 10% Recreational	4 - 6	Wetlands Very severe soils	5
7	East of CTH H North of Dunkelow Road Town of Caledonia T4N R22E, Section 33	180	180	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 2.5 miles - IH 94 1.5 miles - STH 38 Rail: 0.1 mile - CMStP&P	Airport: 4 miles - Racine 15 miles - Mitchell Field	80% Agricultural 10% Residential 10% Industrial	7 +	--	--
8	South of 4 Mile Road East of Nicholson Road Town of Caledonia T4N R22E, Sections 27/34	600	600	II	Industrial	Sewer - Onsite Water - Not Available	Existing Freeway/Highway: 0.25 mile - STH 38 4 miles - IH 94 Rail: Adjacent - C&NW	Airport: 4 miles - Racine 14 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	80% Agricultural 10% Residential 10% Industrial	7 +	--	--

Map C-5

LOCATION OF SUITABLE INDUSTRIAL SITES IN WALWORTH COUNTY



LEGEND

ZONED FOR INDUSTRIAL USE

PROPOSED FOR INDUSTRIAL USE

Source: SEWRPC.

Table C-4 (continued)

Number on Map C-4	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
9	South of Dunkelow Road West of C&NW Railway Town of Caledonia T4N R22E, Section 34	60	60	II	Industrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: 0.5 mile - STH 38 4 miles - IH 94 Rail: Adjacent - C&NW	Airport: 3 miles - Racine 15 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	60% Agricultural 25% Residential 15% Industrial	1 - 3	--	--
10	South of Harvest Lane East of STH 31 Town of Caledonia T4N R23E, Section 18	40	40	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 31/32 8 miles - IH 94 Rail: 0.25 miles - C&NW	Airport: 3 miles - Racine 12 miles - Mitchell Field	55% Residential 40% Agricultural 5% Industrial	1 - 3	--	--
11	South of Melvin Avenue East of Mt. Pleasant Street City of Racine T3N R23E, Section 5	50	35	I	Industrial	Sewer - Onsite Water - Onste	Existing Freeway/Highway: 0.25 mile - STH 32 8 miles - IH 94 Rail: Adjacent - C&NW	Airport: Adjacent - Racine 17 miles - Mitchell Field	75% Residential 20% Industrial 5% Transportation	1 - 3	City Park Detention Pond	15
12	North of Chickory Road West of STH 32 Town of Mt. Pleasant T3N R23E, Section 29	185	185	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 32 8 miles - IH 94 Rail: Adjacent - C&NW	Airport: 6 miles - Racine 22 miles - Mitchell Field	70% Residential 20% Agricultural 10% Industrial	1 - 3	--	--
13	South of Chickory Road West of STH 32 Town of Mt. Pleasant T3N R23E, Sections 31/32	130	130	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 32 8 miles - IH 94 Rail: 0.25 mile - C&NW	Airport: 7 miles - Racine 23 miles - Mitchell Field	75% Agricultural 20% Residential 5% Industrial	7 +	--	--
14	North of CTH KR West of STH 32 Town of Mt. Pleasant T3N R23E, Sections 31/32	220	210	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 32 8 miles - IH 94 Rail: Adjacent - C&NW	Airport: 8 miles - Racine 24 miles - Mitchell Field	75% Agricultural 25% Residential	7 +	Wetlands 100-year floodplain	10
15	South of STH 11 East and West of Pike River Town of Mt. Pleasant T3N R22E, Sections 26/27	520	445	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 11 4 miles - IH 94 Rail: Onsite - C&NW	Airport: 6 miles - Racine 21 miles - Mitchell Field Proposed Freeway/Highway: Onsite - Lake Arterial	70% Agricultural 20% Residential 10% Industrial	7 +	Wetlands 100-year floodplain	75
16	North of STH 11 West of Willow Road Town of Mt. Pleasant T3N R22E, Section 22	55	40	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 11 3.5 miles - IH 94 Rail: Adjacent - C&NW	Airport: 5 miles - Racine 21 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	75% Industrial 25% Agricultural	1 - 3	100-year floodplain	15
17	North of STH 11 East of Willow Road Town of Mt. Pleasant T3N R22E, Sections 22/23	85	70	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 11 4 miles - IH 94 Rail: Adjacent - C&NW	Airport: 5 miles - Racine 21 miles - Mitchell Field Proposed Freeway/Highway: Adjacent - Lake Arterial	90% Industrial 5% Natural Area 5% Agricultural	1 - 3	100-year floodplain	15
18	South of STH 20 West of Willow Road Town of Mt. Pleasant T3N R22E, Sections 15/22	125	85	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 20 3.5 miles - IH 94 Rail: 0.25 mile - C&NW	Airport: 4 miles - Racine 20 miles - Mitchell Field Proposed Freeway/Highway: 0.25 mile - Lake Arterial	50% Industrial 25% Residential 25% Agricultural	1 - 3	Very severe soils 100-year floodplain	40

[a] *Excludes five acres of development as of 1984.*

[b] *Excludes 20 acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC.

Table C-5

POTENTIAL INDUSTRIAL SITES: WALWORTH COUNTY

Number on Map C-5	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	South of CTH S West of STH 59 City and Town of Whitewater T4N R15E, Sections 7/8/18	605	600	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 59 0.5 mile - STH 89 Rail: Onsite - CMStP&P	Airport: 18 miles - Lake Lawn Lodge 50 miles - Mitchell Field Proposed Freeway/Highway: Onsite - STH 12	95% Agricultural 5% Residential	1 - 3	Wetlands	5
2	East of STH 59 South of Jefferson County City of Whitewater T4N R15E, Section 3	55	35	III	Nonindustrial	Sewer - Adjacent Water - 0.1 mile	Existing Freeway/Highway: Adjacent - STH 59 0.5 mile - STH 12 Rail: 0.5 mile - CMStP&P	Airport: 17.5 miles - Lake Lawn Lodge 48 miles - Mitchell Field	75% Agricultural 25% Industrial	1 - 3	Wetlands Very severe soils	20
3	South of Bluff Road West of Howard Road Town of Whitewater T4N R15E, Section 3	90	90	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 12 Rail: Adjacent - CMStP&P	Airport: 17 miles - Lake Lawn Lodge 48 miles - Mitchell Field	95% Agricultural 5% Residential	1 - 3	--	--
4	East of Howard Road North and South of Bluff Road Town of Whitewater T4N R15E, Sections 2/11	220	220	III	Nonindustrial	Sewer - 0.5 mile Water - 0.5 mile	Existing Freeway/Highway: Adjacent - STH 12 Rail: Adjacent - CMStP&P	Airport: 17 miles - Lake Lawn Lodge 48 miles - Mitchell Field	100% Agricultural	1 - 3	--	--
5	South of St. Peters Road West of East Troy Railroad Town of East Troy T4N R18E, Sections 20/21	55	55	III	Nonindustrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: 0.5 mile - STH 20 0.5 mile - STH 15 Rail: Adjacent - East Troy Railroad 4.5 miles - Soo Line	Airport: 12.5 miles - Burlington 34 miles - Mitchell Field	85% Agricultural 10% Institutional 5% Residential	1 - 3	--	--
6	South of STH 20 West of STH 15 Village of East Troy T4N R18E, Section 20	80	80	II	Industrial	Sewer - Adjacent Water - Onsite	Existing Freeway/Highway: Adjacent - STH 15 0.1 mile - STH 20 Rail: 5 miles - Soo Line 0.5 mile - East Troy Railroad	Airport: 12 miles - Burlington 34 miles - Mitchell Field	25% Open Land 35% Industrial 15% Agricultural 25% Transportation	1 - 3	--	--
7	South of CMStP&P Railroad West of STH 67 City of Elkhorn T2N R16E, Section 1	100	100	III	Nonindustrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 67 0.5 mile - STH 15 Rail: Adjacent - CMStP&P	Airport: 4 miles - Lake Lawn Lodge 40 miles - Mitchell Field	65% Agricultural 35% Industrial	1 - 3	--	--
8	South of CMStP&P Railroad West of STH 15 City of Elkhorn T2N R17E, Section 6	85	85	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 67 Adjacent - STH 15 Rail: Adjacent - CMStP&P	Airport: 3 miles - Lake Lawn Lodge 40 miles - Mitchell Field	40% Industrial 30% Transportation 20% Commercial 10% Residential	1 - 3	--	--

Table C-5 (continued)

Number on Map C-5	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
9	North and South of CMStP&P Railroad East of STH 15 City of Elkhorn T2N R17E, Section 6	225	190[a]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 15 0.5 mile - STH 12 Rail: Onsite - CMStP&P	Airport: 3 miles - Lake Lawn Lodge 40 miles - Mitchell Field	65% Agricultural 25% Transportation 5% Residential 5% Industrial	1 - 3	Open water	25
10	East of STH 67 South of STH 15 Town of Geneva T2N R17E, Section 7	75	75	III	Nonindustrial	Sewer - 0.5 mile Water - 0.1 mile	Existing Freeway/Highway: Adjacent - STH 15 Adjacent - STH 67 Rail: 0.5 mile - CMStP&P	Airport: 3 miles - Lake Lawn Lodge 40 miles - Mitchell Field	95% Agricultural 5% Transportation	1 - 3	--	--
11	South of CMStP&P Railroad West of STH 15 City of Delavan T2N R16E, Sections 16/17	135	135	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 15 0.5 mile - STH 50 Rail: Adjacent - CMStP&P	Airport: 1 mile - Lake Lawn Lodge 45 miles - Mitchell Field	35% Agricultural 35% Industrial 15% Water 15% Transportation	1 - 3	--	--
12	Southwest of STH 14 North of Madison Street Village of Darien T2N, R15E, Section 28	35	35	III	Nonindustrial	Sewer - 0.1 mile Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 14 0.1 mile - STH 15 Rail: 0.5 mile - CMStP&P	Airport: 6 miles - Lake Lawn Lodge 51 miles - Mitchell Field	85% Agricultural 10% Institutional 5% Residential	1 - 3	--	--
13	Southwest of STH 14 South of Madison Street Village of Darien T2N, R15E, Section 28	55	50[b]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway 0.1 mile - STH 14 0.25 mile - STH 15 Rail: Adjacent - CMStP&P	Airport: 6 miles - Lake Lawn Lodge 51 miles - Mitchell Field	95% Agricultural 5% Utility	1 - 3	--	--
14	South of Brick Church Road West of Six Corners Road Town of Walworth T1N R16E, Section 17	120	120	II	Industrial	Sewer - Onsite Water - 0.5 mile	Existing Freeway/Highway: 0.5 mile - STH 14 1.5 miles - STH 67 Rail: 5 miles - CMStP&P	Airport: 9 miles - Lake Lawn Lodge 55 miles - Mitchell Field	85% Agricultural 10% Industrial 5% Utility	1 - 3	--	--
15	North of STH 50 West of STH 12 City of Lake Geneva T2N R18E, Sections 30/31	50	50	III	Nonindustrial	Sewer - 0.5 mile Water - Onsite	Existing Freeway/Highway: Adjacent - STH 50 Adjacent - STH 12 Rail: 8 miles - CMStP&P 12 miles - Soo Line	Airport: 2 miles - Americana 36 miles - Mitchell Field Proposed Freeway/Highway: Onsite - STH 120	35% Agricultural 40% Transportation 25% Recreational	1 - 3	--	--
16	South of Town Line Road West of North Road City of Lake Geneva T1N R18E, Sections 5/6	100	100	III	Industrial	Sewer - 0.25 mile Water - 0.1 mile	Existing Freeway/Highway: 0.25 mile - STH 12 1 mile - STH 50 Rail: 9 miles - CMStP&P 12 miles - Soo Line	Airport: 3 miles - Americana 37 miles - Mitchell Field Proposed Freeway/Highway: Onsite - STH 120	40% Agricultural 40% Recreational 20% Natural Area	1 - 3	--	--

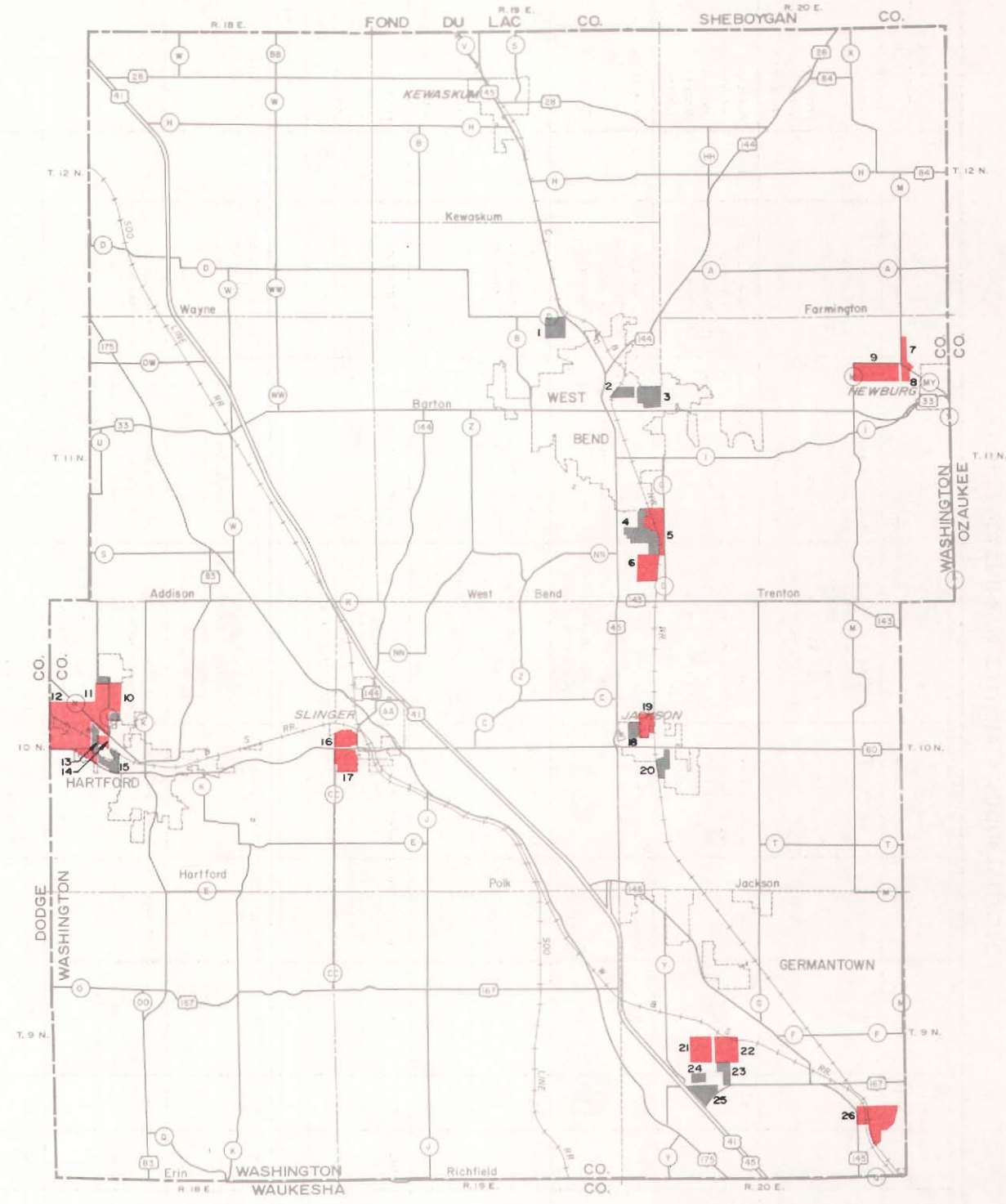
[a] *Excludes 10 acres of development as of 1984.*

[b] *Excludes five acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC.

Map C-6

LOCATION OF SUITABLE INDUSTRIAL SITES IN WASHINGTON COUNTY



LEGEND

- ZONED FOR INDUSTRIAL USE
- PROPOSED FOR INDUSTRIAL USE

GRAPHIC SCALE

Source: SEWRPC.

Table C-6

POTENTIAL INDUSTRIAL SITES: WASHINGTON COUNTY

Number on Map C-6	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	South of CTH D West of USH 45 Town of Barton T11N R19E, Section 3	150	75	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: Adjacent - USH 45 1 mile - STH 144 Rail: 0.25 mile - C&NW	Airport: 4.5 miles - West Bend 42 miles - Mitchell Field Proposed Freeway/Highway: Relocation of USH 45	40% Natural Area 35% Open Land 25% Agricultural	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	75
2	North of STH 33 West of Schmidt Road City of West Bend T11N R19E, Section 12	50	35[a]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 33 0.5 mile - USH 45 Rail: Adjacent - C&NW	Airport: 2.5 miles - West Bend 40 miles - Mitchell Field	45% Open Land 30% Industrial 15% Residential 10% Water	1 - 3	Primary environmental corridor Wetlands Steep slopes	10
3	North of STH 33 East of Schmidt Road City of West Bend T11N R19E, Section 12	110	100	II	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.25 mile - STH 33 1 mile - USH 45 Rail: 0.5 mile - C&NW	Airport: 2 miles - West Bend 40 miles - Mitchell Field	45% Open Land 30% Commercial 15% Residential 10% Industrial	1 - 3	Steep slope	10
4	South of Paradise Drive West of C&NW Railway City of West Bend T11N R19E, Section 25	170	135	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - USH 45 1 mile - STH 143 Rail: Adjacent - C&NW	Airport: 3.5 miles - West Bend 38 miles - Mitchell Field	80% Agricultural 10% Open Land 10% Natural Area	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope 100-year floodplain	35
5	South of Paradise Drive West of CTH G Town of West Bend T11N R19E, Section 25	160	130	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - USH 45 1 mile - STH 143 Rail: Adjacent - C&NW	Airport: 3.5 miles - West Bend 38 miles - Mitchell Field	95% Agricultural 5% Natural Area	4 - 6	Primary environmental corridor Wetlands Very severe soils Steep slope 100-year floodplain	30
6	South of Rusco Drive West of C&NW Railway Town of West Bend T11N R19E, Section 36	115	110	III	Nonindustrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 0.5 mile - USH 45 0.5 mile - STH 143 Rail: Adjacent - C&NW	Airport: 4.5 miles - West Bend 37 miles - Mitchell Field	85% Agricultural 15% Natural Area	1 - 3	Very severe soils Steep slope	5
7	North of CTH MY East of CTH M Town of Trenton T11N R20E, Section 1/12	50	50	III	Nonindustrial	Sewer - 0.25 mile Water - Not Available	Existing Freeway/Highway: 1 mile - STH 33 7 miles - USH 45 Rail: 6 miles - CMSTP&P 6 miles - C&NW	Airport: 4 miles - West Bend 38 miles - Mitchell Field	95% Agricultural 5% Residential	4 - 6	--	--
8	South of CTH MY East of Lovers Lane Town of Trenton T11N R20E, Section 12	40	40	III	Nonindustrial	Sewer - 0.25 mile Water - Not Available	Existing Freeway/Highway: 1 mile - STH 33 7 miles - USH 45 Rail: 6 miles - CMStP&P 6 miles - C&NW	Airport: 4 miles - West Bend 38 miles - Mitchell Fiel	90% Agricultural 5% Natural Area 5% Residential	1 - 3	--	--

Table C-6 (continued)

Number on Map C-6	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
9	South of CTH M West of Lovers Lane Town of Trenton T11N R20E, Section 11	260	245	III	Nonindustrial	Sewer - 0.5 mile Water - Not Available	Existing Freeway/Highway: 0.5 mile - STH 33 6 miles - USH 45 Rail: 5 miles - C&NW	Airport: 3 miles - West Bend 38 miles - Mitchell Field	90% Agricultural 10% Natural Area	4 - 6	Wetlands Very severe soils Steep slope	15
10	East of CTH U North of CTH N Town of Hartford T10N R18E, Sections 8/17	125	120	III	Nonindustrial Industrial	Sewer - 0.5 mile Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 60 1.5 miles - STH 83 Rail: 0.25 mile - WSOR	Airport: Adjacent - Hartford 41 miles - Mitchell Field	75% Agricultural 15% Industrial 10% Residential	4 - 6	Primary environmental corridor Wetlands Very severe soils	5
11	North of CTH N West of CTH U Town of Hartford T10N R18E, Sections 8/17/18	260	255	III	Nonindustrial Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 60 1.5 miles - STH 83 Rail: 0.25 mile - WSOR	Airport: Adjacent - Hartford 41 miles - Mitchell Field	80% Agricultural 10% Industrial 10% Transportation	7 +	Steep slope	5
12	North of STH 60 East of Dodge County City and Town of Hartford T10N R18E, Sections 18/19	580	500	III	Nonindustrial	Sewer - Onsite Water - 0.25 mile	Existing Freeway/Highway Adjacent - STH 60 1 mile - STH 83 Rail: Onsite - WSOR	Airport: 1.5 miles - Hartford 41 miles - Mitchell Field	90% Agricultural 10% Natural	7 +	Wetlands 100-year floodplain	80
13	South of CTH N West of City of Hartford City Limit Town of Hartford T10N R18E, Section 18	55	30	II	Industrial	Sewer - Onsite Water - 0.1 mile	Existing Freeway/Highway: 1.0 mile - STH 60 1.5 miles - STH 83 Rail: Onsite - WSOR	Airport - 1.5 miles - Hartford 41 miles - Mitchell Field	80% Agricultural 10% Open Water 5% Industrial 5% Open Water	1 - 3	Wetlands 100-year floodplain	25
14	North of WSOR Railroad Southeast of CTH N City of Hartford T10N R18E, Section 17	40	35	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 60 1 mile - STH 83 Rail: Adjacent - WSOR	Airport: 1.5 miles - Hartford 41 miles - Mitchell Field	50% Industrial 25% Open Water 15% Agricultural 10% Natural Area	1 - 3	Wetlands 100-year floodplain	5
15	North of STH 60 West of Wacker Drive Town of Hartford T10N R18E, Section 20	70	40	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 60 0.5 - STH 83 Rail: Adjacent - WSOR	Airport: 2 miles - Hartford 41 miles - Mitchell Field	40% Industrial 25% Open Water 20% Residential 10% Agricultural 5% Commercial	1 - 3	Wetlands 100-year floodplain Steep slope	30
16	North of STH 60 West of STH 144 Village of Slinger T10N R19E, Section 18	70	35	III	Nonindustrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 60 Adjacent - STH 144 Rail: 0.1 mile - WSOR 0.1 mile - Soo Line	Airport: 6 miles - Hartford 37 miles - Mitchell Field	40% Residential 20% Industrial 20% Commercial 20% Open Land	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	35
17	South of STH 60 East of CTH CC Village of Slinger T10N R19E, Section 19	135	90	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 60 0.1 mile - STH 144 Rail: 0.5 mile - WSOR 0.5 mile - Soo Line	Airport: 6 miles - Hartford 37 miles - Mitchell Field	50% Open Land 30% Residential 20% Commercial	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slope	45

Table C-6 (continued)

Number on Map C-6	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
18	North of Industrial Drive Village of Jackson T10N R20E, Section 18	50	30	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 60 0.5 mile - USH 45 Rail: 0.25 mile - C&NW	Airport: 9.5 miles - West Bend 34 miles - Mitchell Field	50% Residential 25% Agricultural 25% Natural Area	1 - 3	Wetlands Very severe soils 100-year floodplain	20
19	North of N. Center West of C&NW Railway Town and Village of Jackson T10N R20E, Section 18	60	60	III	Nonindustrial Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.25 mile - STH 60 0.5 mile - USH 45 Rail: Adjacent - C&NW	Airport: 9.5 miles - West Bend 34 miles - Mitchell Field	90% Agricultural 5% Industrial 5% Residential	1 - 3	--	--
20	South of STH 60 East and West of Jackson Drive Village of Jackson T10N R20E, Sections 19/20	70	60	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - STH 60 1 mile - USH 45 Rail: Adjacent - C&NW	Airport: 10 miles - West Bend 33 miles - Mitchell Field	75% Agricultural 25% Industrial	1 - 3	Wetlands Very severe soils	10
21	South of Friestadt Road West of Maple Road Village of Germantown T9N R20E, Section 20	160	160	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - USH 41/45 1 mile - STH 145/167 Rail: 0.25 mile - WSOR	Airport: 9 miles - Timmerman Field 27 miles - Mitchell Field	50% Agricultural 25% Industrial 25% Recreational	1 - 3	--	--
22	South of Friestadt Road East of Maple Road Village of Germantown T9N R20E, Section 21	160	155	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 145/167 1 mile - USH 41/45 Rail: Adjacent - WSOR	Airport: 9 miles - Timmerman Field 27 miles - Mitchell Field	50% Agricultural 20% Natural Area 15% Industrial 15% Institutional	4 - 6	Steel slope	5
23	North of Mequon Road East of Maple Road Village of Germantown T9N R20E, Section 21	60	60	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.5 mile - USH 41/45 1.5 miles - STH 145 Rail: 0.5 mile - WSOR	Airport: 9 miles - Timmerman Field 27 miles - Mitchell Field	25% Industrial 25% Institutional 25% Agricultural 25% Open Land	1 - 3	--	--
24	North of Mequon Road East of CTH Y Village of Germantown T9N R20E, Section 20	40	40	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.5 mile - USH 41/45 1 mile - STH 175 Rail: 1.5 miles - WSOR	Airport: 8 miles - Timmerman Field 26 miles - Mitchell Field	65% Industrial 20% Agricultural 15% Open Land	1 - 3	--	--
25	South of Mequon Road East of USH 41/45 Village of Germantown T9N R20E, Section 29	125	95[b]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - USH 41/45 1 mile - STH 175 Rail: 1.5 miles - WSOR	Airport: 8 miles - Timmerman Field 26 miles - Mitchell Field	70% Transportation 20% Open Land 10% Industrial	4 - 6	Wetlands	20
26	East of STH 145 North and South of Donges Bay Road Village of Germantown T9N R20E, Sections 25/36	285	250	III	Nonindustrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: Adjacent - STH 145 3 miles - USH 41/45 Rail: Onsite - WSOR/C&NW	Airport: 6 miles - Timmerman Field 24 miles - Mitchell Field	75% Agricultural 15% Natural Area 10% Industrial	1 - 3	Wetlands 100-year floodplain	35

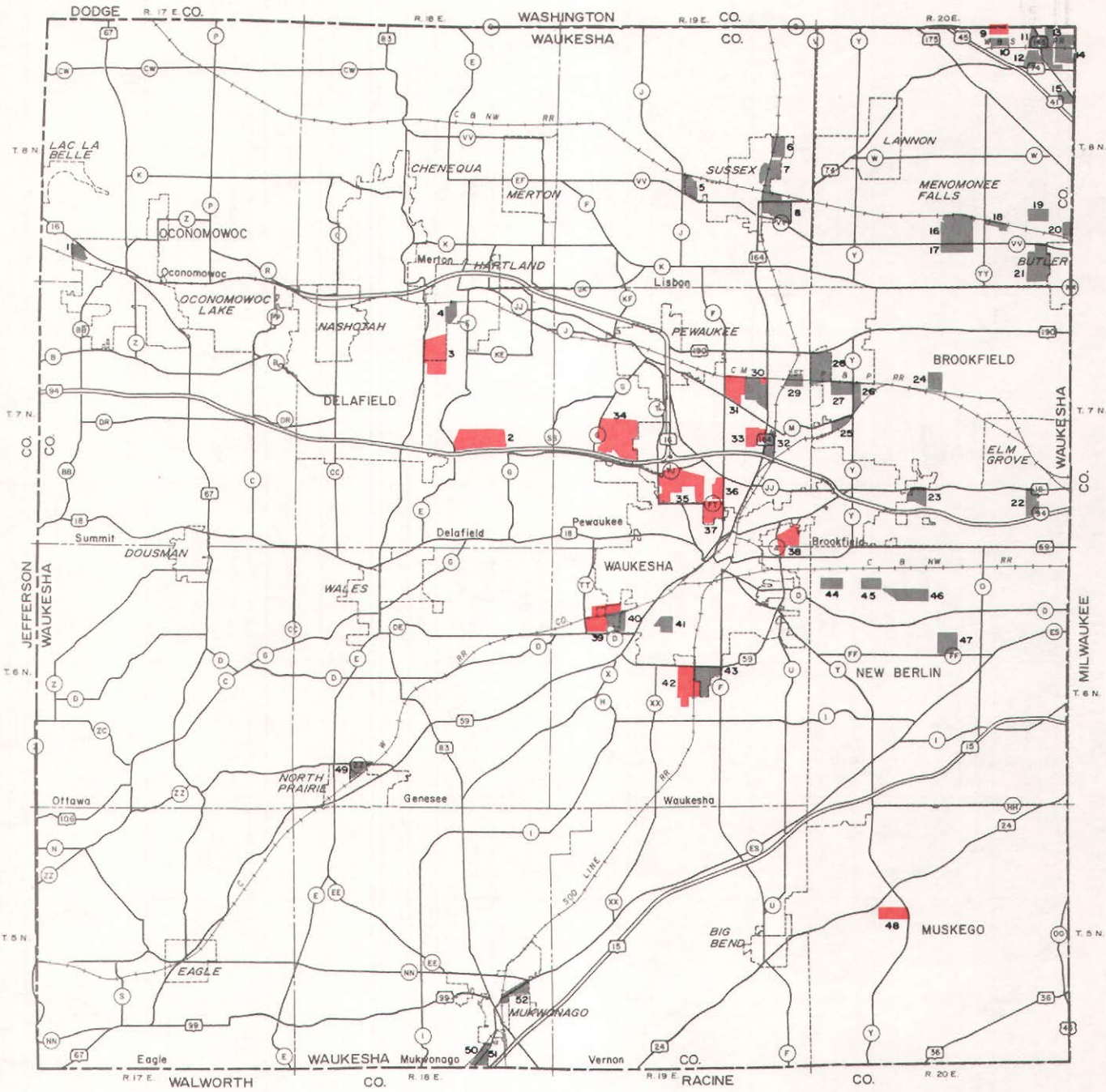
[a] *Excludes five acres of development as of 1984.*

[b] *Excludes 10 acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC.

Map C-7

LOCATION OF SUITABLE INDUSTRIAL SITES IN WAUKESHA COUNTY



Source: SEWRPC.

Table C-7

POTENTIAL INDUSTRIAL SITES: WAUKESHA COUNTY

Number on Map C-7	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
1	South of STH 16 West of Oconomowoc Road City of Oconomowoc T8N R17E, Sections 31/32	55	50	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 16 1 mile - STH 67 Rail: Adjacent - CMStP&P	Airport: 17 miles - Waukesha County 40 miles - Mitchell Field Proposed Freeway/Highway: 2 miles - Related STH 16	35% Industrial 35% Residential 30% Agricultural	1 - 3	100-year floodplain Very severe soils Steep slopes	5
2	East of CTH E North of IH 94 Town of Delafield T7N R18E, Section 22/23	345	285	III	Nonindustrial	Sewer - Adjacent Water - Not Available	Existing Freeway/Highway: Adjacent - IH 94 1 mile - STH 83 Rail: 4 miles - CMStP&P	Airport: 4 miles - Waukesha County 27 miles - Mitchell Field	30% Residential 30% Transportation 20% Natural Area 10% Agricultural 10% Recreational	7 +	Primary environmental corridor Wetlands Very severe soils Steep slopes	60
3	East of STH 83 South of Bark River Village of Hartland T7N R18E, Section 10	210	205	III	Nonindustrial	Sewer - 0.5 mile Water - 1 mile	Existing Freeway/Highway: Adjacent - STH 83 2 miles - IH 94 Rail: 1.5 miles - CMStP&P	Airport: 8 miles - Waukesha County 31 miles - Mitchell Field	75% Agricultural 25% Natural Area	1 - 3	Steep slopes	5
4	West of CTH E North of Bark River Village of Hartland T7N R18E, Section 3	60	35[a]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.5 mile - STH 83 3.5 miles - IH 94 Rail: Adjacent - CMStP&P	Airport: 9 miles - Waukesha County 32 miles - Mitchell Field	45% Industrial 35% Natural Area 20% Residential	1 - 3	Primary environmental corridor Wetlands 100-year floodplain Steep slopes Very severe soils	20
5	East of CTH J North of STH 74 Village of Sussex T8N R19E, Section 22	80	75	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 74 1.5 miles - STH 164 Rail: Adjacent - C&NW	Airport: 6 miles - Capitol Drive 26 miles - Mitchell Field	70% Agricultural 15% Industrial 15% Residential	1 - 3	Primary environmental corridor Site split by Waukesha County bike trail	5
6	North of Good Hope Road East and West of Soo Line Railroad Village of Sussex T8N R19E, Section 13	105	55	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: 1 mile - STH 74 1 mile - STH 164 Rail: Onsite - Soo Line	Airport: 5.5 miles - Capitol Drive 28 miles - Mitchell Field	75% Natural Area 25% Agricultural	1 - 3	Wetlands 100-year floodplain Steep slopes Very severe soils	50
7	North of STH 74 East of Waukesha Road Village of Sussex T8N R19E, Sections 23/24	300	195	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 74 0.1 mile - STH 164 Rail: Onsite - Soo Line Onsite - C&NW	Airport: 5 miles - Capitol Drive 28 miles - Mitchell Field	30% Open Land 25% Natural Area 25% Industrial 10% Residential 10% Agricultural	4 - 6	Wetlands 100-year floodplain Steep slopes Very severe soils	105
8	South of STH 74 East of Soo Line Railroad Village of Sussex T8N R19E, Sections 25/26	170	135[b]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 74 0.1 mile - STH 164 Rail: Adjacent - Soo Line 0.25 mile - C&NW	Airport: 5 miles - Capitol Drive 28 miles - Mitchell Field	50% Agricultural 15% Residential 15% Open Land 10% Industrial 10% Institutional	1 - 3	--	--

Table C-7 (continued)

Number on Map C-7	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
9	South of CTH Q East of CTH YY Village of Menomonee Falls T8N R20E, Section 2	80	80	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 145 0.25 mile - USH 41/45 Rail: 0.25 mile - WSOR 1.5 mile - C&NW	Airport: 6.5 miles - Timmerman Field 24 miles - Mitchell Field	50% Residential 25% Industrial 25% Agricultural	1 - 3	--	--
10	North of WSOR Railroad East of CTH YY Village of Menomonee Falls T8N R20E, Section 2	60	60	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.1 mile - USH 41/45 1.5 miles - STH 145 Rail: Adjacent - WSOR 1.5 miles - C&NW	Airport: 6 miles - Timmerman Field 23.5 miles - Mitchell Field	75% Industrial 15% Agricultural 10% Residential	1 - 3	--	--
11	West of STH 145 South of CTH Q Village of Menomonee Falls T8N R20E, Section 1	60	40[c]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 145 0.5 mile - STH 74 Rail: Onsite - WSOR 1 mile - C&NW	Airport: 6 miles - Timmerman Field 23.5 miles - Mitchell Field	50% Industrial 50% Residential	4 - 6	100-year floodplain	5
12	West of STH 145 North of STH 74 Village of Menomonee Falls T8N R20E, Sections 1/2	75	70	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: Adjacent - STH 145 Adjacent - STH 74 Rail: 0.1 mile - WSOR 1.5 miles - C&NW	Airport: 5.5 miles - Timmerman Field 23 miles - Mitchell Field	50% Industrial 40% Residential 10% Commercial	4 - 6	100-year floodplain	5
13	Between CTH Q and STH 74 East of STH 145 Village of Menomonee Falls T8N R20E, Section 1	170	165[d]	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: Adjacent - STH 145 Adjacent - STH 74 Rail: Onsite - WSOR 0.5 mile - C&NW	Airport: 5.5 miles - Timmerman Field 23 miles - Mitchell Field	70% Open Land 20% Residential 10% Agricultural	7 +	--	--
14	West of Boundary Road North of STH 74 Village of Menomonee Falls T8N R20E, Section 1	115	90	III	Industrial	Sewer - 0.5 mile Water - 0.5 mile	Existing Freeway/Highway: 0.1 mile - STH 74 0.1 mile - STH 145 Rail: Onsite - WSOR 0.1 mile - C&NW	Airport: 5.5 miles - Timmerman Field 23 miles - Mitchell Field	40% Agricultural 40% Open Land 10% Natural Area 10% Industrial	4 - 6	Very severe soils Open water	25
15	West of STH 145 Northeast of USH 41/45 Village of Menomonee Falls T8N R20E, Section 12	45	45	III	Industrial	Sewer - 0.1 mile Water - 0.1 mile	Existing Freeway/Highway: Adjacent - STH 145 0.25 mile - USH 41/45 Rail: 1 mile - WSOR 1.5 mile - C&NW	Airport: 4.5 miles Timmerman Field 21 miles - Mitchell Field	35% Commercial 25% Recreational 30% Open Land 10% Industrial	1 - 3	--	--
16	North of Silver Spring Road 0.25 Mile West of CTH YY Village of Menomonee Falls T8N R20E, Section 27	250	240	III	Industrial	Sewer - 2 miles Water - 2 miles	Existing Freeway/Highway: 3 miles - USH 41/45 2.5 miles - STH 190 Rail: Adjacent - C&NW	Airport: 4 miles - Timmerman Field 21 miles - Mitchell Field	35% Agricultural 35% Open Land 30% Natural Area	4 - 6	Primary environmental corridor Steep slopes	10

Table C-7 (continued)

Number on Map C-7	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
17	South of Silver Spring Drive 0.25 Mile West of CTH YY Village of Menomonee Falls T8N R20E, Section 34	105	100	III	Industrial	Sewer - 2 miles Water - 2 miles	Existing Freeway/Highway: 3 miles - USH 41/45 2 miles - STH 190 Rail: 0.5 mile - C&NW	Airport: 4 miles - Timmerman Field 21 miles - Mitchell Field	90% Agricultural 10% Open Land	7 +	Steep slopes	5
18	South of C&NW Railway East of CTH YY Village of Menomonee Falls T8N R20E, Section 26	45	45	III	Industrial	Sewer - 1.5 miles Water - 1.5 miles	Existing Freeway/Highway: 2 miles - USH 41/45 2.5 miles - STH 190 Rail: Adjacent - C&NW	Airport: 4 miles Timmerman Field 21 miles - Mitchell Field	50% Industrial 25% Open Land 20% Natural Area 5% Residential	1 - 3	--	--
19	East of Lilly Road 0.25 Mile South of Mill Road Village of Menomonee Falls T8N R20E, Section 25	75	70	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 1 mile - STH 175 1 mile - USH 41/45 Rail: 0.1 mile - C&NW	Airport: 3 miles - Timmerman Field 20 miles - Mitchell Field	35% Industrial 35% Residential 30% Agricultural	1 - 3	Wetlands	5
20	North of C&NW Railway East of Menomonee River Village of Menomonee Falls T8N R20E, Section 25	45	45	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: 0.5 mile - USH 41/45 1 mile - STH 175 Rail: Adjacent - C&NW	Airport: 2 miles - Timmerman Field 19 miles - Mitchell Field	40% Open Land 25% Industrial 25% Natural Area 10% Residential	1 - 3	--	--
21	East of Lilly Road South of Silver Spring Drive Village of Menomonee Falls T8N R20E, Section 36	230	170[e]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 1 mile - USH 41/45 1.25 miles - STH 190 Rail: 0.25 mile - C&NW	Airport: 2 miles - Timmerman Field 19 miles - Mitchell Field	25% Industrial 25% Natural Area 25% Residential 25% Agricultural	4 - 6	Primary environmental corridor Wetlands 100-year floodplain Steep slopes	50
22	South of Blue Mound Road East of Sunny Slope Road City of Brookfield T7N R20E, Sections 25/36	115	70[f]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway; 1.5 miles - IH 94 Adjacent - USH 18 Rail: 0.5 mile - CMStP&P	Airport: 8 miles - Timmerman Field 13.5 miles - Mitchell Field	50% Residential 25% Commercial 25% Transportation	1 - 3	Wetland	5
23	South of Blue Mound Road 0.25 mile West of Calhoun Road City of Brookfield T7N R20E, Sections 28/33	90	80	80 I	Industrial Nonindustrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - USH 18 1 mile - IH 94 Rail: 2 miles - C&NW	Airport: 5.5 miles - Capitol Drive 16 miles - Mitchell Field	25% Residential 25% Commercial 25% Natural Area 25% Utility	1 - 3	100-year floodplain	10
24	South of Burleigh Road West of Calhoun Road City of Brookfield T7N R20E, Section 16	70	40	III	Industrial	Sewer - 0.1 mile Water - 0.5 mile	Existing Freeway/Highway: 1 mile - STH 190 4 miles - IH 94 Rail: Adjacent - CMStP&P	Airport: 3.5 miles - Capitol Drive 18 miles - Mitchell Field	75% Residential 25% Natural Area	1 - 3	Wetlands Very severe soils	30

Table C-7 (continued)

Number on Map C-7	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
25	South of CTH M West of CTH Y City of Brookfield T7N R20E, Section 19	60	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 2 miles - IH 94 1.5 miles - STH 164 Rail: Adjacent - CMStP&P	Airport: 2 miles - Capitol Drive- 19 miles - Mitchell Field	50% Residential 30% Natural Area 20% Agricultural	1 - 3	Wetlands 100-year floodplain Primary environmental corridor	15
26	South of CMStP&P Railroad East of CTH Y City of Brookfield T7N R20E, Section 17	55	45[g]	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 2 miles - IH 94 1 mile - STH 190 Rail: Adjacent - CMStP&P	Airport: 2 miles - Capitol Drive 19 miles - Mitchell Field	50% Natural Area 40% Agricultural 10% Residential	1 - 3	Primary environmental corridor Wetlands	5
27	South of CMStP&P Railroad West of CTH Y City of Brookfield T7N R20E, Section 18	90	65	III	Industrial	Sewer - 0.5 mile Water - Adjacent	Existing Freeway/Highway: 3 miles - IH 94 1 mile - STH 190 Rail: Adjacent - SMStP&P	Airport: 2 miles - Capitol Drive 19 miles - Mitchell Field	30% Agricultural 30% Open Land 20% Natural Area 20% Residential	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slopes	25
28	South of STH 190 East of Springdale Road City of Brookfield T7N R20E, Sections 7/18	240	175	III	Industrial	Sewer - 1.5 miles Water - 0.8 mile	Existing Freeway/Highway: Adjacent - STH 190 3 miles - IH 94 Rail: Onsite - CMStP&P	Airport: 0.25 mile - Capitol Drive 19 miles - Mitchell Field	40% Residential 40% Natural Area 10% Agricultural 10% Transportation	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slopes 100-year floodplain	65
29	South of Green Road East of Soo Line Railroad City of Pewaukee T7N R19E, Section 13	50	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 190 2 miles - IH 94 Rail: Onsite- CMStP&P Adjacent - Soo Line	Airport: 1 mile - Capitol Drive 19.5 miles - Mitchell Field	40% Residential 35% Industrial 25% Open Land	1 - 3	Steep slope	5
30	South of CMStP&P Railroad West of STH 164 City of Pewaukee T7N R19E, Section 14	175	175	III	Industrial Nonindustrial	Sewer - 1.5 miles Water - 0.1 mile	Existing Freeway/Highway: 0.5 mile - STH 190 1.5 miles - IH 94 Rail: Adjacent - CMStP&P	Airport: 2.5 miles - Waukesha County 20 miles - Mitchell Field	25% Agricultural 25% Natural Area 25% Open Land 25% Industrial	1 - 3	--	--
31	North of CTH SS East of CTH F City of Pewaukee T7N R19E, Section 14	160	155	III	Nonindustrial	Sewer - 0.5 mile Water - 0.25 mile	Existing Freeway/Highway: 1.5 miles - IH 94 0.5 mile - STH 190 Rail: Adjacent - CMStP&P	Airport: 2 miles Waukesha County 20.5 miles - Mitchell Field	45% Agricultural 45% Natural Area 10% Utility	4 - 6	Wetlands	5
32	North of IH 94 East of STH 164 City of Pewaukee T7N R19E, Sections 23/24	80	40[h]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - IH 94 Adjacent - STH 164 Rail: Adjacent - Soo Line Adjacent - CMStP&P	Airport: 1.5 miles - Waukesha County 19 miles - Mitchell Field	35% Natural Area 35% Agricultural 15% Commercial 15% Transportation	4 - 6	--	--

Table C-7 (continued)

Number on Map C-7	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
33	0.25 Mile South of CTH SS West of STH 164 City of Pewaukee T7N R19E, Section 23	120	120	III	Nonindustrial	Sewer - 2.5 miles Water - 0.1 mile	Existing Freeway/Highway: 0.25 mile - IH 94 Adjacent - STH 164 Rail: 0.5 mile - CMStP&P 0.5 mile - Soo Line	Airport: 1.5 miles - Waukesha County 19 miles - Mitchell Field	50% Natural Area 20% Agricultural 15% Open Land 15% Utility	1 - 3	--	--
34	North of IH 94 East of CTH G City of Pewaukee City of Waukesha T7N R19E, Section 20	500	380	III	Nonindustrial Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: Adjacent - IH 94 0.5 mile - STH 16 Rail: 3 miles - Soo Line 2 miles - CMStP&P	Airport: 1.5 miles - Waukesha County 23 miles - Mitchell Field	25% Residential 25% Transportation 20% Natural Area 20% Agricultural 10% Open Land	7 +	Primary environmental corridor Wetlands Very severe soils Steep slopes 100-year floodplain	120
35	North of CTH FT East of CTH T City of Pewaukee T7N R19E, Sections 27/28	345	310	III	Nonindustrial	Sewer - Adjacent Water - Onsite	Existing Freeway/Highway: 0.25 mile - IH 94 0.25 mile - STH 16 Rail: 1 mile - CMStP&P 1 mile - Soo Line	Airport: Adjacent - Waukesha County 22 miles - Mitchell Field	40% Transportation 25% Institutional 20% Residential 15% Open Land	4 - 6	Wetlands Steep slopes	35
36	North of CTH FT West of CTH F City of Pewaukee T7N R19E, Section 27	85	85	III	Nonindustrial	Sewer - 0.25 mile Water - Adjacent	Existing Freeway/Highway: 0.5 mile - IH 94 0.5 mile - STH 164 Rail: 0.5 mile - CMStP&P 0.5 mile - Soo Line	Airport: Adjacent - Waukesha County 22 miles - Mitchell Field	50% Transportation 25% Industrial 25% Agricultural	1 - 3	--	--
37	South of CTH FT West of CTH F City of Pewaukee T7N R19E, Section 34	150	135	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 1 mile - IH 94 0.5 mile - STH 164 Rail: 0.5 mile - CMStP&P 0.5 mile - Soo Line	Airport: Adjacent - Waukesha County 22 miles - Mitchell Field	30% Residential 30% Agricultural 20% Natural Area 10% Transportation 10% Recreational	1 - 3	Steep slopes Wetlands Very severe soils	15
38	South of CTH Y East of CTH A T6N R19 E, Section 1 Town of Waukesha T7N R19E, Section 36 City of Pewaukee	120	70	III	Nonindustrial	Sewer - 0.25 mile Water - Adjacent	Existing Freeway/Highway: 0.25 mile - USH 18 1.5 miles - IH 94 Rail: 0.5 mile - C&NW 1.5 miles - Soo Line	Airport: 2.5 miles - Waukesha County 21 miles - Mitchell Field	55% Residential 35% Open Land 10% Industrial	1 - 3	Very severe soils Steep slopes	50
39	North of CTH D East of CTH TT Town of Waukesha T6N R19E, Sections 7/8	190	115	III	Nonindustrial	Sewer - 0.25 mile Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 59 2 miles - USH 18 Rail: Onsite - CWRC 1 mile - CMStP&P	Airport: 4 miles - Waukesha County 23 miles - Mitchell Field Proposed Freeway/Highway: Onsite - STH[1]	50% Residential 25% Natural Area 25% Agricultural	4 - 6	Primary environmental corridor Wetlands Very severe soils 100-year floodplain	75
40	North of CTH D 0.25 Mile West of CTH X Town and City of Waukesha T6N R19E, Section 8	95	45	II	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 1 mile - STH 59 2.5 miles - USH 18 Rail: Onsite - CWRC 1 mile - CMStP&P	Airport: 4 miles - Waukesha County 23 miles - Mitchell Field	25% Natural Area 20% Industrial 20% Commercial 20% Agricultural 15% Open Land	1 - 3	Primary environmental corridor Wetlands Very severe soils 100-year floodplain	50

Table C-7 (continued)

Number on Map C-7	Location	Size (acres)		Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations	
		Gross	Net								Type	Acreage
41	North of CTH D West of Sentry Drive City of Waukesha T6N R19E, Section 9	75	75	I	Industrial	Sewer - Onsite Water - Adjacent	Existing Freeway/Highway: 0.8 mile - STH 59 1.5 miles - USH 18 Rail: 0.5 mile - C&NW/ CWRC/Soo Line	Airport: 3.5 miles - Waukesha County 22 miles - Mitchell Field	50% Industrial 25% Residential 25% Natural Area	1 - 3	--	--
42	South of STH 59 East of Center Road Town of Waukesha T6N R19E, Sections 15/22	235	160	III	Nonindustrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: Adjacent - STH 59 3 miles - USH 18 Rail: Onsite - Soo Line	Airport: 5 miles - Waukesha County 22 miles - Mitchell Field	60% Natural Area 20% Agricultural 20% Residential	4 - 6	Primary environmental corridor Wetlands Very severe soils	75
43	South of STH 59 West of CTH F Town of Waukesha T6N R19E, Sections 15/22	190	55[j]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: Adjacent - STH 59 3 miles - USH 18 Rail: Adjacent - Soo Line	Airport: 5 miles - Waukesha County 22 miles - Mitchell Field	50% Natural Area 20% Residential 20% Agricultural 10% Industrial	1 - 3	Primary environmental corridor Wetlands Very severe soils Steep slopes 100-year floodplain	115
44	North of Lincoln Avenue 0.25 Mile East of Springdale Road City of New Berlin T6N R20E, Section 6	65	50	III	Industrial	Sewer - 2 miles Water - 2 miles	Existing Freeway/Highway: 1 mile - STH 59 3 miles - IH 94 Rail: 0.25 mile - C&NW	Airport: 5 miles - Waukesha County 17 miles - Mitchell Field	75% Natural Area 25% Agricultural	4 - 6	Primary environmental corridor Wetlands 100-year floodplain	15
45	North of Lincoln Avenue 0.25 Mile East of Danny Road City of New Berlin T6N R20E, Section 5	50	40	III	Industrial	Sewer - 1 mile Water - 1 mile	Existing Freeway/Highway: 1.5 miles - STH 59 4 miles - IH 94 Rail: 0.25 mile - C&NW	Airport: 6 miles - Waukesha County 17 miles - Mitchell Field	60% Natural Area 20% Industrial 20% Agricultural	4 - 6	Steep slope 100-year floodplain	10
46	South of Lincoln Avenue 0.25 Mile West of Calhoun Road City of New Berlin T6N R20E, Sections 8/9	145	115	III	Industrial	Sewer - 0.25 mile Water - 0.25 mile	Existing Freeway/Highway: 1.5 miles - STH 59 3 miles - IH 94 Rail: 0.5 mile - C&NW	Airport: 7 miles - Waukesha County 16 miles - Mitchell Field	35% Natural Area 30% Agricultural 30% Open Land 5% Residential	4 - 6	Primary environmental corridor Wetlands Very severe soils Steep slopes 100-year floodplain	30
47	North of CTH FF East of Calhoun Road City of New Berlin T6N R20E, Section 15	155	60[k]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 2 miles - STH 59 4 miles - IH 94 Rail: 1.5 miles - C&NW	Airport: 8.5 miles - Waukesha County 14.5 miles - Mitchell Field	70% Agricultural 25% Industrial 5% Residential	1 - 3	Wetlands 100-year floodplain	45
48	South of Gemini Drive West of CTH Y City of Muskego T5N R20E, Sections 16/17	95	60	III	Nonindustrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 24 3 miles - STH 15 Rail: 8 miles - Soo Line	Airport: 13 miles - Mitchell Field	50% Agricultural 25% Industrial 25% Residential	4 - 6	Very severe soils 100-year floodplain	35

Table C-7 (continued)

Number on Map C-7	Location	Size (acres) Gross	Size (acres) Net	Classification	Zoning	Sanitary Sewer and Water Supply	Transportation Access		Adjacent Land Uses	Number of Owners	Physical Limitations Type	Physical Limitations Acreage
49	South of STH ZZ Northwest of CMStP&P Railroad Town of Genesee T6N R18E, Section 32	80	75	III	Industrial	Sewer - Not Available Water - Not Available	Existing Freeway/Highway: 0.5 mile - STH 59 2 miles - STH 83 Rail: Adjacent - CMStP&P	Airport: 11 miles - Waukesha County 27 miles - Mitchell Field	50% Agricultural 20% Open Land 15% Natural Area 15% Industrial	1 - 3	Steep slopes	5
50	North of Walworth County Line West of CTH ES Town of Mukwonago T5N R18E, Section 35	40	40	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 83 1 mile - STH 15 Rail: Adjacent - East Troy Railroad 0.5 mile - Soo Line	Airport: 14 miles - Burlington 23 miles - Mitchell Field	25% Agricultural 25% Residential 25% Commercial 25% Open Land	4 - 6	--	--
51	North of Walworth County Line East of CTH ES Town of Mukwonago T5N R18E, Section 35	45	45	II	Industrial	Sewer - Adjacent Water - Adjacent	Existing Freeway/Highway: 0.5 mile - STH 83 1 mile - STH 15 Rail: 0.5 mile - Soo Line 0.25 mile - East Troy Railroad	Airport: 14 miles - Burlington 23 miles - Mitchell Field	35% Agricultural 35% Residential 30% Open Land	1 - 3	--	--
52	South of CTH ES East of Soo Line Railroad Village of Mukwonago T5N R18E, Sections 25/26	70	65[l]	I	Industrial	Sewer - Onsite Water - Onsite	Existing Freeway/Highway: 0.1 mile - STH 83 1 mile - STH 15 Rail: Adjacent - Soo Line	Airport: 14 miles - Waukesha County 23 miles - Mitchell Field Proposed Freeway/Highway: Onsite - Relocation of STH 83	40% Agricultural 40% Residential 20% Commercial	1 - 3	--	--

[a] *Excludes five acres of development as of 1984.*

[b] *Excludes 35 acres of development as of 1984.*

[c] *Excludes 15 acres of development as of 1984.*

[d] *Excludes five acres of development as of 1984.*

[e] *Excludes 10 acres of development as of 1984.*

[f] *Excludes 40 acres of development as of 1984.*

[g] *Excludes five acres of development as of 1984.*

[h] *Excludes 40 acres of development as of 1984.*

[i] *Existing County Trunk Highway TT.*

[j] *Excludes 20 acres of development as of 1984.*

[k] *Excludes 50 acres of development as of 1984.*

[l] *Excludes five acres of development as of 1984.*

Source: Wisconsin Electric Power Company and SEWRPC.