

A LAND USE AND
TRANSPORTATION SYSTEM
DEVELOPMENT PLAN
FOR THE IH 94 SOUTH
FREEWAY CORRIDOR

KENOSHA, MILWAUKEE,
AND RACINE COUNTIES

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**COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 200**

**A LAND USE AND TRANSPORTATION SYSTEM
DEVELOPMENT PLAN FOR THE IH 94 SOUTH FREEWAY CORRIDOR
KENOSHA, MILWAUKEE, AND RACINE COUNTIES**

Prepared by the
Southeastern Wisconsin Regional Planning Commission
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December 7, 1991

TO: The County Executives and County Boards of Supervisors of Kenosha, Milwaukee, and Racine Counties

The Regional Planning Commission is pleased to transmit to you this document, which sets forth a land use and transportation system development plan for the IH 94 South freeway corridor. The plan was prepared in response to requests received by the Commission from Kenosha and Racine Counties and pertains to an approximately six-mile-wide corridor lying on either side of IH 94 from the Wisconsin-Illinois state line to W. College Avenue in Milwaukee County, a distance of about 30 miles. As a subregional planning area, the corridor encompasses a total of 178 square miles and lies in portions of three counties, seven towns, three villages, and four cities. An Advisory Committee consisting of representatives of various public and private interests from throughout the corridor, including representatives of the counties and local municipalities within the corridor, and the Wisconsin Department of Transportation, provided guidance in the plan preparation process.

The plan was prepared in response to a recognition that economic and land use development conditions are rapidly changing within the IH 94 South freeway corridor. To cope with these changing conditions, the report sets forth a coordinated set of land use and transportation system development plans set within the context of broader regional plans. In addition to recommending a land use pattern to meet the anticipated land use demand in the freeway corridor over the next 20 years, the land use plan set forth herein also recommends the reservation of larger areas for commercial and industrial development to meet anticipated development needs well into the 21st century. Importantly, the recommended land use development pattern seeks to place new commercial and industrial development at strategic locations along the freeway, and thereby to avoid creating a land use pattern of continuous strip development along the 30-mile stretch of freeway. The recommended land use pattern for the corridor as set forth in this document is intended to serve as the basis for preparing new sanitary sewer and water supply facility plans for the eastern portions of Kenosha and Racine Counties, as well as a basis for highway and transit system planning in the corridor.

Based upon the recommended land use pattern, this report includes a recommended transportation system plan for the corridor. The key recommendations in this respect include the widening of IH 94 South to provide for eight through travel lanes; the unbraiding in Kenosha and Racine Counties of all freeway on- and off-ramps from the network of frontage roads in those two counties; the addition of three new interchanges, including two in the City of Oak Creek and one in the Village of Pleasant Prairie and Town of Bristol, as well as a potential new interchange at Kraut Road in Racine County; the reconstruction to provide additional capacity at several interchanges; and the provision of express bus-based rapid transit service over the IH 94 South freeway between Kenosha, Racine, Oak Creek, and Milwaukee as a precursor to the eventual provision of commuter rail service in or adjacent to the corridor. The study also confirms the need for the construction of the long proposed Lake Arterial facility through the Milwaukee and Racine County portions of the corridor, terminating at the junction of STH 31 in the Town of Somers, Kenosha County.

The Regional Planning Commission is pleased to have been able to be of assistance to the Wisconsin Department of Transportation, and the counties and communities that comprise the IH 94 South freeway corridor in carrying out this cooperative planning effort. The Commission, of course, stands ready to assist the Wisconsin Department of Transportation, the counties, and the communities concerned in implementing the recommended plans over time.

Sincerely,



Kurt W. Bauer
Executive Director

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Chapter I

INTRODUCTION

This report presents alternative and recommended land use development and transportation system plans for the Interstate Highway (IH) 94 South (North-South Freeway) Corridor lying within portions of Kenosha, Racine, and Milwaukee Counties. The plans were developed by the Southeastern Wisconsin Regional Planning Commission with the assistance of an intergovernmental coordinating and technical advisory committee created for this purpose. The plans were prepared in response to requests from Racine and Kenosha Counties. The scope and content of the plans extend to all aspects of land use and transportation system development in the corridor. The land use and transportation system development plans, and the attendant recommended implementation measures, were prepared with the general purpose of guiding and accomplishing coordinated and harmonious development of the freeway corridor which will, in accordance with existing and probable future developmental needs of the three counties impacted, best promote the public health, safety, morals, order, prosperity, and general welfare, as well as efficiency and economy.

The planning effort involved extensive inventories and analyses of the factors and conditions affecting development in the IH 94 South Freeway Corridor, including the preparation of forecasts of the possible range of future population and economic activity levels; inventories of the natural and man-made resource base; inventories of adopted local and regional plans for the corridor; inventories of recently proposed projects and development proposals; and inventories of plan implementation measures in the corridor. In addition, the planning effort involved the formulation of a set of recommended land use and transportation system development objectives, principles, and standards and related urban design criteria for the corridor; the preparation of alternative plans which may be expected to accommodate the existing and probable future population and employment levels while meeting the agreed-upon develop-

ment objectives for the corridor; the identification of the best plan from among the alternatives considered; and the identification of recommended plan implementation measures.

PURPOSE OF THE PLANNING EFFORT

Economic and land use development conditions within the IH 94 South Freeway Corridor are rapidly changing, and a coordinated set of land use and transportation system development plans should be formulated to guide and coordinate this change in the public interest, and thereby avoid the creation of costly developmental and environmental problems. The corridor plans, while primarily intended to meet local development objectives, are also intended to carry related regional plan elements into greater detail. In conducting the corridor planning effort, an attempt was made to identify the physical development constraints imposed upon, and the development opportunities open to, the communities within the corridor; to set forth an integrated set of physical development objectives and supporting standards for the corridor; and to determine desirable patterns of land use and transportation system development which can serve as a guide to county and local officials in the making of development decisions over time.

The transportation system plan identifies functional and jurisdictional systems of arterial streets and highways designed to meet the traffic needs generated by land use development within the IH 94 South Corridor. The plan identifies arterial street and highway improvements in the corridor needed to meet the current and probable future traffic loadings, including arterial widenings, extensions, and reconfigurations and freeway interchange and ramp realignments.

Finally, plan implementation measures and devices needed to effectively carry out the recommended plans are identified, with particu-

lar emphasis upon the needed modifications to local zoning and land subdivision control ordinances, and official maps.

Simultaneously with the corridor planning effort, the Wisconsin Department of Transportation (WisDOT) had underway detailed studies of freeway interchanges in the corridor, at IH 94 and STH 50 in Kenosha County and at IH 94 and STH 20 in Racine County. These detailed engineering and environmental assessment studies built upon prior planning work attendant to the reconfiguration of the two subject interchanges conducted cooperatively by WisDOT, the counties, the towns, and the landowners concerned. To the extent feasible, the detailed recommendations of these two WisDOT interchange studies were incorporated directly into the IH 94 South Corridor plan. In addition, the WisDOT agreed that it would review in detail as part of the corridor planning effort any further recommendations concerning new interchanges and/or existing interchange reconfigurations that may be recommended by the Advisory Committee so that, upon completion of the corridor plan, only detailed engineering and environmental assessment studies would need to be conducted prior to the actual programming of the construction work.

The land use plan developed under the IH 94 South Freeway Corridor planning effort is also intended to be used in subsequent planning for the provision of public sanitary sewer and water supply facilities, particularly in the Kenosha and Racine County portions of the corridor. A formal prospectus has been prepared for the preparation of a coordinated set of areawide sanitary sewer and water supply facility plans in both the Kenosha and Racine areas.¹ Those prospectuses propose to explicitly incorporate as a basis for coordinated sewer and water utility system planning the land use plan for the IH 94 South Corridor prepared under the planning effort.

¹See *SEWRPC Prospectus for the Preparation of Coordinated Sanitary Sewer and Water Supply System Plans for the Kenosha Area, June 1988; and SEWRPC Prospectus for the Preparation of Coordinated Sanitary Sewer and Water Supply System Plans for the Racine Area, May 1989.*

THE PLANNING AREA

The corridor planning area considered consists of the area bounded approximately by the proposed Lake Arterial and by the Chicago & Northwestern Transportation Company right-of-way on the east; the Wisconsin and Illinois State line on the south; a line approximately two miles west of IH 94 on the west; and College Avenue in Milwaukee County on the north. The corridor encompasses a total area of about 178.4 square miles and lies in portions of three counties, eight towns, two villages, and four cities, as shown in Table 1 and graphically illustrated on Map 1.

The identification of subregional planning areas within the Southeastern Wisconsin Region helps to carry regional plan elements into the depth and detail necessary to provide a sound framework for local development planning and for plan implementation. The study area constitutes a subregional planning area for the purpose of guiding the direction, quantity, and quality of the growth along IH 94 South Freeway. The study area is generally defined by identifiable boundaries encompassing the IH 94 South Freeway Corridor. The northern boundary of the study area, delineated by College Avenue, marks the divide between the intensive urban land use developments and more rural land uses in Milwaukee County. The eastern boundary of the study area is oriented in a north-south direction and runs parallel to IH 94 along U. S. Public Land Survey section lines through Kenosha, Racine, and Milwaukee Counties. The eastern boundary marks the divide between the existing intensive urban land uses in the Cities of Kenosha and Racine and the rural land uses lying to their west. The southern boundary of the study area is marked by the state line which jurisdictionally divides Wisconsin and Illinois. The western boundary of the study area runs in a north-south direction parallel to IH 94 and includes those areas determined to be the most reasonably impacted by freeway-oriented development.

The Intergovernmental Coordinating and Technical Advisory Committee considered the study area boundary at its meeting held on April 14, 1988. In considering that boundary, the Committee stressed the importance of reflecting and reinforcing local community development objectives in the final plan, particularly where those

objectives seek to preserve agricultural land uses and environmentally sensitive areas within the study area boundary. As shown on Map 2, the Committee approved the study area boundary as described above, conditioned upon the second mile west of IH 94 in Kenosha County being included in the study area for impact analysis purposes only, it being intended that only the first mile west of IH 94 in Kenosha County be considered for the location of urban land uses.

INTERGOVERNMENTAL COORDINATING AND TECHNICAL ADVISORY COMMITTEE FOR THE IH 94 SOUTH FREEWAY CORRIDOR DEVELOPMENT PLAN

On February 15, 1988, the Southeastern Wisconsin Regional Planning Commission created an intergovernmental coordinating and technical advisory committee to direct and assist the Regional Planning Commission staff in the preparation of the requested land use and transportation system development plans. The Committee consists of 22 elected and appointed public officials and civic leaders representing each of the concerned and affected municipalities and development-related interests of the corridor planning area. The full membership of the Committee is listed on the inside front cover of this report.

The basic function of the Committee is to actively involve the various units and agencies of government and concerned private interests in the corridor planning process. The Committee is charged with the responsibility of reviewing and approving the geographic boundaries of the study area; reviewing and approving preliminary drafts of the planning report as those drafts are produced by the Commission staff; evaluating alternative land use and transportation system plans for the corridor; selecting a recommended plan; and identifying means of implementation. The Committee should also assist in familiarizing the political, business, and industrial leadership within the study area of its findings and recommendations.

THE PLANNING PROCESS

The recommended land use and transportation system development plans presented herein were developed through the following eight-step

planning process: 1) definition of the purpose of the planning effort; 2) inventory of the factors affecting land use and transportation system development in the corridor; 3) an analysis of inventory data; 4) the formulation of development objectives, principles, and standards and of related urban design criteria for the corridor; 5) the identification of development needs in the corridor through the year 2010 based upon the population and economic activity forecasts and the development objectives and standards; 6) the formulation of alternative plans; 7) the selection and adoption of a coordinated set of recommended land use and transportation system development plans; and 8) the recommendation of plan implementation measures. The planning process utilized is graphically summarized in Figure 1.

Definition of the Purpose of the Planning Effort

The development plan and its attendant transportation system plan presented herein have been developed through a multi-step planning process. The initial step in this process is defining the IH 94 South Freeway Corridor study area and the purpose for the planning effort. In order to carry out the necessary planning program in an efficient and coordinated manner, it will be necessary, before undertaking specific work elements, to define the ultimate goals of the work effort and to design the study in sufficient detail to assure the proper completion and outcome of the work within the established time frame. Such detailing of work elements is necessary to ensure the ultimate advancement of the elements into sound, comprehensive land use and transportation system development plans.

Inventory and Analysis

Reliable basic planning data are absolutely essential to the formulation of workable development plans. Consequently, inventory becomes the next operational step in the planning process. The crucial nature of factual information in the planning process should be evident, since no intelligent forecasts can be made, or alternative courses of action evaluated, without the knowledge of the current state of the system being planned. The sound formulation of a development plan for the IH 94 South Corridor requires that factual data be developed on the existing and locally proposed development patterns, on

Table 1

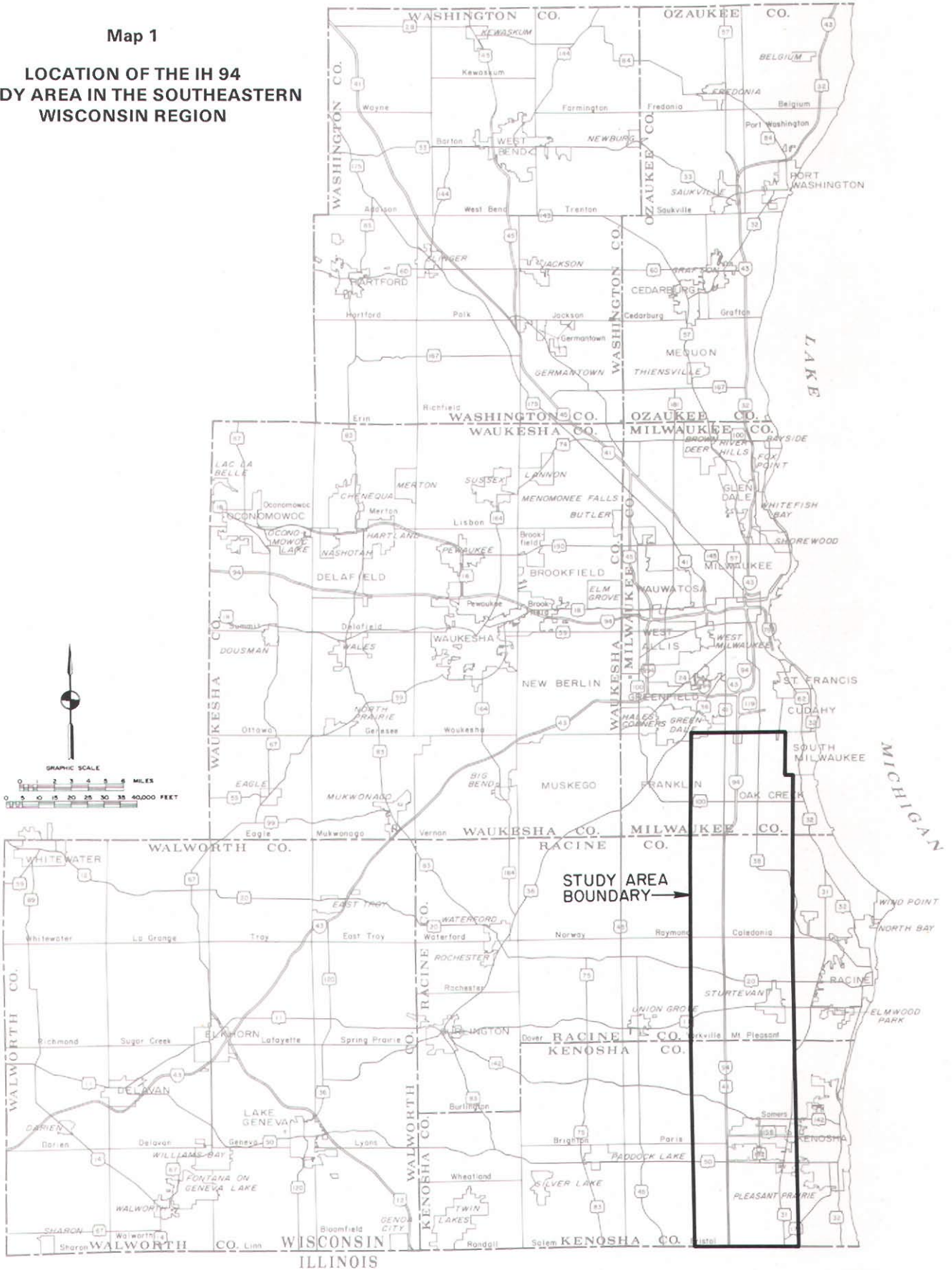
TOTAL SQUARE MILES WITHIN THE IH 94 SOUTH CORRIDOR STUDY AREA

Area	U. S. Public Land Survey		Total Square Miles
	Township	Sections	
<u>Kenosha County</u>			
City of Kenosha	Township 1 North, Range 22 East Township 2 North, Range 22 East	3, 10 29, 32, and 34	2.9
Town of Bristol	Township 1 North, Range 21 East	1, 2, 11-14 23-26, 35, and 36	12.0
Town of Pleasant Prairie	Township 1 North, Range 22 East	3-10, 15-22, and 27-34	23.2
Town of Paris	Township 2 North, Range 21 East	1, 2, 11-14 23-26, 35, and 36	12.0
Town of Somers	Township 2 North, Range 22 East	3-10, 15-22, and 27-34	22.0
<u>Racine County</u>			
Village of Sturtevant	Township 3 North, Range 22 East	20-22 and 27-29	2.2
Town of Yorkville	Township 3 North, Range 21 East	1, 2, 11-14, 23-26, 35, and 36	12.0
Town of Mt. Pleasant	Township 3 North, Range 22 East	3-10, 15-22, and 27-34	21.9
Town of Raymond	Township 4 North, Range 21 East	1, 2, 11-14 23-26, 35, and 36	12.0
Town of Caledonia	Township 4 North, Range 22 East	3-10, 15-22, and 27-34	24.1
<u>Milwaukee County</u>			
City of Franklin	Township 5 North, Range 21 East	1, 2, 11-14, 23-26, 35, and 36	10.7
City of Oak Creek	Township 5 North, Range 22 East	3-10, 15-22, and 27-34	22.6
City of Milwaukee	Township 5 North, Range 22 East	3 and 6	0.4
Village of Greendale	Township 5 North, Range 21 East	2	0.3
Total Square Miles	--	--	178.4

Source: SEWRPC.

Map 1

LOCATION OF THE IH 94
STUDY AREA IN THE SOUTHEASTERN
WISCONSIN REGION

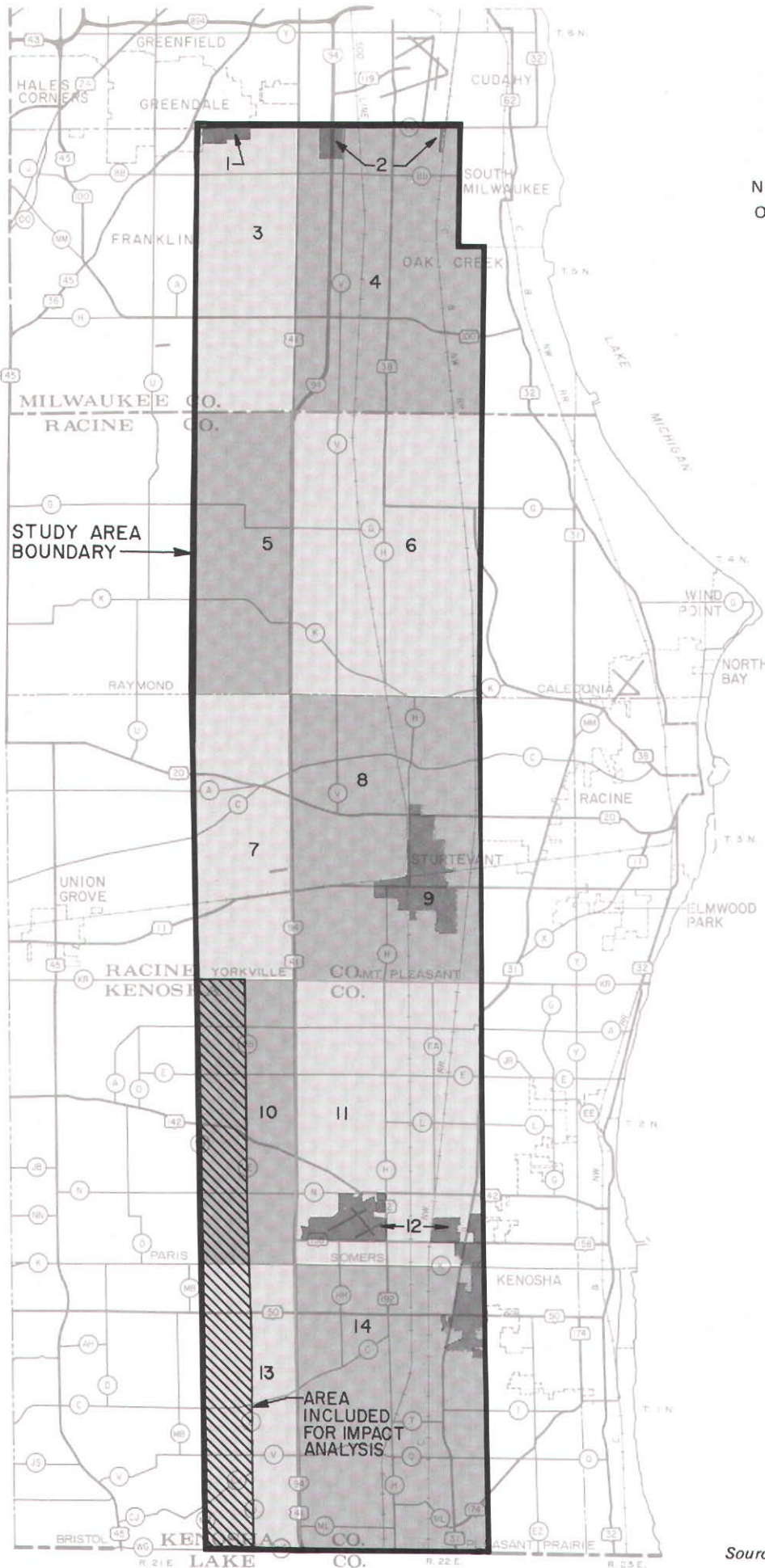


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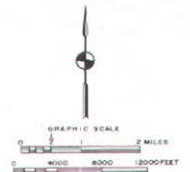
Map 2

**CIVIL DIVISIONS IN THE
IH 94 CORRIDOR STUDY AREA**

NUMBER ON MAP	CIVIL DIVISION NAME
1	VILLAGE OF GREENDALE
2	CITY OF MILWAUKEE
3	CITY OF FRANKLIN
4	CITY OF OAK CREEK
5	TOWN OF RAYMOND
6	TOWN OF CALEDONIA
7	TOWN OF YORKVILLE
8	TOWN OF MT. PLEASANT
9	VILLAGE OF STURTEVANT
10	TOWN OF PARIS
11	TOWN OF SOMERS
12	CITY OF KENOSHA
13	TOWN OF BRISTOL
14	TOWN OF PLEASANT PRAIRIE



Source: SEWRPC.



the potential demand for each of the various land use categories and on the determining factors of these demands, and on study area development objectives and constraints, as well as on the underlying natural resource and public utility base and its ability to support development. The necessary inventory and analyses not only provide data describing the existing conditions and development trends, but also provide a basis for identifying problems that could result from poorly planned or unplanned development in the corridor, as well as opportunities and potentials for good development in the study area. The study area inventory data are also crucial to the forecasting of corridor development needs, formulation of alternative plans, and evaluation of alternative plans.

Formulation of Development Planning Objectives, Principles, and Standards and Related Urban Design Criteria

An objective may be defined as a goal or end toward the attainment of which plans and policies are directed. Planning is a rational process for the formulation of and attaining objectives. The objectives developed, and their attendant supporting principles and standards, serve as a guide to the preparation of the plans and provide an important basis for the selection of recommended plans from among the alternatives considered. The development plan should be clearly related to the defined objectives through a set of standards and urban design criteria. Objectives may change as new information is developed, as objectives are fulfilled through plan implementation, or as objectives fail to be implemented owing to changing public attitudes and values.

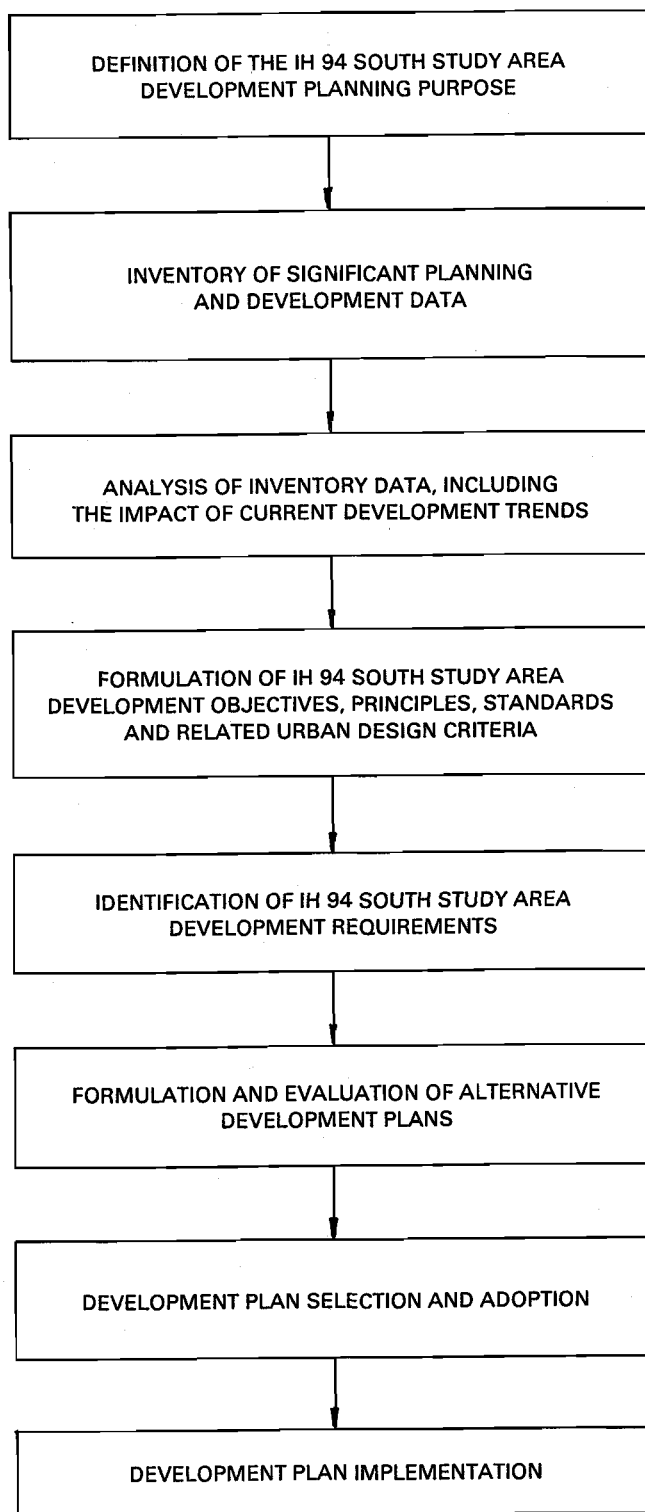
The formulation of objectives should involve the active participation of affected officials and interested citizens. The Intergovernmental Coordinating and Technical Advisory Committee for the IH 94 South Freeway Corridor development plan is intended to provide for that participation, and for the active guidance of the planning effort by duly elected and appointed public officials and citizen leaders throughout the course of the planning effort.

Identification of Development and Facility Requirements

Although the preparation of forecasts is not planning, a development plan must, to the

Figure 1

THE PLANNING PROCESS



Source: SEWRPC.

extent possible, anticipate future requirements as a basis for the development and evaluation of alternative plans. In the planning effort, forecasts are required of future events and conditions which are outside the scope of the systems being planned. The demand for land and facilities will depend primarily upon the size of the future population and the nature of future economic activity levels. Therefore, future population and economic activity levels must be forecast. These levels, in turn, can be used to determine the probable future demand for the land use and transportation facilities within the corridor.

Development and Evaluation of Alternative Plans and Selection and Adoption of Recommended Plans

Having estimated the probable future demand for land use and transportation facilities in the corridor, alternative plans which meet these demands can be developed. The alternative plans should be evaluated based upon their relative ability to attain agreed-upon development objectives, and the plans that are judged to best meet those objectives should be recommended for adoption. The evaluation and selection should be made by the Advisory Committee. Such evaluation and selection involves the use of data obtained in the inventory and analysis stages of the planning process, as well as during the later plan design stages.

Plan Implementation

Plan implementation is achieved through the formulation of a policy program—a series of rules or courses of action which are used to ensure plan implementation. Each community will need to examine a number of planning tools of a legal nature to assist in the implementation of the adopted plan. Land subdivision regulations, for example, are applied to assure that plats and certified survey maps conform to the plan both with respect to the proposed land uses to be accommodated and with respect to such details as street, block, and lot layout, and required infrastructure improvements. A zoning ordinance and accompanying zoning map are used to legally assure that private development and any redevelopment occur in conformance with the adopted development plan and plan elements. An official map is used to assure that

the lands required for the streets, parkways, parks, and playgrounds needed to serve the land use pattern recommended in the development plan are reserved for public use. Implementation of the plan is also furthered by the formulation of public policies which will ensure plan implementation. Policies should be based upon the desired objectives of the plan and be directed toward the effective attainment of those objectives over time. Certain public policies concerning annexation, incorporation, consolidation, and the extension of municipal utilities, such as water supply and sanitary sewer systems, are used by local communities to further implement the adopted development plan.

FORMAT OF PLAN PRESENTATION

This community assistance planning report describing the findings and recommendations of IH 94 South Freeway Corridor study is organized into the following chapters. Following this introductory chapter, Chapter II, "Demographic and Economic Base," provides pertinent data on the existing and probable future population and employment levels in the corridor, on such population characteristics as household size and age composition, and on the economic characteristics of the counties in the study area. Chapter III, "Land Use and Natural Resource Base," presents pertinent data on the historic and existing land use pattern and natural resource base of the IH 94 south study area. Chapter IV, "Transportation, Utility, and Public Safety Facilities and Services," provides an inventory of the transportation system, along with community utilities, facilities and services serving the IH 94 south study area, including sanitary sewer service, water supply, gas, electric, and telephone service, fire and police protection, and educational facilities. Chapter V, "Plans, Land Use Regulations, and Development Proposals," identifies existing plans, policies, and proposals impacting the land use development in the IH 94 south study area. Chapter VI, "Development Objectives, Principles, Standards, and Related Urban Design Criteria," presents a set of recommended development and land use objectives, supporting principles and standards, and related urban design criteria for the IH 94 south study area. Chapter VII, "Recommended Land Use Development Plan," identifies and describes the key elements of the recommended future devel-

opment and related land use for the IH 94 south study area. Chapter VIII, "Recommended Transportation Plan," identifies and describes the transportation system requirements for the IH 94 south study area. Chapter IX, "Plan

Implementation," presents the recommended means for implementation of the adopted plans. Chapter X, "Summary and Conclusions," provides an overview of the recommended plans for the IH 94 south study area.

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Chapter II

DEMOGRAPHIC AND ECONOMIC BASE

INTRODUCTION

Inventories of population and economic activity are essential to sound comprehensive planning. Future urban land development needs within the IH 94 South Corridor will depend in part upon the population and economic activity levels of Kenosha, Milwaukee, and Racine Counties and the larger Southeastern Wisconsin Region, of which the corridor is an integral part. Future land development needs within the corridor also will likely be influenced by development trends in neighboring Lake County, Illinois, to the south. This chapter summarizes the findings of the socioeconomic inventories conducted under the IH 94 South Corridor study, providing information on population size and distribution; household units, size, and income; and labor force and employment.

POPULATION

The population over the period 1950-1988 for the Southeastern Wisconsin Region; the Counties of Kenosha, Milwaukee, and Racine; and the IH 94 South Corridor is set forth in Table 2. Corresponding data for the Northeastern Illinois Region and Lake County, Illinois, are set forth in Table 3. After periods of rapid population growth from 1950 to 1960 and 1960 to 1970, population growth in the Southeastern Wisconsin Region and in the Northeastern Illinois Region slowed considerably. The estimated resident population for southeastern Wisconsin in 1988 is virtually the same as that counted in the 1970 Census, or about 1.75 million persons. In northeastern Illinois, the regional population over almost that same time period increased only slightly, from about 6.97 million persons to about 7.27 million persons.

Population changes in Kenosha, Milwaukee, and Racine Counties over the period 1950 through 1988 have in varying degrees mirrored the pattern of such changes in southeastern Wisconsin. In Kenosha and Racine Counties, rapid population growth during the 1950's and 1960's was replaced by modest growth during the 1970's. The population levels of Kenosha and Racine Counties have not changed significantly since 1980. Milwaukee County experienced rapid

population growth during the 1950's, modest population growth during the 1960's, and an actual decline in population after 1970. In neighboring Lake County, Illinois, however, the population growth trend established in the 1950's and 1960's remains relatively strong as that County approaches a population level of nearly one-half million persons.

Only about 50,000 people currently reside within the IH 94 South Corridor study area. About one-half of that population resides in Milwaukee County, with residential subdivision activity having been relatively strong in the Cities of Franklin and Oak Creek in recent years. The remaining population in the corridor is nearly evenly divided between Kenosha and Racine Counties, reflecting westward urban growth out from the central cities of Racine and Kenosha.

HOUSEHOLD UNITS, SIZE, AND INCOME

The number of housing units in the Southeastern Wisconsin Region; in Kenosha, Milwaukee, and Racine Counties; and in the IH 94 South Corridor study area over the period 1960 through 1985 is shown in Table 4. Corresponding household size data are set forth in Table 5. Unlike the trend in population size, growth in housing units in the Region and the three counties comprising the corridor remained strong throughout the 1970's, and, indeed, into the 1980's. Even in Milwaukee County, where the population decline has been large in absolute terms, the number of housing units has continued to increase.

There were about 17,000 housing units in the IH 94 South Corridor study area in 1985. As in the case of population, about one-half of these housing units are located within the Milwaukee County portion of the study area, with the remaining units about evenly divided between the Kenosha and Racine County portions of the study area.

Corresponding with a stable or declining population and an increase in the number of housing units is a decline in the average size of the household. At the regional level, the number of persons per occupied housing unit declined

Table 2

**HISTORICAL POPULATION FOR THE SOUTHEASTERN WISCONSIN REGION; KENOSHA,
MILWAUKEE, AND RACINE COUNTIES; AND THE IH 94 SOUTH CORRIDOR: 1950-1988**

Year	Region ^a		Kenosha County		Milwaukee County		Racine County	
	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period
1950	1,240,618	--	75,238	--	871,047	--	109,585	--
1960	1,573,614	26.8	100,615	33.7	1,036,047	18.9	141,781	29.4
1970	1,756,083	11.6	117,917	17.2	1,054,249	1.8	170,838	20.5
1980	1,764,796	0.5	123,137	4.4	964,988	-8.5	173,132	1.3
1985 ^b	1,742,742	-1.2	121,158	-1.6	939,570	-2.6	169,193	-2.3
1988 ^b	1,750,919	0.5	123,127	1.6	931,000	-0.9	170,670	0.9

Year	IH 94 South Corridor							
	Total		Kenosha County Portion		Milwaukee County Portion		Racine County Portion	
	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period
1950	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--
1970	41,001	--	8,768	--	18,330	--	13,903	--
1980	48,803	19.0	11,162	27.3	23,374	27.5	14,267	2.6
1985 ^b	49,768	1.9	11,459	2.7	24,542	5.0	13,767	-3.5
1988 ^b	--	--	--	--	--	--	--	--

^aThe Southeastern Wisconsin Region comprises Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties.

^bWisconsin Department of Administration population estimates.

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

Table 3

**HISTORICAL POPULATION FOR THE NORTHEASTERN
ILLINOIS REGION AND LAKE COUNTY, ILLINOIS: 1950-1985**

Year	Northeastern Illinois Region ^a		Lake County, Illinois	
	Population	Percent Change from Preceding Time Period	Population	Percent Change from Preceding Time Period
1950	5,177,868	--	179,097	--
1960	6,220,913	20.1	293,638	64.0
1970	6,974,755	12.1	382,638	30.3
1980	7,103,624	1.8	440,372	15.1
1985	7,271,600	2.4	468,600	6.4

^aThe Northeastern Illinois Region comprises Cook, DuPage, Kane, Lake, McHenry, and Will Counties.

Source: U. S. Bureau of the Census, Northeastern Illinois Planning Commission, and SEWRPC.

Table 4

HOUSING UNITS IN THE SOUTHEASTERN WISCONSIN REGION; KENOSHA, MILWAUKEE, AND RACINE COUNTIES; AND THE IH 94 CORRIDOR: 1960-1985

Year	Region ^a		Kenosha County		Milwaukee County		Racine County	
	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period
1960	499,986	--	33,643	--	327,736	--	43,895	--
1970	566,756	13.4	39,110	16.3	349,764	6.7	52,829	20.4
1980	664,934	17.3	47,506	21.5	378,000	8.1	62,565	18.4
1985	681,555	2.5	48,696	2.5	382,645	1.2	64,463	3.0

Year	IH 94 South Corridor							
	Total ^a		Kenosha County Portion		Milwaukee County Portion		Racine County Portion	
	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period	Number of Housing Units	Percent Change from Preceding Time Period
1960	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--
1980	16,057	--	3,800	--	7,789	--	4,468	--
1985	17,015	6.0	4,145	9.1	8,330	6.5	4,540	1.6

^aComprised of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties.

Source: SEWRPC.

Table 5

PERSONS PER OCCUPIED HOUSING UNIT IN THE SOUTHEASTERN WISCONSIN REGION; KENOSHA, MILWAUKEE, AND RACINE COUNTIES; AND THE IH 94 SOUTH CORRIDOR: 1960-1985

Year	Region ^a	Kenosha County	Milwaukee County	Racine County	IH 94 South Corridor			
					Total	Kenosha County Portion	Milwaukee County Portion	Racine County Portion
1960	3.30	3.36	3.21	3.39	--	--	--	--
1970	3.20	3.26	3.04	3.35	3.82	3.66	3.89	3.85
1980	2.75	2.80	2.59	2.86	3.13	3.12	3.07	3.26
1985	2.64	2.68	2.48	2.71	3.02	2.95	3.01	3.09

^aComprised of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties.

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

Table 6

**HOUSEHOLD INCOME IN THE SOUTHEASTERN WISCONSIN REGION
AND KENOSHA, MILWAUKEE, AND RACINE COUNTIES: 1979**

Income Range	Households							
	Region		Kenosha County		Milwaukee County		Racine County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
\$0-\$4,999	59,308	9.4	3,951	9.1	40,734	11.2	5,361	9.0
\$5,000-\$9,999	83,645	13.3	5,723	13.3	55,392	15.2	7,350	12.4
\$10,000-\$14,999	82,607	13.1	5,603	13.0	53,090	14.6	7,083	11.9
\$15,000-\$19,999	87,216	13.9	6,191	14.3	52,330	14.3	8,207	13.8
\$20,000-\$29,999	161,400	25.6	11,319	26.2	87,525	24.0	16,211	27.2
\$30,000-\$39,999	87,240	13.9	6,284	14.6	43,673	12.0	8,975	15.1
\$40,000-\$49,999	35,701	5.7	2,445	5.7	17,381	4.8	3,487	5.9
\$50,000 and Over	32,100	5.1	1,649	3.8	14,335	3.9	2,809	4.7
Total	629,217	100.0	43,165	100.0	364,460	100.0	59,483	100.0

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

significantly, from about 3.30 in 1960 to about 2.64 in 1985. The declines in the three counties comprising the corridor essentially mirror the regional change, with the average household size in Milwaukee County falling below 2.5 persons, and the average household size in Kenosha and Racine Counties approximating a level of about 2.7 persons per occupied housing unit. As shown in Table 5, the size of occupied housing units within the IH 94 South Corridor study area averaged slightly over 3.0 persons in 1985, significantly greater than the regional average. This pattern is consistent throughout the individual county portions of the study area, reflecting the essentially suburban character of the residential land use development that has occurred within the study area. Household sizes in the study area, however, have declined significantly since 1970.

Household income in the Southeastern Wisconsin Region and in Kenosha, Milwaukee, and Racine Counties by income range is shown in Table 6. This income is for calendar year 1979, the last year for which detailed income data are available. Estimated per capita income in the Southeastern Wisconsin and Northeastern Illinois Regions and in Kenosha, Milwaukee, and Racine Counties and Lake County, Illinois, for the years 1979 and 1985 is shown in Table 7. These per capita income data are based upon

population 15 years of age or older, representing that portion of the population of income earning age. As shown in this table, per capita incomes in northeastern Illinois are slightly higher than in southeastern Wisconsin. In both regions, however, the change in per capita income over the six-year period was essentially the same—about 41 percent. By way of comparison, the rate of general price inflation over that same six-year period was about 59 percent, indicating generally that income on a per capita basis in the two regions was not keeping pace with general price inflation.

At the county level, per capita incomes within southeastern Wisconsin in 1985 ranged from a low of nearly \$10,600 in Kenosha County, to a high of nearly \$11,200 in Milwaukee County. The per capita income in Lake County, Illinois, slightly exceeded \$15,000, a significantly higher amount. As shown in Table 7, per capita income in Lake County, Illinois, over the six-year period increased by nearly 49 percent, as compared to a range of 36 to 41 percent for the three Wisconsin counties.

LABOR FORCE AND EMPLOYMENT

The civilian labor force in the Southeastern Wisconsin Region and in Kenosha, Milwaukee, and Racine Counties over the period 1960

Table 7

ESTIMATED PER CAPITA INCOME IN THE SOUTHEASTERN WISCONSIN AND NORTHEASTERN ILLINOIS REGIONS AND IN KENOSHA, MILWAUKEE, RACINE, AND LAKE COUNTIES: 1979 AND 1985

Area	Per Capita Income ^a		Change	
	1979	1985	Amount	Percent
Southeastern Wisconsin Region	\$ 8,154	\$11,497	\$3,343	41.0
Northeastern Illinois Region	8,561	12,122	3,561	41.6
Kenosha County	\$ 7,756	\$10,594	\$2,838	36.6
Milwaukee County	7,952	11,194	3,242	40.8
Racine County	7,969	10,873	2,904	36.4
Lake County, Illinois	10,103	15,029	4,926	48.8

^aBased on population 15 years of age and older.

Source: U. S. Bureau of the Census.

through 1987 is shown in Table 8. The regional labor force increased by about 43 percent over that time period. At the county level, the Racine County labor force increased by about 56 percent, the Kenosha County labor force by about 36 percent, and the Milwaukee County labor force by about 15 percent.

The labor force participation rate—that is, the proportion of the civilian population 16 years of age and older that is in the labor force—has increased significantly in the Region, from about 58 percent in 1960 to about 66 percent in 1980. In 1987, the unemployment rate in the Region was estimated to be 5.5 percent. The unemployment rates for Kenosha, Milwaukee, and Racine Counties in that year were an estimated 7.4, 5.5, and 6.9 percent, respectively.

Employment trends in the Southeastern Wisconsin Region; in Kenosha, Milwaukee, and Racine Counties; and in the IH 94 South Corridor study area are shown in Table 9. At the regional level, employment over the 13-year period 1972 through 1985 increased by about 16 percent—from nearly 749,000 jobs in 1972 to nearly 872,000 jobs in 1985. The 1985 level, however, represents a loss from the 1980 level of about 884,000 jobs, reflecting the severe economic recession experienced in the Region from 1981 through 1983. At the county level, within Kenosha, Milwaukee, and Racine Counties the job

trends mirrored the regional trend. While in each county there were gains over the 13-year period as reflected in Table 9, the number of jobs in each county declined after 1980.

In the IH 94 South Corridor study area, however, the number of jobs increased from about 11,700 in 1972 to 24,000 in 1980, and to 28,000 in 1985. Since the IH 94 South Corridor study area is on the fringes of the Kenosha, Milwaukee, and Racine urban areas, the pattern of continued employment growth reflects a general trend of job decentralization in the Region.

SUMMARY AND CONCLUSION

This chapter has described the demographic and economic base for the IH 94 South Corridor study area. Of significance to the preparation of a development plan for the corridor are the following findings:

1. After periods of rapid population growth in the 1950's and 1960's, population growth in the Southeastern Wisconsin Region stabilized, with the resident population of the Region in 1985 estimated at 1.75 million persons, virtually the same as the regional population counted in the 1970 Census. Population in the neighboring Northeast-

Table 8

**COMPARATIVE CIVILIAN LABOR FORCE IN THE SOUTHEASTERN WISCONSIN
REGION AND KENOSHA, MILWAUKEE, AND RACINE COUNTIES: 1960-1987**

Area	Number of Persons					Percent Change			
	1960 ^a	1970 ^b	1980 ^b	1985 ^{b,c}	1987 ^{b,d}	1960-1970	1970-1980	1980-1987	1960-1987
Region									
Civilian Labor Force	636,897	736,078	876,154	874,700	911,300	15.6	19.0	4.0	43.1
Employed	612,723	708,800	826,458	813,700	861,300	15.7	16.6	4.2	40.1
Unemployed	24,174	27,278	49,696	61,000	50,000	12.8	82.2	0.6	106.8
Kenosha County									
Civilian Labor Force	39,726	47,171	59,625	54,100	54,100	18.7	26.4	-9.3	36.2
Employed	38,498	45,145	55,280	47,900	50,100	17.3	22.4	-9.4	30.1
Unemployed	1,228	2,026	4,345	6,200	4,000	65.0	109.5	-7.9	225.7
Milwaukee County									
Civilian Labor Force	431,742	454,085	478,184	471,700	494,700	5.2	5.3	3.5	14.6
Employed	414,230	437,207	450,851	440,500	467,500	5.5	3.1	3.7	12.9
Unemployed	17,512	16,878	27,333	31,200	27,200	-3.6	61.9	-0.5	55.3
Racine County									
Civilian Labor Force	54,947	68,255	84,330	83,800	85,900	24.2	23.6	1.9	56.3
Employed	52,558	65,098	79,169	75,900	80,000	23.9	21.6	1.0	52.2
Unemployed	2,389	3,157	5,161	7,800	5,900	32.1	63.5	14.3	146.9

^aFourteen years of age and older.

^bSixteen years of age and older.

^cBased upon 1985 average monthly civilian labor force estimates.

^dBased upon 1987 average monthly civilian labor force estimates.

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

Table 9

**EMPLOYMENT IN THE SOUTHEASTERN WISCONSIN REGION; KENOSHA, MILWAUKEE,
AND RACINE COUNTIES; AND THE IH 94 SOUTH CORRIDOR: 1972, 1980, AND 1985**

Area	Number of Jobs			Change					
	1972	1980	1985	1972-1980		1980-1985		1972-1985	
				Number	Percent	Number	Percent	Number	Percent
Southeastern Wisconsin Region	748,900	884,200	871,900	135,300	18.1	-12,300	-1.4	123,000	16.4
Kenosha County	40,700	50,100	42,500	9,400	23.1	-7,600	-15.2	1,800	4.4
Milwaukee County	508,400	542,300	533,700	33,900	6.7	-8,600	-1.6	25,300	5.0
Racine County	63,700	76,100	70,900	12,400	19.5	-5,200	-6.8	7,200	11.3
IH 94 South Corridor	11,700	24,000	28,000	12,300	105.1	4,000	16.7	16,300	139.3

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

ern Illinois Region continued to increase in the 1970's, although at reduced rates from the 1950's to 1960's.

- Population changes in the three counties which contain the IH 94 South Corridor have in varying degrees mirrored the regional change. In Kenosha and Racine Counties, rapid population growth during the 1950's and 1960's was replaced by modest growth during the 1970's. The

population levels of Kenosha and Racine Counties have not changed significantly since 1980. Milwaukee County experienced rapid population growth during the 1950's, modest population growth during the 1960's, and an actual decline in population after 1970. In neighboring Lake County, Illinois, however, population growth remains relatively strong as that County approaches a population level of nearly one-half million persons.

3. About 50,000 people currently reside within the IH 94 South Corridor study area, with one-half of that population residing in Milwaukee County. The remaining one-half of the population is nearly evenly divided between Kenosha and Racine Counties.
4. Reflecting significant declines in the average household size, the number of housing units in the Region; in Kenosha, Milwaukee, and Racine Counties; and in the IH 94 South Corridor study area has continued to increase despite a stable or declining resident population. In 1985 there were about 17,000 housing units in the IH 94 South Corridor study area. The average household size in the study area slightly exceeds 3.0 persons, significantly greater than the regional level of 2.6 persons. This reflects the essentially single-family housing unit character of the residential development in the corridor study area.
5. Per capita income in 1985 in the counties comprising the corridor study area ranged from about \$10,600 in Kenosha County to about \$11,200 in Milwaukee County. In contrast, the per capita income in Lake County, Illinois, in 1985 slightly exceeded \$15,000. The increase in per capita income over the six-year period 1979 through 1985 had not kept pace with the rate of general price inflation.
6. The labor force in the three counties comprising the IH 94 South Corridor study area stood at about 634,700 persons in 1987. Of that total, 39,000 were unemployed, representing an unemployment rate of about 6.1 percent.
7. The number of jobs in the three counties comprising the IH 94 South Corridor study area totaled 647,100 in 1985. Of that total, 28,000, or about 4 percent, were located within the corridor study area. After increasing steadily throughout the 1970's, the number of jobs in the Region and the three counties comprising the corridor decreased after 1980. The number of jobs located within the corridor, however, continued to increase from 1972 to 1985, reflecting a decentralization of job locations.

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Chapter III

LAND USE AND NATURAL RESOURCE BASE

INTRODUCTION

The proper formulation of a development plan for the IH 94 South Corridor requires that factual data be assembled on historical and existing land use development in the corridor, and on the underlying natural resource base and the ability of that base to support various kinds of land use development. Accordingly, this chapter describes the findings of the land use and natural resource base inventories conducted under the IH 94 South Corridor study, providing information on historical and existing land use and on such natural resources as soils, surface waters and wetlands, topography, woodlands, wildlife habitat, and archaeological and historic sites.

HISTORIC URBAN GROWTH

Drawing from historic maps and photographs, the Commission has assembled information that documents the historic pattern of urban development in the Region. The results of that inventory effort are shown on Map 3. While urban development in the Southeastern Wisconsin Region began in the mid-1800's, it wasn't until the mid-1900's that any significant amount of urban development began to take place within the IH 94 South Corridor study area.¹

As shown on Map 3, the only urban development in the corridor by 1950 was that at the north end scattered along S. 27th Street (USH 41) from

¹For the purposes of this analysis, urban development is defined as those areas wherein houses or other buildings have been constructed in relatively compact groups or where a closely spaced network of minor streets has been constructed, thereby indicating a concentration of residential, commercial, industrial, governmental, or institutional land uses. The continuity of such development was considered interrupted if a quarter-mile or more of rural-type land uses, such as agriculture, woodlands, or wetlands, prevailed and the above conditions were generally absent.

College Avenue south to Oakwood Road—primarily highway-oriented commercial development—and small nodes of urban development in the communities of Franksville, Sturtevant, Somers, and Pleasant Prairie. By 1950, urban development in the corridor totaled less than one square mile, or about 0.6 percent of the total corridor study area of about 178 square miles (see Table 10).

By 1963, when the Regional Planning Commission conducted its first regional land use inventory, an additional seven square miles of urban development had been added to the corridor.² By that time, IH 94 had been built through the Racine and Kenosha County portions of the corridor. Some of the new development between 1950 and 1963 was commercial in nature, attracted to the new freeway. The remainder of the development consisted primarily of scattered residential land uses.

By 1975, an additional seven square miles of urban development had been added to the corridor, consisting again of largely scattered commercial and residential development. By 1985, an additional five square miles of urban development had been added to the corridor. Thus, by 1985, about 19 square miles, or nearly 11 percent, of the total corridor was in urban uses.

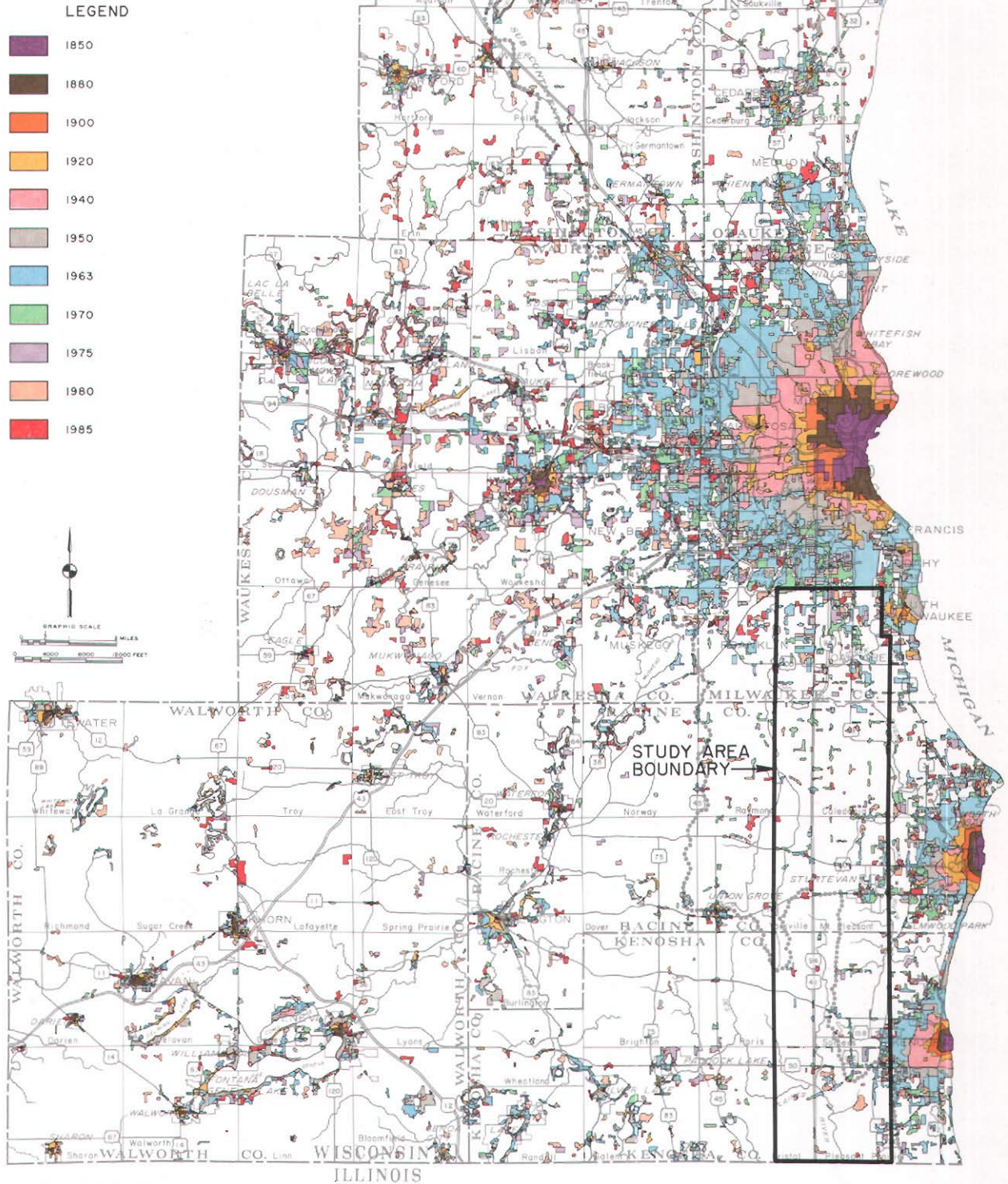
EXISTING LAND USE

The Commission conducts detailed inventories of existing land use in the Region in order to determine the type, amount, and spatial location of new urban development and concomitant reductions and changes in rural land use. As already noted, the first such inventory was conducted in 1963, and the latest such inventory was conducted for the base year 1985. By

²The Kenosha and Racine County portions of IH 94 were opened to traffic in November 1960. That portion of IH 94 in Milwaukee County north to Holt Avenue was opened to traffic in November 1966.

Map 3

**HISTORIC URBAN DEVELOPMENT
IN THE IH 94 SOUTH CORRIDOR**



Source: SEWRPC.

Table 10

**HISTORIC URBAN DEVELOPMENT IN THE IH 94 SOUTH
CORRIDOR BY COUNTY: 1950, 1963, 1975, AND 1985**

County	1950		1963		1975		1985	
	Urban Development Area (square miles)	Percent of Total	Urban Development Area (square miles)	Percent of Total	Urban Development Area (square miles)	Percent of Total	Urban Development Area (square miles)	Percent of Total
Kenosha	0.2	25	2.3	30	3.7	27	5.3	28
Milwaukee	0.4	50	3.7	48	6.7	47	8.8	46
Racine	0.2	25	1.7	22	3.8	26	5.0	26
Total	0.8	100	7.7	100	14.2	100	19.1	100

Source: SEWRPC.

comparing these two detailed land use inventories, trends in land use development and change in the corridor can be determined. The results of the 1963 and 1985 land use inventories are set forth by county and for the entire study area in Table 11. The 1985 land use inventory is summarized in graphic form on Map 4.

For analysis purposes, urban land uses include residential, commercial, industrial, governmental and institutional, park and recreational, transportation and utilities, and extractive and landfill land uses. Rural land uses include prime agricultural lands, other agricultural and open lands, water, wetlands, and woodlands. Collectively, urban land uses in the corridor comprised about 13,100 acres in 1963, or about 20 square miles and about 11 percent of the total study area. By 1985, urban land uses had increased by over 50 percent to about 20,500 acres, or about 32 square miles, representing 18 percent of the study area. This increase in urban land use occurred in all of the urban land use categories, although growth was greatest in the commercial, industrial, and park and recreational land use categories.

Concomitantly, rural land uses in the corridor, which totaled about 101,100 acres, or about 158 square miles, and represented nearly 89 percent of the corridor in 1963, declined over the 22-year period to about 93,600 acres, or 146 square miles, in 1985, representing about 82 percent of the study area. While there were some minor changes in the water, wetlands, and woodlands

land use categories, nearly all of the land converted from rural to urban use over the 22-year period was agricultural or other open lands.

Rural land uses, then, continue to dominate the landscape in the IH 94 South Corridor study area, accounting for over four out of every five acres of land. Despite the intrusion of some urban development in the corridor, agricultural land uses still account for nearly three-quarters of all lands within the corridor. With respect to urban land uses, which constitute less than 20 percent of the corridor study area, nearly 41 percent is devoted to residential land uses; about 39 percent to transportation and utility land uses; about 6 percent to park and recreational land uses; and about 5 percent to industrial land uses. The remaining land use categories—commercial, governmental and institutional, and extractive and landfill—comprise less than 5 percent each. Although much of the recent urban development activity in the Racine and Kenosha County portions of the corridor has been commercial or industrial in nature, such uses together in 1985 accounted for less than 1.5 percent of all lands in the corridor study area.

Residential Land Use

In 1963 there were about 5,200 acres, or about 8 square miles, of developed residential land in the study area, representing nearly 5 percent of the study area. By 1985, the amount of land developed for residential purposes had increased to nearly 8,400 acres, or nearly 13 square miles, representing about 7 percent of the total area. As

Table 11

EXISTING LAND USE IN THE IH 94 SOUTH CORRIDOR STUDY AREA BY COUNTY: 1963 AND 1985

MILWAUKEE COUNTY								
Land Use Category	1963			1985			Change 1963-1985	
	Acres	Percent of County	Percent of Urban or Rural Subtotal	Acres	Percent of County	Percent of Urban or Rural Subtotal	Acres	Percent
Urban								
Residential								
Single-Family	1,895	8.6	49.2	2,943	13.3	41.5	1,048	55.3
Two-Family	2	-- ^a	0.1	19	0.1	0.3	17	850.0
Multiple-Family	1	-- ^a	-- ^a	109	0.5	1.5	108	10,800.0
Subtotal	1,898	8.6	49.3	3,071	13.9	43.3	1,173	61.8
Commercial	135	0.6	3.5	212	1.0	3.0	77	57.0
Industrial	120	0.5	3.1	455	2.0	6.4	335	279.2
Governmental and Institutional	232	1.0	6.0	308	1.4	4.3	76	32.8
Parks and Recreational	76	0.3	2.0	472	2.1	6.7	396	521.1
Transportation and Utilities								
Streets and Highways	860	3.9	22.3	1,626	7.3	23.0	766	89.1
Trucking and Busing Terminals	7	-- ^a	0.2	92	0.4	1.3	85	1,214.3
Railroads	200	0.9	5.2	171	0.8	2.4	-29	-14.5
Airports	60	0.3	1.5	60	0.3	0.8	--	--
Communication and Utilities	103	0.5	2.7	106	0.5	1.5	3	2.9
Off-street Parking	79	0.4	2.0	314	1.4	4.5	235	297.5
Subtotal	1,309	6.0	33.9	2,369	10.7	33.5	1,060	81.0
Extractive and Landfill	85	0.4	2.2	199	0.9	2.8	114	134.1
Urban Land Use Subtotal	3,855	17.4	100.0	7,086	32.0	100.0	3,231	83.8
Rural								
Prime Agricultural	5,026	22.7	27.5	--	--	--	-5,026	-100.0
Other Agricultural and Open Lands	10,609	47.9	58.0	12,588	56.9	83.7	1,979	18.7
Water	56	0.3	0.3	78	0.3	0.5	22	39.3
Wetlands	1,107	5.0	6.1	1,120	5.1	7.4	13	1.2
Woodlands	1,484	6.7	8.1	1,265	5.7	8.4	-219	-14.8
Rural Land Use Subtotal	18,282	82.6	100.0	15,051	68.0	100.0	-3,231	-17.7
Total Land Use	22,137	100.0	--	22,137	100.0	--	--	--

RACINE COUNTY								
Urban								
Residential								
Single-Family	1,819	4.0	36.3	2,844	6.2	41.5	1,025	56.3
Two-Family	3	-- ^a	0.1	36	0.1	0.5	33	1,100.0
Multiple-Family	1	-- ^a	-- ^a	18	-- ^a	0.3	17	1,700.0
Subtotal	1,823	4.0	36.4	2,898	6.3	42.3	1,075	59.0
Commercial	63	0.1	1.3	162	0.4	2.4	99	157.1
Industrial	69	0.2	1.4	336	0.7	4.9	267	387.0
Governmental and Institutional	167	0.4	3.3	237	0.5	3.5	70	41.9
Parks and Recreational	206	0.4	4.1	482	1.0	7.0	276	134.0
Transportation and Utilities								
Streets and Highways	1,777	3.9	35.5	2,003	4.4	29.2	226	12.7
Trucking and Busing Terminals	--	--	--	1	-- ^a	-- ^a	1	--
Railroads	415	0.9	8.3	413	0.9	6.0	-2	-0.5
Airports	41	0.1	0.8	35	0.1	0.5	-6	-14.6
Communication and Utilities	29	0.1	0.6	38	0.1	0.6	9	31.0
Off-street Parking	45	0.1	0.9	168	0.4	2.5	123	273.3
Subtotal	2,307	5.1	46.1	2,658	5.9	38.8	351	15.2
Extractive and Landfill	373	0.8	7.4	73	0.2	1.1	-300	-80.4
Urban Land Use Subtotal	5,008	11.0	100.0	6,846	15.0	100.0	1,838	36.7
Rural								
Prime Agricultural	28,668	62.4	70.1	24,166	52.6	61.8	-4,502	-15.7
Other Agricultural and Open Lands	9,465	20.6	23.1	11,711	25.5	30.0	2,246	23.7
Water	78	0.2	0.2	220	0.5	0.6	142	182.1
Wetlands	1,444	3.1	3.5	1,731	3.7	4.4	287	19.9
Woodlands	1,270	2.7	3.1	1,259	2.7	3.2	-11	-0.9
Rural Land Use Subtotal	40,925	89.0	100.0	39,087	85.0	100.0	-1,838	-4.5
Total Land Use	45,933	100.0	--	45,933	100.0	--	--	--

Table 11 (continued)

KENOSHA COUNTY

Land Use Category	1963			1985			Change 1963-1985	
	Acres	Percent of County	Percent of Urban or Rural Subtotal	Acres	Percent of County	Percent of Urban or Rural Subtotal	Acres	Percent
Urban								
Residential								
Single-Family	1,479	3.2	35.1	2,380	5.2	36.0	901	60.9
Two-Family	2	-- ^a	-- ^a	4	-- ^a	0.1	2	100.0
Multiple-Family	--	--	--	23	-- ^a	0.3	23	--
Subtotal	1,481	3.2	35.1	2,407	5.2	36.4	926	62.5
Commercial	48	0.1	1.1	129	0.3	2.0	81	168.8
Industrial	85	0.2	2.0	306	0.7	4.6	221	260.0
Governmental and Institutional	99	0.2	2.3	133	0.3	2.0	34	34.3
Parks and Recreational	196	0.4	4.6	362	0.8	5.5	166	84.7
Transportation and Utilities								
Streets and Highways	1,622	3.5	38.5	1,805	3.9	27.3	183	11.3
Trucking and Busing Terminals	23	0.1	0.6	44	0.1	0.7	21	91.3
Railroads	414	0.9	9.8	430	0.9	6.5	16	3.9
Airports	147	0.3	3.5	247	0.5	3.7	100	68.0
Communication and Utilities	11	-- ^a	0.3	309	0.7	4.7	298	2,709.1
Off-street Parking	30	0.1	0.7	138	0.3	2.1	108	360.0
Subtotal	2,247	4.9	53.4	2,973	6.4	45.0	726	32.3
Extractive and Landfill	63	0.1	1.5	294	0.6	4.5	231	366.7
Urban Land Use Subtotal	4,219	9.1	100.0	6,604	14.3	100.0	2,385	56.5
Rural								
Prime Agricultural	27,982	60.7	66.8	25,002	54.2	63.3	-2,980	-10.6
Other Agricultural and Open Lands	9,081	19.7	21.7	9,270	21.1	24.6	639	7.0
Water	98	0.2	0.2	219	0.5	0.6	121	123.5
Wetlands	3,164	6.9	7.6	3,093	6.7	7.8	-71	-2.2
Woodlands	1,559	3.4	3.7	1,465	3.2	3.7	-94	-6.0
Rural Land Use Subtotal	41,884	90.9	100.0	39,499	85.7	100.0	-2,385	-5.7
Total Land Use	46,103	100.0	--	46,103	100.0	--	--	--

TOTAL STUDY AREA

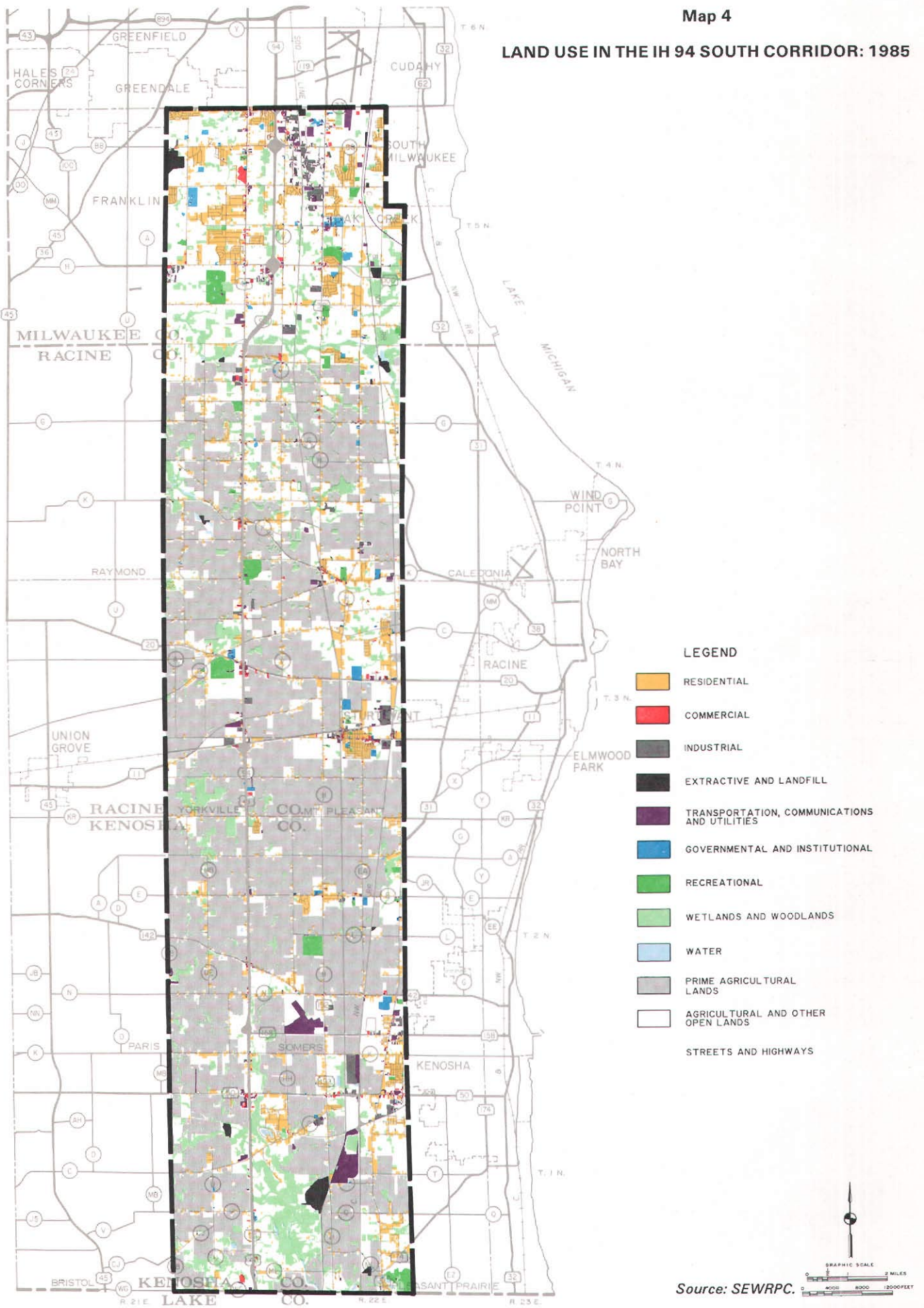
Urban								
Residential								
Single-Family	5,193	4.6	39.7	8,167	7.1	39.8	2,974	57.3
Two-Family	7	-- ^a	0.1	59	0.1	0.3	52	742.9
Multiple-Family	2	-- ^a	-- ^a	150	0.1	0.7	148	7,400.0
Subtotal	5,202	4.6	39.8	8,376	7.3	40.8	3,174	61.0
Commercial	246	0.2	1.9	503	0.4	2.4	257	104.5
Industrial	274	0.2	2.1	1,097	1.0	5.3	823	300.4
Governmental and Institutional	498	0.5	3.8	678	0.6	3.3	180	36.1
Parks and Recreational	478	0.4	3.6	1,316	1.2	6.4	838	175.3
Transportation and Utilities								
Streets and Highways	4,259	3.7	32.5	5,434	4.8	26.5	1,175	27.6
Trucking and Busing Terminals	30	-- ^a	0.2	137	0.1	0.7	107	356.7
Railroads	1,029	0.9	7.9	1,014	0.9	4.9	-15	-1.5
Airports	248	0.2	1.9	342	0.3	1.7	94	37.9
Communication and Utilities	143	0.1	1.1	453	0.4	2.2	310	216.8
Off-street Parking	154	0.1	1.2	620	0.5	3.0	466	302.6
Subtotal	5,863	5.0	44.8	8,000	7.0	39.0	2,137	36.4
Extractive and Landfill	521	0.5	4.0	566	0.5	2.8	45	8.6
Urban Land Use Subtotal	13,082	11.4	100.0	20,536	18.0	100.0	7,454	57.0
Rural								
Prime Agricultural	61,676	54.0	61.0	49,168	43.0	52.5	-12,508	-20.3
Other Agricultural and Open Lands	29,155	25.6	28.8	34,019	29.8	36.3	4,864	16.7
Water	232	0.2	0.2	517	0.5	0.6	285	122.8
Wetlands	5,715	5.0	5.7	5,944	5.2	6.3	229	4.0
Woodlands	4,313	3.8	4.3	3,989	3.5	4.3	-324	-7.5
Rural Land Use Subtotal	101,091	88.6	100.0	93,637	82.0	100.0	-7,454	-7.4
Total Land Use	114,173	100.0	--	114,173	100.0	--	--	--

^aLess than 0.05 percent.

Source: SEWRPC.

Map 4

LAND USE IN THE IH 94 SOUTH CORRIDOR: 1985



shown in Table 11 and on Map 4, residential land use is distributed throughout the three counties in the study corridor. Significant concentrations of this residential development, which is nearly all single family in character, occur in the Cities of Oak Creek and Franklin, the Village of Sturtevant, the Franksville area in the Town of Caledonia, the CTH C area in the Town of Mt. Pleasant, the unincorporated village of Somers in the Town of Somers, the western fringes of the City of Kenosha, and the unincorporated village of Pleasant Prairie in the Town of Pleasant Prairie.

In addition to these clusters of residential development, most of which are served with public sanitary sewers, there are scattered subdivisions and strips of residential land development along county and town highways throughout the more rural portions of the study area. Providing needed centralized sanitary sewer service to these scattered enclaves of residential development is proving to be troublesome and costly. For example, onsite sewage disposal systems are failing on a widespread basis in the Raymond Heights Subdivision in the Town of Raymond just west of IH 94 and north of CTH G. Feasibility studies to date have found no way within the financial reach of the residents in which conventional sanitary sewer service can be provided to resolve these problems, leaving individual or common holding tanks as the only feasible solution at this time.

Commercial Land Use

In 1963 there were 246 acres of developed commercial land in the study area exclusive of off-street parking areas associated with those developed lands. By 1985, developed commercial land had more than doubled to a total of 503 acres. In 1963 land developed for commercial purposes was largely concentrated along S. 27th Street in the Cities of Franklin and Oak Creek, with some minor concentrations in Franksville and Sturtevant, and with a few scattered commercial sites along IH 94 in Racine and Kenosha Counties.

By 1985 the commercial development pattern began to show the impacts of the construction of the IH 94 South Freeway. The most pronounced increases in commercial development between 1963 and 1985 tended to occur near freeway interchanges, particularly the STH 100, 7 Mile Road, STH 20, and STH 50 interchanges.

In order to provide a more detailed inventory of commercial land uses within that portion of the study corridor immediately adjacent to IH 94, the Commission conducted a special land use inventory in spring 1988. The results of that inventory are summarized in Table 12. For purposes of this inventory, the specifically identified commercial land uses were grouped into six categories: motor vehicle-oriented retail sales and services; large floor area retail sales and services; shopping centers; other retail sales and services; offices; and bulk sales and construction services. The motor vehicle-oriented and large floor area retail sales and services tend to be concentrated at the Ryan Road, 7 Mile Road, STH 20, STH 142, and STH 50 interchanges, while the only shopping center concentration is found at the STH 50 interchange.

Industrial Land Use

In 1963 there were 274 acres of land in the study area developed for industrial purposes. By 1985 there were 1,097 acres devoted to industrial land use, a three-fold increase. As in the commercial land use category, this acreage represents the actual area devoted to industrial purposes and does not include off-street parking. This increase in industrial land use activity was distributed throughout all three counties in the corridor. Most of the increase in Milwaukee County has occurred in the City of Oak Creek, which has promoted industrial development on lands lying east of IH 94 and south of General Mitchell International Airport. In Racine County, much of the increase in industrial land has occurred in the Town of Mt. Pleasant just east of the Village of Sturtevant. In Kenosha County, the increases have occurred in both the City of Kenosha and the Town of Pleasant Prairie. In all three counties, the concentrations of new industrial development have occurred largely in planned industrial areas recommended for such development in the adopted regional land use plan. Relatively minor amounts of new industrial development, however, have been located on lands immediately adjacent to IH 94 in locations not recommended for development in the adopted plan.

Governmental and Institutional Land Uses

In 1963 there were nearly 500 acres of land in governmental and institutional land uses in the study corridor. By 1985, that amount had increased by about one-third to nearly 680 acres. Again, this increase in land use was distributed

Table 12

COMMERCIAL LAND USE GROUPINGS ADJACENT TO THE IH 94 SOUTH FREEWAY: APRIL 1988

General Grouping Category	Land Use Type
Motor Vehicle-Oriented Retail Sales and Services ^a	Gasoline Stations (with food market) Gasoline/Diesel Fuel Stations (not bulk, without food market) Restaurants (with automobile drive-through facilities) Restaurants (truck stops) Automobile Servicing/Repair Automobile Sales/Auction Recreational Vehicle Sales Motels/Hotels Motorcycle Sales/Service Tire Stores Banks (with drive-through facilities) Tourist Information Centers
Large Floor Area Retail Sales and Services ^b	Mobile Home Sales Bazaars/Open Air Sales Boat Sales Appliance Sales/Service Furniture Sales Greenhouses (commercial) Auction Houses Nurseries
Shopping Center Retail Sales and Services ^c	Factory Outlet Stores (in shopping center environment) including: —General Merchandise Stores —Apparel and Accessory Stores —Restaurants (not including drive-through facilities) —Banks (not including drive-through facilities) —Confectioneries —Gift Shops —Shoe Stores —Craft Stores —Food Stores —Book Stores
Other Retail Sales and Services ^c	Factory Outlet Stores Restaurants (without automobile drive-through facilities) Taverns/Bars Antique Sales Fireworks Retail Sales/Storage Cheese Sales Adult Books/Videos/Novelties
Offices	Offices
Bulk Sales and Construction Services	Construction Equipment Rental Construction Equipment Sales/Supplies Power Equipment Sales Construction Contractors Lawn Equipment Sales Lawn Sprinkler Design/Sales

^aThe motor vehicle-oriented retail sales and service grouping of commercial uses is characterized by sales and service to commercial customers in the automobile. These types of commercial uses are typically not pedestrian-oriented onsite.

^bThe large floor area retail sales grouping of commercial uses is characterized by onsite parking for customer automobiles, customer off-street loading facilities, and a limited pedestrian-oriented shopping environment.

^cThe shopping center and other retail sales and service groupings of commercial uses are characterized by onsite parking for customer automobiles and a pedestrian-oriented shopping environment.

Source: SEWRPC.

throughout all three counties in the study corridor, with the increases particularly concentrated in the City of Oak Creek in Milwaukee County, where the Milwaukee Area Technical College located a new campus; the Town of Yorkville, where Racine County located a new highway and office building; and the Town of Somers, where a new Town Hall and private high school were constructed.

Park and Recreational Land Uses

In 1963 there were nearly 480 acres of land in the study corridor devoted to park and recreational land uses. By 1985 there were about 1,315 acres devoted to such uses, representing an increase of nearly 175 percent. The major developed park and recreational land uses in the corridor include Oakwood Park in Milwaukee County, the Ives Grove Golf Links and the South Hills Country Club in Racine County, and the Maplecrest Country Club in Kenosha County.

Transportation, Communication, and Utility Land Uses

In 1963 there were nearly 5,900 acres of land devoted to transportation, communication, and utility uses in the corridor, representing about 9 square miles, or about 5 percent of the total study area. By 1985, there were nearly 8,000 acres devoted to such uses, representing about 12 square miles, or nearly 7 percent of the study area. Included in this land use category are streets and highways, truck and bus terminals, railways, utilities, communication facilities, and off-street parking uses.

Much of the increase in the transportation, communication, and utility land use category over the period 1963 through 1985 occurred in Milwaukee County with the construction of the IH 94 Freeway. Another major addition was the Pleasant Prairie electric power generation plant which dominates the landscape in the southern portion of the corridor.

Extractive and Landfill Land Uses

In 1963 there were about 520 acres of land devoted to either extractive or landfill uses in the study corridor. By 1985, this figure had increased only slightly to about 565 acres, an increase of less than 10 percent. As shown on Map 4, extractive and landfill uses are scattered throughout the corridor, including a major extraction activity begun since 1963 in the Town of Pleasant Prairie.

Rural and Open Lands

Rural land uses are comprised of the following: agricultural land uses, surface water, wetlands, woodlands, and unused and other open lands. Of particular importance in this category are prime agricultural lands. For planning purposes, to be considered prime agricultural land the farm units must meet the following criteria: 1) The farm unit must be at least 35 acres in area; 2) at least one-half of the farm unit must be covered by soils which meet U. S. Soil Conservation Service standards for national prime farmland or farmland of statewide significance; and 3) the farm unit must be located in a block of farmland of at least 100 acres in size. The location of prime agricultural lands in the Region in 1985 is shown on Map 4.

In 1963 prime agricultural lands totaled about 61,700 acres, or about 96 square miles, representing about 54 percent of the study area. By 1985 the amount of prime agricultural land had decreased significantly to about 49,200 acres, representing about 77 square miles, or 43 percent of the corridor study area. Much of the decrease in prime agricultural land over the period occurred in the Milwaukee County portion of the study area, where by 1985 urban development had occurred to such an extent that none of the lands previously classified as prime agricultural land met the aforementioned criteria. There remain, however, within Racine and Kenosha Counties, large areas that are well suited for farming and that for the most part have not yet experienced a large degree of intrusion of urban uses. This is particularly true in the four towns lying west of IH 94 in Racine and Kenosha Counties, and in the Town of Somers lying east of IH 94 in Kenosha County.

In 1963 wetlands totaled about 5,700 acres, or about 9 square miles and nearly 6 percent of the total study area. By 1985, the amount of wetlands had increased slightly to over 5,900 acres. This increase in wetland acreage occurred because certain farmlands on soils that are conducive to the rooting of wetland vegetation were taken out of production.

Woodlands in the study corridor in 1963 totaled about 4,300 acres, or about seven square miles and nearly 4 percent of the study area. By 1985 woodlands had decreased by nearly 8 percent to about 4,000 acres, or about six square miles.

Finally, in 1963, nonprime agricultural and other open lands totaled nearly 29,200 acres, or about 46 square miles, representing about 26 percent of the total study area. By 1985, such lands totaled about 34,000 acres, or about 53 square miles.

NATURAL RESOURCE BASE

The proper management of the natural resource base is essential to the physical, social, and economic development of any area, and to the continued ability of that area to provide a pleasant, habitable environment for life. In the absence of sound planning and plan implementation, future land use development in the IH 94 South Corridor study area may be expected to subject the remaining elements of the natural resource base of that corridor to substantial deterioration and destruction. Consequently, the IH 94 South Corridor development plan should recognize those areas having concentrations of natural resources deserving of protection from intensive urban development, as well as those areas that may have natural resource characteristics that would impose significant limitations on urban development.

For the purposes of this corridor planning effort, the principal elements of the natural resource base were defined as soils; surface waters, wetlands, and associated floodlands; woodlands; and wildlife habitat. In addition, while not a natural resource base element, archaeological and historic sites were considered as being culturally significant and worthy of consideration in the corridor planning effort. The following discussion summarizes the inventory findings with respect to these resources.

Soils

In the early 1960's, the Commission contracted with the U. S. Soil Conservation Service to complete detailed operational soil surveys of the entire seven-county Region. This work effort mapped the geographic locations of the various kinds of soils; identified their physical, chemical, and biological properties; and interpreted those properties for land use and public facility planning.

Of particular importance in the IH 94 South Corridor planning effort are soil interpretations with respect to the following: 1) farming and agriculture; 2) residential development on lots

having an area smaller than one acre and not served by public sanitary sewer; 3) residential development on lots having an area of one acre or more and not served by public sanitary sewer; and 4) residential development with public sanitary sewer service. The suitability of soils in the IH 94 South Corridor for farming and agriculture is summarized on Map 5. As can be seen on this map, the great majority of the land within the corridor is well suited to farming and agriculture. These soil properties account for the fact, as reported above, that nearly 77 square miles, or 43 percent of the study area, remains classified as prime agriculture land.

The suitability of soils for residential development intended to be served by onsite septic tank sewage disposal systems on small lots is summarized on Map 6. As shown on this map, about 172 square miles, or 97 percent of the study corridor, is covered by soils that are very poorly suited for the proper operation of septic tank absorption fields. The suitability of soils for residential development to be served by onsite septic tank sewage disposal systems on large lots is shown on Map 7. Even under large lot conditions, about 99 square miles, or about 56 percent of the study area, is poorly suited for the proper operation of septic tank absorption fields.

Soil suitability for residential development with public sanitary sewer service is shown on Map 8. Soil types with severe limitations for residential development even with public sanitary sewers comprise about 45 square miles, or 25 percent of the study corridor.

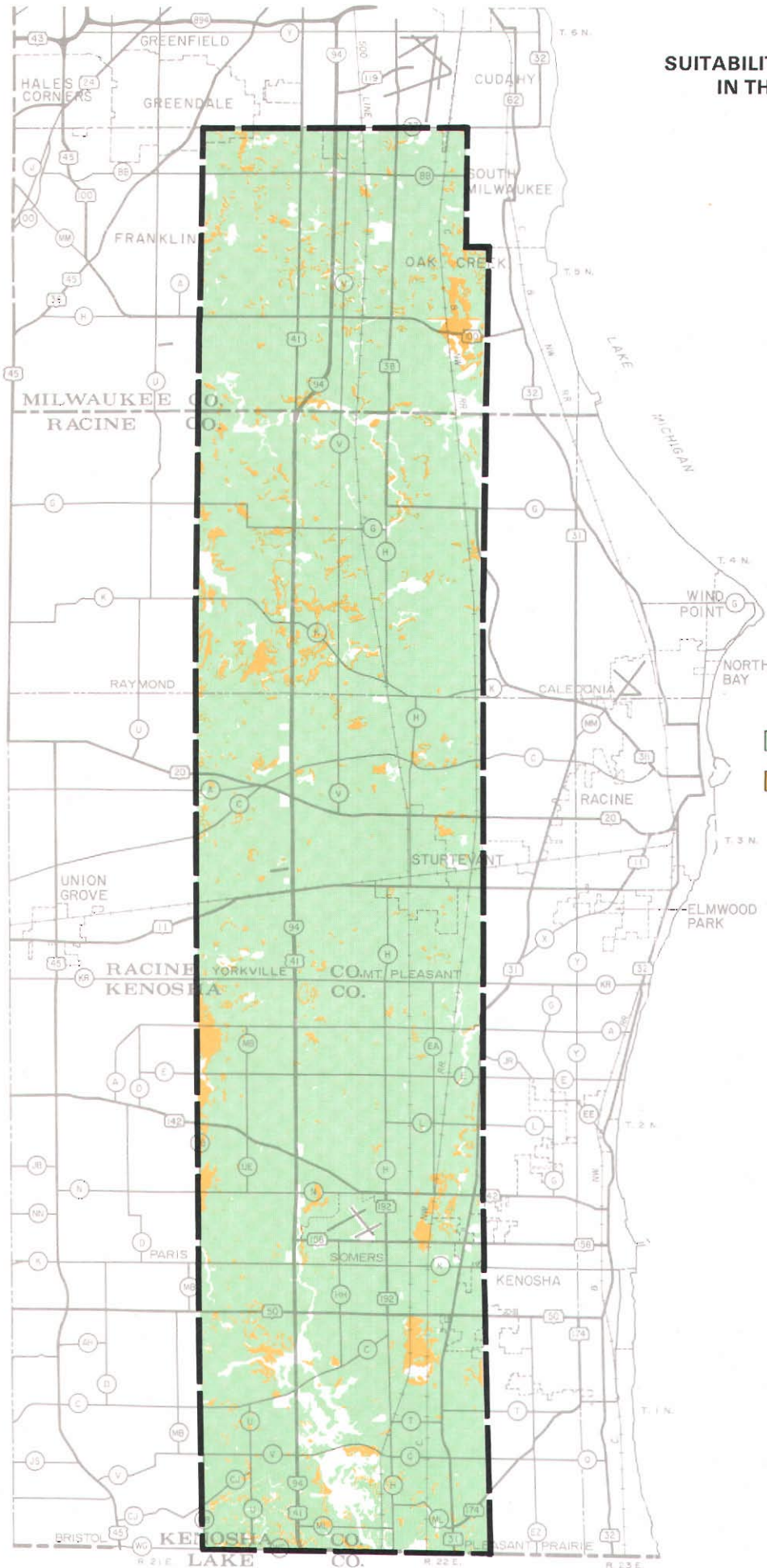
Surface Waters, Wetlands, and Floodlands

The IH 94 South Corridor study area is comprised of parts of five watersheds. At the north end of the study corridor lies the headwaters of the Oak Creek watershed, which drains through Franklin, Oak Creek, and South Milwaukee to Lake Michigan. In addition to the main stem of Oak Creek, the study area contains two major tributaries: the North Branch of Oak Creek and the Mitchell Field Drainage Ditch. In total, the Oak Creek watershed comprises about 19 square miles, or 11 percent of the study area.



Lying west and south of the Oak Creek watershed is the Root River watershed. In addition to the main stem of the Root River, the study area includes the East Branch of the Root River in the City of Franklin; the Root River Canal and the East Branch of that canal in the Towns of

Map 5

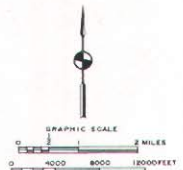
**SUITABILITY OF SOILS FOR AGRICULTURE
IN THE IH 94 SOUTH CORRIDOR**



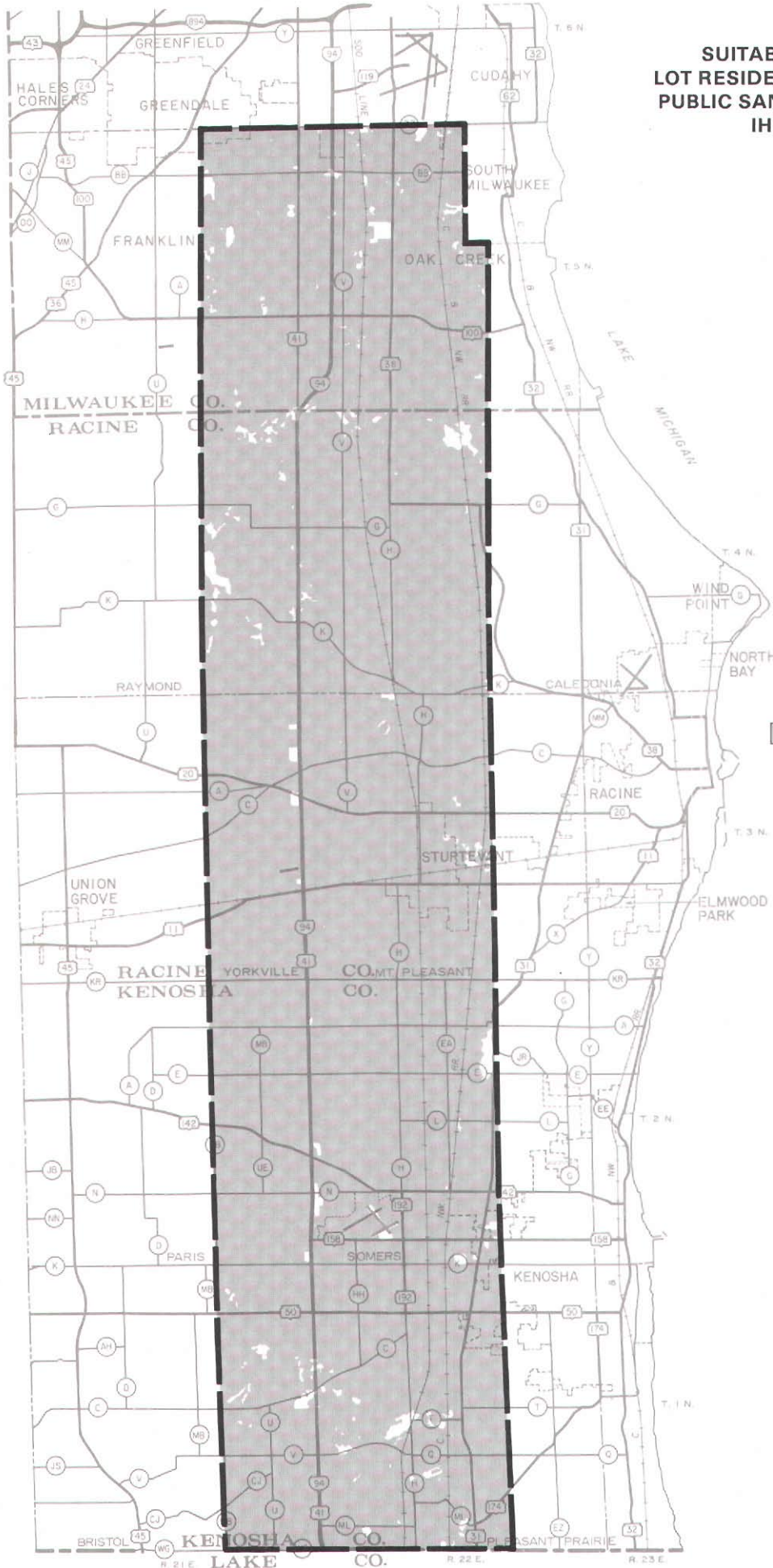
LEGEND

-  SOILS VERY WELL SUITED FOR AGRICULTURE (NATIONAL PRIME SOILS)
-  SOILS WELL SUITED FOR AGRICULTURE (STATE SIGNIFICANT SOILS)

Source: SEWRPC.



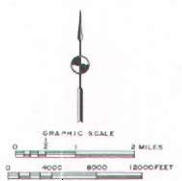
SUITABILITY OF SOILS FOR SMALL LOT RESIDENTIAL DEVELOPMENT WITHOUT PUBLIC SANITARY SEWER SERVICE IN THE IH 94 SOUTH CORRIDOR



LEGEND



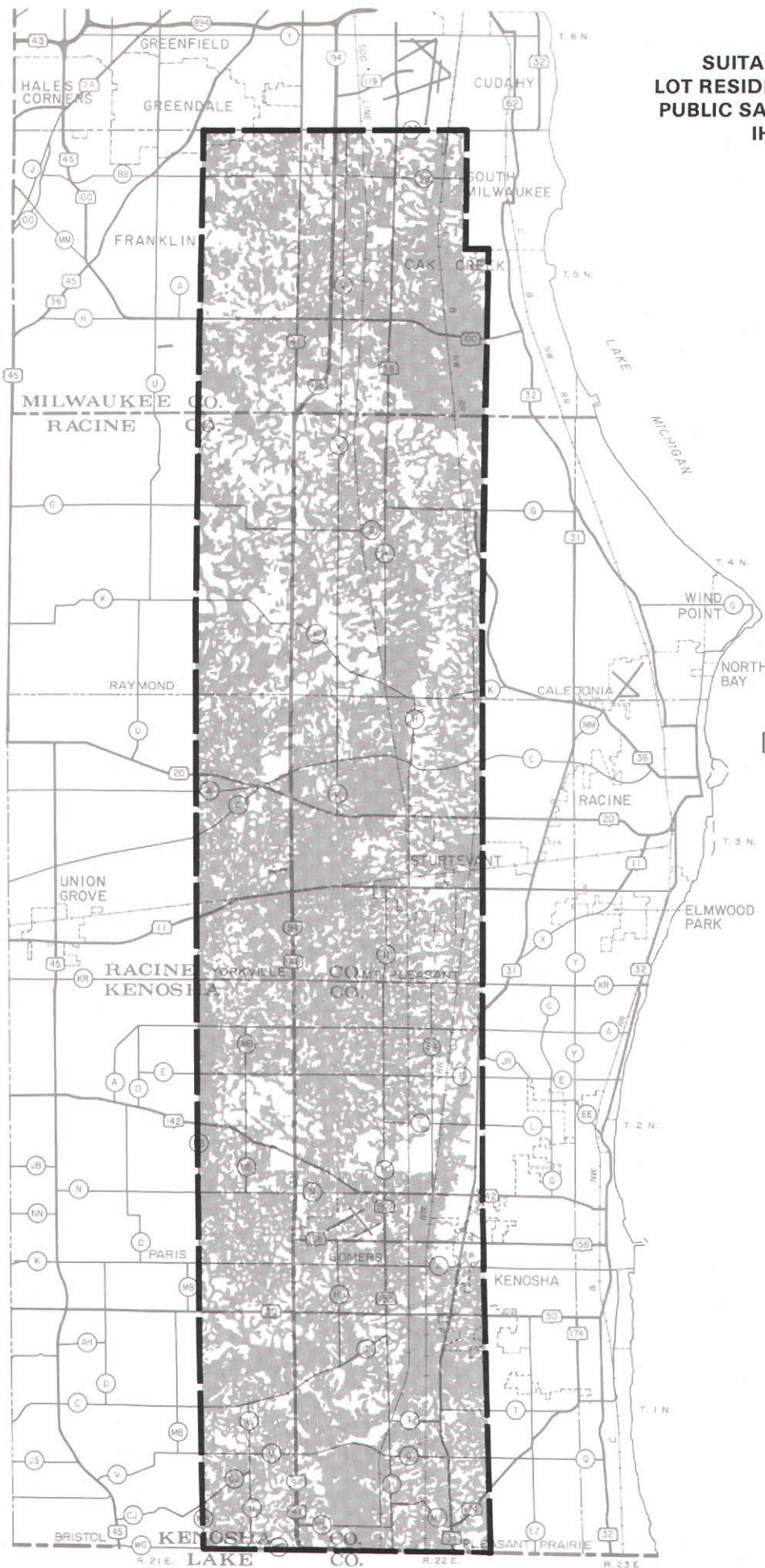
AREAS COVERED BY SOILS HAVING SEVERE OR VERY SEVERE LIMITATIONS FOR RESIDENTIAL DEVELOPMENT WITH SEPTIC TANK SEWAGE DISPOSAL ON LOTS LESS THAN ONE ACRE IN SIZE




Source: SEWRPC.

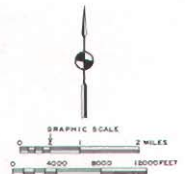
Map 7

SUITABILITY OF SOILS FOR LARGE LOT RESIDENTIAL DEVELOPMENT WITHOUT PUBLIC SANITARY SEWER SERVICE IN THE IH 94 SOUTH CORRIDOR



LEGEND

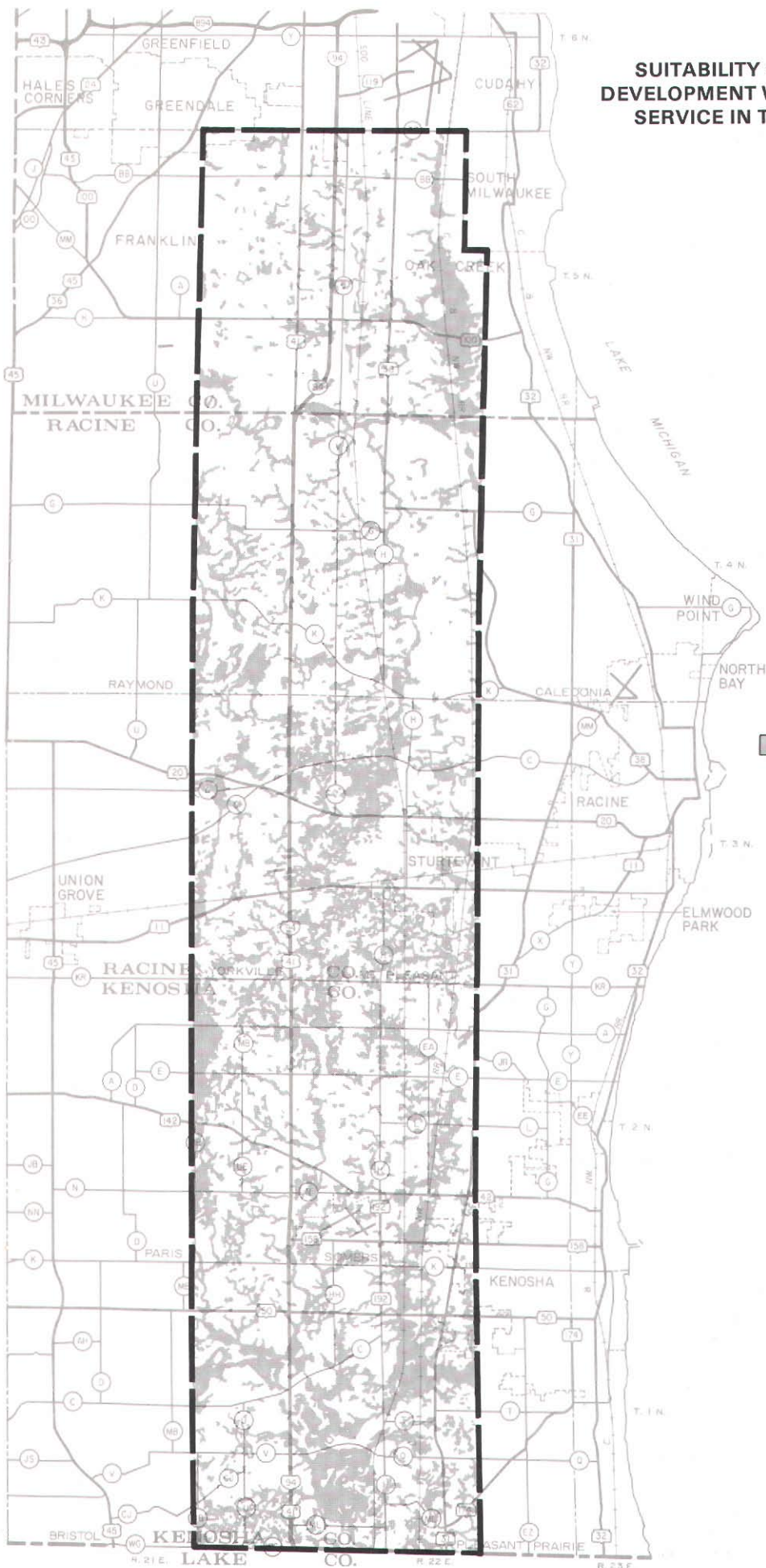
 AREAS COVERED BY SOILS HAVING SEVERE OR VERY SEVERE LIMITATIONS FOR RESIDENTIAL DEVELOPMENT WITH SEPTIC TANK SEWAGE DISPOSAL ON LOTS ONE ACRE OR MORE IN SIZE



Source: SEWRPC.

Map 8

SUITABILITY OF SOILS FOR RESIDENTIAL DEVELOPMENT WITH PUBLIC SANITARY SEWER SERVICE IN THE IH 94 SOUTH CORRIDOR



LEGEND



AREAS COVERED BY SOILS HAVING SEVERE OR VERY SEVERE LIMITATIONS FOR RESIDENTIAL DEVELOPMENT WITH PUBLIC SANITARY SEWER SERVICE



Source: SEWRPC.

Paris, Yorkville, and Raymond; and Hoods Creek in the Towns of Yorkville, Mt. Pleasant, and Caledonia. In total, the Root River watershed occupies about 71 square miles, or 40 percent of the total corridor study area.

The Pike River watershed occupies an area of about 33 square miles, or about 18 percent of the corridor study area. Lying south of the Root River watershed, the Pike River watershed encompasses all of the Village of Sturtevant and portions of the Towns of Mt. Pleasant, Somers, and Pleasant Prairie. Pike Creek, an important tributary of the Pike River, lies within the study area.

A small portion of the study area—about one square mile, or less than 1 percent of the study area, in the City of Kenosha and the Towns of Somers and Pleasant Prairie—lies within the direct drainage area of Lake Michigan.

Finally, the remaining 54 square miles, or 30 percent of the study area, lies within the Des Plaines River watershed. The Des Plaines River watershed is the only watershed in the study area lying west of the subcontinental divide that traverses the Southeastern Wisconsin Region, the divide separating lands which comprise the Lake Michigan basin from those lands that comprise the Mississippi River basin. Important tributaries of the Des Plaines River in the study area include the Kilbourn Road Ditch, Center Creek, Jerome Creek, and Brighton Creek.

The existence of the subcontinental divide has implications for both land use and sewerage and water supply system development. These implications relate to traditional common law riparian doctrine, which forbade the transfer of water between watersheds, such transfer being regarded as a nonriparian use of water. Despite such common law doctrine, interbasin diversions have taken place in the Great Lakes area, although not without difficulty, including long-standing litigation in the Supreme Court of the United States. The matter of the transfer of water between watersheds has also been the subject of recent statutory intervention at the federal and state levels of government, thus creating a difficult, complex, and uncertain legal situation.³

The perennial stream system in the study area and the floodplains associated with that system are shown on Map 36. For planning and regulatory purposes, floodplains are normally defined as those areas subject to inundation by

the 100-year recurrence interval flood event. Floodplain areas are generally not well suited to urban development not only because of the flood hazard, but because of high water tables and the presence of soils generally poorly suited for urban use. Concomitantly, floodplain areas generally contain important elements of the natural resource base, such as high-value wetlands and wildlife habitat. In total, known floodplain areas within the IH 94 South Corridor study area approximate 18 square miles, or about 10 percent of the area.

Wetlands are defined as areas in which the water table is at or near the land surface, and are characterized both by hydric soils, such as peats, mucks, or other organic soils, and by the growth of hydrophytes, such as cattails, bull-rushes, sedges, and willows. Wetlands perform an important set of natural functions which make them particularly valuable resources. Wetlands contribute to the maintenance of good water quality—except during unusual periods of high runoff following prolonged drought—by serving as traps which retain nutrients and sediments, thereby preventing them from reaching streams and lakes. Wetlands act to retain water during dry periods and hold water during flood events, thus keeping the water table high and relatively stable. Finally, wetlands serve as important resources for overall environmental health and diversity by providing essential breeding, nesting, resting, and feeding grounds and predator escape cover for many forms of fish and wildlife.

Wetlands identified under the Wisconsin Wetlands Mapping Program encompass a total of about nine square miles, representing about 5 percent of the study area. In recent years, wetland preservation regulations have been put in place at the federal, state, and local levels of

³For more information concerning the implications of interbasin diversion between the Lake Michigan and Mississippi River basin, see *SEWRPC Prospectus for the Preparation of Coordinated Sanitary Sewer and Water Supply System Plans for the Kenosha Area, June 1988, pages 14 and 15.*

government that have important ramifications for future urban development in the IH 94 South Corridor.⁴

Woodlands

As reported earlier in this chapter, woodlands occupy a total area of about six square miles, or 4 percent, of the total IH 94 South Corridor study area. For the most part, the remaining woodland resources in the study area are widely scattered, although concentrations do occur within the Oak Creek and Des Plaines River watersheds. Woodlands have important direct values as wildlife habitat, for natural study and scientific areas, for outdoor recreation, and in some cases as aesthetic settings for urban development. Woodlands also have indirect values for the reduction of soil erosion and stream sedimentation, reduction of runoff, maintenance of water tables and streams and lake levels, and promotion of groundwater recharge.

Wildlife Habitat

Within southeastern Wisconsin, wildlife is composed primarily of small upland game, such as rabbit and squirrel; some predators, such as fox and raccoon; game birds, including water fowl; and pan and game fish. Deer are also found, but the herds are small when compared to other regions of the State.

In 1985, the Commission and the Wisconsin Department of Natural Resources cooperatively conducted a new inventory of wildlife habitat in the Region. The following five major factors were used to help classify the value of these wildlife habitats:

1. Diversity: An area must maintain a high but balanced diversity of species for a temperate climate, balanced in the sense that the proper predator-prey relationships occur; in addition, a reproductive interdependence must exist.
2. Territorial Requirements: The territorial requirements of the major species within a particular habitat must be met so as to provide for a minimum population level.
3. Vegetation: The vegetal composition and structure must be such that the required levels for provision of nesting, travel routes, concealment, and weather impact modifications are met.
4. Location: Close proximity to other wildlife habitat areas is highly desirable.
5. Disturbance: Minimal levels of disturbance from man's activities are necessary other than those activities of a wildlife management nature.

Based upon these five major factors, the inventory identified and delineated three classes of wildlife habitat: Class I, defined as wildlife habitat areas containing a good diversity of wildlife of such size to meet all of the habitat requirements for each species, and generally located in proximity to other wildlife habitat areas; Class II, defined as those wildlife habitat areas generally lacking one of the three criteria necessary for a Class I designation; and Class III, defined as those wildlife habitat areas that are generally remnant in nature and lack two of the three criteria for identification as a Class I habitat.

Together the significant wildlife habitat remaining in the study area encompasses about 24 square miles, or about 14 percent of the total area. Of this total, about nine square miles, or about 38 percent, fall in the Class I category; an additional nine square miles, or 38 percent, fall in the Class II category; and the remaining six square miles, or 24 percent, fall in the Class III category. The most significant wildlife habitat remaining in the study area is concentrated in riverine areas, with particularly high concentrations along the Root River on the Milwaukee-Racine County line, and along the Des Plaines River in the southern end of the corridor.

⁴An inverse condemnation lawsuit involving wetlands in Kenosha County fronting on an IH 94 service road in the Town of Somers was the subject of a landmark decision handed down by the Wisconsin Supreme Court in November 1987. In effect, this decision made it clear that local governments have a legal right—if not a duty—to prevent a public harm through the enactment of soundly based land use regulations. The wetlands in question had been downzoned from industrial to conservancy use by Kenosha County and the Town of Somers. For more information on this case, *M&I Bank v. Town of Somers*, 141 Wis. 2d 271, see *SEWRPC Newsletter*, Vol. 28, No. 1, Jan.-Feb. 1988.

Topographic Features and Scenic Vistas

The topography, or relative elevation of the land surface, within the IH 94 South Corridor study area has been determined, generally, by the configuration of the bedrock geology, and, more specifically, by the overlying glacial deposits. In general, the topography of the study area is level to gently rolling, with low-lying areas associated with the perennial stream valleys or wet-land areas.

Slope is an important determinant of the land uses practicable on a given parcel of land. Lands with steep slopes are generally poorly suited for urban development, as well as for most agricultural purposes, and therefore should be maintained in natural cover for wildlife habitat and erosion control. Lands with less severe slopes may be suitable for certain agricultural uses, such as pasturelands, and for certain urban uses, such as carefully designed low-density residential areas. Lands that are gently sloping or nearly level are best suited to agricultural production and to high-density residential, industrial, or commercial uses. It should also be noted that the amount and rate of stormwater runoff are directly related to the slope of the land, as is the soil erosion hazard. Therefore, the type and extent of both urban and rural land uses should be carefully adjusted to the slope of the land. In general, slopes of 12 percent or greater should be considered unsuitable for urban development and most types of agricultural land uses, and therefore should be maintained in essentially natural, open uses.

Scenic vistas are defined as areas that provide a panoramic or picturesque view, comprised of a variety of natural resource features. There are two important components of a scenic vista—the picturesque view itself which usually consists of a diversity of natural or cultural features, and the vantage point or viewpoint from which to observe the diversity of features. In identifying such viewpoints in the IH 94 South Corridor study area, it was determined that three basic criteria should be met: 1) A variety of features to be viewed should exist harmoniously in a land- or city-scape; 2) there should be one dominant or particularly interesting feature, such as a river or lake, which serves as a focal point of the picturesque view; and 3) the viewpoint should permit an unobstructed observation area from which the variety of natural features can be seen.

A special inventory of scenic vistas meeting these criteria was conducted as part of the IH 94 South Corridor planning effort. With the aid of topographic maps, areas with a relief greater than 30 feet and a slope of 12 percent or more were identified. Those areas of steep slope so identified having a ridge of at least 200 feet in length and a view of at least three features—including surface water, wetlands, woodlands, or agricultural lands—within approximately one-half mile of the ridge were identified as scenic viewpoints. Within the IH 94 South Corridor study area, only seven areas were identified as having scenic vistas using this methodology. The seven scenic viewpoints are identified on Map 9, and consist of the following: one in Grobschmidt Park in the City of Franklin, Milwaukee County; one in Evans Park and one in Section 35, both in the Town of Yorkville; three along Pike Creek in Section 10 of the Town of Somers; and one in Section 36 of the Town of Bristol. None of these scenic vistas are located adjacent to the IH 94 South Freeway.

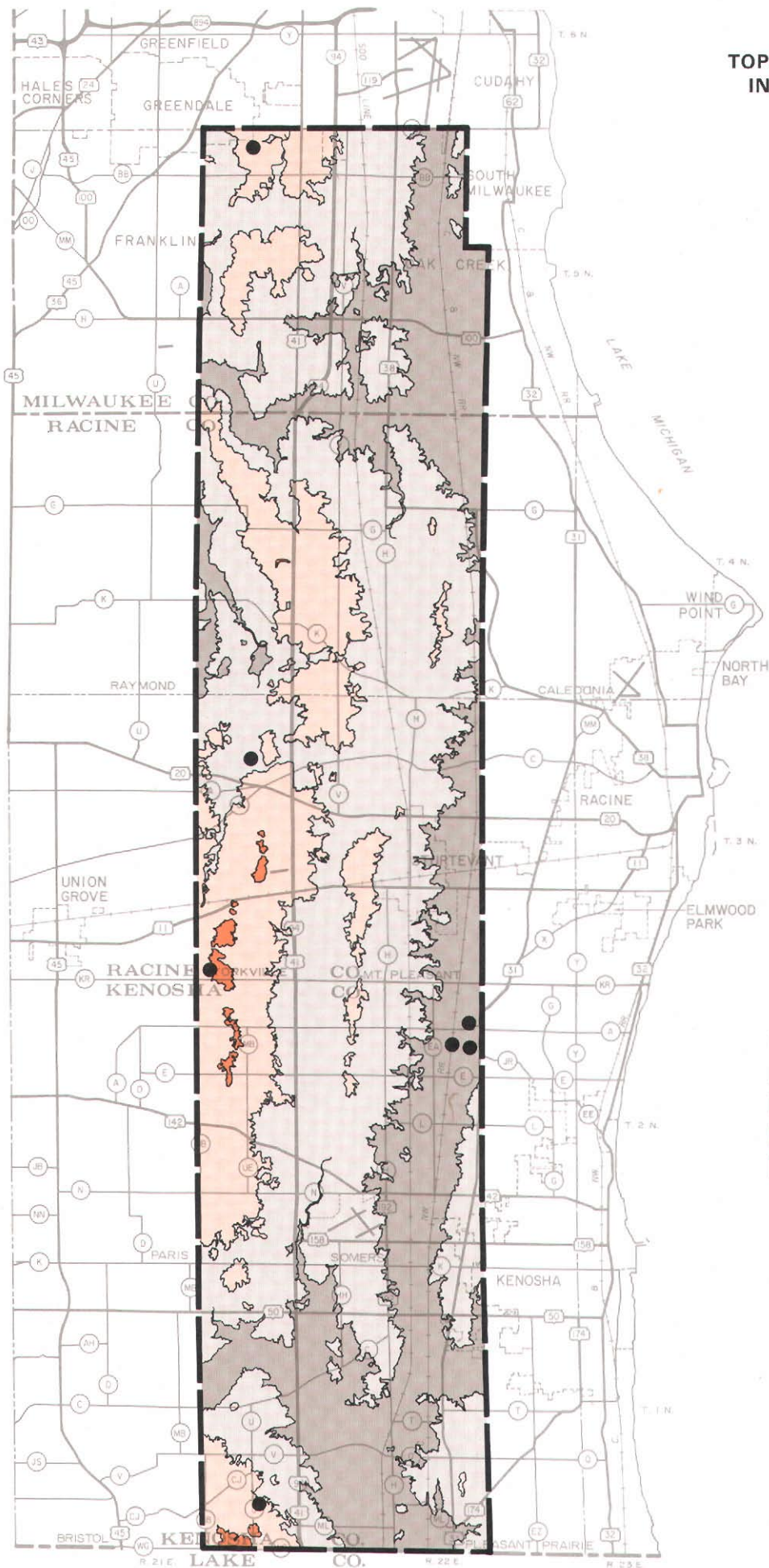
Historic and Archaeological Sites

Historic sites have been classified by the Regional Planning Commission into one of three categories—structures, archaeological sites or features, and other cultural features. In general, historic structures include architecturally or historically significant homes, churches, inns, government buildings, mills, schools, and museums. Archaeological sites consist of areas occupied or utilized by man for a sufficient length of time to be marked by certain features—such as mounds—or to contain a number of artifacts. Such sites are generally associated with early American Indian settlements. Other cultural features include sites of early European settlements or are closely related to such settlements and include, for example, old plank roads and cemeteries.

Only two sites in the IH 94 South Corridor study area are of such historical significance that they have been listed on the National Register of Historic Places. These two sites are the Painesville Chapel located near the intersection of W. Ryan Road and S. 27th Street in the City of Franklin, and the John Collins House located near the intersection of Nicholson Road and Five Mile Road in the Town of Caledonia.

Map 9

TOPOGRAPHY AND SCENIC VISTAS
IN THE IH 94 SOUTH CORRIDOR



LEGEND

- SCENIC VISTA SITES

ELEVATION IN FEET ABOVE NATIONAL GEODETIC VERTICAL DATUM

- 650-700
- 700-750
- 750-800
- 800-850

Source: SEWRPC.

GRAPHIC SCALE
0 1 2 MILES
0 2000 4000 12000 FEET

To date, no archaeological sites in the IH 94 South Corridor study area have been placed on the National Register of Historic Places. As shown on Map 10, however, there are 30 archaeological sites within the corridor that have been identified through research sponsored by The State Historical Society of Wisconsin. Ten of these sites are located in Racine County and 20 sites in Kenosha County. The sites are either American Indian campsites, work sites, or the sites of old villages.

Environmental Corridors

One of the most important tasks completed under the regional planning effort for southeastern Wisconsin has been the identification and delineation of those areas in which concentrations of natural resource base elements occur. Such areas are delineated using a mapping overlay technique through which areas containing concentrations of natural resource and resource-related elements are identified. The following natural resource elements are considered in this mapping process: lakes, rivers, and streams and their associated shorelands and floodlands; wetlands; woodlands; prairies; wildlife habitat areas; wet, poorly drained, and organic soils; and rugged terrain and high-relief topography. The natural resource-related elements considered in the mapping process are: existing and potential park and open space sites; historic and archaeological sites; significant scenic areas and vistas; and natural and scientific areas.

The delineation of these natural resource and related elements on a map results in an essentially linear pattern of relatively narrow elongated areas in the Region which have been termed environmental corridors by the Commission. Primary environmental corridors include a wide variety of the above-mentioned resource and related elements, and are by definition at least 400 acres in size, two miles in length, and 200 feet in width. Secondary environmental corridors generally connect with primary environmental corridors and are at least 100 acres in size and one mile in length.⁵

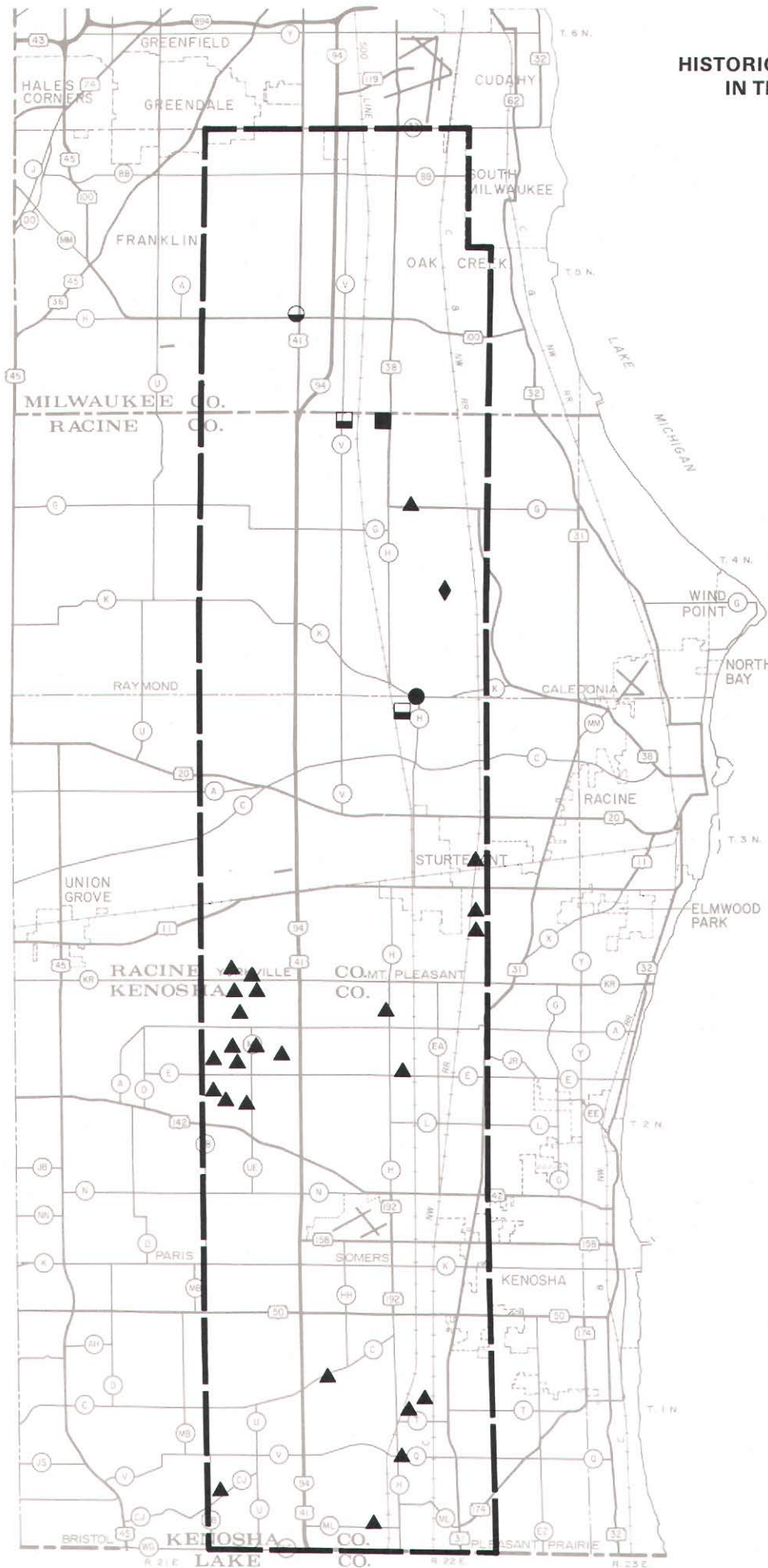
⁵For more detailed information concerning the environmental corridor delineation process, see "Refining the Delineation of Environmental Corridors in Southeastern Wisconsin," *SEWRPC Technical Record*, Vol. 4, No. 2.

In any discussion of environmental corridors and important natural resource features, it is important to point out that because of the many interacting relationships between living organisms and their environment, the destruction or deterioration of a single important element of the total environment may lead to a chain reaction of deterioration and destruction. The drainage of wetlands, for example, may have far-reaching effects, since such drainage may destroy wildlife habitat, groundwater recharge areas, and natural filtration and floodwater storage areas of interconnecting stream systems. The resulting deterioration of surface water quality may, in turn, lead to a deterioration of the quality of groundwater resources. Similarly, the destruction of woodland cover may result in soil erosion, stream siltation, more rapid runoff, and increased flooding, as well as the destruction of wildlife habitat. Although the effects of any one of the environmental changes may not be overwhelming, the combined effects of a series of changes may eventually lead to a serious deterioration of the underlying and supporting natural resource base and of the overall quality of the environment. The need to maintain the integrity of the remaining environmental corridors, to the maximum extent practicable, should thus be apparent.

The results of applying the environmental corridor delineation process to the IH 94 South Corridor study area are shown on Map 11. Primary environmental corridors, which comprise about eight square miles, or 4 percent of the total study area, are generally found along the main stem of the Root River at the Racine-Milwaukee County line, along the Des Plaines River in Bristol and Pleasant Prairie, and along the Kilbourn Road Ditch in Pleasant Prairie and Somers.

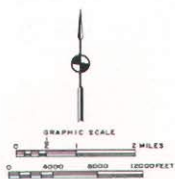
Secondary environmental corridors are found in many of the other riverine areas within the study corridor. These corridors comprise about seven square miles, or 4 percent of the study area. Finally, Map 11 also identifies the remaining isolated natural areas which are generally comprised of scattered woodlands and wetlands throughout the landscape. Together, these areas comprise about four square miles, or 2 percent of the study area.

**HISTORIC AND ARCHAEOLOGICAL SITES
IN THE IH 94 SOUTH CORRIDOR**



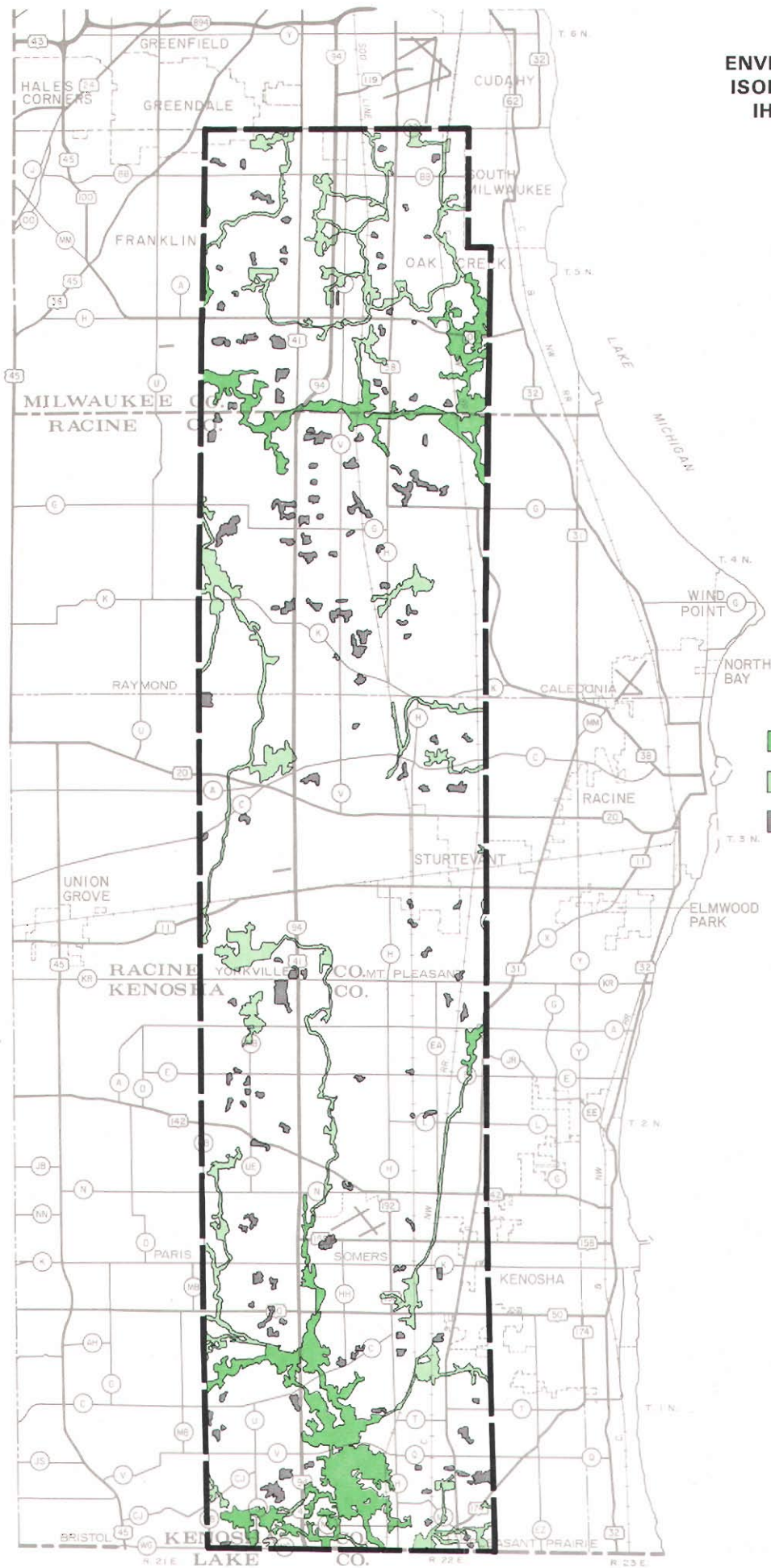
LEGEND

- ARTIFACTS
- ▲ CAMPSITE
- TRADING POST
- ◻ VILLAGE SITE
- ◆ JOHN COLLINS HOUSE
- ◐ PAINESVILLE CHAPEL






Source: SEWRPC.

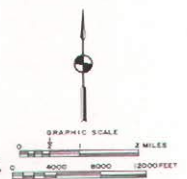
ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL AREAS IN THE IH 94 SOUTH CORRIDOR: 1985



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA

Source: SEWRPC.



SUMMARY AND CONCLUSION

This chapter has described the land use and natural resource base of the IH 94 South Corridor study area. Findings having particular significance for preparation of a land use plan for the corridor include:

1. Until the mid-1900's, there was no significant urban development in the IH 94 South Corridor study area. By 1950, the effects of urban land use decentralization began to be observed in the form of scattered commercial development along S. 27th Street (USH 41) in the Milwaukee County portion of the corridor. Since 1950, urban development in the corridor has consisted largely of two types: residential land uses scattered throughout the corridor, and highway-oriented commercial land uses located within the corridor at major interchanges on the IH 94 Freeway. The Kenosha and Racine County portions of that freeway were opened to traffic in November 1960. The Milwaukee County portion was opened to traffic in November 1966. By 1985, there was about 19 square miles of urban development in the corridor study area, representing about 11 percent of the total study area.
2. Rural land uses continue to dominate the landscape in the IH 94 South Corridor study area, with four out of every five acres of land devoted to agriculture, wetlands, woodlands, or other open land uses. Agricultural land uses account for nearly three-quarters of all lands within the corridor. Prime agricultural land in 1985 accounted for about 77 square miles of the study area, or 43 percent of the study area. Major concentrations of agricultural land uses thus continue to be maintained in the corridor, and provide the area with an economic, environmental, and aesthetic asset. The great majority of soils in the corridor are well suited for continued agricultural use.
3. Urban land uses constitute less than 20 percent of the corridor study area. Of such uses, about 41 percent are devoted to residential use; about 39 percent to transportation and utility land uses, including off-street parking; about 6 percent to park and recreational use; and about 5 percent to industrial use. Commercial, governmental and institutional, and extractive and landfill uses each comprise less than 5 percent of the total study area. Recent urban development activity, particularly in the Racine and Kenosha County portions of the corridor, has been commercial or industrial in nature. In 1985, however, such uses together accounted for less than 1.5 percent of all lands in the corridor study area.
4. While soils in the study area are well suited for farming and agriculture, such soils are generally very poorly suited for urban development without public sanitary sewers. Consequently, new urban development in the corridor must be served either by public sewers or, in some cases, by sewage holding tanks. About one-half of the study area has soils that are poorly suited for housing units with basements and for small commercial buildings.
5. The study area contains portions of the Oak Creek, Root River, Pike River, and Des Plaines River watersheds, together with certain lands that directly drain to Lake Michigan. All but the Des Plaines River watershed lie on the east side of the subcontinental divide that traverses the Southeastern Wisconsin Region. Lands east of that divide drain to Lake Michigan, while lands west of the divide drain to the Mississippi River. This divide has important implications for land use and public utility system planning, since the transfer of water between watersheds over the subcontinental divide is affected not only by common law, which historically has forbade such transfers, but by statutory intervention in recent years at the federal and state levels of government.
6. Surface waters and floodplains, wetlands, woodlands, and wildlife habitat areas are particularly important elements of the natural resource base. Known floodplains within the study area approximate 18 square miles, or 10 percent of the area. Wetlands comprise about nine square miles, or 5 percent of the study area, and woodlands occupy about six square miles,

or 3 percent of the study area. Significant wildlife habitat totals about 24 square miles, or 14 percent of the study area.

7. The most important elements of the natural resource base, including lakes, rivers, and streams and their associated shorelands and floodlands; wetlands; woodlands; wildlife habitat areas; wet, poorly drained, and organic soils; and rugged terrain and high-relief topography, together with such resource-related elements as existing and potential park sites, significant scenic areas and vistas, and historic and archaeological sites, when combined, are found to occur in

linear patterns or corridors, termed environmental corridors by the Regional Planning Commission. The preservation and protection of these corridors is essential to the maintenance of a good environment within the study corridor. In particular, primary environmental corridors, which are the largest, longest, and widest such corridors, should be preserved from urban encroachment. Such corridors total about eight square miles, or 4 percent of the study area. Primary environmental corridors are found to occur along the main stem of the Root River, along the Des Plaines River, and along the Kilbourn Road Ditch.

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Chapter IV

TRANSPORTATION, UTILITY, AND PUBLIC SAFETY FACILITIES AND SERVICES

INTRODUCTION

Of importance to the formulation of a development plan for the IH 94 South Corridor is information concerning transportation, utility, and public safety facilities and services now provided throughout the corridor study area. Accordingly, this chapter describes the findings of the inventories of such services conducted under the IH 94 South Corridor study, providing information on the existing arterial street and highway system, the railway and public transit systems, the public sanitary sewerage and water supply systems, the private utility systems, and the public fire, rescue, and police protection systems existing in the study area.

TRANSPORTATION FACILITIES AND SERVICES

Arterial Street and Highway System

The arterial street and highway system currently serving the IH 94 South Corridor study area is shown on Map 12. The extent of that system is summarized in Table 13. The system totals about 252 miles in length, of which nearly 31 miles, or about 12 percent, are comprised of the IH 94 freeway. As shown on Map 12, the existing arterial network is relatively densely spaced, with arterials occurring at about one-mile intervals in both the north-south and east-west directions throughout most of the study corridor. Also identified on Map 12 is the number of traffic lanes provided on each arterial street and highway segment; an indication as to whether or not, in the case of multiple-lane highways, the highway is a divided facility; and an indication as to which arterial street and highway segments are urban in character—that is, constructed to an urban cross-section with curb and gutter and storm sewerage. A total of about 63 miles, or about 25 percent, of the system consists of divided facilities. Of this total, however, nearly 31 miles consist of the IH 94 freeway itself. About 16 miles, or about 6 percent of the system, have been constructed to urban standards. These include the newly reconstructed STH 31 from STH 50 north to STH 142 and a portion of STH 158 in Kenosha County; STH 11 through Sturtevant and portions of

Table 13

**MILES OF ARTERIAL STREETS AND HIGHWAYS
IN THE IH 94 SOUTH CORRIDOR BY COUNTY
AND TYPE OF FACILITY: 1988**

County	Arterial Miles		
	Freeway	Standard Arterial	Total
Kenosha	12.1	78.9	91.0
Milwaukee	6.3	64.6	70.9
Racine	12.1	78.1	90.2
Total	30.5	221.6	252.1

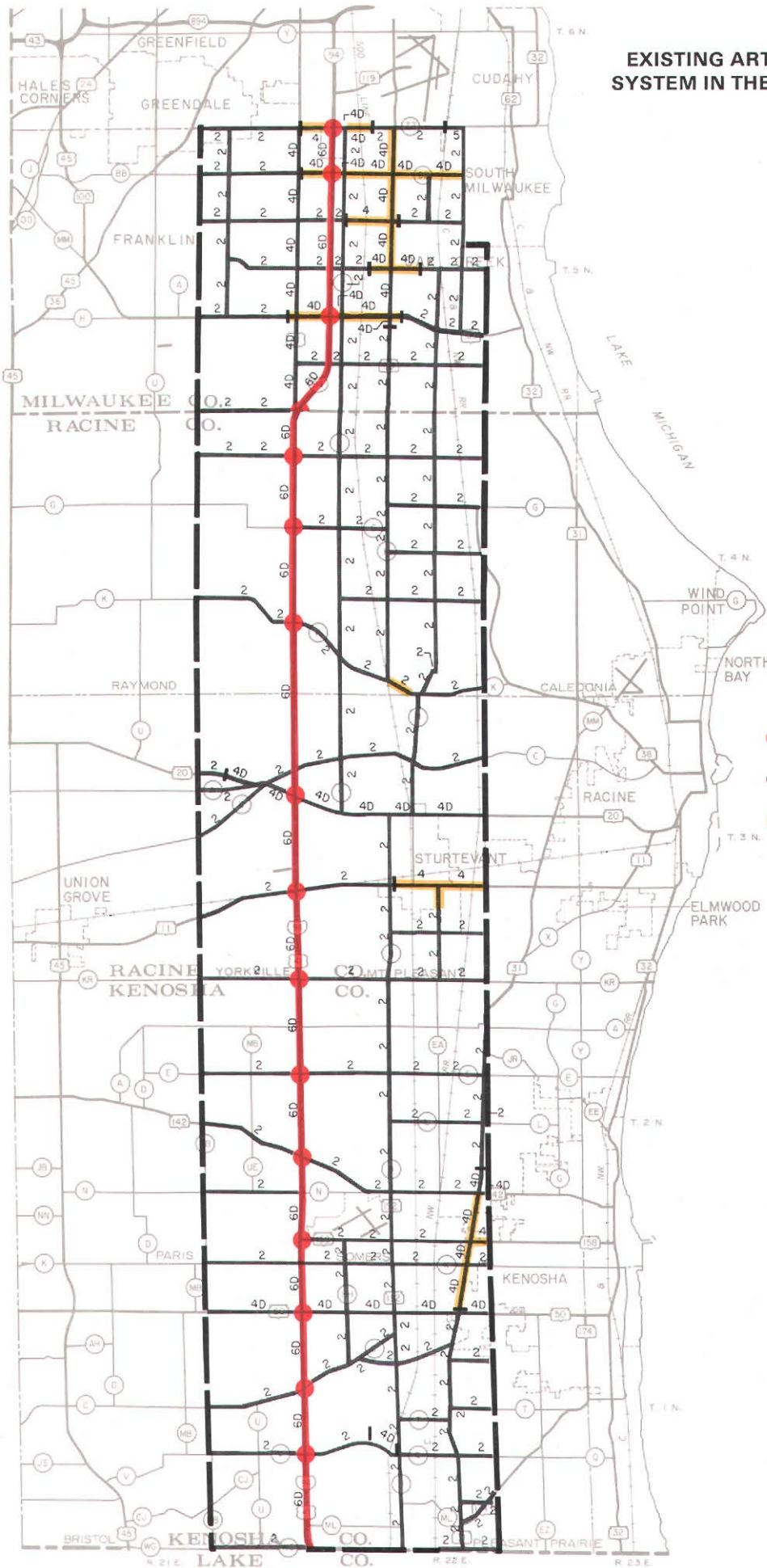
Source: SEWRPC.

CTH K and 90th Street in Racine County; and portions of STH 38, STH 100, CTH BB (Rawson Avenue), and Puetz Road in Milwaukee County.

As part of the IH 94 Corridor study, a special inventory of the intersection traffic control and approach lane configurations attendant to the existing arterial street and highway system of frontage roads along IH 94 through the corridor was conducted. The results of this inventory are graphically summarized on Map 13. This inventory provides information necessary to evaluate traffic management problems, particularly along the IH 94 frontage road system. The existing IH 94 frontage road system in Kenosha and Racine Counties consists of braided freeway entrance and exit ramps with two-way frontage roads extending along IH 94 from the state line in Kenosha County to about the S. 27th Street interchange at the Milwaukee and Racine County line. In the Milwaukee County portion of the study corridor, there are no frontage roads along IH 94.

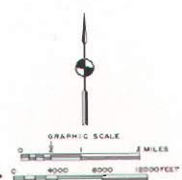
Traffic Volumes and Congestion: The current average weekday traffic volumes for selected segments of the arterial street and highway system in the IH 94 Corridor study area are

EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 SOUTH CORRIDOR: 1988



LEGEND

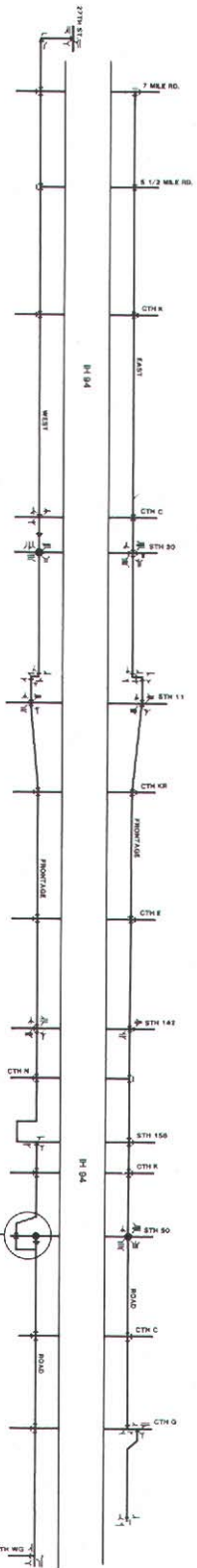
- FREEWAY
- STANDARD ARTERIAL - RURAL CROSS SECTION
- STANDARD ARTERIAL - URBAN CROSS SECTION
- 2 NUMBER OF TRAFFIC LANES
- D DIVIDED ROADWAY
- FREEWAY INTERCHANGE
- ◐ PARTIAL FREEWAY INTERCHANGE
- ┆ INDICATES A CHANGE IN THE NUMBER OF TRAFFIC LANES



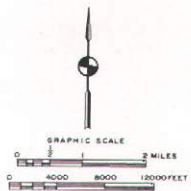
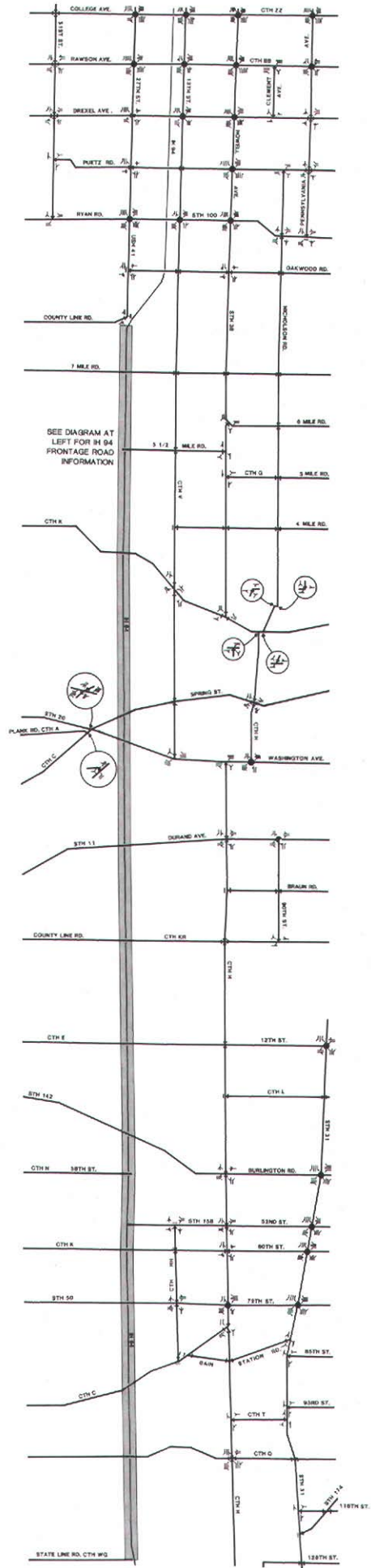
Source: SEWRPC.

INTERSECTION TRAFFIC CONTROL AND APPROACH LANE CONFIGURATION FOR THE EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM AND THE IH 94 FRONTAGE ROADS IN THE IH 94 SOUTH CORRIDOR: 1988

IH 94 FRONTAGE ROAD DIAGRAM
NOT TO SCALE



NOTE: AREA UNDER CONSTRUCTION IN NOVEMBER 1988. FINAL TRAFFIC CONTROL AND LANE DELINEATION NOT IN PLACE.



- LEGEND**
- TRAFFIC CONTROL
 - TRAFFIC SIGNAL AT INTERSECTION
 - SIGN AT INTERSECTION APPROACH
 - ONE WAY TRAFFIC
 - LANE MOVEMENT #
 - EXCLUSIVE THROUGH LANE
 - EXCLUSIVE LEFT TURN LANE
 - EXCLUSIVE RIGHT TURN LANE
 - SHARED LEFT TURN AND THROUGH LANE
 - SHARED RIGHT TURN AND THROUGH LANE
 - SHARED LEFT TURN AND RIGHT TURN LANE
 - SHARED LEFT TURN, RIGHT TURN, AND THROUGH LANE
- # AT INTERSECTIONS WITH TRAFFIC CONTROL BUT NO LANE MOVEMENTS SHOWN, EACH APPROACH IS A SINGLE LANE APPROACH WITH SHARED LEFT AND RIGHT TURNING AND AHEAD MOVEMENTS.

reported on Map 14. In 1987, traffic volumes on the IH 94 freeway ranged from a low of about 41,100 vehicles per average weekday just south of STH 50 in Kenosha County, to 51,500 just north of CTH G in Racine County, to a high of about 80,000 south of W. College Avenue in Milwaukee County. An estimated 20 to 25 percent of this traffic was truck traffic, or about 11,000 to 15,000 trucks per average weekday. The most heavily traveled surface arterial streets and highways consisted of STH 50 and STH 31 in Kenosha County; STH 11 and STH 20 in Racine County; and STH 38, STH 100, USH 41 (S. 27th Street), and CTH BB (Rawson Avenue) in Milwaukee County. The estimated amount of travel in 1987 on an average weekday on the arterial street and highway system in the corridor was 2.61 million vehicle miles, including 1.47 million vehicle miles per average weekday on the IH 94 freeway and 1.14 million vehicle miles on the surface arterials in the corridor. Information on peak-hour traffic volumes was also collated as part of the study, and is summarized on Map 15.

The existing level of traffic congestion in the IH 94 South Corridor study area as measured by comparing average weekday traffic volumes to average weekday traffic design capacities is summarized on Map 16 and in Table 14. Of the approximately 252 miles of arterial streets and highways in the study area, nearly 20 miles, or about 8 percent, currently are operating over the design capacity of the facility. In Kenosha County these congested facilities include portions of STH 31 both south of STH 50 and north of STH 142, STH 142 west of STH 31, STH 158 west of STH 31, STH 50 west of STH 31, and CTH H south of STH 50. In Racine County, the congested facilities consist of STH 11 both east and west of Sturtevant. In Milwaukee County, the congested facilities consist of STH 38 south of STH 100; STH 100 west of USH 41; CTH V south of W. College Avenue; and W. College Avenue along the south side of General Mitchell International Airport.

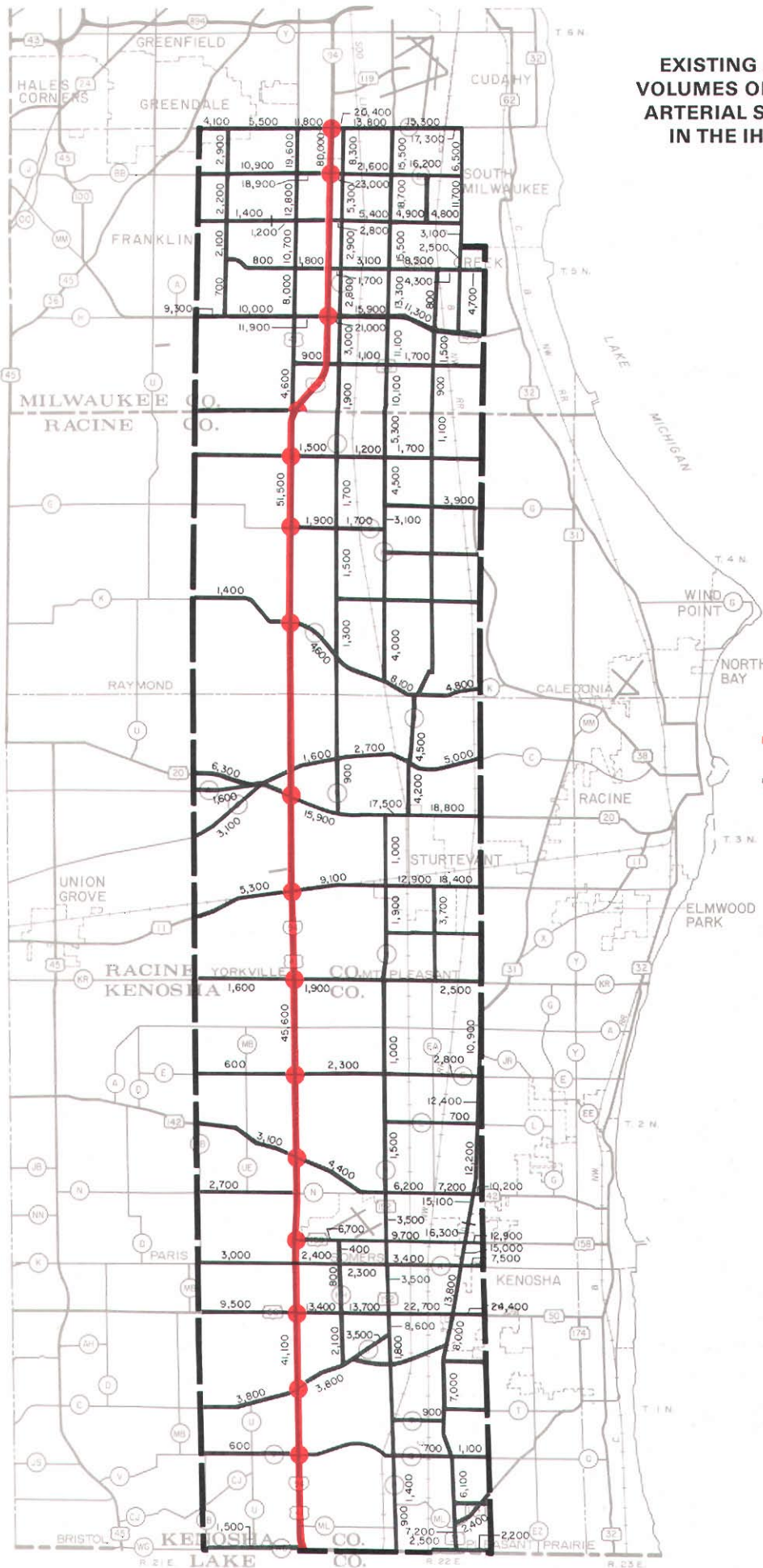
Another six miles of facilities, representing an additional 2 percent of the arterial street and highway system, were found to be operating at the design capacity of the facility. In Kenosha County, these facilities consist of portions of STH 31, STH 50, and STH 158. In Racine County, the only facility operating at design capacity is a portion of STH 20 west of Ives

Grove. In Milwaukee County, the only facility operating at design capacity is STH 100 east of STH 38. As shown in Table 14, nearly 90 percent of the existing arterial street and highway system of the study corridor is currently operating under design capacity.

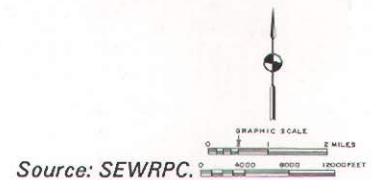
Within the Southeastern Wisconsin Region, average weekend day and weekend peak-hour traffic volumes are typically less than average weekday traffic volumes. Certain arterial facilities within the Region, however, which provide access to recreational facilities within the Region and which carry traffic through the Region to recreational facilities located outside the Region, do experience weekend traffic volumes that exceed average weekday volumes. IH 94 South is such a facility. Table 15 compares the average weekday and average weekend day traffic at three selected locations along IH 94: CTH C in Kenosha County, CTH G in Racine County, and W. Grange Avenue in Milwaukee County. The average weekend day traffic substantially exceeds the average weekday traffic only in Kenosha County—by about 3,300 vehicles per day, or by about 8 percent. This difference has, however, been declining at this location. In comparison, in 1982 weekend daily traffic on IH 94 at Kenosha County CTH C exceeded weekday traffic by about 5,500 vehicles, or by about 16 percent. Similarly, in the early 1970's, average weekend daily traffic was about equal to average weekday traffic on IH 94 at Grange Avenue, whereas by 1987 average weekday traffic at that location substantially exceeded the average weekend daily traffic.

Table 16 compares average weekday and average weekend day peak-hour, peak-direction traffic volumes at selected locations along IH 94, including CTH's C and E in Kenosha County, CTH G in Racine County, and W. Grange Avenue in Milwaukee County. At W. Grange Avenue, the average weekday peak-hour, peak-direction traffic volume substantially exceeded the average weekend day peak-hour, peak-direction traffic volume in 1987. At the other three locations, however, the average weekend day peak-hour, peak-direction traffic volume exceeded the average weekday peak-hour, peak-direction traffic volume. The difference between average weekend day peak-hour, peak-direction traffic and average weekday peak-hour, peak-direction traffic ranges from a high of 450 vehicles per hour, or about 32 percent, at CTH C in

EXISTING AVERAGE WEEKDAY TRAFFIC VOLUMES ON SELECTED SEGMENTS OF THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 SOUTH CORRIDOR: 1987

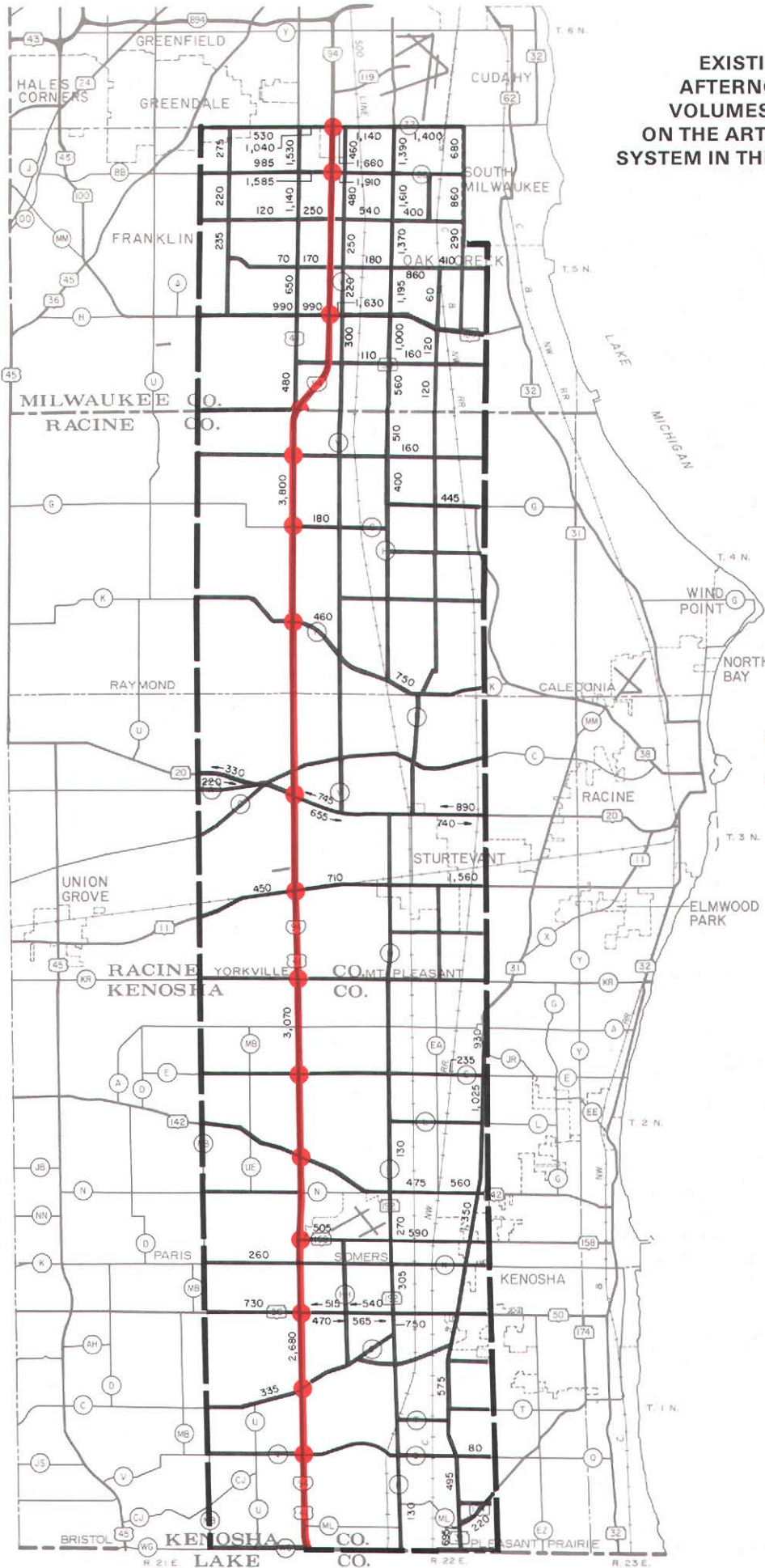


- LEGEND**
- FREEWAY
 - STANDARD ARTERIAL
 - FREEWAY INTERCHANGE
 - ▲ PARTIAL FREEWAY INTERCHANGE
 - 4,800 AVERAGE WEEKDAY TRAFFIC VOLUME



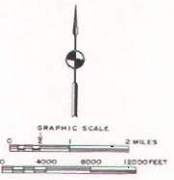
Source: SEWRPC.

**EXISTING AVERAGE WEEKDAY
AFTERNOON PEAK-HOUR TRAFFIC
VOLUMES AT SELECTED LOCATIONS
ON THE ARTERIAL STREET AND HIGHWAY
SYSTEM IN THE IH 94 SOUTH CORRIDOR: 1987**



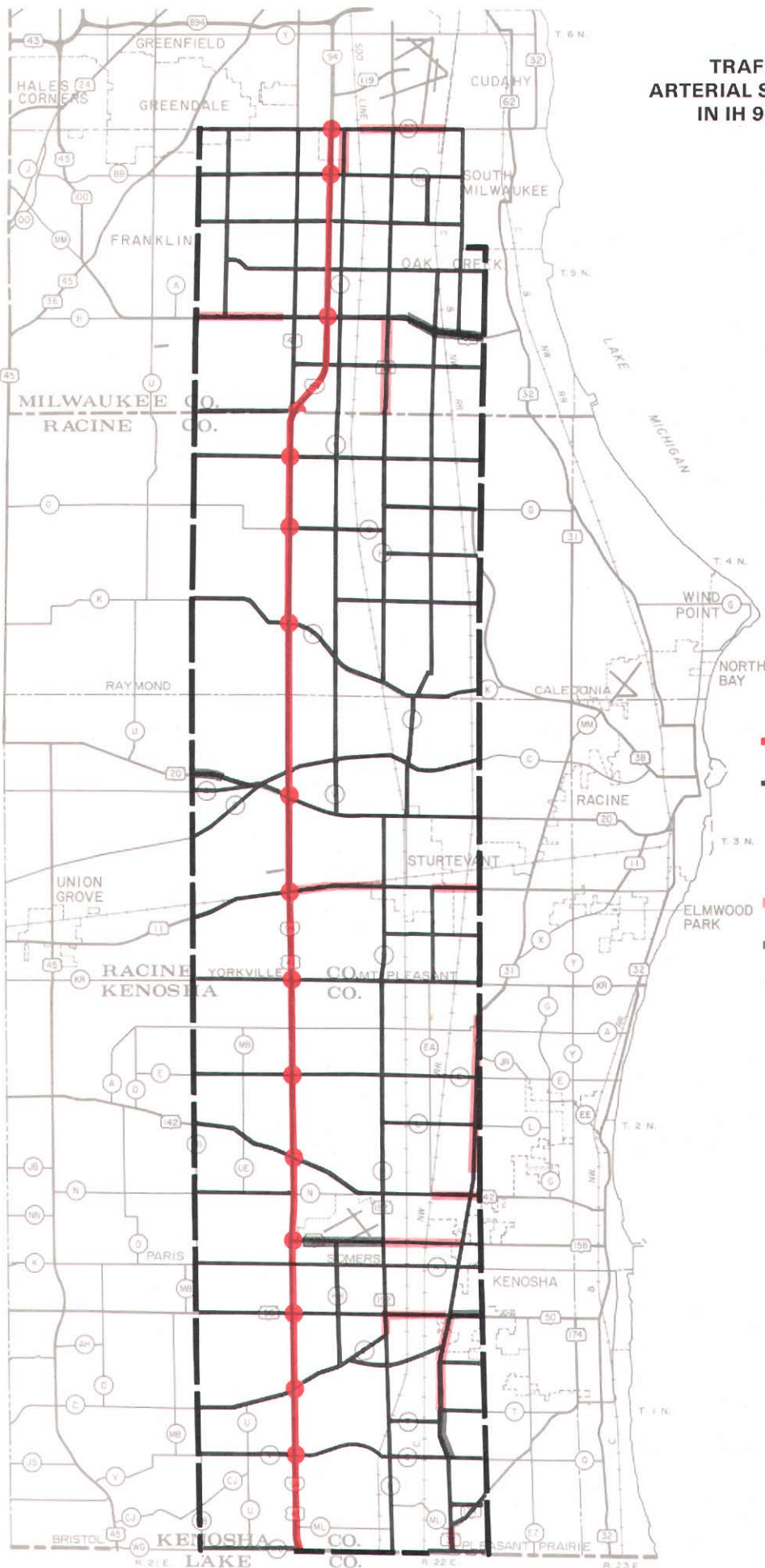
LEGEND

- █ FREEWAY
- STANDARD ARTERIAL
- FREEWAY INTERCHANGE
- ◐ PARTIAL FREEWAY INTERCHANGE
- 750 AFTERNOON PEAK HOUR AVERAGE WEEKDAY TRAFFIC VOLUME









Source: SEWRPC.

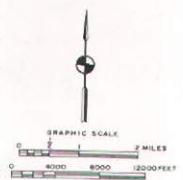
**TRAFFIC CONGESTION ON THE
ARTERIAL STREET AND HIGHWAY SYSTEM
IN IH 94 SOUTH CORRIDOR: 1987**



LEGEND

-  FREEWAY
-  STANDARD ARTERIAL
-  FREEWAY INTERCHANGE
-  PARTIAL FREEWAY INTERCHANGE
-  OVER DESIGN CAPACITY
-  AT DESIGN CAPACITY

NOTE: ARTERIALS NOT MARKED ARE OPERATING UNDER THE DESIGN CAPACITY



Source: SEWRPC.

Table 14

MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 SOUTH CORRIDOR BY COUNTY AND LEVEL OF CONGESTION: 1988

County	Under Design Capacity ^a		At Design Capacity ^b		Over Design Capacity ^c		Total Number of Miles
	Number of Miles	Percent of Total	Number of Miles	Percent of Total	Number of Miles	Percent of Total	
Kenosha	76.9	84.5	3.5	3.8	10.6	11.7	91.0
Milwaukee	62.7	88.4	1.6	2.3	6.6	9.3	70.9
Racine	86.6	96.0	0.9	1.0	2.7	3.0	90.2
Total	226.2	89.7	6.0	2.4	19.9	7.9	252.1

^aDefined as having a volume-to-capacity ratio of 0.00 to 0.90 based on average weekday traffic volumes.

^bDefined as having a volume-to-capacity ratio of 0.91 to 1.00 based on average weekday traffic volumes.

^cDefined as having a volume-to-capacity ratio greater than 1.00 based on average weekday traffic volumes.

Source: SEWRPC.

Table 15

AVERAGE WEEKDAY AND WEEKEND DAY TRAFFIC VOLUMES AT SELECTED LOCATIONS ALONG IH 94 SOUTH: 1987

Location	Weekday	Weekend Day		
	Average Weekday (vehicles per day)	Average Saturday (vehicles per day)	Average Sunday (vehicles per day)	Average Weekend Day (vehicles per day)
IH 94 at CTH C (Kenosha County)	40,600	42,900	44,900	43,900
IH 94 at CTH G (Racine County)	51,700	51,500	52,600	52,000
IH 94 at W. Grange Avenue (Milwaukee County)	106,100	90,500	85,500	88,000

Source: SEWRPC.

Kenosha County, to a low of 190 vehicles per hour, or about 10 percent, at CTH G in Racine County.

From the foregoing it may be concluded that in the Milwaukee County portion of the study area, IH 94 serves weekend travel demands as well as weekday travel demands. In Kenosha and Racine Counties, consideration will need to be

given to weekend travel demands on IH 94 and to those arterial facilities which connect IH 94 to freeway-oriented retail land uses. To the extent that major concentrations of urban land use development may be recommended along IH 94 in Kenosha and Racine Counties as part of the land use plan for the IH 94 South Corridor, however, substantial increases in average weekday traffic volumes may be expected to occur,

Table 16

**AVERAGE WEEKDAY AND WEEKEND DAY PEAK-HOUR, PEAK-DIRECTION
TRAFFIC VOLUMES AT SELECTED LOCATIONS ALONG IH 94 SOUTH: 1987**

Location	Weekday	Weekend Day ^a		
	Average Weekday (vehicles per day)	Average Saturday (vehicles per day)	Average Sunday (vehicles per day)	Average Weekend Day (vehicles per day)
IH 94 at CTH C (Kenosha County)	1,390 (northbound)	1,630 (northbound)	2,040 (southbound)	1,840
IH 94 at CTH E (Kenosha County)	1,600 (northbound)	1,670 (northbound)	2,160 (southbound)	1,920
IH 94 at CTH G (Racine County)	1,940 (northbound)	1,930 (northbound)	2,330 (southbound)	2,130
IH 94 at W. Grange Avenue (Milwaukee County)	4,390 (southbound)	3,280 (northbound)	3,430 (southbound)	3,360

^aThe traffic volumes shown for peak-hour, peak-direction traffic on an average Saturday and an average Sunday are substantially exceeded throughout the years in summer weekend hours. The 30th highest hour of volume for northbound weekend traffic is generally about 60 percent higher than the average peak hour; the 50th highest hour is about 50 percent greater; and the 100th highest hour is about 35 percent greater. With respect to southbound weekend traffic, the 30th highest hour is about 35 percent greater than the average Sunday southbound peak-hour, peak-direction traffic volume; the 50th highest hour is about 30 percent greater; and the 100th highest hour is about 15 percent greater.

Source: SEWRPC.

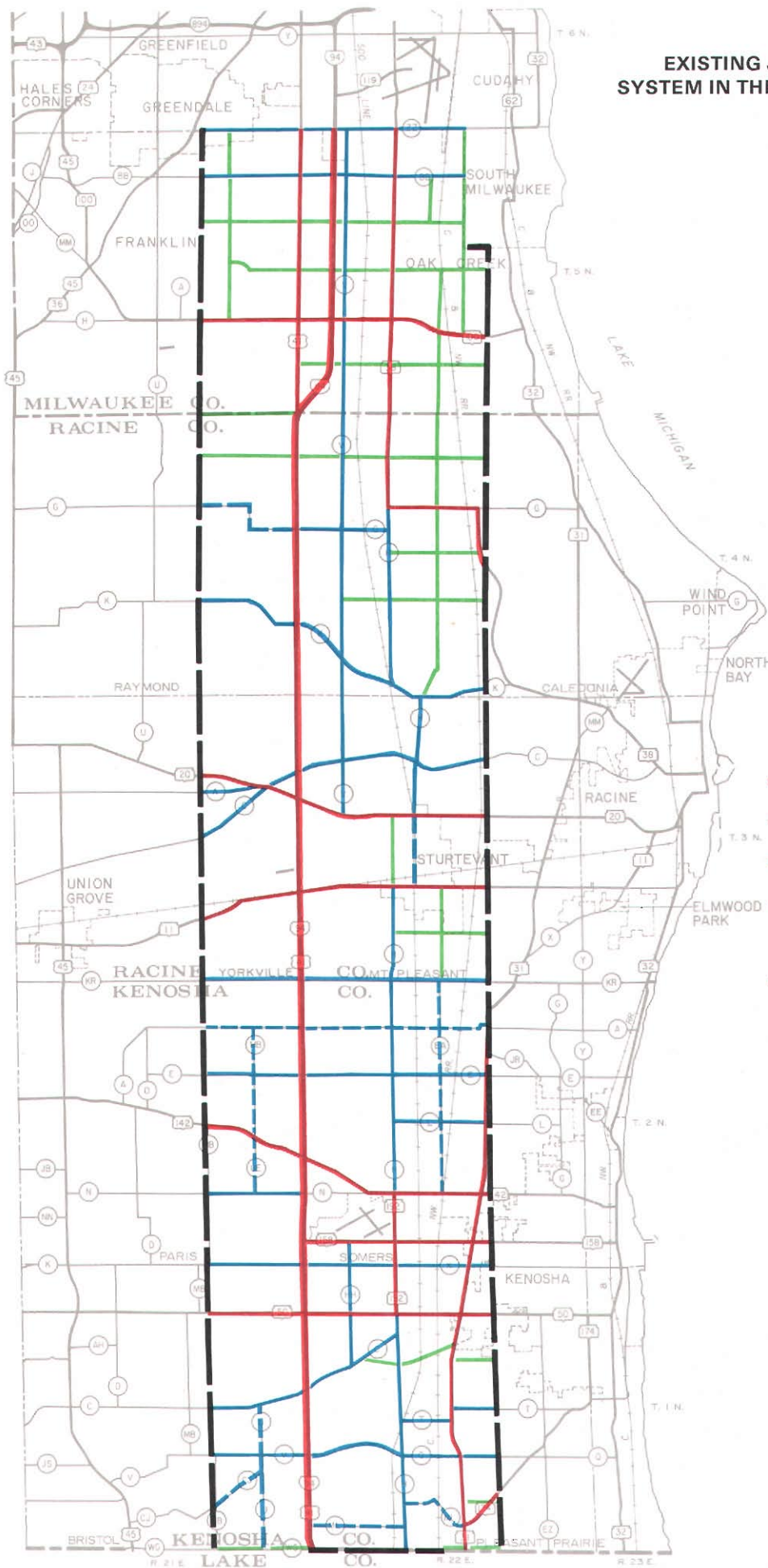
and weekday traffic loadings in Kenosha and Racine Counties may be expected to exceed weekend traffic loadings in the future, as is presently the case in Milwaukee County.

realignment of the state trunk, county trunk, and local trunk highway systems to reflect changing conditions.

Federal Aid Classification of Arterial System: The classification of the arterial street and highway system in the IH 94 South Corridor study area for federal aid purposes is shown on Map 18 and summarized in Table 18. Of the 252-mile arterial system, nearly 31 miles, or about 12 percent, have been placed on the federal aid interstate system; about 52 miles, or nearly 21 percent, have been placed on the federal aid primary system; nearly 69 miles, or about 27 percent, have been placed on the federal aid secondary system; and about 57 miles, or about 22 percent, have been placed on the federal aid urban system. The remaining nearly 44 miles of arterial street and highway facilities in the corridor study area, representing about 18 percent of the total, have not to date been placed on the federal aid system.

Arterial System Jurisdiction: The current jurisdiction attendant to the arterial street and highway system serving the IH 94 South Corridor study area is shown on Map 17 and summarized in Table 17. Of the 252-mile arterial system, nearly 96 miles, or about 38 percent, are state trunk highways. An additional 98 miles, or about 39 percent, are county trunk highways, while the remaining 59 miles, or about 23 percent, are under local jurisdiction. Map 17 also identifies those additional county trunk highways in Kenosha and Racine Counties that are not classified as arterial highways. As discussed in Chapter V of this report, the adopted jurisdictional highway system plans for Kenosha, Milwaukee, and Racine Counties recommend a

EXISTING JURISDICTIONAL HIGHWAY SYSTEM IN THE IH 94 SOUTH CORRIDOR: 1988



LEGEND

- ARTERIAL FACILITIES
 - STATE TRUNK FREEWAY
 - STATE TRUNK NON-FREEWAY
 - COUNTY TRUNK
 - LOCAL TRUNK
- NON-ARTERIAL FACILITIES
 - - - COUNTY TRUNK

Source: SEWRPC.

Table 17

**MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE
IH 94 CORRIDOR BY COUNTY AND JURISDICTION: 1988**

County	Arterial Miles					
	State Trunk Highway			County Trunk Highway	Local	Total
	Freeway	Standard Arterial	Total			
Kenosha	12.1	30.6	42.7	41.2 ^a	7.1	91.0
Milwaukee	6.3	18.1	24.4	17.1	29.4	70.9
Racine	12.1	16.4	28.5	39.4 ^b	22.3	90.2
Total	30.5	65.1	95.6	97.7	58.8	252.1

^aKenosha County also has jurisdictional responsibility for 21.8 miles of nonarterial highways in the study corridor.

^bRacine County also has jurisdictional responsibility for 3.9 miles of nonarterial highways in the study corridor.

Source: SEWRPC.

The adopted county jurisdiction highway system plans recommend a realignment of the federal aid systems to ensure that all arterial street and highway facilities are eligible for available federal aid. All freeways are recommended to be placed on the federal aid interstate or federal aid primary systems. All state trunk highways are recommended to be placed on the federal aid primary system. All county trunk highways outside the urban areas are recommended to be placed on the federal aid secondary system. All county trunk highways in urban areas and all local trunk highways in urban areas are recommended to be placed on the federal aid urban system.

Railway System

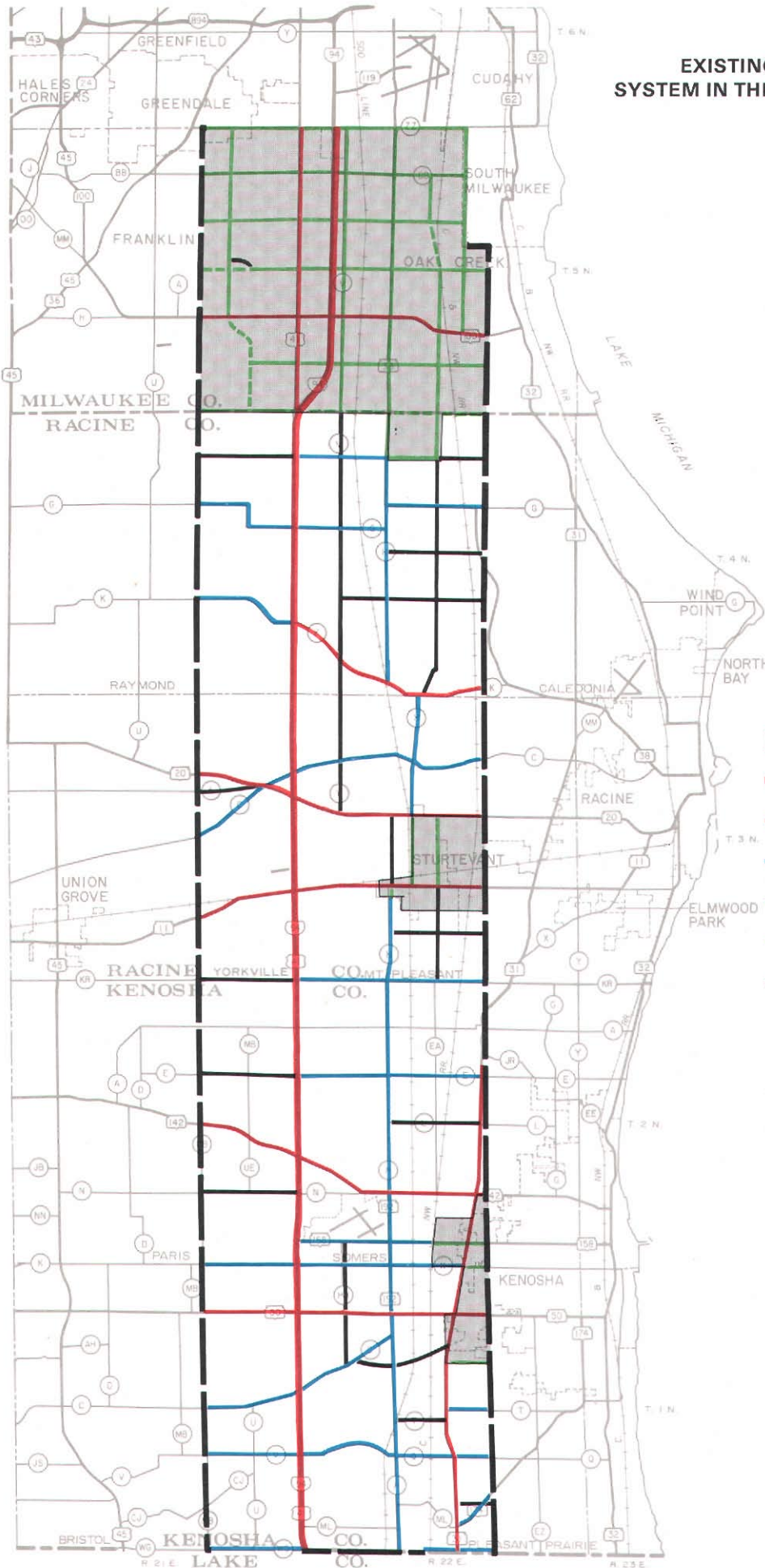
The railway system currently serving the IH 94 South Corridor study area and its immediate environs is shown on Map 19. Currently, two railway companies serve the corridor. The Chicago & North Western Transportation Company maintains a line approximately paralleling the eastern boundary of the study corridor. This line originates in Proviso yard in Chicago, continues to Butler yard in Milwaukee, and terminates in East Minneapolis yard in Minnea-

polis. The line provides service to a number of industrial areas in the study corridor, including the Waxdale area near Sturtevant, the Kenosha industrial park along STH 158, and the Wisconsin Electric Power Company generation plant in Pleasant Prairie.








The Soo Line Railroad Company also serves the corridor, with its main line originating at Bensenville yard in Chicago, continuing to Muskego yard in Milwaukee, and terminating in St. Paul yard in St. Paul, Minnesota. This railway line—formerly the main line of the Chicago, Milwaukee, St. Paul & Pacific Railroad—provides the basis not only for freight movements but for intercity passenger travel on Amtrak service between Milwaukee and Chicago. The Amtrak service includes a stop in the Village of Sturtevant within the corridor. The Soo Line Railroad Company also operates a branch line extending from Waxdale to Union Grove. These two lines also provide service to industrial lands within the IH 94 South Corridor study area, including the Northbranch Industrial Park and PPG Industries site in Oak Creek, the Sturtevant area, and the Wisconsin Electric Power Company generation plant in Pleasant Prairie.

Map 18

EXISTING FEDERAL AID HIGHWAY SYSTEM IN THE IH 94 SOUTH CORRIDOR: 1988



LEGEND

-  URBANIZED AREA
-  INTERSTATE
-  PRIMARY
-  SECONDARY
-  URBAN
-  URBAN - PROPOSED ROUTE
-  ARTERIAL STREET OR HIGHWAY NOT PLACED ON THE FEDERAL AID SYSTEM

Source: SEWRPC.

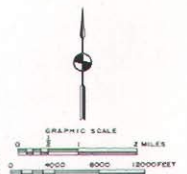


Table 18

**MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 SOUTH
CORRIDOR BY COUNTY AND FEDERAL AID CLASSIFICATION: 1988**

County	Arterial Miles					
	Federal Aid Classification				Nonfederal Aid	Total
	Interstate	Primary	Secondary	Urban		
Kenosha	12.1	23.5	40.4	2.4	12.6	91.0
Milwaukee	6.3	12.1	--	52.0 ^a	0.5	70.9
Racine	12.1	16.6	28.4 ^b	2.3 ^c	30.8	90.2
Total	30.5	52.2	68.8	56.7	43.9	252.1

^aThe federal aid urban system in Milwaukee County also includes Oakwood Road west 1.0 mile from S. 27th Street. This segment of Oakwood Road has not been classified as an arterial highway. In addition, the federal aid urban system in Milwaukee County includes the following four proposed facilities: S. 51st Street extended from W. Ryan Road to W. Eight Mile Road (2.1 miles); E. and W. County Line Road from S. 27th Street to the eastern study area boundary (4.2 miles); W. Puetz Road extended from Hunting Park Drive to the western study area boundary (0.9 mile); and S. Nicholson Road extended from a point one-half mile south of E. Puetz Road to a connection with S. Clement Avenue at E. Drexel Avenue (1.0 mile). Of these four facilities, two—the extension of W. Puetz Road and the extension of S. Nicholson Road—are planned future arterial facilities identified on the adopted regional transportation system plan. The remaining two facilities—S. 51st Street extended and County Line Road—had been identified on the original regional transportation system plan as future arterial facilities but were deleted from the plan in 1978.

^bThe federal aid secondary system in Racine County also includes CTH G west 2.4 miles from IH 94 to the study area boundary. This segment of CTH G has not been classified as an arterial facility.

^cThe federal aid urban system in Racine County also includes 90th Street south 1.5 miles from STH 20 to STH 11 and CTH H south 1.5 miles from STH 20 to STH 11. The subject segment of 90th Street was identified on the original regional transportation system plan as an arterial facility but was removed from the plan in 1978.

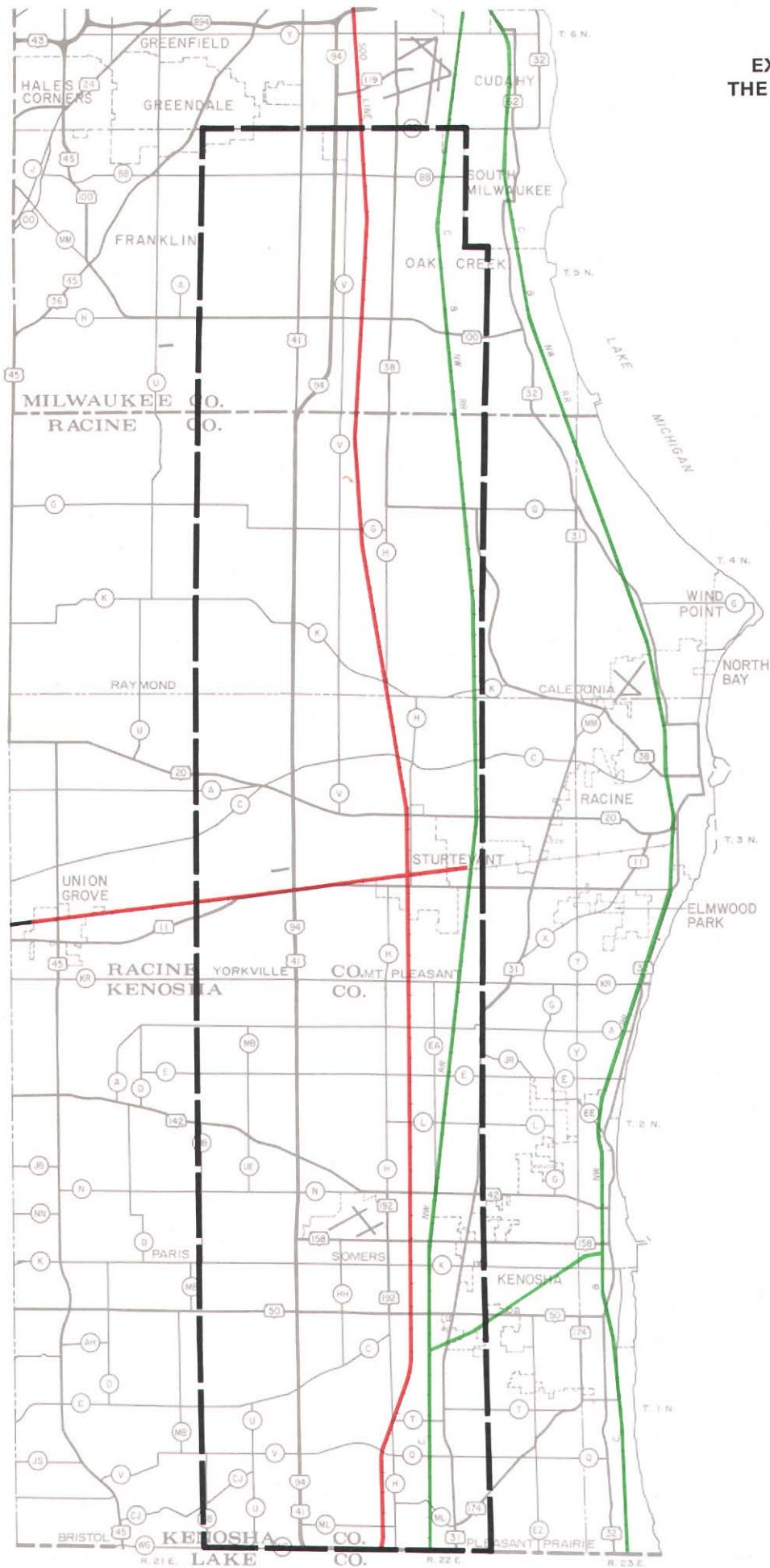
Source: SEWRPC.

Public Transit Service

The location and extent of existing public transit service within the IH 94 South Corridor study area and its immediate environs is summarized on Map 20. Local bus service is provided to very limited areas on the margins of the corridor through route extensions of the Milwaukee County, City of Racine, and City of Kenosha public transit systems. Importantly, the City of Kenosha recently extended on a trial basis bus service west to the major retail and service center located at the intersection of IH 94 and STH 50; to Manu-Tronics, Inc., an electronic

component manufacturing firm located east of the intersection of CTH T and CTH H in LakeView Corporate Park; and to Lakeside Marketplace, a retail center located at the southeast corner of 110th Street and the east frontage road at IH 94. As a part of its development activities, LakeView Corporate Park subsidizes about 50 percent of the costs to operate the trial basis bus service provided to Manu-Tronics and Lakeside Marketplace. Freeway Flyer commuter-oriented bus service to the central business district of Milwaukee—connecting there to freeway flyer service to other areas

**EXISTING RAILWAYS SERVING
THE IH 94 SOUTH CORRIDOR: 1988**



LEGEND

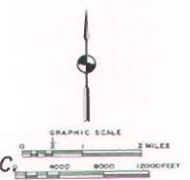
CHICAGO AND NORTH WESTERN
TRANSPORTATION COMPANY

ACTIVE RAILROAD LINE

SOO LINE RAILROAD COMPANY

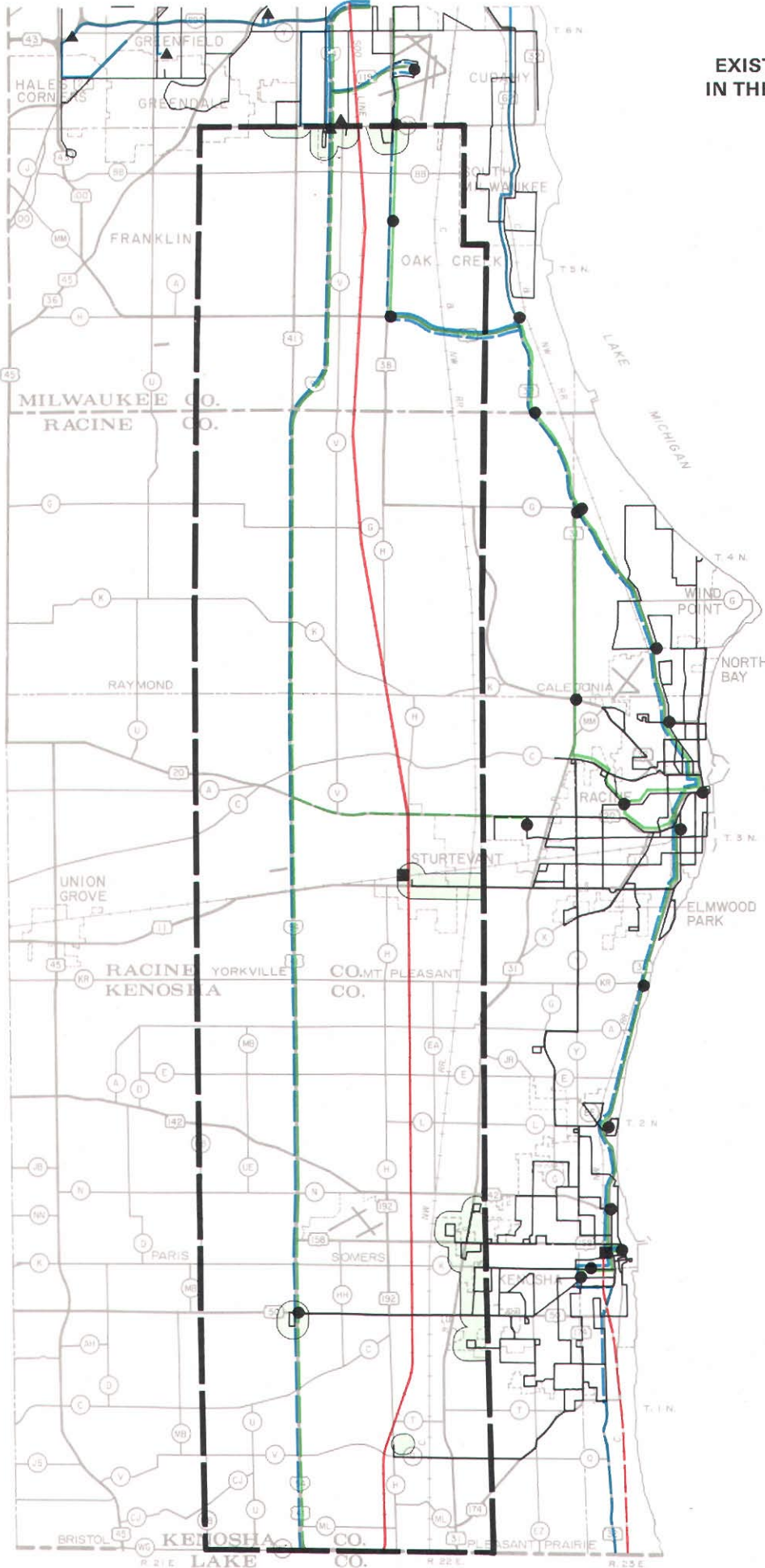
ACTIVE RAILROAD LINE

RAILROAD LINE SUBJECT TO
ABANDONMENT WITHIN THREE YEARS

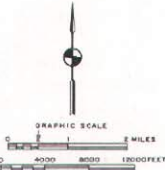


Source: SEWRPC

EXISTING PUBLIC TRANSIT SERVICE
IN THE IH 94 SOUTH CORRIDOR: 1988



- LEGEND**
- LOCAL BUS SERVICE
 - LOCAL BUS ROUTE
 - ▭ LOCAL TRANSIT SERVICE AREA
 - FREWAY FLYER BUS SERVICE
 - FREWAY FLYER BUS ROUTE
 - ▲ PARK - RIDE LOT
 - INTERCITY /COMMUTER BUS SERVICE
 - WISCONSIN COACH LINES, INC.
 - GREYHOUND LINES, INC.
 - OTHER
 - SCHEDULED INTERCITY BUS STOP
 - RAILROAD PASSENGER TRAIN SERVICE
 - AMTRAK
 - METRA
 - RAILROAD PASSENGER STATION



Source: SEWRPC.

of Milwaukee—is also provided at the northern end of the corridor via a park-ride lot located at the College Avenue interchange with IH 94.

The available intercity bus and Amtrak rail passenger services are also identified on Map 20. The intercity service consists largely of buses operating over IH 94 between the Milwaukee and Chicago areas and between General Mitchell International Airport and O'Hare International Airport.

UTILITY FACILITIES AND SERVICES

Public Sanitary Sewerage Systems

As shown on Map 21, in 1988 there were six public sanitary sewerage systems serving the IH 94 South Corridor study area. Selected characteristics attendant to these six plants are set forth in Table 19. At the north end of the corridor the Milwaukee Metropolitan Sewerage District served major portions of the Cities of Oak Creek and Franklin, as well as the Caddy Vista Sanitary District in the Town of Caledonia.

In the middle portion of the corridor two systems provide service. The first is the City of Racine system which extends west into the study area to serve the Village of Sturtevant and portions of the Towns of Mt. Pleasant, Caledonia, and Somers. The second is the Town of Yorkville sewerage system which was created to serve the commercial, institutional, recreational, and residential complex of land uses in both the Towns of Yorkville and Mt. Pleasant at and near the intersection of IH 94 and STH 20.

The remaining three systems serve the southern portion of the corridor in Kenosha County. These include the City of Kenosha system serving portions of the Towns of Pleasant Prairie and Somers lying east of the subcontinental divide traversing southeastern Wisconsin. The remaining two systems are operated by the Town of Pleasant Prairie, one to serve urban development in the northwestern portion of that Town and in the adjacent Town of Bristol, and the second to serve the Pleasant Prairie electric power generation plant and urban development near the Wisconsin-Illinois state line.

The planned extent of sanitary sewer service in the corridor study area is also identified on Map 21. These areas represent the planned sanitary sewer service areas as approved by the

Wisconsin Department of Natural Resources. Nearly all of the Milwaukee County portion of the study area is planned to be served by the Milwaukee Metropolitan Sewerage District. Furthermore, that District is nearing completion of a major construction program that will provide all of the District conveyance and treatment plant capacities required to serve the area.

The planned extent of the Racine sewerage system provides for substantial additional development in the corridor, but the limits of that planned area lie about two miles east of IH 94. The major trunk sewers to serve that planned area are largely in place, as is the required treatment plant capacity in Racine. The relatively small planned extent of the Yorkville sewerage system along IH 94 reflects the very limited capacity available in that plant. The capacity of the Yorkville plant, which approximates 150,000 gallons per day, is fully committed to serve the land use areas shown on Map 21.

In the Kenosha-Pleasant Prairie-Bristol portion of the corridor there is sufficient treatment plant capacity to accommodate planned urban development in both the City of Kenosha and Town of Pleasant Prairie No. 73-1 systems. In the Town of Pleasant Prairie Utility District D system, there is insufficient treatment plant capacity to serve the entire extent of the areas shown for planned urban development.

In total, the six public sewerage systems currently serving the corridor provide sanitary sewer service to about 20.7 square miles, or about 12 percent, of the 178.4-square-mile corridor. About 37,100 persons, representing about 75 percent of the resident population of the study area, are currently served. If sanitary sewer service were extended to the area currently planned for such service, an additional 53.2 square miles would be served, with service being provided to a total of 73.9 square miles, or about 41 percent of the corridor.

Public Water Supply Systems

The portions of the IH 94 Corridor study area served by public water supply systems are shown on Map 22. Four public water supply systems serve the Milwaukee County portion of the corridor. The City of Milwaukee water utility serves a small portion of the City lying in the corridor west of General Mitchell International Airport and provides limited water supply

Table 19

SELECTED CHARACTERISTICS OF EXISTING PUBLIC WASTEWATER TREATMENT FACILITIES IN THE IH 94 SOUTH CORRIDOR STUDY AREA: 1988

Name of Public Sewage Treatment Plant	Date of Original Construction and Major Modification	Level of Treatment Provided	Disposal of Effluent	Design Capacity			Existing Loading: 1988			Wisconsin Pollutant Discharge Elimination System Permit Limits ^a				
				Average Hydraulic (mgd)	Peak Hydraulic (mgd)	Average Organic (pounds BOD ₅ /day)	Annual Average Hydraulic (mgd)	Maximum Monthly Average Hydraulic (mgd)	Average Annual Organic (pounds BOD ₅ /day)	BOD ₅ (mg/l)	Suspended Solids (mg/l)	Ammonia Nitrogen (mg/l)	Phosphorus (mg/l)	Dissolved Oxygen (mg/l)
Kenosha County														
Kenosha Water Utility	1941, 1967, 1984	Secondary, plus phosphorus removal	Lake Michigan	28.40	68.00	29,700	19.9	26.2	18,600	30 ^b	30 ^b	None	1.0 ^b	None
Town of Pleasant Prairie Sewer Utility District D	1966, 1985	Secondary	Tributary to Des Plaines River	0.55	1.16	460	0.34	0.49	326	20 ^b	20 ^b	None	None	4.0 ^c
Town of Pleasant Prairie Sanitary District No. 73-1	1975	Secondary	Des Plaines River	0.40	0.80	800	0.07	0.11	35	15 ^d	15 ^d	None	None	6.0 ^c
Milwaukee County														
Milwaukee Metropolitan Sewerage District South Shore Sewage Treatment Plant	1969, 1974, 1988	Secondary, plus phosphorus removal	Lake Michigan	150.0 ^e	400.0 ^f	265,000	88.0	124.0	103,000	30 ^b	30 ^b	None	1.0 ^b	None
Racine County														
Racine Water and Wastewater Utilities	1938, 1967, 1977	Secondary, plus phosphorus removal	Lake Michigan	30.0	70.0	50,000	23.6	32.4	22,200	30 ^b	30 ^b	None	1.0 ^b	None
Town of Yorkville Sewer Utility District No. 1	1965, 1982	Secondary	Unnamed Tributary to Hoods Creek	0.15	0.60	255	0.05	0.06	92	20 ^d	20 ^d	None	None	4.0 ^c

^aAll of the treatment plants in the study area are in compliance with permit limits, except for a limited number of short-term exceedances, none of which require enforcement actions.

^bMaximum monthly average.

^cMinimum daily average.

^dMaximum weekly average.

^eThe current Milwaukee Metropolitan Sewerage District South Shore sewage treatment plant expansion project will provide the design capacity noted. The capacity prior to the current plant expansion and upgrading was 120 million gallons per day (mgd) for average hydraulic capacity.

^fThe peak hydraulic design flow at the Milwaukee Metropolitan Sewerage District South Shore plant is 400 mgd, of which 250 mgd will be treated and 150 mgd will be stored and treated following peak flows as capacity becomes available.

Source: SEWRPC.

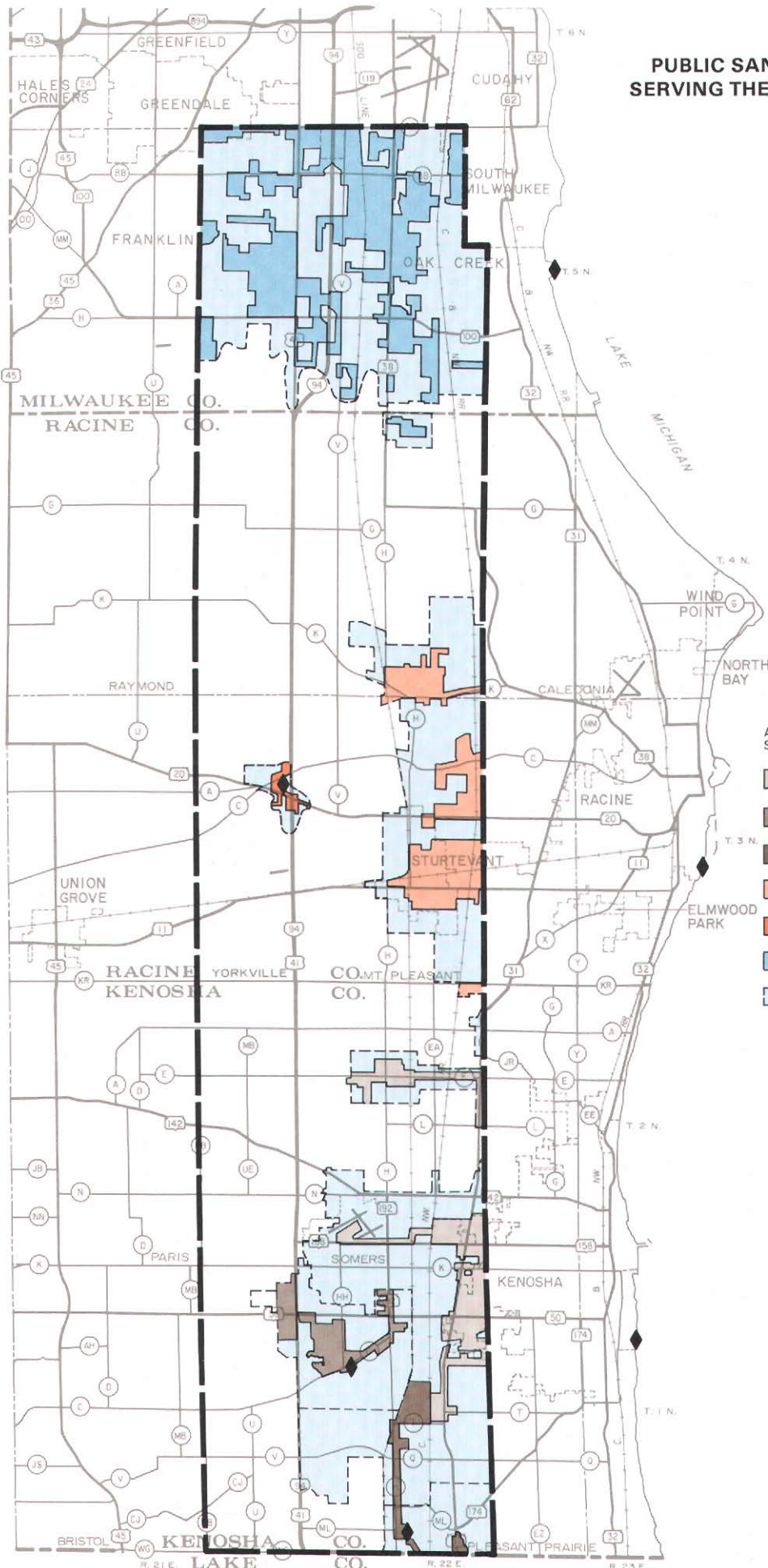
service to the City of Franklin, located along W. College Avenue from S. 27th Street to S. 43rd Street. The Village of Greendale water utility serves that small portion of the Village lying in the corridor, purchasing Lake Michigan water from the City of Milwaukee. The City of Oak Creek water utility serves substantial portions of the City lying in the IH 94 Corridor study area using Lake Michigan as a source of supply through its own water treatment plant. The City of Oak Creek system also serves portions of the City of Franklin. In addition, the City of Franklin water utility provides service to a portion of the urban development within that City, drawing upon groundwater for supply.

Very limited public water supply services are available in the Racine County portion of the corridor. The City of Racine system, which uses Lake Michigan as a source of supply, serves the Village of Sturtevant and a relatively small

portion of the Town of Mt. Pleasant. In addition, a public water supply utility using groundwater is operated by the Caddy Vista Sanitary District in the Town of Caledonia.

The extent of public water supply service in the Kenosha County portion of the IH 94 study area is also relatively limited. The City of Kenosha system, which uses Lake Michigan as a source of supply, serves that portion of the corridor lying within the City, as well as relatively small parts of the Towns of Somers and Pleasant Prairie. The Town of Pleasant Prairie water utility serves the northwestern portion of the Town near the intersection of IH 94 and STH 50, the Pleasant Prairie electric power generation plant, and the Timber Ridge area in the southeastern portion of the corridor, all through groundwater wells. The Town of Bristol provides service to a portion of the Town at the intersection of IH 94 and STH 50.

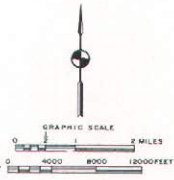
**PUBLIC SANITARY SEWERAGE SYSTEMS
SERVING THE IH 94 SOUTH CORRIDOR: 1988**



LEGEND

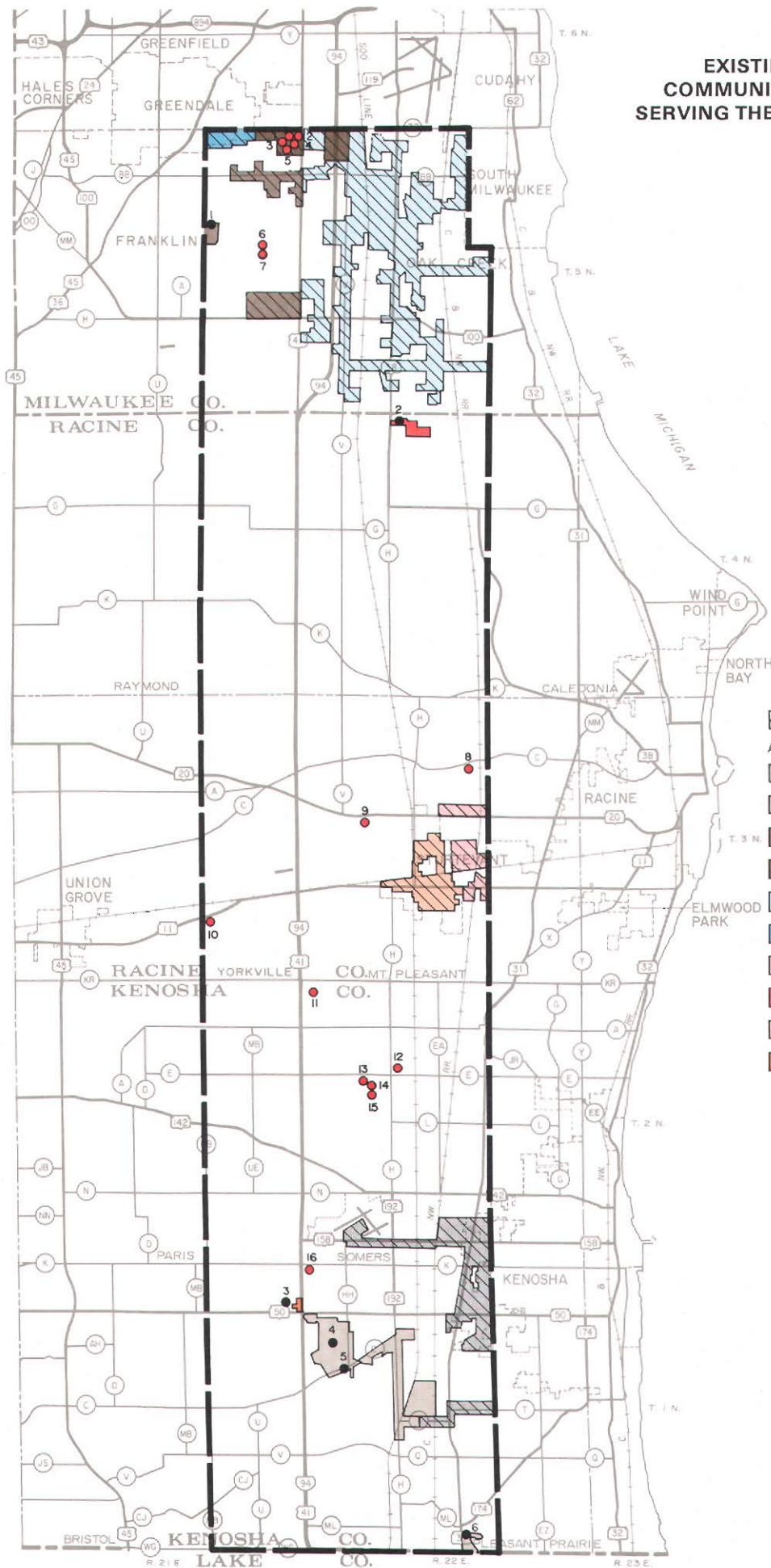
AREAS TRIBUTARY TO THE FOLLOWING
SEWERAGE TREATMENT PLANTS:

- CITY OF KENOSHA
- TOWN OF PLEASANT PRAIRIE SEWER UTILITY DISTRICT D
- TOWN OF PLEASANT PRAIRIE SANITARY DISTRICT NO. 73-1
- CITY OF RACINE
- YORKVILLE SEWER UTILITY DISTRICT NO. 1
- MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
- PLANNED SANITARY SEWER SERVICE AREA BOUNDARY
- PUBLIC SEWERAGE TREATMENT PLANT
















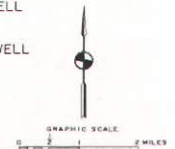
Source: SEWRPC.

**EXISTING PUBLIC AND PRIVATE
COMMUNITY WATER SUPPLY SYSTEMS
SERVING THE IH 94 SOUTH CORRIDOR: 1988**



LEGEND

-  LAKE MICHIGAN WATER SUPPLY SOURCE
- AREAS SERVED BY PUBLIC WATER UTILITIES**
-  CITY OF KENOSHA MUNICIPAL WATER UTILITY
-  TOWN OF PLEASANT PRAIRIE WATER UTILITY
-  CITY OF FRANKLIN WATER UTILITY
-  CITY OF MILWAUKEE WATER WORKS
-  CITY OF OAK CREEK WATER AND SEWER UTILITY
-  VILLAGE OF GREENDALE WATER AND SEWER UTILITY
-  CITY OF RACINE MUNICIPAL WATER UTILITY
-  CADDY VISTA SANITARY DISTRICT
-  VILLAGE OF STURTEVANT WATER UTILITY
-  TOWN OF BRISTOL WATER UTILITY
-  LOCATION OF PRIVATE COMMUNITY WATER SUPPLY AND IDENTIFICATION NUMBER
- 1 BADGER MOBILE HOME PARK
- 2 DREAM LAND VILLAGE APARTMENTS
- 3 FRANKLIN MOBILE ESTATES #3
- 4 FRANKLIN MOBILE ESTATES #1
- 5 FRANKLIN MOBILE ESTATES #2
- 6 MARY ANN DR. HOMEOWNERS COMMUNITY WATER SYSTEM
- 7 ACRE AVENUE WATER TRUST
- 8 STUART ROAD DUPLEXES
- 9 JENSEN MOBILE HOME VILLAGE
- 10 FONK'S MOBILE HOME PARK
- 11 OAKDALE ESTATES MOBILE HOME PARK
- 12 EAGLE CHATEAU APARTMENTS
- 13 COUNTRY CHARM ESTATES #1
- 14 COUNTRY CHARM ESTATES #3
- 15 COUNTRY CHARM ESTATES #4
- 16 PLEASANT PRAIRIE MOBILE HOME PARK
-  MUNICIPAL WELLS
- 1 CITY OF FRANKLIN WELL
- 2 CADDY VISTA WELL
- 3 TOWN OF BRISTOL WELL
- 4 ZIRBEL WELL
- 5 LADISH WELL
- 6 TIMBER RIDGE WELL



Source: SEWRPC.

In addition to the foregoing nine public water supply utilities serving the area, there are a total of 16 privately owned community water supply systems serving urban development throughout the study corridor (see Map 22). These systems are regulated under Wisconsin law, and serve individual mobile home parks, subdivisions, and apartment complexes.

In total, the areal extent of public water supply service in the IH 94 South Corridor approximates 13.8 square miles, or about 8 percent of the 178.4-square-mile study corridor. Public water supply service is provided to about 29,000 persons, representing about 58 percent of the resident population of the corridor. State-regulated private community supply water systems provide service to an additional 2,460 persons, representing an additional 5 percent of the corridor population.

Of special concern with regard to the public water supply systems are current and possible future drinking water standards for radium and lead. The current federal and state combined standard for radium (combined radium 226 and 228) is 5.0 picocuries per liter. The radium standard is undergoing review by the U. S. Environmental Protection Agency, with a proposed new standard expected to be announced at the end of 1989. The standard could be more or less stringent than the current level, and could establish separate standards for selected types of radium and possibly for radon and uranium. At the present time, the standard for radium is exceeded by some of the wells in the Town of Pleasant Prairie and the Caddy Vista Sanitary District.

The current federal and state standard for lead is 50 parts per billion (ppb) and is not typically exceeded at the water supply sources. However, this standard is also under federal review. The new regulations could call for increased sampling within the water distribution system, including samples at selected building outlets. This could result in increased treatment requirements, since lead standards are expected to be exceeded at locations in areas with certain types of plumbing systems.

Private Utility Systems

Electric power service over the entire IH 94 South Corridor study area is provided by the Wisconsin Electric Power Company. Electric

power service is considered to be ubiquitously available throughout the study corridor.

Natural gas service in the study corridor is provided by three different private companies. The Wisconsin Gas Company provides gas service to a small portion of the City of Milwaukee at the extreme northern end of the study corridor. The Wisconsin Southern Gas Company provides service to that portion of the corridor lying south of CTH KR and west of IH 94 in the Towns of Bristol and Paris. The remainder of the corridor study area is served by the Wisconsin Natural Gas Company. Like electric power service, natural gas service is considered to be ubiquitously available throughout the study corridor and is not a constraint on development.

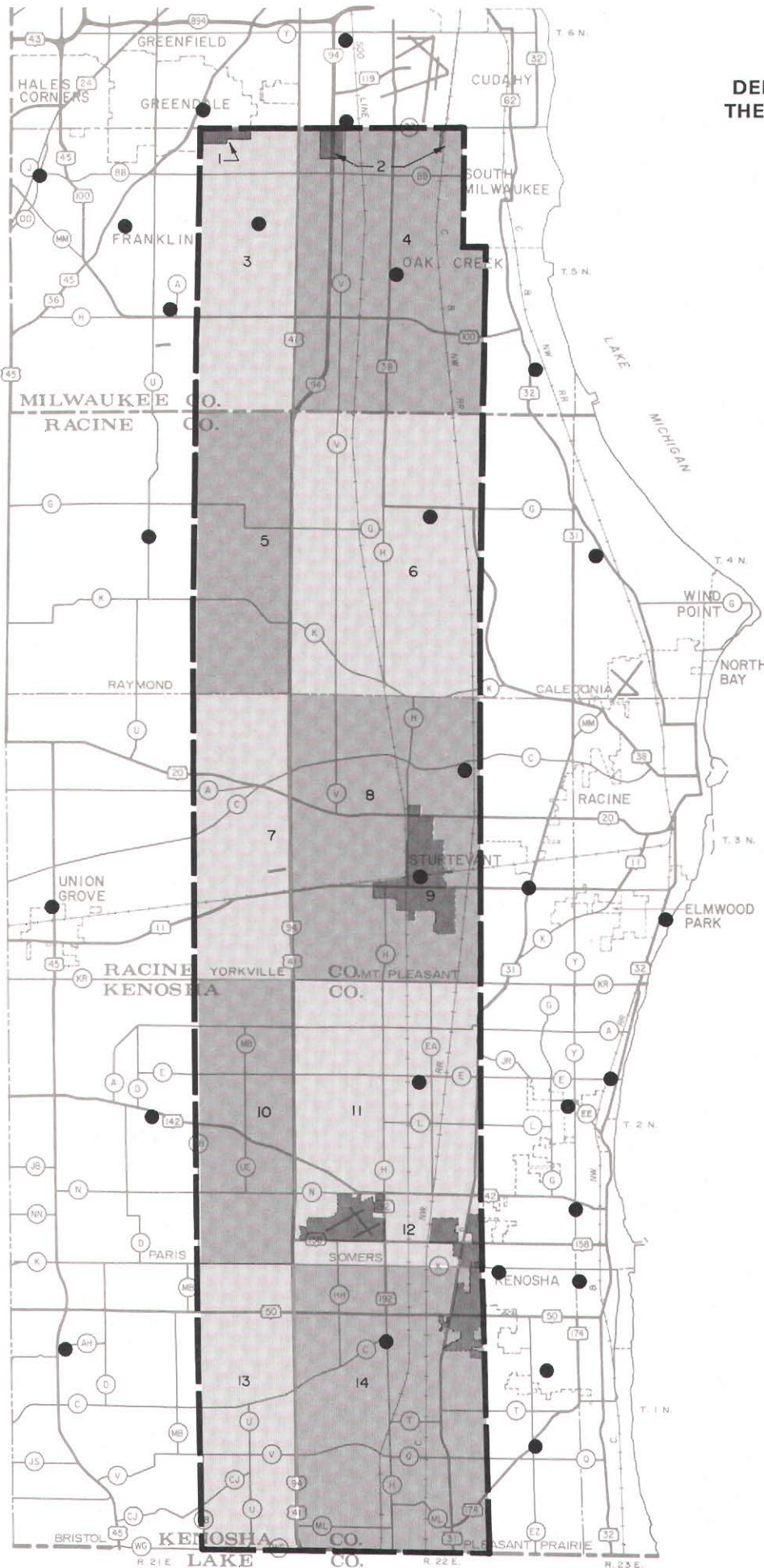
PUBLIC SAFETY FACILITIES AND SERVICES

Fire Suppression Services

Each of the 14 local units of government in the IH 94 Corridor study area independently provides fire suppression services. The location of each of the fire stations within and in the immediate environs of the IH 94 Corridor study area, and the jurisdictional limits of each individual fire suppression system, are shown on Map 23. Table 20 provides information about the working status of fire fighters within each system—that is, whether they are full-time, volunteer, or paid on-call volunteer, or some combination thereof—and the type of service agreements maintained with adjacent jurisdictions.

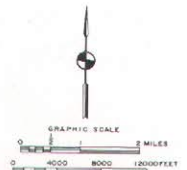
The extent to which each of the individual fire-fighting jurisdictions is able to meet the six-minute response time standard set forth in Chapter VI of this report is graphically summarized on Map 24. The analysis reflected on this map has been constrained by the jurisdictional limits of each fire-fighting system and does not take into account mutual aid agreements, since such agreements do not provide for "first response" actions. Furthermore, the analysis does not take into account any time it may take those volunteer fire fighters assigned to vehicle duty to get to the station. As shown on this map, there are substantial areas of the IH 94 South Corridor where the six-minute response time standard cannot be met. These lands generally lie along either side of IH 94 in the Towns of Mt. Pleasant, Yorkville, Somers, and Bristol.

FIRE STATIONS AND FIRE DEPARTMENT SERVICE AREAS IN THE IH 94 SOUTH CORRIDOR: 1988



LEGEND

- 1 VILLAGE OF GREENDALE
- 2 CITY OF MILWAUKEE
- 3 CITY OF FRANKLIN
- 4 CITY OF OAK CREEK
- 5 TOWN OF RAYMOND
- 6 TOWN OF CALEDONIA
- 7 TOWN OF YORKVILLE
- 8 TOWN OF MT. PLEASANT
- 9 VILLAGE OF STURTEVANT
- 10 TOWN OF PARIS
- 11 TOWN OF SOMERS
- 12 CITY OF KENOSHA
- 13 TOWN OF BRISTOL
- 14 TOWN OF PLEASANT PRAIRIE
- FIRE STATION



Source: SEWRPC

Table 20

WORKING STATUS OF FIRE FIGHTERS, EMERGENCY SERVICE LEVELS, AND SERVICE AGREEMENTS FOR FIRE AND RESCUE DEPARTMENTS SERVING THE IH 94 SOUTH CORRIDOR: 1988

Fire/Rescue Department	Working Status of Firefighters	Emergency Service Level ^a	Service Agreements ^b
City of Kenosha	Full-time	EMT-I; paramedic service planned in mid-1989	Mutual Aid Agreement with the Town of Pleasant Prairie and the City of Racine
Town of Bristol ^c	Paid on-call volunteer	EMT-A	Mutual Aid Box Alarm System Agreement (MABAS) with other municipalities in Kenosha County and Lake County
Town of Somers	Paid on-call volunteer	EMT-D; one EMT-D is full time	MABAS with other municipalities in Kenosha County and Lake County and Mutual Aid Agreement with City of Racine
Town of Paris	Volunteer	EMT-A; contracts with a private firm—Med-Tech, Inc., for rescue services	MABAS with other municipalities in Kenosha County and Lake County and Mutual Aid Agreement with Village of Union Grove
Town of Pleasant Prairie	Full-time and paid on-call volunteer	EMT-D and EMT-I ^d	MABAS with other municipalities in Kenosha County and Lake County
City of Racine ^e	Full-time	EMT-D	Mutual Aid Agreements with City of Kenosha and Town of Somers; Reciprocal Agreements with Towns of Caledonia and Mt. Pleasant and Village of Sturtevant
Village of Sturtevant	Volunteer	EMT-A	Mutual Aid Agreements with Towns of Caledonia, Mt. Pleasant, and Somers and Village of Union Grove; Reciprocal Agreements for selected intersections in the City of Racine
Village of Union Grove and Town of Yorkville	Volunteer	EMT-A	Mutual Aid Agreements with Towns of Brighton, Mt. Pleasant, and Raymond and Village of Sturtevant; Reciprocal Agreement with the Town of Paris to provide fire-fighting service
Town of Caledonia	Full-time and paid on-call volunteer	EMT-E	Mutual Aid Agreements with Towns of Mt. Pleasant and Raymond and Cities of Racine and Oak Creek; Reciprocal Agreements with City of Racine; First Response Fire Service Agreement with Wind Point
Town of Mt. Pleasant ^e	Full-time and part-time	EMT-D and EMT-I	Mutual Aid Agreements with City of Racine and Towns of Caledonia and Somers and Villages of Sturtevant and Union Grove; Reciprocal Agreement with City of Racine; First Response Fire Service Agreement with Village of Elmwood; Reciprocal Agreement with City of Racine
Town of Raymond	Volunteer	EMT-A	Mutual Aid Agreements with Towns of Caledonia, Norway, and Yorkville; Reciprocal Agreement with Town of Caledonia; and Rescue Service Agreement with Town of Dover

Table 20 (continued)

Fire/Rescue Department	Working Status of Firefighters	Emergency Service Level ^a	Service Agreements ^b
City of Franklin	Full-time and paid on-call volunteer	EMT-A; paramedic service planned for January 1990	Mutual Aid Agreements with Cities of Oak Creek and Greenfield and Villages of Hales Corners and Greendale; and Paramedic Service Agreement for emergency services provided by Milwaukee County
City of Milwaukee	Full-time	EMT-I	Mutual Aid Agreements with all surrounding communities
City of Oak Creek	Full-time and part-time—paid on-call	EMT-A; paramedic unit from South Milwaukee responds to critical emergencies in the Cities of Cudahy, Oak Creek, St. Francis, and South Milwaukee	Mutual Aid Agreements with Cities of Cudahy, Franklin, St. Francis, and South Milwaukee, Villages of Greendale and Hales Corners and Town of Caledonia
Village of Greendale	Full-time and paid on-call	EMT-A	Mutual Aid Agreements with Village of Hales Corners and Cities of Franklin and Greenfield

^aLevels of EMT Training

EMT-A—Service is provided by emergency medical technicians having 350 hours of training in providing ambulatory service.

EMT-D—Service is provided by emergency medical technicians having 350 hours of basic training and an additional 10 hours of training with the defibrillator machine.

EMT-I—Service is provided by emergency medical technicians having 350 hours of basic training and an additional 120 hours of training in the administration of intermediate drugs.

EMT-E—Service is provided by emergency medical technicians having 350 hours of basic training and an additional 6 hours of training in the injection of drugs into the muscular system.

EMT-Paramedic—Service is provided by emergency medical technicians having all of the above training and an additional 1,000 hours of training for the administration of all drugs. The EMT-Paramedic is the highest level of pre-hospital care.

^bThe Mutual Aid Box Alarm System (MABAS) is the mutual aid system whereby communities are contacted for assistance. The pre-established MABAS prioritizes the order in which communities respond to an incident. Kenosha County communities are on the MABAS system. Racine County communities have proposed a MABAS system to be implemented within the next several years. Milwaukee County communities are not involved in a MABAS system.

Mutual Aid—A definite and prearranged agreement and plan whereby regular response and assistance is provided in the event of alarms from certain boxes or locations in a stricken municipality by the aiding municipalities, in accordance with Box Alarm Assignments as developed by the Fire Chiefs or Senior Officers of the participating municipalities. The agreement indicates that the aiding community would provide either immediate manpower and similar equipment or highly trained personnel and specialized equipment beyond the capability of the stricken municipality to respond to the incident.

Reciprocal Agreement—A definite and prearranged agreement and plan whereby assistance is provided in the event of alarms from certain boxes or locations in a stricken municipality by the reciprocal municipality, in accordance with Box Alarm Assignments as developed by the Fire Chiefs or Senior Officers of the participating municipalities. The agreement indicates that the aiding community would provide similar types of fire-fighting equipment as the stricken municipality. The aiding community is under no obligation to provide "other specialized" types of equipment that the stricken community does not have.

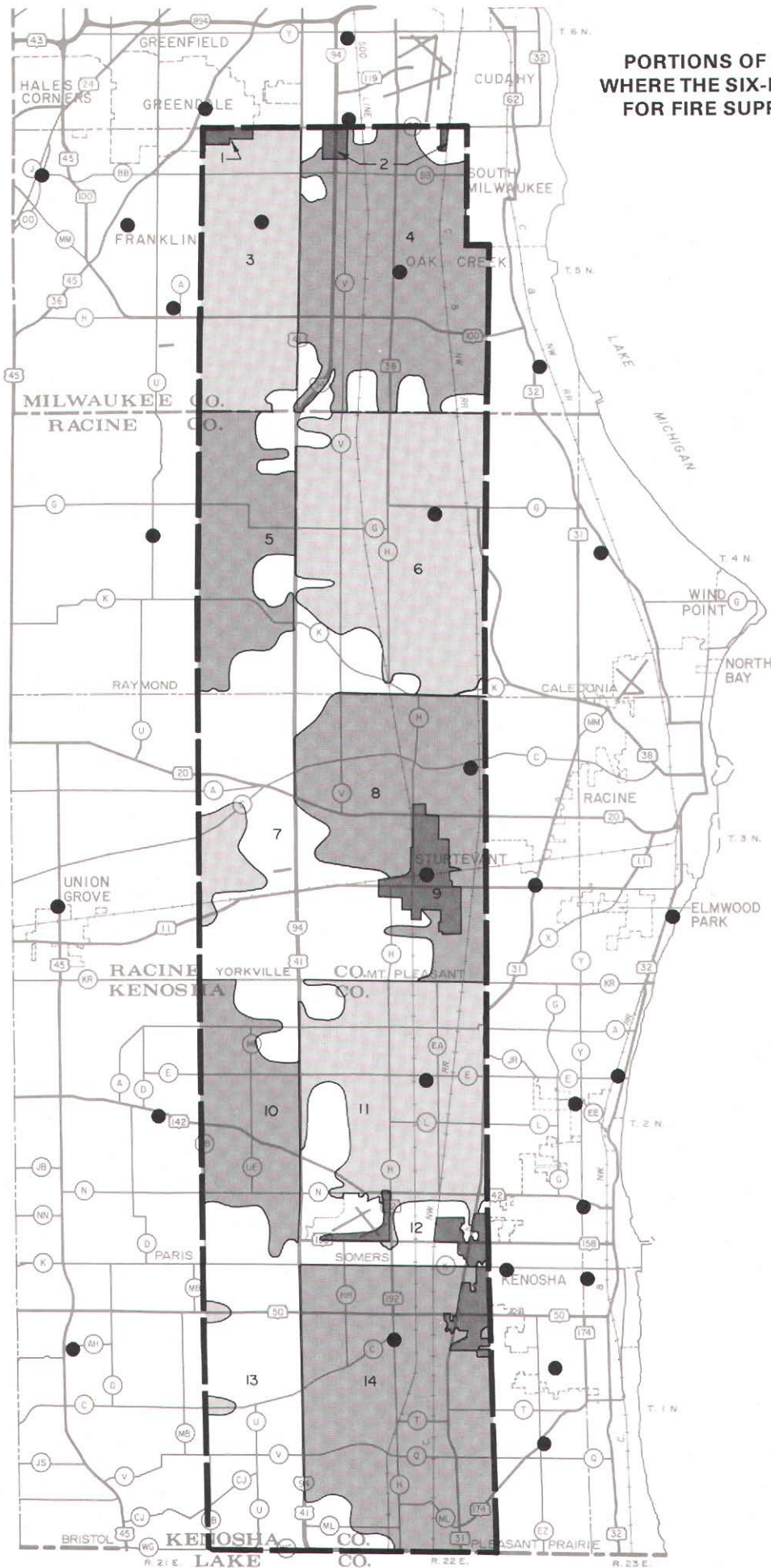
^cThe Town of Bristol is planning to construct a new fire station near the interchange of STH 50 and IH 94 and, when that station is constructed, to establish a full-time fire-fighting capability.

^dThe Town of Pleasant Prairie is beginning training in 1989 toward establishing a paramedic level of emergency service.

^eFirst Response Agreements exist between the City of Racine and the Town of Mt. Pleasant for selected intersections in those communities.

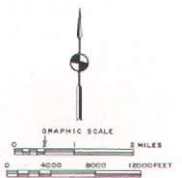
Source: Fire departments within the study area and SEWRPC.

PORTIONS OF THE IH 94 SOUTH CORRIDOR WHERE THE SIX-MINUTE RESPONSE STANDARD FOR FIRE SUPPRESSION CAN BE MET: 1988



LEGEND

- 1 VILLAGE OF GREENDALE
- 2 CITY OF MILWAUKEE
- 3 CITY OF FRANKLIN
- 4 CITY OF OAK CREEK
- 5 TOWN OF RAYMOND
- 6 TOWN OF CALEDONIA
- 7 TOWN OF YORKVILLE
- 8 TOWN OF MT. PLEASANT
- 9 VILLAGE OF STURTEVANT
- 10 TOWN OF PARIS
- 11 TOWN OF SOMERS
- 12 CITY OF KENOSHA
- 13 TOWN OF BRISTOL
- 14 TOWN OF PLEASANT PRAIRIE
- FIRE STATION



Source: SEWRPC.

Rescue Services

As shown on Map 25, each of the 14 local governments in the IH 94 South Corridor study area also independently maintains a rescue service. In the case of all jurisdictions except the Town of Paris, rescue service is provided by the publicly sponsored fire department. The Town of Paris contracts with a private ambulance service in the City of Kenosha to provide rescue services. The service levels in terms of emergency medical technician training attendant to each of the individual rescue systems are summarized in Table 20. Currently, the only available paramedic service in the study corridor is provided by the Cities of Oak Creek and Franklin.

The ability of each of the individual rescue systems to meet the six-minute response time standard specified in Chapter VI of this report is graphically summarized on Map 26. As shown on this map, there are substantial areas of inadequate service along IH 94, particularly in the Towns of Yorkville and Mt. Pleasant in Racine County and the Towns of Bristol and Paris in Kenosha County.

Law Enforcement

Nine of the 14 municipalities in the IH 94 Corridor study area provide for law enforcement through full-time police departments. In the remaining five municipalities—the Towns of Bristol, Paris, Raymond, Somers, and Yorkville—primary law enforcement is through the County Sheriff's Department. In addition, the Towns of Bristol, Raymond, and Yorkville provide limited law enforcement through part-time Town Constables.

SUMMARY AND CONCLUSION

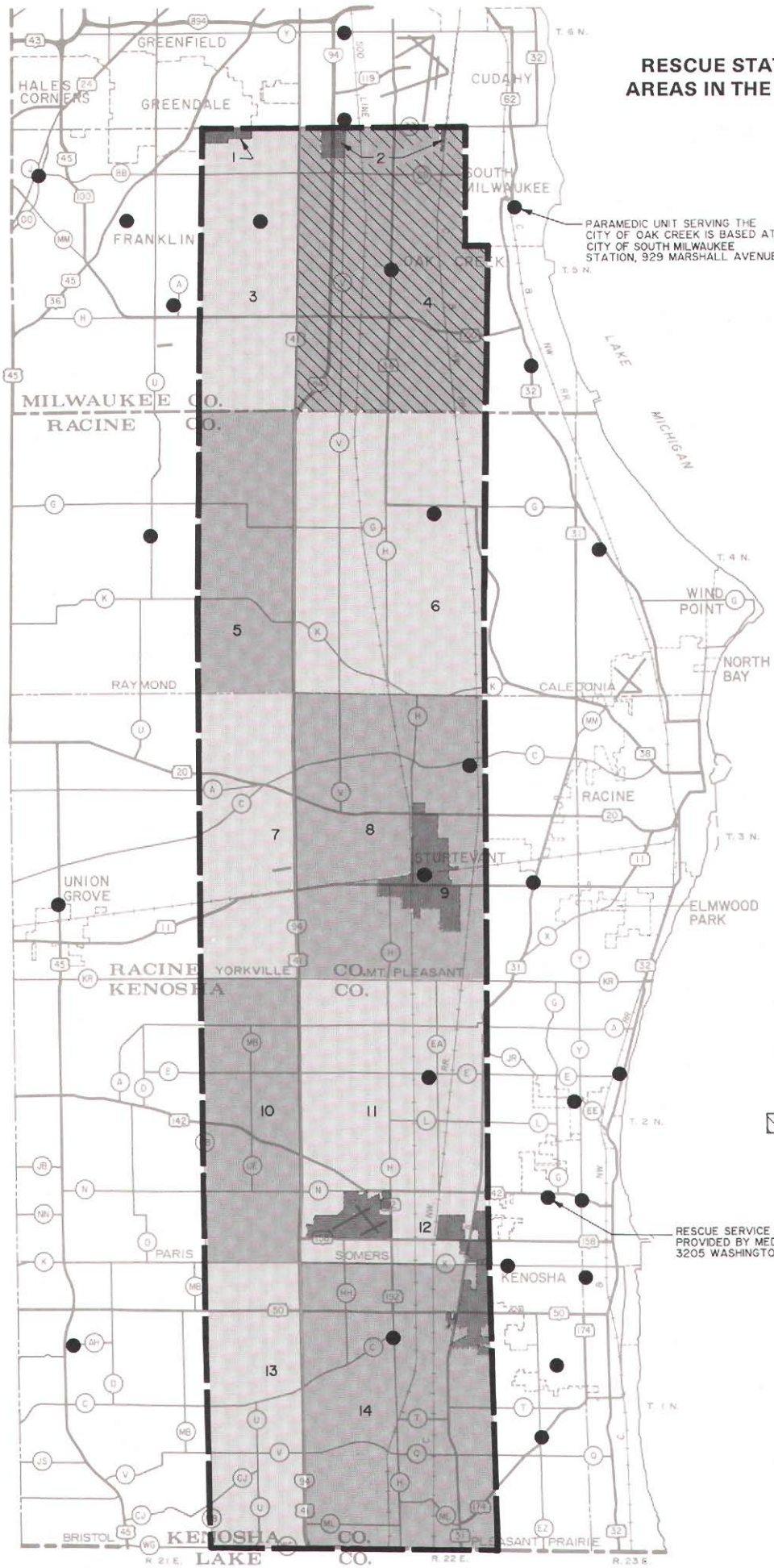
This chapter has described the transportation, utility, and public safety facilities and services currently provided in the IH 94 South Corridor study area. The following summarizes those findings of this chapter which have particular significance for the preparation of a development plan for the corridor:

1. The corridor study area is well served by an arterial street and highway system totaling about 252 miles in length. The arterial network is relatively densely spaced at about one-mile intervals in both the north-south and east-west directions throughout much of the study corridor.

About 63 miles, or about 25 percent of the system, consist of divided facilities, while about 16 miles, or about 6 percent, have been constructed to urban standards.

2. The IH 94 freeway is the most heavily traveled facility in the corridor, with average weekday traffic volumes ranging from a low of about 41,100 just south of STH 50 in Kenosha County to a high of about 80,000 just south of W. College Avenue in Milwaukee County. The most heavily traveled surface arterial streets and highways consist of STH 50 (24,400) and STH 31 (16,300) in Kenosha County; STH 11 (18,400) and STH 20 (18,800) in Racine County; and USH 41 (19,600), STH 38 (18,700), STH 100 (15,900), and W. Rawson Avenue (CTH BB) (21,600) in Milwaukee County.
3. About 20 miles, or 8 percent, of the 252-mile arterial system serving the study area were, in 1988, operating over design capacity and exhibiting traffic congestion during peak travel periods. Another six miles of facilities, representing an additional 2 percent of the system, were operating at design capacity.
4. A comparison of average weekday travel with average weekend travel along IH 94 leads to the conclusion that at least within the Milwaukee County portion of the study area, the design of IH 94 to serve weekday travel demands should be sufficient to meet weekend travel demands as well. In Kenosha and Racine Counties, consideration should be given in design to average weekend as well as average weekday travel demand on IH 94 and on those surface arterial facilities which connect IH 94 to freeway-oriented land uses.
5. State trunk highways constitute nearly 96 miles, or about 38 percent, of the 252-mile arterial system. County trunk highways total an additional 98 miles, or about 39 percent of the system, with the remaining 59 miles, or about 23 percent, under local jurisdiction. All but 44 miles of the system, or about 18 percent, have been placed on the federal aid interstate, primary, secondary, or urban systems and are thus eligible for such categorical aids.

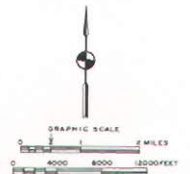
RESCUE STATIONS AND RESCUE SERVICE AREAS IN THE IH 94 SOUTH CORRIDOR: 1988



LEGEND

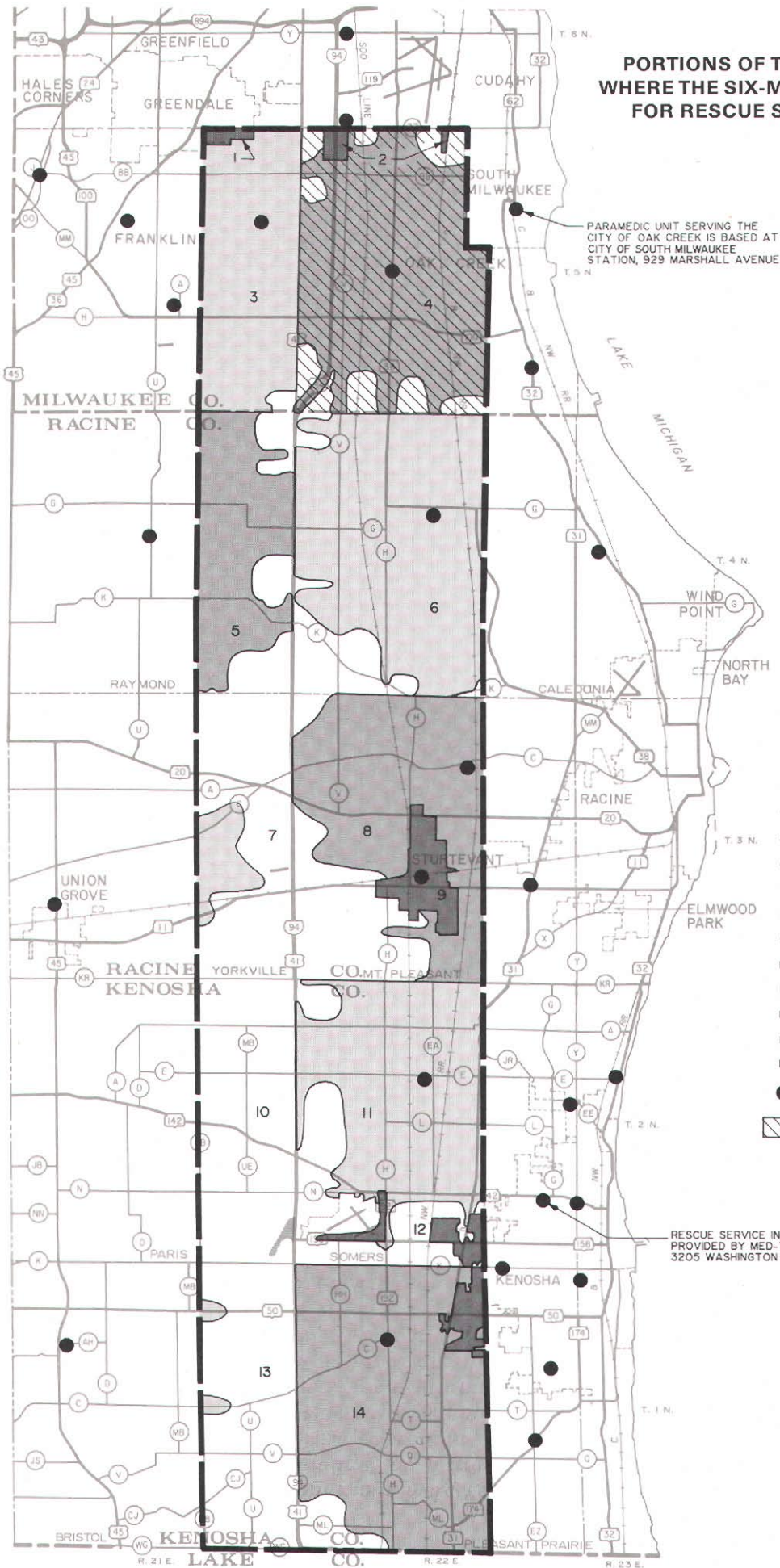
- 1 VILLAGE OF GREENDALE
- 2 CITY OF MILWAUKEE
- 3 CITY OF FRANKLIN
- 4 CITY OF OAK CREEK
- 5 TOWN OF RAYMOND
- 6 TOWN OF CALEDONIA
- 7 TOWN OF YORKVILLE
- 8 TOWN OF MT. PLEASANT
- 9 VILLAGE OF STURTEVANT
- 10 TOWN OF PARIS
- 11 TOWN OF SOMERS
- 12 CITY OF KENOSHA
- 13 TOWN OF BRISTOL
- 14 TOWN OF PLEASANT PRAIRIE
- RESCUE STATION
- ▨ EMT-PARAMEDIC SERVICE AREA IN THE STUDY AREA

RESCUE SERVICE IN TOWN OF PARIS PROVIDED BY MED-TECH AMBULANCE, INC. 3205 WASHINGTON ROAD, KENOSHA



Source: SEWRPC.

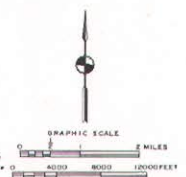
**PORTIONS OF THE IH 94 SOUTH CORRIDOR
WHERE THE SIX-MINUTE RESPONSE STANDARD
FOR RESCUE SERVICE CAN BE MET: 1988**



LEGEND

- 1 VILLAGE OF GREENDALE
- 2 CITY OF MILWAUKEE
- 3 CITY OF FRANKLIN
- 4 CITY OF OAK CREEK
- 5 TOWN OF RAYMOND
- 6 TOWN OF CALEDONIA
- 7 TOWN OF YORKVILLE
- 8 TOWN OF MT. PLEASANT
- 9 VILLAGE OF STURTEVANT
- 10 TOWN OF PARIS
- 11 TOWN OF SOMERS
- 12 CITY OF KENOSHA
- 13 TOWN OF BRISTOL
- 14 TOWN OF PLEASANT PRAIRIE
- RESCUE STATION
- ▨ EMT-PARAMEDIC SERVICE AREA IN THE STUDY AREA

Source: SEWRPC.



6. Railway service is provided in the corridor by two private companies—the Soo Line Railroad and the Chicago & North Western Transportation Company—with each company having one interstate line serving the corridor. This railway system provides freight service to industrial concentrations within the corridor and to the Wisconsin Electric Power Company generation plant. The Soo Line Railroad also provides the facilities for the routing of the subsidized Amtrak passenger service between Milwaukee and Chicago, that service providing a stop at Sturtevant within the corridor. Given the predominantly rural nature of the study area, only limited public transit service is currently provided within the corridor.
7. Six public sanitary sewerage systems provide service to development within the corridor. Together these six systems currently provide service to nearly 21 square miles of development and about 37,100 persons, or about 75 percent of the resident population of the corridor. Major land areas along IH 94 lie beyond the currently planned reach of these six sewerage systems. Such areas are concentrated in Racine County and northern Kenosha County.
8. Nine public water supply utilities serve urban development within the study corridor. Together these utilities provide service to nearly 14 square miles and to about 29,000 persons, or about 58 percent of the resident population of the corridor. Public water supply service is generally available in the Milwaukee County portion of the corridor. Service using Lake Michigan as a source of supply is not yet available to any area lying along IH 94 in Racine and Kenosha Counties.
9. All 14 local units of government in the study area independently provide fire suppression services through either full-time, volunteer, or paid on-call volunteer departments, or some combination thereof. There are substantial areas of the IH 94 South Corridor where a six-minute response time standard for fire suppression cannot now be met. These lands generally lie along either side of IH 94 in the Towns of Mt. Pleasant, Yorkville, Somers, and Bristol.
10. Each of the 14 local units of government independently maintains a rescue service. In all cases except the Town of Paris, rescue service is provided through the fire department. The Town of Paris contracts with a private ambulance firm in the City of Kenosha for such services. There are substantial areas along IH 94 where a six-minute response time standard cannot be met. These lands are generally located in the Towns of Bristol, Paris, Mt. Pleasant, and Yorkville.
11. All but five of the 14 municipalities in the study area have established full-time police departments to provide primary law enforcement services. The Towns of Bristol, Paris, Somers, Raymond, and Yorkville rely on their respective County Sheriff's Department for primary law enforcement services.

Chapter V

PLANS, LAND USE REGULATIONS, AND DEVELOPMENT PROPOSALS

INTRODUCTION

The development plan for the IH 94 South Corridor is intended, in part, to reevaluate, amend, update, and extend adopted regional and local plans as those plans pertain to the study corridor. In addition, the plan is to take into account local development objectives reflected in locally adopted land use control ordinances. Finally, the corridor plan is to take into account current land use development proposals of various types emanating from both the public and private sectors. Accordingly, an important step in the IH 94 South Corridor planning process was the assembly of information pertaining to the existing framework of regional plans, local plans and related land use regulations, and public and private land use development proposals. This chapter presents in summary form the inventory findings with respect to these matters.

REGIONAL PLAN FRAMEWORK

Since its creation in 1960, the Southeastern Wisconsin Regional Planning Commission, in cooperation with the local units of government concerned and with the guidance and advice of many advisory committees, has prepared and adopted a number of regional plans which are intended to provide a framework for development within the seven-county Southeastern Wisconsin Region. While always advisory in nature to the local, state, and federal units and agencies concerned and to private sector interests, this regional plan framework frequently serves as the basis for more detailed county and local government comprehensive planning, and is intended to influence both public and private sector decision-making with respect to development matters. An understanding of pertinent recommendations contained in the regional plan is, therefore, important to the preparation of a development plan for the IH 94 South Freeway Corridor.

Of particular importance to the IH 94 South Freeway Corridor are certain recommendations contained in the adopted regional land use plan, regional park and open space plan, regional transportation system plan for arterial streets

and highways, regional airport system plan, and regional water quality management plan, and in the subregional plans for the Oak Creek, Root River, and Pike River watersheds. A brief description of the major recommendations of each of these plans as they currently pertain to the IH 94 South Freeway Corridor follows.

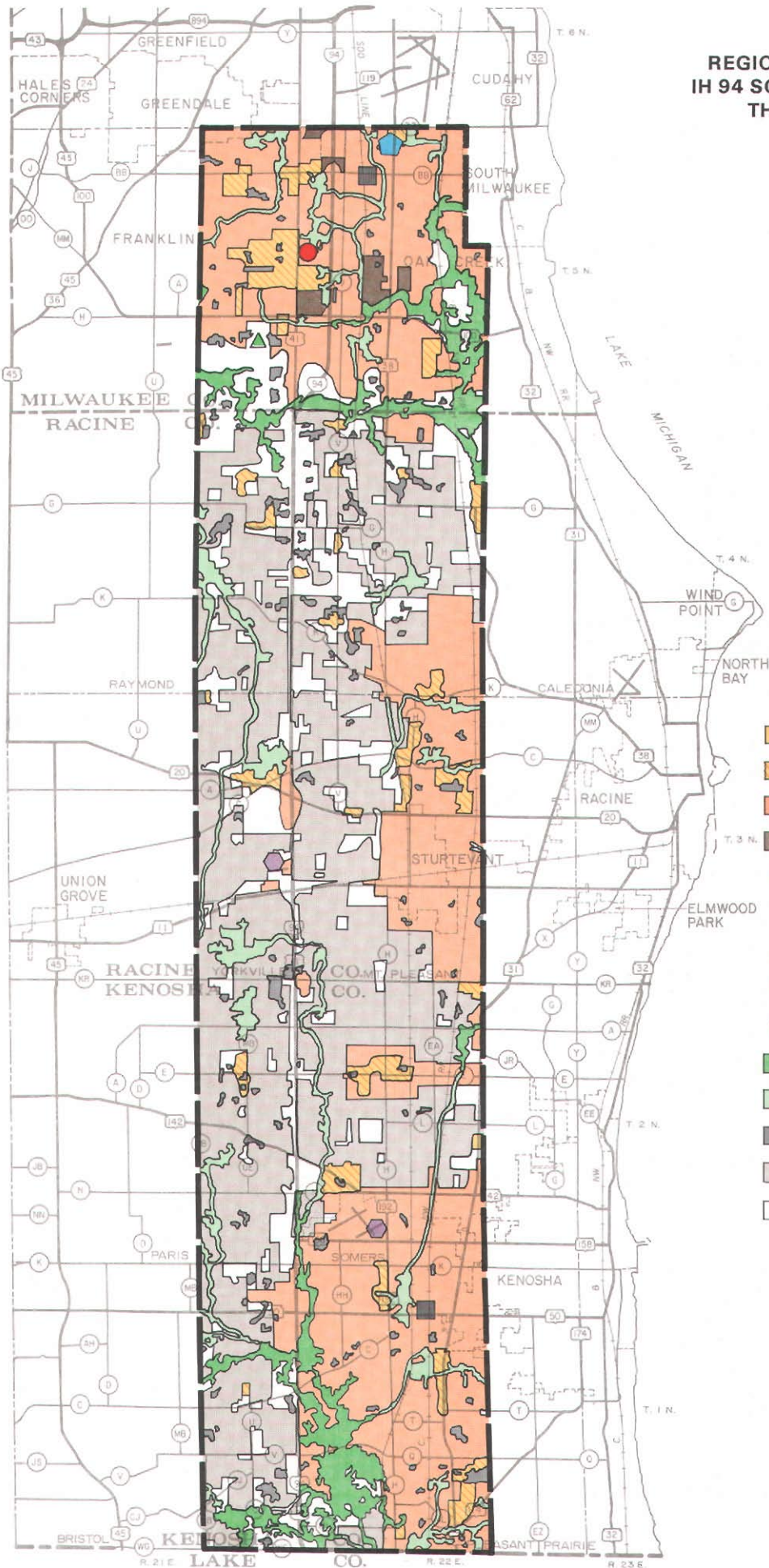
Regional Land Use Plan

Land use development is one of the principal areas of public policy determination facing communities in the Region. Although much land use development is financed by private capital, each new increment of urban growth, whether it be a subdivision, shopping center, or industrial plant, inevitably creates a demand for new public services and requires the investment of public capital in new or improved transportation facilities, utilities, and community facilities, and the expenditure of public funds for their continued operation and maintenance. Moreover, in an urbanizing region, the units of government facing these public investments and increased public expenditures may not always be the same as the units experiencing the growth. Thus, while detailed land use problems are primarily of local concern, the aggregate effects of changing land use activities are areawide in scope and not only interact strongly with the need for areawide utility, recreation, and transportation facilities, but exert a demand upon a limited natural resource base. Recognizing the fundamental importance of land use development, then, the Commission places great emphasis on the preparation and maintenance of a regional land use plan.















The currently adopted regional land use plan, as that plan pertains to the IH 94 South Corridor, is spatially depicted on Map 27. The regional land use plan is documented in SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings, April 1975; and Volume Two, Alternative and Recommended Plans, May 1978. The plan shown on Map 27 reflects amendments that have come about through subregional studies that have refined and detailed the regional land use plan. These studies include the farmland preservation plans for Kenosha and Racine

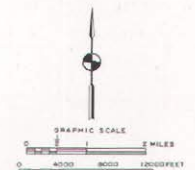
Map 27

**REGIONAL LAND USE PLAN FOR THE
IH 94 SOUTH CORRIDOR: AS AMENDED
THROUGH SEPTEMBER 1988**



LEGEND

-  SUBURBAN RESIDENTIAL (0.2-0.6 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  LOW DENSITY RESIDENTIAL (0.7-2.2 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  MEDIUM DENSITY RESIDENTIAL (2.3-6.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  HIGH DENSITY RESIDENTIAL (7.0-17.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  MAJOR RETAIL AND SERVICE CENTER
-  MAJOR INDUSTRIAL CENTER
-  MAJOR PUBLIC OUTDOOR RECREATION CENTER
-  MAJOR TRANSPORTATION CENTER
-  MAJOR GOVERNMENTAL OR INSTITUTIONAL CENTER
-  PRIMARY ENVIRONMENTAL CORRIDOR
-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA
-  PRIME AGRICULTURAL LAND
-  OTHER AGRICULTURAL AND OPEN LAND



Source: SEWRPC.

Counties¹; the Pike River and Oak Creek watershed plans²; and detailed sanitary sewer service area plans for the Kenosha and Racine urbanized areas.³

The adopted regional land use plan contains three basic recommendations:

1. Placement of Urban Land Use Development. The plan seeks to promote a more orderly and economic development pattern within the Region by encouraging the location of new urban development in areas adjacent to existing development; by encouraging new urban development to occur at densities consistent with the provision of public sanitary sewer, water supply, and mass transit facilities and services; by encouraging new urban development to occur only in areas covered by soils well suited to urban use and not subject to special hazards, such as flooding and erosion; and by encouraging new urban development and redevelopment to occur in areas where essential urban facilities and services are already available, or into which such facilities and services can be readily and economically extended. As applied to the IH 94 South Corridor to date, these areas are shown in brown, orange, and yellow on Map 27.
2. Protection and Preservation of Environmentally Sensitive Lands. The plan recom-

mends that new urban development be discouraged from occurring in primary environmental corridors as those corridors are shown in dark green on Map 27. Not only are the best remaining elements of the natural resource base found in those corridors, but the topography, soils, and flood hazards existing in those corridors make them poorly suited for intensive urban development of any kind. The secondary environmental corridors and isolated natural areas, also shown on Map 27, are recommended for consideration by local officials for preservation as needed for park, drainage, and open space purposes.

3. Protection and Preservation of Prime Agricultural Lands. The plan recommends that the remaining prime agricultural lands, as identified in a tan color on Map 27, also be protected and preserved from urban encroachment. As discussed in Chapter III of this report, these lands contain soils that are very well suited for agricultural use and occur in farm sizes and farm blocks large enough to help sustain an agricultural economy. Furthermore, given the commitment to urban development of substantial amounts of lands not identified for prime agricultural use, there is no need to consider committing prime agricultural lands to meet urban land use development needs.

Collectively, the lands recommended for urban development in the adopted regional land use plan within the IH 94 South Freeway Corridor amount to nearly 72 square miles, or 40 percent of the total corridor. As noted in Chapter III, only about 32 square miles of this total represents lands developed for urban purposes in 1985. Consequently, an additional 40 square miles of land are recommended for new urban development in the adopted plan. The lands proposed for new urban development could be expected to accommodate, at currently prevailing densities and intensities of development, an incremental population of 53,000 persons, and an incremental employment of 49,000.

Regional Park and Open Space Plan

The regional park and open space plan builds upon the basic land use development framework set forth in the regional land use plan, adding specific recommendations for park site acquisition and development, for parkway acquisition

¹See SEWRPC Community Assistance Planning Reports No. 45, A Farmland Preservation Plan for Kenosha County, Wisconsin, June 1981; and No. 46, A Farmland Preservation Plan for Racine County, Wisconsin, August 1981.

²See SEWRPC Planning Reports No. 35, A Comprehensive Plan for the Pike River Watershed, June 1983; and No. 36, A Comprehensive Plan for the Oak Creek Watershed, August 1986.

³See SEWRPC Community Assistance Planning Reports No. 106, Sanitary Sewer Service Areas for the City of Kenosha and Environs, Kenosha County, Wisconsin, November 1985; and No. 147, Sanitary Sewer Service Area for the City of Racine and Environs, Racine County, Wisconsin, November 1986.

and development, and for the development of recreational trails. The park and open space plan also reinforces the recommendations contained in the regional land use plan attendant to open space preservation, insofar as prime agricultural lands and environmental corridors are concerned.

The currently adopted regional park and open space plan, as that plan pertains to the IH 94 South Corridor, is shown on Map 28. The regional park and open space plan is documented in SEWRPC Planning Report No. 27, A Regional Park and Open Space Plan for Southeastern Wisconsin: 2000, November 1977. The plan shown on Map 28 reflects amendments that have come about through subregional studies that have refined and detailed the park and open space plan. These studies include park and open space plans for Kenosha, Racine, and Milwaukee Counties, and for the Kenosha urbanized area.⁴

The adopted park and open space plan contains the following specific recommendations for lands lying within the IH 94 South Corridor:

1. Park Site Acquisition and Development. A total of five major public parks are recommended to be located within the corridor. Four of these parks—Grobschmidt Park in the Village of Greendale and City of Franklin, Oakwood Park in the City of Franklin, and Falk Park in the City of Oak Creek, all in Milwaukee County, and Ives Grove Golf Links in the Town of Yorkville, Racine County—currently exist and are recommended in the plan for additional facility development. More specifically, the plan recommends the development of picnic areas, playfields, trails, and related facilities at Falk and Grobschmidt Parks; and the provision of camping, swimming,

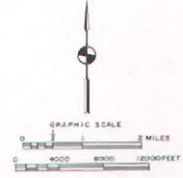
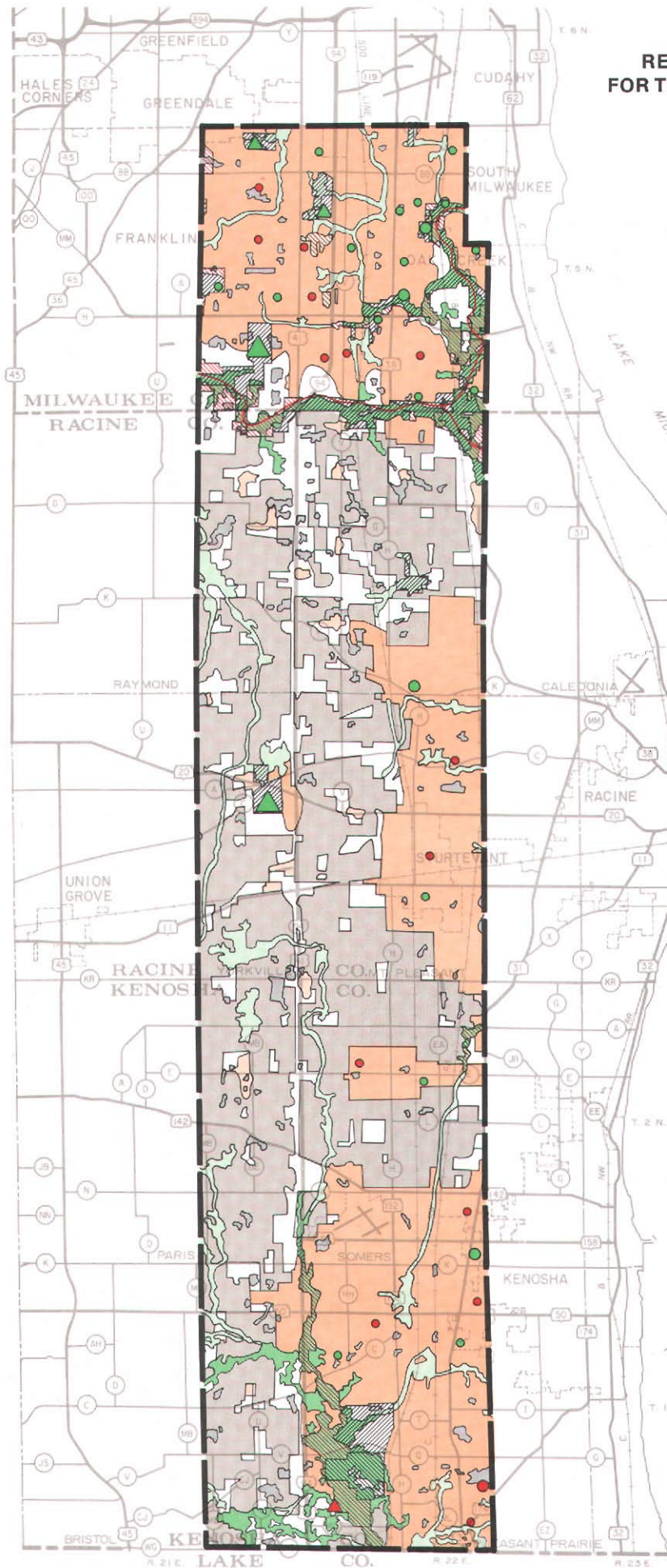
picnicking, and related facilities at Oakwood Park in conjunction with the proposed Oakwood reservoir as described later in this chapter.

One new major park site is recommended to be developed within the corridor. That site lies along the Des Plaines River in the Town of Pleasant Prairie, Kenosha County. The plan recommends that this park site be acquired and developed by Kenosha County and that a golf course and picnicking and river access facilities be provided. In addition to these major parks, the plan recommends that local units of government provide community and neighborhood parks as may be required from time-to-time to serve developing urban neighborhoods.

2. Parkway Acquisition. In order to strengthen the regional land use plan recommendation to protect and preserve primary environmental corridors, especially in urbanizing areas, the regional park and open space plan recommends that county and local park agencies acquire for public parkway purposes most of the primary environmental corridors within urbanizing areas. Significant progress in implementing these recommendations in the IH 94 South Corridor has already been made, particularly in Milwaukee and Racine Counties, where the plan calls for primary environmental corridor acquisition along the Root River and Oak Creek. Map 28 identifies the corridor lands along those two waterways that have already been acquired and those that have yet to be acquired. Additional parkway acquisition recommendations are made to protect primary environmental corridors attendant to the Des Plaines River, the Kilbourn Ditch, and Pike Creek in Kenosha County. Acquisition of such lands for public purposes can come about through purchase, gifts, and dedications during the land subdivision process.
3. Recreational Trails. The adopted park and open space plan recommends that recreational trails for hiking, bicycling, and cross-country skiing be provided along certain of the proposed parkways. In particular within the IH 94 South Corridor, the plan recommends that such trail faci-

⁴See SEWRPC Community Assistance Planning Reports No. 131, A Park and Open Space Plan for Kenosha County, November 1987; No. 132, A Park and Open Space Plan for Milwaukee County, forthcoming; No. 134, A Park and Open Space Plan for Racine County, September 1988; and No. 41, A Park and Open Space Plan for the Kenosha Planning District, December 1980.

**REGIONAL PARK AND OPEN SPACE PLAN
FOR THE I-94 SOUTH CORRIDOR: AS AMENDED
THROUGH SEPTEMBER 1988**



- LEGEND**
- OPEN SPACE PRESERVATION ELEMENT**
 - ENVIRONMENTAL CORRIDOR COMPONENT**
 - PRIMARY ENVIRONMENTAL CORRIDOR
 - SECONDARY ENVIRONMENTAL CORRIDOR
 - ISOLATED NATURAL AREA**
 - EXISTING PUBLIC OWNERSHIP**
 - PROPOSED PUBLIC OWNERSHIP**
 - EXISTING COMPATIBLE PRIVATE OWNERSHIP**
 - PRIME AGRICULTURAL COMPONENT**
 - PRIME AGRICULTURAL LAND
 - OUTDOOR RECREATION ELEMENT**
 - RESOURCE ORIENTED COMPONENT**
 - REGIONAL PARK SITE-TYPE I (250 OR MORE ACRES)
 - EXISTING OWNERSHIP
 - OTHER MAJOR PUBLIC PARK SITE-TYPE II (100-249 ACRES)
 - EXISTING OWNERSHIP
 - PROPOSED OWNERSHIP
 - RECREATION CORRIDOR
 - COUNTY TRAIL
 - URBAN ORIENTED COMPONENT**
 - EXISTING OR PLANNED URBAN DEVELOPMENT REQUIRING COMMUNITY AND NEIGHBORHOOD PARK SITES
 - COMMUNITY PARK SITE-TYPE III (25-99 ACRES)
 - EXISTING
 - PROPOSED
 - NEIGHBORHOOD PARK SITE-TYPE IV (5-24 ACRES)
 - EXISTING
 - PROPOSED
 - OTHER LAND USE**
 - OTHER EXISTING URBAN DEVELOPMENT
 - OTHER AGRICULTURAL AND OPEN LAND

Source: SEWRPC.

ties be provided along the Root River and Oak Creek in the manner shown on Map 28.

Regional Transportation Plan

The regional transportation system plan is designed to effectively serve the urban and rural development patterns reflected on the regional land use plan. The regional transportation plan provides both functional and jurisdictional recommendations for the development, operation, and maintenance of the arterial street and highway system needed to serve the Region. The functional recommendations pertain to the general location, type, capacity, and service levels of the arterial street and highway facilities needed to serve the developing and changing Region. The jurisdictional recommendations pertain to which levels and agencies of government should assume responsibility for the construction, operation, and maintenance of each of the arterial street and highway facilities included in the functional plan. In addition, the Commission transportation system plan contains recommendations for the provision of public transit services. These recommendations relate not only to the areas proposed to be provided with urban mass transit service, but to the types and levels of services to be provided.

The currently adopted regional transportation system plan, as that plan pertains to the IH 94 South Corridor, is summarized on Map 29. The regional transportation system plan is documented in SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings, April 1975; and Volume Two, Alternative and Recommended Plans, May 1978. The plan shown on Map 29 reflects plan amendments that have come about through subsequent studies, including a rapid transit study⁵ and a special study of the Lake Freeway South Corridor.⁶

⁵See SEWRPC Planning Report No. 33, A Primary Transit System Plan for the Milwaukee Area, June 1982.

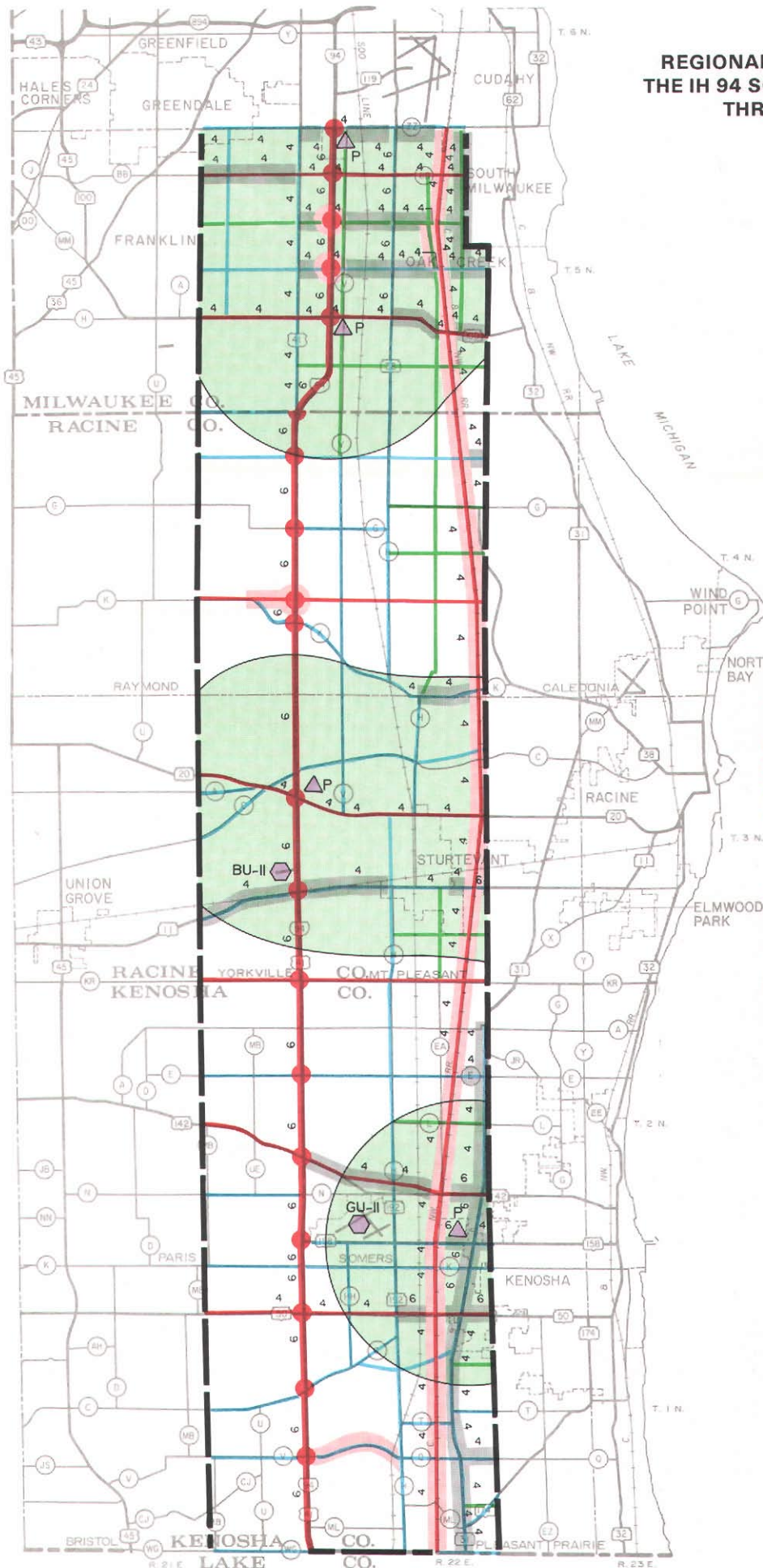
⁶See SEWRPC document, Amendment to the Regional Transportation Plan—2000, Lake Freeway South Corridor, June 1981.

The currently adopted regional transportation system plan contains the following recommendations for arterial street and highway and transit facilities within the IH 94 South Corridor:

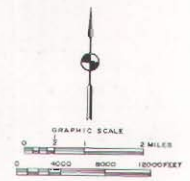
1. New Arterial Facilities. New arterial facilities proposed in the plan include the Lake Arterial, which is proposed to extend south from E. College Avenue at the southern end of General Mitchell International Airport through the entire length of the study corridor; the extension of S. Nicholson Road from a point one-half mile south of E. Puetz Road to a connection with S. Clement Avenue at E. Drexel Avenue in the City of Oak Creek; the extension of Four Mile Road from IH 94 west to CTH K in the Town of Raymond; and the extension of CTH Q from CTH H west to IH 94 in the Town of Pleasant Prairie. In addition, the plan proposes interchanges at IH 94 with W. Drexel Avenue and W. Puetz Road. While Map 29 graphically shows the proposed Lake Arterial extending south all the way to the Wisconsin-Illinois state line, the Commission recognized in 1981, when the plan was amended to downgrade that facility from a freeway to an expressway, that it was likely there would be no connection of that facility to a previously proposed facility in Illinois. Accordingly, the Commission recommended at that time that the Wisconsin Department of Transportation conduct a corridor location and right-of-way study for the Lake Arterial system that would identify a precise alignment and right-of-way for the facility, as well as a final southern terminus at some point in Kenosha County. That corridor location study has not yet been undertaken. Consideration will probably be given to connecting the Lake Arterial to STH 31 in the vicinity of the Racine-Kenosha County line.
2. Arterial Street Widenings. A number of important arterial street widenings to provide additional traffic-carrying capacity are recommended in the adopted plan. These widenings are also identified on Map 29 and consist of the following: portions of College Avenue along the northern study corridor border; S. Pennsylvania Avenue from E. College Avenue to E. Puetz Road; W. Rawson Avenue from

Map 29

REGIONAL TRANSPORTATION PLAN FOR THE IH 94 SOUTH CORRIDOR: AS AMENDED THROUGH SEPTEMBER 1988



- LEGEND**
- ARTERIAL STREET AND HIGHWAY SYSTEM**
- JURISDICTIONAL CLASSIFICATION
- STATE TRUNK-FREEWAY
 - STATE TRUNK-NONFREEWAY
 - COUNTY TRUNK
 - LOCAL TRUNK
- FREEWAY-NONFREEWAY INTERCHANGE
- 4 NUMBER OF TRAFFIC LANES (IF MORE THAN 2)
- NEW ARTERIAL FACILITIES
- ARTERIAL FACILITY WIDENINGS
- URBAN MASS TRANSIT SYSTEM**
- SERVICE AREA
- ▲ P TRANSIT STATION WITH PARKING
- AIRPORT SYSTEM CLASSIFICATION**
- ⬡ BU-II BASIC UTILITY-STAGE II
- ⬡ GU-II GENERAL UTILITY-STAGE II



Source: SEWRPC.

S. 27th Street to the west corridor boundary; E. and W. Drexel Avenue from S. 27th Street to the east corridor boundary; E. and W. Puetz Road from S. 27th Street to the east corridor boundary; S. Ryan Road and STH 100 from S. Howell Avenue to the east corridor boundary; Seven Mile Road from the proposed Lake Arterial to the east corridor boundary; CTH K from Kraut Road to the east corridor boundary; STH 11 from the west corridor boundary to West Road and from 86th Street to the east corridor boundary; STH 31 throughout the Kenosha County portion of the study corridor; CTH E from the proposed Lake Arterial to the east corridor boundary; STH 142 from IH 94 to the east corridor boundary; STH 158 from the proposed Lake Arterial to STH 31; STH 50 from STH 192 to the east corridor boundary; and CTH Q from STH 31 to the east corridor boundary.

3. Jurisdictional Highway Transfers. Map 29 identifies the recommended jurisdiction of the planned arterial street and highway serving the IH 94 South Corridor—that is, which of the planned arterial facilities should be state trunk highways, which should be county trunk highways, and which should be under local government jurisdiction. A number of jurisdictional transfers would have to be undertaken in order to carry out this element of the recommended plan.
4. Transit Service. Map 29 also identifies the planned transit service areas within the IH 94 South Corridor study area. These service areas include both local service through planned extensions of the Milwaukee County transit system and the transit systems operated by the Cities of Racine and Kenosha, as well as commuter-oriented service proposed in the adopted plan between Racine, Kenosha, and Milwaukee. With respect to transit-oriented park-ride lots, the plan envisions three such lots in addition to the lot already provided at the W. College Avenue interchange with IH 94. The three new lots would be located: 1) near the Ryan Road interchange in the City of Oak Creek; 2) near the STH 20 interchange in the Town of Mt. Pleasant; and 3) along STH

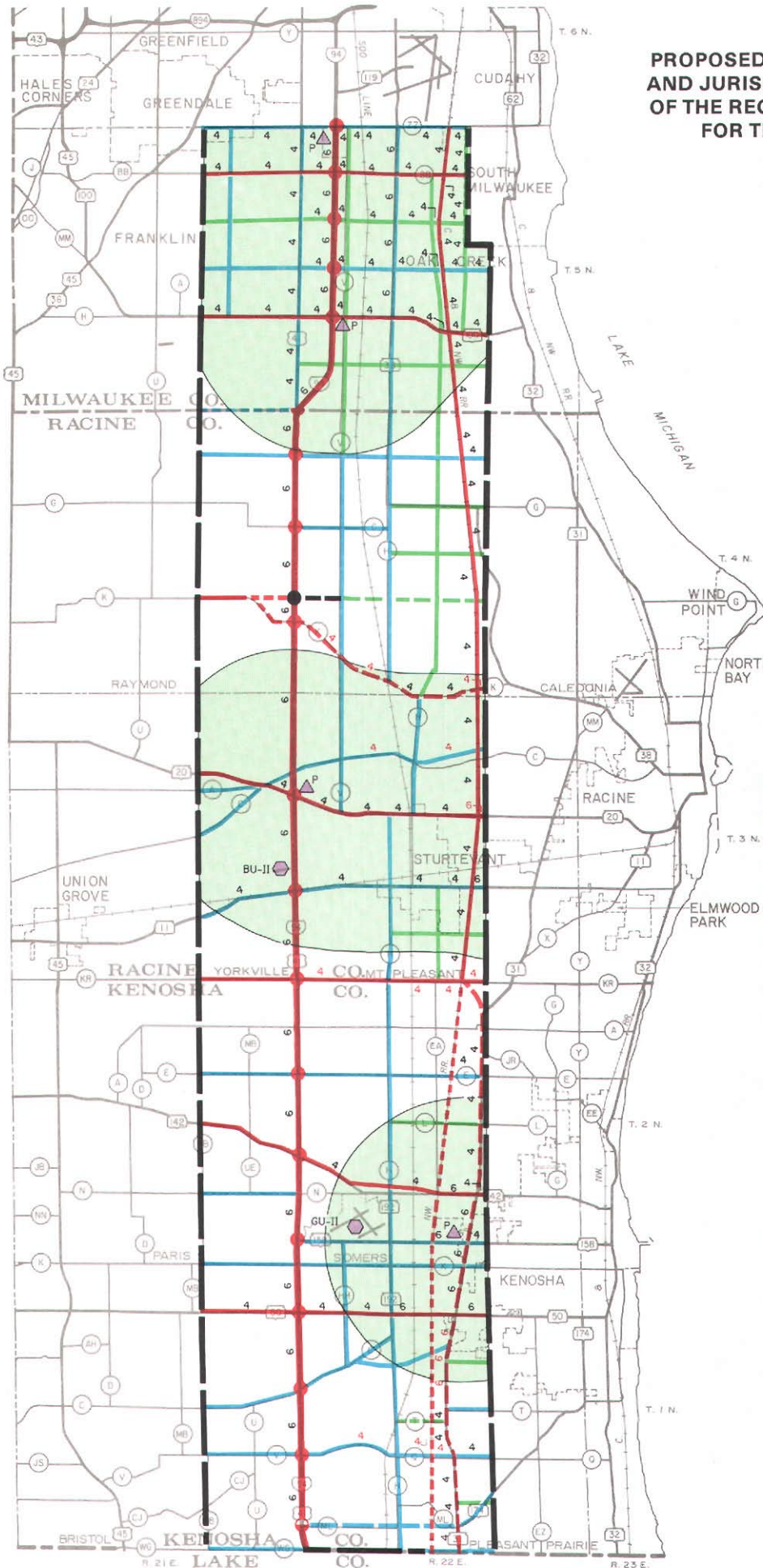
158 east of IH 94. Express bus rapid transit service would be provided under the plan over IH 94 between the Cities of Kenosha, Racine, and Milwaukee.

Recent study efforts have led to the preparation of proposals to change in significant ways the currently adopted regional transportation system plan as that plan pertains to the IH 94 South Corridor. These proposals are summarized on Map 30. The first set of proposals came out of a special study of arterial traffic needs conducted by the Commission at the request of the Racine County Board of Supervisors.⁷ The proposed changes pertain to both the functional and jurisdictional elements of the plan. The proposed functional changes to the plan as they pertain to the study corridor are as follows:

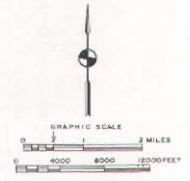
1. Provide for the reconstruction of CTH KR from IH 94 east to STH 31 to provide for four, rather than two, travel lanes.
2. Provide for the reconstruction of STH 20 from Oakes Road west to the proposed Lake Arterial to provide for six, rather than four, travel lanes.
3. Provide for the reconstruction of CTH C from CTH V east to the proposed Lake Arterial to provide for four, rather than two, travel lanes.
4. Provide for the reconstruction of CTH K from IH 94 east to CTH H at Franksville to provide for four, rather than two, travel lanes.
5. Provide for the reconstruction of CTH K from the proposed Lake Arterial to the east corridor boundary to provide for four, rather than six, travel lanes.
6. Eliminate the proposed interchange of Four Mile Road and IH 94; eliminate from the arterial system existing Four Mile Road from IH 94 east to CTH V; and eliminate the proposed construction of

⁷See *SEWRPC Memorandum Report No. 9, An Arterial Highway System Plan for Eastern Racine County, April 1987.*

PROPOSED CHANGES TO THE FUNCTIONAL AND JURISDICTIONAL HIGHWAY ELEMENTS OF THE REGIONAL TRANSPORTATION PLAN FOR THE IH 94 SOUTH CORRIDOR



- LEGEND**
- ARTERIAL STREET AND HIGHWAY SYSTEM**
- JURISDICTIONAL CLASSIFICATION**
- EXISTING STATE TRUNK - FREEWAY
 - - - EXISTING STATE TRUNK - NONFREEWAY
 - - - PROPOSED STATE TRUNK - NONFREEWAY
 - - - PROPOSED REMOVAL OF STATE TRUNK - NONFREEWAY
 - EXISTING COUNTY TRUNK
 - - - PROPOSED COUNTY TRUNK
 - - - PROPOSED REMOVAL OF COUNTY TRUNK
 - EXISTING LOCAL TRUNK
 - - - PROPOSED LOCAL TRUNK
 - PROPOSED LOCAL STREET
- INTERCHANGES**
- EXISTING FREEWAY - NONFREEWAY INTERCHANGE
 - ◐ PROPOSED FREEWAY - NONFREEWAY INTERCHANGE
 - PROPOSED REMOVAL OF FREEWAY - NONFREEWAY INTERCHANGE
- TRAFFIC LANES**
- 4 EXISTING NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)
 - 4 PROPOSED NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)
- URBAN MASS TRANSIT SYSTEM**
- SERVICE AREA
 - ▲ TRANSIT STATION WITH PARKING
- AIRPORT SYSTEM CLASSIFICATION**
- BU-II BASIC UTILITY - STAGE II
 - GU-II GENERAL UTILITY - STAGE II



Source: SEWRPC.

Four Mile Road extended west from IH 94 to CTH K.

The proposed jurisdictional changes as they pertain to the IH 94 South Corridor study area are as follows:

1. Provide for the transfer to the state trunk highway system of existing CTH K from about one mile west of IH 94 easterly to the proposed Lake Arterial highway; the plan currently calls for the retention of this facility on the county trunk highway system.
2. Provide for the retention on the local arterial system of Four Mile Road from CTH V east to the study boundary; the plan currently calls for the transfer of this facility to the state trunk highway system.
3. Provide for the elimination from the proposed state trunk highway system of Four Mile Road and Four Mile Road extended from CTH V west to CTH K about one mile west of IH 94.
4. Provide for the relocation of the relocated segment of CTH ML and existing CTH ML from CTH H to IH 94 on the planned county trunk highway system; the plan currently calls for CTH ML to be eliminated from the arterial street and highway system and to revert to local jurisdiction.
5. The reconstruction of the CTH ML interchange on IH 94.
6. The retention of STH 31 throughout Kenosha County on the state trunk highway system; the plan currently calls for STH 31 to be placed on the county trunk highway system based on the assumption that the Lake Arterial would be extended south to the Wisconsin-Illinois state line.
7. The elimination from the county trunk highway system of CTH T from STH 31 to CTH H, with its retention on the arterial street and highway system as a local facility.

In addition to the foregoing, a current study effort initiated at the request of the Town of Pleasant Prairie and involving the Wisconsin Department of Transportation, Kenosha County, WISPARK, Inc., and the Regional Planning Commission is resulting in additional proposals to change the functional and jurisdictional recommendations contained in the currently adopted regional transportation plan as it applies to the corridor study area. These potential plan changes are also summarized on Map 30 and consist of the following:

1. The termination of the proposed Lake Arterial facility, as already noted, just south of the Racine-Kenosha County line via a connection with STH 31 just north of Petrifying Springs County Park in the Town of Somers.
2. The reconstruction of STH 31 from STH 50 south to CTH Q to provide for six, rather than four, travel lanes.
3. The ultimate provision of four, rather than two, travel lanes on CTH Q and its extension from STH 31 to IH 94.
4. The realignment of CTH ML between STH 31 and CTH H, and the placement of

Regional Airport System Plan

Working closely with the Wisconsin Department of Transportation, the Regional Planning Commission has prepared and adopted a regional airport system plan. That plan is documented in SEWRPC Planning Report No. 38, A Regional Airport System Plan for Southeastern Wisconsin: 2010, May 1987. The regional airport system plan emphasizes the maintenance and gradual improvement of a basic system of airports already in place. No new airport sites are recommended for development. The regional airport system plan for southeastern Wisconsin, which is a key component of the statewide airport system plan, contains specific recommendations for each of 11 public use airports recommended to comprise the regional airport system. Those recommendations pertain to land acquisition and facility development in terms of runways, taxiways, navigation aids, and hangar and terminal improvements. Furthermore, each of the 11 airports in the system has been assigned a class generally based upon the size and performance of the aircraft that are intended to use the airport.

Of the 11 airports in the planned regional system, two—Kenosha Municipal and Sylvania—are located within the IH 94 South Corridor study area. Two others—General Mitchell International and Horlick Racine—are located in

proximity to the corridor study area and can be expected to have important implications for future development within the study area.⁸ The adopted plan makes the following recommendations for the two airports lying within the corridor study area:

1. Kenosha Municipal Airport. With the recent completion of a major new NE/SW primary runway and taxiway, and with the land acquisition completed for that project, only relatively minor additional improvements are recommended at Kenosha Municipal Airport over the next 20 years. The remaining improvements include the lengthening, strengthening, and widening of the crosswind NW/SE runway; the installation of an instrument landing system at the southwest end of the new primary NE/SW runway; and terminal and hangar improvements as may be required from time-to-time. No additional site acquisition is envisioned in the plan.
2. Sylvania Airport. Major improvements are recommended in the plan at Sylvania Airport in the Town of Yorkville, Racine County. As shown on Map 31, these improvements include land acquisition; the extension of the existing paved runway to a length of 3,300 feet; the construction of a 2,640-foot-long paved crosswind runway; and the provision of adequate support facilities, including an apron, lighting and navigational aids, terminal and hangar facilities, and parking and service roadways.

With the recent improvements at Kenosha Municipal Airport, it is now classified as a General Utility-Stage II airport. This type of airport is intended to serve all single-engine aircraft; virtually all twin-engine piston and turboprop aircraft, including propeller-driven aircraft used by commuter airlines; and most business and corporate jets. The proposed improvements at Sylvania Airport would result in that airport being classified as a Basic Utility-Stage II airport. Such an airport is intended to

serve all small single-engine, propeller-driven aircraft and most twin-engine, propeller-driven aircraft. Only the largest twin-engine, propeller-driven aircraft—those that typically seat 6 to 14 people—could not be accommodated. Thus, when fully improved, Sylvania Airport would be capable of accommodating many of the smaller aircraft used for business and charter purposes.

The regional airport system plan also includes land use development recommendations for the environs of each airport in the planned system. These recommendations, which have important implications for portions of the IH 94 South Corridor, are summarized on Maps 32, 33, and 34, respectively, for General Mitchell International, Kenosha Municipal, and Sylvania Airports.

Regional Water Quality Management Plan

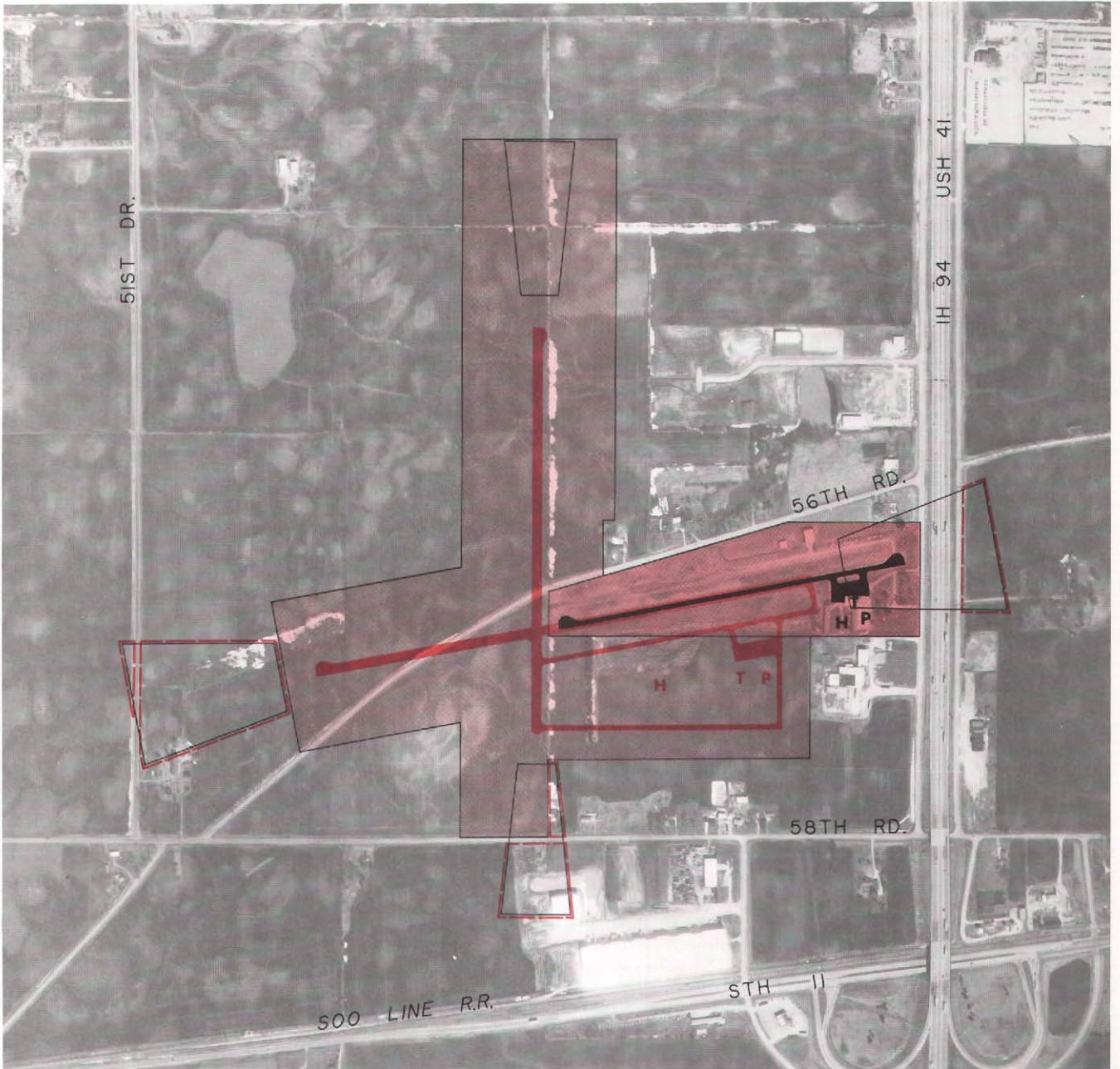
The regional water quality management plan is intended to provide recommendations to help meet a Congressional mandate that the waters of the United States be made, to the extent practical, "fishable and swimmable." Toward that end, the plan provides recommendations for the control of water pollution from point sources—such as sewage treatment plants, points of separate and combined sewer overflow, and industrial waste outfalls—and from nonpoint sources—such as urban and rural stormwater runoff. Other recommendations relate to the management of sludges as a residual waste from sewage treatment plants. The regional water quality management plan is set forth in SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings, September 1978; Volume Two, Alternative Plans, February 1979; and Volume Three, Recommended Plan, June 1979. The plan has been amended from time-to-time, with amendments pertaining to planned sewer service areas in the IH 94 Corridor.⁹

⁹See SEWRPC Community Assistance Planning Report No. 106, Sanitary Sewer Service Areas for the City of Kenosha and Environs, Kenosha County, Wisconsin, November 1985; and No. 147, Sanitary Sewer Service Area for the City of Racine and Environs, Racine County, Wisconsin, November 1986.

⁸A clear zone at the south end of the primary north-south runway at General Mitchell International Airport extends south of College Avenue into the IH 94 South study area.

Map 31

RECOMMENDED SITE IMPROVEMENT PLAN FOR SYLVANIA AIRPORT



LEGEND

AIRPORT LANDS

EXISTING PROPOSED



AIRPORT PROPERTY

(NONE)



CLEAR ZONE EASEMENT

RUNWAY CLEAR ZONE



ULTIMATE CLEAR ZONE AREA

AIRPORT FACILITIES

EXISTING PROPOSED



RUNWAYS, TAXIWAYS, AND APRONS

T

T

TERMINAL /ADMINISTRATION BUILDINGS

H

H

AIRCRAFT HANGARS

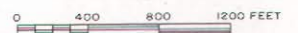
P

P

AUTOMOBILE PARKING



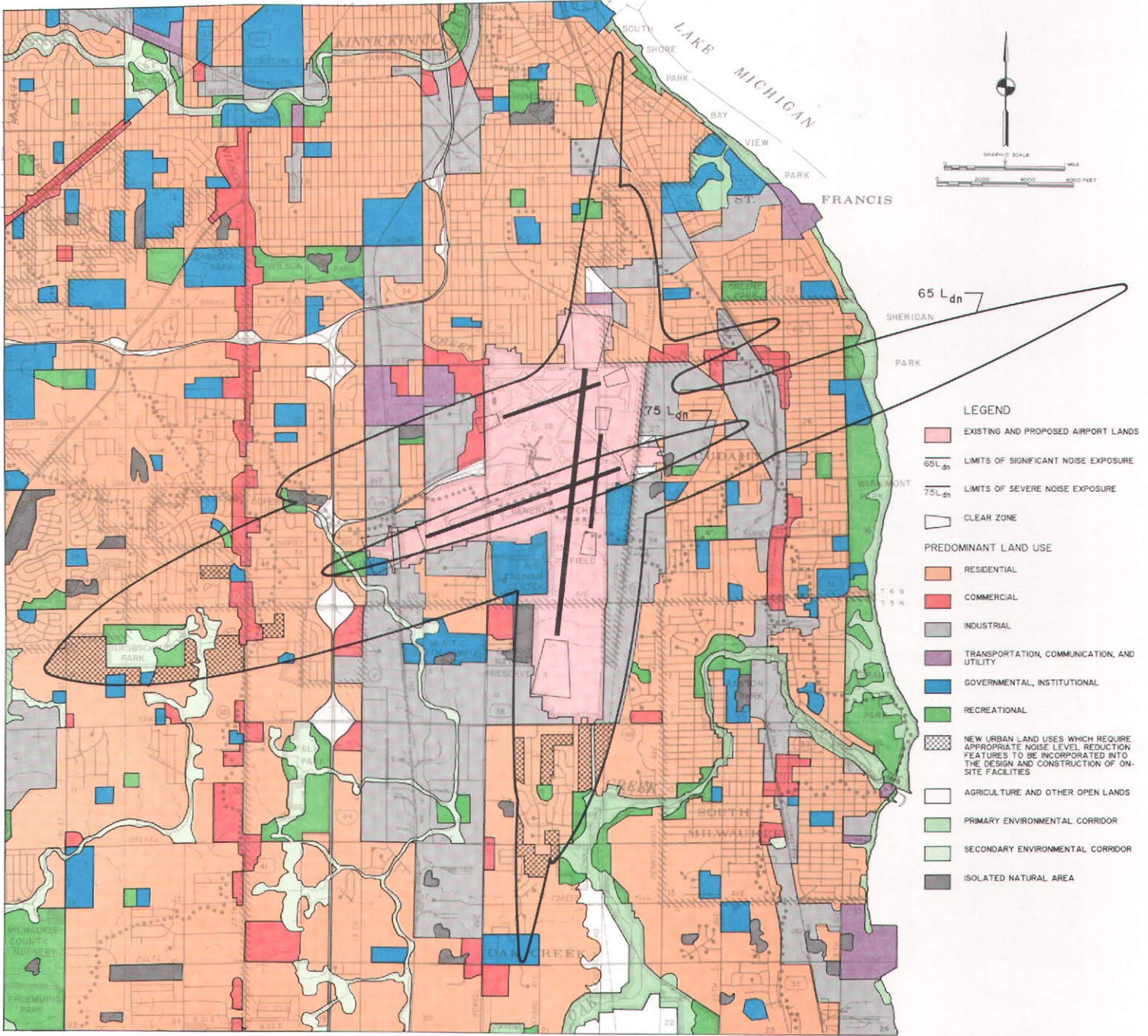
GRAPHIC SCALE



Source: SEWRPC.

Map 32

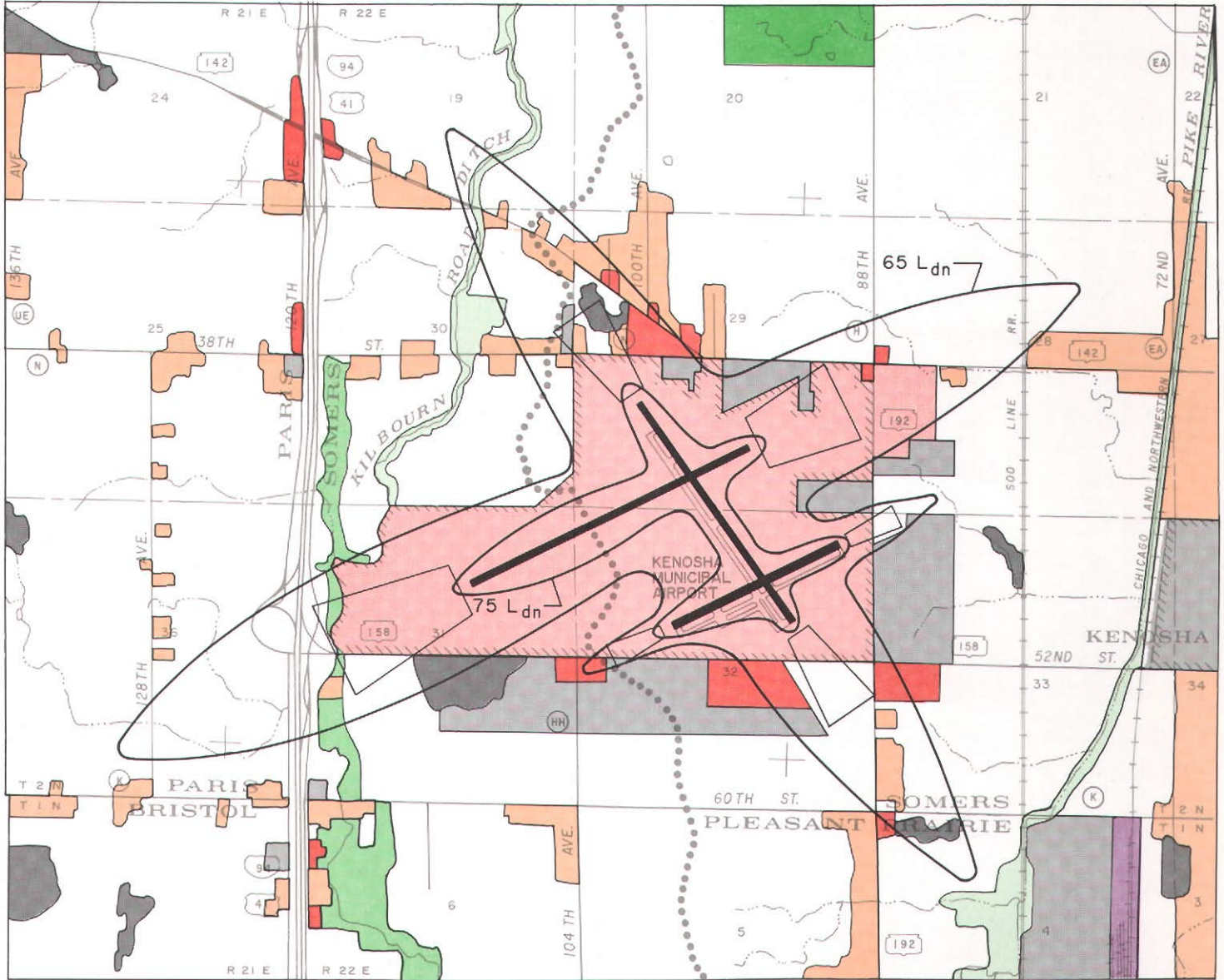
RECOMMENDED LAND USE PLAN FOR THE ENVIRONS OF GENERAL MITCHELL INTERNATIONAL AIRPORT: 2010
















Source: SEWRPC.

Map 33

RECOMMENDED LAND USE PLAN FOR THE ENVIRONS OF KENOSHA MUNICIPAL AIRPORT: 2010



LEGEND

- | | | | |
|--|--------------------------------------|---|--|
|  | EXISTING AND PROPOSED AIRPORT LANDS |  | TRANSPORTATION, COMMUNICATION, AND UTILITY |
|  | LIMITS OF SIGNIFICANT NOISE EXPOSURE |  | RECREATIONAL |
|  | LIMITS OF SEVERE NOISE EXPOSURE |  | AGRICULTURE AND OTHER OPEN LANDS |
|  | CLEAR ZONE |  | PRIMARY ENVIRONMENTAL CORRIDOR |
| PREDOMINANT LAND USE | |  | SECONDARY ENVIRONMENTAL CORRIDOR |
|  | RESIDENTIAL |  | ISOLATED NATURAL AREA |
|  | COMMERCIAL | | |
|  | INDUSTRIAL | | |

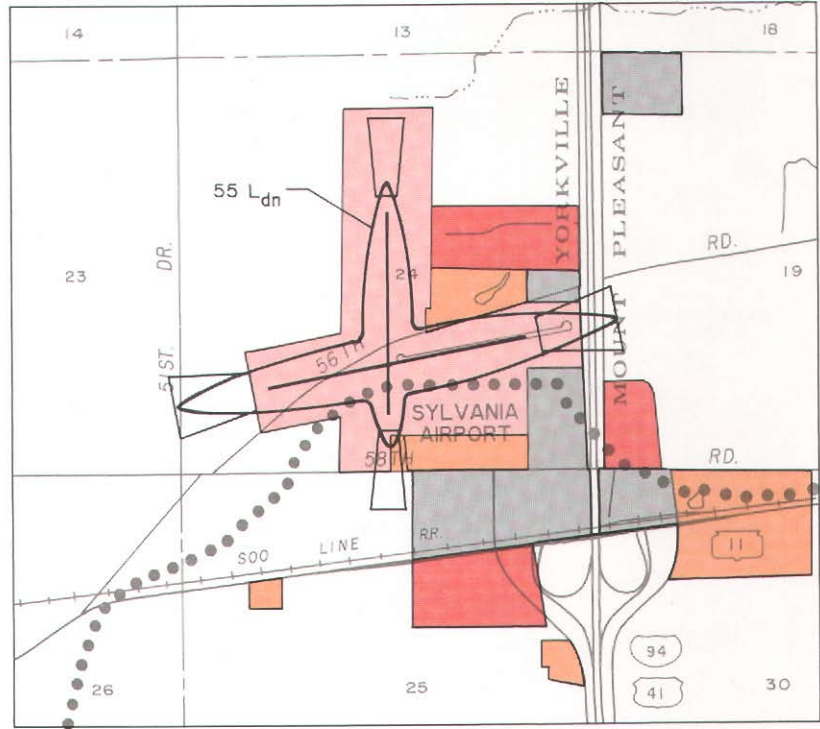
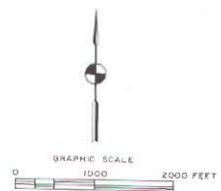
Source: SEWRPC.



Map 34

RECOMMENDED LAND USE PLAN FOR SYLVANIA AIRPORT: 2010

- LEGEND**
- EXISTING AND PROPOSED AIRPORT LANDS
 - LIMITS OF MINIMAL TO MODERATE NOISE EXPOSURE
 - CLEAR ZONE
- PREDOMINANT LAND USE**
- RESIDENTIAL
 - COMMERCIAL
 - INDUSTRIAL
 - AGRICULTURE AND OTHER OPEN LANDS



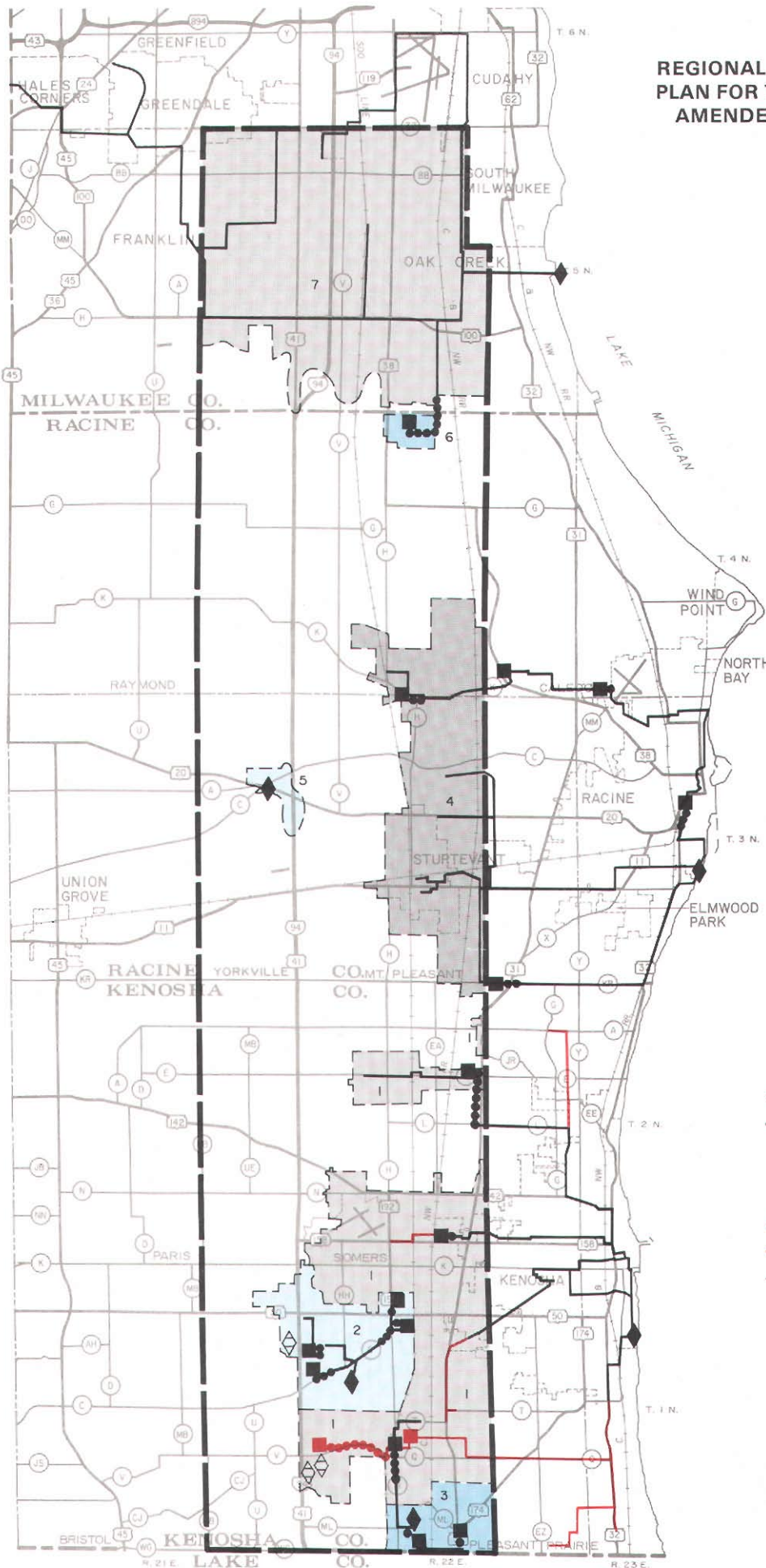
Source: SEWRPC.

Of particular importance to the IH 94 South Corridor study effort are the plan recommendations pertaining to point sources of pollution, to planned sewer service areas and related municipal sewage treatment facilities, and to major intercommunity trunk sewers. These plan recommendations as they pertain to the corridor are summarized on Map 35.

As shown on Map 35, within the IH 94 South Corridor study area there are seven individual sanitary sewer service areas served by six different public sewage treatment facilities. The planned sanitary sewer service area in the Cities of Franklin and Oak Creek at the north end of the study corridor, together with the sewer service area for the Caddy Vista Sanitary District in the Town of Caledonia, is tributary to the Milwaukee Metropolitan Sewerage System and treatment facilities operated by the Milwaukee Metropolitan Sewerage District. The planned sanitary sewer service area in the Village of Sturtevant and the Towns of Mt. Pleasant and Caledonia in Racine County, as well as a portion

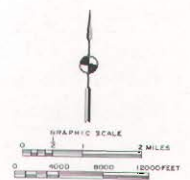
of the Town of Somers in Kenosha County, is tributary to the sewage treatment facility operated by the City of Racine. The planned sanitary sewer service area in the Town of Yorkville and the Town of Mt. Pleasant at the interchange of IH 94 and STH 20 is tributary to a sewage treatment facility operated by the Town of Yorkville Sewer Utility District No. 1. The planned sewer service area in the City of Kenosha and adjacent lands in the Towns of Somers and Pleasant Prairie is tributary to the sewage treatment facility operated by the City of Kenosha. The planned sewer service area in the Towns of Bristol and Pleasant Prairie near the interchanges of IH 94 and STH 50 and IH 94 and CTH C is tributary to a sewage treatment facility operated by the Town of Pleasant Prairie Sewer Utility District D. Finally, the planned sewer service area at the extreme south end of the study corridor in the Town of Pleasant Prairie is tributary to a sewage treatment facility operated by the Town of Pleasant Prairie Sanitary District No. 73-1. Map 35 also identifies the existing and planned major trunk sewers designed to serve these planned sewer service areas.

**REGIONAL WATER QUALITY MANAGEMENT
PLAN FOR THE IH 94 SOUTH CORRIDOR: AS
AMENDED THROUGH SEPTEMBER 1988**



LEGEND

- 1 CITY OF KENOSHA SEWER SERVICE AREA
- 2 TOWN OF PLEASANT PRAIRIE SEWER UTILITY DISTRICT D SEWER SERVICE AREA
- 3 TOWN OF PLEASANT PRAIRIE SANITARY DISTRICT NO. 73-1 SEWER SERVICE AREA
- 4 CITY OF RACINE SEWER SERVICE AREA
- 5 TOWN OF YORKVILLE SEWER UTILITY DISTRICT NO. 1 SEWER SERVICE AREA
- 6 CADDY VISTA SEWER SERVICE AREA
- 7 MILWAUKEE METROPOLITAN SEWERAGE DISTRICT SEWER SERVICE AREA
- ◆ EXISTING PUBLIC SEWAGE TREATMENT FACILITY
- EXISTING PUMPING OR LIFT STATION
- EXISTING FORCE MAIN
- EXISTING TRUNK SEWER
- ◇ PRIVATE SEWAGE TREATMENT FACILITY TO BE ABANDONED
- PROPOSED PUMPING OR LIFT STATION
- PROPOSED FORCE MAIN
- PROPOSED TRUNK SEWER
- - - SANITARY SEWER SERVICE AREA BOUNDARY



Source: SEWRPC.

Comprehensive Watershed Plans

The Commission watershed planning efforts are undertaken at the request of the county and local units of government concerned, and result in the preparation of comprehensive watershed development plans. Collectively, these plans form the regional floodland management and stormwater drainage plan. To date, the Commission has completed and adopted watershed plans for that portion of the IH 94 South Corridor encompassed by the Oak Creek, Root River, and Pike River watersheds.¹⁰

The major recommendations for drainage and flood control that have been developed in these three watershed studies and that affect lands within the IH 94 South Corridor are graphically summarized on Map 36. The following recommendations pertain to the Root River watershed:

1. The construction, operation, and maintenance of a multipurpose reservoir at the confluence of the main stem of the Root River and the Root River Canal in the City of Franklin. This multipurpose reservoir, known as the Oakwood Reservoir, lies partially within the IH 94 South Corridor study area. The reservoir would provide flood control, water quality, and recreational benefits. The plan recommends that this reservoir be constructed by Milwaukee County.
2. The resolution of structure flooding problems along the East Branch of the Root River in the City of Franklin through structure floodproofing, elevation, and/or removal.
3. Periodic channel cleaning and debrushing along the Root River Canal system in the Towns of Raymond, Yorkville, and Paris.

4. A series of projects to improve drainage along Crayfish Creek, including the construction of a berm along the divide between the Oak Creek and Root River watersheds to prevent the backup of floodwaters from Oak Creek into Crayfish Creek; the reconstruction and elevation of a section of E. County Line Road to prevent Root River floodwaters from extending back into Crayfish Creek; the installation of backwater gates at the E. County Line Road culvert to allow for drainage from Crayfish Creek during periods of low flow on the Root River and to prevent the backup of Root River flood flows into Crayfish Creek; the installation of a bulkhead in the existing culverts under the Chicago & North Western Railway at the present outlet of Crayfish Creek; the construction of a new channel from the existing outlet of Crayfish Creek to a location just upstream of the Root River crossing of Seven Mile Road, including a sediment retention pond; and a culvert replacement on Crayfish Creek at Oakwood Road.

With respect to the Oak Creek watershed, the following recommendations have been made:

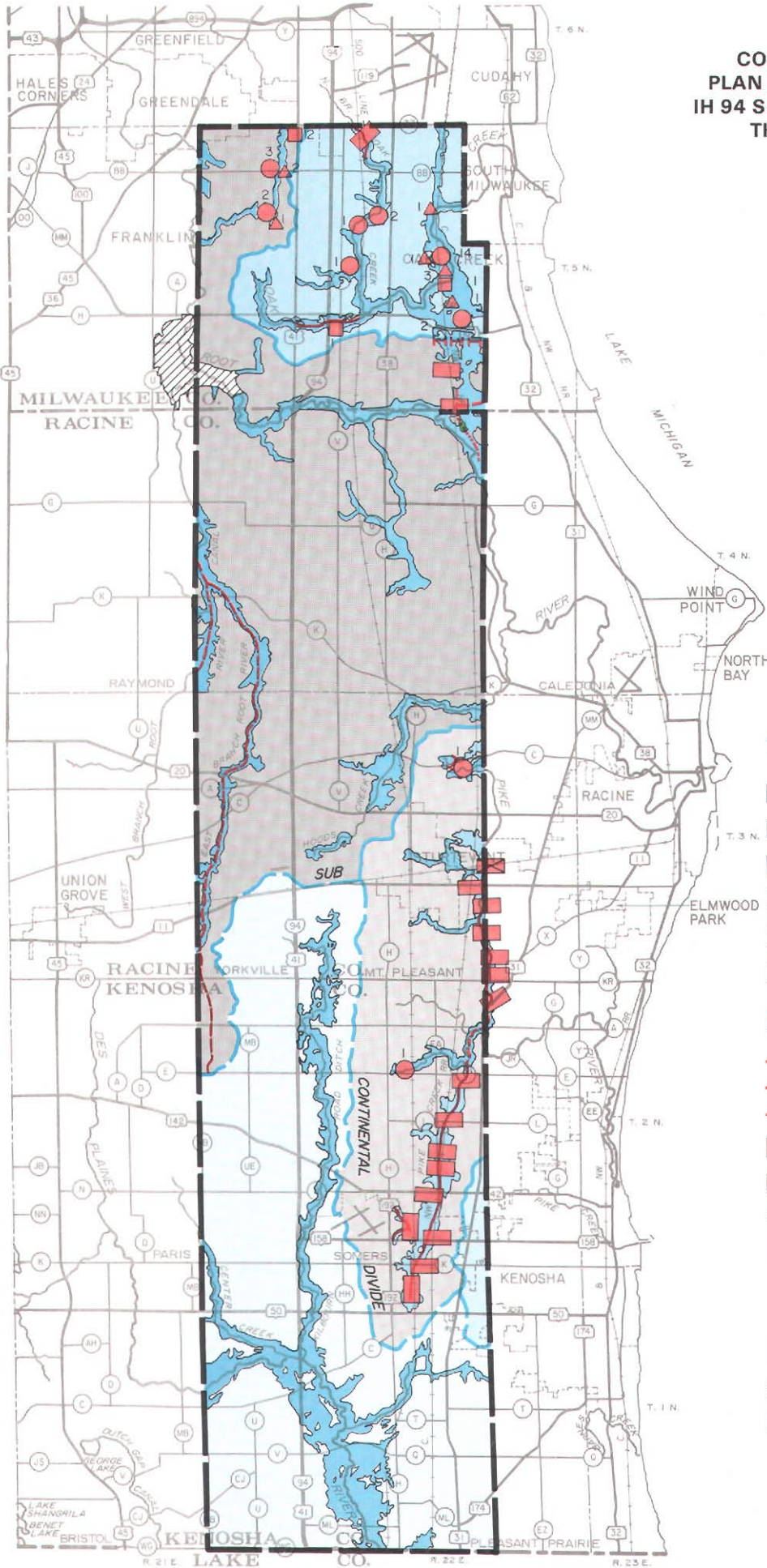
1. The resolution of structure flooding problems along the North Branch of Oak Creek and along the Oak Creek main stem through structure floodproofing, elevation, and/or removal.
2. Widening, deepening, and reshaping along the main stem of Oak Creek from S. 27th Street to the Soo Line Railroad right-of-way on either side of IH 94 just south of W. Ryan Road.
3. Widening, deepening, and reshaping along the North Branch of Oak Creek from the United Parcel Service Center to S. 13th Street.

The following recommendations have been made for the Pike River watershed:

1. Channel cleaning and debrushing along Pike Creek from STH 31 at the study boundary to the confluence with Somers Branch.
2. Major channel improvements, including channel widening and deepening and bridge replacement along Pike Creek from

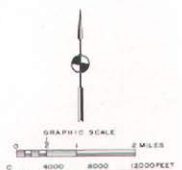
¹⁰See *SEWRPC Planning Reports No. 36, A Comprehensive Plan for the Oak Creek Watershed, August 1986; No. 9, A Comprehensive Plan for the Root River Watershed, September 1966; and No. 35, A Comprehensive Plan for the Pike River Watershed, June 1983; and SEWRPC Memorandum Report No. 35, A Stormwater Management Plan for the Crayfish Creek Subwatershed, City of Oak Creek, Milwaukee County, Wisconsin, June 1988.*

**COMPREHENSIVE WATERSHED
PLAN RECOMMENDATIONS FOR THE
IH 94 SOUTH CORRIDOR: AS AMENDED
THROUGH SEPTEMBER 1988**



LEGEND

- WATERSHED BOUNDARY AS DELINEATED BY SEWRPC USING FIELD CHECKS AND LARGE SCALE MAPPING AND COMBINED SEWER SYSTEM MAPS WHERE AVAILABLE.
- DES PLAINES RIVER WATERSHED
- LAKE MICHIGAN DIRECT DRAINAGE AREA
- OAK CREEK WATERSHED
- PIKE RIVER WATERSHED
- ROOT RIVER WATERSHED
- 100-YEAR RECURRENCE INTERVAL FLOODLANDS--PLANNED LAND USE AND PLANNED CHANNEL CONDITIONS
- 100-YEAR RECURRENCE INTERVAL FLOODLANDS--UNDER PLANNED LAND USE AND EXISTING CHANNEL CONDITIONS THAT WOULD BE ELIMINATED UNDER PLANNED CHANNEL CONDITIONS
- CHANNEL ENLARGEMENT
- CHANNEL CLEANING AND DEBRUSHING
- NEW CHANNEL
- BRIDGE AND CULVERT MODIFICATION OR REPLACEMENT
- BRIDGE OR CULVERT REMOVAL
- ROAD RECONSTRUCTION
- DIKE
- STRUCTURE FLOODPROOFING AND NUMBER OF STRUCTURES
- STRUCTURE ELEVATION AND NUMBER OF STRUCTURES
- STRUCTURE REMOVAL AND NUMBER OF STRUCTURES
- RESERVOIR
- SEDIMENTATION POND



Source: SEWRPC.

its confluence with Somers Branch upstream to a point just north of STH 50. The proposed channel would be turf lined, and would be lowered by an average of 6 feet and by a maximum of 13 feet. If carried out, these improvements would eliminate overland flooding along Pike Creek upstream from the Somers Branch confluence.

3. Major channel improvements, including channel widening and deepening along both the Airport Branch and the Airport Branch Tributary, provided that land development studies for these branches between STH 31 and Kenosha Municipal Airport north of STH 58 find that such channel improvements are essential.
4. Construction of a dike upstream of Spring Street to protect residential development from flooding along Bartlet Branch in the Town of Mt. Pleasant.
5. Major channel improvements consisting of channel widening, deepening, and realignment along the Upper Pike River extending from CTH C downstream to the confluence with Pike Creek. The proposed channel would be turf lined and would be lowered by an average of three feet and a maximum of about six feet. If carried out, these channel improvements would virtually eliminate overland flooding along the Pike River, including lands lying within the study corridor.

While no comprehensive watershed plan has been prepared for the Des Plaines River watershed, the Federal Emergency Management Agency has conducted a floodplain information study within that watershed. The existing floodplains in the Des Plaines River watershed are shown on Map 36.

LOCAL PLANS AND STUDIES

In addition to working closely with the Regional Planning Commission in developing the framework of regional plans, county and local units of government in the IH 94 South Corridor are continuously undertaking locally focused planning efforts. Generally, these local plans and studies are set within the regional plan framework and are intended to refine and detail the recommendations contained in the regional

plans. A basic understanding of these local plans and studies is important in order to ensure the integration of locally desired development objectives into the development plan for the IH 94 South Corridor. The following is a brief description of those local plans and studies which have significance for the preparation of the corridor plan.

Comprehensive Plan for the City of Oak Creek

In 1985 the City of Oak Creek adopted a comprehensive plan for the City, that plan having a design year of 2000.¹¹ The Oak Creek comprehensive plan consists of land use, transportation, community facility, and public utility elements. Review of the comprehensive plan indicates that the plan recommendations are basically consistent with the adopted regional plan, carrying that plan into greater detail, particularly with respect to land use, community facility, and community utility elements. The only inconsistency relates to proposed urban development in the central and southwestern portions of the City on lands recommended to be preserved for primary environmental corridor and agricultural and other open uses in the adopted Oak Creek watershed plan. About 538 acres of land designated to be preserved in essentially open uses in the watershed plan have been proposed in the local plan for long-range industrial land uses, and 151 acres have been proposed for residential land uses. The detailed land use plan for the City of Oak Creek is shown on Map 37. The recommendations contained in that plan as they affect the IH 94 South Corridor should be taken into account as preparation of the corridor plan proceeds.

Neighborhood Plans for the City of Franklin

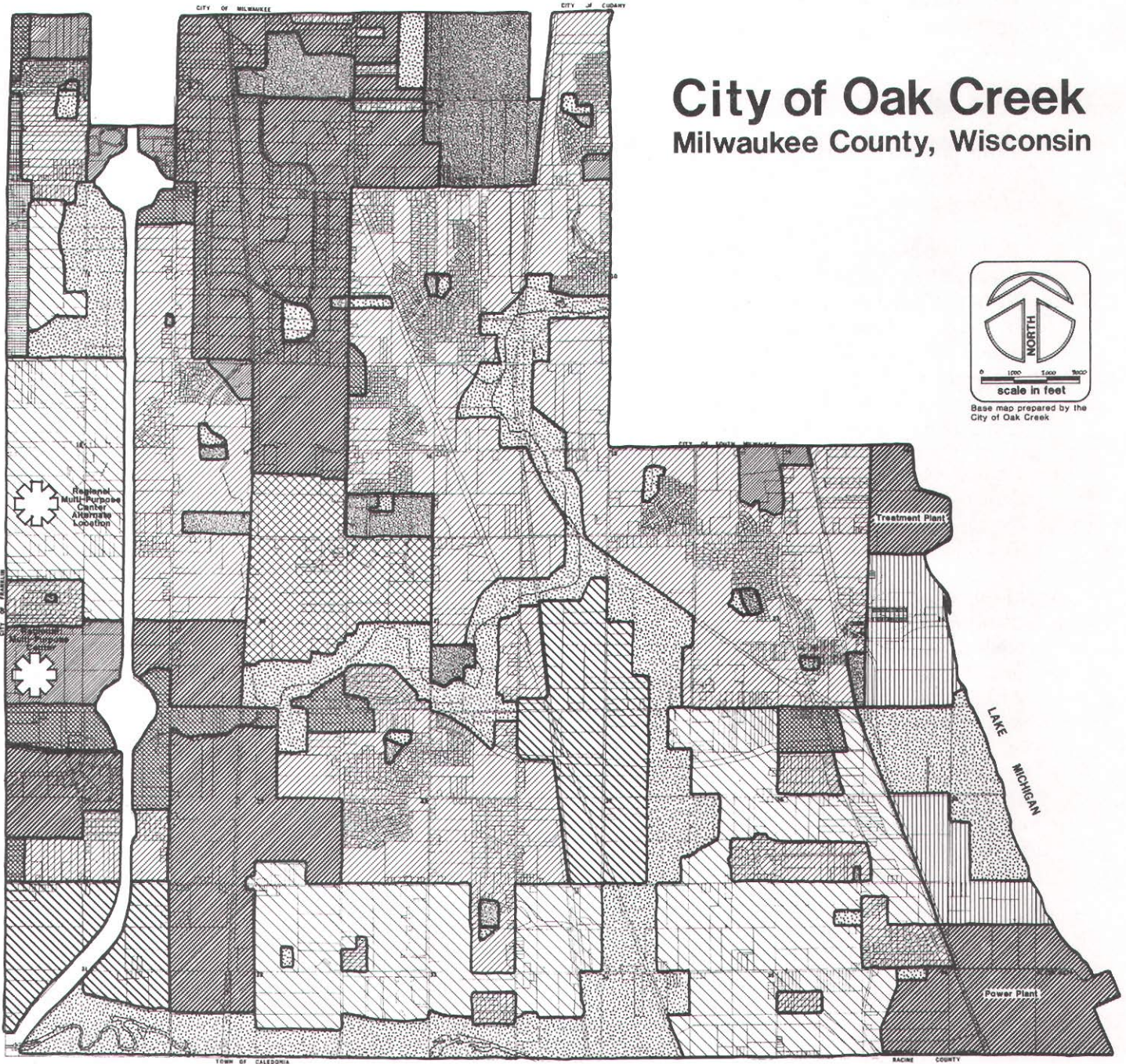
The City of Franklin has approached land use planning by preparing detailed neighborhood unit development plans for subareas of the City. These plans are set within the framework of the adopted regional land use plan and carry that plan into a significantly greater level of detail. The neighborhood plans recommend the location of future collector and minor land access street alignments and attendant block configurations, and identify the locations within each neighborhood best suited for institutional, recreational,

¹¹ See *Comprehensive Plan 85, City of Oak Creek, Wisconsin, Harland Bartholomew & Associates, Inc., June 1985.*













ADOPTED LAND USE PLAN FOR THE CITY OF OAK CREEK

City of Oak Creek

Milwaukee County, Wisconsin



LAND USE PLAN

- | | |
|--|--|
|  RESIDENTIAL |  COMMERCIAL/RESIDENTIAL |
|  LONG-RANGE RESIDENTIAL |  CITY CENTER |
|  HIGH DENSITY RESIDENTIAL |  HOWELL AVENUE CORRIDOR |
|  PARK AND PARKWAY |  INDUSTRIAL |
|  PUBLIC |  LONG-RANGE INDUSTRIAL |
|  COMMERCIAL |  LAKE FRONT DEVELOPMENT |

prepared for
City of Oak Creek, Wisconsin

commercial, industrial, and residential land uses of various types.

While considerable progress has been made to date by the City in preparing preliminary neighborhood plan layouts for those neighborhoods that lie within the IH 94 South Corridor portion of the City, no such neighborhood plans have been formally documented and adopted pursuant to Section 62.23(3) of the Wisconsin Statutes by the City Plan Commission. The City Plan Commission has, however, given preliminary approval to neighborhood plan layout maps for each of the neighborhoods within the IH 94 South Corridor portion of the City. These plans are on file at the Franklin City Hall.

A plan for one of the neighborhoods lying almost entirely within the IH 94 South Corridor has recently been fully documented and is scheduled for formal adoption by the City Plan Commission in the near future. That plan is for the Franklin Industrial Park Neighborhood, which lies west of Oakwood Park and south of Ryan Road in an area adjacent to the proposed Oakwood Reservoir.¹² The general plan for the City of Franklin—which is essentially the regional plan as it applies to the City—together with the delineation of neighborhoods in the City, is shown on Map 38. The detailed neighborhood plan for the Franklin Industrial Park Neighborhood is shown on Map 39. The Franklin Industrial Park Neighborhood plan, together with the preliminary plans for the other neighborhoods that lie partially or wholly within the IH 94 South Corridor, should be taken into account as the preparation of the corridor plan proceeds.

Yorkville Sewer District Planning Study

In 1979, the Racine County Planning and Zoning Department conducted a planning study for the area encompassed by the Yorkville Sewer District and its immediate environs. This study was prepared for the Racine County Board of Supervisors and was adopted by that Board. The study was carried out in cooperation with the Towns of Yorkville and Mt. Pleasant. The study

was precipitated by the fact that Racine County is a major landowner in the area of the interchange of IH 94 and STH 20, and at the time of the study was operating its own sewage treatment facility to serve the Racine County Highway and Office Building and the Ives Grove Golf Links. The purpose of the study was to prepare a recommended land use plan that could be used in part to help the Yorkville Sewer Utility District No. 1 formulate plans for an expanded sewage treatment facility that would serve not only Racine County lands but other lands in the vicinity, in part resolving problems associated with failing onsite sewage disposal systems. As noted in Chapter IV of this report, that facility was constructed and remains in operation.

The study results are set forth in a document published by Racine County.¹³ The resulting recommended land use plan for the Yorkville Sewer Utility District and its immediate environs is shown on Map 40. The recommended plan for the Yorkville Sewer District area is basically consistent with the adopted regional land use plan and further is based upon locally established policies that seek to encourage highway-oriented commercial development within the area while discouraging new residential development other than appropriate in-filling of lands already committed for residential use.

Racine County IH 94 Development Opportunity Study

In 1986, Racine County commissioned a special study to ascertain from a market perspective the real estate development potential for lands located along IH 94 extending from the CTH C crossing of IH 94 on the north to the STH 11 interchange with IH 94 on the south. The results of this study were published in a report submitted to Racine County.¹⁴ The basic conclusions reached by the consultant in this study may be summarized as follows:

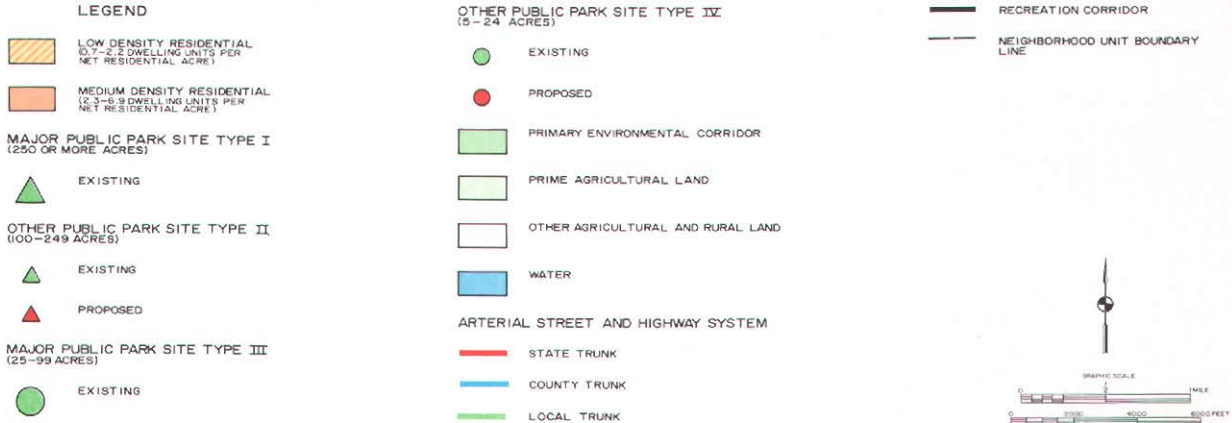
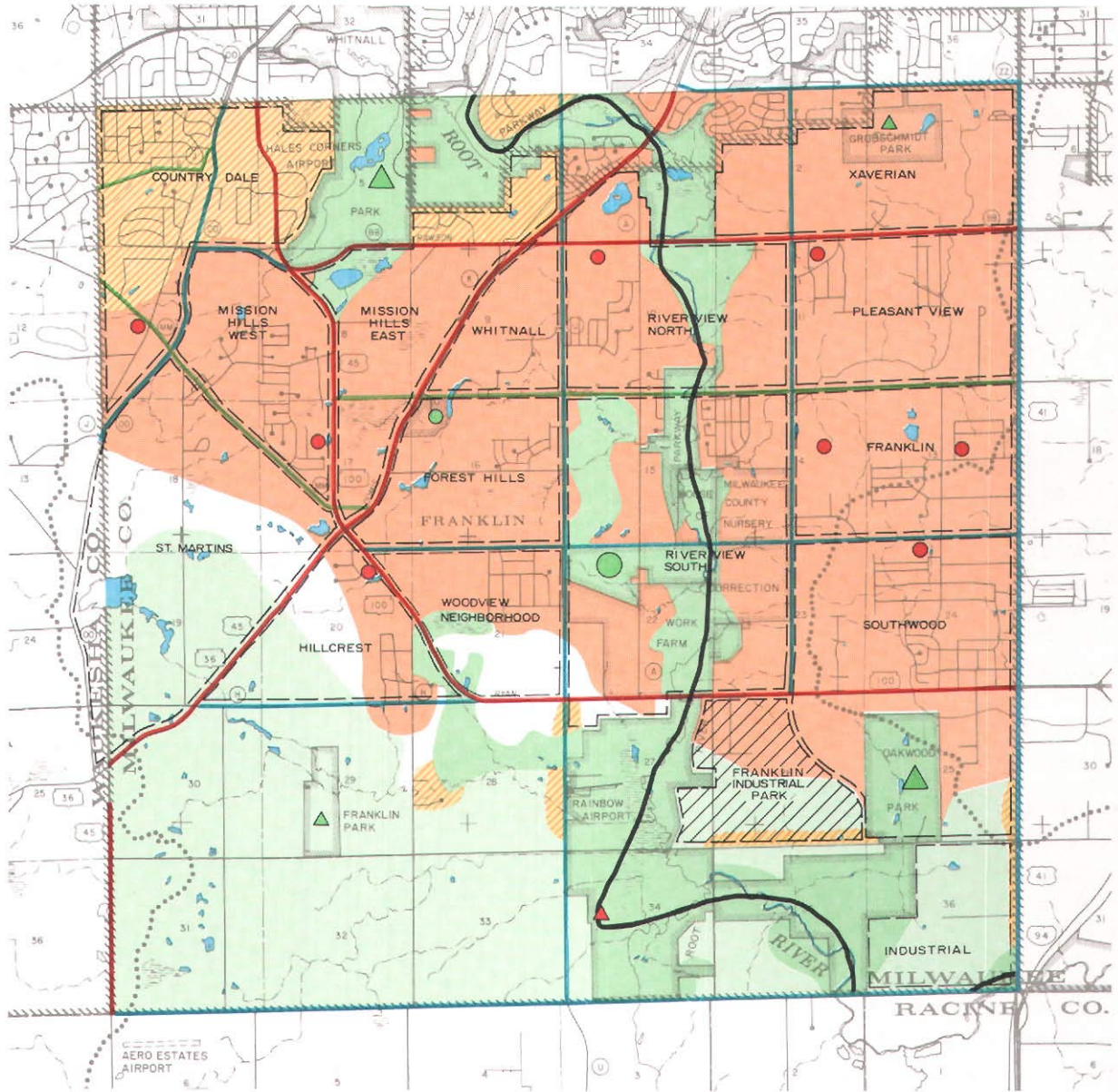
¹²See *SEWRPC Community Assistance Planning Report No. 138, A Development Plan for the Franklin Industrial Park Neighborhood, City of Franklin, Milwaukee County, Wisconsin, July 1988.*

¹³See *The Yorkville Sewer District Planning Study, Report No. 14, Racine County Board of Supervisors, May 1979.*

¹⁴See *Development Opportunity Analysis for the I-94 Planning Area in Racine County, Wisconsin, Laventhol & Horwath, September 1986.*

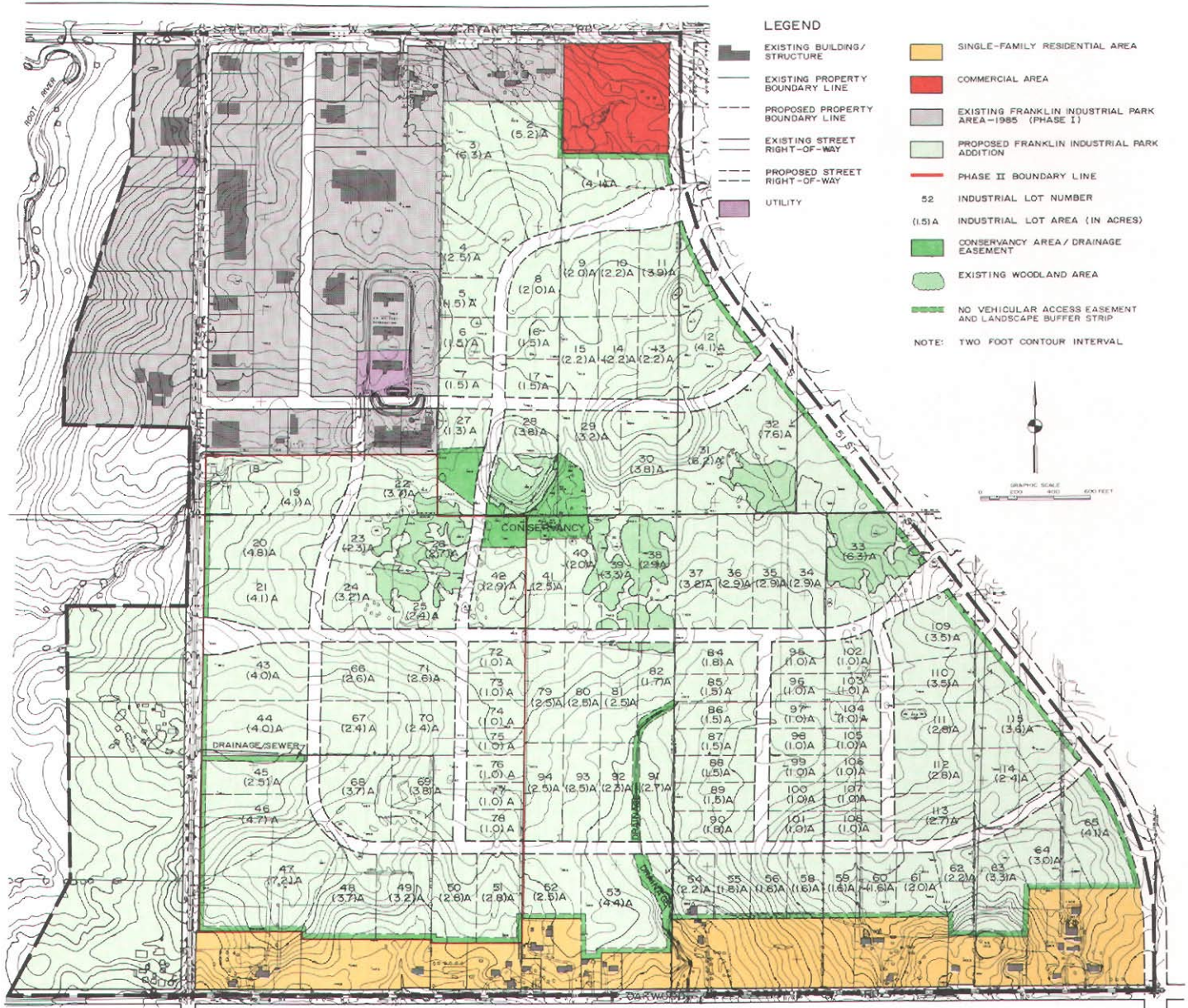
Map 38

GENERAL LAND USE PLAN FOR THE CITY OF FRANKLIN



Map 39

RECOMMENDED FRANKLIN INDUSTRIAL PARK NEIGHBORHOOD PLAN

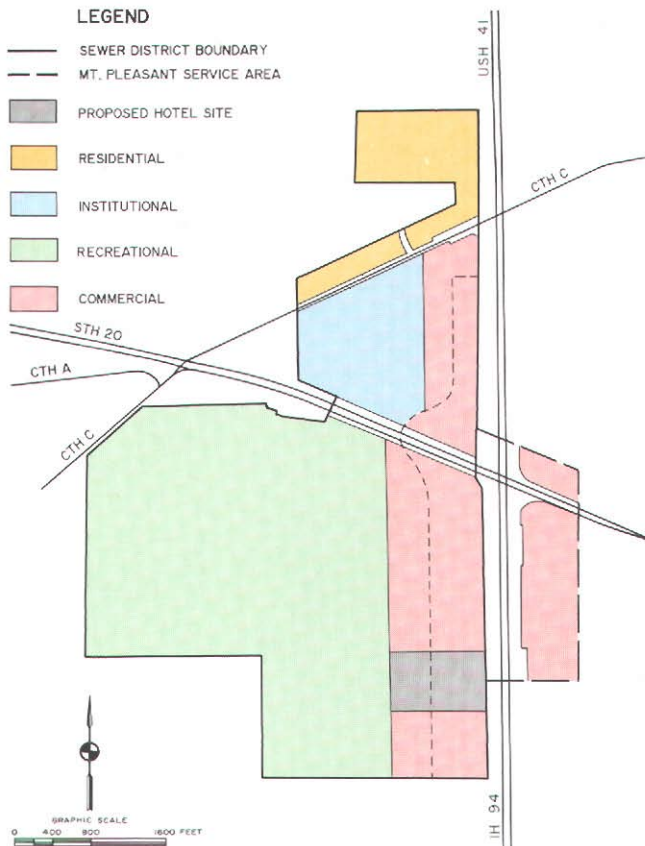


Source: SEWRPC.

1. The lands along IH 94 in this portion of Racine County remain in relatively large tracts controlled by relatively few persons which, together with the location of such tracts along the interstate highway system, makes the land attractive for private sector real estate development. The major disadvantage of the location, however, is its relative isolation from major population and employment centers.
2. Although much of the land along IH 94 is suitable for warehouse, distribution, and other light industrial uses, the absorption rate of industrial land in Racine County in recent years has averaged only about 11 acres annually, leading to a conclusion that, given the supply of competitive sites in the area, significant growth in industrial use of lands in this part of Racine County is unlikely.

Map 40

ADOPTED LAND USE PLAN FOR THE
YORKVILLE SEWER DISTRICT AND ENVIRONS



Source: Racine County Board of Supervisors.

3. The potential to attract office development to lands along IH 94 in Racine County is minimal because of its distance from a population base and because of the supply of available office space in nearby markets.
4. A large-scale retail development is not supportable along IH 94 in Racine County in the near future; however, lands along IH 94 have the potential to recapture lost retail sales by providing highway-oriented commercial uses that would attract travelers off the interstate highway. In addition, the lands along IH 94 would be suitable for automobile dealerships and truck-oriented facilities.
5. There will likely be little demand for additional lodging facilities in the Racine

market area that could be supplied with hotel or motel developments along IH 94 in Racine County.

6. While the potential for additional housing development along IH 94 is likely limited in the near future, there is a strong market for elderly housing and care facilities that could be met in the IH 94 Corridor.

Based upon these findings, the Racine County consultant prepared a "development opportunity program" for the lands in the study area along IH 94. The development opportunity areas as outlined by the consultant are shown on Map 41. In the consultant's opinion:

Development Opportunity Area 1 is suitable for industrial and commercial land uses, particularly industrial developments in conjunction with Sylvania Airport and for uses serving the trucking industry.

Development Opportunity Area 2 is suitable for highway-oriented commercial uses, such as gasoline stations, restaurants, and gift shops.

Development Opportunity Area 3 is suitable for larger land-consuming commercial land uses, such as automobile and recreational vehicle dealerships.

Development Opportunity Area 4 is suitable for tourist-oriented recreational land uses, such as campgrounds and amusement parks.

Development Opportunity Area 5 is suitable for multiple-family residential or institutional land uses—in particular, housing for the elderly.

Development Opportunity Areas 6 and 7 are suitable for agricultural or perhaps recreational land uses.

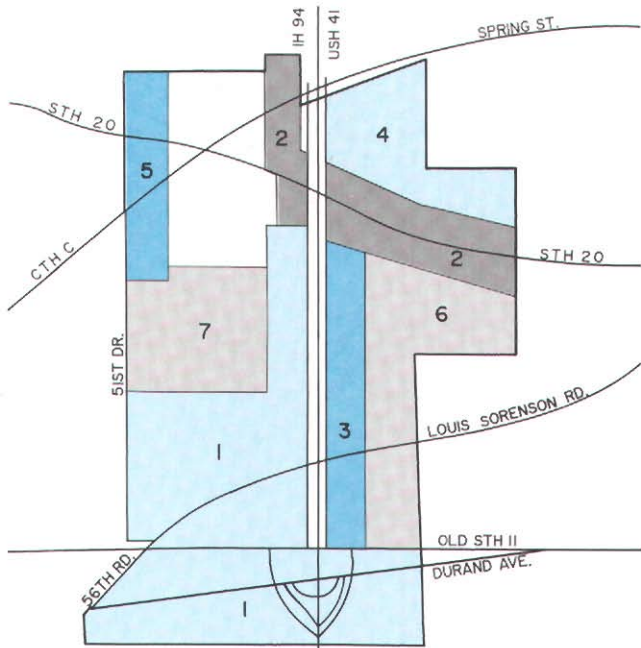
Pleasant Prairie Housing
and Development Study

In 1985 the Town of Pleasant Prairie Plan Commission conducted a study of housing and development trends in the Town.¹⁵ Based upon

¹⁵See Housing and Development Forecast 1985-2005, Town of Pleasant Prairie, Kenosha County, Wisconsin, April 1985.

Map 41

DEVELOPMENT OPPORTUNITY AREAS IDENTIFIED IN THE IH 94 PLANNING AREA FOR RACINE COUNTY



NOTE: NUMBERS INDICATE DEVELOPMENT OPPORTUNITY AREAS DESCRIBED IN ACCOMPANYING TEXT.

Source: Lavenhol & Horwath Management Advisory Services.

its review of development trends within the Town and taking into account the growth in neighboring Lake County, Illinois, the Town identified industrial, residential, and commercial growth areas within which growth should be encouraged over the next two decades. With respect to the IH 94 Corridor study area, industrial growth was recommended by the Town Plan Commission to be concentrated on lands lying south of the Pleasant Prairie electric power generation plant. These are lands now under development by WISPARK, Inc. Commercial development is recommended to be concentrated on lands located near four major intersections: IH 94 and STH 50, STH 192 and STH 50, CTH Q extended and IH 94, and STH 31 and STH 174. Incremental residential growth is recommended to be concentrated south of STH 50 and east of CTH HH near the old village area of the Town.

Pleasant Prairie Highway Access and Development Plan

In 1986, in a cooperative effort involving the Town of Pleasant Prairie, the City and County of Kenosha, and the Wisconsin Department of Transportation, a highway access and development plan was prepared for STH 50 between IH 94 and 60th Avenue.¹⁶ The purpose of the study was to recommend in detail the number and location of private and public access points and median openings, and the location and configuration of frontage roads along STH 50. One of the recommendations contained in the plan is the separation of the freeway ramps from the frontage roads at the interchange of STH 50 with IH 94 and the construction of new frontage roads. Other recommendations relate to the construction of frontage roads along certain sections of STH 50, the relocation of existing median openings to line up with proposed public streets, and the closing of certain existing driveways along STH 50. This plan was adopted by the Town of Pleasant Prairie, the City of Kenosha, and Kenosha County, and was endorsed by the Wisconsin Department of Transportation. A graphic summary of the plan is shown on Map 42.

STH 20 Highway Access Plan

In 1986, in a cooperative effort involving the Village of Sturtevant, the Town of Mt. Pleasant, and the Wisconsin Department of Transportation, a highway access plan was prepared for STH 20 between Willow Road/Stuart Road and CTH H. The plan identifies appropriate highway access points along STH 20 for new commercial and industrial development and the opening of new public streets as urban development in the area proceeds. This plan, which is shown on Map 43, was adopted by the Village of Sturtevant and the Town of Mt. Pleasant and was endorsed by the Department of Transportation.

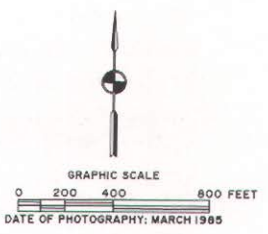
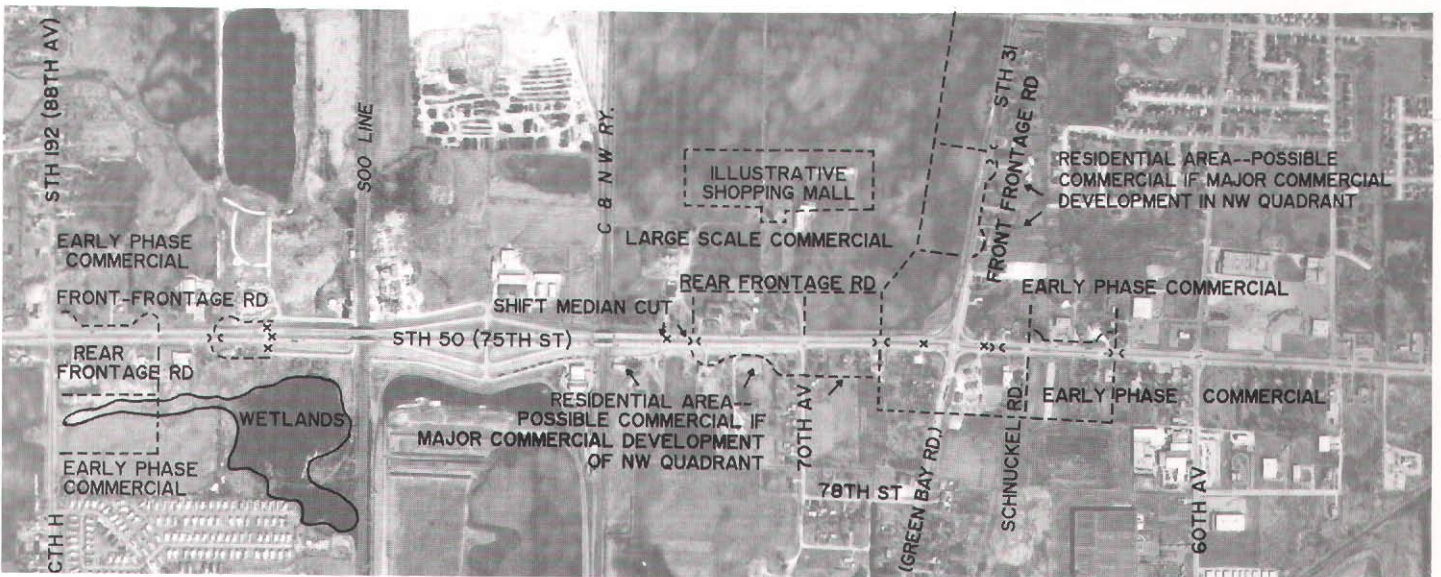
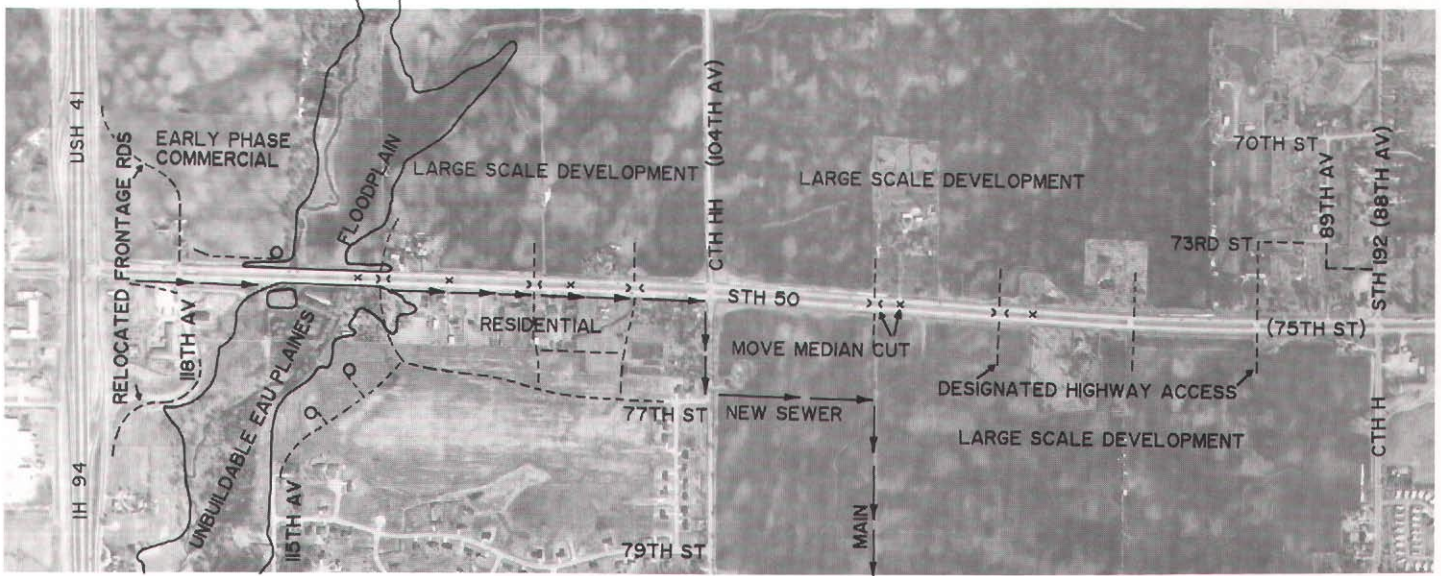
IH 94 Interchange Plans

Over the past several years, the Wisconsin Department of Transportation, in cooperation with Racine and Kenosha Counties and the

¹⁶See Highway Access and Development Plan for Wisconsin State Trunk Highway 50 Located in the Town of Pleasant Prairie and the City of Kenosha, Kenosha County, Wisconsin, Between Interstate Highway 94 and 60th Avenue, February 1987.

Map 42

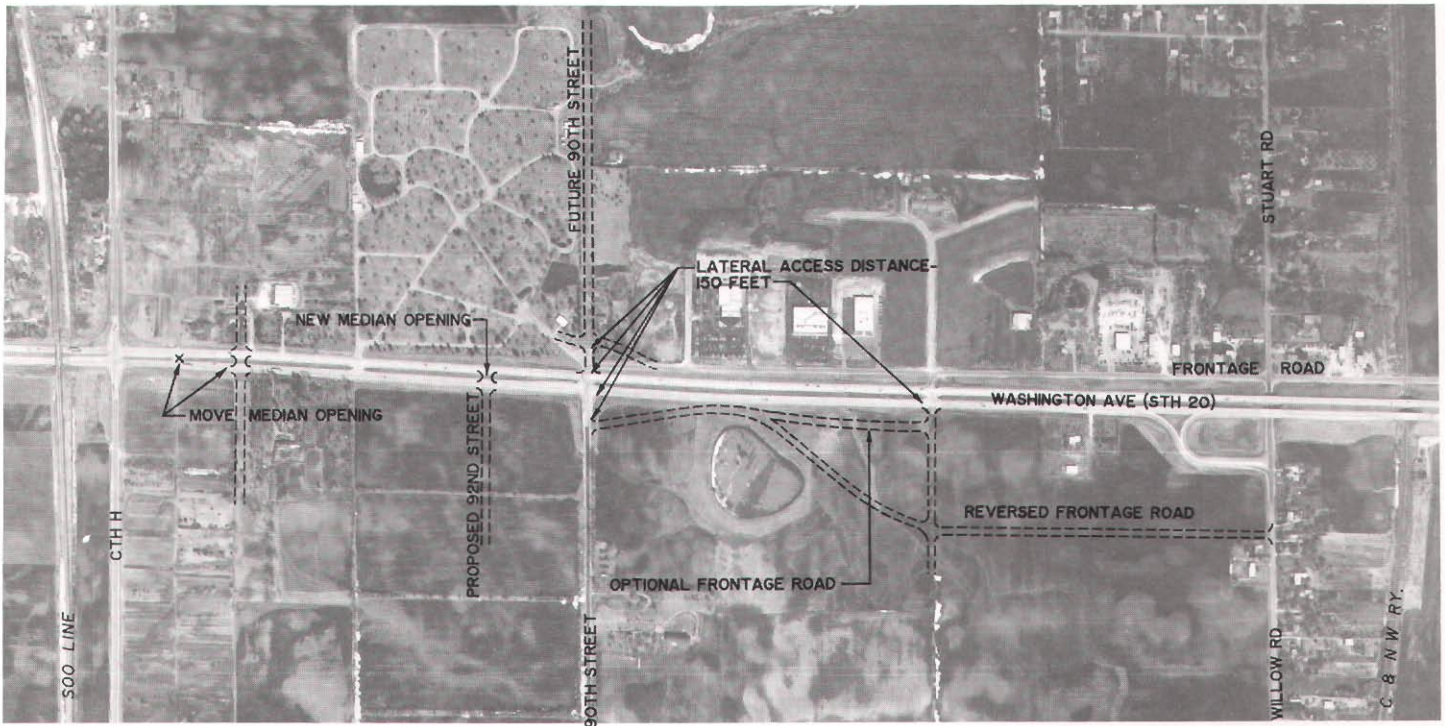
STH 50 HIGHWAY ACCESS AND DEVELOPMENT PLAN



Source: Town of Pleasant Prairie, City of Kenosha, Kenosha County, and Wisconsin Department of Transportation.

Map 43

STATE TRUNK HIGHWAY 20 ACCESS PLAN



Source: Town of Mt. Pleasant, Village of Sturtevant, and Wisconsin Department of Transportation.

various towns concerned, has been preparing detailed plans to reconfigure interchange ramps and attendant frontage roads at three of the interchanges in the study corridor: STH 50, STH 20, and Racine County CTH K. In each case, changes in ramp and frontage road configurations will have an impact on private property owners. Accordingly, many private property owners have also been involved in the formulation of these interchange reconstruction plans. For the purposes of the IH 94 South Corridor study, the Wisconsin Department of Transportation has indicated a commitment to implementing certain improvements to the STH 50 and STH 20 interchanges on IH 94. The interchange plan committed for STH 50 is shown on Map 44. The changes west of IH 94 shown on this plan were completed in the fall of 1988. The changes shown for the east side of IH 94 might be

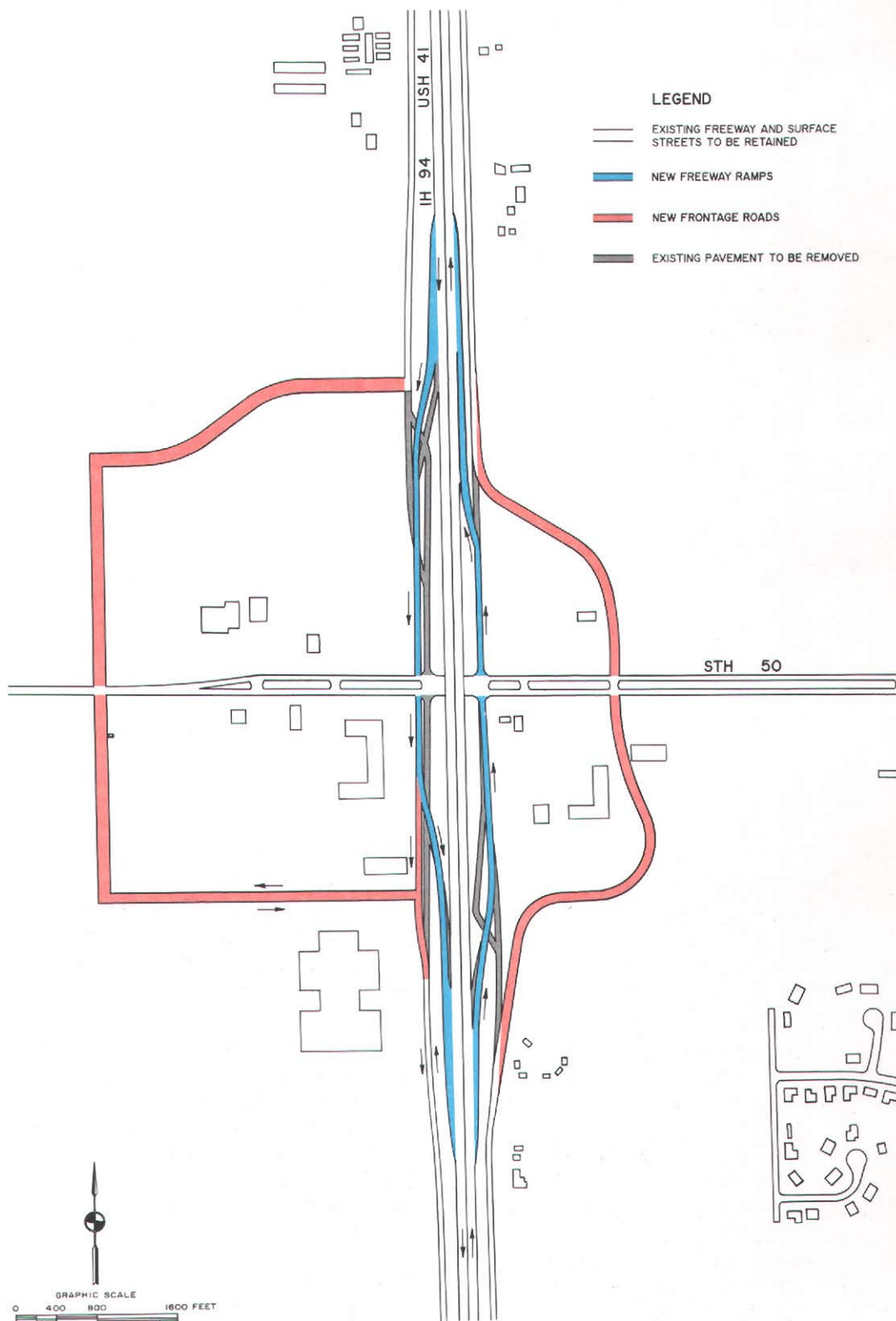
completed as part of an improvement project programmed by the Department for STH 50 east of IH 94, or, depending upon timing, might be completed as development of lands at the interchange proceeds.

The improvement plan for the STH 20 interchange is shown on Map 45. In this case, the Department has retained an engineering consultant to complete the necessary environmental review for the proposed projects and to prepare final design plans. That work is expected to be completed in 1989, with construction scheduled for 1990.

A conceptual interchange plan for the Racine County CTH K interchange is shown on Map 46. While this plan has been prepared cooperatively by Racine County, the Town of Raymond, and

Map 44

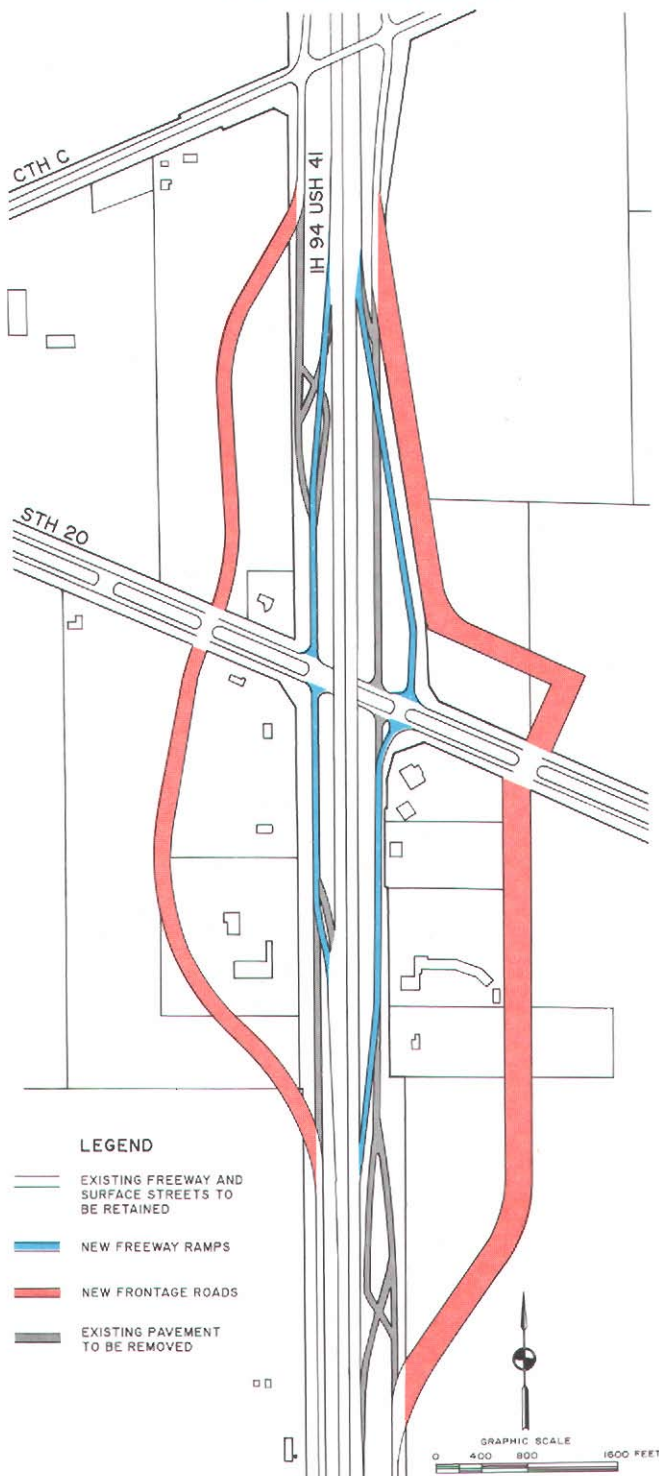
PROPOSED RAMP AND FRONTAGE ROAD
CONFIGURATION AT THE IH 94-STH 50 INTERCHANGE



Source: Kenosha County and Wisconsin Department of Transportation.

Map 45

PROPOSED RAMP AND FRONTAGE ROAD CONFIGURATION AT THE IH 94-STH 20 INTERCHANGE



Source: Racine County and Wisconsin Department of Transportation.

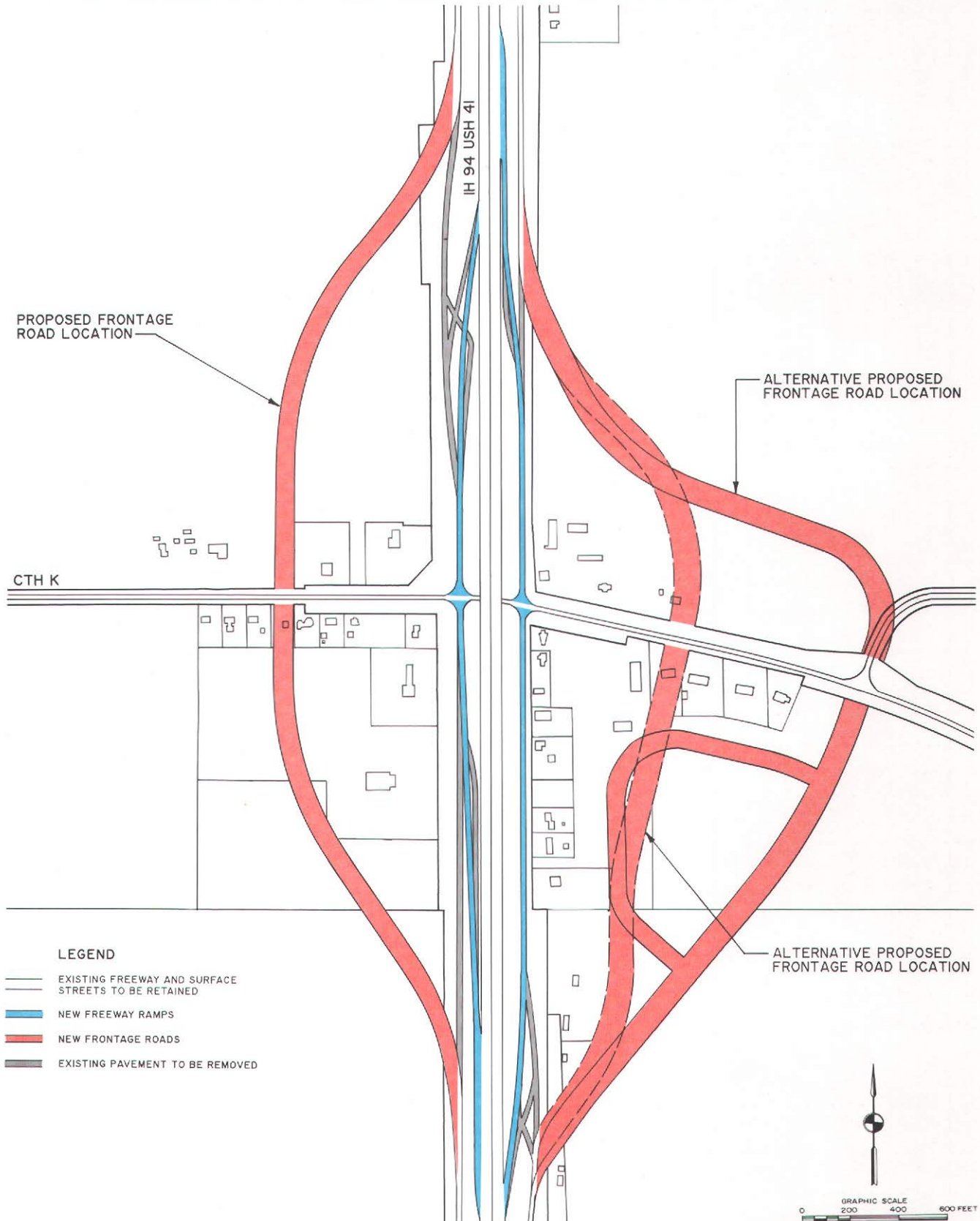
the Wisconsin Department of Transportation, the Department has not made any commitment to date to proceed with implementation of the improvements identified in the plan.

Lake County (Illinois) Framework Plan

In addition to the foregoing local plans which have been prepared by state, county, and local governments for portions of the IH 94 South Corridor in southeastern Wisconsin, one other plan—pertaining to IH 94 south of the Wisconsin-Illinois state line—deserves brief comment. That plan is the Lake County (Illinois) framework plan as adopted and amended by the Lake County Board of Supervisors.¹⁷ Of particular interest is the fact that the plan, as it pertains to the IH 94 tollway corridor extending from the Wisconsin-Illinois state line south to Illinois STH 132—a distance of nearly eight miles—does not propose any significant commercial or industrial development on lands bordering the tollway for several miles to either the east or the west. The first planned concentration of intensive urban development is found at the interchange of IH 94 and Illinois STH 132. For that eight-mile segment of IH 94, the Lake County framework plan envisions primarily low-density, estate-type residential development combined with protecting the environmentally sensitive lands along the Des Plaines River through open space acquisition. The first planned concentration of intensive urban development is located at the interchange of IH 94 and Illinois STH 132. Major land use development proposals advanced for this interchange include: the Gurnee Mills, a 2.2-million-square-foot retail shopping mall; the Grand Tri-State Business Park, a 300-acre business and office park development; the Pembroke Subdivision, a residential development proposing 275 single-family units, 280 multi-family units, and 160 townhouse units; and the Days-Inn, a 134-room hotel. The retail project, similar in scope to those proposed along IH 94 in Kenosha County, has been strategically located in an attempt to intercept traffic destined for existing outlet malls in Kenosha County. Marketing efforts by these

¹⁷See *Lake County, Illinois, Framework Plan Update*, Lake County Department of Planning, Zoning and Environmental Quality, November 1987.

PROPOSED RAMP AND FRONTAGE ROAD CONFIGURATION AT THE IH 94-CTH K INTERCHANGE



Source: Racine County and Wisconsin Department of Transportation.

developers to redirect the consumers may have a significant impact on the demand for similar retail goods and services in the IH 94 study area.

LAND USE REGULATIONS

Good planning practice notwithstanding, local development objectives are often expressed most forcefully, and sometimes solely, in local land use control ordinances. Accordingly, an inventory was conducted of the zoning ordinances and zoning district maps in effect within the IH 94 South Freeway Corridor. This inventory also included local land division ordinances and official maps. The following presents in summary form the findings of this inventory.

Zoning

In late 1985 the Regional Planning Commission completed a re-inventory of all local zoning ordinances and zoning district maps in the Region. With few exceptions, it is believed that the zoning in place at that time within the IH 94 Freeway Corridor substantially reflects the zoning that was in place in mid-1988.¹⁸

In order to reduce the local zoning district maps to a common basis amenable to comparative analysis, a zoning district classification system was utilized. All local zoning district categories were converted to that common classification system and their boundaries delineated on SEWRPC one inch equals 2,000-foot scale county base maps. The land use zoning information so mapped was then quantified by measuring and tabulating the areas devoted to each category. A composite map of the local zoning districts was prepared on a SEWRPC one inch equals 4,000-foot scale base map of the study corridor. This map is shown on Map 47. The areal extent of lands lying within each of the generalized zoning districts is set forth in Table 21.

Collectively as of 1985, local units of government in the Region have zoned nearly 17 percent of the study corridor for residential land use development, representing nearly 19,400 acres,

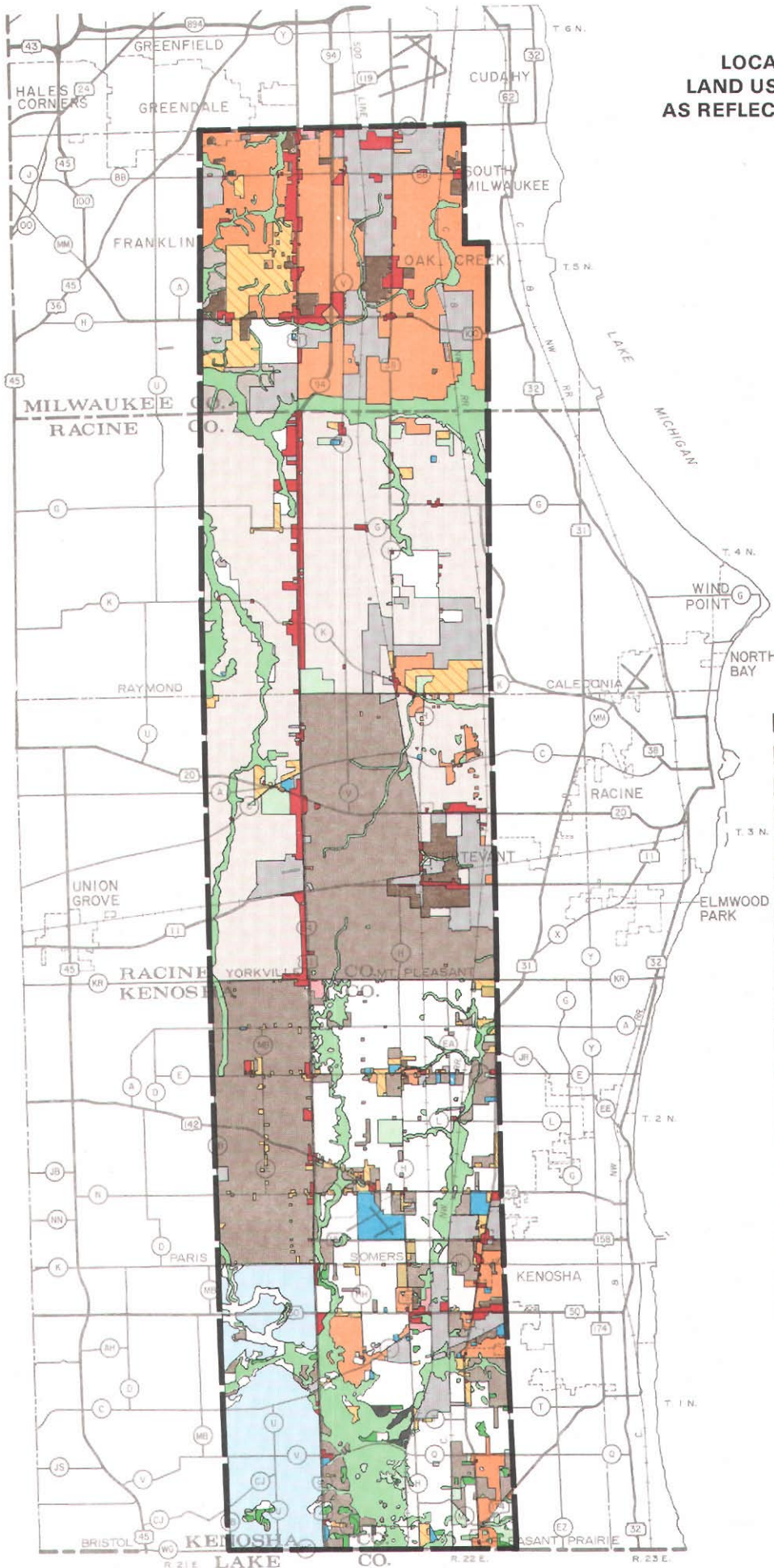
or about 30 square miles. Much of that development lies within the Cities of Oak Creek and Franklin, where large areas of land have been committed for residential development for many years. Relatively small amounts of land have been zoned for residential use by local communities in Racine and Kenosha Counties.

Local communities have zoned nearly 11 percent of the corridor for commercial and industrial development, such areas totaling nearly 12,100 acres, or about 19 square miles—not including the Town of Pleasant Prairie WISPARK-related zoning covering an additional 864 acres. Major concentrations of industrially zoned land are found throughout the study corridor. Very little of the industrially zoned land, however, lies immediately adjacent to the IH 94 freeway. Lands zoned for commercial use, as may be expected, can be found throughout the study corridor. A significant amount of such land, however, has been zoned in narrow, strip fashion along IH 94, particularly through Racine County, where long reaches of the IH 94 frontages have been zoned commercial in the Towns of Caledonia, Raymond, and Yorkville.

Agricultural zoning in the corridor has been applied to about 62,300 acres of land, or about 97 square miles, representing nearly 55 percent of the total study area. Of that total, about 25 square miles, representing about 14 percent of the corridor area, has been zoned for truly exclusive agricultural use—that is, placed into a zoning category that has a minimum farm size of 35 acres. Except for a few scattered farms in Racine County, all of the exclusive agricultural zoning has been enacted in the Towns of Somers and Pleasant Prairie in Kenosha County. Marginal agricultural zoning providing for a minimum lot size of five acres, but less than 35 acres, applies to another 32 square miles, or about 18 percent of the total corridor area. The bulk of this agricultural zoning is in the Towns of Mt. Pleasant and Paris, with relatively minor amounts in the Towns of Somers and Pleasant Prairie. The remaining agricultural zoning—agricultural in name only since it permits nonfarm-related residential development—which occurs in the Towns of Caledonia, Mt. Pleasant, Raymond, and Yorkville and the City of Franklin, and which provides for farm sizes less than five acres in area, comprises about 40 square miles and represents about 22 percent of the study corridor.

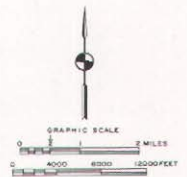
¹⁸One recognized major exception is the rezoning early in 1988 of about 864 acres of land in the Town of Pleasant Prairie from agricultural to industrial use. This rezoning was undertaken in conjunction with the initiation of development of the Lake View Corporate Park by WISPARK, Inc.

**LOCALLY PROPOSED GENERALIZED
LAND USE IN THE IH 94 SOUTH CORRIDOR
AS REFLECTED IN ZONING ORDINANCES: 1985**



LEGEND

- HIGH DENSITY RESIDENTIAL (LESS THAN 6,000 SQUARE FEET)
 - MEDIUM DENSITY RESIDENTIAL (6,000-19,999 SQUARE FEET)
 - LOW DENSITY RESIDENTIAL (20,000 SQUARE FEET-L4 ACRES)
 - SUBURBAN (1.5-4.9 ACRES)
 - RURAL ESTATE (5.0 ACRES OR GREATER)
 - MOBILE HOMES
 - COMMERCIAL
 - INDUSTRIAL
 - TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
 - GOVERNMENTAL AND INSTITUTIONAL
 - RECREATION
 - LOWLAND CONSERVANCY
 - UPLAND CONSERVANCY
 - EXTRACTIVE
- AGRICULTURE**
- 35 ACRES OR GREATER
 - 5.0-34.9 ACRES
 - 2.0-4.9 ACRES
 - LESS THAN 2.0 ACRES
 - UNZONED



Source: SEWRPC.

Table 21

AREAL EXTENT OF EXISTING GENERALIZED ZONING DISTRICTS IN THE IH 94 SOUTH CORRIDOR: 1985

Generalized Zoning District Class	Total Area Zoned (ares)	Percent of Total Corridor Area
Residential		
High Density (less than 6,000 square feet per dwelling unit)	2,167	1.9
Medium Density (6,000-19,999 square feet per dwelling unit)	13,050	11.4
Low Density (20,000 square feet-1.4 acres per dwelling unit)	3,685	3.2
Suburban (1.5-4.9 acres per dwelling unit)	152	0.1
Rural Estate (5.0 or more acres per dwelling unit)	126	0.1
Mobile Homes	193	0.2
Subtotal	19,373	16.9
Commercial	2,913	2.6
Industrial^a	9,175	8.0
Transportation, Communication, and Utility	5	0.0
Governmental and Institutional	935	0.8
Recreational	1,189	1.0
Conservation		
Lowland	11,122	9.8
Upland	446	0.4
Subtotal	11,568	10.2
Extractive	154	0.1
Agriculture		
35 or More Acres per Farm	16,221	14.2
5.0-34.9 Acres per Farm	20,647	18.1
2.0-4.9 Acres per Farm	695	0.6
Less than Two Acres per Farm	24,742	21.7
Subtotal	62,305	54.6
Unzoned^b	6,556	5.8
Water	--	--
Total	114,173	100.0

^aSince 1985, an additional 864 acres of land have been rezoned from agriculture to industrial to accommodate the Lake View Corporate Park project in the Town of Pleasant Prairie.

^bExcept for those portions of the Town of Bristol lying within the Kenosha County statutory shoreland zoning jurisdiction area, the remainder of the Town, comprising 6,556 acres, or about 6 percent of the study area, is unzoned.

Source: SEWRPC.

Table 22

PRIME AGRICULTURAL LANDS PROPERLY PROTECTED THROUGH LOCAL ZONING IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1987

County	Prime Agricultural Lands Recommended to be Preserved		Prime Agricultural Lands Properly Protected Through Zoning	
	Acres	Percent of Total	Acres	Percent of Total
Kenosha	25,002	50.9	15,268	61
Milwaukee	--	--	--	--
Racine	24,166	49.1	953	4
Total	49,168	100.0	16,221	33

Source: SEWRPC.

Conservancy zoning to protect natural resources is prevalent throughout the IH 94 South Corridor. In total, local units of government have applied either upland or lowland conservancy zoning, as may be appropriate for the characteristics of the land, to nearly 11,600 acres, or about 18 square miles, representing about 10 percent of the study corridor. As shown on Map 47, the conservancy zoning has been applied to most of the riverine areas of the study corridor.

Finally, about 10 square miles of the study corridor, or about 6 percent, is unzoned. All of the unzoned land is located in the Town of Bristol. The only lands zoned in the Town of Bristol are those zoned by Kenosha County within statutorily defined shoreland areas.

A special analysis was made to determine the extent to which local units of government have protected prime agricultural lands through proper local zoning. The results of that analysis are summarized in Table 22. By definition, proper zoning of prime agricultural lands is that zoning which ensures a minimum farm size of 35 acres. Such zoning qualifies farmers for income tax credits under the Wisconsin Farmland Preservation Program, and ensures that prime agricultural lands are not inappropriately divided for scattered rural residential development. As presented in Chapter III of this report,

there are nearly 49,200 acres, or about 77 square miles, of prime agricultural lands in the study corridor about equally divided between Racine and Kenosha Counties. In order to quantify the amount of prime agricultural land properly zoned, a comparison was made between the areal extent of prime agricultural lands as shown on Map 4 in Chapter III of this report to the areal extent of the exclusive agricultural zoning depicted on Map 47. This comparison indicates that nearly 24 square miles, representing about 61 percent of the prime agricultural lands in Kenosha County, have been properly zoned. In contrast, only about 1.5 square miles, or about 4 percent, have been properly zoned in Racine County.

A similar analysis was made to determine the extent to which local units of government, either through zoning or public land acquisition, have properly protected the primary environmental corridor lands in the IH 94 South study area. This analysis was conducted by comparing the areal extent of the primary environmental corridors as depicted on Map 11 in Chapter III of this report to the conservancy zoning depicted on Map 47 and to property ownership maps. The results of this analysis are summarized in Table 23. For the study corridor as a whole, about 84 percent of the primary environmental lands, representing nearly seven square miles,

Table 23

PRIMARY ENVIRONMENTAL CORRIDOR LANDS PROPERLY PROTECTED THROUGH LOCAL ZONING OR ACQUISITION IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985

County	Primary Environmental Corridor Recommended to be Preserved		Primary Environmental Corridor Properly Zoned or Acquired	
	Acres	Percent of Total	Acres	Percent of Total
Kenosha	3,204	62.4	2,920	91.1
Milwaukee	1,236	24.1	712	57.6
Racine	696	13.5	667	95.8
Total	5,136	100.0	4,299	83.7

Source: SEWRPC.

have been either acquired or properly placed in conservancy zoning districts.

Finally, special analyses were conducted of the development potential of vacant lands currently zoned for residential, commercial, and industrial use in the IH 94 South Corridor. The results of these analyses are summarized in Table 24 for residential development and Table 25 for commercial and industrial development. As shown in Table 24, there are nearly 8,300 acres of vacant land in the study corridor zoned for residential development, representing an area of nearly 13 square miles. Based upon the densities at which development is permitted within these zoned areas, these lands have the capability of accommodating nearly 22,000 incremental housing units and an incremental population of about 55,300. In addition, local units of government in the corridor have collectively zoned nearly 6,400 acres of land for commercial or industrial use, representing about 10 square miles. Together, those lands have the capability of providing for nearly 63,000 incremental jobs if they are developed at industrial and commercial densities generally found in southeastern Wisconsin.

Land Division Regulation

In 1985 the Regional Planning Commission also completed an inventory of all land division ordinances enacted by county and local units of

government in the Region. The results of that inventory are summarized in Table 26. Land division ordinances provide for appropriate public oversight of the creation of new parcels and help ensure that new urban development is appropriately located, that farm and lot size minimums specified in zoning ordinances are observed, that arterial street rights-of-way are appropriately dedicated or reserved, and that access to arterial streets and highways is appropriately limited in order to preserve the traffic-carrying capacity of such facilities. Land division ordinances can be enacted by cities, villages, and towns and by counties, with the latter applying only to unincorporated areas. Thus, within unincorporated areas, it is possible to have concurrent jurisdiction over land divisions by both counties and towns.

As shown in Table 26, all counties, cities, villages, and towns within the IH 94 South Corridor have adopted land division ordinances except Milwaukee County—where there is no unincorporated land—and the Towns of Caledonia and Raymond. In each case, the land division ordinance appropriately regulates subdivisions generally in the manner the term “subdivision” is defined by State law. Importantly, many of the local units of government also regulate minor land subdivisions—that is, those divisions of land that are not defined as a

Table 24

DEVELOPMENT POTENTIAL OF VACANT LANDS CURRENTLY ZONED FOR RESIDENTIAL USE IN THE IH 94 SOUTH CORRIDOR BY RESIDENTIAL DEVELOPMENT TYPE AND COUNTY: 1985

Residential Development Type	Vacant Lands Zoned Residential (acres ^a)				Development Potential ^b	
	Kenosha County	Milwaukee County	Racine County	Total	Number of Housing Units ^c	Population ^d
High Density	91	473	335	899	5,671	14,664
Medium Density	658	4,983	215	5,856	15,006	37,679
Low Density	199	890	327	1,416	1,065	2,728
Suburban	18	--	--	18	7	19
Rural Estate	73	--	--	73	10	27
Mobile Homes	23	--	--	23	59	158
Total	1,062	6,346	877	8,285	21,818	55,275

^aDoes not include vacant lands within primary environmental corridors or airport clear zones.

^bAssumes that 18 percent of vacant lands are unsuitable for development owing to such factors as steep slopes, poor soils, and scattered wetlands.

^cAssumes 13 acres per 100 dwelling units for high density; 32 acres per 100 dwelling units for medium density and mobile homes; 109 acres per 100 dwelling units for low density; 204 acres per 100 dwelling units for suburban density; and 588 acres per 100 dwelling units for rural estate density.

^dAssumes 2.68 persons per household in Kenosha County; 2.48 persons per household in Milwaukee County; and 2.71 persons per household in Racine County.

Source: SEWRPC.

Table 25

DEVELOPMENT POTENTIAL OF VACANT LANDS CURRENTLY ZONED FOR COMMERCIAL OR INDUSTRIAL USE IN THE IH 94 SOUTH CORRIDOR BY DEVELOPMENT TYPE AND COUNTY: 1985

Development Type	Vacant Lands Zoned Commercial or Industrial (acres ^a)				Development Potential ^b (number of jobs)
	Kenosha County	Milwaukee County	Racine County	Total	
Commercial	216	255	594	1,065	14,555
Industrial	703 ^c	2,089	2,496	5,288	48,180
Total	919	2,344	3,090	6,353	62,735

^aDoes not include vacant lands within primary environmental corridors or airport runway clear zones.

^bAssumes that 18 percent of vacant lands are unsuitable for development owing to such factors as steep slopes, poor soils, and scattered wetlands; further assumes six acres per 100 employees for commercial development and nine acres per 100 employees for industrial development.

^cDoes not include 864 acres of land in the Town of Pleasant Prairie rezoned for industrial use since 1985.

Source: SEWRPC.

Table 26

**STATUS OF LAND DIVISION REGULATION BY COUNTY AND LOCAL
UNIT OF GOVERNMENT IN THE IH 94 SOUTH CORRIDOR: 1985**

Governmental Unit	Governing Body Has Adopted a Land Division Ordinance (yes or no)	Ordinance Applies to Divisions of Land Other than Subdivisions as Defined in State Statutes (yes or no)	Scope of Minor Land Division Review
Counties			
Kenosha	Yes	Yes	All lots 5 acres or less
Milwaukee	Not Applicable	--	--
Racine ^a	Yes	Yes	All lots 35 acres or less
Cities or Villages			
Franklin	Yes	Yes	All lots 3 acres or less
Greendale	Yes	Yes	All lots
Kenosha	Yes	No	--
Milwaukee	Yes	Yes	All lots
Oak Creek	Yes	Yes	All lots
Sturtevant	Yes	No	--
Towns			
Bristol	Yes	Yes	All lots
Caledonia ^b	Yes	Yes	All lots 35 acres or less
Mt. Pleasant	Yes	Yes	All lots 35 acres or less
Paris	Yes	Yes	All lots
Pleasant Prairie	Yes	Yes	All lots
Raymond	No	Yes	All lots
Somers	Yes	Yes	All lots
Yorkville	Yes	Yes	All lots 35 acres or less

^aOn September 6, 1988, the Racine County Board of Supervisors eliminated all requirements for county approval of certified survey maps.

^bThe Town of Caledonia has adopted by reference the provisions of the Racine County Subdivision Control Ordinance.

Source: SEWRPC.

subdivision. All of the units of government having a land division ordinance provide for regulation of minor land divisions except the City of Kenosha and the Village of Sturtevant. For those governmental units regulating minor land divisions, Table 26 also identifies the scope of minor land division review.

Official Mapping

Official maps, prepared pursuant to Section 62.23(6) of the Wisconsin Statutes, are an important but historically underutilized plan

implementation tool. The official map is intended to precisely identify the location and width of existing and proposed streets, highways, parkways, and drainageways, and the location and extent of parks and playgrounds. The adoption of such a map effectively precludes the construction of new buildings within the areas identified for future public use. The results of the inventory of local plans and land use controls conducted by the Commission in 1985 indicated that within the IH 94 South Corridor, official maps have been formally adopted only

by the Cities of Franklin, Milwaukee, and Oak Creek.¹⁹ In addition, a street and highway width map adopted by Milwaukee County in the 1920's remains in effect.

LAND USE DEVELOPMENT PROPOSALS

A large number of land development proposals have been recently advanced within the IH 94 South Freeway Corridor. In some cases, these proposals have reached the construction stage and represent a new increment of urban development in the corridor. In other cases, the projects are speculative in nature and may never reach the construction stage. Some of the proposals are competing in nature, such as several proposals to build dog racing facilities in the corridor.

Given the intense interest in land development activities within the corridor, the Commission assembled all of the land use development proposals announced from April through August 1988. The results of this compilation of information are summarized on Map 48 and in Table 27. This compilation identified a total of 82 individual land use development proposals that have been announced during the period concerned. This information was considered useful in determining the current scope and intensity of land use development activity in the corridor, and in better understanding the direction that the private real estate market appears to be taking with respect to development of the IH 94 South Corridor.

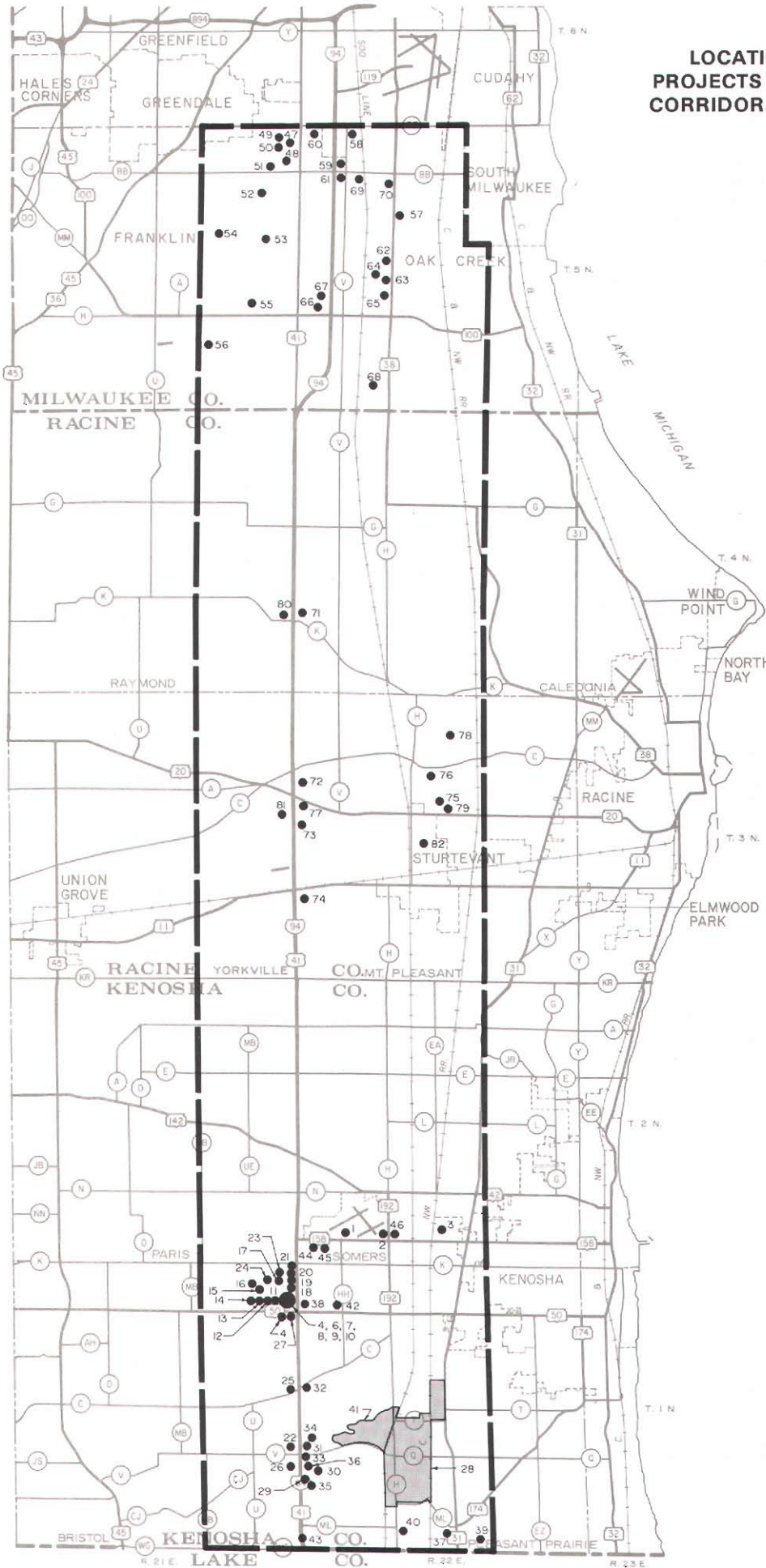
SUMMARY AND CONCLUSIONS

This chapter has summarized information pertaining to the existing framework of regional plans, local plans and related land use regulations, and land use development proposals within the IH 94 Freeway Corridor study area. The following summarizes the findings of this chapter which have significance for preparation of a development plan for the corridor:

1. A number of regional plans have been prepared by the Regional Planning Commission that apply to the study corridor. This framework of plans consists of the regional land use plan, the regional park and open space plan, the regional transportation system plan for arterial streets and highways and public transit, the regional airport system plan, and the regional water quality management plan, as well as sub-regional plans for the Oak Creek, Root River, and Pike River watersheds. The corridor plan should serve to refine and detail these regional plan elements as may be found necessary or desirable.
2. The regional land use plan contains recommendations attendant to the placement of urban land use development, to the protection and preservation of environmentally sensitive lands, and to the protection and preservation of prime agricultural lands. The regional land use plan proposes the conversion of an additional 40 square miles of land from rural to urban use in the IH 94 South Freeway Corridor. These lands could be expected to accommodate, at currently prevailing densities and intensities of development, an incremental population of about 53,000 persons, and an incremental employment of about 49,000 jobs.
3. The regional park and open space plan contains recommendations attendant to park site acquisition and development, parkway acquisition, and recreational trail development. In addition to major facility development at four existing major public parks in the IH 94 South Corridor, the acquisition and development of one new major park in the corridor is recommended, that being near the Des Plaines River in the Town of Pleasant Prairie. Parkway acquisition recommendations apply to primary environmental corridor lands along Oak Creek in Milwaukee County, the Root River in Milwaukee and Racine Counties, and the Des Plaines River, Pike Creek, and the Kilbourn Ditch in Kenosha County. Recreational trails are recommended to be provided along Oak Creek and the Root River.
4. The regional transportation system plan contains recommendations for the con-

¹⁹The Village of Sturtevant adopted an official map ordinance in 1960; however, no map has been produced to date.

**LOCATION OF LAND DEVELOPMENT
PROJECTS PROPOSED IN THE IH 94 SOUTH
CORRIDOR: APRIL THROUGH AUGUST 1988**



- LEGEND**
- LAND DEVELOPMENT PROJECT SITE
 - 56 SITE IDENTIFICATION NUMBER (SEE TABLE 27)

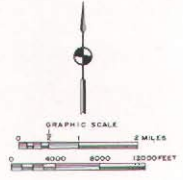


Table 27

**LAND DEVELOPMENT PROJECTS PROPOSED FOR THE IH 94
SOUTH CORRIDOR DURING THE PERIOD APRIL THROUGH AUGUST 1988**

Site Location	Site Number (see Map 54)	Site Name	Intended Land Use ^a
City of Kenosha	1	City of Kenosha Fire Station ^b	Governmental
	2	City of Kenosha Fire Station ^b	Governmental
	3	Southeastern Wisconsin Research Center ^c	Commercial—offices
Town of Bristol	4	Bristol Parkway—Long John Silver's Restaurant	Commercial—shopping center retail sales and service
	5	Bristol Parkway—Kenosha Savings and Loan Association	Commercial—shopping center retail sales and service
	6	Bristol Parkway—Knights Inn Motel	Commercial—automobile-oriented retail sales and service
	7	Bristol Parkway—Best Western Hotel	Commercial—automobile-oriented retail sales and service
	8	Bristol Parkway—Restaurant Site	Commercial—shopping center retail sales and service
	9	Bristol Parkway—Landmark Crossings	Commercial—shopping center retail sales and service
	10	Bristol Parkway—Retail Shopping Mall Site	Commercial—shopping center retail sales and service
	11	Bristol Parkway—Auto Center Site	Commercial—automobile-oriented retail sales and service
	12	Bristol Parkway—Fast Food Restaurant Site	Commercial—automobile-oriented retail sales and service
	13	Bristol Parkway—Retail Shopping Mall Site	Commercial—shopping center retail sales and service
	14	Bristol Parkway—Fast Food Restaurant Site	Commercial—automobile-oriented retail sales and service
	15	Bristol Parkway—Restaurant Site	Commercial—shopping center retail sales and service
	16	Bristol Parkway—Golf Course and Clubhouse	Recreational
	17	Bristol Parkway—Bristol Mills Mall	Commercial—large floor area retail sales
	18	Bristol Parkway—Retail Store Site	Commercial—shopping center retail sales and service
	19	Bristol Parkway—Fast Food Restaurant Site	Commercial—automobile-oriented retail sales and service
	20	Bristol Parkway—Hotel and Convention Center Site	Commercial—automobile-oriented retail sales and service
	21	Bristol Parkway—Office Building Site	Commercial—offices
	22	Flying J Travel Plaza	Commercial—automobile-oriented retail sales and service
	23	Bristol Parkway—Kenosha Greyhound Park	Recreational and Commercial— mixed use development
	24	Bristol Parkway—Office Park Site	Commercial—offices
	25	I-94 Manufacturers Outlet	Commercial—shopping center retail sales and service
	26	Kenosha Military Museum	Governmental and Institutional
	27	Congo River Miniature Golf Course	Recreational

Table 27 (continued)

Site Location	Site Number (see Map 54)	Site Name	Intended Land Use ^a
Town of Pleasant Prairie	28	WISPARK—Lake View Corporate Park	Industrial and Commercial—mixed use development
	29	Hotel and Conference Center	Commercial—automobile-oriented retail sales and service
	30	Commercial and Business Park Site	Commercial—offices
	31	Southeastern Wisconsin Research Center ^c	Commercial—offices
	32	Commercial Development Site	Commercial—shopping center retail sales and service
	33	Wisconsin Visitors' Center	Governmental
	34	Commercial Development Site	Commercial—shopping center retail sales and service
	35	Lakeside Marketplace	Commercial—large floor area sales and service
	36	Town of Pleasant Prairie Fire Station ^d	Governmental
	37	Town of Pleasant Prairie Fire Station ^d	Governmental
	38	Gateway Center	Commercial and Residential—mixed use development
	39	Big Oaks Parcel A Subdivision	Residential—single family
	40	Salica's Greenhill Farm Subdivision	Residential—single family
	41	Town of Pleasant Prairie Park	Recreational
	42	Assembly of God Church and Elderly Housing Facility	Governmental, Institutional and Residential—mixed use development
43	Veterans' Monument ^e	Recreational and Educational	
Town of Somers	44	Industrial, Commercial, and Business Park Site	Industrial and Commercial—mixed use development
	45	Kenosha Sports Dome—Dog Racing Track and Related Facilities	Recreational and Commercial—mixed use development
	46	Gateway Dog Track—Dog Racing Track and Related Facilities	Recreational and Commercial—mixed use development
City of Franklin	47	Residential Multi-family Development	Residential—multi-family
	48	Condominium Auto Dealership, Mini-warehousing, Multi-family Residential	Mixed Use Planned Unit Development
	49	Woods II - Residential Development	Residential—multi-family
	50	Hillcrest Apartments	Residential—multi-family
	51	Hidden Lakes Development	Residential—single and multi-family
	52	Tifton Heights	Residential—single family
	53	Coachlight Estates	Residential—single family
	54	Cascade Heights	Residential—single family
	55	Southwood East Addition	Residential—single family
56	Franklin Industrial Park	Industrial	

Table 27 (continued)

Site Location	Site Number (see Map 54)	Site Name	Intended Land Use ^a
City of Oak Creek	57	The Pines of Oak Creek	Residential—multi-family
	58	Marriott Courtyard Motel	Commercial—automobile-oriented retail sales and service
	59	Green Hills Village Apartments	Residential—multi-family
	60	Oak Creek Estates	Residential—mobile homes
	61	Big Boy Restaurant	Commercial—shopping center retail sales and service
	62	Oak Creek Centre	Commercial—shopping center retail sales and service
	63	Salvation Army	Commercial and Residential— mixed use development
	64	Apartments	Residential—multi-family
	65	Apartments	Residential—multi-family
	66	Commercial Development— Knights Inn, Cinema, Residential	Commercial—automobile-oriented retail sales and service
	67	Tanglewood Apartments	Residential—multi-family
	68	Milwaukee Metropolitan Sewerage District Sludge Site	Utilities
	69	Tews Cement	Industrial
70	Soderberg Company	Industrial	
Town of Caledonia	71	Christmas Tree Story House and Victorian Village	Commercial and Recreational— mixed use development
Town of Mt. Pleasant	72	Recreational Center and Campground	Recreational and Commercial— mixed use development
	73	Russ Darrow Car Dealership	Commercial—automobile-oriented retail sales and service
	74	Racine Soccer Club Complex	Recreational
	75	Fountain Hills Housing Complex	Residential—multi-family
	76	Residential Subdivision	Residential—single family
	77	McDonald's Restaurant	Commercial—automobile-oriented
	78	Residential Subdivision	Residential—single family
79	Corporate West Professional Center	Commercial—office	
Town of Raymond	80	Truck Plaza	Commercial—automobile-oriented retail sales and service
Town of Yorkville	81	Dog Racing Track and Related Facilities	Recreational and Commercial— mixed use development
Village of Sturtevant	82	Racine Correctional Institution	Institutional

^aCommercial land development projects have been categorized as follows:

Shopping center retail sales and services—Includes general merchandise stores, food stores, apparel and accessory stores, drug stores, department stores, gift shops, personal services, banks and savings and loan institutions, and restaurants (without drive-in or drive-through facilities).

Footnotes to Table 27

Offices—Includes professional offices, medical offices, dental offices, clinics and reproduction services, and associated office support facilities.

Large floor area retail sales—Includes furniture sales, appliance sales, factory outlet stores, and garden centers.

Automobile-oriented retail sales and services—Includes gasoline stations, automobile sales and service, bowling alleys, car-washes, drive-in theaters, drive-in banking, drive-in and drive-through restaurants, and motels and hotels.

Bulk sales and construction services—Includes building supplies, equipment sales, septic system service, and liquid petroleum gas sales and storage.

^bTwo sites have been identified as potential locations for a new City of Kenosha fire station; only one site will be selected.

^cTwo sites have been identified as potential locations for the Southeastern Wisconsin Research Center; only one site will be selected.

^dTwo sites have been identified as potential locations for a new Town of Pleasant Prairie fire station; only one site will be selected.

^eThis proposed project was announced in June 1988 for a potential site located near the Wisconsin-Illinois state line and IH 94 in Kenosha County.

Source: SEWRPC.

struction of new arterial facilities for arterial street widenings, for the transfer of jurisdictions among agencies responsible for the arterial street and highway system, and for the provision of public transit service. Of particular importance to the IH 94 South Corridor is the proposed construction of the Lake Arterial facility from the northern end of General Mitchell International Airport to an appropriate terminus in Kenosha County; the construction of CTH Q in Kenosha County west from CTH H to IH 94, a project now underway; the construction of new interchanges on IH 94 at W. Drexel Avenue and W. Puetz Road in the City of Oak Creek; and a series of arterial street widenings in order to provide necessary traffic-carrying capacity on the existing arterial street and highway system. A number of changes to the currently adopted regional transportation system plan have been advanced as that plan pertains to the IH 94 South Corridor. These changes should be reflected in the preparation of the transportation element of the corridor plan.

5. The regional airport system plan contains recommendations for the maintenance and gradual improvement of a basic system of airports already in place. Of particular importance to the IH 94 South Corridor are four of the 11 public use airports comprising the recommended regional airport system—General Mitchell International, Horlick Racine, Kenosha Municipal, and Sylvania. The latter two are located within the study area. Major improvements at Kenosha Municipal Airport have recently been completed. The plan envisions a substantial improvement of Sylvania Airport, including land acquisition and runway construction. With the completion of the recommendations included in the regional airport system plan, the IH 94 South Freeway Corridor will be well served with air transportation facilities.
6. The regional water quality management plan provides recommendations of significance to the IH 94 South Corridor. At present, that plan includes seven individual sanitary sewer service areas that have been

defined to be served by six public sewage treatment facilities. Three of those treatment facilities—the Milwaukee Metropolitan Sewerage District South Shore plant and the Kenosha and Racine plants—lie beyond the IH 94 South Corridor, but serve, or are proposed to serve, areas within the corridor. The remaining three plants—the Town of Yorkville Sewer Utility District No. 1, Town of Pleasant Prairie Sewer Utility District D, and Town of Pleasant Prairie Sanitary District 73-1 facilities—are located within and discharge to receiving streams in the corridor.

7. Drainage and flood control recommendations have been developed through comprehensive studies for the Oak Creek, Root River, and Pike River watersheds. The plans resulting from these studies seek to resolve flooding and drainage problems within the respective watersheds and include recommendations pertaining to structure floodproofing, elevation, and removal; channel widening and deepening, as well as channel cleaning and debrushing; and the construction of such facilities as dikes and reservoirs. There is no drainage and flood control plan for that portion of the IH 94 South Corridor study area within the Des Plaines River watershed.
8. County and local units of government have undertaken a number of important local planning efforts containing recommendations that are significant for the development of the IH 94 South Corridor plan. More detailed land use plans completed within the framework of the regional land use plan have been prepared for the Cities of Oak Creek and Franklin, for the Yorkville Sewer District and its environs, and for a portion of the Town of Pleasant Prairie. A special study conducted for Racine County attendant to the real estate development potential of lands located along IH 94 has also been conducted, and contains findings that need to be taken into account as the development of a land use plan for the IH 94 South Corridor proceeds. With respect to residential development, those findings are inconsistent with some of the local land use planning that has been conducted within the corridor.
9. In cooperative efforts, the Wisconsin Department of Transportation and the county and local units of government have prepared a number of detailed plans relating to highway access and interchange configuration. Of particular significance is the highway access plan prepared for STH 50 from IH 94 east to 60th Avenue in the City of Kenosha. In addition, detailed plans to reconfigure the interchange ramps and attendant frontage roads at the interchanges of IH 94 with STH 50, STH 20, and Racine County CTH K have been completed. These plans should be regarded as committed for the purposes of the IH 94 South Corridor planning effort.
10. An analysis of local development objectives as expressed through adopted zoning district maps indicates that, collectively, local units of government have zoned about 30 square miles, or 17 percent, of the study corridor for residential use; about 19 square miles, or nearly 11 percent of the corridor, for commercial and industrial use; about 97 square miles, or nearly 55 percent of the corridor, for agricultural use; and about 18 square miles, or about 10 percent of the corridor, for conservancy use. About 10 square miles of the study corridor, or about 6 percent, all lying in the Town of Bristol, is presently unzoned.
11. Collectively, local units of government within the corridor have acted to properly zone for protection and preservation about one-third of the approximately 77 square miles of prime agricultural lands in the corridor. Most of this preservation—through exclusive agricultural zoning—has taken place in Kenosha County. In addition, the local units of government have collectively preserved through proper zoning and land acquisition about seven square miles of the primary environmental corridor in the study area, representing about 84 percent of such corridor lands in the study area.
12. If all of the land currently zoned for residential development but not yet developed were to be developed at prevailing densities, such lands would have the capability of accommodating nearly 22,000 additional housing units, representing an

incremental population of about 55,300. In addition, if all of the land in the corridor currently zoned for industrial or commercial use but not yet developed for such purposes were to be developed at prevailing densities, such lands would have the capability of providing for nearly 63,000 additional jobs.

13. Nearly all county and local units of government within the corridor provide for public regulation of land divisions. In most cases, such regulation extends to minor land subdivisions. The regulation of minor land subdivisions is important to ensure that farm and lot size minimums specified in zoning ordinances are observed, that arterial street rights-of-way are appropriately dedicated or reserved, and that

access to arterial streets and highways is appropriately limited. Very few local units of government in the corridor, however—only the Cities of Franklin, Milwaukee, and Oak Creek—have adopted official maps to protect future public rights-of-way.

14. The private real estate market is very active in the IH 94 South Freeway Corridor. During the months of April through August 1988, a total of 82 individual land use development projects and proposals of significance were announced. While some of these projects are speculative and some are competing in nature, others have moved into the construction stage. Information about these proposals should be appropriately considered in the preparation of the land use plan for the corridor.

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Chapter VI

DEVELOPMENT OBJECTIVES, PRINCIPLES, STANDARDS, AND RELATED URBAN DESIGN CRITERIA

INTRODUCTION

Planning is a rational process for formulating and meeting objectives. Consequently, the formulation of objectives is an essential task which must be undertaken before plans can be prepared. A set of development objectives was formulated for the IH 94 South Corridor study area, recognizing the unusual nature of the corridor. The corridor encompasses parts of three counties and 14 municipalities, and is not only set within the context of the southeastern Wisconsin metropolitan region, of which the corridor is an integral part, but is strongly impacted by conditions and development in the northeastern Illinois metropolitan region. Consequently, development objectives for the corridor must reflect, to the extent possible, such objectives for both the larger and smaller—county and local—communities concerned. The objectives must recognize the unique setting of the corridor along a major interstate highway that forms the principal transportation link between the Chicago and Milwaukee metropolitan areas.

The development objectives set forth in this chapter were based, in part, then, upon areawide development objectives contained in regional plans which were considered by the Advisory Committee to be applicable to, and supportable by, the local units of government within the study area. In addition, the development objectives were based upon county and local community objectives as articulated by the members of the Advisory Committee. The selected set of development objectives is presented in this chapter, together with supporting principles and standards. These objectives relate primarily to the allocation and distribution of the various land uses within the study area and to the provision to those land uses of essential transportation, utility, and other facilities and services to meet the needs of the existing and probable future population and employment within the study area and the larger Region of which it is a part, as well as to meet the needs of the large and changing nonresident population that uses IH 94 as a transportation facility. In addition to the objectives and their supporting principles and standards, this chapter

includes recommended urban design criteria and performance standards.

BASIC CONCEPTS AND DEFINITIONS

The terms "objective," "principle," "standard," "design criteria," "plan," "policy," and "program" are subject to a range of interpretations. Therefore, they are defined below.

1. Objective: a goal or end toward the attainment of which plans and policies are directed.
2. Principle: a fundamental, generally accepted tenet used to support objectives and prepare standards and plans.
3. Standard: a criterion used as a basis of comparison to determine the adequacy of plan proposals to attain objectives.
4. Design Criteria: a body of information which can be applied to the development of a solution or solutions to a specific design problem or set of problems.
5. Plan: a design which seeks to achieve agreed-upon objectives.
6. Policy: a rule or course of action used to ensure plan implementation.
7. Program: a coordinated series of policies and actions to carry out a plan.

Although this chapter deals with only the first four of these terms, an understanding of their interrelationship and the concepts they represent is essential to an understanding of the development objectives, principles, standards, and related urban design criteria presented herein. The development objectives, principles, and standards, as developed and approved by the Intergovernmental Coordinating and Technical Advisory Committee for the IH 94 South Freeway Corridor Development Plan, deal primarily with: 1) areal allocation to the various land uses; 2) desirable spatial distribution of land uses; 3) natural resource base and agricul-

tural lands preservation and protection; 4) the transportation system; and 5) fire protection and related rescue services. Detailed urban design criteria and performance standards were developed relating to commercial, industrial, and

residential development, which represent the most intensive types of urban growth to be expected within the study area. Each objective, together with supporting principles and standards, follows:

DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS

OBJECTIVE NO. 1—LAND USE ALLOCATION

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

PRINCIPLE

The planned supply of land set aside for any given use should approximate the known and anticipated demand for that use.

STANDARD

The amount of land area set aside for each major land use category to accommodate existing and probable future needs in the study area should be determined by application of the standards set forth in Table 28.

OBJECTIVE NO. 2—LAND USE SPATIAL DISTRIBUTION

A spatial distribution of the various land uses which will result in a compatible arrangement of land uses properly related to the existing and proposed supporting transportation, utility, and public facility systems and which assures the economical provision of transportation, utility, and public facility services, as well as further enhancing the economic base of the study area.

PRINCIPLE

The proper allocation of urban uses to land can avoid or minimize hazards and dangers to health, safety, and welfare and maximize amenity and convenience in terms of accessibility to supporting land uses. The transportation and public utility facilities and the land use pattern which these facilities serve and support are mutually interdependent in that the land use pattern determines the demand for, and loadings upon, transportation and utility facilities; and these facilities, in turn, are essential to, and form a basic framework for, land use development.

STANDARDS

1. Rural and suburban residential uses should have reasonable access through the appropriate component of the transportation system to local service uses; employment; community and regional commercial, cultural, and governmental centers; and secondary school and higher educational facilities.

2. Urban residential uses should be located in planned areas which are served with centralized public sanitary sewerage and water supply facilities and contain, within a reasonable walking distance, necessary supporting local service uses, such as parks, commercial establishments, and elementary school facilities, and should have reasonable access through the appropriate component of the transportation system to employment, community and regional commercial, cultural, and governmental centers, and secondary school and higher educational facilities.

3. Regional commercial development, which would include activities primarily associated with the sale of shoppers' goods, should be located in centers of concentrated activity, should be afforded direct access to the arterial street system, and should meet the following minimum standards:

- a. Accessibility to a population of between 75,000 and 150,000 persons located within a 10-mile radius.
- b. A minimum gross site area of 60 acres.
- c. At least two general sales and service department stores per regional commercial center offering a full range of commodities and price levels.

Table 28

URBAN LAND USE STANDARDS FOR THE IH 94 SOUTH CORRIDOR STUDY AREA

Land Use Category	Development Standard (gross area) ^a
Residential (single-family dwellings) Rural Estate (5-acre lots or greater) Suburban (1.5- to 5-acre lots) Low-Density Urban (20,000- to 62,000-square-foot lots) Medium-Density Urban (8,400- to 20,000-square-foot lots)	588 acres/100 dwelling units 204 acres/100 dwelling units 109 acres/100 dwelling units 32 acres/100 dwelling units
Residential (multi-family dwellings) High Medium-Density Urban (5.2 to 7.3 dwelling units per net residential acre) High-Density Urban (7.4 to 16.1 dwelling units per net residential acre)	17 acres/100 dwelling units 9 acres/100 dwelling units
Commercial Major Other Commercial	3 acres/100 commercial employees 6 acres/100 commercial employees
Industrial	9 acres/100 industrial employees ^b
Governmental/Institutional Major Schools Public Elementary Public Middle School Public High School Church Other	12 acres/1,000 persons 0.3 acres/100 students 0.3 acres/100 students 0.3 acres/100 students 2.5 acres/1,000 persons 12 acres/1,000 persons
Public Outdoor Recreation Regional and Multi-Community Community In Park Sites In Middle School or High School Sites Neighborhood In Park Sites In Elementary School Sites	As recommended in the Regional Park and Open Space Plan 2.2 acres/1,000 persons 0.9 acres/1,000 persons 1.7 acres/1,000 persons 1.6 acres/1,000 persons

^aGross areas include associated street rights-of-way and off-street parking for each land use category. These standards have been based upon existing land use studies of the Southeastern Wisconsin Region since 1963 and are reasonably responsive to expected future as well as present conditions.

^bAssuming a net land-to-building ratio of 5:1 to 7:1. If the net land-to-building ratio is between 3:1 and 5:1, then 6 acres/100 employees is a more realistic standard to use.

Source: SEWRPC.

- d. Direct access to the arterial street system.
 - e. Direct access to the primary, secondary, and tertiary mass transit service.
 - f. Available adequate public water supply.
 - g. Available adequate sanitary sewer service.
 - h. Available adequate stormwater management facilities.
 - i. Available adequate power supply.
 - j. The site should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development.
 - k. The provision of adequate off-street parking and loading facilities.
 - l. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - m. The provision of acceptable landscaping to serve as a buffer between commercial uses and adjacent incompatible noncommercial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - n. The provision of adequate building setbacks from abutting major arterial streets and highways.
 - o. Adequate fire protection services for protecting structures and employees against the hazards of fire at or near a regional commercial development. A regional commercial development should be located within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
4. Interregional freeway-oriented, shopper goods-related commercial development, in particular manufacturer outlet malls and centers designed for the sale of shopper goods to a population drawn from a large, interregional population, should be located in planned centers of concentrated activity, should be afforded direct access to the arterial street system in proximity to a freeway interchange, and should meet the following minimum standards:
- a. Accessibility to a minimum population of 500,000 persons located within a 30-mile radius.
 - b. A minimum gross site area of 60 acres.
 - c. Direct access to the arterial street and highway system, and access to an interregional freeway having a minimum traffic volume of 35,000 vehicles per average weekday via an interchange located no more than one-quarter mile from the site entrance.
 - d. Available adequate public water supply.
 - e. Available adequate public sanitary sewer service.
 - f. Available adequate stormwater management facilities.
 - g. Available adequate electric power supply.
 - h. The site should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development.
 - i. The provision of adequate off-street parking and loading facilities. A minimum of 5.5 parking spaces per 1,000 square feet of gross leasable floor area should be provided.
 - j. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.

- k. The provision of acceptable landscaping to serve as a buffer between commercial uses and adjacent noncommercial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - l. The provision of adequate building setbacks from abutting major arterial streets and highways.
 - m. Location within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
 - n. Provision of a high degree of visual exposure from the freeway.
5. Freeway-oriented, highway service-related commercial development, in particular activities associated with serving the needs of the freeway traveler, should be afforded direct access to the supporting arterial street and highway system, and should meet the following minimum standards:
- a. A minimum gross area of five acres.
 - b. Direct access to the arterial street and highway system, and access to a freeway via an interchange located no more than one-half mile from the site entrance.
 - c. Provision of a high degree of visual exposure from the freeway.
 - d. Available adequate stormwater management facilities.
 - e. Available adequate power supply.
 - f. Where located in areas served by public sanitary sewer facilities, the site should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development.
 - g. Where located in areas not served by public sanitary sewer facilities, the site should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development and for the use of onsite sewage disposal systems.
 - h. The provision of adequate off-street parking and loading facilities.
 - i. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - j. The provision of acceptable landscaping to serve as a buffer between commercial uses and adjacent noncommercial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - k. The provision of adequate building setbacks from abutting major arterial streets and highways.
 - l. Location within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
6. Neighborhood and community level commercial land uses should be located in established centers of concentrated retail and service activity and should be afforded direct access to the arterial street system. Sites for neighborhood and community service facilities should be provided in accordance with the service radius standards set forth in Table 29.
7. Regional office development should be located in planned office districts which meet the following standards:
- a. Minimum gross site area of 60 acres or a minimum employment of 3,500 persons.
 - b. Direct access to the arterial street and highway system and access within two miles to the freeway system.
 - c. Direct access to primary, secondary, and tertiary mass transit service.
 - d. Access to a General Utility-Stage II airport within a maximum travel time of 30 minutes.
 - e. Available adequate water supply.

Table 29

FACILITY SITE AREA AND SERVICE RADIUS STANDARDS FOR THE IH 94 SOUTH CORRIDOR STUDY AREA

Type	Number of Persons Served	Required Site Area (gross acres)	Maximum One-Way Walking Distance Medium-Density Neighborhood (miles)	Maximum One-Way Travel Time (minutes)	
				Automobile at 25 mph	Transit Facility Total Elapsed Time
Commercial Facilities					
Neighborhood Retail and Service Center	4,000-8,000	6.5 minimum	¾	3	--
Community Retail and Service Center	10,000-75,000	15-40	1½	15	20
Regional Retail and Service Center	75,000-150,000	60 minimum	--	--	20
Highway-Oriented Commercial Development	15,000 ^a	5-25	--	--	--
Regional Highway-Oriented Commercial Development	500,000 (35,000) ^a	60 minimum	--	--	--
Multi-Community and Community Office Development	1,000 minimum	20 minimum	--	--	20
Regional Office Development	3,500 minimum	60 minimum	--	--	30
Community Industrial Facility	300-3,500 employees	20-320	--	15	20
Regional Industrial Facility	3,500 minimum	320 minimum	--	--	30
Local Transit Facilities	--	--	¼	--	--
Educational Facilities					
Public Elementary School (grades K-6)	550 students	11 ^b	½	--	--
Public Middle School (grades 7-8)	900 students	19 ^b	1½	15	20
Public Senior High School (grades 9-12)	2,300 students	48 ^b	--	20	30
Outdoor Recreational Facilities					
Subneighborhood	--	--	--	--	--
Neighborhood	6,500	10	½	--	--
Community	--	25-99	--	20	--
Multi-Community	--	100-249	4 (urban) 10 (rural)	--	--
Regional	--	250 or more	10	--	--

^aIndicates minimum average weekday traffic volume required on abutting freeway or arterial street or highway.

^bIncluding land for the school facility and for associated school-related outdoor recreation facilities.

Source: SEWRPC.

- f. Available adequate public sanitary sewer service.
 - g. Available adequate stormwater management facilities.
 - h. Available adequate electric power supply.
 - i. Sites should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development.
 - j. To the extent possible, office district sites should be located so as to maximize visibility and should offer potential for public identity.
 - k. The site configuration, or its shape, should accommodate the use of the site as a planned office district.
 - l. Available telephone communication systems.
 - m. Available natural gas supply.
 - n. Adequate fire protection services should be available for protecting structures and employees against the hazards of fire. A planned office district should be located within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
 - o. Allowance for internal expansion of the office development area in order to accommodate future office expansion land needs.
 - p. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as a planned office district.
 - q. Adequate off-street parking and loading areas onsite.
 - r. The planned office district should be served by an internal street system which provides convenient access from individual parcels in the district to the supporting arterial street and highway system.
 - s. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - t. The provision of acceptable landscaping to serve as a buffer between office uses and adjacent incompatible nonoffice uses, and to help screen the development from freeways and surface arterial streets and highways.
 - u. The provision of adequate building setbacks from abutting major arterial streets and highways.
8. Multi-community and community office development should be located in planned office parks which meet the following standards:
- a. Minimum gross site area of 20 acres or a minimum employment of 1,000 persons.
 - b. Direct access to the arterial street and highway system and access within two miles to the freeway system.
 - c. Direct access to primary, secondary, and tertiary mass transit service.
 - d. Access to a General Utility-Stage II airport within a maximum travel time of 30 minutes.
 - e. Available adequate water supply.
 - f. Available adequate public sanitary sewer service.
 - g. Available adequate stormwater management facilities.
 - h. Available adequate electric power supply.

- i. Sites should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for commercial development.
 - j. To the extent possible, office park sites should be located so as to maximize visibility and should offer potential for public identity.
 - k. The site configuration, or its shape, should accommodate the use of the site as an office park.
 - l. Available telephone communication systems.
 - m. Available natural gas supply.
 - n. Adequate fire protection services should be available for protecting structures and employees against the hazards of fire. An office park should be located within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
 - o. An office park should allow for the internal expansion of the office development area in order to accommodate future office land needs.
 - p. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as an office park.
 - q. Adequate off-street parking and loading areas onsite.
 - r. The office park should be served by an internal street system which provides convenient access from individual parcels in the park to the supporting arterial street and highway system.
 - s. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets and highways.
 - t. The provision of acceptable landscaping to serve as a buffer between office uses and adjacent incompatible nonoffice uses, and to help screen the development from freeways and surface arterial streets and highways.
 - u. The provision of adequate building setbacks from abutting major streets and highways.
9. Regional industrial development should be located in planned industrial districts which meet the following standards:
- a. Minimum gross site area of 320 acres or a minimum employment of 3,500 persons.
 - b. Direct access to the arterial street and highway system and access within two miles to the freeway system.
 - c. Access to railway facilities if required by the industries located within the district.
 - d. Direct access to primary, secondary, and tertiary mass transit service.
 - e. Access to a General Utility-Stage II airport within a maximum travel time of 30 minutes, and access to seaport facilities within a maximum travel time of 60 minutes.
 - f. Available adequate water supply.
 - g. Available adequate public sanitary sewer service.
 - h. Available adequate stormwater management facilities.
 - i. Available adequate electric power supply.
 - j. Sites should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for industrial development.
 - k. Lands with slopes generally exceeding 6 percent may not be suitable for industrial-related development. Desirably, the maximum grade of any street in an industrial area should not exceed 3 percent.

- l. To the extent possible, industrial sites should be located so as to maximize visibility and should offer potential for public identity.
 - m. The site configuration, or its shape, should accommodate the use of the site as a planned industrial district.
 - n. Available telephone communication systems.
 - o. Available natural gas supply.
 - p. Adequate fire protection services should be available for protecting plant and employees against the hazards of fire at or near the planned industrial district. A planned industrial district should be located within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
 - q. The planned industrial district should allow for the internal expansion of the industrial area in order to accommodate future industrial land needs.
 - r. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as a planned industrial district.
 - s. Adequate off-street parking and loading areas onsite.
 - t. The planned industrial district should be served by an internal street system which provides convenient access from individual parcels in the district to the supporting arterial street and highway system.
 - u. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - v. The provision of acceptable landscaping to serve as a buffer between industrial uses and adjacent incompatible nonindustrial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - w. The provision of adequate building setbacks from abutting major streets and highways.
10. Community industrial development should be located in planned industrial parks which meet the following standards:
- a. Minimum gross site area of 80 acres.
 - b. Convenient access to the arterial street and highway system.
 - c. Access to railway facilities if required by the tenant industries.
 - d. Access to a General Utility-Stage II airport and access to seaport facilities if required by the tenant industries.
 - e. Available adequate water supply.
 - f. Available adequate public sanitary sewer service.
 - g. Available adequate stormwater management facilities.
 - h. Available adequate electric power supply.
 - i. Sites should be covered by soils identified in the regional soils survey as having very slight, slight, or moderate limitations for industrial development.
 - j. Lands with slopes generally exceeding 6 percent may not be suitable for industrial-related development. Desirably, the maximum grade of any street in an industrial area should not exceed 3 percent.
 - k. To the extent possible, industrial sites should be located so as to maximize visibility and should offer potential for public identity.
 - l. The site configuration, or its shape, should accommodate the use of the site as an industrial park.

- m. Available telephone communication systems.
 - n. Available natural gas supply.
 - o. Adequate fire protection services should be available for protecting plant and employees against the hazards of fire at or near the industrial park. An industrial park should be located within six minutes of a fire station providing engine-hose and engine-ladder company and emergency medical services.
 - p. Industrial parks should allow for the internal expansion of the industrial area in order to accommodate future industrial land needs.
 - q. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as a planned industrial district.
 - r. Adequate off-street parking and loading areas onsite.
 - s. Industrial parks should be served by an internal street system which provides convenient access from individual parcels in the district to the arterial street and highway system.
 - t. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - u. The provision of acceptable landscaping to serve as a buffer between industrial uses and adjacent incompatible nonindustrial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - v. The provision of adequate building setbacks from abutting major streets and highways.
11. Special industrial development traditionally viewed as "heavy" in nature, which may present special problems in terms of air quality, noise, hazardous materials, aesthetics, and traffic considerations, and which typically cannot be accommodated in planned industrial parks, should be located in specially identified industrial areas which meet the following standards:
- a. Direct access to the arterial street and highway system.
 - b. Access to railway facilities as may be required by the specific industry.
 - c. Available adequate stormwater management facilities.
 - d. Available adequate electric power supply.
 - e. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.
 - f. The provision of acceptable landscaping to serve as a buffer between industrial uses and adjacent incompatible nonindustrial uses, and to help screen the development from freeways and surface arterial streets and highways.
 - g. The provision of adequate building setbacks from abutting major streets and highways.

OBJECTIVE NO. 3—NATURAL RESOURCE BASE AND AGRICULTURAL LANDS PROTECTION

A spatial distribution of the various land uses which will result in the protection, preservation, and wise use of the natural resources and agricultural lands of the area including soils, lakes and streams, wetlands, woodlands, and wildlife, and the composite of the best of these individual elements.

PRINCIPLE

The proper allocation of land uses can assist in maintaining an ecological balance between the activities of man and the natural environment which supports him.

A. Soils

Principle

The proper relation of urban and rural land use development to soil type and distribution can serve to avoid costly environmental and developmental problems, aid in the establishment of better settlement patterns, and promote the wise use of an irreplaceable resource.

Standards

1. Sewered urban 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 except in areas less than 5 acres in size.
2. Unsewered suburban and rural residential 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.

B. Lakes and Streams

Principle

Inland lakes and streams contribute to the atmospheric water supply through evaporation; provide a suitable environment for desirable and sometimes unique plant and animal life; provide the population with opportunities for certain scientific, cultural, and educational pursuits; constitute prime recreational areas; provide a desirable aesthetic setting for certain types of land use development; serve to store and convey floodwaters; and provide certain water withdrawal requirements.

Standards

1. Floodlands should not be allocated to any urban development which would cause or be subject to flood damage.
2. The floodwater storage capacity of natural floodlands should not be reduced by urban or rural development.
3. The flow capacity of perennial stream channels and associated floodlands should not be reduced below existing conditions.
4. Adequate stormwater management facilities should be provided for all urban development.

C. Wetlands

Principle

Wetlands support a wide variety of desirable and sometimes unique plant and animal life; assist in the stabilization of lake levels and streamflows; trap and store plant nutrients in runoff, thus reducing the rate of enrichment of surface waters and obnoxious weed and algae growth; contribute to the atmospheric oxygen supply; contribute to the atmospheric water supply; reduce stormwater runoff by providing area for floodwater impoundment and storage; trap soil particles suspended in runoff and thus reduce stream sedimentation; and provide the population with opportunities for certain scientific, educational, and recreational pursuits.

Standard

Wetland areas adjacent to streams or lakes, wetlands within areas having special wildlife and other natural values, and wetlands having an area of five acres or more should not be allocated to any urban development except limited recreation, and should not be drained or filled. Under State law all wetlands five acres or more in size in floodland and shoreland areas must be preserved, pursuant to Chapter NR 117 of the Wisconsin Administrative Code.

D. Woodlands

Principle

Woodlands assist in maintaining unique natural relationships between plants and animals; reduce stormwater runoff; contribute to the atmospheric oxygen supply; contribute to the atmospheric water supply through transpiration; aid in reducing soil erosion and stream sedimentation; provide the resource base for the forest product industries; provide the population with opportunities for certain scientific, educational, and recreational pursuits; and provide a desirable aesthetic setting for certain types of land use development.

Standards

1. High- and medium-value woodland areas having an area of five acres or more should not be allocated to urban development except for limited recreation.
2. A minimum community aggregate of five acres of woodland per 1,000 population should be maintained for recreational pursuits.

E. Wildlife

Principle

Wildlife, when provided with a suitable habitat, will supply the population with opportunities for certain scientific, educational, and recreational pursuits; comprises an integral component of the life systems which are vital to beneficial natural processes, including the control of harmful insects and other noxious pests and the promotion of plant pollination; provides food sources; offers an economic resource for the recreation industries; and serves as an indication of environmental health.

Standard

The area wherein fish and game can best be fed, sheltered, and reproduced is a natural habitat. Since the natural habitat for fish and game can best be achieved by preserving or maintaining in a wholesome state other resources such as soil, air, water, wetlands, and woodlands, the standards for each of these other resources, if met, would ensure the preservation of a suitable wildlife habitat and population.

F. Primary and Secondary Environmental Corridors

Principle

The primary and secondary environmental corridors are a composite of the best individual elements of the natural resource base, including lakes, rivers, and streams and their associated floodlands; wetlands; woodlands; wildlife habitat areas; rugged terrain consisting of slopes 12 percent or greater; wet, poorly drained, or organic soils; and significant geological formations. By protecting these elements of the natural resource base, flood damage can be reduced, soil erosion abated, water supplies protected, air cleansed, and wildlife population enhanced, and continued opportunities provided for scientific, educational, and recreational pursuits.

Standards

1. All remaining undeveloped lands within the designated primary environmental corridors in the study area should be preserved in essentially natural, open uses.
2. All remaining undeveloped lands within the designated secondary environmental corridors and isolated natural areas in the study area should be considered for preservation as urban development proceeds and used as drainageways, floodwater detention areas, and parks.

G. Prime Agricultural Lands

Principle

The preservation of prime agricultural lands ensures that the most productive existing farmlands will remain available for the provision of food and fiber; contribute to the agricultural and agricultural-related economy of the area; maximize the return on capital invested in agricultural irrigation and drainage systems and soil and water conservation practices; minimize conflicts between farming operations and activities associated with urban land uses; and contribute to energy conservation, since prime agricultural soils require less energy to farm than do other soils.

Standard

To the extent possible, all prime agricultural lands in the study area should be preserved for agricultural use.

H. Agricultural Lands of Local Significance

Principle

Agricultural lands of local significance, although not meeting criteria for prime agricultural lands, constitute an important part of the agricultural sector of the study area and thereby warrant preservation in agricultural use. Farms with soils having limited agricultural capability which are devoted to orchards, mint, ginseng, and specialty crops typify this category of farmland. The preservation of such farmland also serves to maintain the local economic base, promote local self-sufficiency, preserve the rural lifestyle, prevent urban sprawl, and control public costs.

Standard

Farmlands of local significance in the study area, as identified in this planning document, should be preserved for agricultural use to the maximum extent practicable.

I. Other Agricultural Lands

Principle

While less important to the production of food and fiber than prime and locally significant agricultural areas, other agricultural lands serve many useful functions. Such lands lend form and structure to urban development and contribute to the agricultural heritage and natural beauty of the study area. Moreover, these agricultural lands contribute to the preservation of nonagricultural environmental areas by providing an important open space buffer around major scientific, educational, and recreational sites. The preservation of all agricultural lands, including those of marginal value, promotes a compact and efficient form of urban development and discourages diffused low-density urban growth, thus avoiding the adverse impacts of urban sprawl development.

Standard

Agricultural lands not classified as prime agricultural lands or farmland of local significance should be protected to the maximum extent practicable.

OBJECTIVE NO. 4—TRANSPORTATION SYSTEM

An integrated transportation system which, through its location, capacity, and design, will safely, economically, and effectively serve the existing and proposed land use pattern and promote the implementation of the land use plan, meeting the current and anticipated travel demand generated by the existing and proposed land uses.¹

PRINCIPLE

An integrated area transportation system serves to freely interconnect the various land use activities within the study area and to connect those land use activities to such activities within the Region, State, and nation, thereby providing the attribute of accessibility essential to the support of these activities.

STANDARDS

1. The transportation system should provide access not only to all land presently devoted to urban development, but to land proposed in public plans to be used for such development, as well as an orderly functional hierarchy of arterials, collectors, land access streets, and pedestrian paths to service the area.

Land Access Streets: The primary function of land access streets is to conduct traffic to and from individual building sites.

¹*In the application of the transportation planning standards and in the preparation of the corridor land use and transportation plans, it is important to recognize that it may be necessary, owing to considerations of cost and disruption of existing land uses, to consider alternative plans which do not fully meet all standards. Such plans should be comprehensively evaluated and compared against plans which fully meet the defined standards to permit informed analyses to be made of any potential departure from defined standards in the final recommended plan.*

Collector Streets: The primary function of collector streets is to collect traffic from urban uses abutting land access streets and convey it to arterial streets and highways and/or activity centers.

Arterial Streets: The primary function of arterial streets is to provide for the expeditious movement of through traffic into, out of, and within the study area. Arterial streets should be located to minimize their penetration into existing and proposed residential areas.

2. Transportation-related facilities, such as off-street parking and off-street truck loading, should be located in proximity to the principal land uses to which they are accessory.
3. Public off-street parking facilities designed to facilitate tripmaking by both transit and van- and carpooling should be considered for provision within one-quarter mile of a freeway interchange having a total entrance ramp average weekday traffic volume of at least 3,000 vehicles. Interchange spacing, land availability, and existing and potential transit service should also be considered in the provision of such facilities.
4. Arterial streets and highways should be provided at intervals of no more than one-half mile in each direction in high-density urban areas; at intervals of no more than one mile in each direction in medium-density urban areas; at intervals of no more than two miles in each direction in low-density urban and suburban areas; and at intervals of no less than two miles in each direction in rural areas.
5. Arterial street and highway facilities should be located and designed to provide adequate capacity—that is, a volume-to-design capacity ratio equal to, or less than, 1.0 based on 24-hour average weekday traffic volumes—to support and induce development and redevelopment as recommended under the regional land use plan.²

²Arterial facilities operating at or under design capacity will generally permit the following average speeds to be achieved during peak traffic periods:

Facility Type	Average Traffic Speed	
	Urban	Rural
<i>Freeway</i>		
<i>Posted Speed 50 mph</i>	40-50	--
<i>Posted Speed 55 mph</i>	45-55	45-55
<i>Posted Speed 65 mph</i>	--	55-65
<i>Standard Arterial</i>		
<i>Posted Speed 30 mph</i>	18-27	--
<i>Posted Speed 40 mph</i>	27-37	30-40
<i>Posted Speed 55 mph</i>	--	40-55

Urban standard arterial streets operating over design capacity will provide substantial delays at signalized intersections. During peak traffic periods, vehicles may have to wait through more than one traffic signal red phase. The average delay to each vehicle at controlled intersections will be at least 35 seconds, and may approach 120 seconds. The average travel speed along such urban arterials will generally be less than 15 to 20 miles per hour (mph). In addition, the potential for accidents is increased on arterials carrying traffic volumes over design capacity. Standard arterials operating at design capacity will have average speeds of about 20 to 30 mph, and average delays at signalized intersections of about 25 seconds. Urban standard arterials operating below design capacity will have average speeds of 25 to 40 mph, and average delays at signalized intersections of 5 to 15 seconds.

Rural arterials (with a 55-mph speed limit) operating over design capacity will have average speeds of 30 to 45 mph, with significant restrictions on lane changing on multi-lane facilities, and on passing on two-lane facilities. Rural arterials operating at design capacity will have average speeds of 45 to 50 mph, with some restrictions on lane changing or passing. Rural arterials operating under design capacity will have average speeds of 50 to 55 mph, with minimal restrictions on lane changing or passing.

Freeways operating over design capacity will have average speeds of 30 to 45 mph, with significant restrictions on lane changing. Stop-and-go traffic at speeds below 30 mph may occur behind over-design-capacity freeway sections. Freeways operating at design capacity will have speeds of 40 to 50 mph, with some restrictions on lane changing. Freeways operating under design capacity (with 55-mph speed limit) will have average speeds of 55 mph and no restrictions on lane changing.

Arterial facilities operating at design capacity will typically permit the following 24-hour average weekday traffic volumes to be carried:

Facility Type	Average Weekday Traffic Volume	
	Urban	Rural
Freeway		
Four Lanes	60,000	52,500 to 60,000
Six Lanes	90,000	85,000 to 90,000
Standard Arterial		
Two-Lane (undivided)	13,000	7,000
Four-Lane		
Undivided	17,000	--
Divided	25,000	22,000
Six-Lane (divided)	35,000	--

6. Arterial street and highway facilities should be designed and operated to provide an adequate level of service during peak travel periods.

- a. At least a level of service "C" for urban freeways (approximately 1,400 vehicles per lane per hour).
- b. At least a level of service "C" for rural freeways (approximately 1,210 vehicles per lane per hour).
- c. At least a level of service "C" for arterial intersections or a maximum of about 1,300 vehicles per hour for the sum of the critical lane volumes³ for the intersection.

7. Arterial street and highway intersections should be designed with the following considerations:

- a. Traffic signals should be considered for installation when they meet the warrants specified in the Manual on Uniform Traffic Control Devices. Such warrants, based on traffic volumes, specify that traffic signals should be considered for installation when, for at least eight hours, the sum of the hourly intersection approach volumes on the major streets is greater than 500 vehicles per hour for single-lane approaches (600 vehicles per hour for multi-lane approaches), and the hourly intersection approach volume on one minor street is greater than 150 vehicles per hour for single-lane approaches (200 vehicles per hour for multi-lane approaches); or the sum of the hourly intersection approach volumes on the major streets is greater than 750 vehicles per hour for single-lane approaches (900 vehicles per hour for multi-lane approaches), and the hourly intersection approach volume on one minor street is greater than 75 vehicles per hour for single-lane approaches (100 vehicles per hour for multi-lane approaches).
- b. Provision of an exclusive left-turn lane should be considered when left-turning volumes exceed 100 vehicles per hour; a pair of exclusive left-turn lanes should be considered when left-turning volumes exceed 300 vehicles per hour; and an exclusive right-turn lane should be considered when right-turning volumes exceed 300 vehicles per hour.

8. Freeways and freeway ramps should be designed with a 70-miles per hour (mph) design speed, and according to Wisconsin Department of Transportation standards as documented in the Wisconsin Department of Transportation's Facility Development Manual and the 1984 American Association of State Highway and Transportation Officials' A Policy on Geometric Design of Highways and Streets, including the following highway design elements:

³The sum of the critical lane volumes for planning analysis purposes is the total of the northbound through lane movement plus the southbound left-turn movement, or the southbound through lane movement plus the northbound left-turn movement, whichever is greater; and the eastbound through lane movement plus the westbound left-turn movement, or the westbound through lane movement plus the eastbound left-turn movement, whichever is greater.

Sight distance	Stopping, decision
Horizontal alignment	Maximum curvature, maximum superelevation transition curvature, lane drop taper, lane add taper
Vertical alignment	Minimum grade, maximum grade, maximum speed, vertical curve length, reduction for trucks on long grades, vertical clearance
Cross-section	Lane width, shoulder width, normal cross slope, maximum cross slope break, backslope
Ramp terminals	Taper angle, curvature, physical separation at nose, physical separation at merging end
Lane balance and lane continuity	Basic lanes, auxiliary lanes
Ramp sequence and spacing	Entrance-entrance; exit-exit; exit-entrance; entrance-exit
Interchange design	Ramp location

9. The braiding of freeway entrance/exit ramps with two-way frontage roads should be eliminated.

10. The minimum spacing provided between ramp termini and adjacent driveways and streets should be 500 feet.

PRINCIPLE

Accidents take a heavy toll on life and cause property damage and human suffering; contribute substantially to overall transportation costs; and increase public costs for police and welfare services. Therefore, every attempt should be made to reduce both the incidence and severity of accidents through proper design and operation of the arterial street and highway system.

STANDARD

The total number of accidents, and the severity of traffic accidents, on arterial highways should be minimized by the identification and improvement of those facilities which exhibit above average accident rates.⁴

PRINCIPLE

The total resources of the Region are limited, and any undue investment in transportation facilities and services must occur at the expense of other public and private investment; therefore, total transportation costs should be minimized for the desired level of service. Full use should be made of existing facilities through improved management and operation prior to any capital-intensive or disruptive construction of new facilities.

STANDARDS

1. Total arterial highway system operating and capital investment costs should be minimized.
2. The direct benefits derived from arterial highway system improvements should exceed the direct costs of such improvements.
3. The amount of energy utilized in constructing and operating the transportation system of which the arterial highway system is an integral part should be minimized, particularly with respect to petroleum-based fuels.

⁴To determine those arterial facilities exhibiting above average accident rates, the following rates based on statewide averages should be used: rural freeways, 95 accidents per 100 million vehicle miles traveled; urban freeways, 190 accidents per 100 million vehicle miles traveled; rural arterials, 230 accidents per 100 million vehicle miles traveled; and urban arterials, 710 accidents per 100 million vehicle miles traveled.

PRINCIPLE

The social and economic costs attendant to the disruption of homes, businesses, industries, and communication and utility facilities, as well as the adverse effects on the natural resource base, can be minimized through the proper location and design of transportation facilities and terminals. To reduce those social and economic costs, the proper use of land for, and adjacent to, transportation facilities should be maximized and the disruption of future development should be minimized through advance reservation of rights-of-way for transportation facilities.

STANDARDS

1. The penetration of neighborhood areas and primary environmental corridors by arterial streets and highways should be minimized.
2. The dislocation of households, businesses, and public and institutional buildings as caused by the reconstruction of existing, or the construction of new, arterial facilities should be minimized.

OBJECTIVE NO. 5—FIRE PROTECTION

The provision of facilities necessary to maintain a high quality of fire protection throughout the study area.

PRINCIPLE

Adequate fire protection is essential to the protection of the public health and safety and of real property values, and is a public service which enhances the economic development potential of an area.

STANDARD

Fire stations and equipment should be distributed based upon the standards shown in Table 30.

Table 30

FIRE COMPANY DISTRIBUTION STANDARDS

District and Required Fire Flow	Optimum Service Radius in Miles	
	From Engine, Hose, or Engine-Ladder Company	From Ladder Company
High-Value District (commercial, industrial, and institutional)		
Where required flow is 9,000 gallons per minute (gpm) or more	¾	1
Where required flow is 5,000 to 8,999 gpm	1	1¼
Where required flow is less than 4,500 gpm	1½	2
Residential District		
Where required flow is more than 2,000 gpm or where there are buildings in the district three or more stories in height, including tenement houses, apartments, or hotels	1½	2
Same as above, but where the life hazard is above normal	1	1¼
For buildings having an average separation of less than 100 feet (and a flow requirement of 2,000 gpm or less)	2	3
For buildings having an average separation of 100 feet or more (and a flow requirement of 2,000 gpm or less)	4	4

NOTE: The above distances should be considered as direct street travel distances. Also, the above distances should be reduced if a severe hazard to life exists; if streets are narrow or in poor condition; if traffic, one-way streets, topography, or other unusual locational conditions hinder response; or if other circumstances peculiar to the district or municipality indicate that such a reduction is needed.

URBAN DESIGN CRITERIA AND PERFORMANCE STANDARDS

In order to guide the development of physical solutions to urban design problems within the IH 94 study area, certain urban design criteria and performance standards must be developed. In this respect, urban design criteria and performance standards may be defined as a body of information which can be applied to the development of a solution or solutions to a specific urban design problem or set of problems. Specific urban design decisions should be based, in part, upon sound urban design criteria and performance standards, as well as the underlying development objectives, principles, and standards outlined herein. Urban design criteria and performance standards are of a high level of specificity in order to assist in the development of detailed urban design solutions to the highly specific urban design problems outlined. Urban design criteria and performance standards have been developed with respect to both commercial and industrial development, as well as for vehicular access control along abutting arterial streets and highways.

COMMERCIAL DEVELOPMENT URBAN DESIGN CRITERIA AND PERFORMANCE STANDARDS

Vehicular Circulation

The vehicular circulation system in the study area should be developed for easy access to commercial parking facilities. Vehicular and pedestrian conflicts should be avoided where possible, and, where conflicts cannot be totally avoided, conflicts should be minimized.

Limitation of Arterial

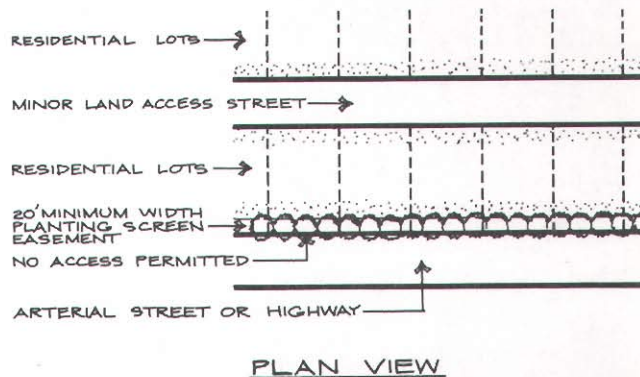
Highway Vehicular Access

Arterial Street and Highway Access and Street Intersections: No new direct public or private access should be permitted to an arterial street or highway within 115 feet of the intersection of the right-of-way lines of another arterial street; and, where land parcel size permits, no new direct public or private access should be permitted to an arterial street or highway within 250 feet of the intersection of the right-of-way lines of another arterial street.

Arterial Street and Highway Access Barriers: Access barriers such as curbing, fencing, landscaping, or other topographic barriers should be

Figure 2

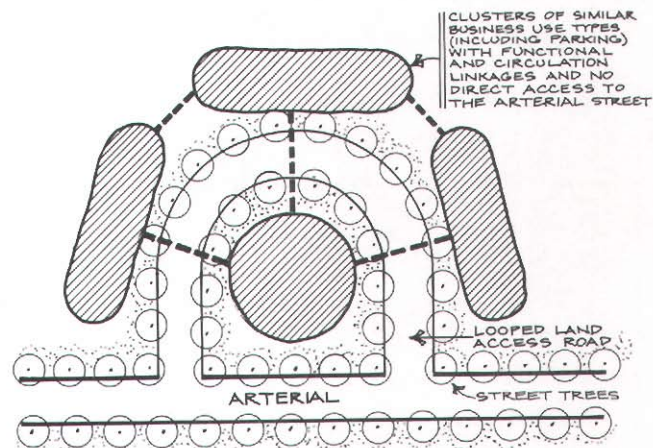
REVERSED FRONTAGE LOTS FOR LIMITATION OF VEHICULAR ACCESS TO ARTERIAL STREETS



Source: SEWRPC.

Figure 3

DESIRABLE LOOPING OF LAND ACCESS STREETS IN COMMERCIAL AREAS



Source: SEWRPC.

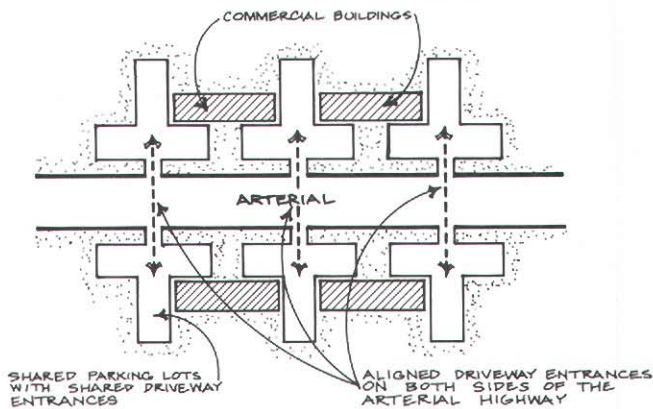
erected to prevent undesirable vehicular ingress or egress to arterial streets or highways and properly and safely channelize traffic movements. When landscaping is used as an access barrier, the width of such landscaped areas should be a minimum of 20 feet, as shown in Figure 2.

Freeway Ramp Access: No direct vehicular access should be allowed from freeway ramps to abutting lands.

Reversed Frontage Lots to Limit Arterial Street and Highway Access: Whenever proposed commercial land uses abut an arterial street or

Figure 4

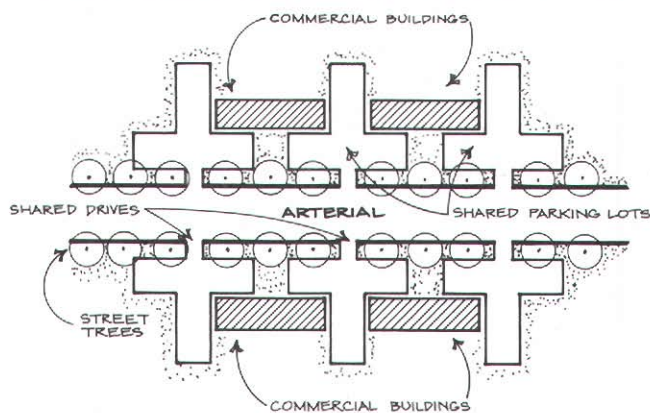
**DESIRABLE DRIVEWAY ALIGNMENT
ALONG ARTERIAL STREETS AND HIGHWAYS
IN COMMERCIAL AREAS**



Source: SEWRPC.

Figure 5

**DESIRABLE USE OF SHARED DRIVEWAYS
AND PARKING LOTS IN COMMERCIAL AREAS**



Source: SEWRPC.

highway, the capacity and safety of the arterial facility should be protected by limiting access from the abutting commercial land uses, and by separating through and local traffic, where possible, as shown in Figure 2. In addition, a planting screen should be provided in a non-access reservation along the rear property line, as also shown in Figure 2.

Land Access Streets: The number of intersections of streets along arterial streets and highways should be held at a minimum, with the distance between such intersections generally not less than 1,200 feet. Streets should intersect each other at as nearly right angles as topogra-

phy and other limiting factors of good design permit. Looped land access streets should be used when feasible in order to assist in reducing the potential number of drive intersections along an arterial, as illustrated in Figure 3.

Land Access Driveways: Land access driveways should intersect each other at as nearly right angles as topography and other limiting factors of good design permit. Driveway entrances along both sides of an arterial should be aligned as illustrated in Figure 4 to assist in reducing the number of driveways needed and limit some of the confusion caused by unaligned driveways. Also, the use of shared driveways and parking lots in commercial areas should be promoted as shown in Figure 5. In such cases, the driveway centerline may be the property line between two parcels of land or may be a mutually agreed upon land access easement.

Driveway Design for Entering Vehicles: Driveway design in commercial areas should allow an entering vehicle a turning speed of 15 miles per hour (mph) in order to assist in reducing interference with through arterial street traffic. Driveway design and placement should be in harmony with internal site circulation and off-street parking design, such that the driveway entrance to the site can absorb the maximum expected rate of inbound traffic during a normal weekday peak traffic period.

Sight Distance and Driveway Placement: Direct access driveway placement on abutting arterial streets and highways should be such that an exiting vehicle has a minimum unobstructed sight distance (see Table 31) based upon the operating design speed of the abutting arterial street or highway.

Driveway Spacing: Driveway spacing should be determined as a function of arterial street and highway operating speeds. The minimum spacing between access driveways along an arterial street or highway should be determined according to Table 32. These spacings are based upon average vehicle acceleration and deceleration rates and are considered necessary to maintain safe traffic operation.

Maximum Number of Driveways per Parcel: Generally along arterial streets and highways, where abutting street frontage is less than 400 feet, a maximum of one driveway opening should be permitted to a particular site from

Table 31

HIGHWAY DESIGN SPEED AND MINIMUM REQUIRED SIGHT DISTANCE FOR DIRECT ACCESS DRIVEWAY PLACEMENT

Highway Design Speed (mph)	Minimum Sight Distance (feet)	Desirable Sight Distance (feet)
30	200	200
35	225	250
40	275	325
45	325	400
50	400	475

Source: American Association of State and Highway Transportation Officials, 1984; and the Wisconsin Department of Transportation's Facility Development Manual.

Table 32

HIGHWAY OPERATING SPEED AND MINIMUM SPACING BETWEEN DIRECT ACCESS DRIVEWAYS

Highway Speed Limit (mph)	Minimum Spacing (feet)
25	105
30	125
35	150
40	185
45	230
50	275

Source: Wisconsin Department of Transportation.

each of any one or two abutting arterial streets and highways. One additional driveway entrance along a single continuous parcel of land with frontage in excess of 400 feet may be permitted. When a shared driveway is used, it should be considered one single, direct-access driveway.

Parking Lot Access from Arterial Streets and Highways

Parking Visibility from Arterial Streets and Highways: Commercial parking lots should be clearly visible from an arterial street or highway, have clearly marked entries and exits, and be visually distinguished from public rights-of-way.

Off-Street Parking: All parking areas serving highway commercial development should be off-street. Parking perpendicular to arterial street or highway rights-of-way with direct access to the right-of-way without a service drive should be prohibited.

Pedestrian Circulation

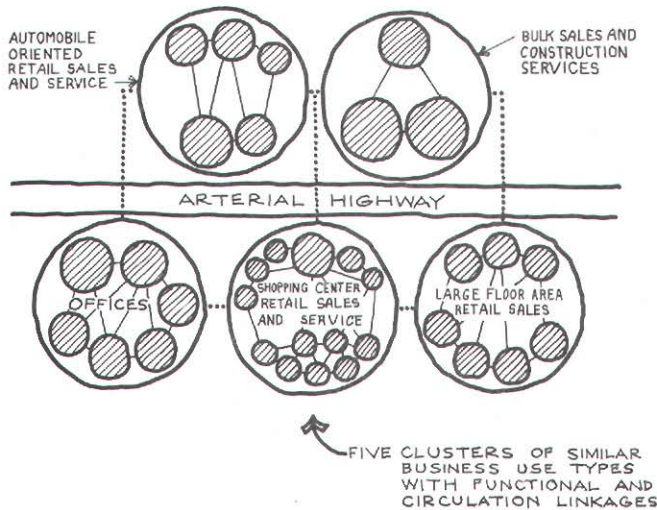
The pedestrian movement system in commercial areas should form linkages between the various commercial activities and commercial sites. The system should not conflict with vehicular circulation. If conflicts cannot be totally avoided, the conflicts should be minimized. Spatial sequences, visual aspects, and pavement texture should also be taken into consideration in the placement of sidewalks so that the pedestrian is offered a variety of visually pleasing experiences which add to the pedestrian's overall enjoyment of the commercial area. A recommended minimum sidewalk width is five feet. Provisions for the handicapped in sidewalk construction should also be made. In highway commercial areas a pedestrian path system should be provided on both sides of the arterial street or highway where there are pedestrian-related activities on both sides of the street or highway, and a pedestrian crossing of the arterial street or highway should be provided at least every 400 feet and preferably every 200 feet in areas of moderate to heavy pedestrian flow.

Land Use Spatial Considerations

Commercial Business Clustering: Businesses with similar land use and urban design characteristics should form commercial clusters and locate within proximity of one another in order to better define identifiable commercial areas for the user, provide functional linkages of similar business types, reduce travel distances, and provide circulation linkages for both vehicular and pedestrian traffic, as illustrated in Figure 6. Businesses may be so located forming the following five general types of clusters:

Figure 6

CONCEPTUAL SKETCH OF
CLUSTERED COMMERCIAL AREAS ALONG
AN ARTERIAL STREET OR HIGHWAY



Source: SEWRPC.

1. Shopping center retail sales and service characterized by onsite parking for customer automobiles and a shopping environment geared to pedestrians. Uses in this category include general merchandise stores, food stores, apparel and accessory stores, drug stores, department stores, gift shops, personal services, banks/savings and loan institutions, and restaurants (without drive-in or drive-through facilities).
2. Offices including professional offices, medical offices, dental offices, clinics and reproduction services, and associated office support facilities.
3. Large floor area retail sales characterized by onsite parking for customer automobiles, customer off-street loading facilities, and a limited shopping environment for pedestrians. Uses in this category include furniture sales, appliances sales, factory outlet stores, and garden centers.
4. Automobile-oriented retail sales and services characterized by sales and service to commercial customers in the automobile. These types of commercial uses are not pedestrian-oriented onsite. Uses in this category include gasoline stations, automo-

bile sales/service, car-washes, drive-in theaters, drive-in banking, drive-in/drive-through restaurants, and motels.

5. Bulk sales and construction services characterized by onsite parking for customer automobiles, onsite outdoor areas for merchandise storage and sales, customer off-street loading facilities, and open outdoor pedestrian areas for bulk sales of merchandise. Uses in this category include building supplies, equipment sales, septic system service, and gas sales/storage.

Minimum Commercial Lot Sizes: Minimum lot sizes in designated commercial areas along arterial streets and highways should be one acre with a minimum frontage of 150 feet. Commercial lot sizes should meet at least the minimum lot size requirements specified by the appropriate local zoning ordinance.

Land Use Buffers: Commercial land uses should be buffered from adjacent noncompatible land uses such as residential, industrial, and institutional land uses by either natural or man-made means such as distance, landscaping, fencing, or walls.

Internal Site Circulation

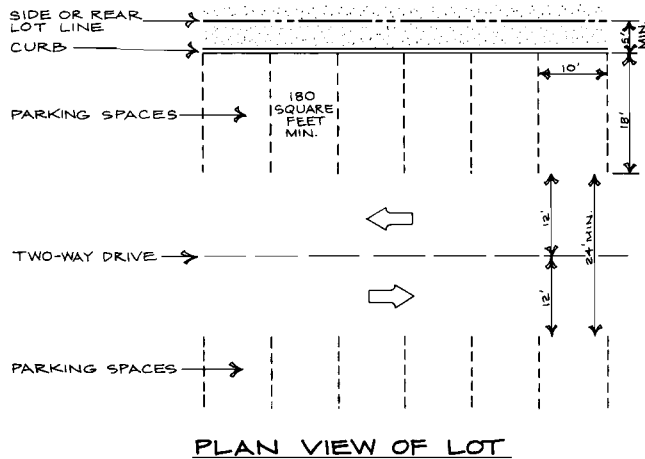
Vehicular Circulation Between Adjacent Properties: Provision for vehicular circulation between adjacent commercial uses should be provided through coordinated land access drives and/or jointly used parking lots.

Onsite Vehicular Circulation: The vehicular circulation system within and around separate parcels of land within a commercial area should be developed so as to provide easy access to parking facilities from the larger community without destroying the safety or capacity of abutting arterial streets and highways. Vehicular pedestrian conflicts should be avoided where possible. Where conflicts cannot be totally avoided, conflicts should be minimized. Also, delivery and service circulation patterns on the site should not conflict with customer circulation patterns.

Onsite Queued Vehicle Storage: There should be sufficient onsite space to accommodate at least three queued vehicles waiting to park or exit the parking lot without utilizing any portion of the arterial street or highway right-of-way or in any other way interfering with arterial street or

Figure 7

MINIMUM DIMENSIONS FOR COMMERCIAL PARKING LOTS



NOTE : PARKING SPACES FOR THE HANDICAPPED SHOULD HAVE A MINIMUM WIDTH OF 12 FEET AND MINIMUM LENGTH OF 18 FEET. PARKING SPACES FOR COMPACT CARS SHOULD HAVE A MINIMUM WIDTH OF 9 FEET AND A MINIMUM LENGTH OF 16 FEET. BERTHING LANES FOR BUSES AND RECREATIONAL VEHICLES SHOULD HAVE A MINIMUM WIDTH OF 12 FEET AND A MINIMUM LENGTH OF 40 FEET, ALONG WITH AN ADDITIONAL 50 FEET FOR BERTHING.

Source: SEWRPC.

highway traffic and safety. For drive-up services, queuing area to accommodate a minimum of 10 vehicles onsite should be provided.

Onsite Parking Areas

Parking Lot Surfacing: All off-street parking areas should be graded and hard surfaced so as to be dust free and properly drained. Any 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. Minimum dimensions for parking lots are shown in Figure 7.

Parking Space Size: The size of each parking space should be not less than 180 square feet exclusive of the space required for ingress and egress to the parking space. Additional space shall be provided for those stalls assigned for the use of the physically handicapped.

Number of Parking Spaces: Parking spaces should be provided in a sufficient number to meet the requirements of the appropriate local zoning ordinance. Parking spaces should also be provided to serve the handicapped.

Parking Lot Drive Width: 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.

Parking Curbs and Barriers Near Side and Rear Lot Lines: Curbs or barriers should be installed a minimum of five feet from side and rear property lines so as to prevent parked vehicles from extending over any lot lines and to provide a minimum space for visual screening when needed.

Parking Lot Lighting: Parking lot lighting in commercial areas should serve four purposes. First, the lighting should provide for the safe movement of pedestrian and vehicular traffic. Second, it should aid in the provision of an environment which promotes security and crime prevention. Third, the lighting should aid in creating an aesthetically pleasing environment at night as well as during the daylight hours. Fourth, the lighting should assist in promoting the use of the commercial facilities both day and night.

Recommended illumination for commercial parking areas is about 1.0 footcandle.⁵ All other outside site lighting should be arranged and shielded to prevent glare or reflection, nuisance, inconvenience, or hazardous interference of any kind on adjoining streets or residential properties.

Parking Lot Location: Parking lots should be so located on the site to minimize customer walking distances to the facility the parking lot is serving.

Onsite Service and Loading Areas

Service and loading areas should be located for easy service vehicle access. Service and loading areas should not conflict with pedestrian or general vehicular traffic in the area. Also, service and loading areas which are generally not aesthetically pleasing should be so oriented or designed to obscure visual contact from the customers of the area.

⁵Recommended standards from the U. S. Department of Transportation, *Federal Highway Administration's Roadway Lighting Handbook*, Washington, D. C., U. S. Government Printing Office, December 1978, p. 118. The recommended illumination value shown is meaningful only when designed in conjunction with other elements. The most critical elements are luminaire mounting height, spacing, transverse location of luminaires, luminaire selection, traffic conflict areas, border areas, transition lighting, alleys, and roadway lighting layouts.

Landscaping and Site Development

Urban Landscape Plant Selection: Landscape plantings are an important part of an attractive commercial area. Landscape plantings have functional as well as aesthetic characteristics which can improve a commercial area to a great extent. Plantings of trees and shrubs can provide shade and shelter, act as limited noise buffers and visual screens, assist in the channeling of pedestrian and vehicular traffic, act as windbreaks, and decrease insolation (incoming solar radiation) before it reaches the ground, thus preventing re-radiation (long-wave radiation) from asphalt and concrete surfaces.

Shade Tree Location: At least one shade tree of at least six feet in height should be planted for each 50 feet of frontage along an arterial street or highway. Columnar varieties of shade trees may require shorter distances between plantings.

Parking Lot Landscaping: All 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 total surfaced parking area. The minimum size of each landscape area should not be less than 180 square feet. Location of landscape areas, plant materials, and protection afforded the plantings, including curbing and provision for maintenance, should be considered. Those parking areas for five or more vehicles, if adjoining a residential use, should be screened from such residential uses by a solid wall, fence, dense evergreen plantings, or other effective means, built and maintained at a minimum height of six feet. Off-street parking should not be closer than 10 feet to the base building setback lines. Landscaping elements should be placed where they will not interfere with the act of parking, parking lot maintenance, vehicular egress and ingress, or snow removal.

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

Site Furniture and Amenities: Site furniture and amenities include a myriad of man-made objects which have the functions of serving pedestrian needs and adding visual variety in a commercial area. Site furniture and amenity items include lighting luminaires and posts, plant containers, street seating, fences and gates, handrails, drinking fountains, water fountains, sculpture, clocks, play equipment, bicycle racks, garbage receptacles, fire hydrants, telephones, bollards, kiosks, newspaper boxes, sunshading devices, parking meters, and signage. The design and placement of such items should contribute to the overall design theme of the commercial area, serving an aesthetic function as well as a utilitarian function, while adding a sense of design continuity and human scale.

Above-Ground Utility Cables

The location or relocation of above-ground utilities underground should be considered, since these wires detract from the overall appearance of the commercial area and typically add to visual clutter.

Utility Easements

Utility easements of widths adequate for the intended purpose, but not less than 10 feet on each side of rear lot lines, on side lot lines, or across lots may be necessary or advisable for electric power and communication wires and conduits; storm and sanitary sewers; and gas, water, and other utility lines. Where a land division is traversed by a watercourse, drainage way, or street, an easement of a proper width and alignment should be provided for drainage purposes.

Stormwater Drainage and Erosion/Sedimentation Control

Stormwater drainage facilities should be adequate to serve the development, and may include curbs and gutters, catch basins and inlets, storm sewers, road ditches, culverts, open channels, water retention structures, and settling basins. The facilities should be of adequate size and grade to hydraulically accommodate design flows through and from the development, and should be so designed as to prevent and control soil erosion and sedimentation and to present no hazards to life or property.

Earth-moving activities such as grading, topsoil removal, mineral extraction, road cutting, waterway construction or enlargement, excavation,

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, watercourse, water regimen, and topography. Construction activities should be planned so that the soil is disturbed a minimal amount of time. Cut and filled lands outside of street rights-of-way should be graded to a maximum slope of 25 percent or to the angle of repose of the soil, whichever is less.

The developer should plant those grasses, trees, and vines necessary to prevent soil erosion and sedimentation. In addition, the developer may have to undertake measures such as clearing, dredging, or snagging or install certain protection and rehabilitation measures such as fencing, slopes, seeding, trees, shrubs, rip-rap, wells, revetments, berms, jetties, clearing, dredging, snagging, drop structures, brush mats, willow poles, and grade stabilization structures to prevent soil erosion and sedimentation.

General Commercial Area Maintenance

A complete and thorough public maintenance program for public lands, as well as individual private maintenance programs in the commercial areas, should be established in order to ensure attractiveness. The continued positive appearance of buildings is dependent upon proper maintenance attitudes and procedures. However, during the urban design process, certain maintenance requirements should be considered, including the provision of easy access for window and building facade cleaning, painting, and repairing, and the selection of building materials with an insight into their durability and maintenance requirements. Maintenance programs should be established which include the watering, maintenance, and pruning of any landscape planting areas; the cleaning up of litter and emptying of trash containers in a timely fashion; sweeping, cleaning, and repairing of paved surfaces; and the care and maintenance of site furniture, the replacement of broken and vandalized parts, and the replacement of burned-out light bulbs.

Commercial Architectural Design

Commercial Streetscape Facades: The structural shapes of buildings and their proportions, the placement of openings such as door or windows, the placement of signs, and various other building details all contribute to the overall

commercial streetscape appearance. Although the building facades of two adjacent buildings may be different, their overall appearance can be made compatible through the proper use of these visual elements. Individual building facade treatment plans should be developed based, in part, upon the design character of the surrounding commercial area and the various urban design criteria developed herein, thus assuring a degree of compatibility of architectural design with neighboring structures.

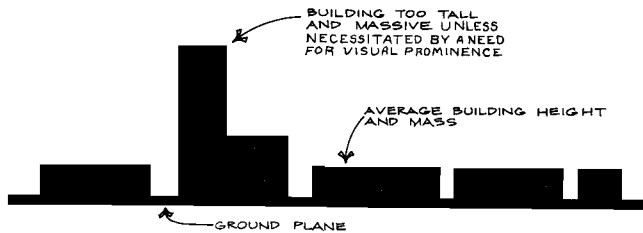
Front Yards, Rear Yards, and Side Yards: Front, rear, and side yards should be kept clean, and proper garbage receptacles used. Other unsightly features should be covered from view in a creative fashion. Entrances that are used by the general public should provide a walkway which exhibits safe and attractive features, including landscape plantings when practicable. Where a building site and/or yard is exposed to public view, consideration should be given to the impact of its urban features on the surrounding area. Setbacks should be determined by the appropriate local zoning ordinance.

Urban Scale and Mass: The relative proportion or scale of a building to its neighboring buildings, of a building to the pedestrian or observer, or of a building to the surrounding area in general should be considered when new commercial buildings are built or when existing commercial buildings are remodeled or altered. The visual elements which contribute to this overall scale and mass in commercial areas include the visual rhythm and proportion of the elements of the building facades, the architectural detailing, the visual directional emphasis of the streetscape (which can be either horizontal or vertical line direction), the symmetrical or asymmetrical character of the building facades, the mass of individual buildings, the presence or absence of landscape planting materials, the size and configuration of site open spaces, the use of building materials, the use of color, building height and width, and the presence or absence of street furniture. These elements of urban scale and mass should be considered whenever possible to create an attractive environment. Figure 8 illustrates an example of the relationship of urban scale to the commercial streetscape.

Streetscape Rooflines and Roof Shapes: The upper edges of building roofs or rooflines visually define the upper edge or height of the building and/or streetscape. The visual continu-

Figure 8

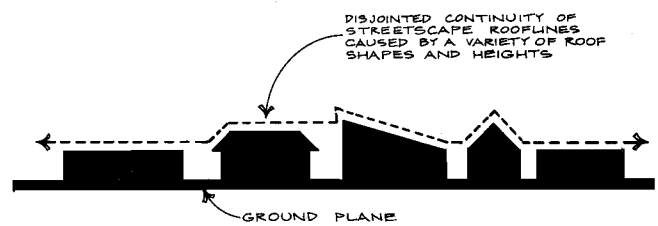
**URBAN SCALE AND MASS
OF COMMERCIAL BUILDINGS**



Source: SEWRPC.

Figure 9

**COMMERCIAL STREETSCAPE
ROOFLINES AND SHAPES**



Source: SEWRPC.

ity of these roofline urban design elements should be maintained if warranted, and building development or redevelopment with opposing rooflines should be discouraged. Figure 9 illustrates the relationship of rooflines and roof shapes to an overall commercial streetscape.

Materials: Material selection for both architectural and landscape design in commercial areas should be based upon several areas of concern, including material unity, the atmosphere desired, the material composition of surrounding buildings and landscape features, the material compatibility with other materials, and climatic considerations.

Colors: The selection of colors for privately owned commercial buildings is generally an individual decision. However, the use of colors does have a significant effect upon the overall appearance of a commercial area. Colors should be selected based upon the colors of both the surrounding man-made environment and the natural environment. Colors which clash with the overall visual character of the commercial area should be avoided and discouraged.

Architectural Details: Architectural details and building ornamentation (if present) often represent historic elements of architecture and are important components of the overall character of a commercial area. The distinctiveness of older commercial buildings is directly associated with their architectural details. Unsympathetic design changes on a building can destroy the architectural character of a building and the overall commercial streetscape as well. Significant architectural details, where they exist, should not be lost in rehabilitation or "modernization" of existing buildings. Remodeling efforts

should attempt to retain any rich architectural details. However, efforts to transform an existing building into an earlier period through the use of details that were not originally used on the structure do not usually retain the original architectural integrity of the building. Consequently, if there is an introduction of modern detail or a mixture of old and new parts on the building, the overall visual character of the building should not be spoiled.

Accessory Buildings: Accessory buildings and structures in commercial areas should be compatible with principal structures in terms of building facade character, scale and mass, rooflines and roof shapes, materials, colors, and architectural details, particularly if these accessory structures are visible from public areas.

Mechanical Equipment for Commercial Buildings: Mechanical equipment should be installed to be unobtrusive and/or shielded from public view. Rooftop and grade level mechanical equipment should be effectively screened from public view.

Signage: In addition to conforming with the rules and regulations of locally adopted sign ordinances in the IH 94 study area, signs should be designed so that they are in keeping with the overall character of the commercial area of which they are a part. Lettering on signs should be functional as well as visually pleasing. Truly functional lettering is of a typeface which is properly spaced and easy to read, and which makes its message clear from the distance it is intended to be read. Generally, the fewer the words on the sign face, the more likely people will be able to read the sign with ease. Signs should be placed in visually pleasing and logical

places of the facade, such as areas of the building facade which are void of openings, projections, and architectural details. Signage height should be consistent between stores in the same streetscape facade. Signage should project a positive image which encourages the location of desirable, well-designed types of land use developments in the study area. Signs should not create a hazard or dangerous distraction to vehicular traffic or a nuisance to the adjoining properties.

INDUSTRIAL DEVELOPMENT URBAN DESIGN CRITERIA AND PERFORMANCE STANDARDS

Urban design criteria relating to industrial development are proposed with respect to street, block, and lot layouts and arrangements; automobile parking; easements; stormwater drainage and erosion sedimentation control; and general landscaping.

Industrial-Related Streets

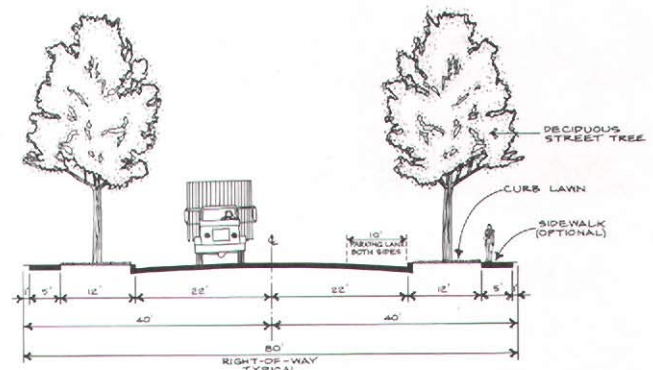
Limitation of Access to Arterial Streets and Highways: Whenever proposed industrial land uses abut an arterial street or highway, access from abutting land uses should be limited to adequately protect the capacity and safety of the arterial facility. This protection can be accomplished through the separation 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 in width, as shown in Figure 2.

Street Cross-Sections: Street cross-section design criteria for industrial development are shown graphically in Figure 10. It is recommended that the desirable cross-section for a minimum land access street right-of-way serving an industrial area be 80 feet.

Street Grades: Unless necessitated by exceptional topography, the maximum grade of any street in an industrial area should not exceed 3 percent. In addition, the grade of any street should in no case be less than five-tenths of 1 percent. And finally, 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.

Figure 10

TYPICAL CROSS-SECTION FOR AN INDUSTRIAL STREET



Source: SEWRPC.

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

Street Intersections: Street intersections and alignments should follow the same urban design criteria outlined for commercial development.

Driveways: Driveways should be located following the same general urban design criteria outlined for commercial development.

Industrial-Related Blocks

General: The widths, lengths, and shapes of blocks should be suited to the planned industrial use of the land; local zoning requirements; the need for convenient access, control, and safety of street traffic; and the limitations of and opportunities provided by topography.

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

Industrial Lots

General: The size, shape, and orientation of lots should be appropriate for the type of development and use contemplated. Lots should be designed to provide an aesthetically pleasing building site and a proper architectural setting for the industrial buildings contemplated.

Lot Size: Area and dimensions of all industrial lots should conform (at a minimum) to the requirements of the applicable local zoning ordinance for industrial uses.

Lot Depth: The depth of lots or parcels 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 design elements to serve as a buffer area between the two land uses. Lot depths which permit the assembly of individual lots to create large parcels of industrial property under one ownership should be encouraged.

Lot Width: Lots within the interior of an industrial block should have the minimum average width required by the local zoning ordinance.

Corner Lots: Corner lots should have an additional width to permit adequate building and facility setbacks from side streets.

Setbacks: No building or portion of any industrial building should be built nearer than 30 feet from the front lot line of any industrial lot. Where industrial uses directly abut residential uses, there should be open space provided on the industrial lot a minimum of 50 feet wide for landscape buffer areas, not to be used for parking or for storage or to be built upon between two uses.

Side Yards: Each building in industrial areas should have a side yard along each side lot line of not less than 25 feet. The parking or storage of trucks, products, or equipment should be prohibited in any side yard area.

Rear Yards: Each building in industrial areas should have a rear yard of not less than 25 feet. The parking or storage of trucks, products, or equipment may be allowed in any rear yard.

Automobile Parking Lot Design Criteria

Placement of Off-Street Parking Lots: Employee off-street parking should not be permitted within the front yard setback line of any industrial lot. However, visitor or customer parking may be allowed within the front setback from the street right-of-way line, provided said parking is set back a minimum of 25 feet from the street right-of-way line.

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 500 square feet of principal building area. Parking stalls should be added on each property as needed to accommodate all employees as building facilities expand. In addition, 2 percent of all parking stalls provided shall be properly designed for the physically handicapped.

Parking Lot Landscaping: Landscaping should be provided for automobile parking lots in a manner similar to that shown in Figure 11.

Easements, Stormwater Drainage, and Erosion/Sedimentation Control, and General Landscaping: Urban design criteria for these elements of an industrial area should follow those established for commercial development.

RESIDENTIAL URBAN DESIGN CRITERIA AND PERFORMANCE STANDARDS

Urban design criteria are proposed with respect to residential neighborhood recreation facilities; service radii of neighborhood facilities; street, block, and lot layouts and arrangements; residential structure orientation for solar access and energy conservation; general landscaping; utility easements; and stormwater drainage and erosion/sedimentation control.

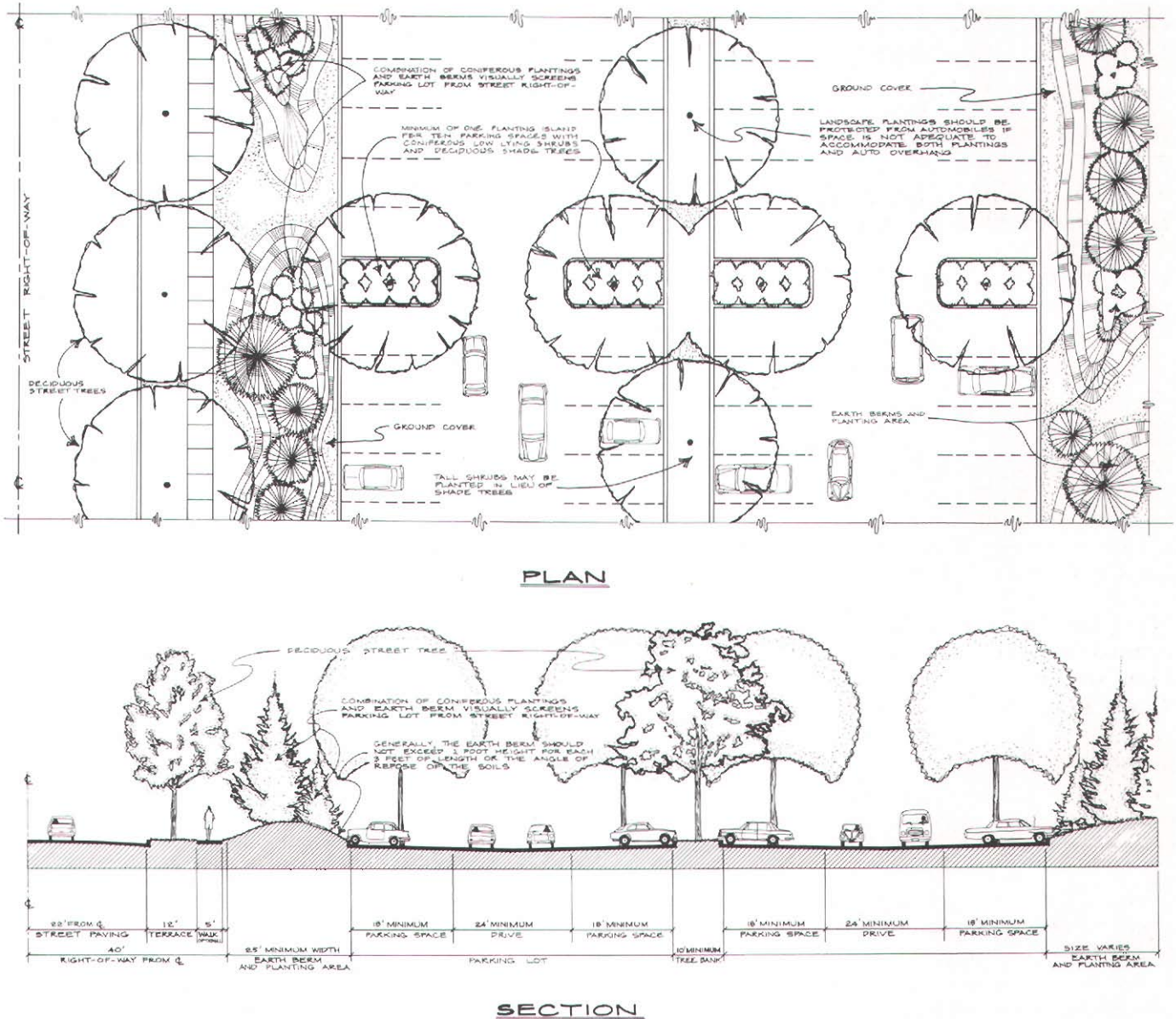
Residential Neighborhood Recreational/Educational Facilities

Recreational lands at the neighborhood level should provide a focal point for neighborhood activities and should be located and developed in conjunction with a neighborhood elementary school. The elementary school and recreational facilities should be provided on a common site available to serve the recreation demands of both the school student and the resident neighborhood population. Using a neighborhood park site standard of 1.7 acres per 1,000 residents, and an elementary school site standard of 1.6 acres per 1,000 residents, a total site area of 3.3 acres per 1,000 residents should be provided, with the joint site having a minimum area of 10 acres, however. The individual recreational facility requirements should be based upon the values listed in Table 33.

Walking Distances to Neighborhood Facilities: Residents of the neighborhood should be afforded convenient access to existing and

Figure 11

RECOMMENDED LANDSCAPING OF INDUSTRIAL-RELATED AUTOMOBILE PARKING LOTS



Source: SEWRPC.

proposed commercial facilities, educational facilities, transportation facilities, recreational facilities, and community facilities which meet the maximum walking distance and travel time criteria shown in Table 29.

Streets

Limitation of Access to Arterial Streets: Whenever proposed residential land uses abut an arterial street or highway, the character of the residential uses and the capacity and safety of the arterial facility should be protected by limiting access from the abutting land uses, and

by separating through and local traffic, where possible, by reversed frontage. In addition, a planting screen should be provided in a non-access reservation along the rear property line. This concept is illustrated in Figure 2.

Street Cross-Sections: Table 34 summarizes cross-sectional design criteria for desirable collector streets, desirable minor land access streets, cul-de-sacs, and pedestrian ways. The respective cross-sections are shown graphically in Figure 12.

Table 33

OUTDOOR RECREATION FACILITY REQUIREMENTS IN A
TYPICAL MEDIUM-DENSITY RESIDENTIAL NEIGHBORHOOD

Facility	Minimum Standard Public Facility Requirement	Number of Facilities Required	Total Acreage Required
Active Recreation			
Baseball Diamond	0.09 per 1,000	0.59 = 1	4.5
Basketball Goal	0.91 per 1,000	5.9 = 6	0.42
Ice-Skating Rink	0.15 per 1,000	0.98 = 1	0.35 minimum
Playfield	0.39 per 1,000	2.5 = 3	4.95 minimum
Playground	0.35 per 1,000	2.3 = 2	1.24 minimum
Softball Diamond	0.53 per 1,000	3.4 = 2	5.36
Tennis Court	0.50 per 1,000	3.3 = 3	0.96
Subtotal	--	--	17.78 minimum
Passive Recreation Area	Add 10 percent of active recreation area total		1.8
Other Recreation Area ^a	Add 10 percent of active recreation area total		1.8
Total	--	--	21.38 minimum

NOTE: Medium density defined as 2.3 to 6.9 dwelling units per net residential acre, with a total population of 6,500 within an area of one square mile (640 acres).

^aPicnicking facilities should be provided in a neighborhood park.

Source: SEWRPC.

Street Grades: Unless necessitated by exceptional topography, the maximum grade of any street should not exceed the following: arterial streets, 6 percent; collector streets, 8 percent; minor streets, alleys, and frontage streets, 12 percent; and pedestrian ways, 12 percent unless steps of acceptable design are provided. In addition, the grade of any street should not exceed 12 percent or be less than 0.5 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.

Street Intersections: Streets should intersect each other at as near to right angles as topography and other limiting factors of design permit. In addition, the number of streets converging at one intersection should be held to

a minimum, preferably to not more than two streets at one intersection; the number of intersections along arterial streets and highways should be held to a minimum, and the distance between such intersections should generally not be less than 1,200 feet; and 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.

Street Alignment: When a continuous street centerline deflects at any point by more than 10 degrees, a circular curve should be introduced having a radius of curvature on the centerline of not less than the following: arterial streets, 500 feet; collector streets, 300 feet; and minor streets, 100 feet. A tangent at least 100 feet in length should be provided between reverse curves on

Table 34

STREET DESIGN CRITERIA FOR RESIDENTIAL AREAS

Type of Street	Minimum Right-of-Way to be Dedicated	Minimum Dimensions
Desirable Collector Streets	80 feet	48-foot pavement (face of curb to face of curb) 10-foot tree banks (curb lawn) 5-foot sidewalks 1-foot outside sidewalks
Minor Streets	60 feet	36-foot pavement (face of curb to face of curb) 6-foot tree banks (curb lawn) 5-foot sidewalks 1-foot outside sidewalks
Cul-de-Sac (turnaround)	60-foot radius	48-foot outside face of curb radius 24-foot inside pavement radius 6-foot tree banks (curb lawn) 5-foot sidewalks (if required) 1-foot outside sidewalks
Mid-Block Pedestrian Ways	16-foot average	5-foot minimum walk

Source: SEWRPC.

arterial and collector streets. In addition, minor and collector streets should not necessarily continue across arterial streets. If the distance between the centerline intersections of any intersecting streets is less than 250 feet, then the street location should be adjusted so that the distance is increased or the alignment across the intersecting streets is continuous, thus avoiding a jog in the flow of traffic.

Street Orientation for Solar Access: In order to facilitate solar access, where topography and other natural features permit streets should generally be laid out in an east-west direction, with a maximum of 10° variation to the north-west and a maximum of 25° variation to the southwest, as shown in Figure 13. In situations where topography and other natural features do not permit streets to be laid out in an east-west direction, lot and/or building orientation should be flexible to compensate for these natural barriers to solar access. Developments along north-south streets should be encouraged to have the structures built with the long roof axis facing south, as shown in Figure 13.

Cul-de-Sac Streets: Cul-de-sacs which are designed to have one end permanently closed should generally not exceed 600 feet in length. Such cul-de-sac streets should terminate in a circular turnaround having a design as described in Table 34 and shown graphically in Figure 12.

Handicap and Bicycle Access: Wheelchair and bicycle curb ramps should be installed at street intersection crosswalks pursuant to Section 66.616 of the Wisconsin Statutes.

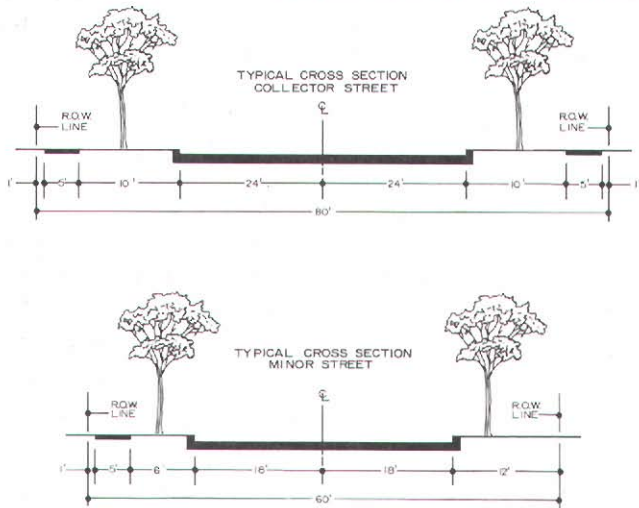
Blocks

The widths, lengths, and shapes of blocks should be suited to the planned use of the land; zoning requirements; the need for convenient access, control, and safety of street traffic; and the limitations of and opportunities provided by topography.

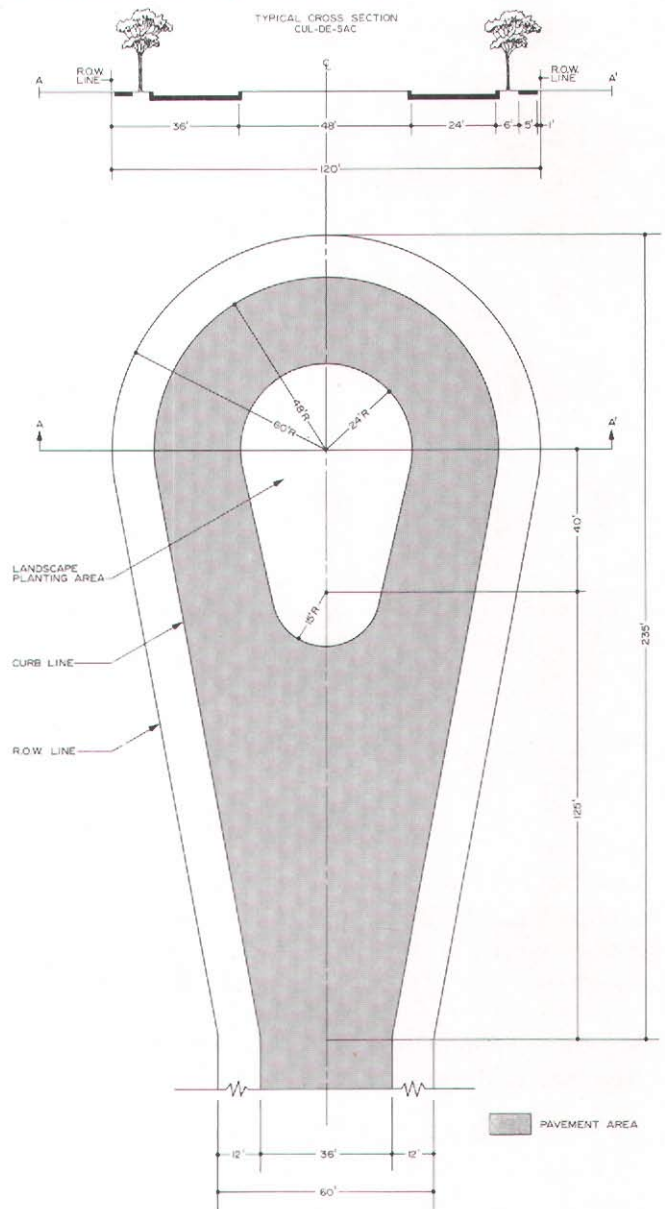
Length: Blocks in residential areas should not be less than 600 feet nor more than 1,200 feet in length unless otherwise dictated by exceptional topography or other limiting factors of good design.

Figure 12

DESIRABLE STREET CROSS-SECTIONS FOR RESIDENTIAL AREAS



Source: SEWRPC.



Pedestrian Ways: Pedestrian ways of not less than 16 feet in width may be required near the center of and entirely across any block of more than 900 feet in length to provide adequate pedestrian circulation or access to schools, parks, shopping centers, churches, or transportation facilities.

Width: Blocks should be wide enough to provide for two tiers of lots of appropriate depth except where required to separate residential development from through traffic.

Utilities: Telephone and electric power lines should, where practical, be placed on mid-block easements of not less than 20 feet in width centered on the property line and, where possible, along rear lot lines for underground construction.

Block Orientation for Solar Access: In order to facilitate solar access, and where topography and other natural features permit, generally blocks should be laid out with the long axis of the block oriented in an east-west direction, with a maximum of 10° variation to the northwest and a maximum of 25° variation to the southwest, as shown in Figure 13.

Lots

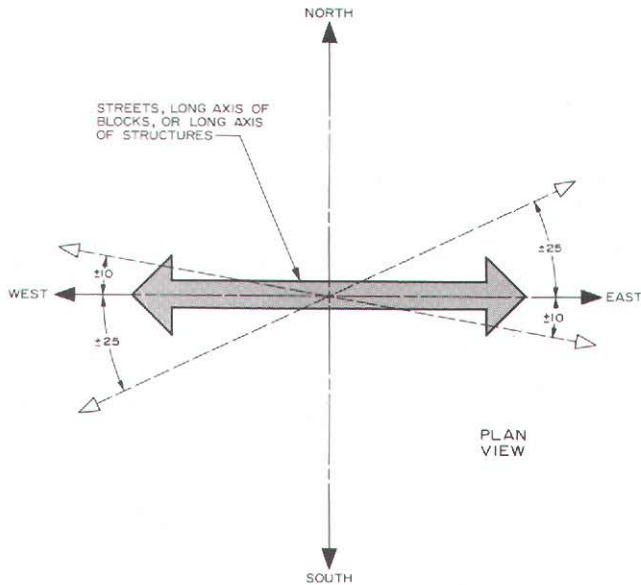
The size, shape, and orientation of lots shall be appropriate for the location of the subdivision

and for the type of development and use contemplated. The lots should be designed to provide an aesthetically pleasing building site and a proper architectural setting for the building contemplated.

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

Figure 13

ORIENTATION FOR SOLAR ACCESS



IN ORDER TO FACILITATE SOLAR ACCESS, AND WHERE TOPOGRAPHY AND OTHER NATURAL FEATURES PERMIT, GENERALLY STREETS AND THE LONG AXIS OF BLOCKS AND STRUCTURES SHOULD BE LAID OUT IN AN EAST-WEST DIRECTION, WITH A MAXIMUM OF 10° VARIATION TO THE NORTHWEST AND A MAXIMUM OF 25° VARIATION TO THE SOUTHWEST, AS SHOWN.

Source: SEWRPC.

Double Frontage: Double frontage or “through” lots should be prohibited except where necessary to provide separation of residential development from arterial traffic or to overcome specific disadvantages of topography and orientation.

Access: Every lot should front or abut a public street for a distance of at least 40 feet.

Lot Size: Area and dimensions of all lots should conform to the requirements of the applicable local zoning ordinance for subdivisions within residential areas.

Lot Depth: Excessive depth of lots in relation to width should be avoided, and a proportion of two to one should be considered a maximum depth-to-width ratio.

Lot Width: Lots within the interior of a block should have the minimum average width required by the applicable zoning district in which the lot is located.

Corner Lots: Corner lots should have an additional width of 10 feet to permit adequate building setbacks from side streets.

Lot Orientation for Solar Access: In order to facilitate solar access, and where topography and other natural features permit, residential lots should be laid out with the long axis of the lot in a north-south orientation.

Residential Structure Orientation for Solar Access and Energy Conservation

Code Conformance: Single-family and two-family dwelling structures should be constructed in such a manner as to meet the minimum energy conservation standards as defined in Section Ind. 22, “Energy Conservation” of the Uniform Dwelling Code in the Wisconsin Administrative Code.

Orientation of Structures: In order to facilitate solar access, generally the long axis of a residential structure should be in an east-west orientation, with a maximum of 10° variation to the northwest and a maximum of 25° variation to the southwest, as shown in Figure 13.

Solar Access Protection: Solar access protection for individual properties should be afforded to south-facing slopes with high insolation, to south-facing rooftops and walls, to portions of lots adjacent to south-facing walls, and to portions of lots which could be used as sites for detached solar collection devices.

Building Shadows: Buildings should not be of a height which would cast a shadow during daylight hours between 9 a.m. and 3 p.m. local time of the winter solstice on any portion of another building—or buildable portion of any parcel of land if no building exists.

General Landscaping

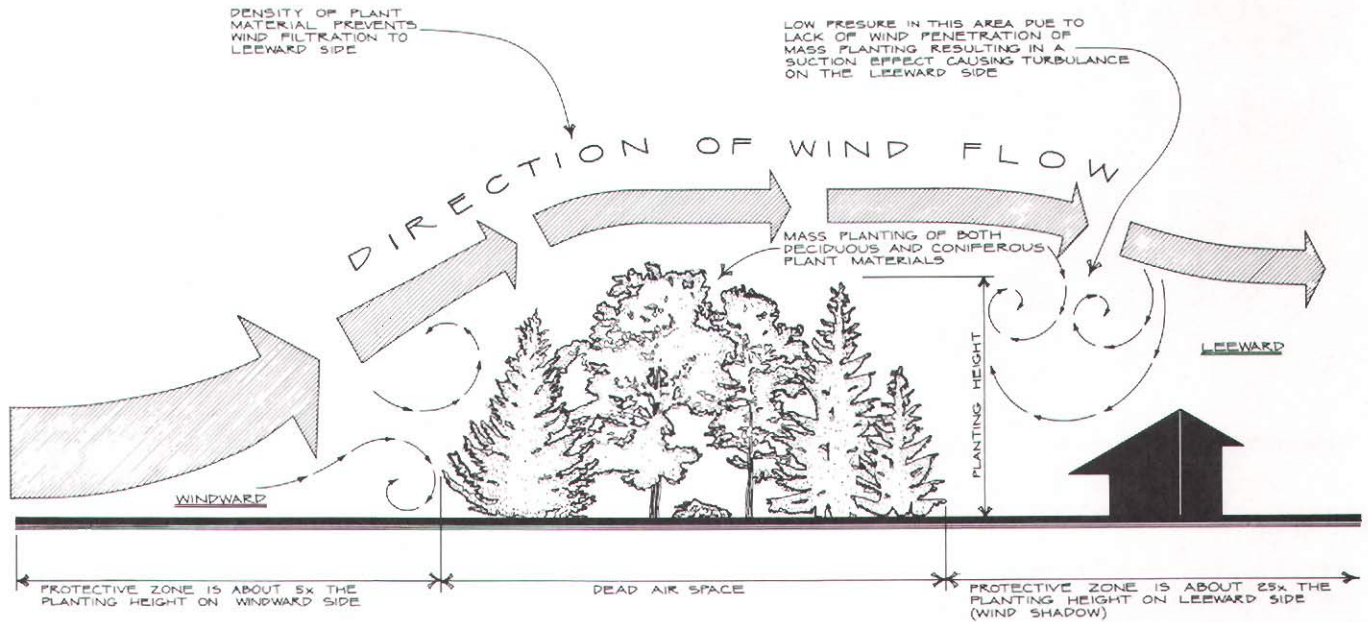
Every effort should be made to protect and retain all existing trees, shrubbery, vines, and grasses not actually lying in public roadways, drainageways, paths, and trails. Trees should be protected and preserved during construction in accordance with sound conservation practices, including the use of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

Cutting and Clearing: Tree cutting and shrubbery clearing should not exceed 30 percent of the lot or tract and should be conducted so as to prevent erosion and sedimentation and preserve and improve scenic qualities.

Paths: Paths and trails in wooded and wetland areas should not exceed 10 feet in width unless otherwise approved by the local unit of govern-

Figure 14

LANDSCAPE PLANTING FOR WIND PROTECTION



A mass planting of landscape materials, including both deciduous and coniferous varieties, can decrease the wind velocity about five times the planting height on its windward side and about 25 times its height on its leeward (wind shadow) side.

Source: SEWRPC.

ment, and should be designed and constructed so as to result in the least removal and disruption of trees and shrubs and the minimum impairment of natural beauty.

Street Trees: At least one street tree of a species approved by the local unit of government and of at least 10 feet in height should be planted for each 50 feet of frontage on proposed dedicated streets. However, the placement and selection of street tree species should not hamper or interfere with access to natural light and air for nearby lots.

Wind and Landscape Planting: With respect to wind, landscaping should be done so as to minimize winter wind and promote summer wind effects on structures. Winter wind protection is afforded by planting landscaping of an adequate height on the west of structures. However, if solar access would be blocked, low shrubs should be used to divert or enhance winds. An optimum distance between a winter windbreak and a structure is approximately twice the tree height. A coniferous windbreak that is two rows wide is nearly optimum for efficiency, and additional rows would not significantly increase its effectiveness as a windbreak. Figure 14 illustrates the concept.

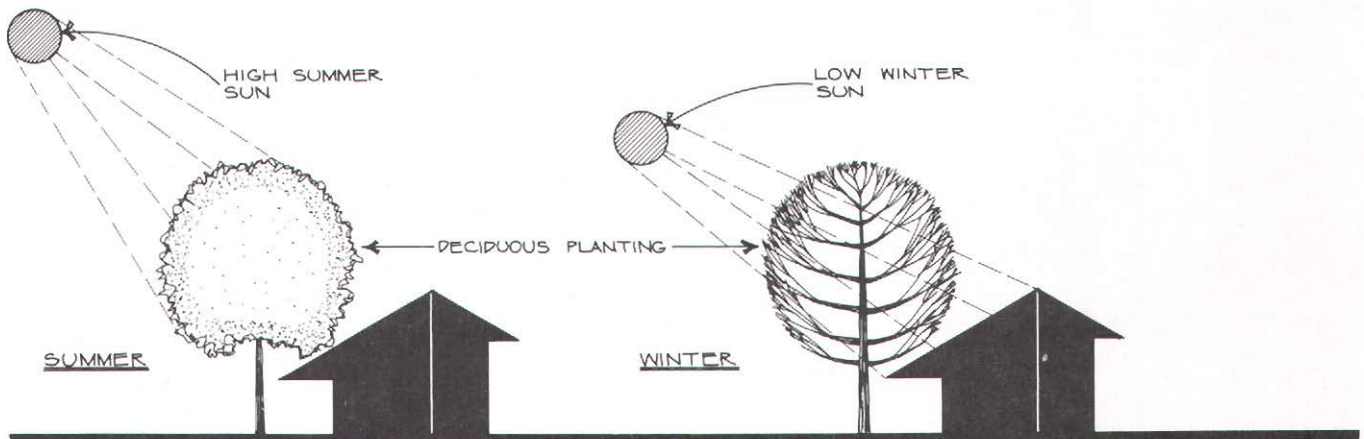
Noise and Landscape Planting: Groups of trees, shrubs, and other landscape masses, such as earth berms, can serve as noise barriers and should be utilized where noise could create problems for neighboring land uses. Such landscaped noise barriers are the most effective when the barrier is near the noise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

Under daytime conditions, dense landscape plantings can provide noise reductions of 5 to 8 dBA⁶ of traffic noise. Also, earth berms 12 feet high, when combined with dense landscape plantings, can reduce truck noise by 10 to 15 dBA. However, landscaped sound barriers can be expected to be less effective at night than during the day since, when surface air is cool

⁶The source of acoustic energy is characterized by its Sound Pressure Level (SPL), usually measured in decibels (dB); by the tonal composition of the noise; and by the variation of SPL in time. Many scales for measuring noise have been devised. Of these scales, the A weighted measure of SPL (written as dBA) is becoming more and more common as a measure of environmental noise. For this measure, the weighting of the tonal composition of the noise is similar to that of the human ear.

Figure 15

DECIDUOUS LANDSCAPE PLANTING AND NATURAL SOLAR ACCESS



Generally, landscape plantings to the south of structures would be broad, deciduous species with open twig patterns, affording the passage of light through the branch structure in the winter. Deciduous plantings should be selected since they drop their leaves in the fall and allow low winter sun to penetrate their branching structure. In the summer, the deciduous plantings can also provide sun shading of the structure, thus lowering unwanted summer heat gain.

Source: SEWRPC.

(inversions), the noise will be refracted over any noise barrier. Landscape planting noise barriers should be used whenever possible.

Solar Access and Landscape Planting: With respect to solar access, 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. Figure 15 illustrates the concept. Landscaping should not be of a height which would cast a shadow during daylight hours between 9 a.m. and 3 p.m. local time of the winter solstice on any portion of a building—or buildable portion of any parcel of land if no building exists.

Solar Access and Open Space: In residential areas, the location of open space should be such that, whenever possible, the open space acts as a buffer between short structures and the shadows cast by neighboring structures or landscape materials.

Easements

Utility easements of widths adequate for the intended purpose but not less than 10 feet on each side of all rear lot lines and on side lot lines or across lots may be required by the applicable local unit of government where necessary or advisable for electric power and communication wires and conduits; storm and sanitary sewers; and gas, water, and other utility lines. Where a subdivision is traversed by a watercourse, an adequate drainageway or easement should be provided as may be required by the applicable local unit of government. Solar access easements may be incorporated into preliminary and final plats or can be handled on an individual lot basis between property owners.

Stormwater Drainage and Erosion/Sedimentation Control

Urban design criteria and performance standards should follow those established for commercial development.

Chapter VII

RECOMMENDED LAND USE DEVELOPMENT PLAN

INTRODUCTION

Previous chapters in this report have presented in summary form pertinent data for the IH 94 South Corridor. These data related to the demographic and economic base; the natural resource base; historic urban development patterns and existing land use; transportation facilities and services; the public utility base; and selected community facilities and services. In addition, information was presented on areawide and local plans relating to proposed development projects in the corridor. The preceding chapter presented a set of development objectives, principles, and standards and related urban design criteria for the corridor.

This chapter presents a recommended land use development plan for the corridor. The plan is based upon the inventory data and the objectives, principles, and standards set forth in prior chapters; a land use development plan framework set forth in this chapter; anticipated growth and change in the Southeastern Wisconsin Region; and land use development plans for the corridor prepared for two alternative future scenarios intended to bracket a reasonable range of probable futures for the Region and the corridor.

LAND USE DEVELOPMENT PLAN FRAMEWORK

A land use development plan framework for the IH 94 South Corridor was assembled as a basis for the allocation of future land uses in the preparation of a recommended land use plan. That framework is graphically shown on Map 49 and is quantitatively summarized in Table 35. The development framework was drawn in part from past planning and development activities relating to this part of the Region, but also recognizes the recent strong urban land market forces which have resulted in a growing demand for commercial and industrial land use development in the IH 94 South Freeway.

The plan development framework is composed of the following major elements:

1. Existing Urban Development

The pattern of existing urban development in the corridor as of 1985 is identified in orange on Map 49, and described in Chapter III of this report. Existing urban land uses, including transportation facilities, collectively encompass about 32 square miles, or about 18 percent of the 178-square-mile corridor study area. The amount of existing urban land use is nearly equally divided between the Kenosha, Milwaukee, and Racine County portions of the study area, as shown in Table 35. The lands concerned are fully committed to urban use and must be recognized as such in any recommended corridor land use plan.

2. Environmental and Recreational Land Reserve

In order to protect and preserve the natural resource base, certain lands in the corridor study area should be set aside as a permanent environmental and recreational land reserve and, hence, not considered available for new urban development. These lands are identified in green on Map 49 and consist of the following:

- a. Primary and secondary environmental corridors as described in Chapter III of this report, together with certain small areas—less than five acres—totally encompassed by the corridors, and therefore considered unsuitable for urban development.
- b. Those 100-year recurrence interval floodplains that lie beyond the limits of the primary and secondary environmental corridors. The floodplains were also described in Chapter III.
- c. Major existing park and recreational land uses, including public park and parkway lands acquired but not yet developed for recreational use.
- d. Major outdoor recreation and open space areas previously proposed in adopted regional and local plan ele-

Table 35

DEVELOPMENT FRAMEWORK FOR THE IH 94 SOUTH CORRIDOR BY COUNTY

County	Lands Not Available for New Urban Development (square miles)			
	Existing Urban Land (1985)	Environmental and Major Recreational Land Reserve	Permanent Agricultural Land Reserve	Total
Kenosha	10.3	12.0	18.3	40.6
Milwaukee	11.1	8.6	0.0	19.7
Racine	10.7	7.8	14.8	33.3
Total	32.1	28.4	33.1	93.6

County	Lands Available for New Urban Development (square miles)			
	Proposed Major Commercial Land Use Reserve	Proposed Major Industrial and Transportation Land Use Reserve	Residual Area	Total
Kenosha	2.8	5.1	23.6	31.5
Milwaukee	0.5	3.6	10.8	14.9
Racine	2.4	7.2	28.8	38.4
Total	5.7	15.9	63.2	84.8

County	Development Capability of Available Lands			
	Number of New Commercial Jobs Accommodated	Number of New Industrial Jobs Accommodated	Number of New Housing Units Accommodated	Incremental Resident Population Accommodated
Kenosha	32,673	35,719	30,929	74,229
Milwaukee	8,685	25,864	19,188	51,808
Racine	31,056	51,273	46,746	112,190
Total	72,414	112,856	96,863	238,227

Source: SEWRPC.

ments, including the Oakwood Reservoir and associated parklands in Milwaukee County; proposed Oak Creek parkway lands in Milwaukee County; proposed Root River parkway lands in Milwaukee and Racine Counties; a proposed expansion of the Nicholson Wildlife Area in Racine County; a new major Village of Pleasant Prairie park site and lake in Kenosha County; and a proposed Kenosha County park and golf course along the Des Plaines River in the Village of Pleasant Prairie.¹

In total, the environmental and major outdoor recreational land reserve encompasses about 28 square miles, or nearly 16 percent of the corridor study area. As shown in Table 35, about 12.0 square miles of such lands are in Kenosha County, about 8.6 square miles in Milwaukee County, and about 7.8 square miles in Racine County.

3. Agricultural Land Reserve

Despite an urban land market which is exerting a heavy demand along IH 94, agriculture remains a strong and important part of the regional economy, particularly with respect to the towns lying west of IH 94 in Kenosha and Racine Counties. Thus, while it is recognized that certain lands along the west side of IH 94 in

Kenosha and Racine Counties are being, and may be expected to continue to be, converted to urban development, it should also be recognized that: a) not all such lands will be needed to accommodate even a greatly increased urban land market demand; b) there is a substantial reservoir of land along and east of IH 94 in Kenosha and Racine Counties that can also accommodate massive amounts of new urban development; and c) there is an expressed local desire to maintain viable agriculture economies in the four towns of Racine and Kenosha Counties abutting the west side of IH 94. Accordingly, it is proposed that all lands in the Racine and Kenosha County portions of the study corridor lying west of IH 94 be placed in an agricultural reserve except those lands already developed for urban use; those lands identified for inclusion in the environmental and recreational land reserve; and those lands described below as designated for commercial, industrial, and transportation land uses. These lands, shown in tan on Map 49, total about 33 square miles, or nearly 19 percent of the corridor study area. As shown in Table 35, about 18.3 square miles of such lands are in Kenosha County, and 14.8 square miles in Racine County. The great majority of such lands were identified in Chapter III of this report as prime agricultural in nature, and are thus eligible for participation in the Wisconsin Farmland Preservation Program which provides, via an income tax credit device, property tax relief to the landowners concerned.

Regarding that portion of the corridor study area comprised of the second mile west of IH 94 in the Towns of Bristol and Paris, Kenosha County, the data set forth in this chapter, including data shown on the maps in this chapter, are intended only to reflect existing land uses and are not intended to constitute a development plan for such lands. In this respect, it is recognized that any additional urban development within the second mile of the Towns of Bristol and Paris west of IH 94—should it occur—would not be reflected in the forecasts of travel demand nor in the estimates of public sewerage and water supply demand being prepared for the

¹On April 5, 1989, as this study was underway, the remnant Town of Pleasant Prairie was incorporated as the Village of Pleasant Prairie. This action was preceded by certain changes in the boundaries of the City of Kenosha, the Town of Somers, and the Town of Pleasant Prairie which were accomplished through boundary agreements and Kenosha County Board action. The inventory data and analyses presented in the preceding chapters of this report, and the base maps upon which such data and analyses are displayed, reflect the limits of the Town of Pleasant Prairie as of October 1, 1988. The plan maps presented in this and subsequent chapters have been adjusted to reflect the incorporation of the Village of Pleasant Prairie and the attachment of certain portions of the former Town of Pleasant Prairie to the City of Kenosha and the Town of Somers.

Kenosha area public utility study being conducted concurrently with the IH 94 corridor land use study.

4. Major Commercial Land Use Reserve

Much of the demand for new urban development along IH 94 has been commercial in nature. In part, this demand may be attributed to an attempt by the land market to capitalize on the perceived need for enhanced levels of service to the traveling public by providing such facilities as restaurants, automobile service stations, and truck service plazas. In addition, however, as evidenced by recent retail development along IH 94 in Kenosha County, some of the commercial land use demand is for the provision of a variety of shopping opportunities, with development in some cases seeking to attract shoppers from within a 50-mile or more radius of the site. In order to accommodate this demand exerted by the urban land market, it is proposed that major commercial land use activities along the IH 94 South Corridor be concentrated in six specific locations. The locations and proposed extent of these six major commercial reserves are shown in red on Map 49. These six areas are:

- a. A major commercial land reserve in the City of Oak Creek at the interchange of IH 94 and STH 100. This reserve, approximating 330 acres in extent of currently undeveloped but developable land, lies along the north side of STH 100 extending from S. 27th Street on the west to the Soo Line railway tracks on the east.
- b. A major commercial land reserve in the Towns of Caledonia and Raymond on either side of IH 94 both north and south of the Seven Mile Road interchange. This reserve totals about 250 acres in extent.
- c. A major commercial land reserve in the Towns of Mt. Pleasant and Yorkville on either side of IH 94 at the STH 20 interchange. This reserve totals about 1,280 acres in extent.
- d. A major commercial land reserve in the Towns of Paris and Somers on either side of IH 94 at the STH 142 inter-

change. This reserve totals about 260 acres in extent.

- e. A major commercial land reserve in the City of Kenosha, the Village of Pleasant Prairie, and the Town of Bristol at the interchange of IH 94 and STH 50. This reserve totals about 810 acres in extent.
- f. A major commercial land reserve in the Town of Bristol and the Village of Pleasant Prairie on either side of IH 94 at the CTH Q interchange and extending north to the CTH C interchange. This reserve totals about 740 acres in extent.

Together, these six major commercial land use reserves encompass almost six square miles, or about 3 percent of the corridor study area. It is envisioned that the land so designated would be reserved for commercial use even though the demand for full utilization of such lands may not occur for many years, probably well beyond the plan design year of 2010 for the IH 94 South Corridor plan. The lands in these commercial reserves should not be committed to other urban land uses, but rather held in agricultural and open space uses pending conversion to commercial uses.

5. Major Industrial and Transportation Land Reserve

Land along, or with ready access to, IH 94 is also viewed in the urban land market as desirable for accommodating certain types of industrial uses. In addition, major areas within the corridor may be required for the expansion of existing airport facilities. In order to accommodate industrial demands and meet airport needs, it is proposed that major industrial and transportation land reserves be established at nine specific locations. The locations and proposed extent of these nine major industrial reserves are shown in gray on Map 49. These nine areas are:

- a. A major industrial land reserve in the City of Oak Creek centered on the existing, partially developed North Branch Industrial Park and including lands needed for clear zone purposes south of General Mitchell International Airport. This reserve totals about 370

acres in extent of currently undeveloped but developable land.

- b. A major industrial land reserve in the City of Oak Creek along either side of IH 94 lying south of STH 100. This reserve represents an extension of the existing, partially developed South Branch Industrial Park and totals about 970 acres in extent.
- c. A major industrial land reserve in the City of Franklin lying south of STH 100 and west of S. 27th Street. This reserve represents an extension of the existing, partially developed Franklin Industrial Park and totals about 990 acres in extent.
- d. A major industrial land reserve in the Towns of Caledonia and Raymond on either side of IH 94 both north and south of the CTH K interchange. This reserve totals about 1,780 acres in extent.
- e. A major industrial land reserve both north and south of CTH K and west of the Chicago & North Western railway tracks in the Franksville area of the Towns of Caledonia and Mt. Pleasant. This reserve totals about 390 acres in extent.
- f. A major industrial and transportation land reserve in the Towns of Mt. Pleasant and Yorkville along either side of IH 94 centered on the STH 11 interchange. This reserve totals about 1,760 acres in extent, not including the 160 acres needed to accommodate the proposed expansion of Sylvania Airport.
- g. A major industrial land reserve in the Town of Mt. Pleasant and Village of Sturtevant on either side of STH 11 at the eastern study area boundary. This reserve represents an extension of the Waxdale industrial area and totals about 690 acres in extent.
- h. A major industrial and transportation land reserve in the City of Kenosha and Town of Somers generally bounded by IH 94 on the west, CTH K on the south, STH 142 on the north, and the Kenosha Industrial Park on the east. This

reserve, which includes Kenosha Municipal Airport, totals about 1,550 acres in extent.

- i. A major industrial and utility land reserve in the Village of Pleasant Prairie lying generally south of STH 50 along the Soo Line railway tracks for a distance of about four miles. This reserve includes the existing Pleasant Prairie electric power generation plant and the new Lakeview Corporate Park. This reserve totals about 1,660 acres in extent.

Together, these nine major industrial, transportation, and utility land reserves represent an area of nearly 16 square miles, or about 9 percent of the corridor study area. Like the commercial land reserves, it is envisioned that the lands so designated would be permanently reserved for industrial, transportation, and utility uses even though the demand for full utilization of such lands may not occur for many years.

6. Residual Area Available for All Other New Development

The areas within the IH 94 South Corridor not otherwise classified represent a residual reservoir of land that may be considered to be available for all other types of new urban development, depending upon the extent of the demand exerted by the urban land market in this portion of the Region. Together, such lands total about 63.2 square miles, or about 35 percent of the corridor study area. These areas are shown in white on Map 49.

In locating the proposed commercial and industrial land reserves along the IH 94 freeway, a number of factors were considered, including the extent of existing and committed commercial and industrial land development; the location of interchanges on IH 94; the relative proximity of the areas concerned to existing and planned extensions of public utility systems; and local land use planning and zoning. In addition, consideration was given to ensuring that the entire 30-mile length of IH 94 through the corridor study area would not be entirely developed as a linear strip of mixed commercial and industrial land uses. As a principal entry to the State of Wisconsin, the IH 94 South freeway

should offer to the motoring public a visual image of a variety of well-planned, clustered land uses, with centers of intensive urban activity occurring periodically at key interchanges and with visually strong stretches of rural land between such centers.

In total, the lands identified on Map 49 and included within the major commercial land use reserves; the major industrial, utility, and transportation land use reserves; and the residual area available for new development approximate 84.8 square miles, or about 48 percent of the corridor study area. The approximate development capability of such lands, assuming development densities that generally prevail locally in the area, is summarized in Table 35. If all such lands were developed, the new commercial land would accommodate about 72,000 incremental jobs; the new industrial land would accommodate nearly 113,000 incremental industrial jobs; and the residual land available for development could accommodate about 97,000 new housing units, and a resident population of about 238,000 persons. In 1985, there were about 6,200 commercial jobs, 15,200 industrial jobs, 17,000 housing units, and 49,800 residents in the corridor study area. Clearly, the reservoir of developable land in the study area within the development framework set forth herein is more than sufficient to accommodate anticipated growth in the corridor for many, many years to come.

The development framework also includes an initially assumed supporting arterial street and highway system in the IH 94 South Corridor. This system is shown on Map 50. Basically, the system includes all of the recommendations for arterial street and highway development included in the adopted regional transportation system plan, together with those proposals to amend that plan that have already been advanced, particularly in Racine and Kenosha Counties, through concurrent transportation studies. Of particular significance in this respect is a proposal to terminate the lake arterial highway facility just south of the Racine-Kenosha County line in the Town of Somers. It is intended that the transportation system analyses under the IH 94 corridor study evaluate the foregoing proposal and result in a consensus among all agencies concerned as to the proper location to terminate the lake arterial highway in Kenosha County. It is this initially assumed

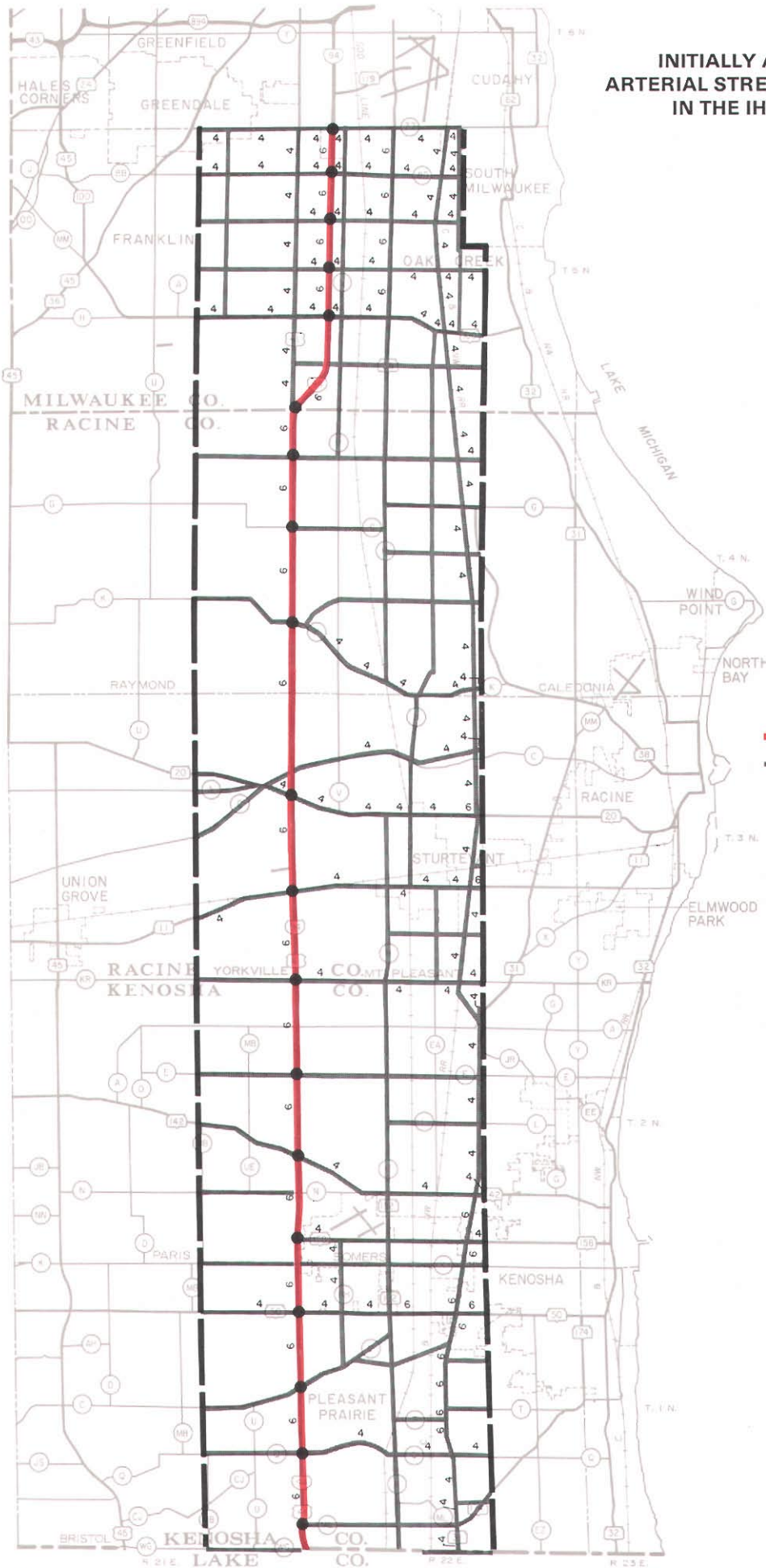
arterial street and highway system that will be the beginning point for the transportation system analysis to be based upon the recommended land use plan, and reported on in the next chapter of this report.

ANTICIPATED FUTURE GROWTH AND CHANGE





The recommended land use plan for the IH 94 South Corridor was prepared within the context of the third generation regional land use plan for southeastern Wisconsin. The latter plan was under preparation simultaneously with the corridor plan, and, like the corridor plan, has a plan design year of 2010. In order to cope with the changes in the socioeconomic characteristics of the Region that became evident in the 1970's and 1980's, the Commission used an approach termed "alternative futures" in the preparation of the third generation regional land use plan. Under this approach, the development and evaluation of alternative land use plans is based not upon a single most probable forecast of future conditions—the traditional approach to planning in periods of socioeconomic stability when historic trends are anticipated to continue relatively unchanged—but rather upon a number of alternative futures chosen to represent a range of conditions which may be reasonably expected to occur over the plan design period. The purpose of the alternative futures approach is to allow the evaluation of the performance of alternative plans over a variety of possible future conditions in order to identify those alternatives that perform well under a wide range of such conditions.

Three alternative future scenarios were postulated for the purpose of preparing the new regional land use plan, with two intended to identify reasonable extremes and one intended to identify a most probable future that lies between the extremes. Population and employment changes attendant to each future were projected. A "most reasonably optimistic" future scenario of population and employment change was postulated by combining those socioeconomic factors that were internally consistent and would create highly favorable conditions for economic and population growth within the Region. Similarly, a "most reasonably pessimistic" future scenario was postulated by combining those socioeconomic factors that would tend to create unfavorable conditions for economic and

INITIALLY ASSUMED SUPPORTING
ARTERIAL STREET AND HIGHWAY NETWORK
IN THE IH 94 SOUTH CORRIDOR



LEGEND

-  FREEWAY
-  STANDARD ARTERIAL STREET OR HIGHWAY
-  4 NUMBER OF TRAFFIC LANES (IF MORE THAN 2)
-  ● FREEWAY-STANDARD ARTERIAL INTERCHANGE

Source: SEWRPC.

population growth within the Region. An additional variable was added to the analysis in the preparation of land use plans for each scenario. That variable deals with the degree of centrality of incremental urban land use development as measured by the relative nearness of such new land uses to the major population centers in the Region.²

For the purposes of the IH 94 South Corridor study, it was determined to prepare, and present to the Advisory Committee for review, land use plans for two of the possible alternative future scenarios considered by the Commission in its regional planning efforts: an intermediate-centralized scenario and an optimistic-decentralized scenario. These two alternative future scenarios were believed to best represent the range of possible futures for growth and development in that part of the Region comprised of the IH 94 South Corridor study area. The projected resident populations of the three counties in which the study area is located—Kenosha, Milwaukee, and Racine—under the two selected alternative future scenarios are set forth in Table 36. With respect to population growth and viewing the three counties in their entirety, it is envisioned that under the intermediate-centralized scenario, the resident population of the three-county area would remain virtually unchanged from the 1985 level of about 1.23 million persons, although there would be a continued redistribution of population within those counties reflecting existing trends of declining densities in the older and larger central city areas. Under the optimistic-decentralized scenario, the population of the three-county area is envisioned to increase by about 7 percent, or by about 82,400 persons, to a total resident population of 1.31 million persons. Under this scenario, Kenosha and Racine Counties would significantly gain in

population—about 33 percent in Racine County and about 38 percent in Kenosha County—with Milwaukee County experiencing a relatively modest decline of about 2 percent.

Corresponding data relating to households for the two scenarios and the three counties concerned are also shown in Table 36. Under the intermediate-centralized scenario, the number of households is envisioned to increase by about 10 percent overall, reflecting a projected continuing decline in household size. Under the optimistic-decentralized scenario, the number of households would increase significantly in Kenosha and Racine Counties, while declining somewhat in Milwaukee County owing to the decentralization assumptions inherent in this scenario.

Table 36 also identifies envisioned changes in employment for the three counties under the two scenarios. Under the intermediate-centralized scenario, total employment would increase by about 13 percent, representing an absolute increase of about 83,900 jobs, to a total of 731,000 jobs. Under the optimistic-decentralized scenario, total employment would increase by about 26 percent, representing an absolute increase in jobs of about 166,600, to a total of 813,700 jobs. Under both scenarios, employment would increase in all three of the counties concerned, with the largest relative increases occurring in Kenosha and Racine Counties.

The data set forth in Table 36 were used as the basis for preparing land use plans for the two future scenarios within the context of the plan development framework described earlier in this chapter. The plans were prepared for the entire counties concerned, and indeed were set within a plan context comprising the entire Region. The following sections of this chapter quantitatively and graphically describe the two plans as they apply to the IH 94 South Corridor study area.

INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN

A land use plan for the intermediate-centralized future scenario as it applies to the IH 94 South Corridor is shown on Map 51. The salient aspects of this plan may be summarized as follows:

1. Population Increment

This future would accommodate a population increase in the corridor of about 22,400

²For more information concerning the alternative futures technique and its application in southeastern Wisconsin, see SEWRPC Technical Report No. 25, Alternative Futures for Southeastern Wisconsin; SEWRPC Technical Report No. 11 (2nd Edition), The Population of Southeastern Wisconsin; and SEWRPC Technical Report No. 10 (2nd Edition), The Economy of Southeastern Wisconsin.

Table 36

POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN KENOSHA, MILWAUKEE, AND RACINE COUNTIES: EXISTING 1985 AND PROJECTED 2010 UNDER THE INTERMEDIATE-CENTRALIZED AND OPTIMISTIC-DECENTRALIZED ALTERNATIVE FUTURE SCENARIOS

County	Existing 1985	Population					
		Intermediate Centralized Scenario			Optimistic Decentralized Scenario		
		2010	Change		2010	Change	
			Number	Percent		Number	Percent
Kenosha	121,200	123,300	2,100	2	166,800	45,600	38
Milwaukee	939,600	934,000	-5,600	-1	920,900	-18,700	-2
Racine	169,200	171,800	2,600	2	224,700	55,500	33
Total	1,230,000	1,229,100	-900	- .^a	1,312,400	82,400	7

County	Existing 1985	Households					
		Intermediate Centralized Scenario			Optimistic Decentralized Scenario		
		2010	Change		2010	Change	
			Number	Percent		Number	Percent
Kenosha	44,200	49,500	5,300	12	61,300	17,100	39
Milwaukee	368,200	401,000	32,800	9	359,200	-9,000	-2
Racine	61,200	68,600	7,400	12	81,700	20,500	33
Total	473,600	519,100	45,500	10	502,200	28,600	6

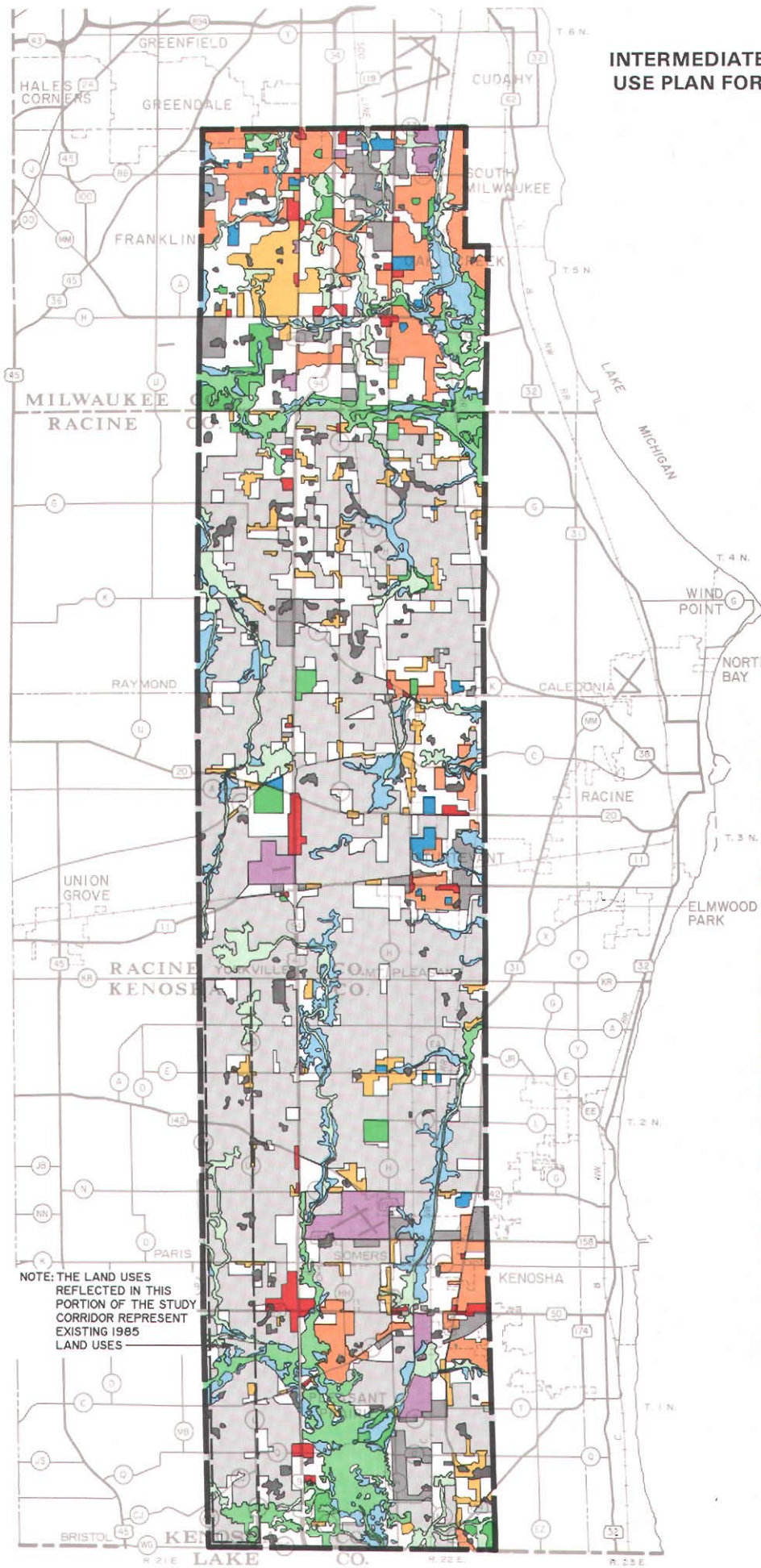
County	Existing 1985	Employment					
		Intermediate Centralized Scenario			Optimistic Decentralized Scenario		
		2010	Change		2010	Change	
			Number	Percent		Number	Percent
Kenosha	42,500	59,800	17,300	41	79,800	37,300	88
Milwaukee	533,700	584,200	50,500	9	625,400	91,700	17
Racine	70,900	87,000	16,100	23	108,500	37,600	53
Total	647,100	731,000	83,900	13	813,700	166,600	26

^aLess than 0.5 percent.

Source: SEWRPC.

Map 51

INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN FOR THE IH 94 SOUTH CORRIDOR



LEGEND

- NONE
- PREDOMINANTLY LOW DENSITY RESIDENTIAL
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL
- NONE
- PREDOMINANTLY HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATION, AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- PARK AND RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- FLOODPLAINS BEYOND ENVIRONMENTAL CORRIDORS
- PREDOMINANTLY PRIME AGRICULTURAL LAND
- OTHER AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND

NOTE: THE LAND USES REFLECTED IN THIS PORTION OF THE STUDY CORRIDOR REPRESENT EXISTING 1985 LAND USES

Source: SEWRPC.

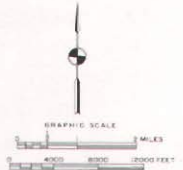


Table 37

**EXISTING AND PROPOSED POPULATION DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN**

County	1985 Population		Planned Increment		2010 Population	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	11,500	23	2,700	23	14,200	20
Milwaukee	24,500	49	18,100	74	42,600	59
Racine	13,800	28	1,600	12	15,400	21
Total	49,800	100	22,400	45	72,200	100

Source: SEWRPC.

Table 38

**EXISTING AND PROPOSED HOUSEHOLD DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN**

County	1985 Households		Planned Increment		2010 Households	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	3,900	24	1,400	36	5,300	20
Milwaukee	8,100	49	7,700	95	15,800	60
Racine	4,400	27	1,000	23	5,400	20
Total	16,400	100	10,100	62	26,500	100

Source: SEWRPC.

persons (see Table 37). This represents a 45 percent increase in the resident population of the corridor, which in 1985 stood at 49,800 persons. Much of the increase in the resident population under the scenario would occur in Milwaukee County, with only limited residential growth in the Kenosha and Racine County portions of the corridor. By the year 2010 under this scenario, the corridor would have a resident population of about 72,200 persons.

2. Household Increment

In terms of land use demand, households are a more significant factor than population. Under this scenario, there would be an increase of about 10,100 households in

the corridor, representing a 62 percent change over the 1985 level of about 16,400 (see Table 38). Like population, most of the household increment under this scenario is allocated to the Milwaukee County portion of the corridor. By the year 2010, the number of households in the corridor would total about 26,500.

3. Employment Increment

The number of jobs in the corridor under the intermediate-centralized future scenario would approximately double over the plan design period to a level of about 57,400 (see Table 39). The most significant change in employment would be expected to occur in the Kenosha County portion of

Table 39

**EXISTING AND PROPOSED EMPLOYMENT DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN**

County	1985 Employment		Planned Increment		2010 Employment	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	4,600	16	14,700	320	19,300	33
Milwaukee	16,900	61	7,600	45	24,500	43
Racine	6,500	23	7,100	109	13,600	24
Total	28,000	100	29,400	105	57,400	100

Source: SEWRPC.

the corridor, where the planned increment of 14,700 jobs would result in a level about four times the 1985 employment. Employment in the Racine County portion of the corridor would more than double, while employment in the Milwaukee County portion of the corridor would increase by about 45 percent.

4. Overall Change in Land Use

In order to accommodate the foregoing increments in population, households, and employment, and taking into account the land use development standards set forth in Chapter VI of this report, it would be necessary to convert about 9.8 square miles of land in the corridor study area over the 25-year period, 1985 through 2010, to urban use (see Table 40). Of that total, about 3.0 square miles, or 31 percent, would be converted in Kenosha County; about 5.0 square miles, or 51 percent, in Milwaukee County; and about 1.8 square miles, or 18 percent, in Racine County.

5. Residential Land Use

The distribution by county and by density of the increment in residential land needed to accommodate the increments in population and households noted above is identified in Table 41. The planned increment in residential land use totals about 4.1 square miles. The great majority of this is recom-

mended to be at medium residential densities, defined as from 2.3 to 6.9 dwelling units per net residential acre. Much of the new residential development is proposed for the Milwaukee County portion of the study corridor in the Cities of Franklin and Oak Creek, where partially developed neighborhoods would be completed. Relatively small amounts of new residential development are allocated in the plan for the Kenosha and Racine County portions of the study corridor.

6. Commercial Land Use

The plan envisions a 48 percent increase in the amount of land devoted to commercial land use in the study area. As shown in Table 42, the planned net increase in commercial land is 241 acres, net being defined to exclude the off-street parking areas needed to serve the commercial development. Off-street parking areas are classified as a transportation land use. About 90 percent of all new commercial development envisioned in the plan is recommended to occur within the six major commercial land use reserves identified on Map 49. The remaining 10 percent would constitute neighborhood and other local commercial uses, and would be distributed throughout the corridor in accordance with local needs. Of the planned increment in commercial land of 241 acres, about 64 per-

Table 40

**EXISTING AND PROPOSED LAND USE IN THE IH 94 SOUTH CORRIDOR:
1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN**

Land Use Category	Existing 1985		Planned Increment		Total 2010	
	Acres	Percent of Major Category	Acres	Percent Change	Acres	Percent of Major Category
Urban						
Residential	8,771	43	2,623	30	11,394	43
Commercial	503	3	241	48	744	3
Industrial	1,097	5	1,057	96	2,154	8
Governmental and Institutional	678	3	86	13	764	3
Transportation, Communication, and Utility ^a	8,000	39	1,926	24	9,926	37
Park and Recreation ^b	1,316	7	350	27	1,666	6
Subtotal	20,365	100	6,283	31	26,648	100
Rural						
Prime Agricultural	49,168	52	-798	-2	48,370	55
Other Open Lands ^c	44,640	48	-5,485	-12	39,155	45
Subtotal	93,808	100	-6,283	-7	87,525	100
Total	114,173	--	--	--	114,173	--

^aIncludes off-street parking.

^bConsists of intensively used outdoor recreation lands.

^cIncludes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.

Source: SEWRPC.

cent is proposed to be located in Kenosha County and about 18 percent in both Milwaukee and Racine Counties.

7. Industrial Land Use

A planned increment of nearly 1,100 acres in industrial land is identified in the plan. This would nearly double the amount of such land now found in the study corridor. All of the new industrial land is recommended to be located within the nine major industrial land use reserves identified on Map 49. As shown in Table 42, about 43 percent of the increment is planned for Kenosha County, with the remaining amount being nearly evenly divided between Milwaukee and Racine Counties. Like the increments for commercial land,

these industrial land increments represent net figures and do not include areas devoted to off-street parking.

8. Other Urban Land Uses

The planned increments in the remaining categories of urban land use—transportation, communications, and utilities; governmental and institutional; and park and recreational—are identified in Table 43. With the exception of specifically planned major park and recreation areas as previously identified in this chapter, and with the further exception of planned improvements to Kenosha Municipal and Sylvania Airports located in the corridor, the planned increments in these three categories of urban land uses are based upon the

Table 41

**EXISTING AND PROPOSED RESIDENTIAL LAND USE IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED LAND USE PLAN**

Residential Land Use Category (acres)	County			Total
	Kenosha	Milwaukee	Racine	
High Density				
Existing 1985	--	--	--	--
Planned Increment	--	--	--	--
Total 2010	--	--	--	--
Percent Change	--	--	--	--
Medium Density				
Existing 1985	855	2,139	842	3,836
Planned Increment	347	1,650	265	2,262
Total 2010	1,202	3,789	1,107	6,098
Percent Change	41	77	31	59
Low Density				
Existing 1985	1,726	1,070	2,139	4,935
Planned Increment	39	173	149	361
Total 2010	1,765	1,243	2,288	5,296
Percent Change	2	16	7	7
Suburban Density				
Existing 1985	--	--	--	--
Planned Increment	--	--	--	--
Total 2010	--	--	--	--
Percent Change	--	--	--	--
Total				
Existing 1985	2,581	3,209	2,981	8,771
Planned Increment	386	1,823	414	2,623
Total 2010	2,967	5,032	3,395	11,394
Percent Change	15	57	14	30

Source: SEWRPC.

land use plan design standards identified in Chapter VI of this report and are not specifically shown on Map 51, but rather are assumed to be distributed in proportion to the new residential land.

9. Agricultural Land

The conversion to urban use of nearly 10 square miles of land results in a concomitant decrease in agricultural and other open lands. These changes as they relate to all agricultural and open lands and to those agricultural lands classified as prime in nature are identified in Table 44. As shown in this table, under the plan about 1.2 square miles of lands currently classi-

fied as prime agricultural, or about 2 percent of the total of such lands in the corridor, would be converted to urban use.

10. Environmentally Sensitive Lands

Within the plan development framework previously identified, the intermediate-centralized future land use plan recommends that certain lands classified as environmentally sensitive in nature be preserved and protected in essentially natural, open uses. These lands are identified by category in Table 45. In total, these lands encompass about 29.4 square miles. Of this total, about 8.0 square miles are comprised of primary environmental corridors, about 7.0 square miles of second-

Table 42

EXISTING AND PROPOSED COMMERCIAL AND INDUSTRIAL LAND USE IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN

County	Commercial Land Use (acres) ^a				Industrial Land Use (acres) ^a			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	129	154	283	119	306	451	757	147
Milwaukee	212	43	255	20	455	295	750	65
Racine	162	44	206	27	336	311	647	93
Total	503	241	744	48	1,097	1,057	2,154	96

^aDoes not include off-street parking areas, which are classified as a transportation land use.

Source: SEWRPC.

Table 43

EXISTING AND PROPOSED TRANSPORTATION, COMMUNICATION, AND UTILITY, GOVERNMENTAL AND INSTITUTIONAL, AND PARK AND RECREATIONAL LAND USE IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN

County	Transportation, Communication, Utility Land Use (acres) ^a				Governmental and Institutional Land Use (acres)				Park and Recreation Land Use (acres)			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	2,973	718	3,691	24	133	13	146	10	362	166	528	46
Milwaukee	2,369	812	3,181	34	308	65	373	21	472	176	648	37
Racine	2,658	396	3,054	15	237	8	245	3	482	8	490	2
Total	8,000	1,926	9,926	24	678	86	764	13	1,316	350	1,666	26

^aIncludes off-street parking areas associated with other land uses.

Source: SEWRPC.

Table 44

EXISTING AND PROPOSED AGRICULTURAL LANDS IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 INTERMEDIATE-CENTRALIZED FUTURE LAND USE PLAN

County	All Agricultural and Open Lands (acres)				Prime Agricultural Lands (acres)			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	39,619	-1,888	37,731	-5	25,002	-557	24,445	-2
Milwaukee	15,112	-3,214	11,898	-21	0	0	0	0
Racine	39,077	-1,181	37,896	-3	24,166	-247	23,925	-1
Total	93,808	-6,283	87,525	-7	49,168	-798	48,370	-2

Source: SEWRPC.

Table 45

ENVIRONMENTALLY SENSITIVE LAND IN THE IH 94 SOUTH CORRIDOR BY COUNTY

County	Environmental Corridors		Isolated Natural Areas (acres)	Floodplains Beyond Corridors and Natural Areas (acres)	Total (acres)
	Primary (acres)	Secondary (acres)			
Kenosha	3,204	1,412	876	2,867	8,359
Milwaukee	1,236	1,394	417	1,746	4,793
Racine	696	1,642	1,070	2,230	5,638
Total	5,136	4,448	2,363	6,843	18,790

Source: SEWRPC.

ary environmental corridors, and about 3.7 square miles of isolated natural areas, with the remaining 10.7 square miles being comprised of floodplain lands lying beyond the corridors and natural areas. Each of these areas is specifically identified on Map 51.³

OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN

A land use plan for the optimistic-decentralized—or relatively high-growth—future sce-

³*It is recognized that certain floodplain lands lying along Pike Creek in the Town of Somers and City of Kenosha, and along the Pike River and its tributaries in the Town of Mt. Pleasant—lands which lie beyond the boundaries of either primary or secondary environmental corridors—are proposed to be removed from floodplain status upon the construction of major channel projects proposed in the comprehensive plan for the Pike River watershed, as discussed in Chapter V of this report. The land use plans set forth in this chapter assume that such floodplain lands, which total about 790 acres in Kenosha County and 210 acres in Racine County, will not be made available for urban development if the proposed channel projects are not constructed. If the watershed plan is implemented through the construction of the improvement projects, then these additional floodplain lands will be changed in character and will be available for new urban development.*

nario as it applies to the IH 94 South Corridor is shown on Map 52. The salient aspects of this plan may be summarized as follows:

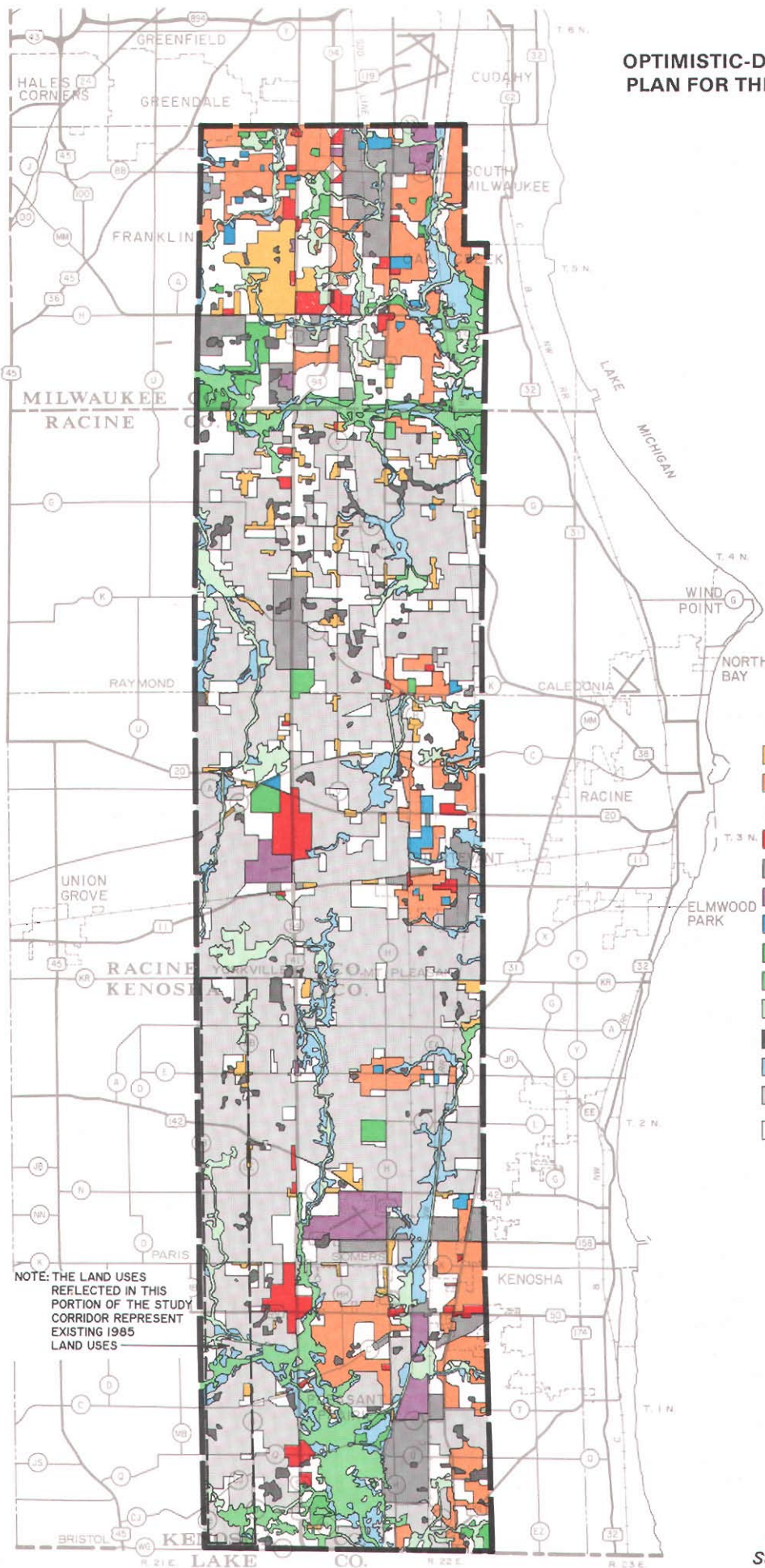
1. Population Increment

This future would accommodate a population increase in the corridor of about 46,700 persons (see Table 46). This represents more than twice the population increment under the intermediate-centralized future land use plan. This also represents nearly a doubling of the current population level of about 49,800 persons. Under this future, about one-half of the population increase would occur in the Milwaukee County portion of the corridor. The remaining one-half would be divided between Kenosha and Racine Counties, both of which would, under this future, experience substantial population increases as compared to the intermediate-centralized future land use plan. By the year 2010, the corridor would have a resident population of about 96,500 persons under this scenario.

2. Household Increment

Under the optimistic-decentralized future scenario, there would be an increment of about 16,500 households in the corridor, representing about a doubling of the 1985 level (see Table 47). All three counties in the corridor would experience substantial increases in the number of households. By the year 2010, the number of households in the corridor would total 32,900.

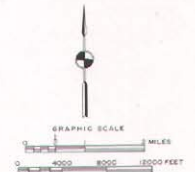
**OPTIMISTIC-DECENTRALIZED LAND USE
PLAN FOR THE IH 94 SOUTH CORRIDOR**



LEGEND

- NONE PREDOMINANTLY SUBURBAN RESIDENTIAL
- PREDOMINANTLY LOW DENSITY RESIDENTIAL
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL
- NONE PREDOMINANTLY HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATION, AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- PARK AND RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- FLOODPLAINS BEYOND ENVIRONMENTAL CORRIDORS
- PREDOMINANTLY PRIME AGRICULTURAL LAND
- OTHER AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND

NOTE: THE LAND USES REFLECTED IN THIS PORTION OF THE STUDY CORRIDOR REPRESENT EXISTING 1985 LAND USES



Source: SEWRPC.

Table 46

**EXISTING AND PROPOSED POPULATION DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN**

County	1985 Population		Planned Increment		2010 Population	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	11,500	23	14,400	125	25,900	27
Milwaukee	24,500	49	22,800	93	47,300	49
Racine	13,800	28	9,500	69	23,300	24
Total	49,800	100	46,700	94	96,500	100

Source: SEWRPC.

Table 47

**EXISTING AND PROPOSED HOUSEHOLD DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN**

County	1985 Households		Planned Increment		2010 Households	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	3,900	24	5,300	136	9,200	28
Milwaukee	8,100	49	7,900	98	16,000	49
Racine	4,400	27	3,300	75	7,700	23
Total	16,400	100	16,500	101	32,900	100

Source: SEWRPC.

3. Employment Increment

The number of jobs in the corridor under the optimistic-decentralized future scenario would increase significantly over the plan design period, from a 1985 level of about 28,000 to a 2010 level of about 94,500, an increment of about 66,500 jobs, or about 238 percent (see Table 48). The number of jobs in the Kenosha County portion of the corridor would represent over a seven-fold increase from the current level; in the Milwaukee County portion of the corridor more than double the current level; and in the Racine County portion of the corridor almost four times the current level.

4. Overall Change in Land Use

In order to accommodate the foregoing increments in population, households, and employment, and taking into account the land use development standards set forth in Chapter VI of this report, it would be necessary to convert about 18.2 square miles of land over the 25-year period, 1985 through 2010, to urban use (see Table 49). Of that total, about 7.3 square miles, or 40 percent, would be converted in Kenosha County; about 6.4 square miles, or 35 percent, in Milwaukee County; and about 4.5 square miles, or 25 percent, in Racine County.

Table 48

**EXISTING AND PROPOSED EMPLOYMENT DISTRIBUTION IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN**

County	1985 Employment		Planned Increment		2010 Employment	
	Number	Percent of Total	Number	Percent Change	Number	Percent of Total
Kenosha	4,600	16	29,500	641	34,100	36
Milwaukee	16,900	61	18,100	107	35,000	37
Racine	6,500	23	18,900	291	25,400	27
Total	28,000	100	66,500	238	94,500	100

Source: SEWRPC.

Table 49

**EXISTING AND PROPOSED LAND USE IN THE IH 94 SOUTH CORRIDOR:
1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN**

Land Use Category	Existing 1985		Planned Increment		Total 2010	
	Acres	Percent of Major Category	Acres	Percent Change	Acres	Percent of Major Category
Urban						
Residential	8,771	43	4,576	52	13,347	42
Commercial	503	3	535	106	1,038	3
Industrial	1,097	5	2,389	218	3,486	11
Governmental and Institutional	678	3	155	23	833	3
Transportation, Communication, and Utility ^a	8,000	39	3,502	44	11,502	35
Park and Recreation ^b	1,316	7	481	37	1,797	6
Subtotal	20,365	100	11,638	57	32,003	100
Rural						
Prime Agricultural	49,168	52	-2,768	-6	46,400	56
Other Open Lands ^c	44,640	48	-8,870	-20	35,770	44
Subtotal	93,808	100	-11,638	-12	82,170	100
Total	114,173	--	--	--	114,173	--

^aIncludes off-street parking.

^bConsists of intensively used outdoor recreation lands.

^cIncludes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.

Source: SEWRPC.

Table 50

**EXISTING AND PROPOSED RESIDENTIAL LAND USE IN THE IH 94 SOUTH CORRIDOR
BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN**

Residential Land Use Category (acres)	County			Total
	Kenosha	Milwaukee	Racine	
High Density				
Existing 1985	--	--	--	--
Planned Increment	--	--	--	--
Total 2010	--	--	--	--
Percent Change	--	--	--	--
Medium Density				
Existing 1985	855	2,139	842	3,836
Planned Increment	2,235	1,709	977	4,921
Total 2010	3,090	3,848	1,819	8,757
Percent Change	261	80	116	128
Low Density				
Existing 1985	1,726	1,070	2,139	4,935
Planned Increment	-535	173	17	-345
Total 2010	1,191	1,243	2,156	4,590
Percent Change	-31	16	1	-7
Suburban Density				
Existing 1985	--	--	--	--
Planned Increment	--	--	--	--
Total 2010	--	--	--	--
Percent Change	--	--	--	--
Total				
Existing 1985	2,581	3,209	2,981	8,771
Planned Increment	1,700	1,882	994	4,576
Total 2010	4,281	5,091	3,975	13,347
Percent Change	66	59	33	52

Source: SEWRPC.

5. Residential Land Use

The distribution by county and by density of the increment in residential land needed to accommodate the increments in population and households noted above is identified in Table 50. The planned increment in residential land use totals about 7.2 square miles. Again, the great majority of this is recommended to be at medium residential densities, defined as from 2.3 to 6.9 dwelling units per net residential acre. As under the intermediate-centralized land use plan, much of the new residential development under this plan is proposed for the Milwaukee County portion of the study corridor,

where partially developed neighborhoods in the Cities of Franklin and Oak Creek would be completed. Unlike the intermediate-centralized plan, however, the optimistic-decentralized future land use plan also envisions significant amounts of new residential development in neighborhoods in Racine and Kenosha Counties.

6. Commercial Land Use

The plan envisions a 106 percent increase in the amount of land devoted to commercial land use in the corridor study area. As shown in Table 51, the planned net increase in commercial land is 535 acres,

Table 51

EXISTING AND PROPOSED COMMERCIAL AND INDUSTRIAL LAND USE IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN

County	Commercial Land Use (acres) ^a				Industrial Land Use (acres) ^a			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	129	278	407	216	306	878	1,184	287
Milwaukee	212	115	327	54	455	760	1,215	167
Racine	162	142	304	88	336	751	1,087	224
Total	503	535	1,038	106	1,097	2,389	3,486	218

^aDoes not include off-street parking areas, which are classified as a transportation land use.

Source: SEWRPC.

net being defined to exclude the off-street parking areas needed to serve commercial development. Like the intermediate-centralized land use plan, the optimistic-decentralized land use plan recommends that about 90 percent of all new commercial development occur within the six major commercial land use reserves identified on Map 49. The remaining 10 percent would constitute neighborhood and other local commercial uses distributed throughout the corridor in accordance with local needs. Of the planned increment in commercial land of 535 acres, about 52 percent is proposed for Kenosha County and about 21 percent for Milwaukee County, with the remaining 27 percent in Racine County.

7. Industrial Land Use

A planned increment of nearly 2,400 acres in industrial land is identified in the optimistic-decentralized land use plan for the study corridor. Whereas the intermediate-centralized plan would nearly double the industrial land now found in the corridor, the optimistic-decentralized plan would more than triple the amount of such land. All of the new industrial land is recommended to occur within the nine major industrial land use reserves shown on Map 49. As shown in Table 51, about

37 percent of the increment is planned for Kenosha County, 32 percent for Milwaukee County, and 31 percent for Racine County. Like the commercial land increments, these industrial land increments are net in nature and do include areas devoted to off-street parking.

8. Other Urban Land Uses

The planned increments in the remaining categories of urban land uses—transportation, communications, and utilities; governmental and institutional; and park and recreational—are identified in Table 52. Again, with the exception of specifically planned major park and recreation areas and specifically planned airport improvements, the planned increments in these three categories of urban land uses are based upon the land use plan design standards identified in Chapter VI of this report and are not specifically shown on Map 52, but rather are assumed to be distributed in proportion to the new residential land.

9. Agricultural Land

The conversion to urban use of about 18.2 square miles of land results in a concomitant decrease in agricultural and other open lands. These changes as they relate to all agricultural and open lands and to

Table 52

EXISTING AND PROPOSED TRANSPORTATION, COMMUNICATION, AND UTILITY, GOVERNMENTAL AND INSTITUTIONAL, AND PARK AND RECREATIONAL LAND USE IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN

County	Transportation, Communication, Utility Land Use (acres) ^a				Governmental and Institutional Land Use (acres)				Park and Recreation Land Use (acres)			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	2,973	1,515	4,488	51	133	59	192	44	362	245	607	68
Milwaukee	2,369	1,110	3,479	47	308	67	375	22	472	184	656	39
Racine	2,658	877	3,535	33	237	29	266	12	482	52	534	11
Total	8,000	3,502	11,502	44	678	155	833	23	1,316	481	1,797	37

^aIncludes off-street parking areas associated with other land uses.

Source: SEWRPC.

Table 53

EXISTING AND PROPOSED AGRICULTURAL LANDS IN THE IH 94 SOUTH CORRIDOR BY COUNTY: 1985 AND 2010 OPTIMISTIC-DECENTRALIZED FUTURE LAND USE PLAN

County	All Agricultural and Open Lands (acres)				Prime Agricultural Lands (acres)			
	Existing 1985	Planned Increment	Total 2010	Percent Change	Existing 1985	Planned Increment	Total 2010	Percent Change
Kenosha	39,619	-4,675	34,944	-12	25,002	-1,885	23,147	-7
Milwaukee	15,112	-4,118	10,994	-27	0	0	0	0
Racine	39,077	-2,845	36,232	-7	24,166	-913	23,253	-4
Total	93,808	-11,638	82,170	-12	49,168	-2,768	46,400	-6

Source: SEWRPC.

those agricultural lands classified as prime in nature are identified in Table 53. As shown in this table, under the plan just over four square miles of lands currently classified as prime agricultural in nature would be converted to urban use, or about 6 percent of such lands in the corridor study area.

respect to the environmentally sensitive lands. As such, the plan would recommend that nearly 29.4 square miles of land be protected and preserved in essentially natural, open uses.

RECOMMENDED LAND USE PLAN

After reviewing the plan development framework, the intermediate-centralized future land use plan alternative, and the optimistic-decentralized future land use plan alternative described in the preceding sections of this

10. **Environmentally Sensitive Lands**
The optimistic-decentralized future land use plan is identical to the intermediate-centralized future land use plan with

chapter, the Advisory Committee directed that a recommended land use plan be prepared based upon the intermediate-centralized land use plan for the study corridor. That recommended plan is shown on Map 53.

The recommended land use plan is based upon the forecasts of future growth and development in the study corridor set forth under the intermediate-centralized land use plan. Drawing in part from the plan development framework and in part from local land use development objectives and plans, however, the Advisory Committee directed that certain additional commercial and industrial land use reserves be included in the recommended plan. In so doing, the Advisory Committee acknowledged a commitment in the plan to commercial and industrial land use development greater than that needed to accommodate the forecast change in employment underlying the intermediate-centralized land use plan. In addition, the Advisory Committee directed that a residential land reserve be added to the plan, such reserve to reflect the outer extent of planned sanitary sewer service areas that have already been approved by the Wisconsin Department of Natural Resources.

The inclusion of the major land use reserve areas within the recommended plan was intended to provide landowners and local governments with a measure of flexibility in the location and timing of, in particular, new commercial and industrial development. All lands within the reserve areas should be viewed as being available for urban development within the next 20 years, even though it is recognized that not all such lands will be needed for urban development during that period. With the flexibility so provided, local government officials should be able to resist pressures to convert to urban uses those lands now in agricultural use along the IH 94 South Freeway, but lying beyond the limits of the recommended reserves.

Developable land data attendant to each of 10 predominantly commercial and nine predominantly industrial land reserves in the study corridor are set forth in Table 54. In total, the 10 commercial reserves encompass about 4,310 acres of developable land. Only about 670 acres, or 16 percent of that total, is estimated to be required to meet the demand for commercial land use forecast under the intermediate-centralized future scenario. Similarly, the nine industrial land reserves total about 8,930 acres of developable land. About 1,220 acres, or 14 per-

cent of that total, would be required to meet the forecast demand. The locations of these 19 land reserves in relationship to the existing and initially planned arterial street and highway system for the corridor are shown on Map 54.

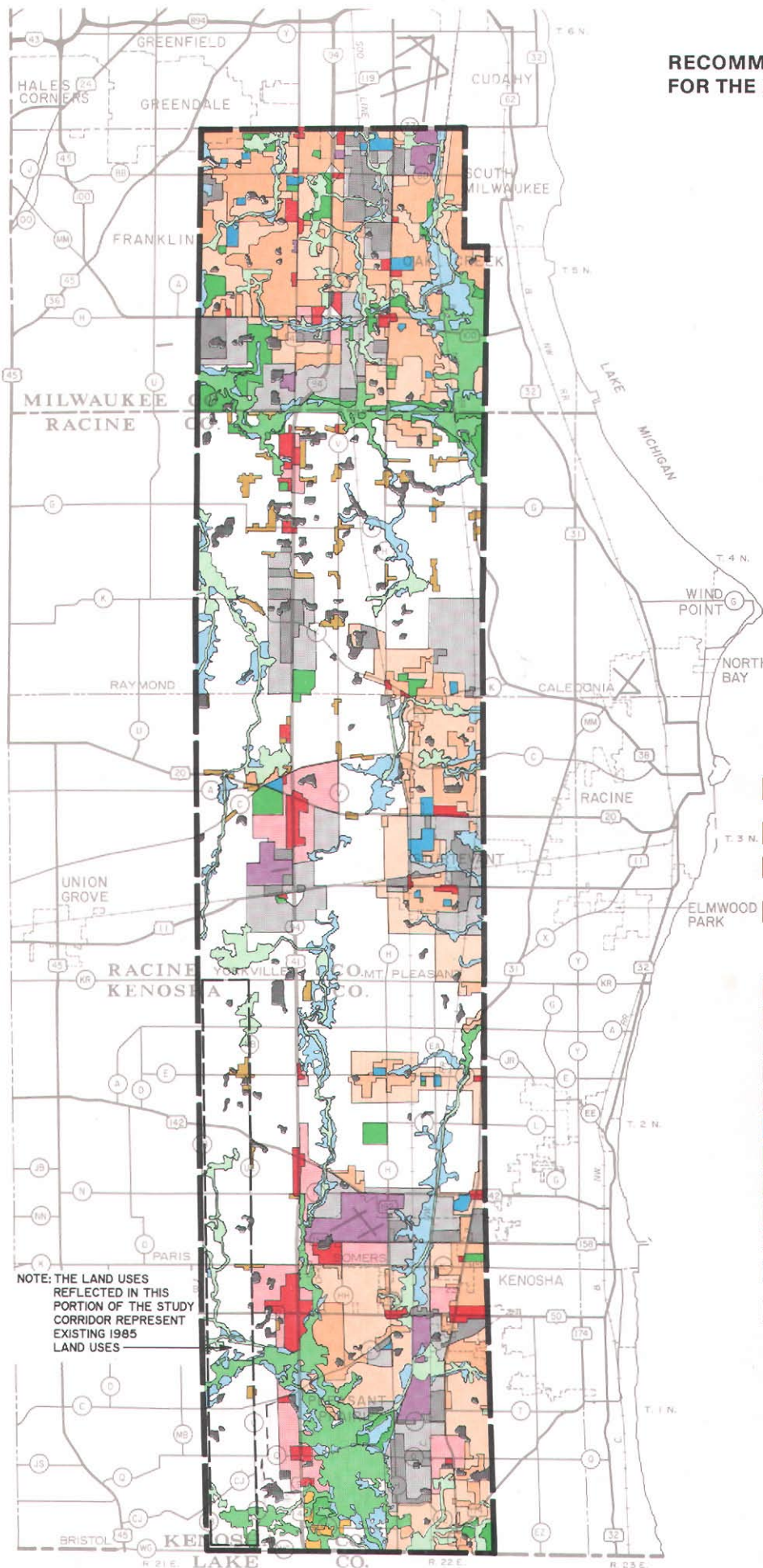
Developable land data attendant to each of five predominantly residential land reserves are set forth in Table 55. Each of these reserve areas is tributary to a different public sewage treatment plant serving the corridor. In total, the five residential land reserves encompass about 12,650 acres of developable land.

It is further recommended that the major public sewer and water utility studies being concurrently conducted for the Kenosha and Racine County portions of the IH 94 South Corridor use the land use distribution, including the major land reserves, reflected on Map 53 as a basis for estimating future water supply and sewerage needs. This approach should permit engineers to evaluate alternatives for sizing the utility lines needed to serve major new urban development in the corridor. Decisions need to be made in those studies as to whether the utility lines should be sized only for the extent of development envisioned through the year 2010, or perhaps increased to provide for development in the major reserves beyond that time, extending for up to a period of 40 years as permitted under rules established by the Wisconsin Department of Natural Resources.

Finally, as a part of the land use plan, it is recommended that the local government jurisdictions within the study area take steps to address the response time shortfalls in the provision of fire and rescue services to lands on either side of IH 94 South as those shortfalls were identified and described in Chapter IV of this report. In particular, major response time shortfalls were identified in the Town of Bristol in Kenosha County and the Towns of Mt. Pleasant and Yorkville in Racine County. Such shortfalls can only be expected to become more serious as new urban development proceeds in accordance with the land use plan for the study corridor recommended herein.

Map 55 identifies the response time shortfalls and suggests possible locations for new fire-rescue stations that would address these shortfalls. A total of nine proposed fire-rescue stations are identified on this map, including two in the Town of Bristol, one in the Village of Pleasant Prairie, and one in the City of Kenosha, all in Kenosha County; one in the Town of Yorkville,

**RECOMMENDED LAND USE PLAN
FOR THE IH 94 SOUTH CORRIDOR**



LEGEND

- NONE PREDOMINANTLY SUBURBAN RESIDENTIAL
(0.2-0.6 DWELLING UNITS PER
NET RESIDENTIAL ACRE)
- PREDOMINANTLY LOW DENSITY RESIDENTIAL
(0.7-2.2 DWELLING UNITS PER
NET RESIDENTIAL ACRE)
- LOW DENSITY RESIDENTIAL RESERVE
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL
(2.3-6.9 DWELLING UNITS PER
NET RESIDENTIAL ACRE)
- MEDIUM DENSITY RESIDENTIAL RESERVE
- NONE PREDOMINANTLY HIGH DENSITY RESIDENTIAL
(7.0-17.9 DWELLING UNITS PER
NET RESIDENTIAL ACRE)
- COMMERCIAL
- COMMERCIAL RESERVE
- INDUSTRIAL
- INDUSTRIAL RESERVE
- TRANSPORTATION, COMMUNICATION, AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- PARK AND RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- FLOODPLAINS BEYOND ENVIRONMENTAL
CORRIDORS
- AGRICULTURAL, OPEN, AND RURAL
RESIDENTIAL LAND

NOTE: THE LAND USES
REFLECTED IN THIS
PORTION OF THE STUDY
CORRIDOR REPRESENT
EXISTING 1985
LAND USES

Source: SEWRPC.

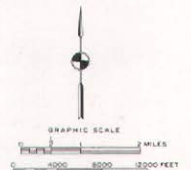


Table 54

**MAJOR COMMERCIAL AND INDUSTRIAL LAND USE RESERVES IN
THE IH 94 SOUTH CORRIDOR: 2010 RECOMMENDED LAND USE PLAN**

Major Land Use Reserve		Developable Land Area (acres) ^a	Amount of Land Needed to Meet Forecast Demand (acres) ^b	Residual Area Available to Meet Demand Beyond the Forecast (acres)
Predominant Type	Location			
Commercial	IH 94 and STH 100— Oak Creek	140	50	90
	IH 94 and Seven Mile Road—Towns of Caledonia and Raymond	160	30	130
	IH 94 and STH 20—Towns of Mt. Pleasant and Yorkville	1,130	120	1,010
	IH 94 and CTH E—Town of Somers	40	10	30
	IH 94 and STH 142—Towns of Paris and Somers	350	10	340
	IH 94 and STH 158—City of Kenosha and Town of Somers	510	100	410
	IH 94 and STH 50—City of Kenosha, Village of Pleasant Prairie, and Town of Bristol	790	200	590
	IH 94 and CTH C and CTH Q— Village of Pleasant Prairie and Town of Bristol	640	120	520
	STH 31 and CTH Q—Village of Pleasant Prairie	350	10	340
STH 31 and STH 50— City of Kenosha	200	20	180	
Total	--	4,310	670	3,640
Industrial	City of Oak Creek—North	590	250	340
	City of Oak Creek—South	840	30	810
	City of Franklin	840	130	710
	IH 94 and CTH K—Towns of Caledonia and Raymond	1,190	170	1,020
	Franksville—Town of Caledonia	990	20	970
	IH 94 and STH 11—Towns of Mt. Pleasant and Yorkville	1,140	30	1,110
	Waxdale—Village of Sturtevant and Town of Mt. Pleasant	980 ^c	60	920
	Kenosha Airport—City of Kenosha and Town of Somers	970 ^c	120	850
	Lakeview—Village of Pleasant Prairie	1,390	410	980
Total	--	8,930	1,220	7,710

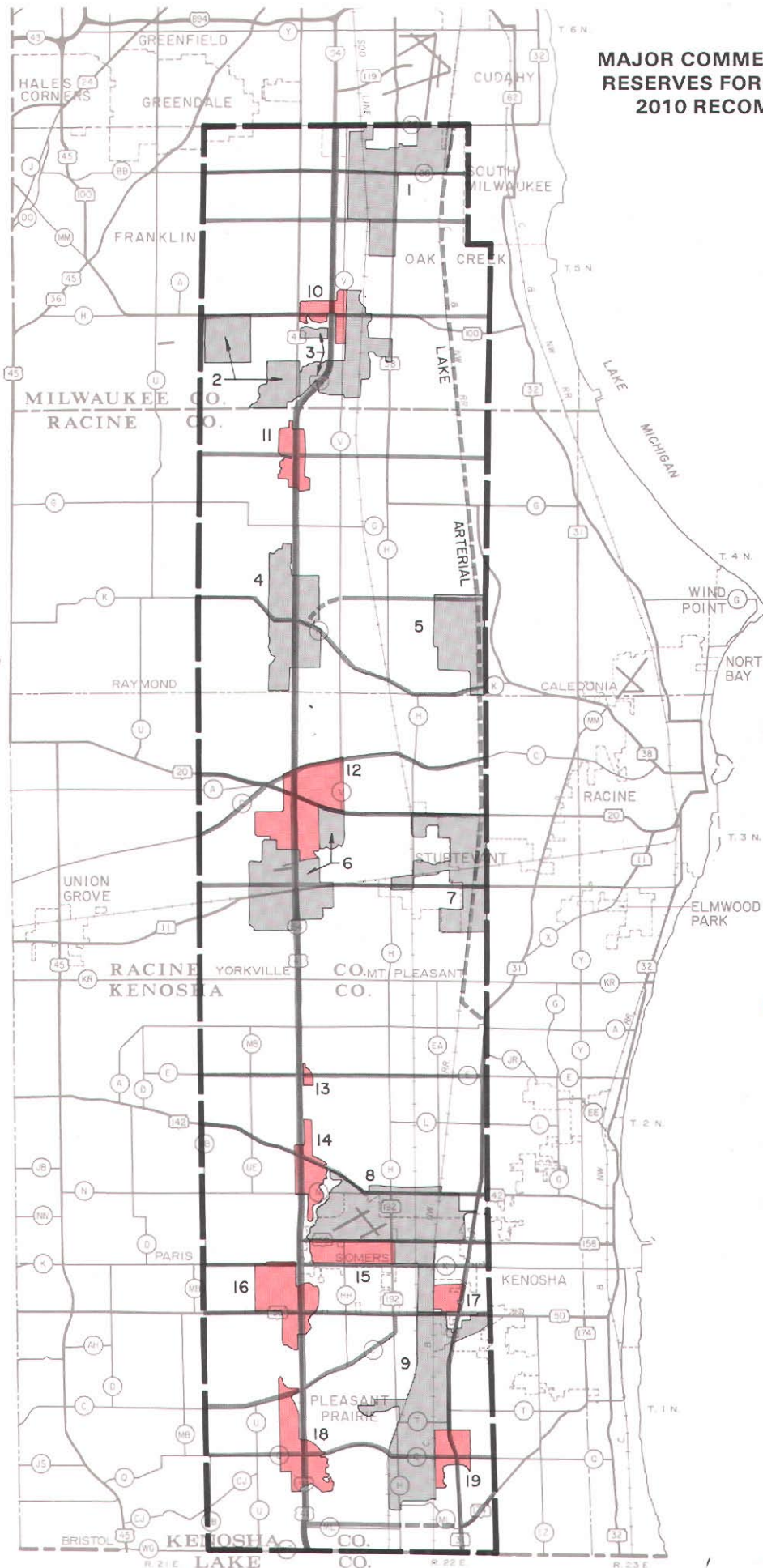
^aAs of the base year 1985.

^bForecast demand derived from the intermediate-centralized future development scenario.

^cExcludes about 40 acres of lands now located within the floodplain of the Pike River in the Waxdale Reserve and about 440 acres within the floodplain of the Pike Creek in the Kenosha Airport Reserve. If the channels of the Pike River and Pike Creek are widened and deepened in accordance with recommendations set forth in the Pike River watershed plan, such lands will be removed from the floodplain and become available for industrial development.

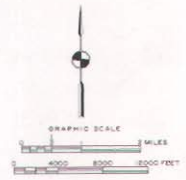
Source: SEWRPC.

**MAJOR COMMERCIAL AND INDUSTRIAL LAND RESERVES FOR THE IH 94 SOUTH CORRIDOR:
2010 RECOMMENDED LAND USE PLAN**



LEGEND

- MAJOR INDUSTRIAL LAND RESERVE
- 1 CITY OF OAK CREEK - NORTH
- 2 CITY OF FRANKLIN
- 3 CITY OF OAK CREEK - SOUTH
- 4 IH 94 AND CTH K - TOWNS OF CALEDONIA AND RAYMOND
- 5 FRANKSVILLE - TOWN OF CALEDONIA
- 6 IH 94 AND STH II - TOWNS OF MT. PLEASANT AND YORKVILLE
- 7 WAXDALE - VILLAGE OF STURTEVANT AND TOWN OF MT. PLEASANT
- 8 KENOSHA AIRPORT - CITY OF KENOSHA AND TOWN OF SOMERS
- 9 LAKEVIEW - VILLAGE OF PLEASANT PRAIRIE
- MAJOR COMMERCIAL LAND RESERVE
- 10 IH 94 AND STH 100 - OAK CREEK
- 11 IH 94 AND SEVEN MILE ROAD - TOWNS OF CALEDONIA AND RAYMOND
- 12 IH 94 AND STH 20 - TOWNS OF MT. PLEASANT AND YORKVILLE
- 13 IH 94 AND CTH E - TOWN OF SOMERS
- 14 IH 94 AND STH 142 - TOWNS OF PARIS AND SOMERS
- 15 IH 94 AND STH 159 - CITY OF KENOSHA AND TOWN OF SOMERS
- 16 IH 94 AND STH 50 - CITY OF KENOSHA, VILLAGE OF PLEASANT PRAIRIE, AND TOWN OF BRISTOL
- 17 STH 31 AND STH 50 - CITY OF KENOSHA
- 18 IH 94 AND CTH C AND CTH Q - VILLAGE OF PLEASANT PRAIRIE AND TOWN OF BRISTOL
- 19 STH 31 AND CTH Q - VILLAGE OF PLEASANT PRAIRIE



Source: SEWRPC.

Table 55

**RESIDENTIAL LAND USE RESERVES
IN THE IH 94 SOUTH CORRIDOR: 2010
RECOMMENDED LAND USE PLAN**

Predominantly Residential Land Use Reserve Tributary to Public Sewage Treatment Plant	Developable Land Area (acres) ^a
Milwaukee Metropolitan Sewerage District South Shore Plant	3,670
City of Racine Plant	3,360
City of Kenosha Plant	3,110
Village of Pleasant Prairie District D Plant	1,510
Village of Pleasant Prairie District 73-1 Plant	1,000
Total	12,650

^aAs of the base year 1985.

Source: SEWRPC.

one in the Town of Mt. Pleasant, and one in the Town of Caledonia, all in Racine County; and two in the City of Oak Creek in Milwaukee County. The number and locations of these stations are based on the assumption that the communities concerned will continue to constrain first response commitments to the jurisdiction of each community. Because the IH 94 freeway serves as a municipal boundary line for some civil jurisdictions in the corridor, and because of the extent of new commercial and industrial land development proposed in the plan on either side of IH 94, many of the proposed station locations are relatively close to IH 94 and could readily serve lands in more than one jurisdiction. If the local governments involved were able to negotiate cooperative agreements to provide for first response service unconstrained by jurisdictional limits, then the number of proposed new stations could be reduced to seven. It is recommended that the fire-rescue station location proposals set forth on Map 55 serve as a point of departure for local discussions to provide appropriate fire and rescue services to the IH 94 South Corridor as development proceeds.

SUMMARY AND CONCLUSION

This chapter has described a recommended land use plan for the IH 94 South Corridor study area. The recommended plan is set within a frame-

work that recognizes both past planning and development activities within the study corridor and the recent strong urban land market forces which have resulted in a growing demand for commercial and industrial land use development along the freeway. The development framework also recognizes the need to properly protect the natural resource base and to continue to support the agricultural economies west of IH 94 in Kenosha and Racine Counties.

Over the next two decades, an increase in the conversion of lands from rural to urban use is anticipated along the IH 94 South Corridor study area. Under the recommended land use plan, sufficient land would be set aside to accommodate a 45 percent increase in resident population, a 62 percent increase in resident households, and an approximate doubling of the number of jobs located in the corridor. Furthermore, the land use development framework on which the plan is in part based would provide for even greater increases in population and economic activity, with land reserves identified should socioeconomic conditions result in greater than anticipated increases in population and employment levels.

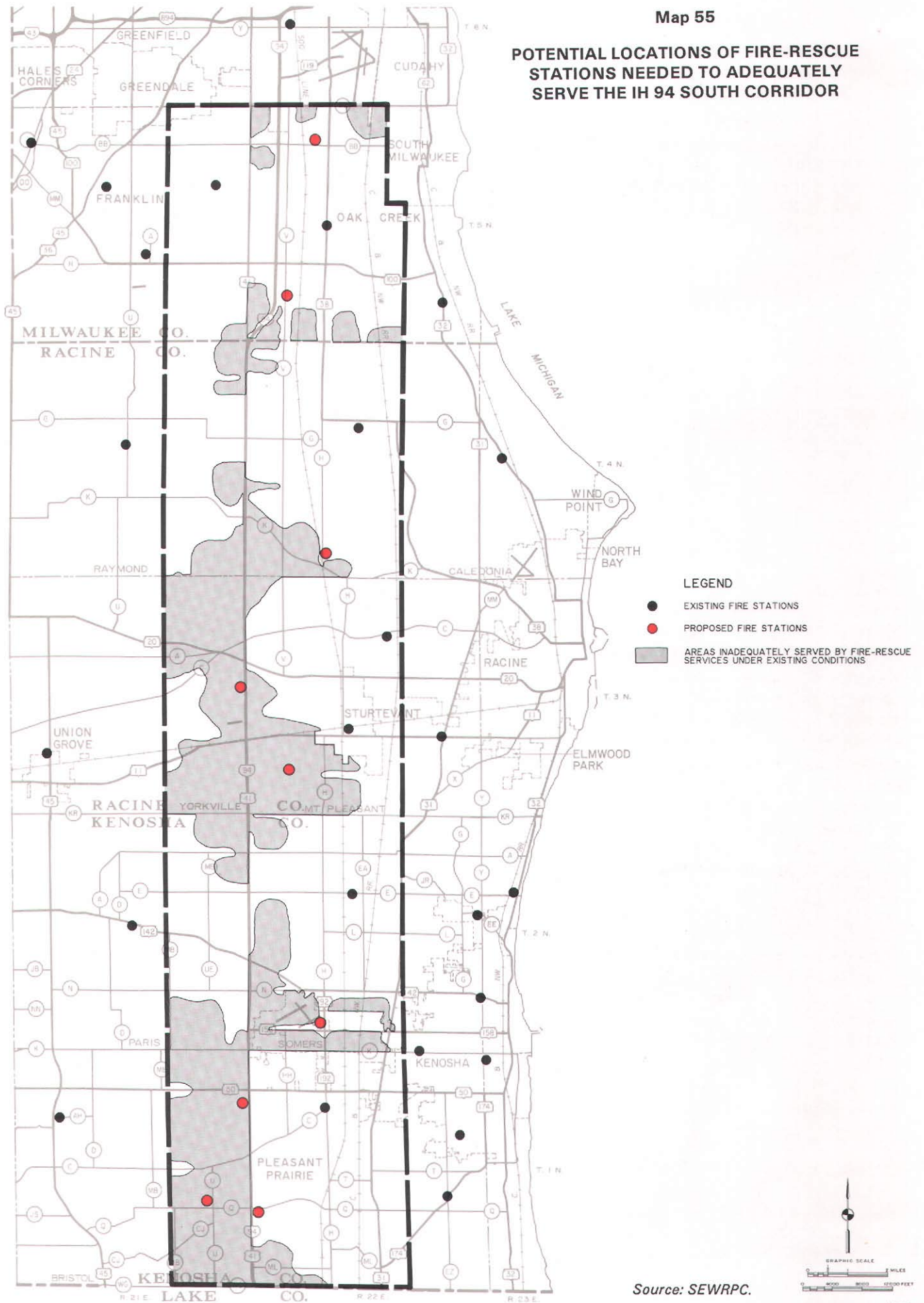
The anticipated growth and change in the study corridor will be expected to generate demands for improved transportation facilities, and will further exert demands on a limited natural resource base. The land use plan recommended in this chapter seeks to provide for the growth and development in an efficient as well as environmentally sound manner.

Implementation of the recommended land use plan would:

1. Provide a sound basis for accommodating the strong market demand for commercial and industrial development sites in the IH 94 corridor.
2. Protect and enhance the natural resource base remaining in the study corridor by protecting environmentally sensitive lands from development.
3. Provide a sound basis for evaluating how best to extend essential public sanitary sewer and water supply systems to lands along the IH 94 South Freeway, particularly in the Kenosha and Racine County portions of the corridor.

Map 55

POTENTIAL LOCATIONS OF FIRE-RESCUE STATIONS NEEDED TO ADEQUATELY SERVE THE IH 94 SOUTH CORRIDOR



Source: SEWRPC.

4. Assure that urban development, in particular commercial and industrial development, is placed at strategic locations along the IH 94 South Freeway so that the resulting urban land use pattern is not one of continuous strip development along the entire 30-mile stretch of freeway within the corridor.
5. Provide a sound basis for the planning, design, and development of transportation facilities in the corridor.
6. Contribute to the preservation and enhancement of the agricultural economy, particularly with respect to lands lying west of IH 94 in Kenosha and Racine Counties.

Chapter VIII

RECOMMENDED TRANSPORTATION SYSTEM PLAN

INTRODUCTION

The preceding chapter of this report set forth land use development plans for the IH 94 South Corridor based upon two alternative future regional growth scenarios: one based on an intermediate-centralized growth scenario and a second based on an optimistic-decentralized growth scenario. The recommended land use plan selected by the Advisory Committee is based upon the intermediate-centralized growth scenario, but takes into account through the designation of commercial, industrial, and residential land reserves the potential for growth and development to a level beyond that reflected in the forecasts underlying the intermediate-centralized growth future.

This chapter presents a recommended transportation system plan for the corridor. The chapter begins with a description of a base arterial street and highway system plan for the corridor. As indicated in the "growth framework" discussion set forth in the previous chapter, that base is comprised of the recommendations for arterial street and highway system development already included in the adopted regional transportation system plan, together with proposals to amend that plan that have already been advanced through concurrent transportation studies, including a new Racine County jurisdictional highway system plan. The base arterial street and highway system plan, in turn, serves as the point of departure for the transportation system analyses presented in this chapter. Succeeding sections of the chapter present information on the traffic volumes and attendant congestion anticipated under both the intermediate and optimistic futures, assuming that the arterial street and highway improvements included in the base plan are implemented. Based upon this information and the indicated analyses, additional arterial street and highway improvements are presented for both the intermediate and optimistic futures, and a recommended arterial street and highway system plan for the corridor is synthesized. The final section of the chapter presents companion recommendations for the provision of transit service in the corridor.

DESCRIPTION OF BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN

The designation of a base arterial street and highway system plan as a point of departure for the transportation system analyses is particularly appropriate for the IH 94 South Corridor for two reasons. First, the designation of a base plan recognizes that the corridor is set within the broader areawide context of the Southeastern Wisconsin Region and of three of the counties that comprise that Region. Prior regional and county studies have already demonstrated the need for certain arterial street and highway improvements, and policy agreement generally has been reached among the several levels and agencies of government concerned as to the desirability of undertaking those improvements. Such is the case, for example, with respect to the programmed improvement of STH 31 from STH 50 south to the Wisconsin-Illinois State line in the Village of Pleasant Prairie. The need for the improvement of that facility is well recognized and may be attributed to incremental urban development lying both within and without the IH 94 South Corridor. There is no reason to reconfirm that need as part of the current corridor study. Collectively, then, the previously agreed-upon improvements are being taken as committed for the purposes of the IH 94 South Corridor study.

A second reason that the designation of a base arterial street and highway system plan is particularly appropriate for the IH 94 South Corridor relates to the character of the new land use development being proposed along IH 94. It is desirable to isolate to the greatest extent possible those additional arterial improvement needs which may be attributable to the new land use development pattern proposed in the IH 94 South Corridor plan. Unlike prior areawide plans, the new corridor plan accommodates, and indeed would promote, large-scale commercial and industrial land development at selected locations along the IH 94 South Freeway. It is useful to identify those incremental arterial street and highway improvements—and attendant costs—that may be substantially attributed

to this major change in the planned urban development pattern, particularly in the Kenosha and Racine areas.

The recommended base arterial street and highway system plan for the IH 94 South Corridor is shown on Map 56. The improvements identified in the base plan either are included in prior regional plans or have been identified in transportation studies being undertaken concurrently with the IH 94 South Corridor study. More particularly, the improvement recommendations reflected on Map 56 have been drawn from the regional transportation system plan adopted in 1978; from subsequent amendments to that plan, including an amendment substituting the Lake Arterial South highway for the previously proposed Lake Freeway South; from the updated Racine County jurisdictional highway system plan which was taken to public hearing in January 1990; and from proposed amendments to the Kenosha County jurisdictional highway system plan which were under active intergovernmental consideration in January 1990. It is important to note that the alignment for the proposed Lake Arterial South highway shown on Map 56 is only one of several potential alignments. In 1990 the Wisconsin Department of Transportation began a preliminary engineering and environmental assessment study to identify a preferred alignment for this facility. Consequently, the particular alignment on Map 56 should not be construed as the preferred alignment.

The new arterial street and highway facilities, and the major arterial street and highway widenings included in the base plan, are listed in Table 56 and shown on Map 56. The base arterial street and highway system plan also incorporates certain improvements to the 19 interchanges along IH 94 South identified on Map 56. The diagrams set forth in Figure 16 identify schematically for each of these 19 interchanges the number of lanes provided on the freeway, on the intersecting arterial street, and on the freeway ramps assumed to be provided in the base plan. These interchange diagrams further assume that, consistent with the interchange reconstruction activities along the IH 94 South Corridor that have occurred over the recent past in Kenosha and Racine Counties, and consistent with the standards set forth in Chapter VI of this report, all frontage roads in Kenosha and Racine Counties would be re-

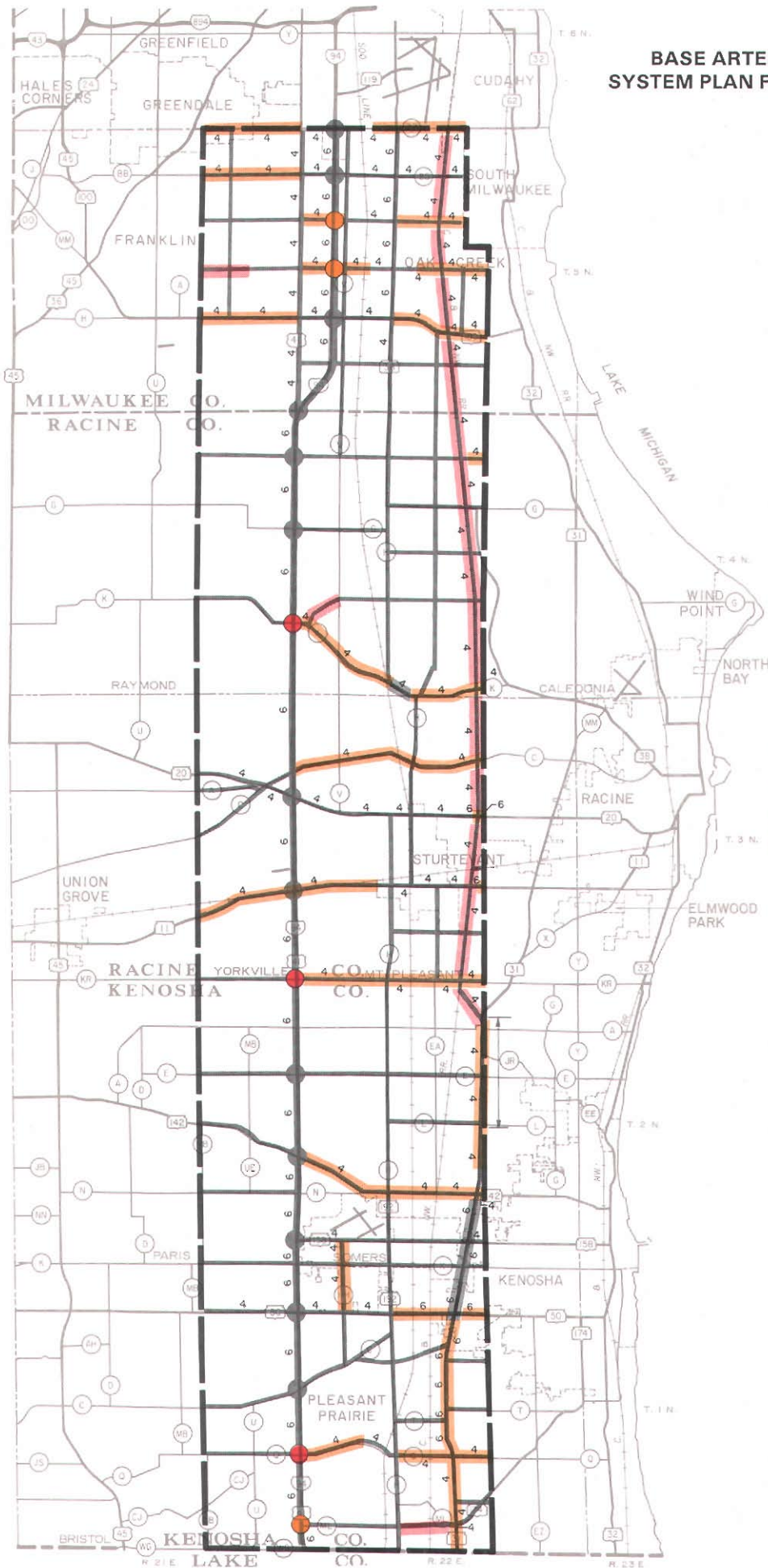
cated in such a way as to eliminate braided freeway on- and off-ramps. Thus, the base plan incorporates the unbraiding of the ramps in a manner similar to that already accomplished or underway in whole or in part at the CTH Q, STH 50, and STH 20 interchanges. This ramp unbraiding, together with certain interchange improvements consistent with the base plan recommendations to provide widened arterial facilities that intersect with IH 94, comprises the base plan for the 19 interchanges along IH 94 in the study corridor. The diagrams set forth in Figure 16 schematically indicate which of the travel lanes through the interchange are currently provided, and which would be assumed to be provided as committed decisions under the base plan.

Finally, the base plan also includes certain minor transportation system management improvements that have previously been found necessary to provide the arterial capacity needed to meet forecast travel demand. These consist of the following:

- Elimination of parking along S. Howell Avenue in the City of Oak Creek from E. College Avenue to E. Ryan Road in order to provide for six travel lanes.
- Elimination of parking on CTH K through Franksville in the Town of Caledonia in order to provide for four travel lanes.
- Minor interchange improvements involving traffic island and signal locations at the intersections of STH 158, CTH K, and STH 50 with STH 31 in order to permit six continuous through travel lanes on STH 31.

The capital costs of carrying out the improvements identified in the base arterial street and highway plan for the IH 94 South Corridor are summarized by county in Table 57. New arterial facilities included in the base plan have an estimated cost of \$47.7 million. The arterial street widenings identified in the base plan would have a capital cost of about \$94.0 million. The IH 94 south interchange improvements set forth in the base plan would have a capital cost of about \$6.9 million. Thus, the total capital cost of implementing the base arterial street and highway plan—exclusive of any cost needed to preserve through resurfacing and reconstruction those arterial streets in the corridor that would not be widened—is estimated at \$148.6 million.

BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 SOUTH CORRIDOR



LEGEND

- FREEWAY -- NO ADDITIONAL LANES
- STANDARD ARTERIAL -- NO ADDITIONAL LANES
- NEW ARTERIAL FACILITY
- WIDENING OF EXISTING FACILITY TO PROVIDE ADDITIONAL LANES
- PARKING PROHIBITIONS AND MINOR INTERSECTION IMPROVEMENTS TO PROVIDE ADDITIONAL LANES
- NEW FREEWAY INTERCHANGE
- IMPROVED FREEWAY INTERCHANGE TO CARRY ADDITIONAL LANES ON INTERSECTING ARTERIAL HIGHWAY
- 4 NUMBER OF TRAFFIC LANES (IF MORE THAN 2)

NOTE: THE BASE PLAN ALSO INCLUDES THE ELIMINATION OF ALL REMAINING BRAIDED FREEWAY ON- AND OFF- RAMP ALONG IH 94 THROUGH THE RELOCATION OF FRONTAGE ROADS

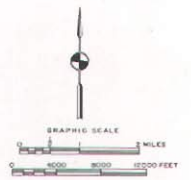
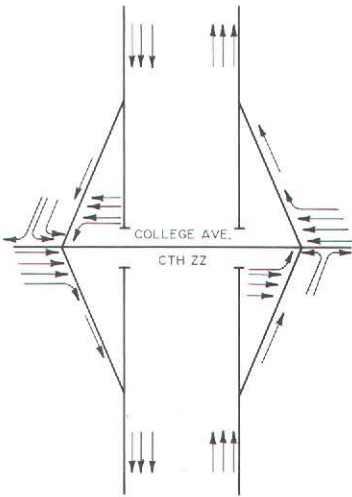


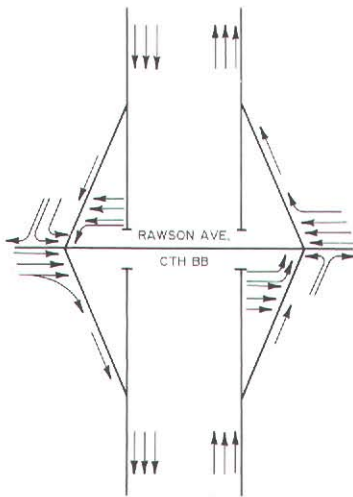
Figure 16

IH 94 FREEWAY INTERCHANGE IMPROVEMENTS INCLUDED IN THE BASE SYSTEM

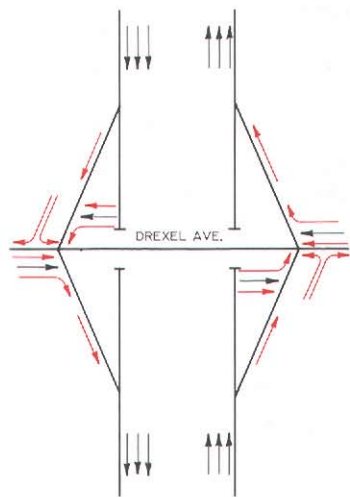
INTERCHANGE OF IH 94 WITH W. COLLEGE AVENUE



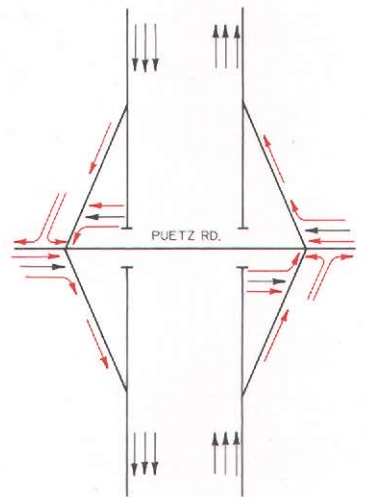
INTERCHANGE OF IH 94 WITH W. RAWSON AVENUE



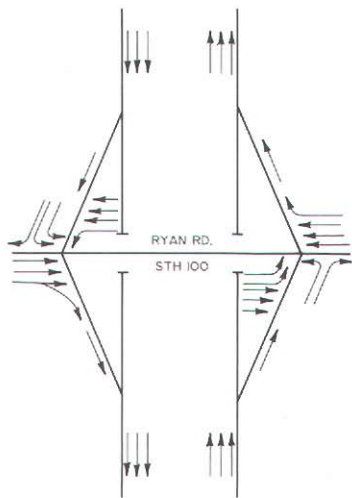
INTERCHANGE OF IH 94 WITH W. DREXEL AVENUE



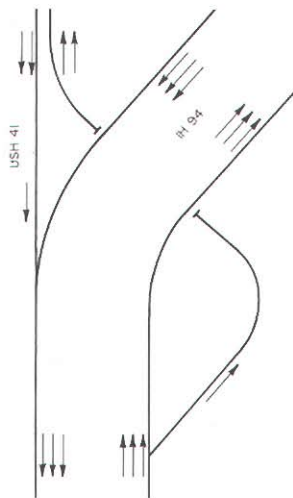
INTERCHANGE OF IH 94 WITH W. PUETZ ROAD



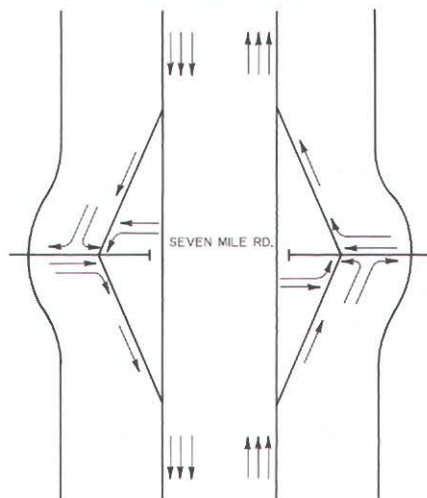
INTERCHANGE OF IH 94 WITH W. RYAN ROAD



INTERCHANGE OF IH 94 WITH USH 41



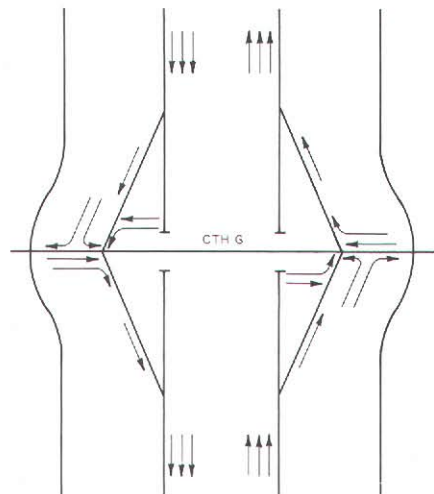
INTERCHANGE OF IH 94 WITH SEVEN MILE ROAD



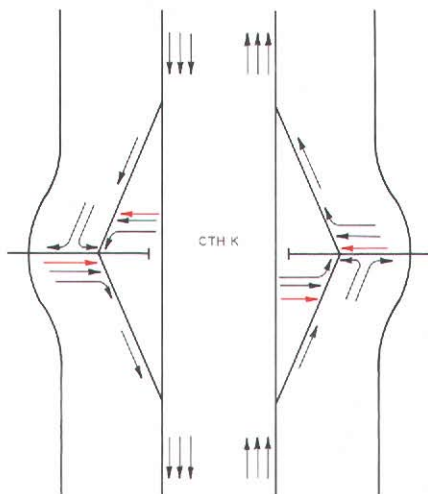
LEGEND

- ← EXISTING TRAFFIC LANE
- ← PLANNED TRAFFIC LANE

INTERCHANGE OF IH 94 WITH CTH G



INTERCHANGE OF IH 94 WITH CTH K



INTERCHANGE OF IH 94 WITH STH 20

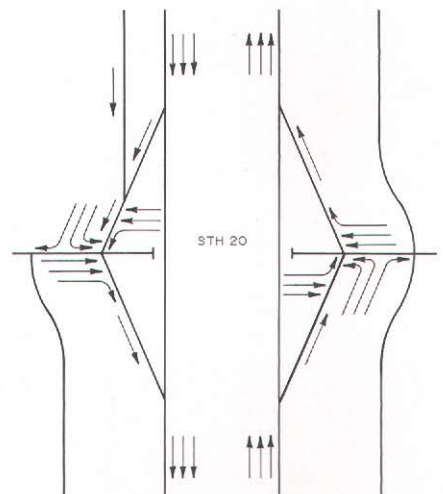
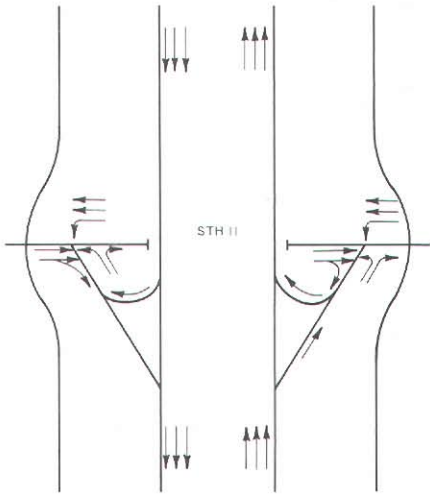
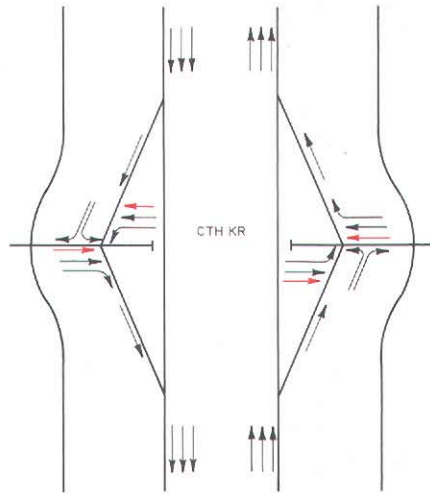


Figure 16 (continued)

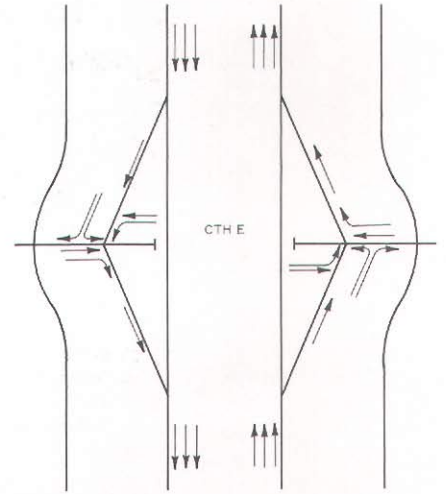
INTERCHANGE OF IH 94 WITH
STH 11



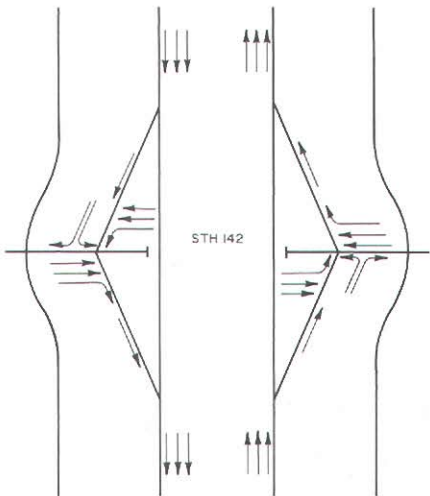
INTERCHANGE OF IH 94 WITH
CTH KR



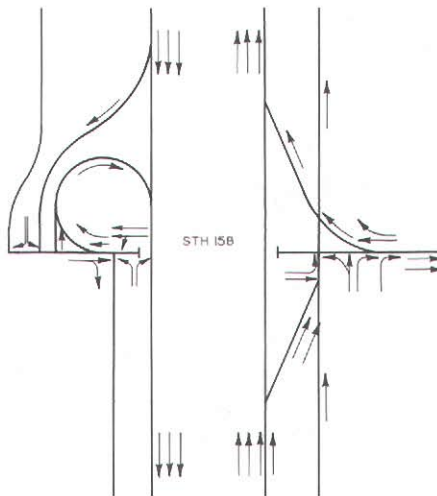
INTERCHANGE OF IH 94 WITH
CTH E



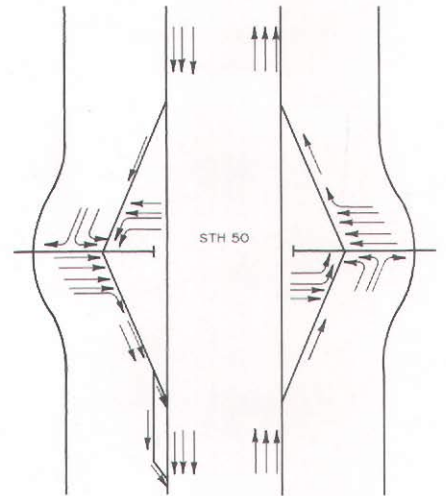
INTERCHANGE OF IH 94 WITH
STH 142



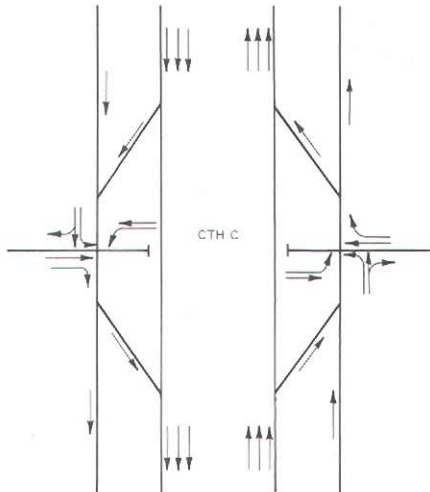
INTERCHANGE OF IH 94 WITH
STH 158



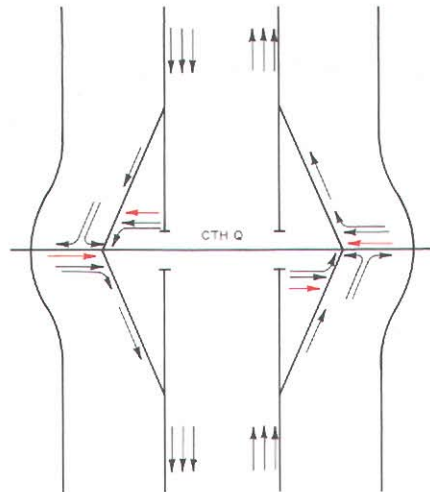
INTERCHANGE OF IH 94 WITH
STH 50



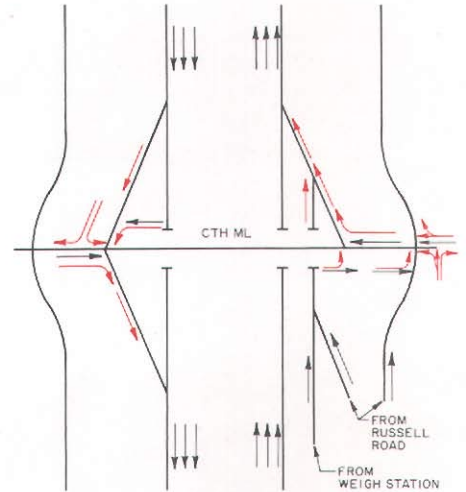
INTERCHANGE OF IH 94 WITH
CTH C



INTERCHANGE OF IH 94 WITH
CTH Q



INTERCHANGE OF IH 94 WITH
CTH ML



Source: SEWRPC.

Table 56

**ARTERIAL STREET AND HIGHWAY SYSTEM IMPROVEMENTS
INCLUDED IN THE BASE PLAN FOR THE IH 94 SOUTH CORRIDOR**

Type of Facility	Facility	Termini	Length (miles)	Description
New Facilities	Lake Arterial	E. College Avenue to STH 31	19.05	Construct four lanes on new alignment
	W. Puetz Road	Hunting Park Drive to western corridor boundary	0.93	Construct two lanes on new alignment
	Four Mile Road	CTH V to CTH K	0.96	Construct two lanes on new alignment
	S. 21st Street	Lake Arterial to eastern corridor boundary	0.21	Construct two lanes on new alignment
	CTH ML	STH 31 to CTH H	1.25	Construct two lanes on new alignment
	W. Drexel Avenue	IH 94	--	Construct new interchange
	W. Puetz Road	IH 94	--	Construct new interchange
	CTH ML	IH 94	--	Construct new interchange
Improved Facilities	W. College Avenue	S. 27th Street to western corridor boundary	2.00	Widen from two to four traffic lanes
	E. College Avenue	S. 6th Street to Lake Arterial	1.63	Widen from two to four traffic lanes ^a
	W. Rawson Avenue	S. 27th Street to western corridor boundary	2.00	Widen from two to four traffic lanes
	W. Drexel Avenue	S. 13th Street to S. 27th Street	0.97	Widen from two to four traffic lanes
	E. Drexel Avenue	S. Howell Avenue to Pennsylvania Avenue	1.50	Widen from two to four traffic lanes
	W. Puetz Road	Soo Line railway to S. 27th Street	1.50	Widen from two to four traffic lanes
	E. Puetz Road	S. Shepherd Avenue to eastern corridor boundary	1.50	Widen from two to four traffic lanes
	W. Ryan Road	S. 27th Street to western corridor boundary	2.00	Widen from two to four traffic lanes
	E. Ryan Road	S. Howell Avenue to eastern corridor boundary	2.07	Widen from two to four traffic lanes
	Seven Mile Road	Lake Arterial to eastern corridor boundary	0.50	Widen from two to four traffic lanes
	CTH K	IH 94 to CTH H	2.43	Widen from two to four traffic lanes
	CTH K	CTH H to eastern corridor boundary	2.14	Widen from two to four traffic lanes
	CTH C	STH 20 to eastern corridor boundary	4.81	Widen from two to four traffic lanes
	STH 20	Willow Road to eastern corridor boundary	0.23	Widen from four to six traffic lanes
	STH 11	CTH H to western corridor boundary	4.21	Widen from two to four traffic lanes
	STH 11	STH 31 to eastern corridor boundary	0.25	Widen from four to six traffic lanes
	CTH KR	IH 94 to eastern corridor boundary	4.00	Widen from two to four traffic lanes
	STH 31	STH 142 to eastern corridor boundary	3.61	Widen from two to four traffic lanes
	STH 142	IH 94 to STH 31	3.94	Widen from two to four traffic lanes
	STH 50	CTH H to eastern corridor boundary	2.02	Widen from four to six traffic lanes
	STH 31	STH 50 to CTH Q	3.00	Widen from two to six traffic lanes
	STH 31	CTH Q to Wisconsin-Illinois state line	2.00	Widen from two to four traffic lanes
	CTH Q	IH 94 to 1.3 miles east of IH 94	1.30	Widen from two to four traffic lanes
	CTH Q	CTH H to eastern corridor boundary	2.00	Widen from two to four traffic lanes

^aThat portion of the proposed improvement from S. 6th Street to S. Howell Avenue was under construction in 1990.

Source: SEWRPC.

Table 57

ESTIMATED CAPITAL COST OF IMPLEMENTING THE ARTERIAL STREET AND HIGHWAY IMPROVEMENTS IDENTIFIED IN THE BASE PLAN FOR THE IH 94 SOUTH CORRIDOR

County	New Facilities	Widening Existing Facilities	Freeway Interchange Improvements	Total
Kenosha	\$ 3,680,000	\$37,970,000	\$4,210,000	\$ 45,860,000
Milwaukee	15,470,000	37,020,000	1,100,000	53,590,000
Racine	28,500,000	19,000,000	1,680,000	49,180,000
Total	\$47,650,000	\$93,990,000	\$6,990,000	\$148,630,000

Source: SEWRPC.

With the establishment of these base plan costs, it is possible to estimate the incremental capital costs associated with providing the arterial street and highway improvements necessary to accommodate the IH 94 South Corridor land use development pattern envisioned in the recommended land use plan.

TRAVEL AND ARTERIAL CONGESTION UNDER FUTURE CONDITIONS

In the proper design of a recommended transportation system plan, forecasts of anticipated travel for a design year should be derived from a land use pattern. Typically, the design year for arterial street and highway facilities is set from 20 to 25 years beyond the base year of the plan. For the IH 94 South corridor study, the base year was 1985.

As documented in Chapter VII, the Advisory Committee approved a recommended land use plan for the corridor for the design year 2010. That recommended plan was a refinement of the new regional land use plan being prepared for the design year 2010. Quantitatively, the corridor plan was, therefore, based upon forecasts of future growth and development in the corridor associated with the intermediate-centralized future scenario for the Southeastern Wisconsin Region. Under that scenario, population in the corridor would increase by about 45 percent, or by about 22,400 persons, from a 1985 level of 49,800 to a year 2010 level of 72,200; households in the corridor would increase by about 62 percent, or by about 10,100 households, from a 1985 level of 16,400 to a 2010 level of about 26,500; employment in the corridor would

increase by about 105 percent, or by about 29,400 jobs, from a 1985 level of 28,000 jobs to a year 2010 level of about 57,400 jobs; and urban land use in the corridor would increase by about 31 percent, or by about 10 square miles, from a 1985 level of about 32 square miles to a year 2010 level of about 42 square miles. The first step in the corridor transportation planning process was to make a traffic assignment to the previously described base plan arterial street and highway network utilizing the Commission battery of travel and traffic simulation models. The travel so assigned was derived from the recommended land use plan for the corridor set within the land use plan for the Region as a whole.

In developing the recommended land use plan for the corridor, the Advisory Committee determined to identify on that plan major areas to be designated as reserves for potential additional residential, commercial, and industrial development. While collectively these urban development reserves do not encompass the entire IH 94 South corridor study area, the extent of the reserves is of such a magnitude that it may be considered an "ultimate" land use plan for the corridor. The reserves so incorporated were intended both to provide for the possibility that the area may grow more rapidly than envisioned under the intermediate growth scenario and to provide flexibility in plan implementation. The Advisory Committee did not attempt to assign a design year by which full development of the reserve areas would be completed.

Sound public works planning, including planning for arterial street and highway facilities, would utilize a 20- to 25-year design period. Such

a period was reflected in the intermediate-centralized land use plan. In order to evaluate potential arterial street and highway needs beyond those reflected in the intermediate-centralized land use plan, but short of that represented by the ultimate plan, it was determined to address this need by using as a surrogate for the ultimate plan, the forecast of future growth and development in the corridor associated with the optimistic-decentralized future scenario for the southeastern Wisconsin Region. Under that scenario, which has the desired 20- to 25-year design period, population in the corridor would increase by about 94 percent, or by about 46,700 persons, from a 1985 level of 49,800 to a year 2010 level of 96,500; households in the corridor would increase by 101 percent, or by about 16,500 households, from a 1985 level of 16,400 to a year 2010 level of about 32,900; employment in the corridor would increase by about 238 percent, or by about 66,500 jobs, from a 1985 level of 28,000 jobs to a year 2010 level of 94,500 jobs; and urban land use in the corridor would increase by about 57 percent, or by about 18 square miles, from a 1985 level of 32 square miles to a year 2010 level of about 50 square miles. Development at the level assumed under the optimistic-decentralized future would consume about 23 percent of the residential land reserve identified in the recommended plan, about 17 percent of the commercial land reserve, and about 22 percent of the industrial land reserve. Traffic assignments to the previously described base plan arterial street and highway network were then made using the travel derived from the "ultimate" land use plan for the corridor, that plan being represented by the quantitative level of urban growth and development assumed under the optimistic-decentralized regional growth future. In the presentation that follows, the analyses will be reported as representing the recommended and the ultimate land use plans.

Information on travel in the IH 94 South Corridor is provided in Table 58. There were about 2.6 million vehicle miles of arterial travel in the corridor in 1987, with this total nearly equally divided between the three counties. About 56 percent of the total travel occurred on the IH 94 freeway. Under the intermediate growth future, as reflected in the land use pattern envisioned in the recommended land use plan, average weekday travel in the corridor would about double by the year 2010, to about

5.3 million vehicle miles of travel. The proportion of travel on the freeway versus the surface arterial system would increase slightly to about 57 percent.

Under the optimistic growth future, average weekday travel in the corridor could be expected to approximate 6.6 million vehicle miles, or about 25 percent over the level anticipated under the intermediate growth future. Under the optimistic growth future, the proportion of travel on the freeway is expected to increase to about 59 percent.

The assignment of travel demand to the arterial street and highway system in the corridor under the intermediate growth future results in the anticipated future traffic volumes shown on Map 57. Significant increases in traffic volumes are anticipated, particularly along the IH 94 South Freeway and on certain east-west arterial facilities that interchange with that freeway. The anticipated traffic volumes posted on Map 57 may be compared with the existing traffic volumes posted on Map 14 in Chapter IV of this report. For example, the traffic volumes on IH 94 in the City of Oak Creek south of W. College Avenue, which ranged from 50,000 to 80,000 vehicles per day in 1987, may be expected to increase to a range of 98,000 to 128,000 vehicles per day over the next two decades. Within Racine County, the traffic volumes on IH 94, which ranged from 45,000 to 51,500 in 1987, may be expected to about double to 96,000 to 109,000 vehicles per day by the year 2010. Within Kenosha County, the traffic volumes on IH 94, which ranged from 41,000 to 45,000 vehicles per day in 1987, may be expected to range from 79,000 to 99,000 vehicles per day by the year 2010. These anticipated increases in traffic volume on the freeway are indeed significant.

With respect to east-west surface arterial streets and highways, traffic volumes on Ryan Road east of IH 94, which ranged from 11,300 to 15,900 vehicles per day in 1987, may be expected to range from 20,000 to 27,000 vehicles per day by the year 2010. Similarly, traffic volumes on STH 20 east of IH 94, which ranged from 15,900 to 18,800 vehicles per day in 1987, may be expected to range from 27,000 to 34,000 vehicles per day by the year 2010. Finally, traffic volumes on STH 50 east of IH 94, which in 1987 ranged from 13,400 to 24,400 vehicles per day, could be expected to range from 25,000 to 32,000 vehicles per day by the year 2010.

Table 58

**ARTERIAL VEHICLE MILES OF TRAVEL ON AN AVERAGE WEEKDAY
IN THE IH 94 SOUTH CORRIDOR: EXISTING 1987 AND FORECAST 2010**

County	Existing 1987		Intermediate Growth Future 2010 ^a			Optimistic Growth Future 2010 ^b		
	Average Weekday Vehicle Miles of Travel	Percent of Total	Average Weekday Vehicle Miles of Travel	Percent of Total	Percent Change	Average Weekday Vehicle Miles of Travel	Percent of Total	Percent Change
Kenosha								
Freeway	519,000	59	1,091,500	57	110	1,422,900	59	178
Standard Arterial	367,900	41	823,500	43	124	977,800	41	168
Subtotal	886,900	100	1,915,000	100	116	2,400,700	100	174
Milwaukee								
Freeway	375,400	45	715,200	47	91	837,000	47	144
Standard Arterial	467,300	55	822,500	53	76	925,800	53	94
Subtotal	842,700	100	1,537,700	100	82	1,762,800	100	116
Racine								
Freeway	577,200	65	1,202,700	65	108	1,538,200	66	169
Standard Arterial	306,000	35	634,200	35	107	797,400	34	161
Subtotal	883,200	100	1,836,900	100	108	2,335,600	100	166
Corridor								
Freeway	1,471,600	56	3,009,400	57	104	3,798,100	58	165
Standard Arterial	1,141,200	44	2,280,200	43	100	2,701,000	42	136
Total	2,612,800	100	5,289,600	100	102	6,499,100	100	152

^aCorresponds to recommended land use plan for IH 94 South Corridor.

^bAssumes the provision of no more than eight through travel lanes on IH 94.

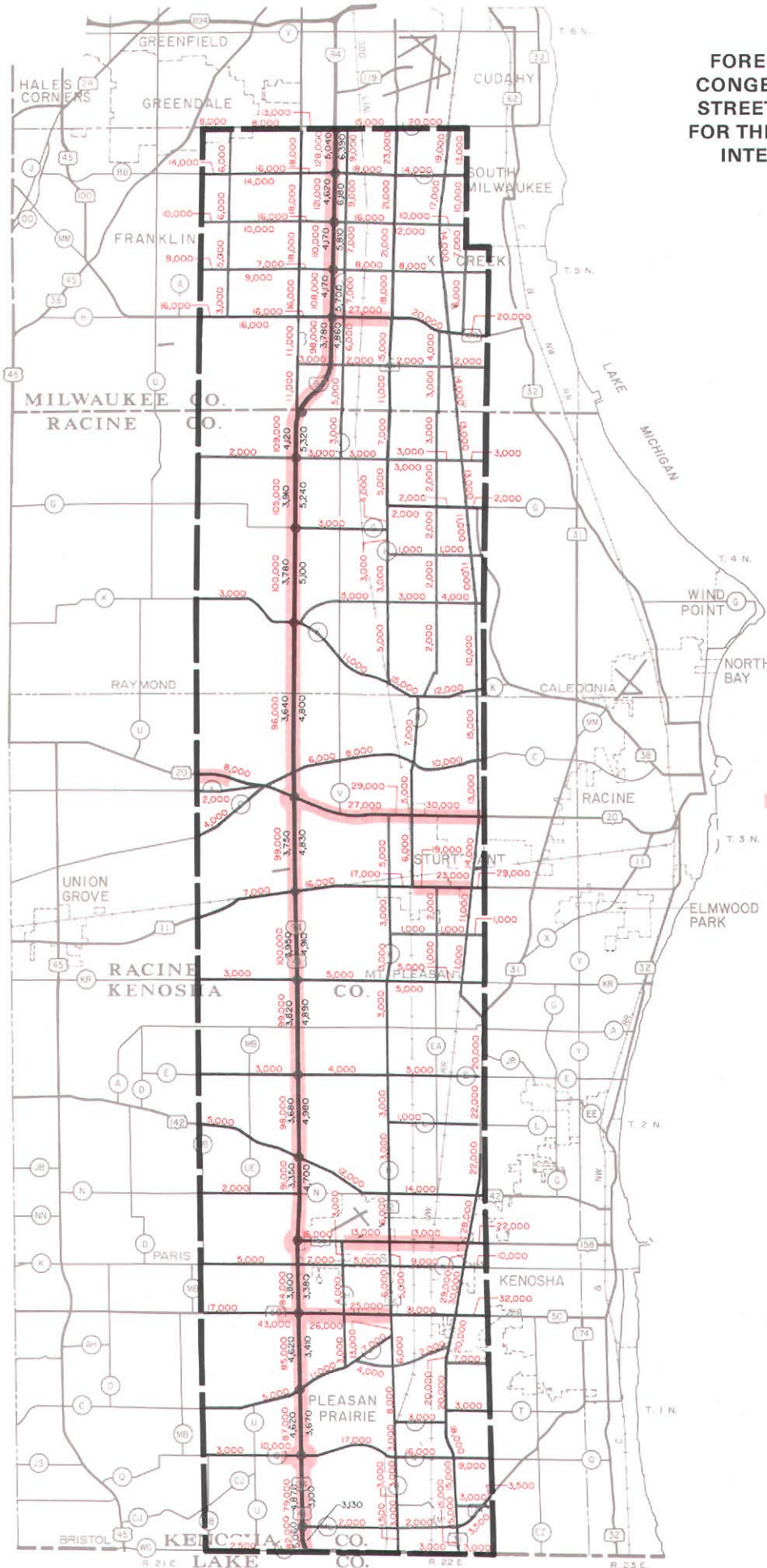
Source: SEWRPC.

With respect to north-south surface arterial streets and highways, average weekday traffic volumes on S. Howell Avenue in Oak Creek, which ranged from 10,100 to 18,700 vehicles per day in 1987, may be expected to range from 11,000 to 23,000 vehicles per day by the year 2010 assuming that the Lake Arterial is built as proposed under the base plan. The proposed Lake Arterial within the City of Oak Creek may be expected to carry volumes ranging from 14,000 to 19,000 vehicles per day in the year 2010. These traffic loadings in Oak Creek on S. Howell Avenue and the proposed Lake Arterial indicate the need for a second major north-south surface arterial street in that City, particularly one that would be aligned east of General

Mitchell International Airport. In Racine County, the Lake Arterial may be expected to carry traffic volumes ranging from 11,000 to 15,000 vehicles per average weekday. In Kenosha County, STH 31, which carried volumes ranging from 6,100 to 16,300 in 1987, may be expected to carry volumes ranging from 15,000 to 30,000 in the year 2010.

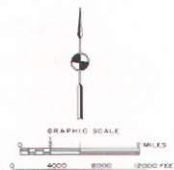
If the recommended improvements envisioned in the base plan are carried out, the traffic analyses indicate that, with relatively few exceptions, the traffic generated by the new commercial and industrial development along the IH 94 South Freeway will cause severe congestion only on the freeway itself. All but a very short segment of

FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 SOUTH CORRIDOR: 2010 INTERMEDIATE GROWTH FUTURE



LEGEND

- 30,000 AVERAGE WEEKDAY TRAFFIC VOLUME
- 4,800 P.M. PEAK HOUR DIRECTIONAL FREEWAY VOLUME
- ARTERIAL FACILITY EXPECTED TO OPERATE OVER DESIGN CAPACITY
- FREEWAY INTERCHANGE EXPECTED TO OPERATE OVER DESIGN CAPACITY AT INTERSECTION OF RAMPS AND SURFACE ARTERIAL



Source: SEWRPC.

IH 94 South in Kenosha County may be expected to be severely congested, operating at levels of Service D and E, rather than at Level of Service C specified in the standards set forth in Chapter VI of this report. The surface arterial facilities that may be expected to be congested include a one-mile segment of STH 100 east of IH 94 in the City of Oak Creek; STH 20 west of Ives Grove and east of IH 94 to the Lake Arterial facility in the Towns of Yorkville and Mt. Pleasant, respectively, totaling about 6.4 miles; STH 11 through the Village of Sturtevant, totaling about 1.5 miles; STH 158 between CTH HH and STH 31 in the City of Kenosha, totaling about 2.6 miles; STH 50 from about one-half mile west of IH 94 to about two miles east of IH 94 in the Town of Bristol and the City of Kenosha, respectively, totaling about 2.5 miles; and CTH Q for about one-half mile west of IH 94 in the Town of Bristol.

Special analyses were conducted to identify potential congestion problems attendant to the operation of each of the 19 interchanges along IH 94 South. The results of these analyses are set forth in the series of schematic interchange diagrams reproduced as Figure 17. In these interchange analyses, each potential location of congestion was separately evaluated, including points of merging and diverging of freeway on- and off-ramps, and turning movements at the intersections of freeway on- and off-ramps with the intersecting arterial street or highway. The interchanges identified as having the most severe congestion problems were the STH 20, STH 158, and CTH Q interchanges. Careful attention will have to be given to these potential areas of congestion in the formulation of recommended improvements.

Anticipated average weekday traffic volumes on the arterial street and highway system in the corridor under the optimistic growth future are posted on Map 58. Traffic volumes along IH 94 South in Milwaukee County may be expected to range from 124,000 to 149,000 vehicles per average weekday; in Racine County from 121,000 to 136,000; and in Kenosha County from 103,000 to 133,000. Under this alternative growth future, all of IH 94 South would be severely congested, operating at Levels of Service D and E. In addition to the surface arterials that would be congested under the intermediate growth alternative, several other arterials may be expected to experience congestion under the

optimistic growth alternative, including in Racine County CTH C from IH 94 to CTH V, CTH K through Franksville, and CTH H from CTH K to STH 20, together totaling about 4.1 miles; and in Kenosha County CTH E from IH 94 to 100th Avenue, STH 31 from STH 142 to CTH E, STH 50 from CTH H to the eastern corridor boundary, and CTH Q from IH 94 to CTH H, together totaling about 7.8 miles.

The results of the interchange analyses under the optimistic growth future are set forth in the series of schematic interchange diagrams reproduced as Figure 18. In addition to the three interchanges identified as having potentially severe congestion problems under the intermediate growth future, the analyses indicated that congestion problems also may be expected at the STH 11, STH 142, and CTH ML interchanges.

From the foregoing, it is clear that the departure from historical urban land use development trends reflected in the recommended land use plan for the IH 94 South Corridor will have significant implications for the operation of the arterial street and highway system serving the corridor, particularly for the operation of the IH 94 South Freeway. This is true even assuming that all of the previously planned—and in some cases programmed—improvements to the arterial street and highway system in the corridor are carried out as envisioned in the base arterial street and highway system plan. The following section of this chapter identifies those additional improvements that would be required to make the arterial street and highway system in the IH 94 South Corridor functional under the planned land use development conditions.

POTENTIAL ADDITIONAL ARTERIAL STREET AND HIGHWAY IMPROVEMENTS—RECOMMENDED AND ULTIMATE LAND USE PLANS

Given the anticipated traffic congestion under the recommended and “ultimate” land use plans described in the preceding section of this chapter, which congestion presumes implementation of the arterial street and highway improvements recommended in the base plan, additional arterial street and highway system improvements to abate that congestion were considered. In formulating those incremental improvements beyond the base plan, sufficient traffic carrying capacity was proposed to provide Level of

Figure 17

FORECAST AVERAGE WEEKDAY TRAFFIC VOLUMES AND CONGESTION AT FREEWAY INTERCHANGES IN THE IH 94 CORRIDOR UNDER THE BASE TRANSPORTATION PLAN: 2010 INTERMEDIATE GROWTH FUTURE

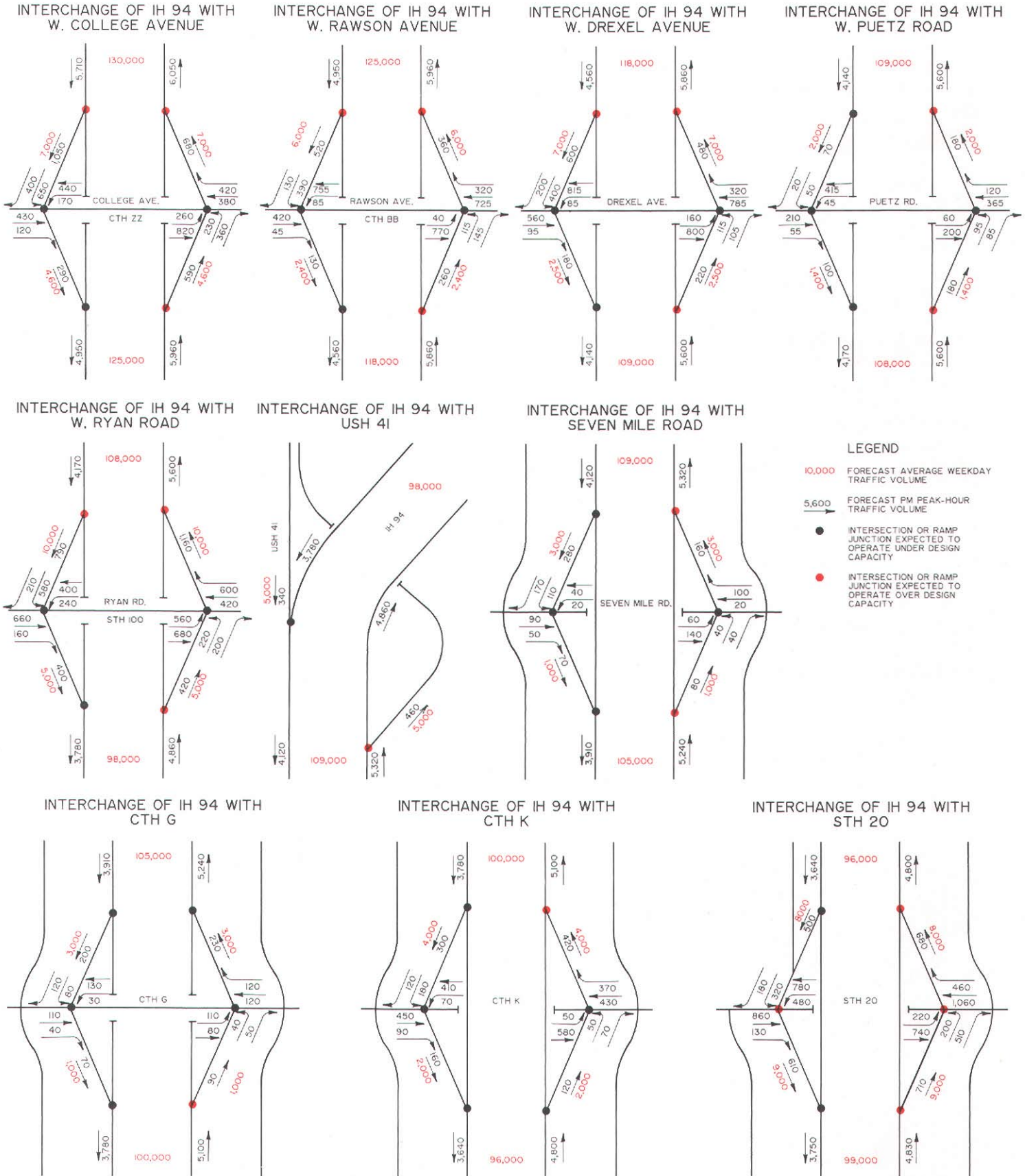
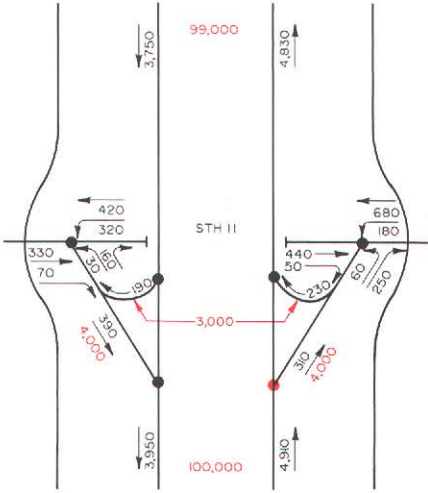
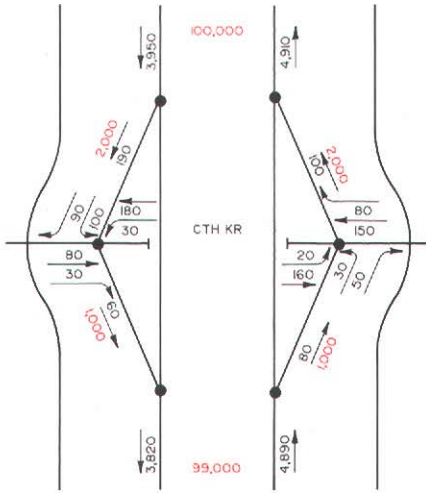


Figure 17 (continued)

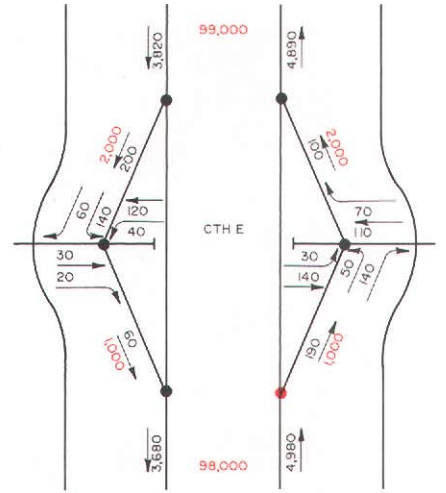
INTERCHANGE OF IH 94 WITH STH II



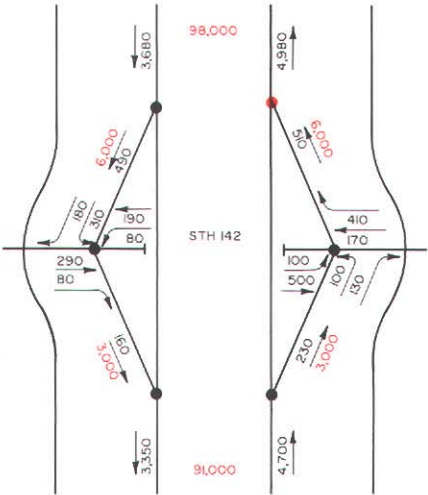
INTERCHANGE OF IH 94 WITH CTH KR



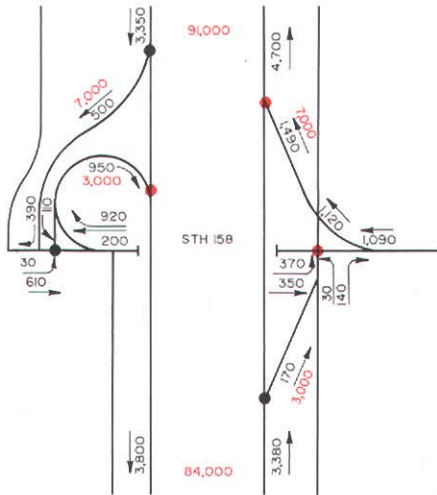
INTERCHANGE OF IH 94 WITH CTH E



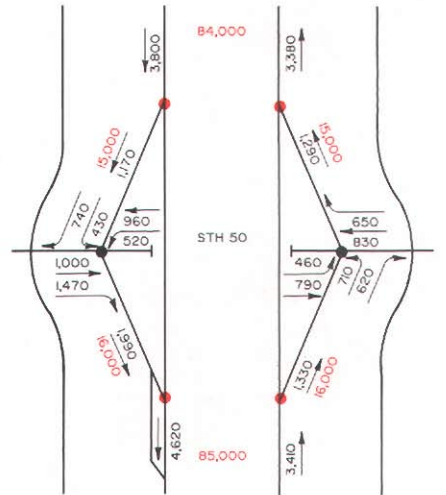
INTERCHANGE OF IH 94 WITH STH I42



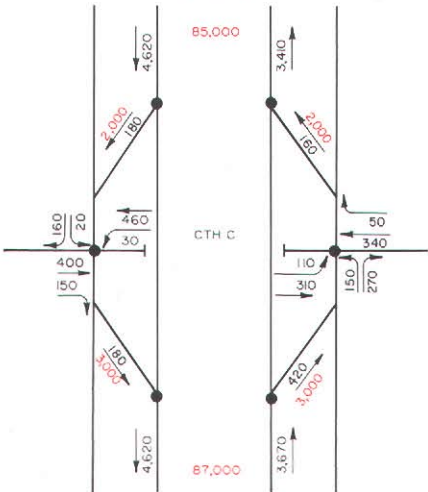
INTERCHANGE OF IH 94 WITH STH I58



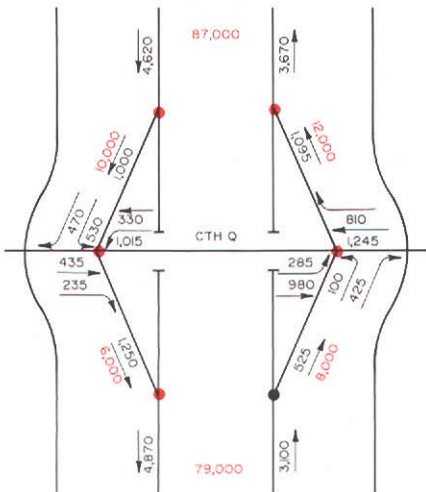
INTERCHANGE OF IH 94 WITH STH 50



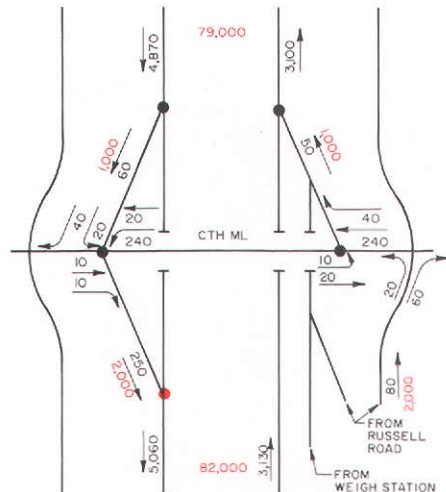
INTERCHANGE OF IH 94 WITH CTH C



INTERCHANGE OF IH 94 WITH CTH Q



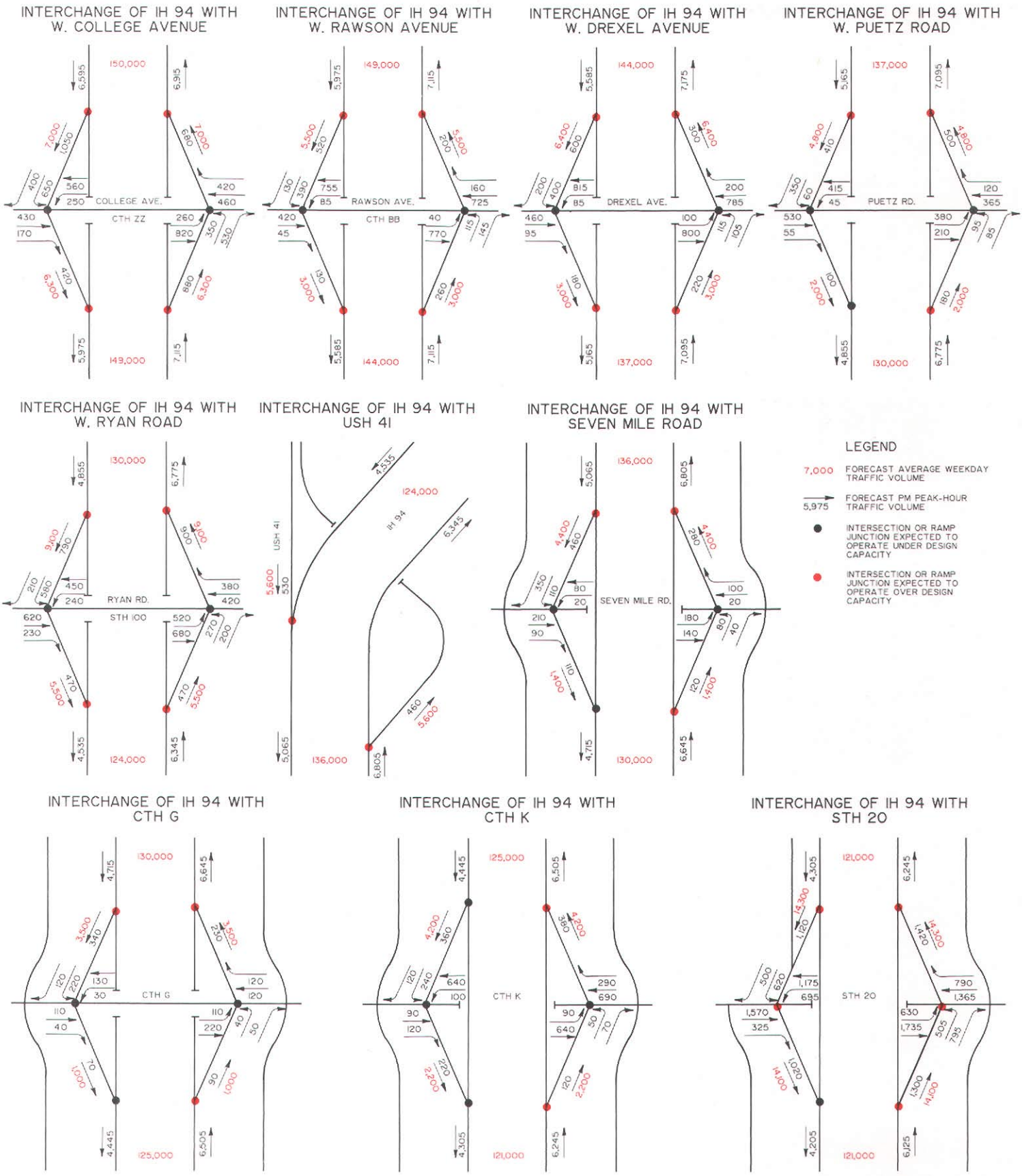
INTERCHANGE OF IH 94 WITH CTH ML



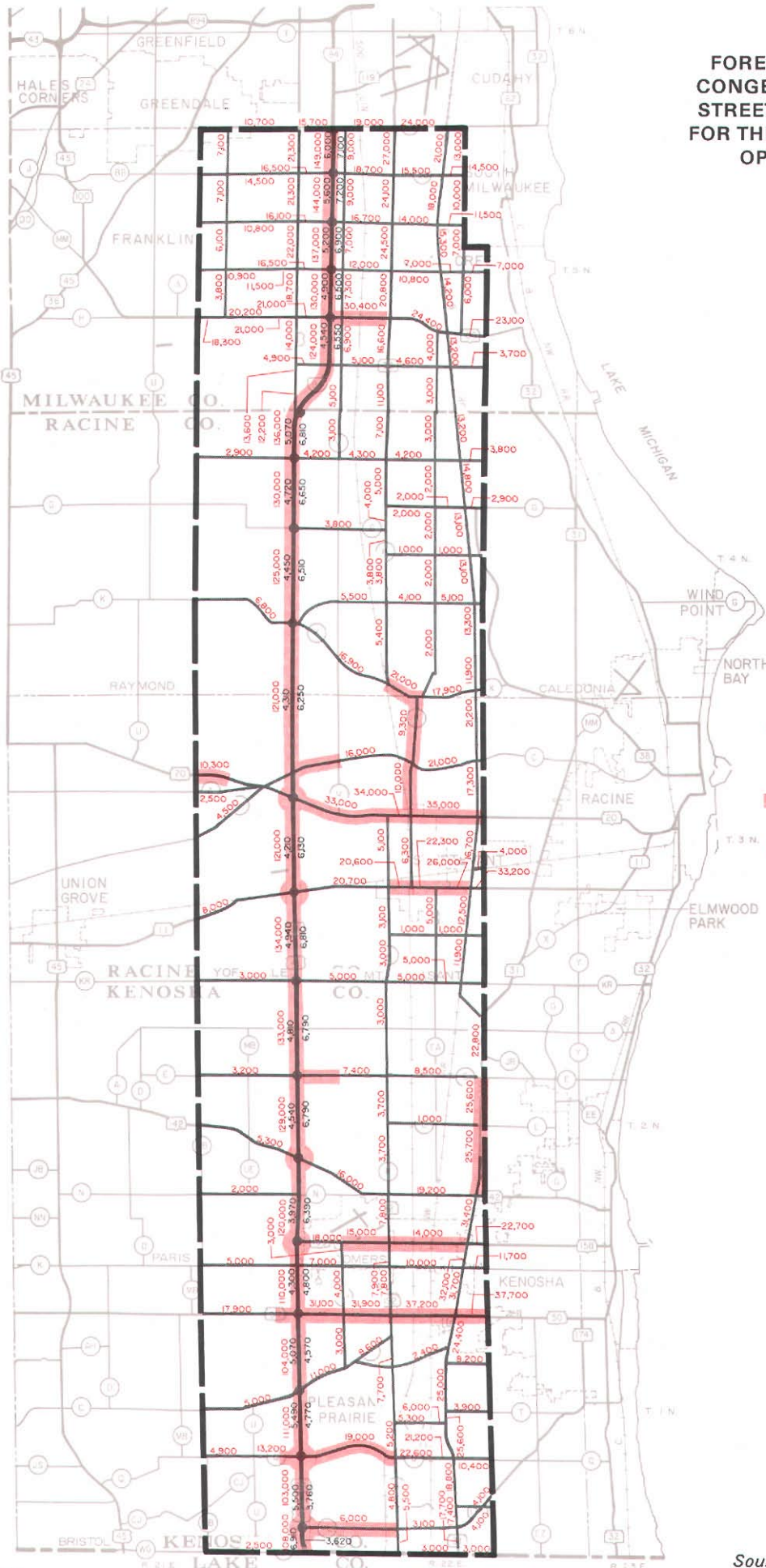
Source: SEWRPC.

Figure 18

FORECAST AVERAGE WEEKDAY TRAFFIC VOLUMES AND CONGESTION AT FREEWAY INTERCHANGES IN THE IH 94 CORRIDOR UNDER THE BASE TRANSPORTATION PLAN: 2010 OPTIMISTIC GROWTH FUTURE

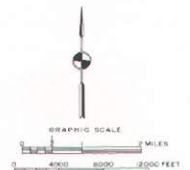


FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 SOUTH CORRIDOR: 2010 OPTIMISTIC GROWTH FUTURE



LEGEND

- 20,200 AVERAGE WEEKDAY TRAFFIC VOLUME
- 4,800 P.M. PEAK HOUR DIRECTIONAL FREEWAY VOLUME
- ARTERIAL FACILITY EXPECTED TO OPERATE OVER DESIGN CAPACITY
- FREEWAY INTERCHANGE EXPECTED TO OPERATE OVER DESIGN CAPACITY AT INTERSECTION OF RAMPS AND SURFACE ARTERIAL



Source: SEWRPC.

Service C conditions, constrained, however, by the following:

1. Not more than eight through travel lanes, plus auxiliary lanes to accommodate merging and diverging traffic, were proposed on the IH 94 South freeway. This constraint is based upon environmental and aesthetic considerations.
2. Except for STH 50, where existing and committed development dictates otherwise, no more than six through travel lanes were proposed for a surface arterial street. This constraint is based upon environmental, aesthetic, and pedestrian safety considerations.
3. Incremental arterial street and highway improvements through the Frankville and Sturtevant urban areas were limited to those improvements proposed under the base plan. This would avoid arterial street widenings that would have a severely disruptive effect on abutting land uses in those urban areas.

The incremental arterial street and highway improvements identified in this analysis for the recommended and "ultimate" land use plans are identified on Map 59, while the incremental improvements at each of the 19 interchanges along IH 94 South for each plan, if any, are identified in a series of schematic interchange diagrams reproduced as Figure 19. The following summarizes the salient findings of this analysis.

IH 94 South Freeway Mainline

In order to provide a Level of Service C under the recommended land use plan, the entire length of the IH 94 South freeway through the study corridor would have to be widened to provide for eight through travel lanes.¹ Under the "ultimate" land use plan, volumes on the IH 94 South freeway could be expected to substantially exceed the design capacity of an eight-

lane freeway. No additional capacity beyond eight lanes is, however, proposed to meet that potential demand. Accordingly, should land use development in the study corridor take place at the level and in the pattern envisioned under the "ultimate" land use plan, it should be expected that service levels on the IH 94 South freeway would deteriorate to Level of Service D through most of Racine and Kenosha County, and to Levels of Service E and F in Milwaukee County.

Freeway Interchanges

The potential needed improvements at each of the 19 existing or proposed freeway interchanges along the IH 94 South corridor may be summarized as follows:

- W. College Avenue

At the W. College Avenue interchange in the City of Milwaukee it would be necessary, under the recommended land use plan, to provide in the northbound direction a two-lane off-ramp and a two-lane on-ramp, together with auxiliary lanes for diverging and merging movements; and in the southbound direction, a two-lane off-ramp and accompanying auxiliary lane. Under the "ultimate" land use plan, it would be necessary to add a two-lane on-ramp and auxiliary lane in the southbound direction. With these improvements, the interchange may be expected to operate at Level of Service C under both plans.

- W. Rawson Avenue

At the W. Rawson Avenue interchange in the City of Oak Creek no improvements would be required under either the recommended or "ultimate" land use plans, nor were any improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- W. Drexel Avenue

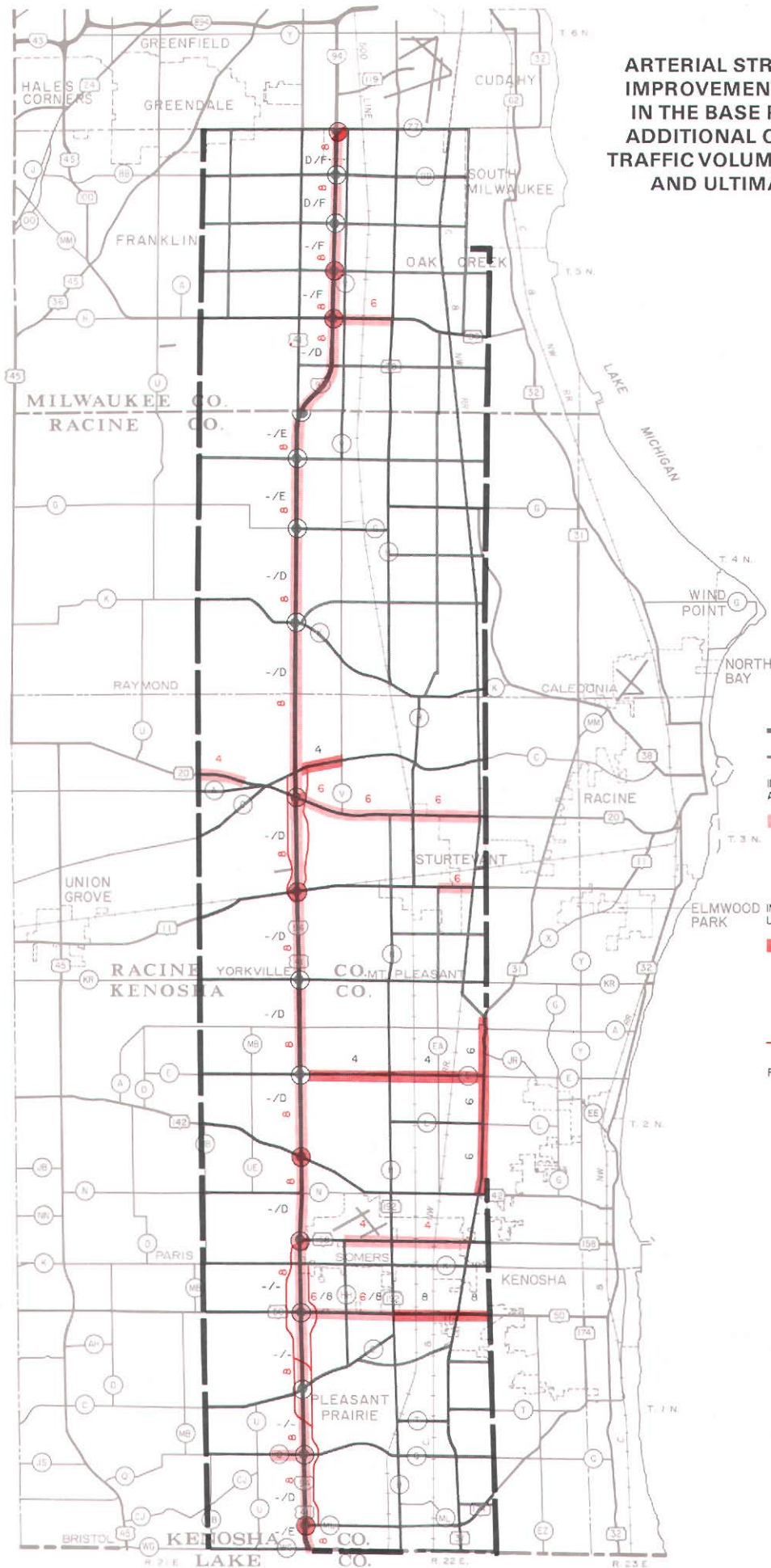
The new W. Drexel Avenue interchange in the City of Oak Creek proposed in the base plan would require no additional improvements to operate at Level of Service C under either the recommended or "ultimate" land use plans.

- W. Puetz Road

The new W. Puetz Road interchange in the City of Oak Creek proposed in the base plan would require no additional improvements to operate at Level of Service C under the

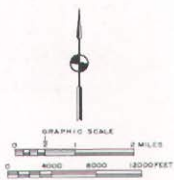
¹External to the study corridor, the provision of eight travel lanes on the IH 94 South freeway would have to be continued north from W. College Avenue to the Mitchell Interchange and south of the Wisconsin-Illinois state line to the USH 41 interchange.

ARTERIAL STREET AND HIGHWAY CAPACITY IMPROVEMENTS BEYOND THOSE INCLUDED IN THE BASE PLAN PROPOSED TO PROVIDE ADDITIONAL CAPACITY TO MEET FORECAST TRAFFIC VOLUMES UNDER THE RECOMMENDED AND ULTIMATE LAND USE PLANS: 2010



LEGEND

- FREEWAY
- STANDARD ARTERIAL
- IMPROVEMENT REQUIRED UNDER RECOMMENDED AND ULTIMATE PLAN
- FACILITY
- 6 NUMBER OF TRAFFIC LANES
- INTERCHANGE
- IMPROVEMENT REQUIRED UNDER ULTIMATE PLAN
- FACILITY
- 6 NUMBER OF TRAFFIC LANES
- INTERCHANGE
- FOUR TRAFFIC LANE FRONTAGE ROAD
- PM PEAK PERIOD LEVEL OF SERVICE
- D/F RECOMMENDED PLAN/ULTIMATE PLAN



Source: SEWRPC.

recommended land use plan. Under the "ultimate" land use plan, however, it would be necessary to add a two-lane on-ramp and auxiliary lane in the northbound direction. With this additional improvement, the interchange may be expected to operate at Level of Service C.

- W. Ryan Road

At the W. Ryan Road interchange in the City of Oak Creek no improvements would be required under the recommended land use plan, nor were any improvements included in the base plan. Under the "ultimate" land use plan, however, it would be necessary to add a second left-turn lane to accommodate the northbound-to-westbound turning movements. With this additional improvement, the interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- USH 41-S. 27th Street

At the USH 41/S. 27th Street interchange in the Towns of Caledonia and Raymond and the Cities of Oak Creek and Franklin no improvements would be required under either the recommended or "ultimate" land use plans, nor were any improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- Seven Mile Road

At the Seven Mile Road interchange in the Towns of Caledonia and Raymond no improvements would be required under either the recommended or "ultimate" land use plans, nor were any improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- CTH G

At the CTH G interchange in the Towns of Caledonia and Raymond no improvements would be required under either the recommended or "ultimate" land use plans, nor were any improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- CTH K

At the CTH K interchange in the Towns of Caledonia and Raymond no improvements

beyond those included in the base plan would be required under either the recommended or "ultimate" land use plans. The interchange may be expected to operate at Level of Service C under both plans with the base plan improvements in place.

- STH 20-CTH C

At the STH 20 interchange in the Towns of Mt. Pleasant and Yorkville it would be necessary under the recommended land use plan to provide three through travel lanes on STH 20 in each direction as opposed to two such lanes in each direction under the base plan, and to add second left-turn lanes on STH 20 to accommodate both the westbound-to-southbound and eastbound-to-northbound turning movements. With these improvements, the interchange may be expected to operate at Level of Service C under the recommended land use plan.

Under the "ultimate" land use plan, a more extensive set of improvements would be required. To accommodate forecast demand under this plan, it would be necessary to create a new interchange on IH 94 with CTH C, and connect that interchange operationally with the interchange at STH 20. As shown on Figure 19, under this proposal a southbound off-ramp and northbound on-ramp would be added to CTH C, coupled with a pair of one-way connecting arterial facilities between CTH C and STH 20. Such facilities could not be frontage roads that provide a land access function, but rather would have to be confined to an arterial function with no access from abutting lands. In addition, at the STH 20 interchange, two-lane on- and off-ramps, together with accompanying auxiliary lanes, would be provided in both the northbound and southbound directions, and a total of four through travel lanes in each direction on STH 20 would be required. With such additional capacity, it may be expected that the paired interchanges of STH 20 and CTH C would operate at Level of Service C under the "ultimate" land use plan.

In the alternative to operating the STH 20 and CTH C interchange as a functional pair, it would be possible to relocate CTH C to a more northerly alignment from a point approximately two miles east of IH 94 to a new interchange with IH 94 at the existing

Figure 19

IH 94 SOUTH FREEWAY INTERCHANGE IMPROVEMENTS UNDER THE RECOMMENDED AND ULTIMATE LAND USE PLANS: 2010

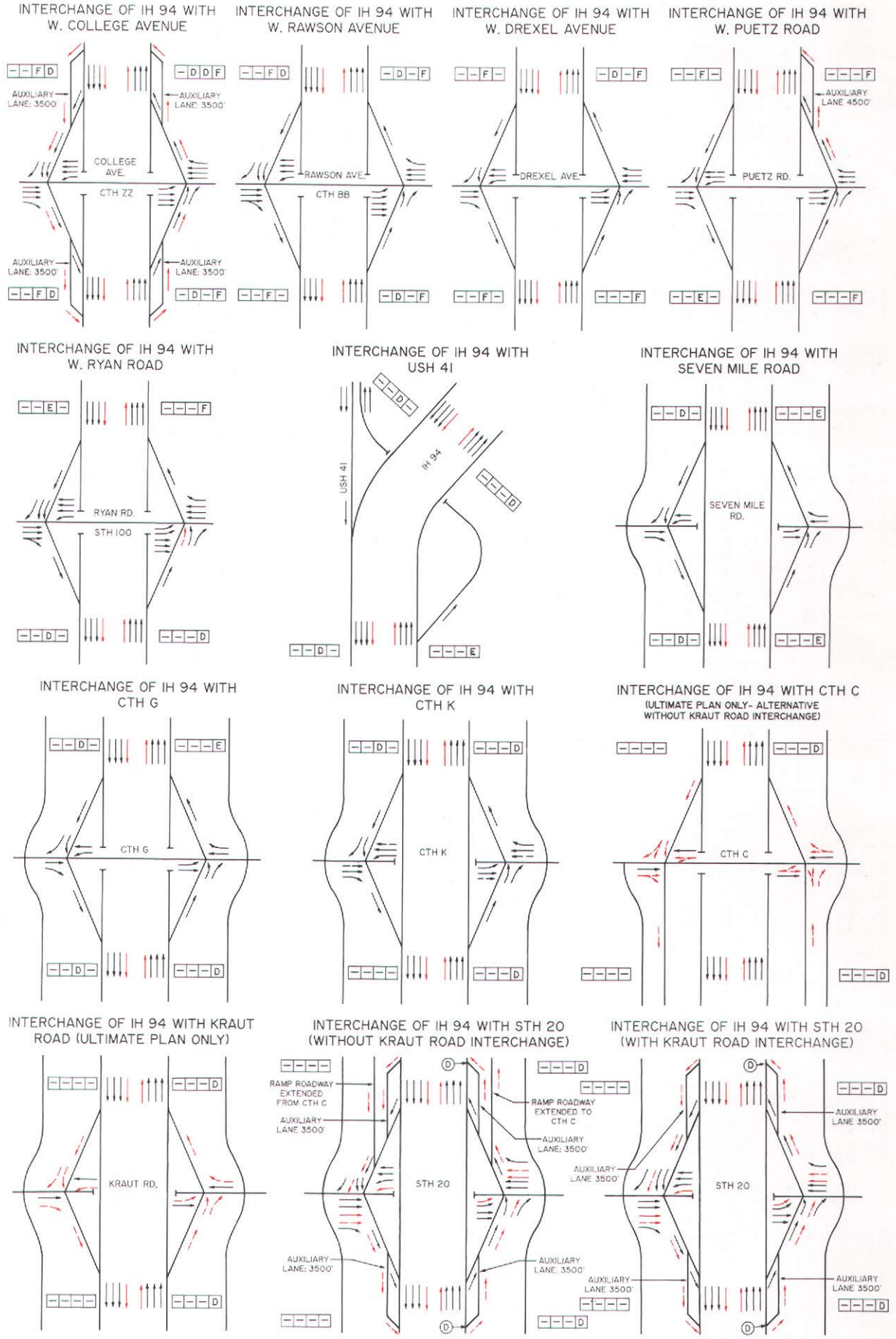
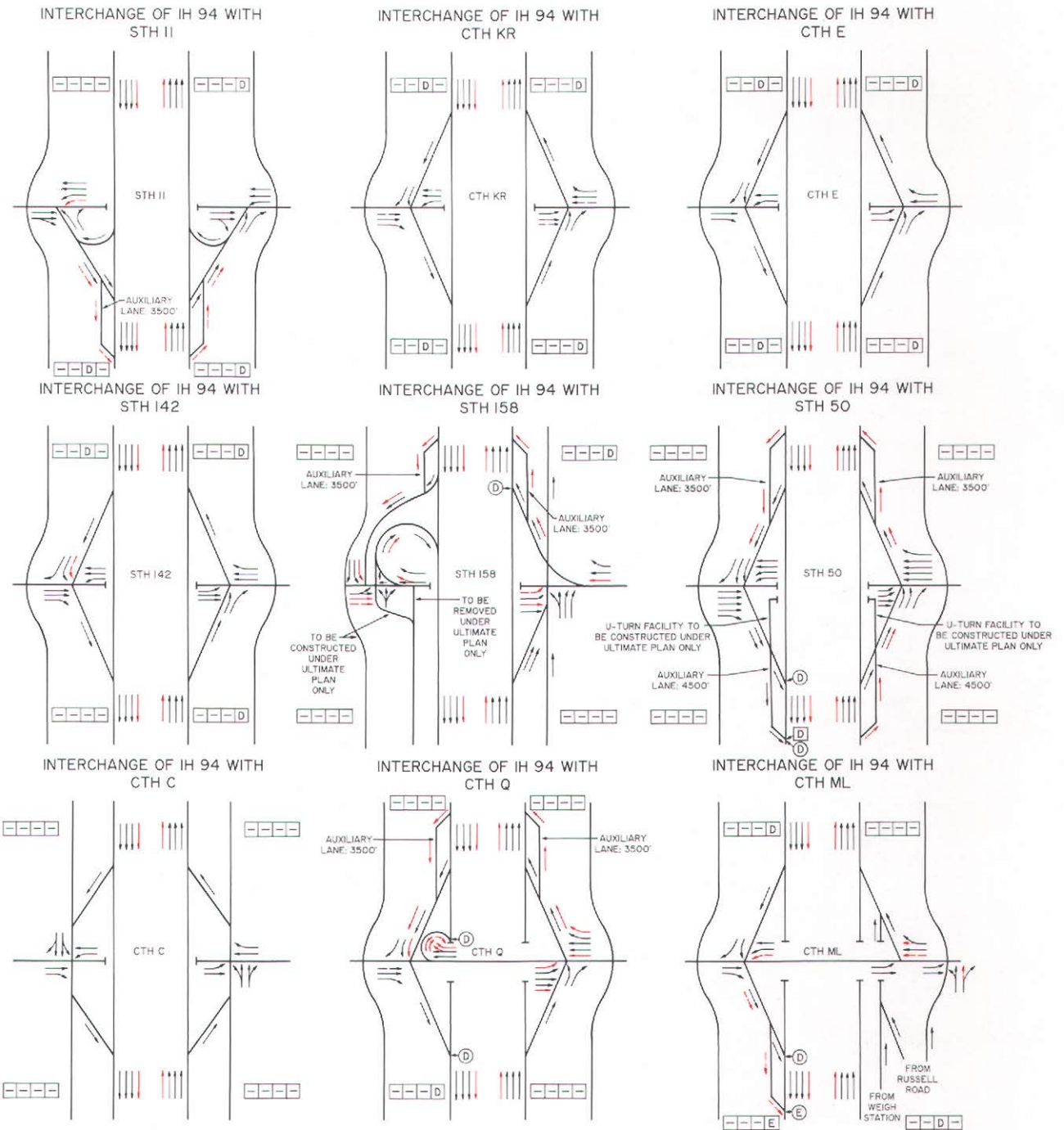


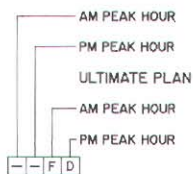
Figure 19 (continued)



LEGEND

PEAK HOUR LEVEL OF SERVICE
("L" INDICATES "C" OR BETTER)

RECOMMENDED PLAN



RECOMMENDED PLAN

PM AT POINT OF RAMP MERGE/DIVERGE

ULTIMATE PLAN

PM AT POINT OF RAMP MERGE/DIVERGE

EXISTING TRAFFIC LANE

IMPROVEMENT REQUIRED UNDER BASE PLAN

IMPROVEMENT REQUIRED UNDER RECOMMENDED AND ULTIMATE PLANS

IMPROVEMENT REQUIRED UNDER ULTIMATE PLAN

NOTE: ALL FREEWAY RAMP AND SURFACE STREET INTERSECTIONS OPERATE AT OR UNDER CAPACITY.

Source: SEWRPC.

Kraut Road crossing (see Map 60). Under this alternative, a full directional diamond interchange would be provided at the relocated CTH C approximately 0.6 miles north of the point where CTH C presently crosses over IH 94. As shown in Figure 19, the existing frontage roads at the present Kraut Road location would have to be relocated to accommodate the interchange. By so relocating the proposed CTH C interchange, it would not be necessary to provide a pair of one-way connecting arterial facilities between the CTH C and STH 20 interchanges. Furthermore, the CTH C and STH 20 interchange would be spaced about 1.1 miles apart. With the additional capacity provided at the proposed CTH C interchange at the Kraut Road location, both the STH 20 and the CTH C interchanges may be expected to operate at Level of Service C under the "ultimate" land use plan.

- STH 11

At the STH 11 interchange in the Towns of Mt. Pleasant and Yorkville no improvements would be required under the recommended land use plan, nor were any improvements included in the base plan. Under the "ultimate" land use plan, it would be necessary to add a two-lane on-ramp and auxiliary lane in the southbound direction and a two-lane off-ramp and auxiliary lane in the northbound direction, together with a second left-turn lane on STH 11 to accommodate the westbound-to-southbound turning movements. With these improvements, the interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- CTH KR

At the CTH KR interchange in the Towns of Paris, Mt. Pleasant, Somers, and Yorkville no improvements beyond those included in the base plan would be required under either the recommended or "ultimate" land use plans. The interchange may be expected to operate at Level of Service C under both plans with the base plan improvements in place.

- CTH E

At the CTH E interchange in the Towns of Paris and Somers no improvements would be required under either the recommended or "ultimate" land use plans, nor were any

improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- STH 142

At the STH 142 interchange in the Towns of Paris and Somers no improvements would be required under the recommended land use plan, nor were any improvements included in the base plan. Under the "ultimate" land use plan, it would be necessary to add a second left-turn lane on the southbound freeway off-ramp to accommodate the southbound-to-eastbound turning movements. With this additional improvement, the interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- STH 158

At the STH 158 interchange in the City of Kenosha and Towns of Paris and Somers it would be necessary under the recommended land use plan to provide in the southbound direction a two-lane on-ramp and a two-lane off-ramp and accompanying auxiliary lane; in the northbound direction a two-lane on-ramp and accompanying auxiliary lane; a second through travel lane on STH 158 in both the eastbound and westbound directions; and a second left-turn lane on the exit ramp to accommodate the southbound-to-eastbound turning movements. With these additional improvements, the interchange may be expected to operate at Level of Service C under the recommended land use plan. Under the "ultimate" land use plan, it would be necessary to add a third through travel lane on STH 158 in the eastbound direction and a second left-turn lane on STH 158 to accommodate the eastbound-to-northbound turning movements. With these additional improvements, the interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- STH 50

At the STH 50 interchange in the City of Kenosha, Village of Pleasant Prairie, and Town of Bristol it would be necessary under the recommended land use plan to provide two-lane off- and on-ramps and accompanying auxiliary lanes in the northbound direction, as well as a two-lane off ramp and auxiliary lane in the southbound direction. With these additional improvements, the

Map 60

RELOCATED CTH C TO SERVE THE NEW KRAUT ROAD INTERCHANGE
 PROPOSED UNDER THE ULTIMATE LAND USE PLAN: 2010



LEGEND

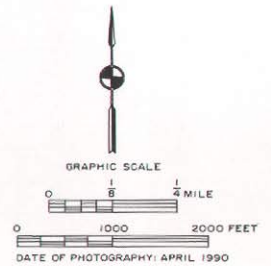
ARTERIAL STREET AND HIGHWAY SYSTEM

- STATE TRUNK-FREEWAY
- - - STATE TRUNK-FREEWAY ON-RAMP/OFF-RAMP
- STATE TRUNK-NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
 (2 LANES WHERE UNNUMBERED)

NONARTERIAL STREET OR HIGHWAY

- - - STATE MAINTAINED FRONTAGE ROAD
- LOCAL
- - - PAVEMENT TO BE REMOVED



interchange may be expected to operate at Level of Service C under the recommended land use plan. Under the "ultimate" land use plan, no additional improvements are proposed except those associated with frontage road upgrading as discussed in the following section of this chapter. The interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- CTH C

At the CTH C interchange in the Village of Pleasant Prairie and Town of Bristol no improvements would be required under either the recommended or "ultimate" land use plans, nor were any improvements included in the base plan. The interchange may be expected to operate at Level of Service C under both plans.

- CTH Q

At the CTH Q interchange in the Village of Pleasant Prairie and Town of Bristol it would be necessary under the recommended land use plan to provide for a two-lane off-ramp and accompanying auxiliary lane in the southbound direction; a two-lane on-ramp and accompanying auxiliary lane in the northbound direction; a loop ramp to accommodate the westbound-to-southbound movements; an additional left-turn lane on the southbound off ramp to accommodate the southbound-to-eastbound movements; an additional right-turn lane on CTH Q to accommodate the westbound-to-northbound movement; an additional left-turn lane on CTH Q to accommodate the eastbound-to-northbound movement; a third through travel lane on CTH Q in both directions through the interchange; and a separate right-turn lane on CTH Q to accommodate the westbound-to-southbound movement onto the loop ramp. With these improvements, the interchange may be expected to operate at Level of Service C under the recommended land use plan. No additional improvements are proposed at this interchange for the "ultimate" land use plan. The improved interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

- CTH ML

At the CTH ML interchange in the Village of Pleasant Prairie and Town of Bristol no improvements beyond those included in the

base plan would be required under the recommended land use plan. Under the "ultimate" land use plan, it would be necessary to provide for a two-lane on-ramp and accompanying auxiliary lane in the southbound direction; an additional through travel lane on CTH ML in the westbound direction; and an additional left-turn lane on CTH ML to accommodate the westbound-to-southbound turning movements. With these improvements, and with additional changes associated with frontage road upgrading as discussed in the following section, the interchange may be expected to operate at Level of Service C under the "ultimate" land use plan.

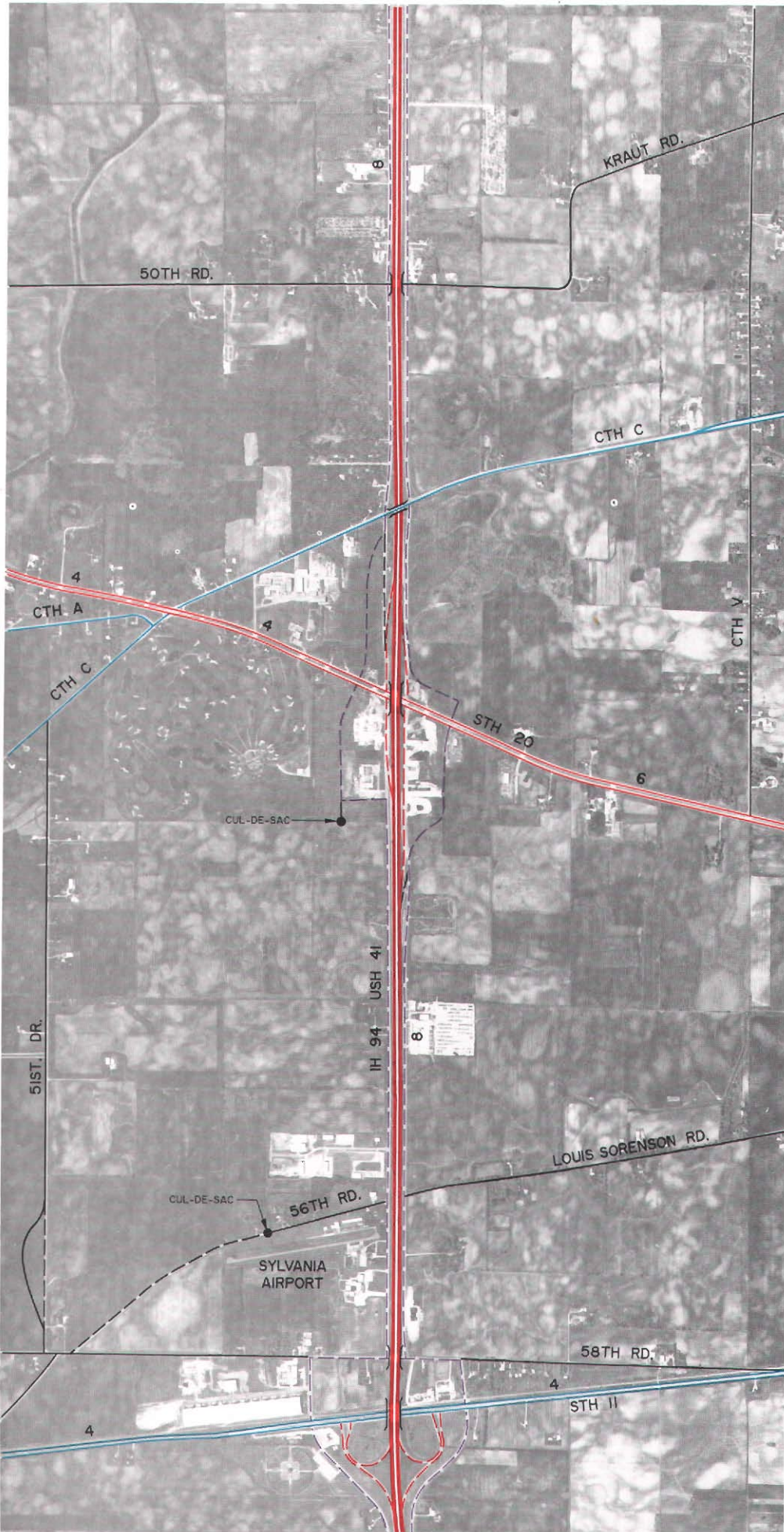
Frontage Roads

As already noted under the description of the base plan, a general assumption was made that the system of frontage roads along IH 94 South in Racine and Kenosha Counties would remain in place and perform as two-lane, two-way, land access streets. It was further assumed that such frontage roads would, wherever feasible, be disconnected from freeway on- and off-ramps.

These working assumptions regarding the system of frontage roads were tested under both the recommended and "ultimate" land use plans. It was generally found that under the recommended land use plan such assumptions were sound even in the intensively developed sections along IH 94 South from the Illinois-Wisconsin state line north to STH 158 in Kenosha County and from STH 11 north to CTH C in Racine County. Given the travel demand that would be experienced in the "ultimate" land use plan, however, the analyses showed that in order to maintain a Level of Service C at certain interchanges and along the frontage road system, it would be necessary to reconfigure that system and provide additional arterial facilities on both sides of IH 94 South. The following describes the results of these analyses with respect to the aforescribed sections of IH 94 South.

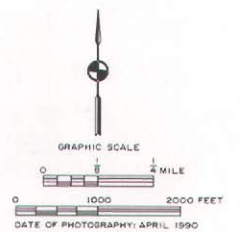
STH 11 to CTH C—Racine County: The envisioned system of frontage roads along IH 94 South from STH 11 to CTH C in Racine County under the recommended land use plan is shown on Map 61. This map identifies the approximate alignments of the relocated frontage roads and freeway on- and off-ramps already committed at the STH 20 interchange with IH 94. This map also identifies the necessary closure or relocation

**PROPOSED IMPROVEMENTS TO
THE IH 94 SOUTH SYSTEM OF
FRONTAGE ROADS FROM STH 11
TO CTH C IN RACINE COUNTY
UNDER THE RECOMMENDED
LAND USE PLAN: 2010**



LEGEND

- ARTERIAL STREET AND HIGHWAY SYSTEM**
- STATE TRUNK-FREEWAY
 - - - STATE TRUNK-FREEWAY ON-RAMP/OFF-RAMP
 - STATE TRUNK-NONFREEWAY
 - COUNTY TRUNK HIGHWAY
 - 4** NUMBER OF TRAFFIC LANES
(2 LANES WHERE UNNUMBERED)
- NONARTERIAL STREET OR HIGHWAY**
- STATE MAINTAINED FRONTAGE ROAD
 - LOCAL
- PAVEMENT TO BE REMOVED**
- - -



of local streets attendant to the planned expansion of the Sylvania Airport near the STH 11 interchange as that expansion is recommended in the adopted regional airport system plan. No additional work is identified on this map for the STH 11 interchange, since the configuration of that interchange already results in the separation of the east and west frontage roads from the freeway on- and off-ramps. With the unbraiding of the freeway on- and off-ramps at the STH 20 interchange, the subject interchanges may be expected to operate at Level of Service C under the level of growth envisioned in the recommended land use plan for the year 2010.

Urban development in this portion of Racine County under the "ultimate" land use plan would require substantial modifications to the frontage road system in order to avoid traffic congestion and provide a Level of Service C at the interchanges concerned. The proposed improvements attendant to this greater level of urban development are shown on Map 62. The key improvements identified on this map are as follows:

1. In order to relieve anticipated traffic congestion at the STH 20 interchange, a new interchange would be provided at a relocated CTH C at the point where Kraut Road now passes under IH 94. This would include the proposed relocation of CTH C from a point approximately two miles east of IH 94 to IH 94.
2. A pair of new arterial highways would largely replace the frontage roads on both sides of IH 94 extending from STH 20 south to STH 11. These arterial highways are envisioned to provide a relatively high level of service with four divided traffic lanes. Land access to these arterial streets would be carefully controlled as new commercial and industrial development occurred in the area. The building of these two local arterial highways paralleling IH 94 South would permit, as shown on Map 62, abandonment of certain segments of the existing frontage roads and thereby improve the appearance of this section of IH 94.
3. A pair of prospective arterial highways on either side of IH 94 South set back from one-half to one mile from the freeway and

extending on the west side from CTH C south to STH 11 and on the east side from STH 20 to STH 11. These prospective arterial highways would be required should development in the industrial and commercial reserve areas identified on the recommended land use map occur at a magnitude greater than that envisioned under the "ultimate" land use plan.

Wisconsin-Illinois State Line to STH 158—Kenosha County: The envisioned system of frontage roads along IH 94 South from the Wisconsin-Illinois state line to STH 158 in Kenosha County under the recommended land use plan is shown on Map 63. The following describes with respect to each interchange in this section of IH 94 South the assumptions made attendant to the unbraiding of the freeway on- and off-ramps from the frontage roads as included in the base plan:

1. At the STH 158 interchange a full ramp unbraiding would not be feasible, owing to physical constraints imposed by the environmental corridor along the Kilbourn Ditch and by the Kenosha Regional Airport. The ramp and frontage road configuration depicted on Map 63 east of IH 94 reflects the improvements and operational changes that were made in 1990 in connection with the opening of the Dairyland Greyhound Racetrack. This set of changes included making the east frontage road one way north from a point about one-quarter mile south of STH 158 north to STH 158. Under the plan shown on Map 63, it is proposed that the east frontage road continue as a one-way road northbound from STH 158 to CTH N. On the west side of IH 94, the improvements proposed consist of the separation of the west frontage road from the southbound freeway off-ramp and the connection of that relocated road to STH 158 extended west.
2. At the STH 50 interchange a full ramp unbraiding is feasible. The ramp and frontage road configuration depicted on Map 63 reflect all of the improvements and operational changes that have already been made in three quadrants of the STH 50 interchange and that are now under construction in the southeast quadrant of the interchange.

**PROPOSED IMPROVEMENTS TO
THE IH 94 SOUTH SYSTEM OF
FRONTAGE ROADS FROM STH 11
TO CTH C IN RACINE COUNTY
UNDER THE ULTIMATE LAND
USE PLAN: 2010**



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

- STATE TRUNK-FREEWAY
- - - STATE TRUNK-FREEWAY ON-RAMP / OFF-RAMP
- STATE TRUNK-NONFREEWAY
- STATE MAINTAINED ARTERIAL FRONTAGE ROAD
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- - - PROSPECTIVE LOCAL TRUNK HIGHWAY

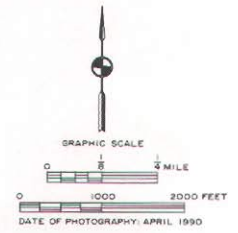
4 NUMBER OF TRAFFIC LANES
(TWO LANES WHERE UNNUMBERED)

NONARTERIAL STREET OR HIGHWAY

- - - STATE MAINTAINED FRONTAGE ROAD
- LOCAL

PAVEMENT TO BE REMOVED

- - -



PROPOSED IMPROVEMENTS TO THE IH 94 SOUTH SYSTEM OF FRONTAGE ROADS FROM THE WISCONSIN-ILLINOIS STATE LINE TO STH 158 IN KENOSHA COUNTY UNDER THE RECOMMENDED LAND USE PLAN: 2010

LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM.

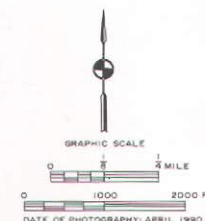
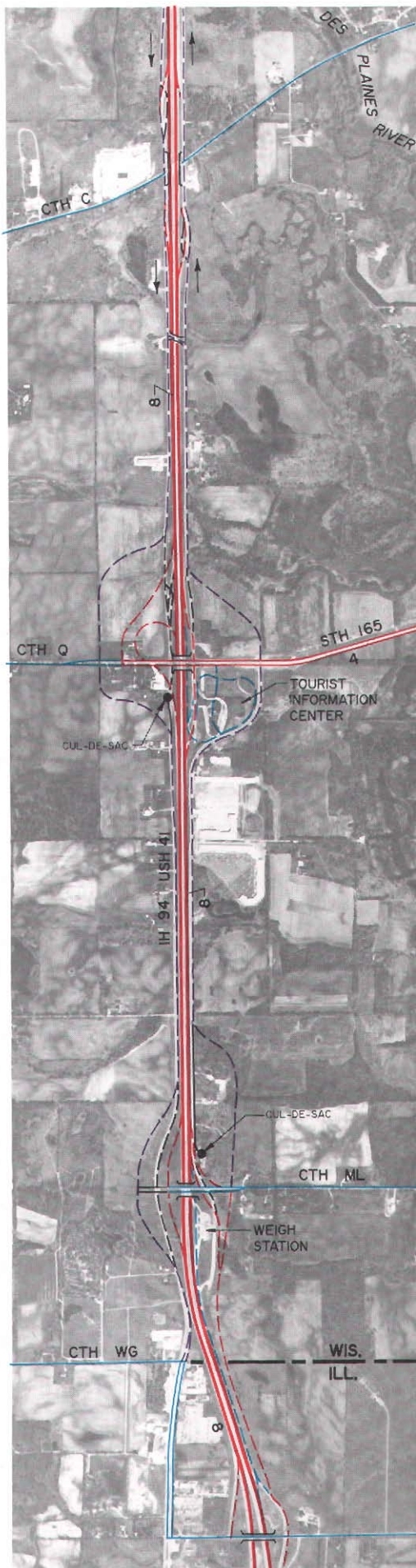
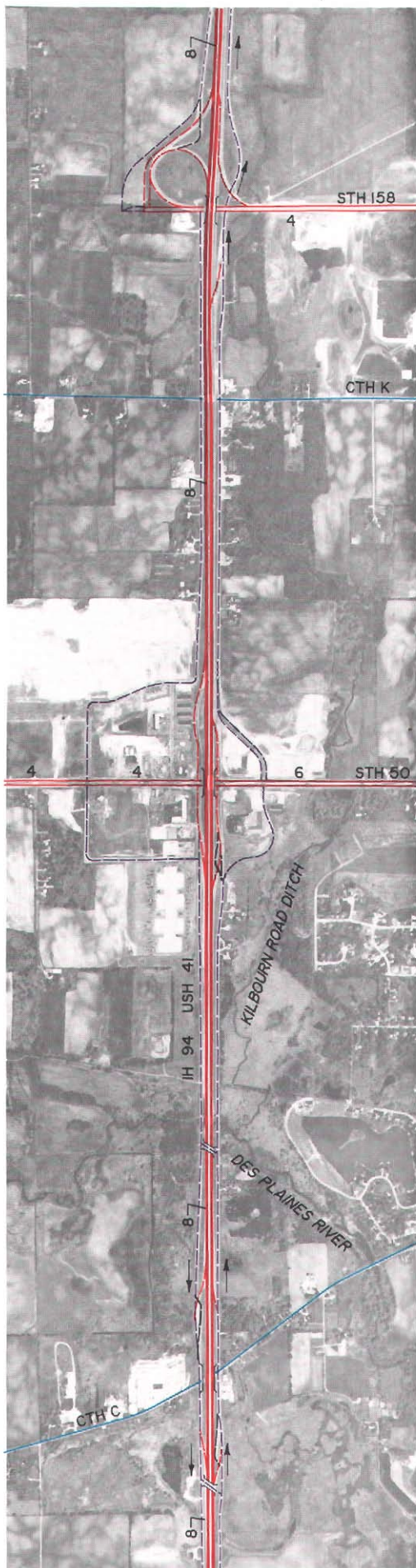
- STATE TRUNK-FREEWAY
- STATE TRUNK-FREEWAY ON-RAMP/OFF-RAMP
- STATE TRUNK-NONFREEWAY
- COUNTY TRUNK HIGHWAY
- 8** NUMBER OF TRAFFIC LANES (2 LANES WHERE UNNUMBERED)
- DIRECTION OF TRAFFIC FLOW (ONE-WAY STREET)

NONARTERIAL STREET OR HIGHWAY

- STATE MAINTAINED FRONTAGE ROAD
- LOCAL
- WEIGH STATION AND TOURIST INFORMATION CENTER ROADWAYS

PAVEMENT TO BE REMOVED

-



3. At the CTH C interchange a full ramp unbraiding will not be feasible owing to the physical constraints imposed by environmental corridor, floodplain, and wetlands that occur in all four quadrants of the interchange. Accordingly, the proposed plan for the recommended land use future shown on Map 63 deals with the ramp and frontage road problems by making the east and west frontage roads a one-way pair from a point about one-half mile south of CTH C to three-quarter mile north of CTH C. At these one-way terminal locations the plan proposes the construction of cross bridges over IH 94 to permit two-way traffic on both frontage roads south to the CTH Q interchange and north to the STH 50 interchange. With the one-way frontage road pair at the CTH C interchange, traffic exiting both southbound and northbound from IH 94 would directly merge with one-way southbound and one-way northbound traffic on the frontage roads and not cross oncoming frontage road traffic.
4. At the CTH Q interchange, which is anticipated to serve significant amounts of commercial and industrial development both east and west of IH 94, a full ramp unbraiding is feasible. In the southeast quadrant of the intersection, the configuration depicted on Map 63 reflects the frontage road relocation already made, as well as the Wisconsin Tourist Information Center access road improvements now under construction. In the other three quadrants of the interchange, the frontage road configurations depicted on Map 63 identify how the remaining ramp unbraiding should take place given the proposed freeway ramp configuration, including a loop ramp to serve the westbound-to-southbound turning movements, for this interchange described above.
5. At the CTH ML interchange, the frontage road and ramp configurations depicted on Map 63 permit a full ramp unbraiding from the frontage roads and also permit improved truck access to and from the state weigh station located in the southeast quadrant of the interchange. The proposed improvements at the CTH ML interchange would extend south across the

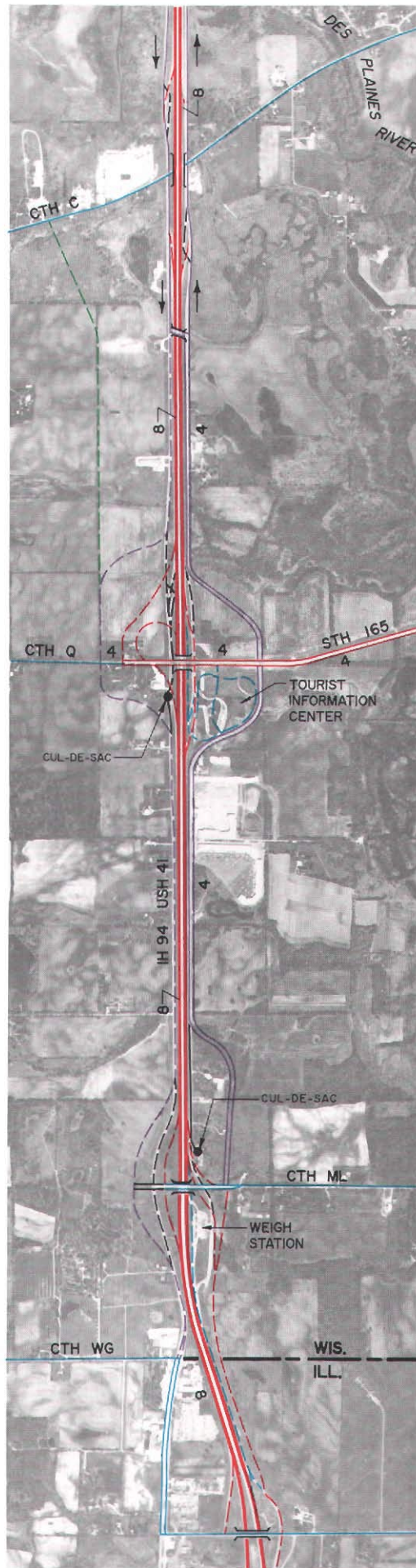
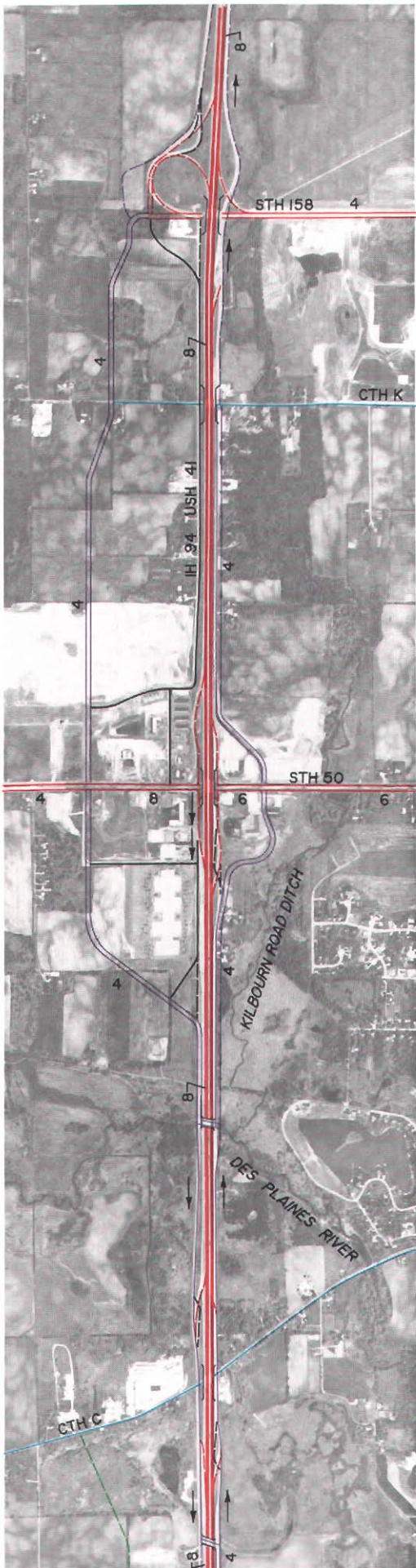
Wisconsin-Illinois state line to the Russell Road interchange at a point one mile south of the CTH ML interchange. The additional improvements outside the study corridor are necessary to separate the truck traffic from the traffic stream for routing to and through the weigh station. Non-truck traffic seeking to enter IH 94 north from Russell Road would be routed on a new facility that would bypass the truck weigh station on the east and enter IH 94 at a point north of CTH ML. Also under the proposal, CTH ML would be extended west of IH 94 to permit the construction of new on- and off-ramps on the west side of IH 94 and the relocation of the existing frontage road to a point approximately 1,000 feet west of IH 94.

Given the frontage road and related freeway ramp improvements identified at the foregoing interchanges along IH 94 South in this portion of Kenosha County, all of the interchanges and frontage roads may be expected to operate at a Level of Service C under development conditions as reflected in the recommended land use plan.

Should urban development in this portion of Kenosha County exceed the level of growth assumed under the recommended land use plan and approach that postulated in the ultimate plan, then substantial additional modifications to the frontage road system would be required in order to avoid traffic congestion and provide a Level of Service C at the interchanges concerned. The proposed improvements attendant to this greater level of urban development are shown on Map 64. The key improvements identified on this map are as follows:

1. A new four-lane divided arterial highway would be required to serve planned commercial development west of IH 94 between STH 50 and STH 158. The approximate alignment for this facility is shown on Map 64. Land access along this facility should be carefully controlled as urban development proceeds.
2. The frontage road east of IH 94 between STH 50 and CTH K is proposed to be converted to a four-lane arterial facility, again with carefully controlled access.
3. New arterial highway facilities would also be provided on either side of IH 94 between

PROPOSED IMPROVEMENTS TO THE IH 94 SOUTH SYSTEM OF FRONTAGE ROADS FROM THE WISCONSIN-ILLINOIS STATE LINE TO STH 158 IN KENOSHA COUNTY UNDER THE ULTIMATE LAND USE PLAN: 2010



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

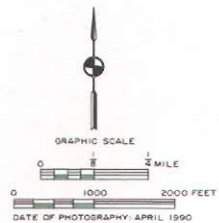
- STATE TRUNK-FREEWAY
- - - STATE TRUNK-FREEWAY ON-RAMP / OFF-RAMP
- STATE TRUNK-NONFREEWAY
- STATE MAINTAINED ARTERIAL FRONTAGE ROAD
- COUNTY TRUNK HIGHWAY
- - - PROSPECTIVE LOCAL TRUNK HIGHWAY
- 4** NUMBER OF TRAFFIC LANES (2 LANES WHERE UNNUMBERED)
- DIRECTION OF TRAFFIC FLOW (ONE-WAY STREET)

NONARTERIAL STREET OR HIGHWAY

- - - STATE MAINTAINED FRONTAGE ROAD
- LOCAL
- - - WEIGH STATION AND TOURIST INFORMATION CENTER ROADWAYS

PAVEMENT TO BE REMOVED

- - -



STH 50 and CTH Q. In some cases, as shown on Map 64, this would involve converting two-lane frontage roads to four-lane divided facilities. In addition, Map 64 identifies a prospective arterial highway along the west side of IH 94 between CTH Q and CTH C. This prospective arterial highway would be required should development in the commercial reserve area identified on the recommended land use plan map occur at a magnitude greater than that envisioned under the "ultimate" land use plan.

4. The east frontage road along IH 94 between CTH ML and CTH Q would be converted to a four-lane arterial facility, with access carefully controlled.
5. The addition of a special U-turn at the STH 50 interchange that would permit northbound traffic on IH 94 to exit at STH 50 and pass under the freeway before the controlled intersections at STH 50 and the freeway ramps. This would permit relatively heavy volumes of turning vehicles coming from the south and destined for commercial areas in the southwest quadrant of the intersection to bypass both controlled intersections at STH 50.

Given these additional improvements along IH 94 South in this portion of Kenosha County, all of the interchanges and frontage roads may be expected to operate at a Level of Service C under land use development conditions as reflected in the "ultimate" land use plan.

Surface Arterial Streets

The additional improvements to the surface arterial street system serving the IH 94 South corridor necessary to accommodate anticipated travel demand under the recommended land use plan are as follows:

- The widening of STH 100 from IH 94 to STH 38 to provide for six, rather than four, travel lanes.
- The widening of STH 20 from CTH A to the western corridor boundary to provide for four, rather than two, travel lanes.²

²This improvement would have to be carried westerly to USH 45 outside the study corridor.

- The widening of STH 20 from IH 94 east to Stuart Road to provide for six, rather than four, travel lanes.
- The widening of STH 11 from 90th Street to the Lake Arterial to provide for six, rather than four, travel lanes.
- The widening of STH 158 from CTH HH to STH 31 to provide for four, rather than two, travel lanes.
- The widening of STH 50 from IH 94 to CTH H to provide for six, rather than four, travel lanes.
- The widening of STH 50 west from IH 94 to existing frontage road to provide for eight, rather than four, travel lanes.
- The widening of CTH Q west from IH 94 to relocated frontage road to provide for four, rather than two, travel lanes.

With these improvements, the entire surface arterial street system in the study corridor would operate at Level of Service C under the recommended land use plan with but one exception. That exception is STH 11 between CTH H and 90th Street in the Village of Sturtevant, which may be expected to operate at Level of Service D.

The following additional arterial street improvements would be required under the "ultimate" land use plan:

- The widening of CTH E from IH 94 to STH 31 to provide for four, rather than two, travel lanes.
- The widening of STH 50 from IH 94 to the eastern corridor boundary to provide for eight, rather than six, travel lanes.³
- The widening of STH 31 from STH 142 to the Lake Arterial junction to provide for six, rather than four, travel lanes.

³This improvement would have to be carried easterly to 39th Avenue outside the study corridor.

With these additional improvements, the entire surface arterial street and highway system in the study corridor could be expected to operate at Level of Service C under the "ultimate" land use plan with but two exceptions: CTH K from CTH H (north) to CTH H (south) through Franksville, which would operate at Level of Service E; and STH 11 from CTH H to 90th Street, which would operate at Levels of Service D and E.

The results of the assignment of travel under the "ultimate" land use plan to the arterial street and highway system as reflected in the base plan were presented earlier in this chapter (see Map 58 and the schematic interchange diagrams in Figure 18). That analysis was constrained by the extent of the capacity improvements assumed in the base plan. Given the additional capacity improvements outlined above for the "ultimate" land use plan, a different distribution of travel results, with capacity being constrained only on the IH 94 South freeway. Accordingly, the travel simulation models were again applied. The results of that analysis are summarized in terms of the anticipated average weekday traffic volumes on the arterial system as posted on Map 65. The anticipated average weekday traffic volumes at each interchange are shown in Figure 20.

RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN

Plan Description

After reviewing the analyses of the presently proposed and of the potential additional arterial street and highway improvements, the Advisory Committee directed that a recommended arterial street and highway system plan be prepared that would consist of the following:

1. All arterial street and highway system improvements included in the base plan as previously described in this chapter.
2. All of the arterial street and highway improvements as identified in the foregoing section of this chapter found necessary to accommodate travel and traffic demand as derived from the recommended land use plan for the IH 94 South corridor. This includes the widening of IH 94 South throughout the entire corridor to provide

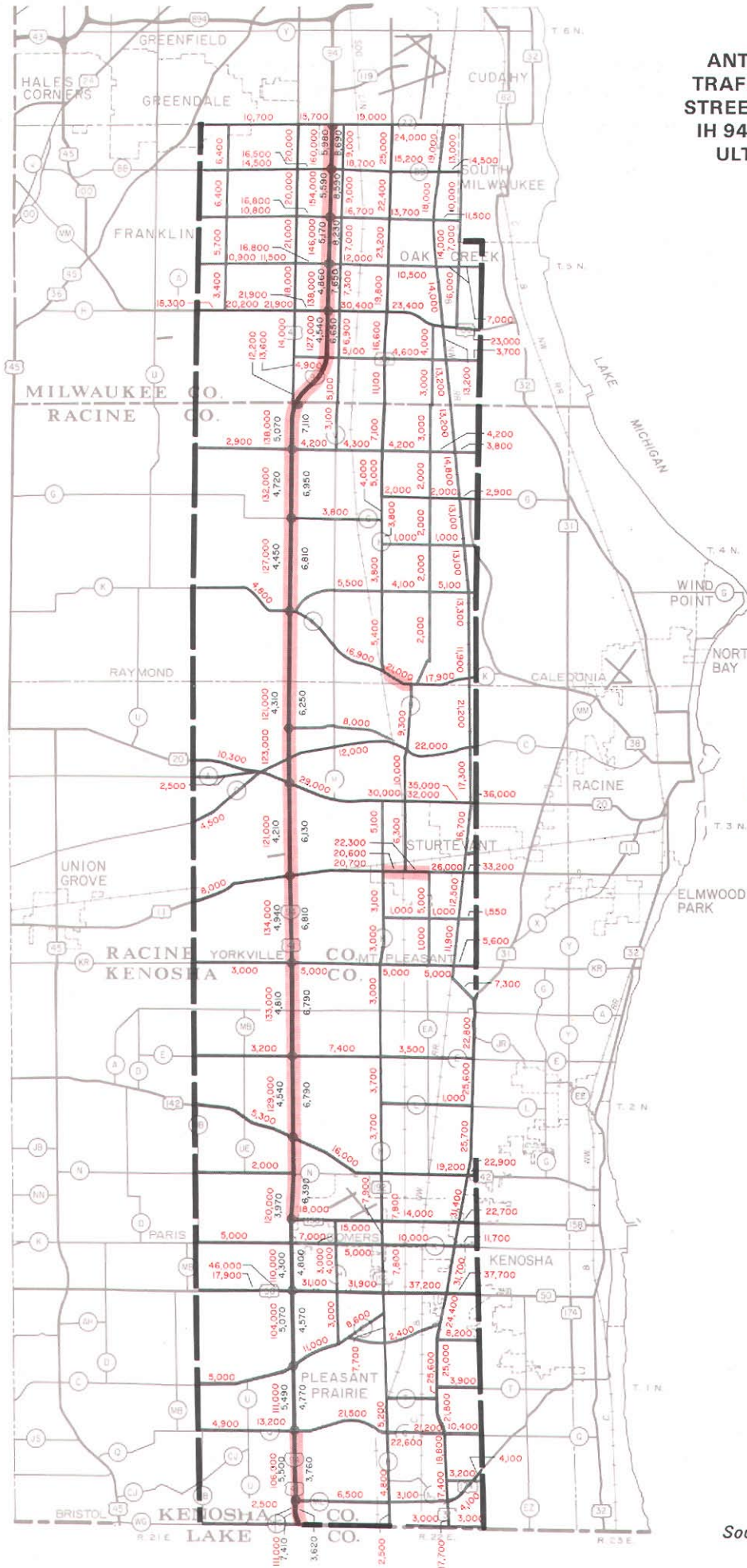
eight through travel lanes, as well as attendant interchange and frontage road improvements.

3. With respect to those additional improvements found to be needed under development conditions that would exceed the recommended land use plan, that is, found to be needed under the "ultimate" land use plan as previously defined, the Advisory Committee recommended that the state, county, and local units of government concerned take steps to define and reserve the rights-of-way necessary to either provide for the ultimate widening of a given facility, or in the case of certain frontage roads along IH 94 South, the construction of entirely new arterial highway facilities. The location of such prospective projects is shown on Map 66.

Based upon the foregoing, the arterial street and highway system plan as recommended by the Advisory Committee is shown on Map 67. The plan envisions a system of arterial street and highway facilities in the corridor that will meet existing and forecast traffic demand in the year 2010 at an adequate level of service. The plan identifies the location and configuration of the various facilities constituting the arterial system, and recommends the number of through traffic lanes required on each segment of the system. The plan also recommends the level of government which should be responsible for the construction, operation, and maintenance of each facility making up the arterial system. Details with respect to each of the 19 interchanges included in the planned system are reflected in the previously presented Figure 19. In addition, details with respect to the frontage road system along those portions of IH 94 South from STH 11 to relocated CTH C (Kraut Road alignment) in Racine County and the Wisconsin-Illinois state line north to STH 158 in Kenosha County, are as shown on the previously presented Maps 60 and 62, respectively.

The major capacity improvements included in the recommended plan are shown on Map 68. These capacity improvements include widening of existing facilities to provide additional lanes and the construction of new facilities, particularly including the proposed Lake Arterial facility. The recommended major capacity

**ANTICIPATED AVERAGE WEEKDAY
TRAFFIC VOLUMES ON THE ARTERIAL
STREET AND HIGHWAY SYSTEM IN THE
IH 94 SOUTH CORRIDOR UNDER THE
ULTIMATE LAND USE PLAN: 2010**



- LEGEND**
- 12,400 AVERAGE WEEKDAY TRAFFIC VOLUME
 - 540 P.M. PEAK HOUR DIRECTIONAL FREEWAY VOLUME
 - ARTERIAL FACILITY EXPECTED TO OPERATE OVER DESIGN CAPACITY

Source: SEWRPC.

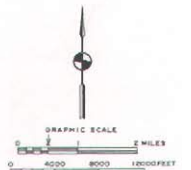


Figure 20

**ANTICIPATED AVERAGE WEEKDAY TRAFFIC VOLUMES AT FREEWAY INTERCHANGES
IN THE IH 94 SOUTH CORRIDOR UNDER THE ULTIMATE LAND USE PLAN: 2010**

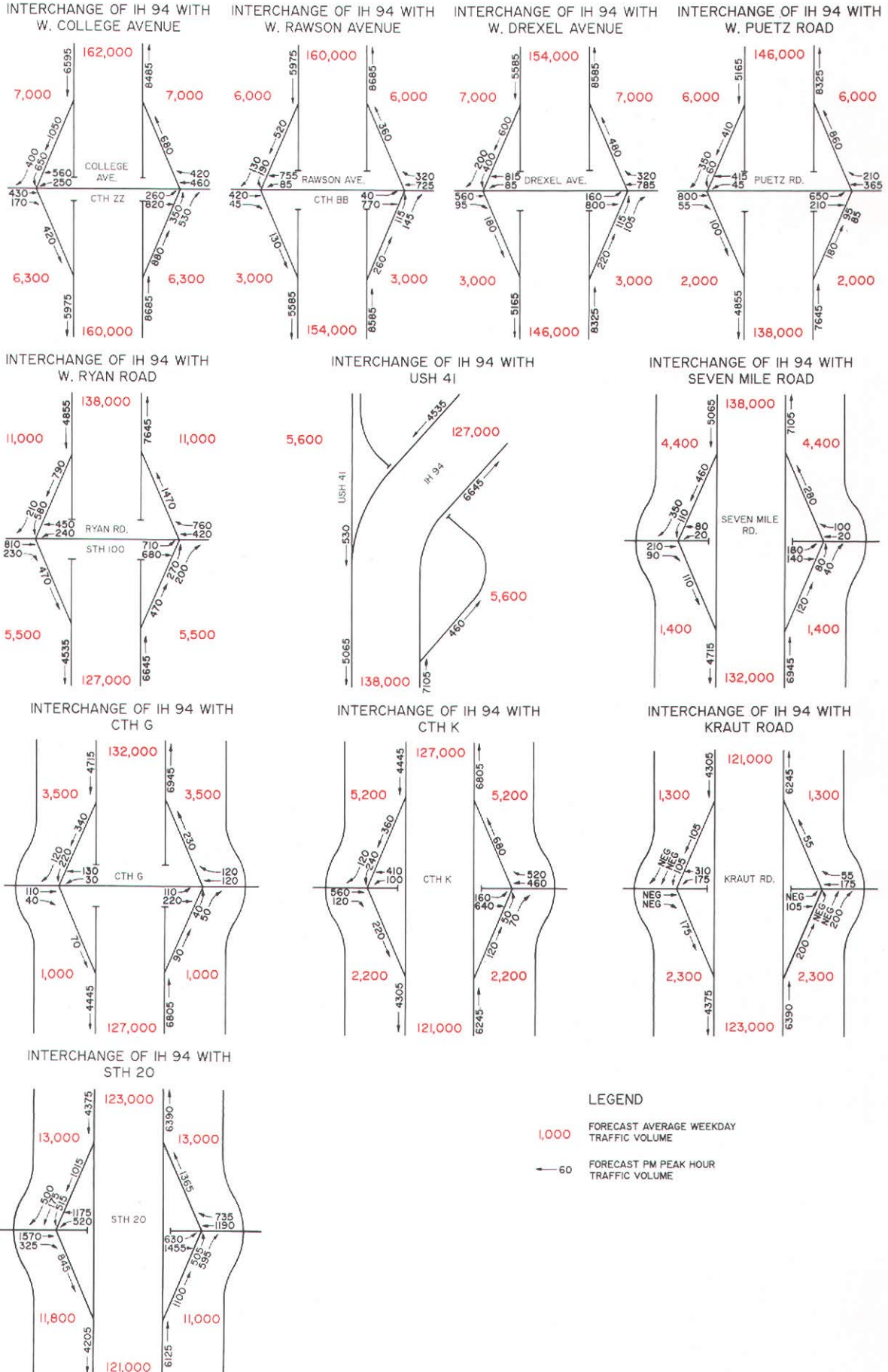
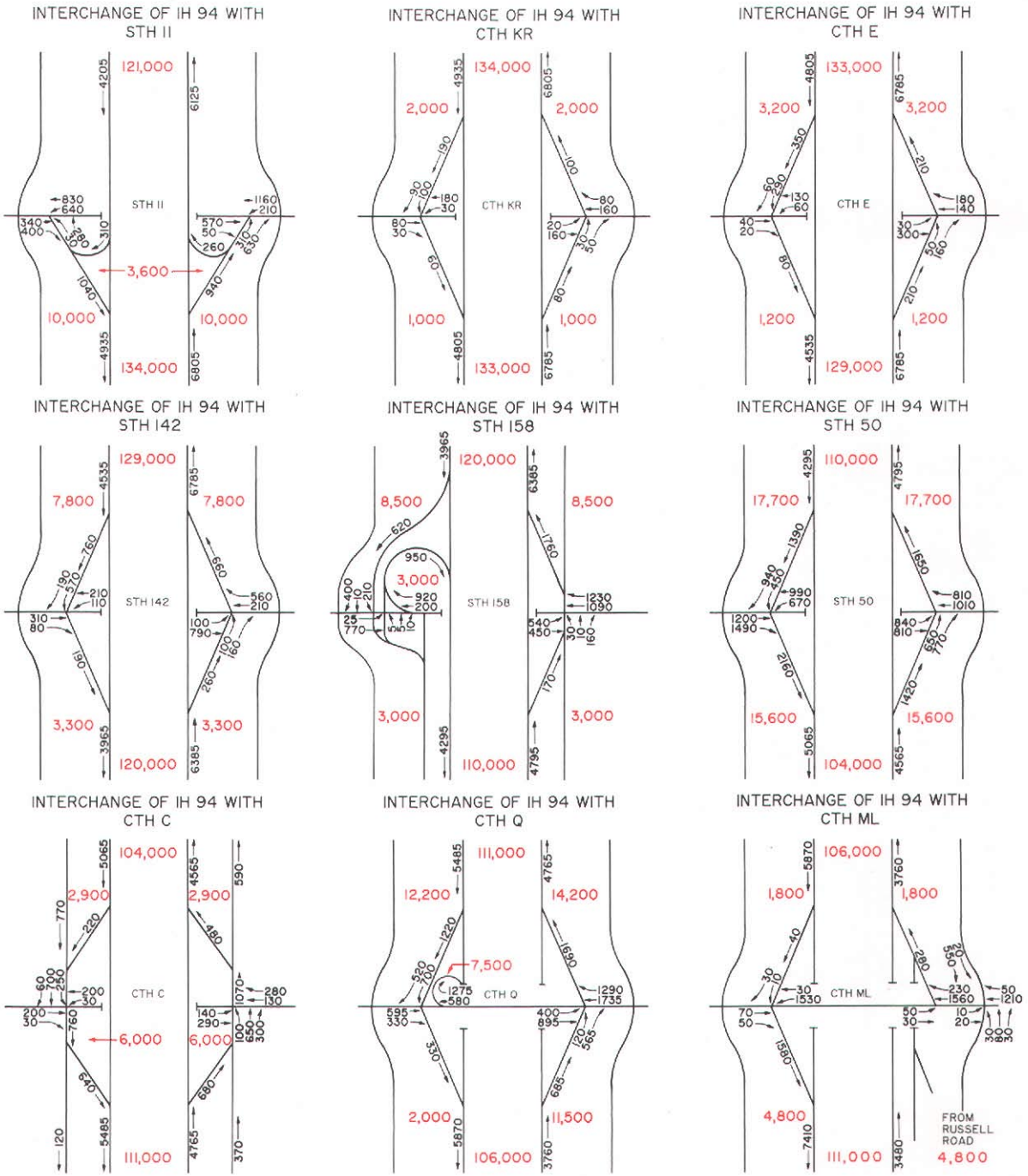
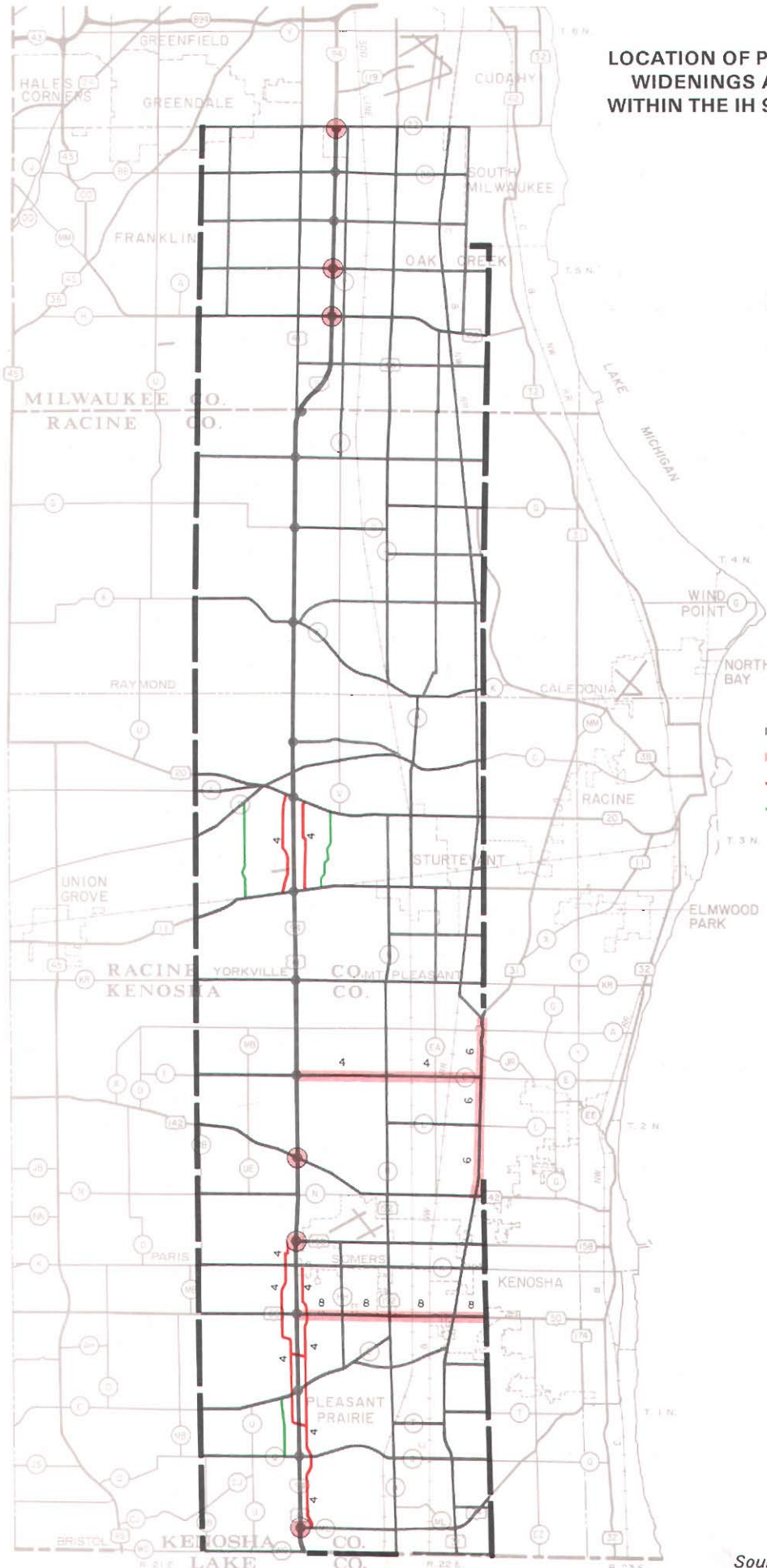


Figure 20 (continued)



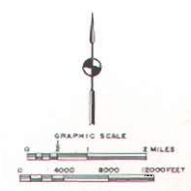
Source: SEWRPC.

**LOCATION OF PROSPECTIVE ARTERIAL STREET
WIDENINGS AND NEW ARTERIAL STREETS
WITHIN THE IH 94 SOUTH FREEWAY CORRIDOR**



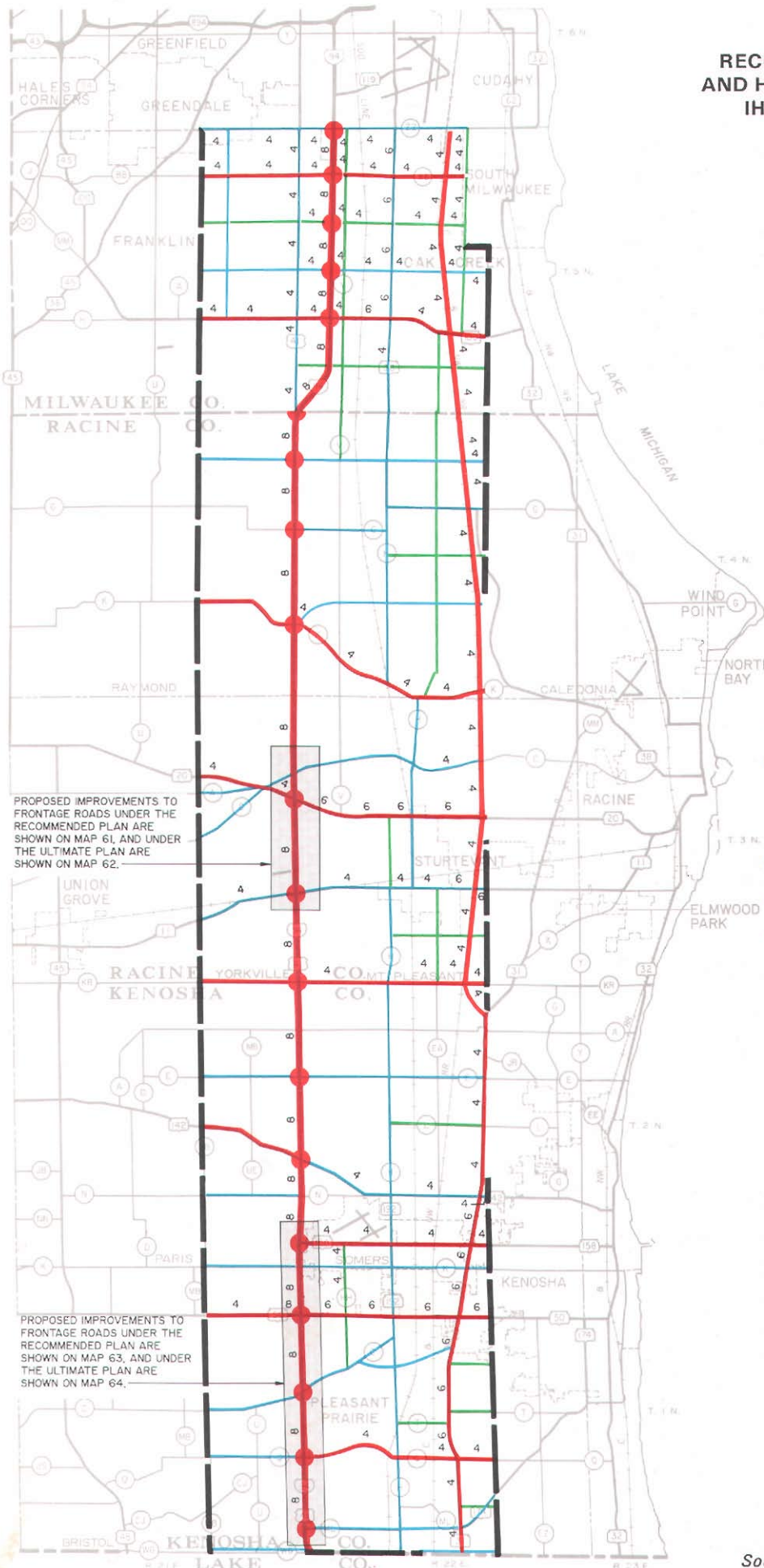
LEGEND

- IMPROVEMENT REQUIRED UNDER ULTIMATE PLAN
- FACILITY WIDENED
 - ARTERIAL FRONTAGE ROAD
 - INTERCHANGE
 - 4 NUMBER OF TRAFFIC LANES



Source: SEWRPC.

RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 SOUTH CORRIDOR: 2010



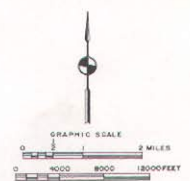
PROPOSED IMPROVEMENTS TO FRONTAGE ROADS UNDER THE RECOMMENDED PLAN ARE SHOWN ON MAP 61, AND UNDER THE ULTIMATE PLAN ARE SHOWN ON MAP 62.

PROPOSED IMPROVEMENTS TO FRONTAGE ROADS UNDER THE RECOMMENDED PLAN ARE SHOWN ON MAP 63, AND UNDER THE ULTIMATE PLAN ARE SHOWN ON MAP 64.

LEGEND

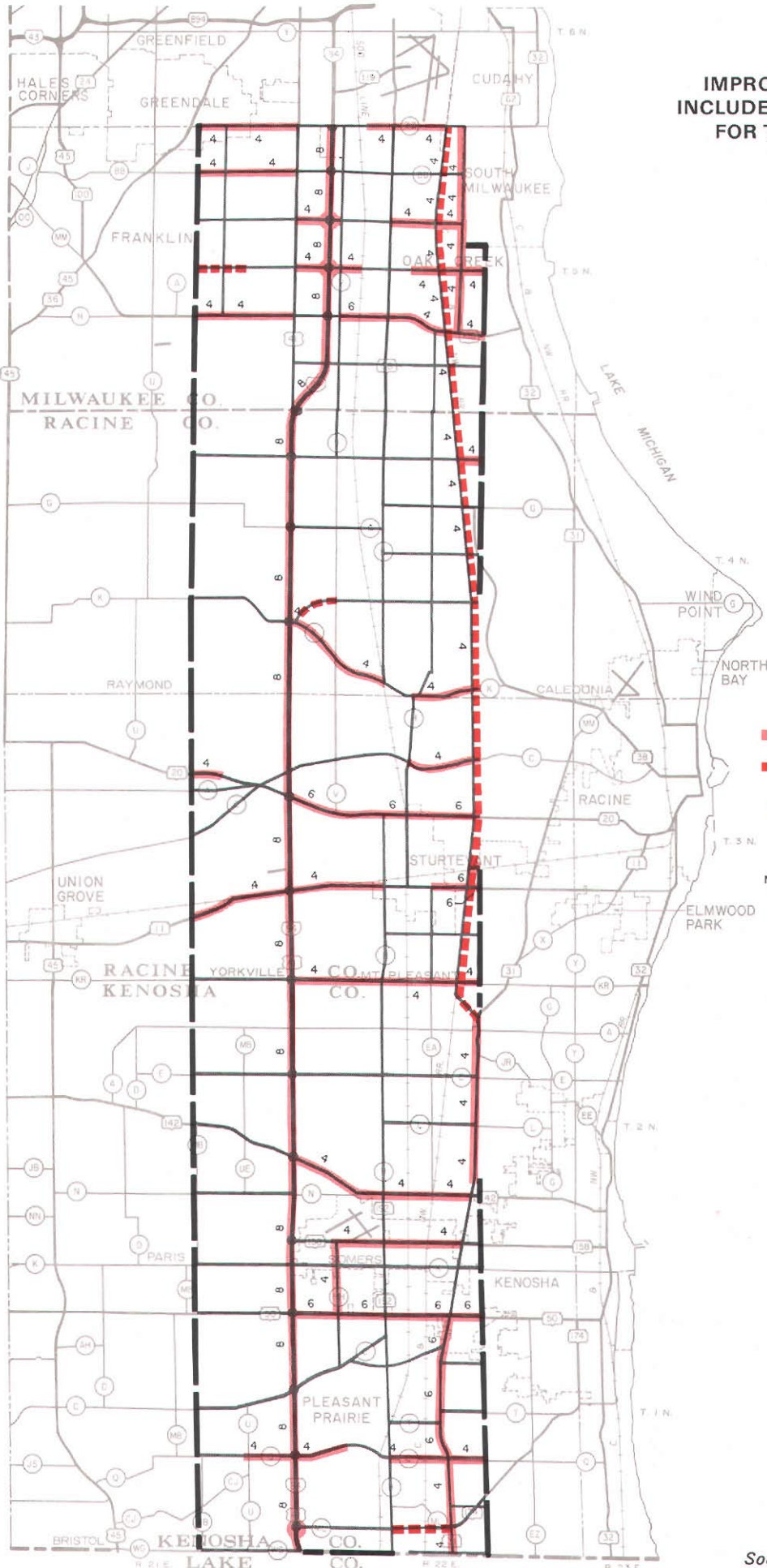
- FREEWAY
- STATE TRUNK HIGHWAY
- INTERCHANGE
- STANDARD ARTERIAL
- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- 4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)

NOTE: In addition to the arterial highway improvements and expansions attendant to the network shown on this map, which improvements and expansions are identified on Map 68, the recommended plan includes the definition and reservation of the rights-of-way required to provide for prospective arterial street widenings and new arterial streets under the "ultimate" land use plan as shown on Map 66.



Source: SEWRPC.

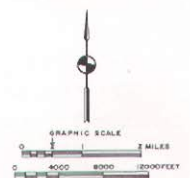
**ARTERIAL HIGHWAY
IMPROVEMENTS AND EXPANSIONS
INCLUDED IN THE RECOMMENDED PLAN
FOR THE IH 94 SOUTH CORRIDOR**



LEGEND

- EXISTING LOCATION (WIDENING)
- - - NEW LOCATION
- NEW INTERCHANGE
- 4 NUMBER OF LANES

NOTE: The alignment shown for the proposed Lake Arterial highway through the City of Oak Creek is one of several potential alignments. A recommended final alignment will be determined through a preliminary engineering study sponsored by the Wisconsin Department of Transportation and scheduled for completion in 1992.



Source: SEWRPC.

improvements are described in Table 59. The recommended changes in jurisdictional responsibility are shown on Map 69 and are listed in Table 60.

The recommended arterial system in the corridor would include 265 miles of streets and highways, representing an increase of about 13 miles, or 5 percent, over the 252 miles of arterial streets and highways that served the corridor in the base year 1985. The changes in the system can also be measured by comparing the number of arterial lane miles provided. In 1985, the number of lane miles on the arterial system was 760. By the year 2010 under the recommended plan, the number of arterial lane miles would increase by about 220, or 29 percent, to a total of 980.

The recommended state trunk highway element of the plan would include 108 miles of arterial facilities, or about 41 percent of the 265-mile planned system. The recommended county trunk highway element of the plan would include 112 miles of arterial facilities, or about 42 percent of the 265-mile planned arterial system. The recommended local trunk highway element of the plan would consist of the remaining 45 miles of arterial facilities, or about 17 percent of the 265-mile planned arterial system. Table 61 presents a summary of the mileage of the planned arterial street and highway system by jurisdiction, state, county, and local, within each unit of government in the corridor. Under the plan, the total mileage of state trunk highways would increase from 96 miles to 108 miles, or by about 13 percent, and the total mileage of county trunk highways would increase from 98 miles to 112 miles, or by about 14 percent.

The present network of frontage roads along IH 94 South in Kenosha and Racine Counties totals about 47.5 miles, all of which are maintained by the State as an integral part of the freeway system. Under the recommended plan, it is proposed that all frontage roads along IH 94 South continue to be maintained by the State. While the frontage roads provide a land access function, the frontage roads also serve as important supplementary facilities to the freeway in that traffic is routed over the frontage roads during major traffic accidents or construction periods.⁴

Under the level of urban development envisioned in the recommended land use plan, it is not anticipated that the system of frontage roads

will perform a day-to-day arterial function. Should the level of urban development along IH 94 exceed that forecast under the recommended plan, however, it will be necessary, as discussed earlier in this chapter, to convert some of the frontage roads to arterial facilities and to then widen those facilities. It is recognized in this respect that a part of the need to maintain and potentially improve the frontage roads can be attributed to increased urban land development. Yet, the frontage road system will continue to function as important supplementary facilities to the freeway. Hence, while the State should maintain jurisdiction over the entire frontage road system, any improvements undertaken to that system might be subject to a local cost share.

Of the 265 miles of the planned arterial street and highway system in the corridor, a total of 148 miles would require only preservation, i.e., either resurfacing or reconstruction to provide the same traffic carrying capacity; 95 miles would require improvement, that is, widening to provide additional traffic carrying capacity; and 22 miles would consist of new or relocated facilities. Of the 95 miles of proposed improvement projects, 67 miles, or 71 percent, would be on the planned state trunk highway system; 20 miles, or 21 percent, would be on the planned county trunk highway system; and the remaining seven miles, or 8 percent, would be on the planned local trunk system. Of the 22 miles of proposed or new relocated arterial facilities, 19 miles, or 86 percent, would be on the state trunk highway system; and three miles, or 14 percent, would be on the county trunk highway system. Less than 0.5 mile would be on the local trunk system.

⁴In considering the matter of the jurisdiction of the frontage road system along IH 94 South, the Advisory Committee requested that the Regional Planning Commission staff apply the jurisdictional classification criteria developed in the Racine and Kenosha County jurisdictional highway system plans to the frontage road system. The results of that application were set forth in a staff memorandum presented to the Advisory Committee on August 30, 1991. A copy of that memorandum is reproduced in Appendix A. After reviewing these results, the Committee acted to recommend that the State retain jurisdiction of the frontage roads as documented in the text.

Table 59

**ARTERIAL STREET AND HIGHWAY SYSTEM IMPROVEMENTS
IN THE IH 94 SOUTH CORRIDOR UNDER THE RECOMMENDED PLAN**

Jurisdiction	Facility	Termini	County	Description	Included in Base Plan	
New Location (new roadway) State	CTH ML Drexel Avenue Lake Arterial	IH 94	Kenosha Milwaukee	Construct new interchange	Yes	
		IH 94		Construct new interchange	Yes	
	County	Puetz Road	E. College Avenue to STH 31	Kenosha, Milwaukee, Racine Milwaukee	Construct four lanes on new alignment	Yes
			IH 94		Construct new interchange	Yes
Local	S. 21st Street	STH 31 to CTH H	Kenosha	Construct two lanes on new alignment	Yes	
		CTH V to CTH K	Racine	Construct two lanes on new alignment	Yes	
		Hunting Park Drive to western corridor boundary	Milwaukee	Construct two lanes on new alignment	Yes	
Existing Location (additional traffic lanes) State	IH 94	North boundary to south boundary	Kenosha, Milwaukee, Racine	Widen from six to eight traffic lanes	No	
	CTH K	IH 94 to CTH H	Racine	Widen from two to four traffic lanes	Yes	
	CTH K	CTH H to eastern corridor boundary	Racine	Widen from two to four traffic lanes	Yes	
	CTH KR	IH 94 to eastern corridor boundary	Kenosha, Racine	Widen from two to four traffic lanes	Yes	
	CTH Q	IH 94 to 1.3 mile east of IH 94	Kenosha	Widen from two to four traffic lanes	Yes	
	CTH Q	CTH H to eastern corridor boundary	Kenosha	Widen from two to four traffic lanes	Yes	
	STH 20	Stewart-Willow Road to eastern corridor boundary	Racine	Widen from four to six traffic lanes	Yes	
	STH 20	Western corridor boundary to 53rd Drive	Racine	Widen from two to four traffic lanes	No	
	STH 20	IH 94 to Stewart-Willow Road	Racine	Widen from four to six traffic lanes	No	
	STH 31	STH 142 to eastern corridor boundary	Kenosha	Widen from two to four traffic lanes	Yes	
	STH 31 ^a	STH 50 to CTH Q	Kenosha	Widen from two to six traffic lanes	Yes	
	STH 31 ^b	CTH Q to Wisconsin-Illinois state line	Kenosha	Widen from two to four traffic lanes	Yes	
	STH 50	CTH H to eastern corridor boundary	Kenosha	Widen from four to six traffic lanes	Yes	
	STH 50	IH 94 to CTH H	Kenosha	Widen from four to six traffic lanes	No	
	W. Rawson Avenue	S. 27th Street to western corridor boundary	Milwaukee	Widen from two to four traffic lanes	Yes	
	STH 100	S. 27th Street to western corridor boundary	Milwaukee	Widen from two to four traffic lanes	Yes	
	STH 100	S. Howell Avenue to eastern corridor boundary	Milwaukee	Widen from two to four traffic lanes	Yes	
	STH 100	S. 13th Street to S. Howell Avenue	Milwaukee	Widen from four to six traffic lanes	No	
	STH 158	CTH HH to STH 31	Kenosha	Widen from two to four traffic lanes	No	
County	CTH C	CTH H to eastern corridor boundary	Racine	Widen from two to four traffic lanes	Yes	
		CTH H to western corridor boundary	Racine	Widen from two to four traffic lanes	Yes	
	STH 11	Lake Arterial to eastern corridor boundary	Racine	Widen from four to six traffic lanes	Yes	
		90th Street to Lake Arterial	Racine	Widen from four to six traffic lanes	No	
	STH 142	IH 94 to STH 31	Kenosha	Widen from two to four traffic lanes	Yes	
	W. College Avenue	S. 27th Street to western corridor boundary	Milwaukee	Widen from two to four traffic lanes	Yes	
	E. College Avenue ^b	S. 6th Street to Lake Arterial	Milwaukee	Widen from two to four traffic lanes	Yes	
	W. Puetz Road	Soo Line railway to S. 27th Street	Milwaukee	Widen from two to four traffic lanes	Yes	
	E. Puetz Road	S. Shepard Avenue to eastern corridor boundary	Milwaukee	Widen from two to four traffic lanes	Yes	
	Seven Mile Road	Lake Arterial to eastern corridor boundary	Racine	Widen from two to four traffic lanes	Yes	
Local	W. Drexel Avenue	S. 13th Street to S. 27th Street	Milwaukee	Widen from two to four traffic lanes	Yes	
		S. Howell Avenue to Pennsylvania Avenue	Milwaukee	Widen from two to four traffic lanes	Yes	
	E. Drexel Avenue ^c	E. College Avenue to E. Puetz Road	Milwaukee	Widen from two to four traffic lanes	Yes	
	Pennsylvania Avenue	STH 158 to CTH C	Kenosha	Widen from two to four traffic lanes	No	
	CTH HH					

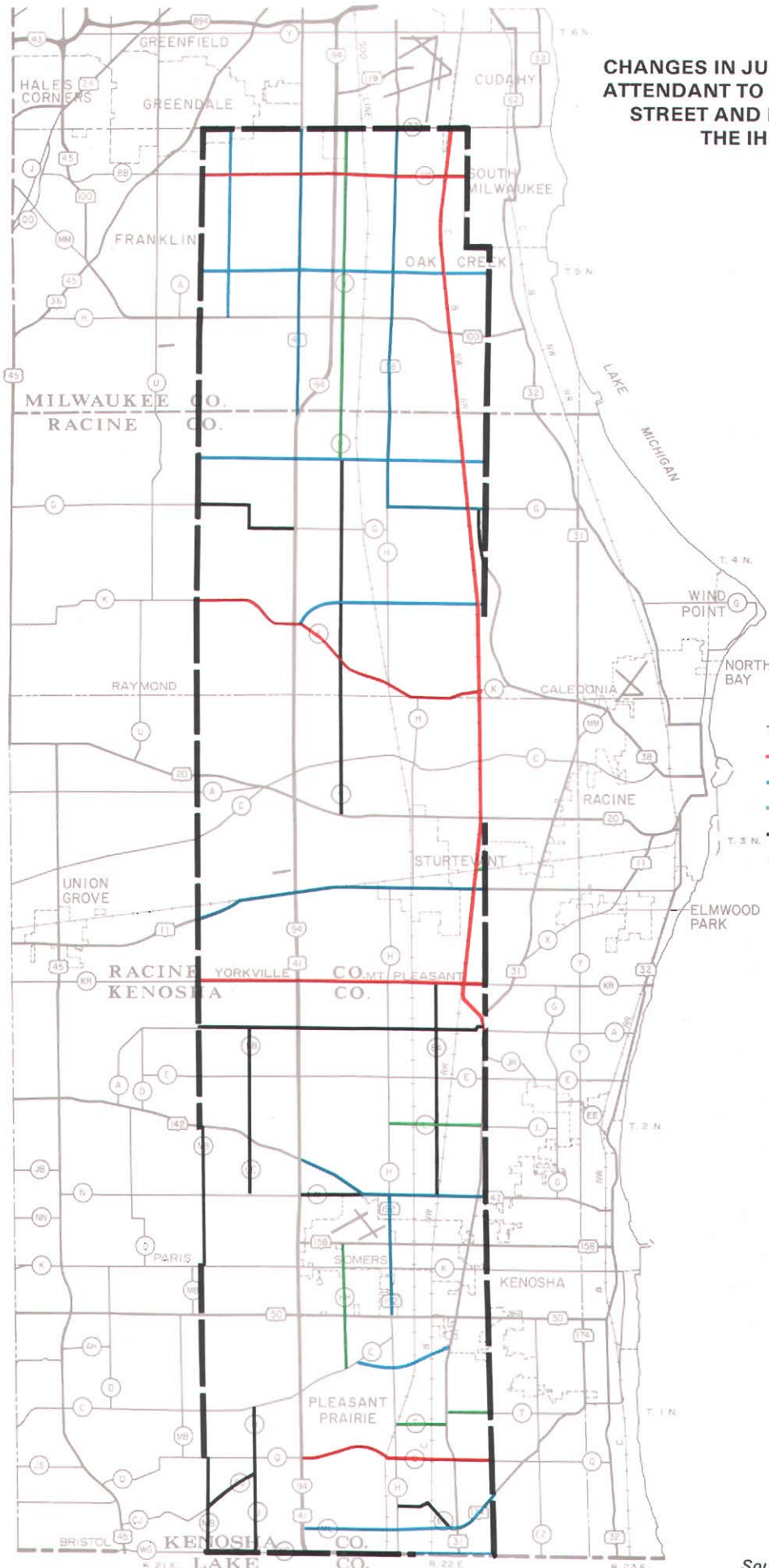
^aThe reconstruction of STH 31 between STH 50 and the Wisconsin-Illinois state line has been programmed.

^bThe reconstruction of W. College Avenue between S. 6th Street and S. Howell Avenue has been completed. The reconstruction of E. College Avenue between S. Howell Avenue and S. Pennsylvania Avenue has been programmed.

^cThe reconstruction of E. Drexel Avenue between S. Howell Avenue and S. Pennsylvania Avenue has been programmed.

Source: SEWRPC.

CHANGES IN JURISDICTIONAL RESPONSIBILITY ATTENDANT TO THE RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 SOUTH CORRIDOR



LEGEND

TRANSFERS TO:

- STATE TRUNK HIGHWAY SYSTEM
- COUNTY TRUNK HIGHWAY SYSTEM
- LOCAL TRUNK HIGHWAY SYSTEM
- LOCAL (NON-ARTERIAL) SYSTEM

NOTE: Under the "ultimate" land use plan conditions two related changes in jurisdictional responsibilities are recommended. Existing Racine County CTH C from STH 20 easterly to a point approximately one-half mile west of CTH H would revert from county to local jurisdiction. CTH C would be relocated to Kraut Road and a new interchange with IH 94 as shown on Map 60.

Source: SEWRPC.

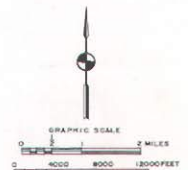


Table 60

**CHANGES IN ARTERIAL HIGHWAY SYSTEM JURISDICTIONAL RESPONSIBILITY
IN THE IH 94 SOUTH CORRIDOR UNDER THE RECOMMENDED PLAN**

Jurisdiction		Facility	From	To	Distance (miles)
Planned	Existing				
Kenosha County					
City of Kenosha					
County Trunk Highway	State trunk highway	STH 192	STH 142	STH 50	0.60
County Trunk Highway	State trunk highway	STH 142	CTH N	STH 192	0.12
County Trunk Highway	Local trunk highway	60th Street	West city limits of City of Kenosha	56th Avenue	0.24
Local Trunk Highway	County trunk highway	CTH HH	STH 158	STH 50	1.11
Subtotal	--	--	--	--	2.07
Town of Bristol					
Local Nonarterial	County trunk highway	CTH CJ	Western study limits	CTH U	1.23
Local Nonarterial	County trunk highway	CTH MB	Illinois state line	CTH V	2.00
Local Nonarterial	County trunk highway	CTH U	Illinois state line	CTH C	3.09
Subtotal	--	--	--	--	6.32
Town of Paris					
State Trunk Highway	County trunk highway	CTH KR	IH 94	Western study limits	1.01
Local Nonarterial	County trunk highway	CTH A	IH 94	Western study limits	2.00
Local Nonarterial	County trunk highway	CTH MB	CTH K	STH 142	2.93
Local Nonarterial	County trunk highway	CTH MB	STH 142	CTH A	2.35
Local Nonarterial	County trunk highway	CTH UE	CTH N	STH 142	1.16
Subtotal	--	--	--	--	9.45
Town of Somers					
State Trunk Highway	County trunk highway	CTH KR	IH 94	Eastern study limits	1.96
State Trunk Highway	New facility	Lake Arterial	CTH KR	STH 31	1.00
County Trunk Highway	State trunk highway	STH 142	IH 94	Eastern study limits	3.99
County Trunk Highway	State trunk highway	STH 192	STH 142	STH 50	1.49
Local Trunk Highway	County trunk highway	CTH L	CTH H	Eastern study limits	2.00
Local Trunk Highway	County trunk highway	CTH HH	STH 158	STH 50	0.44
Local Nonarterial	County trunk highway	CTH A	IH 94	STH 31	3.95
Local Nonarterial	County trunk highway	CTH EA	CTH KR	STH 142	4.51
Local Nonarterial	County trunk highway	CTH N	IH 94	STH 142	1.34
Subtotal	--	--	--	--	20.68
Village of Pleasant Prairie					
State Trunk Highway	County trunk highway	CTH Q	IH 94	East study limits	4.05
County Trunk Highway	State trunk highway	STH 192	CTH K	STH 50	0.49
County Trunk Highway	State trunk highway	STH 174	STH 31	Eastern study limits	1.09
County Trunk Highway	Local trunk highway	128th Street	Chicago & North Western Transportation Company railway right-of-way	STH 31	0.37
County Trunk Highway	Local trunk highway	Bain Station Road	CTH C	STH 31	2.00
County Trunk Highway	New facility	CTH ML extension	CTH H	STH 31	1.25
Local Trunk Highway	County trunk highway	CTH HH	STH 50	CTH C	1.12
Local Trunk Highway	County trunk highway	CTH T	CTH H	Eastern study limits	2.00
Local Nonarterial	County trunk highway	CTH ML	CTH H	STH 31	1.52
Subtotal	--	--	--	--	13.89
Milwaukee County					
City of Franklin					
State Trunk Highway	County trunk highway	CTH BB	USH 41	Western study limits	2.00
County Trunk Highway	State trunk highway	USH 41	CTH ZZ	Racine County line	2.98
County Trunk Highway	Local trunk highway	Puetz Road	Hunting Park Drive	USH 41	1.07
County Trunk Highway	Local trunk highway	S. 51st Street	Village of Greendale	STH 100	3.69
County Trunk Highway	New facility	Puetz Road extension	Hunting Park Drive	Western study limits	0.93
Subtotal	--	--	--	--	10.67

Table 60 (continued)

Jurisdiction		Facility	From	To	Distance (miles)
Planned	Existing				
Milwaukee County (continued)					
City of Oak Creek					
State Trunk Highway	County trunk highway	CTH BB	USH 41	Pennsylvania Avenue	3.49
State Trunk Highway	New facility	Lake Arterial	North city limits of City of Oak Creek	Racine County line	6.00
County Trunk Highway	State trunk highway	STH 38	CTH ZZ	Racine County line	6.05
County Trunk Highway	State trunk highway	USH 41	CTH ZZ	Racine County line	3.02
County Trunk Highway	Local trunk highway	Puetz Road	USH 41	S. 15th Avenue	3.98
Local Trunk Highway	County trunk highway	CTH V	CTH ZZ	Racine County line	5.67
Subtotal	--	--	--	--	28.21
Village of Greendale					
County Trunk Highway	Local trunk highway	S. 51st Street	CTH ZZ	Southern limits of Village of Greendale	0.30
Subtotal	--	--	--	--	0.30
Racine County					
Town of Caledonia					
State Trunk Highway	County trunk highway	CTH K	IH 94	East study limits	4.16
State Trunk Highway	New facility	Lake Arterial	Milwaukee County	Town of Mt. Pleasant	6.00
County Trunk Highway	State trunk highway	STH 38	Milwaukee County line	CTH G	3.90
County Trunk Highway	Local trunk highway	Seven Mile Road	IH 94	Eastern study limits	3.97
County Trunk Highway	Local trunk highway	Four Mile Road	CTH V	Eastern study limits	2.94
County Trunk Highway	New facility	Four Mile Road extension	CTH V	CTH K	0.96
Local Nonarterial	State trunk highway	STH 38	CTH G	Study limits	1.00
Local Trunk Highway	County trunk highway	CTH V	Milwaukee County line	Seven Mile Road	1.00
Local Nonarterial	County trunk highway	CTH V	Seven Mile Road	Town of Mt. Pleasant	5.00
Subtotal	--	--	--	--	28.93
Town of Mt. Pleasant					
State Trunk Highway	County trunk highway	CTH KR	IH 94	Eastern study limits	1.96
State Trunk Highway	County trunk highway	CTH K	Kraut Road	Town of Caledonia	0.39
State Trunk Highway	New facility	Lake Arterial	Town of Caledonia	CTH KR	6.05
County Trunk Highway	State trunk highway	STH 11	Village of Sturtevant	Eastern study limits	0.60
County Trunk Highway	State trunk highway	STH 11	IH 94	Village of Sturtevant	1.72
Local Nonarterial	County trunk highway	CTH V	STH 20	Town of Caledonia	2.49
Local Trunk Highway	New facility	21st Street	Lake Arterial	City of Racine	0.21
Subtotal	--	--	--	--	13.42
Town of Raymond					
State Trunk Highway	County trunk highway	CTH K	Western study limits	IH 94	2.52
County Trunk Highway	Local trunk highway	Seven Mile Road	Western study limits	IH 94	1.99
Local Nonarterial	County trunk highway	CTH G	Western study limits	IH 94	2.50
Subtotal	--	--	--	--	7.01
Town of Yorkville					
State Trunk Highway	County trunk highway	CTH KR	Western study limits	IH 94	1.01
County Trunk Highway	State trunk highway	STH 11	Western study limits	IH 94	2.18
Subtotal	--	--	--	--	3.19
Village of Sturtevant					
County Trunk Highway	State trunk highway	STH 11	West corporate limits	East corporate limits	1.66
Subtotal	--	--	--	--	1.66
Total	--	--	--	--	145.80

Source: SEWRPC.

Table 61

ARTERIAL MILEAGE BY JURISDICTION IN THE IH 94 SOUTH CORRIDOR UNDER THE RECOMMENDED PLAN

Jurisdiction	Planned Arterial Miles				County Branch Highway ^a
	State	County	Local	Total	
Kenosha County					
City of Kenosha	6.87	1.35	1.11	9.33	--
Village of Pleasant Prairie	13.45	14.50	4.78	32.73	--
Town of Bristol	5.04	6.07	0.00	11.11	6.3
Town of Paris	6.25	5.10	0.00	11.35	8.4
Town of Somers	12.51	17.84	2.44 ^b	32.79	9.7
Milwaukee County					
City of Franklin	4.00	9.17	2.00	15.17	--
City of Oak Creek	19.00	14.50	17.77	51.27	--
City of Milwaukee	0.75	1.87	0.32	2.94	--
City of South Milwaukee	0.00	0.00	1.34	1.34	--
City of Cudahy	0.00	0.19	0.00	0.19	--
Village of Greendale	0.00	1.30	0.00	1.30	--
City of Greenfield	0.00	0.50	0.00	0.50	--
Racine County					
Village of Sturtevant	0.13	2.91	0.93	3.97	--
Town of Caledonia	13.29	17.56	9.09	39.94	--
Town of Mt. Pleasant	15.35	11.13	4.78	31.26	--
Town of Raymond	5.40	1.99	0.00	7.39	--
Town of Yorkville	6.09	6.42	0.00	12.51	--
Total	108.13	112.40	44.56	265.09	24.4

^aUnder the jurisdictional highway system plan prepared for Kenosha County, it was recommended that a system of county branch highways be developed. This system would be comprised of existing county trunk highways outside of the urban area which were not required to provide arterial service.

^bUnder the boundary and urban services agreement between the City of Kenosha and the Town of Somers, 0.44 miles of local trunk highway, comprised of 104th Avenue, will be transferred from the Town to the City in future years.

Source: SEWRPC.

The total vehicle miles of travel which may be expected to occur on an average weekday on the arterial street and highway system in the corridor in the year 2010 is about 5.29 million. Of this total, 4.30 million vehicle miles of travel, or about 80 percent, may be expected to occur on the recommended state trunk highway system; 0.8 million miles, or about 16 percent, on the recommended county trunk highway system; and the remaining 0.2 million miles, or 4 percent, on the local trunk system.

Plan Costs

The total capital cost of implementing the recommended arterial street and highway system

plan for the IH 94 South corridor, including frontage roads, is estimated at \$307.5 million. The distribution of this cost by state, county, and local jurisdiction, and by the aforementioned categories of system preservation, improvement, and expansion is set forth in Table 62. All costs include right-of-way acquisition. Of the total cost, about \$241.3 million, or about 78 percent, will be required to preserve, improve, and expand the state trunk highway system in the corridor. This total includes about \$119.6 million for the provision of two additional through traffic lanes along the entire length of IH 94 south in the corridor, including attendant interchange reconstruction and expansion projects and frontage

Table 62

ESTIMATED COST OF THE IH 94 SOUTH CORRIDOR HIGHWAY SYSTEM PLAN

Item	Planned Arterial Mileage—Year 2000			
	State	County	Local	Total
Preservation	22.0	89.0	37.3	148.3
Improvement ^a	67.1	20.3	7.1	94.5
Expansion ^b	19.0	3.1	0.2	22.3
Total	108.1	112.4	44.6	265.1

Item	Estimated Construction Cost (including right-of-way)			
	State	County	Local	Total
Preservation	\$ 12,470,000 ^c	\$12,010,000	\$ 4,400,000	\$ 28,880,000
Improvement ^a	183,360,000	31,660,000	14,280,000	229,300,000
Expansion ^b	45,470,000	3,450,000	380,000	49,300,000
Total	\$241,300,000	\$47,120,000	\$19,060,000	\$307,480,000

^aWidening to provide additional traffic lanes on existing arterials.

^bConstruction of new facilities.

^cIncludes \$7,910,000 for the preservation of the frontage road system supporting the operation of IH 94 in Kenosha and Racine Counties.

Source: SEWRPC.

road projects. An additional \$43.8 million would be required for that portion of the proposed Lake Arterial lying within the corridor. The remaining approximately \$77.9 million would be required on other existing and proposed state trunk highways throughout the corridor.

An additional approximately \$47.1 million would be required to preserve, improve, and expand the three county trunk highway systems in the corridor. The remaining \$19.1 million will be required to preserve, improve, and expand the local trunk arterial street and highway systems. The distribution of the county and local costs to each of the three counties and to the local governments concerned, based on 1989 civil division limits, is shown on Table 63.

Finally, Table 63 also identifies the potential capital costs associated with those arterial street and highway improvements identified as neces-

sary to accommodate urban development under the "ultimate" land use plan. These additional costs total about \$38.7 million. Of this total, about \$31.5 million, or about 81 percent, would be expended on the state trunk highway system and on the frontage roads supporting IH 94; and the remaining \$7.2 million, or about 19 percent, on the county trunk highway system.

Earlier in this chapter it was noted that the capital cost of implementing the base arterial street and highway system plan, essentially the currently adopted regional transportation plan that had been based on a land use plan that did not seek to accommodate extensive commercial and industrial development along IH 94 South, is estimated at about \$232.5 million. This total may be compared with the estimated cost of implementing the new arterial street and highway system plan for the corridor of \$307.5 million. The increment in cost, about \$75.0

Table 63

**ESTIMATED COST BY LEVEL AND UNIT OF GOVERNMENT
OF THE IH 94 SOUTH CORRIDOR HIGHWAY SYSTEM PLAN**

Level and Unit of Government	Recommended Plan Cost	Ultimate Plan Cost	
		Increment	Total
State	\$241,300,000 ^a	\$33,200,000 ^b	\$274,500,000
County			
Kenosha	\$ 11,720,000	\$ 5,890,000	\$ 17,610,000
Milwaukee	20,690,000	0	20,690,000
Racine	13,660,000	2,070,000	15,730,000
Subtotal	\$ 46,070,000	\$ 7,960,000	\$ 54,030,000
Local			
Kenosha County			
Town of Bristol	\$ 0	\$ 0	\$ 0
Town of Paris	0	0	0
Town of Somers	1,050,000	0	1,050,000
Village of Pleasant Prairie	410,000	0	410,000
City of Kenosha	2,220,000	0	2,220,000
Milwaukee County			
Village of Greendale	0	0	0
City of Cudahy	0	0	0
City of Franklin	170,000	0	170,000
City of Greenfield	0	0	0
City of Milwaukee	30,000	0	30,000
City of Oak Creek	10,820,000	0	10,820,000
City of South Milwaukee	2,680,000	0	2,680,000
Racine County			
Town of Caledonia	780,000	0	780,000
Town of Mt. Pleasant	770,000	180,000	950,000
Town of Raymond	0	0	0
Town of Yorkville	0	100,000	100,000
Village of Sturtevant	130,000	0	130,000
Subtotal	\$ 19,060,000	\$ 280,000	\$ 19,340,000
Total	\$306,430,000	\$41,440,000	\$347,870,000

^aCosts to be borne by the State under the recommended plan include \$7,910,000 for the preservation of the frontage road system supporting the operation of IH 94 in Kenosha and Racine Counties.

^bIncremental cost includes \$26,620,000 for the improvement of the frontage road system supporting the operation of IH 94 in Kenosha and Racine Counties, as specified in the "ultimate" plan.

Source: SEWRPC.

million, represents a good approximation of the arterial highway costs associated with the major change in planned urban development pattern reflected in the recommended land use plan for the corridor.

**RECOMMENDATIONS FOR
PUBLIC TRANSIT SERVICE**

As noted in Chapter V of this report, the adopted regional transportation system plan also

includes recommendations for public transit service within the IH 94 South corridor. The public transit service recommendations of the adopted plan are divided into a lower and an upper tier. The lower tier of the plan recommends the development of a rapid transit system within the Region by implementing an extensive network of express bus routes which would be operated on an operationally controlled freeway system; and the implementation of a light rail or express bus transit facility serving the northwest corridor of Milwaukee County. Within the IH 94 South corridor, the lower tier of the adopted plan recommends implementation of commuter-oriented express bus-on-freeway service connecting the Cities of Kenosha, Racine, and Oak Creek with the Milwaukee central business district. The proposed bus-on-freeway routes would serve a total of seven park-ride lots, including four located within the IH 94 South corridor: the existing park-ride lot located at the W. College Avenue interchange with IH 94 plus new park-ride lots located near the Ryan Road interchange with IH 94 in the City of Oak Creek, the STH 20 interchange with IH 94 in the Town of Mt. Pleasant, and the intersection of STH 158 and STH 31 east of IH 94 in the City of Kenosha. In addition, the bus-on-freeway route serving the Cities of Racine and Kenosha would also make a stop at Milwaukee County's General Mitchell International Airport. The lower tier of the adopted plan also envisions a modest expansion in the local transit service provided by the transit systems serving the Cities of Racine and Kenosha, with most of the proposed expansion in local transit service occurring in areas outside the IH 94 South corridor.

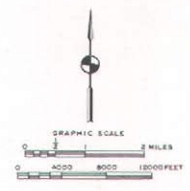
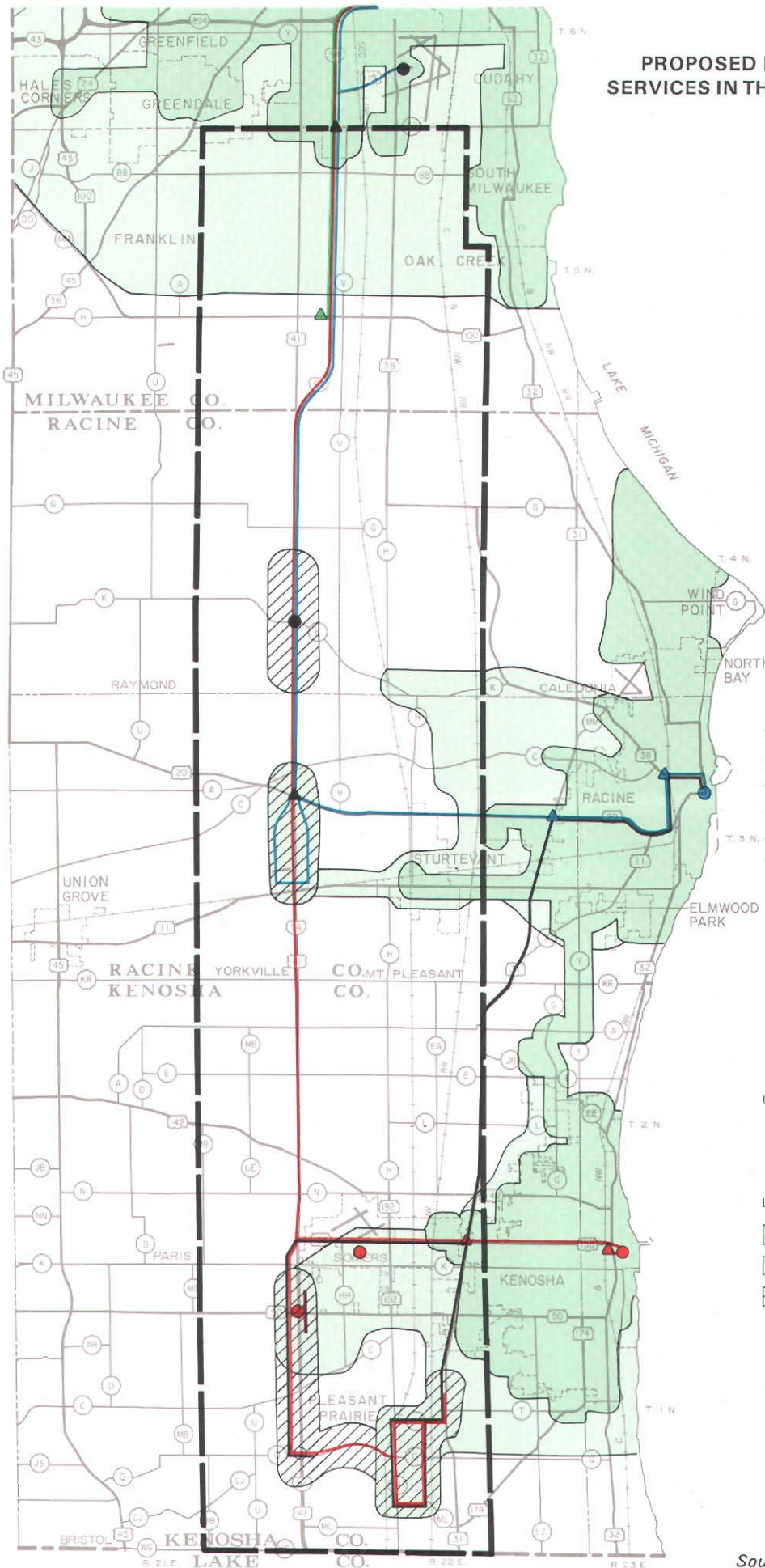
Under the upper tier of the adopted plan, certain bus-on-freeway routes could eventually be converted to light rail transit or commuter rail operation, depending upon how future conditions affected the need for, and use of, rapid transit services. Within the IH 94 South corridor, the upper tier of the adopted plan envisions that the bus-on-freeway services proposed under the lower tier would ultimately be replaced by commuter rail rapid transit service between the Milwaukee central business district and the Cities of Racine and Kenosha along the existing Chicago & North Western Transportation Company's railway right-of-way. The proposed commuter rail line and its passenger station facilities would be located entirely outside the IH 94 South corridor. Access to the proposed

commuter rail service from within the corridor would be through private automobile travel to any of the seven passenger station facilities located from one to four miles outside the corridor, or through the use of local feeder bus services.

The recommended land use plan for the IH 94 South corridor set forth in Chapter VII of this report requires modifications to the public transit services recommended for implementation within the corridor under the adopted regional transportation system plan. In this respect, the following changes are proposed for the recommended public transit services included under the lower tier of the adopted regional transportation system plan (see Map 70).

1. An additional ramp stop would be added at the CTH K interchange with IH 94 in Racine County on the two bus-on-freeway routes operated between the Milwaukee central business district and the Cities of Racine and Kenosha. Access to areas of proposed industrial development around this stop would be provided through proposed local circulator transit services, as discussed below.
2. The proposed bus-on-freeway route between the Milwaukee central business district and the City of Racine would be extended to the south of the proposed park-ride lot near the intersection of IH 94 and STH 20 to serve the proposed retail and office development along IH 94 between STH 20 and STH 11 directly. The route would also be extended to the east to a new stop within the City of Racine central business district to facilitate transfers between routes of the City's local bus system.
3. The proposed bus-on-freeway route between the Milwaukee central business district and the City of Kenosha would be split into two branches, with one branch extending from the STH 158 interchange with IH 94 to the east to serve park-ride lots located within the City of Kenosha, essentially as originally proposed under the lower tier of the adopted plan. Additional stops would also be added on this branch to serve the Dairyland Greyhound Park located immediately south of STH 158 and the common transfer termi-

PROPOSED LOWER TIER PUBLIC TRANSIT SERVICES IN THE IH 94 SOUTH CORRIDOR: 2010



LEGEND

- TRANSIT ROUTES**
- MILWAUKEE-RACINE EXPRESS BUS
 - MILWAUKEE-KENOSHA EXPRESS BUS
 - MILWAUKEE-OAK CREEK EXPRESS BUS
 - RACINE-KENOSHA EXPRESS BUS
- TRANSIT STATIONS**
- MILWAUKEE-RACINE EXPRESS BUS
 - ▲ WITH PARKING
 - WITHOUT PARKING^a
 - MILWAUKEE-KENOSHA EXPRESS BUS
 - ▲ WITH PARKING
 - WITHOUT PARKING^a
 - MILWAUKEE-OAK CREEK EXPRESS BUS
 - ▲ WITH PARKING
 - (NONE) WITHOUT PARKING
- COMMON STOPS^b**
- ▲ WITH PARKING
 - WITHOUT PARKING
- LOCAL TRANSIT SERVICE AREA**
- EXISTING 1990
 - PROPOSED 2010
 - PROPOSED CIRCULATOR SERVICE

^aOnly major stops for express bus routes are shown. Other stops would be made as appropriate within the Cities of Racine and Kenosha, and within areas of retail, office, and industrial development within the IH 94 South corridor.

^bFor Milwaukee-Racine and Milwaukee-Kenosha routes only.

Source: SEWRPC.

nal for the City's local bus system in the central business district. The new second branch of the route would extend south from the STH 158 interchange with IH 94 and directly serve proposed areas of retail and office development along IH 94, as well as the Lake View Corporate Park in the Village of Pleasant Prairie. The route would also be modified to provide for a stop at the proposed park-ride lot near the STH 20 interchange with IH 94 in Racine County to provide access for Kenosha residents to the commercial development along IH 94 between STH 20 and STH 11.

4. Additional express bus service would be provided between the City of Racine central business district and the proposed retail and office development along IH 94 near the STH 50 and STH 165 interchanges and the Lake View Corporate Park in the Village of Pleasant Prairie.
5. Regular local transit service provided by the transit systems serving the Cities of Racine and Kenosha would be extended further into the corridor to serve the expanded areas of medium-density residential development which has been proposed under the recommended corridor land use plan.
6. Special local circulator transit service would be provided within areas of high intensity development to provide connections between the various land uses within these areas, as well as connections with the proposed rapid and express bus services operated between the Milwaukee, Racine, and Kenosha urban areas.

Changes to the recommended transit services within the corridor under the upper tier of the adopted transportation system plan would be as follows (see Map 71):

1. Express bus services would be added to the plan to connect the stations along the proposed commuter rail line with areas of proposed retail, office, and industrial development within the IH 94 South corridor. In addition to providing feeder and distributor transit service for patrons of the proposed commuter rail line, the proposed express bus services would also provide needed connections for Racine and

Kenosha residents to areas of proposed development within the study corridor.

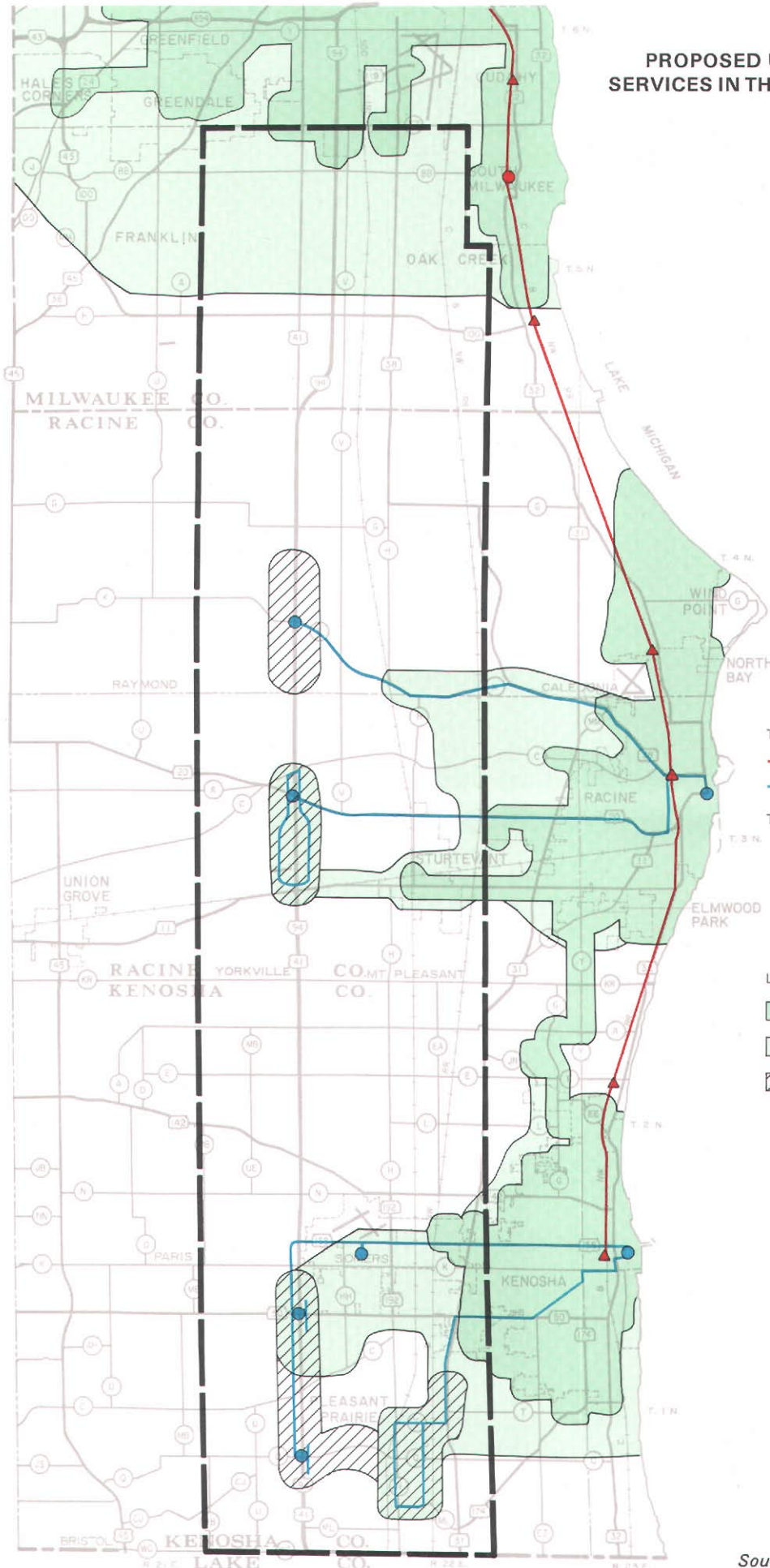
2. The changes proposed under the lower tier of the adopted plan with respect to regular local transit service and special local circulator service would also be made under the upper tier of the adopted plan.

SUMMARY AND CONCLUSION

This chapter has described a recommended transportation system plan for the IH 94 South corridor study area. The transportation plan has been designed to serve the recommended design year 2010 land use plan for the corridor described in Chapter VII of this report. Implementation of the recommended transportation system plan would provide a highway system able to meet the service level standards set forth in Chapter VI of this report throughout the entire corridor except for a relatively short segment of STH 11 through the Village of Sturtevant. The key recommendations included in the transportation plan are:

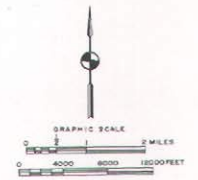
1. The widening of IH 94 South throughout the entire corridor to provide for eight through travel lanes instead of six lanes at present.
2. The unbraiding of all freeway on- and off-ramps from the network of frontage roads except where environmental constraints make such unbraiding inadvisable. In those cases, at the STH 158 and CTH C interchanges, the plan recommends converting limited sections of the frontage road network to one-way operation.
3. The addition of three new interchanges on IH 94 South: at Puetz Road and Drexel Avenue in the City of Oak Creek and at CTH ML in the Village of Pleasant Prairie and Town of Bristol.
4. The reconstruction for additional capacity of the following interchanges in the corridor: College Avenue (CTH ZZ), CTH K, STH 20, CTH KR, STH 158, STH 50, and STH 165.
5. The construction of the long-proposed Lake Arterial facility through the Milwaukee and Racine County portions of the corridor, terminating at a junction with STH 31 in the Town of Somers, Kenosha County.

PROPOSED UPPER TIER PUBLIC TRANSIT SERVICES IN THE IH 94 SOUTH CORRIDOR: 2010



- LEGEND**
- TRANSIT ROUTES**
- COMMUTER RAIL
 - EXPRESS BUS FEEDER / DISTRIBUTOR
- TRANSIT STATIONS**
- ▲ COMMUTER RAIL WITH PARKING
 - COMMUTER RAIL WITHOUT PARKING
 - EXPRESS BUS WITHOUT PARKING²
- LOCAL TRANSIT SERVICE AREA**
- EXISTING 1990
 - PROPOSED 2010
 - PROPOSED CIRCULATOR SERVICE

²Only major stops for express bus routes are shown. Other stops would be made as appropriate within the Cities of Racine and Kenosha, and within areas of retail, office, and industrial development within the IH 94 South corridor.



Source: SEWRPC.

6. Major arterial street and highway widening projects, including: STH 31 from the Illinois state line to STH 50 and from STH 142 to the Lake Arterial junction; STH 50 from IH 94 to 39th Avenue; STH 20 from IH 94 to Stuart Road; STH 100 from S. 76th Street to USH 41 and from STH 38 to STH 32; STH 165 from relocated western frontage road to STH 32; CTH KR from IH 94 to STH 32; CTH K from IH 94 to STH 38; Rawson Avenue from S. 76th Street to USH 41; and College Avenue (CTH ZZ) from STH 36 to USH 41 and from CTH V to the Chicago & North Western Railway line.
7. The provision of express bus-based rapid transit service over the IH 94 South freeway, connecting the Cities of Kenosha, Racine, and Oak Creek with the Milwaukee central business district, and the potential conversion of that express bus service to commuter rail service over the Chicago & North Western Railway Lakeshore right-of-way from Kenosha through Racine and Oak Creek to Milwaukee.

The total capital cost of implementing the recommended arterial street and highway system plan for the corridor is estimated at \$307.5 million. About \$241.3 million, or about 79 percent of the total, would be required to preserve, improve, and expand the state trunk highway system in the corridor. About \$47.1

million, or about 15 percent of the total, would be required to preserve, improve, and expand the three county trunk highway systems. About \$19.1 million, or about 6 percent, would be required to preserve, improve, and expand the local trunk arterial streets and highways. Of the state trunk highway costs, about \$119.6 million would be required to provide the two additional through traffic lanes on IH 94 South in the corridor, to construct the three new interchanges proposed on IH 94, to improve and expand the 19 existing interchanges, and to improve and maintain the frontage roads. About \$43.8 million would be required for that portion of the proposed Lake Arterial facility in the corridor.

The recommended transportation system has been designed so that it can readily be further improved and expanded should urban development in the corridor over the next 20 years exceed the level of development forecast under the recommended land use plan. In particular, the plan identifies potential additional freeway interchange improvements and the conversion of certain of the frontage roads to multi-lane arterial highways. Certain additional widenings of existing arterial streets and highways were also identified. The additional capital costs associated with these potential incremental arterial street and highway improvements are estimated at \$41.4 million. Of this total, 80 percent would be for state facilities, and 20 percent would be for county facilities.

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Chapter IX

PLAN IMPLEMENTATION

INTRODUCTION

The recommended land use and transportation system plan presented in the previous chapters of this report provides a guide for land use development and supporting transportation system development within the IH 94 South Corridor through the year 2010. In a practical sense, these plan elements are not complete until the steps required to implement the plans, that is, to convert the plans into action policies and programs, are specified. This chapter is, therefore, presented as a guide for use in the implementation of the recommended corridor land use and transportation plans. Basically, it outlines the actions which should be taken by the various levels and agencies of government concerned if the recommended land use and transportation plans are to be fully carried out. Those units and agencies of government with plan implementation responsibilities are identified, necessary formal plan adoption actions are specified, and specific implementation actions are recommended.

PLAN IMPLEMENTATION AGENCIES

Implementation of the recommended corridor land use and transportation plans is dependent upon the cooperative actions of a number of local, state, and federal units and agencies of government. Responsibility for implementation of the recommended corridor land use plan rests largely with city councils, village boards, and town boards and their respective plan commissions; the Kenosha, Milwaukee, and Racine County Boards and the county board committees responsible for the land use planning and zoning functions and park and open space functions;¹

¹Because Milwaukee County contains no unincorporated area, there is no county zoning authority. The County Board Committee on Parks, Recreation, and Culture, however, does perform a limited subdivision review function for subdivision plats lying in, or adjacent to, proposed park and parkway development.

and the Metropolitan Milwaukee Sewerage Commission and the governing bodies of the municipal water and sewerage districts and utilities serving the corridor. Responsibility for implementation of the recommended corridor transportation system plan rests largely with city councils, village boards, and town boards and their respective plan commissions; the Kenosha, Milwaukee, and Racine County Boards and their respective county highway and public works committees; county and local agencies responsible for the provision of public transit service, including the City of Kenosha Transit Commission, the City of Racine Transit and Parking Commission, and the Milwaukee County Board Mass Transit Committee; the Wisconsin Department of Transportation; and the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transit Administration.²

It should be noted that, while the Regional Planning Commission itself has no statutory plan implementation powers, the Commission may foster plan implementation as it carries out one of its primary functions, that of serving as a center for the coordination of the planning and plan implementation activities of the various levels and agencies of government in southeastern Wisconsin.

PLAN ADOPTION AND INTEGRATION

Once the corridor land use and transportation plans have been recommended for approval by the Intergovernmental Coordinating and Technical Advisory Committee, the Regional Planning Commission will consider adoption of those plans as amendments to the regional land use

²For a description of the plan implementation powers of these units and agencies of government, see SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin—2000, Volume Two, Alternative and Recommended Plans.

and transportation plans, in accordance with Section 66.945(10) of the Wisconsin Statutes; and, following such adoption, will transmit a certified copy of the plans to the aforementioned plan implementation agencies. Endorsement, adoption, or formal acknowledgement of the plans by the implementing agencies is highly desirable and in some cases necessary to assure a common understanding between the several government levels and to enable their staffs to program the necessary implementation work. The following specific actions are recommended in this respect:

1. It is recommended that the Kenosha, Milwaukee, and Racine County Boards, upon the recommendation of the appropriate county committees, adopt the recommended corridor land use and transportation plans as amendments to the regional land use and transportation plans in accordance with Section 66.945(12) of the Wisconsin Statutes.
2. It is recommended that the plan commissions of the cities, villages, and towns in the IH 94 South Corridor adopt the recommended corridor land use and transportation plans as amendments to the regional land use and transportation plans in accordance with Section 66.945(12) of the Wisconsin Statutes and integrate those plans into local master plans. It is further recommended that the city councils, village boards, and town boards adopt the corridor land use and transportation plans, thereby endorsing the local plan commission action.
3. It is recommended that the Milwaukee Metropolitan Sewerage Commission and the governing bodies of all municipal water and sanitary districts and utilities formally acknowledge the recommended corridor land use plan and consider the plan in the determination of utility service areas.
4. It is recommended that the City of Kenosha Transit Commission and the City of Racine Transit and Parking Commission adopt the recommended corridor transportation plan and integrate that plan as a guide to the provision of mass transit facilities and services within the IH 94 South Corridor.

5. It is recommended that the Wisconsin Department of Transportation formally acknowledge the recommended corridor transportation plan as an amendment to the regional transportation plan and integrate the highway and transit elements of that plan into its broad range of transportation planning and development responsibilities.
6. It is recommended that the U. S. Department of Transportation, Urban Mass Transit Administration and Federal Highway Administration, formally acknowledge the corridor transportation plan as an amendment to the regional transportation plan and consider and give due weight to the plan recommendations in the administration and granting of federal aids for transit system development and operations and for highway-related construction and management, respectively, in the Region.
7. It is recommended that the governing bodies of the special-purpose urban and rural stormwater districts operating in the IH 94 South Corridor, namely, the Mt. Pleasant Stormwater Drainage District No. 1, the Root River Storm Sewer Utility District, the Hoods Creek Drainage District, and the Yorkville-Raymond Drainage District, formally acknowledge the recommended corridor land use plan and consider the plan in carrying out their various stormwater management responsibilities.

LAND USE PLAN IMPLEMENTATION

The land use plan presented in Chapter VII of this report provides recommendations with respect to the amount, spatial distribution, and arrangement of the various land uses within the IH 94 South Corridor through the plan design year 2010. The plan proposes the development of sufficient amounts of land for residential, commercial, industrial, transportation, and other urban uses to meet the needs associated with probable future increases in population, household, and employment levels through the plan design year, while seeking to preserve and protect the underlying and sustaining natural resource base. In addition, the plan provides additional land reserves for residential, commercial, and industrial use which may be required

if the corridor experiences greater than anticipated increases in population and economic activity.

Implementation of the recommended land use plan will be dependent, to a large extent, on the judicious application of land use controls by county and local units of government and on sound public utility and service extension policies. The most important plan implementation actions are described in this section. For convenience in presentation and use, this section has been divided into the following subject areas: zoning, subdivision regulation, official mapping, urban design criteria and performance standards, and public utility and service extension policies.

Zoning

Of all the land use implementation devices presently available, perhaps the most important and versatile is the application of local police power to control land use development through the adoption of appropriate zoning ordinances, including zoning district regulations and zoning district delineations. Within the IH 94 South corridor, eight municipalities, the Cities of Franklin, Kenosha, Oak Creek, and Milwaukee; the Villages of Greendale, Pleasant Prairie, and Sturtevant; and the Town of Mt. Pleasant, administer their own general, or comprehensive, zoning ordinance. The Towns of Caledonia, Raymond, and Yorkville are governed by the Racine County zoning ordinance, while the Towns of Somers, Paris, and Bristol are governed by the Kenosha County zoning ordinance.³

³A number of changes in zoning administration have occurred within the IH 94 South Corridor since the 1985 inventory of zoning reported on in Chapter V. The zoning ordinance administered by the Town of Paris was ruled invalid by the District II Court of Appeals in 1988. Subsequently, the Town Board ratified the Kenosha County Zoning Ordinance. The Town of Pleasant Prairie was governed by the Kenosha County zoning ordinance until it became a village in 1988. The zoning ordinance subsequently adopted by the Village of Pleasant Prairie, however, was essentially the same as the County ordinance. The Town of Bristol adopted the Kenosha County zoning ordinance in 1990; previously the only zoning within the Town of Bristol was that administered by Kenosha County within the statutory shoreland areas.

The following steps should be taken to foster implementation of the corridor land use plan through zoning:

1. It is recommended that Racine County, in cooperation with the Towns of Caledonia, Raymond, and Yorkville, and Kenosha County, in cooperation with the Towns of Somers, Paris, and Bristol, review their zoning ordinances, including zoning district regulations and zoning maps, and adopt those amendments necessary to reflect the recommended corridor land use development plan in accordance with Section 59.97 of the Wisconsin Statutes.
2. It is recommended that the Cities of Franklin, Kenosha, Milwaukee, and Oak Creek along with the Villages of Greendale, Pleasant Prairie, and Sturtevant and the Town of Mt. Pleasant review their zoning ordinances, including zoning district regulations and zoning maps, and adopt those amendments necessary to reflect the recommended corridor land use plan in accordance with Sections 62.23(7), 61.35, and 60.62 of the Wisconsin Statutes.

The task of delineating zoning district boundaries to reflect the recommended land use plan is as difficult as it is important. Through sound zoning district delineations, urban land use development can be guided in both space and time in accordance with the plan. The following recommendations are made to all zoning agencies in the IH 94 South Corridor to assist them in the task of establishing and amending zoning district delineations.

Urban Areas: While the primary function of zoning should be to implement the recommended land use plan, this does not mean that the zoning ordinance and zoning district map should directly and immediately reflect the land use plan. It is important to recognize that the recommended corridor land use plan is a long-range plan, that many of the areas proposed for residential, commercial, and industrial use will not be developed for a number of years, and that many of the identified urban land reserves, in particular, will probably not be developed until after the plan design year 2010. The application of urban zoning districts should, therefore, proceed incrementally in response to the operation of the urban land market. Premature zoning of lands for urban use should be avoided so as

to prevent the creation of isolated urban enclaves and incomplete neighborhoods, which tend to destroy the character of rural areas and which are difficult if not impossible to provide with basic urban services and facilities.

Accordingly, it is recommended that only existing urban areas and areas already committed to urban use, as well as those areas that have immediate development potential and can be economically served by municipal services and facilities, be placed in appropriate exclusive residential, commercial, industrial, governmental, recreational, and other urban zoning districts. Other proposed urban areas should be placed in a holding district such as an agricultural district zone. Such holding districts should be rezoned into appropriate urban districts only when the need for the the proposed development has been demonstrated and essential services and facilities can be readily provided.

One of the major changes to the existing pattern of urban zoning districts required for proper implementation of the corridor land use plan is the reduction in strip commercial zoning along IH 94, particularly within Racine County. The land use plan calls for well-planned clusters of commercial and industrial development at key interchanges on IH 94. Strip zoning should be avoided in order to maintain the integrity of the intervening stretches of rural land along IH 94 envisioned under the recommended plan.

Agricultural Areas: Areas which have been designated prime agricultural lands should be placed in an exclusive agricultural use district, which essentially permits only agricultural uses. Such a district should provide for a minimum parcel size of 35 acres in order to preserve workable farm units and prohibit the intrusion of incompatible urban development. No structures or improvements should be permitted unless consistent with agricultural use. Such zoning, it should be noted, would satisfy one of the basic eligibility requirements for participation by farmland owners in the Wisconsin Farmland Preservation program, a program which provides property tax relief in the form of state income tax credits to eligible landowners.⁴

⁴*On the average in the Southeastern Wisconsin Region, those farmers that participate in the preservation program receive annual income tax credits in the amount of about \$1,300. This represents, on average, property tax relief equal to about 35 percent of the total farm property tax bill.*

Other agricultural land should be placed in general agricultural and rural residential zoning districts, which are designed to reflect community needs, the pattern of land ownership, and the suitability of the land for farming. Such zoning should preclude nonfarm residential development on lots less than five acres in size. Residential development on lots smaller than five acres in rural areas is inconsistent with, and may be disruptive to, agricultural use in such areas and contributes to an urban sprawl pattern of development.

The foregoing recommendations involve significant changes in the zoning of agricultural lands in the corridor. The major changes include the placement of prime agricultural lands in the Towns of Caledonia, Raymond, and Yorkville in exclusive agricultural zoning districts and the placement of other agricultural lands in those towns in general agricultural or rural estate districts; and the appropriate application of exclusive agricultural and general agricultural districts to currently unzoned agricultural land within Town of Paris. Consideration should also be given to raising the minimum parcel size of the Town of Mt. Pleasant agricultural zoning district from 20 to 35 acres, thus meeting the state minimum requirement for participation in the income tax credit program.

Environmental Corridors, Isolated Natural Areas, and Floodlands: Areas which have been designated as primary environmental corridors, secondary environmental corridors, and isolated natural areas should be placed in one of several zoning districts, depending upon the type and character of the natural resource feature to be preserved in natural, open space use. All lakes, rivers, streams, wetlands, and associated undeveloped floodlands and shorelands, including lowland wildlife habitat, should be placed in lowland conservancy or floodland protection districts, which prohibit intensive urban development. Woodlands and areas of steep slope, including scenic vistas and upland wildlife habitat, should be placed in an upland conservancy or rural estate-type residential district with a minimum lot size of five acres.

All floodlands should be placed in special floodland zoning districts to protect their floodwater conveyance and storage capacity and to protect new urban development from the problems of flooding. The Regional Planning Commission has long recommended that floodplain zoning regulations should be formulated so as to

fully protect the entire 100-year recurrence interval flood hazard area. Of primary concern in this regard within the IH 94 South Corridor are certain floodlands tributary to Oak Creek which have not yet been fully protected by the City of Oak Creek floodland regulations.

It should be noted that the Regional Planning Commission stands ready to assist county and local units of government in adapting zoning ordinances to implement the recommended corridor land use plan. The Commission staff will be available during the plan implementation period to assist individual zoning jurisdictions in identifying specific changes to zoning district regulations and zoning district delineations which may be required to implement the urban land development, agricultural land preservation, and environmental corridor and floodplain protection recommendations of the plan.

Subdivision Plat Review and Regulation

As indicated in Chapter V of this report, most of the county and local units of government within the IH 94 South Corridor have enacted land division ordinances regulating the manner in which land is subdivided and prepared for development. County and local units of government responsible for the regulation of land divisions should use the recommended corridor land use plan as a basis for the review and approval of proposed land subdivisions. In general, urban subdivisions should not be approved in areas recommended in the plan to remain in nonurban uses. All urban subdivisions should be required to provide for a full complement of urban services and facilities. Racine County, in particular, should reinstitute the regulation of all land divisions through the use of certified survey maps.

Official Mapping

Official mapping powers provide an effective means for reserving land for future public use as streets, highways, playgrounds, parks, parkways, and waterways. Chapter V of this report indicates that, within the IH 94 South Corridor, only the Cities of Franklin, Milwaukee, and Oak Creek have adopted official maps. It is recommended that the other municipalities in the corridor adopt official maps in accordance with Section 62.23(6) of the Wisconsin Statutes. Of particular importance to implementation of the IH 94 South Corridor land use plan is the designation as parkways of those primary

environmental corridor lands which have been recommended for public acquisition under the regional park and open space plan.

Urban Design Criteria and Performance Standards

Chapter VI of this report presented a set of urban design criteria and performance standards as a guide to the development of physical solutions to urban design problems within the IH 94 South Corridor which are presented for commercial, industrial, and residential development. Those urban design criteria and standards address a wide range of design considerations, including the layout of lots and blocks, provision of off-street parking, proper access to arterial streets and highways, building mass, facades, and materials, landscaping, and outdoor lighting. Adherence to such design criteria and performance standards may be expected to result in a more attractive, safer, and more functional urban land development pattern; contribute to the long-term stability of developing areas and the maintenance of property values; and protect public investment in supporting infrastructure systems.

Perhaps the best way to assure compliance with urban design criteria and performance standards is to incorporate such criteria and standards into local land use controls, particularly zoning and subdivision control ordinances. Zoning ordinances can be expanded by requiring that site plans and building plans be prepared for each proposed development and by specifying the standards which such plans must meet. Subdivision control ordinances may be expanded to stipulate additional design criteria and performance standards required to be met in the land development process. Freestanding architectural control ordinances may also be used to codify building-related design standards.

It is recommended that Kenosha and Racine Counties, along with the cities, villages, and towns in the IH 94 South Corridor, review the urban design criteria and performance standards set forth in Chapter VI, revise and adapt those design criteria and standards as necessary to reflect local values and conditions, and determine whether and how the existing framework of local land use controls should be amended to ensure adherence to such design criteria and standards.

Public Utility Service Extension Policies

Also important to the implementation of the recommended corridor land use plan are sound public policies with respect to the provision of basic utilities and services. Particularly important are policies pertaining to the provision of sanitary sewer service and public safety services.

1. New intensive urban development within the IH 94 South Corridor should, to the maximum extent possible, be provided with public sanitary sewer and water supply service. To ensure the rational extension of sanitary sewer service, it is recommended that the Regional Planning Commission together with the Milwaukee Metropolitan Sewerage Commission and the governing bodies of all sewer utility and sanitary districts amend, as necessary, the sanitary sewer service area recommendations of the regional water quality management plan, taking into account the proposed pattern of urban land uses, including the various urban reserves, shown on the recommended corridor land use plan as well as the results of the public utility studies being concurrently conducted for the Kenosha and Racine portions of the IH 94 South Corridor. The Wisconsin Department of Natural Resources, as the state agency responsible for the regulation of sanitary sewerage systems, should utilize the resulting sanitary sewer service area plans as the basis for approval of all proposed sanitary sewer service extensions within the corridor in accordance with existing state administrative rules.
2. It is recommended that local units of government in the IH 94 South Corridor provide the additional fire suppression and rescue service facilities needed to ensure adequate response times as urban development proceeds within the corridor. In order to minimize additional facility requirements and attendant costs, the concerned local units of government should consider entering into intergovernmental cooperative agreements under which first response service is not constrained by corporate limits.

TRANSPORTATION SYSTEM PLAN IMPLEMENTATION

The transportation system plan for the IH 94

South Corridor includes recommendations regarding the arterial street and highway improvements and transit system improvements needed in support of the recommended design year 2010 land use plan for the corridor. Responsibility for implementation of these recommendations rests primarily with the Wisconsin Department of Transportation and constituent county and local units of government. Recommended implementation measures with respect to the proposed arterial street and highway improvements and transit system improvements are set forth below.

Arterial Streets and Highways

The previous chapter of this report described the specific arterial street and highway improvements proposed in the recommended transportation system plan for the IH 94 South Corridor and indicated proposed jurisdictional responsibilities for those improvements. Under the plan, much of the responsibility for the proposed arterial street and highway system improvements would rest with the Wisconsin Department of Transportation. The Department would be responsible for all recommended freeway improvements, including the widening of IH 94 throughout the entire corridor from six to eight lanes; the construction of three new interchanges on IH 94; the reconstruction of certain existing interchanges on IH 94 to provide for additional capacity; and the unbraiding of freeway on- and off-ramps from the network of frontage roads, where feasible.

The Department would also be responsible for construction of the new Lake Arterial facility through Milwaukee and Racine Counties to its proposed junction with STH 31 in the Kenosha County. Under the plan, the responsibility for the other proposed surface arterial street and highway improvements would rest with the Wisconsin Department of Transportation for the improvements on the planned state trunk highway system; with Kenosha, Milwaukee, and Racine Counties for the improvements on the planned county trunk highway systems; and, to a limited extent, with municipalities in the corridor for local arterial streets. The specific arterial street and highway improvements proposed in the recommended plan and the levels of government responsible for those improvements are indicated in Table 59 in the previous chapter of this report.

While the Wisconsin Department of Transportation has the broadest responsibility with respect to the recommended arterial street and highway system improvements within the IH 94 South Corridor, county and local units of government may be asked to pay a portion of the costs of proposed improvements to the state trunk highway system. It is the department's policy that local jurisdictions and private interests directly benefitting from a highway project should share in the project costs, with the level of participation reflecting the degree of benefit. For example, current Department policy requires that local jurisdictions pay 25 percent of the cost of new state trunk highways as well as the cost of additional traffic lanes on such highways where such projects will serve significant local traffic.⁵ New access intersections or interchanges with a state trunk highway requires a 50 percent local cost share if there is a local public benefit, while the modification or upgrading of such access requires a 25 percent cost share, assuming a local public benefit. The cost of new or improved access to a state trunk highway serving only a private road or driveway must be paid entirely by the developer. Many unique situations, such as the unbraiding of freeway ramps and frontage roads along IH 94, may occur in which the local cost share will have to be negotiated by the Department and the local jurisdiction on the basis of the relative state and local benefits which may accrue. With respect to the unbraiding of freeway ramps, the Department has indicated that it would, under certain conditions, be willing to share in the required preliminary engineering studies on a 50 percent State, 50 percent local cost-sharing basis.

The recommended transportation plan also proposes changes with respect to jurisdictional responsibility for certain existing arterial streets

⁵Significant local traffic is defined for this purpose by the Department as traffic that uses or will use a segment of road and that has a trip end (origin or destination) within one-half mile of the project limits, either currently or in the design year. Cost sharing is required when there is, or will be, 40 percent or more local traffic on a segment that is being improved. The one-half-mile measure may be increased if service to a limited number of developments is clearly the primary reason for the project.

and highways within the corridor. All such proposed jurisdictional changes are indicated in Table 60 in the previous chapter.

The following steps should be taken to facilitate implementation of the arterial street and highway element of the recommended transportation plan for the IH 94 South Corridor:⁶

1. It is recommended that the Wisconsin Department of Transportation, the County Boards of Kenosha, Milwaukee, and Racine Counties, and the governing bodies of the concerned municipalities conduct preliminary engineering studies to establish precise alignments, including precise centerlines and right-of-way widths, for the proposed new arterial streets and highways and existing arterial streets and highways designated for widening under the recommended plan; and to evaluate the environmental impacts of the proposed improvements.⁷
2. It is recommended that Kenosha and Racine County Boards establish, with the approval of the municipalities as they are affected, a highway width map, pursuant to Section 80.64 of the Wisconsin Statutes, identifying the location and necessary rights-of-way of all planned state and county trunk highways; that Milwaukee County Board revise its existing highway width map to properly reflect the needed state and county trunk highway rights-of-way; and that the municipal governing bodies in the corridor establish local official maps, pursuant to Section 62.23(6) of the Wisconsin Statutes, identifying thereon the recommended state, county, and local trunk highway facilities.

⁶All of the proposed county board and municipal governing body actions assume involvement and approval by the respective county highway committees and local plan commissions.

⁷The Wisconsin Department of Transportation began a preliminary engineering and environmental assessment study to identify a preferred alignment for the Lake Arterial in 1990.

3. It is recommended that the Wisconsin Department of Transportation, the County Boards of Kenosha, Milwaukee, and Racine Counties, and the governing bodies of the concerned municipalities proceed with right-of-way acquisition and facility construction as necessary to implement the recommended arterial street and highway improvements.
4. It is recommended that the Wisconsin Department of Transportation, the County Boards of Kenosha, Milwaukee, and Racine Counties, and the municipal governing bodies within the corridor cooperatively arrange for the jurisdictional transfers proposed in the recommended transportation plan.
5. It is recommended that the Wisconsin Department of Transportation, the County Boards of Kenosha, Milwaukee, and Racine Counties, and the municipal governing bodies within the corridor seek the realignment of the federal highway aid system attendant to the recommended plan, including the designation of planned state trunk highway routes as Federal Aid Primary routes; the designation of planned county and local arterial routes in urban areas as Federal Aid Urban routes; and the designation of planned county arterial routes in rural areas as Federal Aid Secondary routes.

The arterial street and highway improvements proposed under the recommended transportation system plan for the IH 94 South Corridor are intended to serve urban development conditions through the year 2010 as envisioned under the recommended land use plan. Urban development significantly beyond that anticipated under the recommended land use plan may be expected to require additional improvements to the arterial system. The improvements required under "ultimate" development conditions within the corridor, were identified in Chapter VIII.⁸ The

⁸*For the purpose of identifying potential additional improvements, ultimate development conditions within the corridor were represented by the year 2010 optimistic-decentralized land use plan for the corridor. That plan is described in Chapter VII of this report.*

additional improvements thus identified, beyond those called for in the recommended plan, include the realignment to the north of Racine County CTH C from a point just west of the Soo Line Railroad to a junction with Kraut Road at a point just east of IH 94 and continuing west along Kraut Road to the proposed relocated western frontage road; the construction of a new interchange on IH 94 at the realigned CTH C; improvements to increase the capacity of certain other interchanges on IH 94; substantial modification of the IH 94 frontage road system, including the replacement of certain frontage roads with four-lane divided arterial highways; the widening of certain surface arterial highways; and, potentially, the construction of several local trunk highway segments parallel to IH 94. It is important that lands required for these prospective improvements be reserved so that options for future development are not foreclosed. Accordingly, it is recommended that the State, county, and local units of government concerned take steps to define and reserve the rights-of-way necessary for these prospective improvements in order to enable their eventual construction should development conditions warrant.

Public Transit Service

The public transit service recommendations of the recommended transportation system plan for the IH 94 South Corridor represent a refinement and detailing of the transit service element of the adopted regional transportation system plan. As indicated in Chapter VIII, the recommended corridor transportation plan calls for the provision of bus-based rapid transit service over the IH 94 South freeway connecting the Cities of Kenosha, Racine, and Oak Creek with the Milwaukee central business district. Integral to such service is a planned system of park-ride lots, four of which would be located within the IH 94 South Corridor, including one existing park-ride lot and three proposed new lots. The plan also calls for the provision of special local circulator transit service within the developing economic activity centers along IH 94; the provision of express bus service from the Racine central business district to the Lakeview Corporate Park and economic activity centers along IH 94 in Kenosha County; and the extension of local transit service to the expanded areas of medium-density residential development which have been proposed in the recommended corridor land use plan.

The following steps should be taken to facilitate implementation of the public transit service element of the IH 94 South Corridor transportation plan:⁹

1. It is recommended that the Cities of Kenosha and Racine in cooperation with Milwaukee County arrange for the provision of bus-on-freeway transit service between the Cities of Milwaukee, Oak Creek, Racine, and Kenosha. In planning for such service, the potential for service provision through private transit companies already operating between the Cities of Kenosha, Milwaukee, and Racine should be explored.
2. It is recommended that the Wisconsin Department of Transportation proceed with land acquisition for, and construction of, the three new park-ride lots that are proposed within the IH 94 South Corridor.
3. It is recommended that Milwaukee County and the Cities of Kenosha and Racine extend local bus service, as warranted, to expanding residential areas within the IH 94 South Corridor.
4. It is recommended that the City of Racine provide express bus service between the Racine central business district and the Lakeview Corporate Park and economic activity centers along IH 94 in Kenosha County, as warranted.
5. It is recommended that the Cities of Kenosha and Racine in conjunction with concerned private interests investigate possible arrangements for local circulator transit service within the economic activity centers along IH 94, as warranted. Alternatives in this regard include service provision by the Cities of Kenosha and Racine as an extension of their local

transit service and private sector service provision arranged for by private interests within the respective centers.

The adopted regional transportation system plan includes an upper tier of recommendations which calls for the replacement of the bus-on-freeway service with commuter rail service between Milwaukee, Racine, and Kenosha along a route lying east of the IH 94 South Corridor, if the need for, feasibility, and cost-effectiveness of, such commuter rail service is demonstrated. It is recommended that, if such commuter rail service is provided, the Cities of Kenosha and Racine provide express bus service connecting stations along the proposed commuter rail line with areas of proposed retail, office, and industrial development within the IH 94 South corridor.

SUMMARY AND CONCLUSIONS

This chapter has described the actions which should be taken by various agencies and units of government for the purpose of implementing the recommended land use and transportation plans for the IH 94 South Corridor. Successful implementation of the corridor land use and transportation plans will depend upon the cooperative actions of a number of agencies and units of government, including, at the local level, the governing bodies of the constituent cities, villages, and towns and their respective plan commissions and transit commissions; at the county level, the Kenosha, Milwaukee, and Racine County Boards and their respective planning and zoning, highway and public works, and transit committees; at the state level, the Wisconsin Department of Transportation; and, at the federal level, the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transit Administration. The Milwaukee Metropolitan Sewerage District and municipal water and sewerage utility districts serving the corridor also have important plan implementation responsibilities. Implementation responsibilities attendant to the recommended land use plan and recommended transportation plan for the IH 94 South Corridor are summarized by agency in Tables 64 and 65.

⁹All of the proposed county and city actions would be implemented through the respective transit committees and commissions.

Table 64

AGENCY RESPONSIBILITIES FOR IMPLEMENTATION OF THE IH 94 SOUTH CORRIDOR LAND USE PLAN

Implementation Activity	County Boards/ County Planning and Zoning Committees	Municipal Governing Bodies/Plan Commissions	Milwaukee Metropolitan Sewerage District, Sewer Utilities, and Sanitary Districts
Plan Endorsement/Adoption	X	X	X
Zoning Ordinance Amendment	X ^a	X	--
Regulation of Land Subdivision	X ^b	X	--
Adaptation of Urban Design Criteria and Performance Standards	X	X	--
Preparation of Official Maps	--	X	--
Amendment of Sanitary Sewer Service Area Plans	--	X	X
Provision of Public Safety Services	--	X	--

^aBecause Milwaukee County contains no unincorporated area, there is no county zoning authority.

^bMilwaukee performs a limited subdivision review function for plats lying in, or adjacent to, proposed park and parkway development.

Source: SEWRPC.

Table 65

AGENCY RESPONSIBILITY FOR IMPLEMENTATION OF THE IH 94 SOUTH CORRIDOR TRANSPORTATION PLAN

Implementation Activity	County Boards/ County Highway and Transit Committees	Municipal Governing Bodies/ Plan Commissions/ Transit Commissions	Wisconsin Department of Transportation	Federal Highway Administration	Urban Mass Transit Administration
Plan Endorsement/Adoption	X	X	X	X	X
Arterial Street and Highway Element Preliminary Engineerings Studies, Right-of-Way Acquisition, and Facility Construction:					
Freeway Widening, Interchange Improvements, Frontage Road Improvements	--	--	X	--	--
Surface Arterial Street and Highway Construction and Widening	X	X	X	--	--
Preparation or Amendment of Highway Width Map or Official Map	X	X	--	--	--
Jurisdictional Highway Transfers	X	X	X	--	--
Federal Highway Aid Realignment	X	X	X	X	--
Transit Service Element					
Provision of Bus-on-Freeway Transit Service	X ^a	X ^a	--	--	--
Development of Park-Ride Lots	--	--	X	--	--
Provision of Express Bus Service Between Racine CBD and Economic Activity Centers Along IH 94 in Kenosha County	--	X ^b	--	--	--
Extension of Local Transit Service to Expanding Residential Areas	X ^c	X ^d	--	--	--
Provision of Special Circulator Transit Service Within Economic Activity Centers Along IH 94	--	X ^e	--	--	--

^aCities of Kenosha and Racine in cooperation with Milwaukee County.

^bCity of Racine.

^cMilwaukee County.

^dCities of Kenosha and Racine.

^eService could be provided by the Cities of Kenosha and Racine or through the private sector.

Source: SEWRPC.

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Chapter X

SUMMARY AND CONCLUSIONS

INTRODUCTION

Economic and land use development conditions along IH 94 in Kenosha, Racine, and southern Milwaukee Counties are changing rapidly. There has been a marked increase in urban development within this freeway corridor in recent years. Recognizing the potential for continued rapid growth and development in this corridor, Kenosha and Racine Counties requested the Regional Planning Commission to prepare a plan to help guide and shape new urban growth within the corridor in the public interest. The Commission suggested that the plan also encompass the southern portion of Milwaukee County, and prepared the requested plan under the guidance of an Intergovernmental Coordinating and Technical Advisory Committee consisting of 22 elected and appointed public officials and citizens representing the concerned county and local units of government and development-related interests. The membership of that Committee is listed on the inside front cover of this report.

The development plan for the IH 94 South Corridor includes a land use element and a transportation system element. The land use element provides recommendations with respect to the amount, spatial distribution, and arrangement of the various land uses within the corridor through the plan design year 2010. The plan proposes the development of sufficient amounts of land for residential, commercial, industrial, transportation, and other urban uses to meet the needs associated with probable future increases in population and economic activity levels through the plan design year while seeking to preserve and protect the underlying and sustaining natural resources base. The transportation system element includes recommendations regarding the arterial street and highway and transit system improvements needed to support the recommended land use plan.

The planning effort involved extensive inventories and analyses of the factors and conditions affecting development in the IH 94 South Corridor, including inventories of the demographic

and economic base and the preparation of forecasts of the possible range of future population and economic activity levels; inventories of the natural resource base and of the man-made environment; and inventories of existing plans, land use regulations, and development proposals. In addition, the planning effort involved the formulation of a set of recommended land use and transportation system development objectives, principles, and standards and related urban design criteria for the corridor; the preparation of alternative land use and transportation plan elements; the selection of recommended land use and transportation plan elements from among the alternatives considered; and the formulation of plan implementation measures. This report has described the findings and recommendations of the planning effort in the IH 94 South Corridor. A summary of the key findings and recommendations is presented in this chapter.

THE PLANNING AREA

The IH 94 South Corridor planning area is an approximately six-mile wide corridor lying on either side of IH 94 from the Wisconsin-Illinois state line to W. College Avenue in Milwaukee County, a distance of about 30 miles. The corridor encompasses a total area of about 178 square miles and lies in portions of three counties, seven towns, three villages, and four cities. The northern boundary of the planning area marks the divide between the intensive urban land use development and more rural land uses in Milwaukee County. The eastern boundary marks the divide between the existing intensive urban land uses in the Cities of Kenosha and Racine and more rural land uses lying to their west. The southern boundary marks the jurisdictional divide between Wisconsin and Illinois. The western boundary includes those areas judged to be impacted by freeway-oriented development. It should be noted that the second mile west of IH 94 in Kenosha County was included in the study area for impact analysis purposes only, it being intended that

only the first mile west of IH 94 in Kenosha County be considered for the location of urban land uses.

The IH 94 South Corridor represents a principal entry into the State of Wisconsin. Since it is located just west of the expanding Kenosha and Racine metropolitan areas, just south of the expanding Milwaukee metropolitan area, and just north of rapidly urbanizing Lake County, Illinois, the IH 94 South Corridor is in a good position with regard to continued growth and development. Many of the most important industrial areas and heaviest population concentrations in the Midwest lie within 250 miles of the study corridor.

ECONOMIC AND DEMOGRAPHIC BASE

Future urban development needs within the IH 94 South Corridor will depend in part upon the population and economic activity levels within Kenosha, Milwaukee, and Racine Counties and the larger Southeastern Wisconsin Region, of which the corridor is an integral part. Future land development needs within the corridor also will likely be influenced by development trends in Northeastern Illinois. Trends in population and economic activity in the corridor must, therefore, be considered within the context of related trends in surrounding areas.

Population and Households

After increases of about 27 percent from 1950 to 1960, and of about 12 percent from 1960 to 1970, population growth in the Southeastern Wisconsin Region slowed considerably. The estimated resident population of Southeastern Wisconsin in 1988 was virtually the same as that counted in the 1970 Census, or about 1.75 million persons. Population changes in Kenosha, Milwaukee, and Racine Counties over the period 1950 through 1988 have to varying degrees mirrored the regional pattern of changes. Rapid increases in the Kenosha and Racine County resident populations of about 34 percent and 29 percent, respectively, during the 1950s and about 17 percent and 21 percent during the 1960s were replaced by modest increases of about 4 percent and 1 percent, respectively, during the 1970s. The population levels in Kenosha and Racine Counties have not changed significantly since 1980. Milwaukee County also experienced rapid population growth, about 19 percent, during the 1950s, followed by more modest growth, about

2 percent, during the 1960s and an actual decline after 1970.¹ In Lake County, Illinois, located just south of the IH 94 South Corridor, the population growth trend established in the 1950s and 1960s remains relatively strong as that County approaches a population level of nearly one-half million persons.

About 49,800 persons resided in the IH 94 Corridor study area in 1985. The resident population of the corridor increased by about 7,800 persons, or 19 percent, between 1970 and 1980 and by just under 1,000 persons, or about 2 percent, between 1980 and 1985. In 1985, about one-half of the corridor population resided in Milwaukee County, while the remainder was nearly evenly divided between Kenosha and Racine Counties.

Unlike the trend in population size, growth in households in the Southeastern Wisconsin Region and in the three counties in the corridor remained strong throughout the 1970s, and, indeed, into the 1980s. Even in Milwaukee County, where the population decline has been large in absolute terms, the number of households has continued to increase.

There were about 17,000 households in the IH 94 South Corridor in 1985. As in the case of population, about one-half of these households were located in the Milwaukee County portion of the study area, with the remaining households about evenly divided between the Kenosha and Racine County portions of the study area.

The average size of households in the Southeastern Wisconsin Region and each of the three counties containing the corridor study area has decreased over the past several decades. The average size of households within the corridor in 1985, 3.0 persons, was significantly greater than the regional average, 2.7 persons. This pattern

¹The 1990 U. S. Census estimated a regional population of 1.81 million persons. The Census indicated a stabilization of the Milwaukee County population, with the County population estimated at 959,300 in 1990. The Census indicated a 1990 Kenosha County population of 128,200, about 4 percent greater than 1980; and a 1990 Racine County population of 175,000, about 1 percent greater than 1980.

is consistent throughout the individual county portions of the study area, reflecting the essentially suburban character of the residential land use development that has occurred within the study area. Household sizes in the study area, however, have declined significantly since 1970.

Labor Force and Employment

The civilian labor force in the three counties containing the IH 94 South Corridor stood at about 634,700 persons in 1987. Between 1960 and 1987, the labor force increased by about 36 percent in Kenosha County, 15 percent in Milwaukee County, and 56 percent in Racine County.

The number of jobs in the three counties in the IH 94 South Corridor totaled 647,100 in 1985. Of that total, 28,000 jobs, or about 4 percent, were located within the corridor. After increasing steadily through the 1970s, the number of jobs in Kenosha, Milwaukee, and Racine Counties decreased after 1980 as a result of a severe economic recession. The number of jobs located within the corridor, however, continued to increase from 1972 to 1985, reflecting a decentralization of job locations.

HISTORIC URBAN GROWTH

Until the mid-1900s, there was no significant urban development in the IH 94 South Corridor study area. By 1950, the effects of urbanization began to be observed in the form of scattered commercial development along S. 27th Street (USH 41) in the Milwaukee County portion of the corridor. Since 1950, urban development in the corridor has consisted largely of two types: residential land uses scattered through the

corridor, and highway-oriented commercial land uses located within the corridor at major interchanges on IH 94. The Kenosha and Racine County portions of that freeway were opened to traffic in 1960, while the Milwaukee County portion was opened in 1966. By 1985, there were about 19 square miles of urban development in the corridor study area, as measured by the Regional Planning Commission urban growth ring analysis, representing about 11 percent of the total study area.²

EXISTING LAND USE

Urban land uses, including residential, commercial, industrial, governmental and institutional, park and recreational, and transportation and utility, as identified in the Commission regional land use inventory, comprised about 32 square miles, or 18 percent of the corridor study area, in 1985. The largest urban land use category was residential, which encompassed about 13.1 square miles and accounted for about 41 percent of all urban land uses and just over 7 percent of the total corridor area. A close second was the transportation and utility category, which encompassed about 12.5 square miles, or 39 percent of all urban land and also about 7 percent of the total corridor area. Recent urban development activity, particularly in the Racine and Kenosha County portions of the corridor, has been largely commercial and industrial in nature. Nevertheless, in 1985, net commercial and industrial land, exclusive of related off-street parking areas, together encompassed only about 2.5 square miles, or less than 1.5 percent of the corridor study area.

²The Regional Planning Commission relies on two types of inventories and analyses in order to monitor urban growth and development within the Region: an urban growth ring analysis and a land use inventory. The urban growth ring analysis delineates the outer limits of the lands developed and committed to urban use, thereby, in effect, identifying concentrations or urban land. The Commission land use inventory identifies all lands actually in urban use, wherever located. The greater urban area indi-

cated by the land use inventory relative to the urban growth analysis within the IH 94 South Corridor is largely due to the treatment of transportation facility rights-of-way. The land use inventory identifies as urban all developed street and highway and railway rights-of-way, wherever located. The urban growth analysis identifies such rights-of-way as urban only to the extent that they are located within a concentration of residential, commercial, industrial, or other urban uses.

Rural land uses continue to dominate the landscape in the IH 94 South Corridor, with about 146 square miles, or 82 percent of all land in the corridor, devoted to agriculture, wetlands, woodlands, or other open land uses in 1985. Agricultural lands alone encompassed about 130 square miles, or 89 percent of all rural lands and 73 percent of the total corridor area. About 77 square miles, or 53 percent of all rural lands and 43 percent of the total corridor area, were classified as prime agricultural lands in 1985, based upon agricultural soil capability, the size of the individual farm units, and overall size of the farming area. The preservation of these lands in agricultural use is important to the protection of the quality of the environment within the Region, to the maintenance of a healthy agricultural economy within the Region, and to giving form and structure to the developing urban areas within the Region.

NATURAL RESOURCE BASE

Soils

While the soils of the study area are well suited for farming and agriculture, they are generally very poorly suited for urban development without public sanitary sewers. Consequently, most new urban development in the corridor must be served either by public sanitary sewers or, in some cases, sewage holding tanks. About 45 square miles, or 25 percent of the corridor study area, is covered by soils having severe limitations for residential development even with public sanitary sewers, or stated differently, are poorly suited for residential development of any kind.

Surface Water, Floodlands, and Wetlands

The study area contains portions of the Oak Creek, Root River, Pike River, and Des Plaines River watersheds, together with certain lands that drain directly to Lake Michigan. All but the Des Plaines River watershed lie on the east side of the subcontinental divide that traverses the Southeastern Wisconsin Region. Lands to the east of that divide drain to Lake Michigan, while lands west of the divide drain to the Mississippi River. This divide has important implications for public utility system planning, since the transfer of water across the subcontinental divide is affected not only by common law, which has historically forbade such transfers, but by statutory intervention in recent years at the federal and state levels of government.

The perennial stream system in the study area and the floodplains associated with that system are shown on Map 36 in Chapter V of this report. For planning and regulatory purposes, floodplains are defined as those areas subject to inundation by the 100-year recurrence interval flood event. In total, the identified 100-year recurrence interval flood hazard areas within the IH 94 South Corridor encompass about 18 square miles, or about 10 percent of the total corridor area.

Wetlands, defined as areas in which the water table is at or near the land surface and which are characterized both by hydric soils and hydrophytic vegetation, encompassed about nine square miles, or about 5 percent of the study area. Wetlands have an important set of natural functions which make them particularly valuable resources. As a result of the increasing awareness of those natural functions, wetland preservation regulations have been put in place at the federal, state, and local levels of government that have important ramifications for future urban development in the study corridor.

Woodlands

Woodlands occupy a total area of about six square miles, or about 4 percent of the IH 94 South Corridor study area. The remaining woodland resources in the corridor are generally scattered, although concentrations do occur within the Oak Creek and Des Plaines River watersheds. Woodlands also perform a variety of important natural functions and provide opportunities for educational, scientific, and recreational pursuits and, in some cases, aesthetic settings for urban development.

Wildlife Habitat

Inventories conducted cooperatively by the Wisconsin Department of Natural Resources and the Commission in 1985 identified wildlife habitat areas in the IH 94 South Corridor study area encompassing collectively about 24 square miles, or 14 percent the total study area. The most significant wildlife habitat remaining in the study area is concentrated in riverine areas, with particularly high concentrations along the Root River along the Milwaukee-Racine County line and along the Des Plaines River in the southern end of the corridor.

Primary Environmental Corridors

The most important elements of the natural resource base, including lakes, rivers and

streams and their associated shorelands and floodplains; wetlands; woodlands; wildlife habitat areas; wet, poorly drained, and organic soils; and rugged terrain and high relief topography, together with such resource related elements as existing and potential parks sites, significant scenic areas and vistas, and historic and archaeological sites, when considered in combination, are found to occur in linear patterns or corridors in the landscape. These corridors have been termed environmental corridors by the Regional Planning Commission. The largest, longest, and widest of these have been identified as primary environmental corridors. Primary environmental corridors encompass about eight square miles, or about 4 percent of the IH 94 South Corridor study area, and occur along the main stem of the Root River, along the Des Plaines River, and along the Kilbourn Road Ditch.

The preservation of primary environmental corridors in natural, open uses is essential to the maintenance of a high level of environmental quality in the IH 94 South Corridor; to the protection of its natural beauty; and to the provision of opportunities for certain scientific, educational, and recreational activities. The exclusion of urban development from these corridors will also help avoid the creation of serious and costly development problems such as wet and flooded basements, foundation failures, and excessive clear water infiltration and inflow into sanitary sewerage systems.

EXISTING TRANSPORTATION, UTILITY, AND PUBLIC SAFETY FACILITIES AND SERVICES

Arterial Streets and Highways

The IH 94 South Corridor is well served by an arterial street and highway system totaling about 252 miles in length. The arterial network is relatively densely spaced at about one-mile intervals in both the north-south and east-west directions throughout much of the study corridor. About 63 miles, or about 25 percent of the system, consist of divided facilities, while about 16 miles, or about 6 percent, have been constructed to urban standards.

About 20 miles, or 8 percent, of the 252-mile arterial system were, in 1988, operating over design capacity and exhibiting traffic congestion during peak travel periods. Another six

miles of facilities, representing an additional 2 percent of the system, were operating at design capacity. The remaining 226 miles, representing about 90 percent of the arterial system were operating under design capacity (see Map 16 in Chapter IV).

The IH 94 freeway is the most heavily traveled facility in the corridor, with average weekday traffic volumes ranging from a low of about 41,000 vehicles per day just south of STH 50 in Kenosha County to a high of about 80,000 just south of W. College Avenue in Milwaukee County. A comparison of average weekday travel with average weekend travel along IH 94 leads to the conclusion that in the Milwaukee County portion of the study area, the design of this freeway facility to serve weekday travel demands should provide a facility with sufficient capacity to meet weekend travel demands as well. In Kenosha and Racine Counties, however, consideration should be given in design to weekend as well as weekday demand on IH 94 and on those surface arterial facilities which connect IH 94 to freeway-oriented land uses.

State trunk highways constitute nearly 96 miles, or about 38 percent, of the 252-mile arterial system within the corridor. County trunk highways total an additional 98 miles, or about 39 percent of the system, and local trunk highways total just over 58 miles, or about 23 percent of the system. All but about 44 miles of the system, or about 18 percent, have been placed on the federal aid interstate, primary, secondary, or urban systems and are thus eligible for such categorical aids.

Railway Service

Railway service was in 1988 provided in the corridor by two private companies, the Soo Line Railroad Company and the Chicago & North Western Transportation Company, each with one interstate line in the corridor. This railway system provides freight service to industrial concentrations within the corridor and to the Wisconsin Electric Power Company generating plant. The Soo Line Railroad also serves as the route of Amtrak passenger service between Milwaukee and Chicago, that service providing a stop at Sturtevant within the corridor. In addition to its line through the IH 94 South Corridor, the Chicago & North Western Transportation Company also provides freight rail service over a north-south line east of the corridor, the Lakeshore line.

Transit Service

Given the predominantly rural nature of the study area, only limited public transit service is currently provided in the IH 94 South Corridor. In 1988, local bus service was provided to very limited areas on the margins of the corridor through route extensions of the Milwaukee County, City of Racine, and City of Kenosha public transit systems. The City of Kenosha has, however, extended bus service on a trial basis from the City west to certain outlying retail and industrial centers. Freeway flyer bus service to the central business district of Milwaukee is also provided at the northern end of the corridor via a park-ride lot located at the College Avenue interchange with IH 94.

Intercity bus service within the corridor in 1988 consisted of service provided by private operators over IH 94 between the Milwaukee and Chicago areas and between General Mitchell International Airport and O'Hare International Airport.

Airports

Two airports identified in the regional airport system plan, Kenosha Municipal and Sylvania, are located within the IH 94 South Corridor, while two others, General Mitchell International, a full service commercial airport, and John H. Batten Field in Racine, are located in proximity to the corridor. Kenosha Municipal Airport is a General Utility-Stage II airport, and, as such, can serve all single-engine aircraft, virtually all twin-engine piston and turboprop aircraft, and most business and corporate jets. Upon completion of planned improvements at Sylvania Airport, that airport is to be classified as a Basic Utility-Stage II airport intended to serve all small single-engine, propeller-driven aircraft and most twin-engine, propeller-driven aircraft.

Utilities

Six public sanitary sewerage systems provided service to development within the IH 94 South Corridor in 1988. Together these six systems provided service to areas encompassing nearly 21 square miles, or 12 percent of the corridor area; and to about 37,100 persons, or about 75 percent of the resident population of the corridor. Major land areas along IH 94 lie beyond the currently planned reach of these six sewerage systems, particularly in the Kenosha and Racine County portions of the corridor study area.

Nine public water supply utilities served urban development with the study corridor in 1988. Together these utilities served to nearly 14 square miles, or about 8 percent of the corridor area; and about 29,000 persons, or about 58 percent of the resident population of the corridor. Public water supply service was generally available in the Milwaukee County portion of the corridor. Within the Kenosha and Racine County portions of the corridor public water supply service was relatively limited.

Electric power service over the entire IH 94 South Corridor is provided by the Wisconsin Electric Power Company. Natural Gas service is provided by three companies: the Wisconsin Gas Company, the Wisconsin Southern Gas Company, and the Wisconsin Natural Gas Company. Electric power and natural gas service is considered to be ubiquitously available throughout the study corridor and is not regarded as a constraint on development.

Public Safety Services

All 14 local units of government in the corridor independently provide fire suppression services through full-time, volunteer, or paid-on-call volunteer departments, or some combination thereof. There were in 1988 substantial areas of the IH 94 South Corridor where a six-minute response time standard for fire suppression could not be met, including lands along either side of IH 94 in the Towns of Mt. Pleasant, Yorkville, Somers, and Bristol.

In 1988, each of the local units of government, except the Town of Paris, provided rescue service through their fire department. The Town of Paris contracted with a private ambulance firm in the City of Kenosha for such service. Areas where a six-minute response time standard for rescue service could not be met also included lands along either side of IH 94 in the Towns of Mt. Pleasant, Yorkville, Somers, and Bristol, along with the Town of Paris.

All but five of the 14 municipalities in the study area in 1988 had established full-time police departments to provide primary law enforcement services. The Towns of Bristol, Paris, Somers, Raymond, and Yorkville relied on their respective County Sheriff Departments for primary law enforcement services.

EXISTING PLANS, LAND USE REGULATIONS, AND DEVELOPMENT PROPOSALS

The development plan for the IH 94 South corridor is intended, in part, to reevaluate, update, and extend adopted regional and local plans as those plans pertain to the corridor. In addition, the plan is intended to take into account local development objectives as reflected in locally adopted land use control ordinances. Finally the corridor plan is intended to take into account current land use development proposals of various types emanating from both the public and private sectors. Accordingly, an important step in the IH 94 South Corridor planning process was the assembly of information pertaining to the existing framework of regional plans, local plans, and related land use regulations, and public and private land use development proposals.

Regional Planning Framework

Since its creation in 1960, the Southeastern Wisconsin Regional Planning Commission, in cooperation with the county and local units of government concerned, has prepared and adopted a number of regional plans which are intended to provide a framework for development within the seven-county Southeastern Wisconsin Region. The regional land use plan contains recommendations concerning the placement of urban land use development, the protection of environmentally sensitive lands, and the protection and preservation of prime agricultural lands. The regional park and open space plan contains recommendations concerning park site acquisition and development, parkway acquisition, and recreational trail development. The regional transportation system plan contains recommendations for the construction of new arterial facilities, for arterial street widenings, for the transfer of jurisdictions among agencies responsible for the arterial street and highway system, and for the provision of public transit service. The regional airport system plan contains recommendations for the maintenance and gradual improvement of a system of airports already in place. The regional water quality management plan contains recommendations concerning sanitary sewerage system improvements and sanitary sewer service areas. Comprehensive watershed plans, which have been

developed for the Oak Creek, Root River, and Pike River watersheds in the the IH 94 South Corridor, contain important drainage and flood control recommendations. Together these plans comprise a regional framework that is intended to serve as a basis for more detailed county and local planning efforts, such as the development planning program for the IH 94 South Corridor.

Local Plans and Studies

County and local units of government have undertaken a number of important local planning efforts that should be taken into account in the formulation of a development plan for the IH 94 South Corridor. Local land use plans completed within the framework of the regional land use plan have been prepared for the Cities of Oak Creek and Franklin, for the Yorkville Sewer District and its environs, and for a portion of the Town of Pleasant Prairie. A special study to identify the real estate development potential of lands located along IH 94 has also been completed by Racine County.

In cooperative efforts, the Wisconsin Department of Transportation and the county and local units of government have prepared a number of detailed plans relating to highway access and interchange configuration within the IH 94 South Corridor. Of particular significance is the highway access plan prepared for STH 50 from IH 94 east to 60th Avenue in the City of Kenosha. In addition, detailed plans to reconfigure the interchange ramps and attendant frontage roads at the interchanges of IH 94 with STH 50, with STH 20, and with Racine County CTH K have been completed. These plans were regarded as committed for purposes of the IH 94 South Corridor planning effort.

Local Land Use Regulations

An analysis of local development objectives as expressed through adopted zoning ordinances in 1985 indicated that, collectively, local units of government have zoned about 30 square miles, or 17 percent of the study corridor, for residential use; about 19 square miles, or nearly 11 percent of the corridor, for commercial and industrial use; just under 4 square miles, or about 2 percent of the corridor, for other urban uses; about 97 square miles, or just over 54 percent of the corridor, for agricultural use; and about 18 square miles, or about 10 percent of the corridor, for conservancy use. About 10 square miles in

the Town of Bristol, representing about 6 percent of the study corridor, were unzoned in 1985.³

The 1985 zoning analysis further indicated that, collectively, local units of government in the corridor have acted to zone properly for protection and preservation about one-third of the approximately 77 square miles of prime agricultural lands in the corridor. Most of this preservation, through exclusive agricultural zoning, has taken place in Kenosha County. In addition, the local units of government have collectively preserved through proper zoning and land acquisition about seven square miles of the primary environmental corridor lands, representing about 84 percent of all such lands in the study area.

Nearly all county and local units of government within the corridor provide for public regulation of land division, with such regulations extending to minor land subdivisions in most cases. Very few local units of government in the corridor, however, only the Cities of Franklin, Milwaukee, and Oak Creek have adopted official maps to reserve lands, as necessary, for future public use.

Land Use Development Proposals

The private real estate market has been recently active in the IH 94 South Corridor. Between April and August 1988, a total of 82 individual land use development projects and proposals of significance were announced. While some of

these projects are speculative and some are competing in nature, others have moved into the construction stage.

OBJECTIVES, PRINCIPLES, STANDARDS AND RELATED URBAN DESIGN CRITERIA

Planning is a rational process for formulating and meeting objectives. Consequently, the formulation of objectives is an essential task which must be undertaken before plans can be prepared. A set of development objectives together with supporting principles and standards for the IH 94 South Corridor is presented in Chapter VI of this report. Those objectives, principles, and standards relate primarily to the allocation and distribution of the various land uses within the study area and to the provision to those land uses of essential transportation and utility facilities and services to meet the needs of the existing and probable future population and employment within the study area and the larger Region of which it is a part, as well as to meet the needs of the large and changing nonresident population that uses IH 94 as a transportation facility. The development objectives, principles, and standards were based, in part, upon areawide development objectives contained in regional plans which were considered by the Advisory Committee to be applicable to, and supportable by, the local units of government with the study area. In addition, the development objectives, principles, and standards reflect county and local community objectives as articulated by the members of the Advisory Committee.

In addition to the development objectives, principles, and standards, a set of urban design criteria and performance standards was recommended as a guide to the development of physical solutions to urban design problems with the IH 94 South Corridor (see Chapter VI). Such design criteria and performance standards are of a relatively high level of specificity in order to assist in the development of detailed design solutions to specific urban design problems. Urban design criteria have been developed with respect to commercial, industrial, and residential development within the IH 94 South Corridor. Those criteria address a wide range of design considerations including the layout of lots and blocks, provision of off-street parking, proper access to arterial streets and highways, building mass, facades, and materials, landscaping, and outdoor lighting. Adherence to the recommended

³*It should be noted that since the 1985 zoning inventory, several important actions have changed the pattern of zoning within certain portions of the study area. The zoning ordinance administered by the Town of Paris was ruled invalid by the District II Court of Appeals in 1988. Subsequently, the Town Board ratified the Kenosha County Zoning Ordinance. In 1990, the Town of Bristol adopted the Kenosha County zoning ordinance; previously, the only zoning within the Town of Bristol was that administered by Kenosha County within the statutory shoreland areas. The Town of Pleasant Prairie was governed by the Kenosha County zoning ordinance until it became a village in 1988. The zoning ordinance subsequently adopted by the Village of Pleasant Prairie, however, was essentially the same as the County ordinance.*

design criteria and performance standards may be expected to result in a more attractive, safer, and more functional urban land development pattern; contribute to the long-term stability of developing areas and the maintenance of property values; and protect public investment in supporting infrastructure systems.

ANTICIPATED FUTURE GROWTH AND CHANGE

The preparation of a land use plan for the IH 94 South Corridor was undertaken within the context of the third-generation regional land use plan for southeastern Wisconsin. The latter plan was under preparation simultaneously with the corridor plan, and, like the corridor plan, has a plan design year of 2010. In order to cope with the uncertainties attendant to the massive social and economic changes taking place in the Region, the Commission used an "alternative futures" approach in the preparation of the third-generation regional land use plan. Under this approach, the development and evaluation of alternative land use plans is based not upon a single most probable forecast of future conditions, the traditional approach to planning in periods of socioeconomic stability when historic trends may be reasonably anticipated to continue relatively unchanged, but rather upon a number of alternative futures chosen to represent a range of conditions which might occur over the plan design period. The purpose of the alternative futures approach is to allow the evaluation of the performance of alternative plans over a variety of possible future conditions in order to identify those alternatives that perform well under a wide range of such conditions.

Three alternative future scenarios were postulated for the purpose of preparing the new regional land use plan, and a complimentary set of population and employment forecasts was prepared for each. Two scenarios, the "optimistic" scenario and the "pessimistic" scenario, are intended to represent reasonable extremes, while the third scenario, the "intermediate" scenario, is intended to represent a more likely future. An additional variable was added to the analysis in the preparation of land use plans for each scenario. That variable deals with the degree of centrality of incremental urban land use development as measured by the relative nearness of such new land uses to the major population centers of the Region.

For purposes of the IH 94 South Corridor planning program, two of the alternative futures considered by the Commission in its regional planning effort, an intermediate-centralized scenario and an optimistic-decentralized scenario, were explored. These two alternative future scenarios were believed to best represent the range of possible future conditions in the study corridor. Under the intermediate-centralized scenario, the population of the three counties comprising the corridor study area would remain virtually unchanged from the 1985 level of about 1.23 million persons, although there would be a continued redistribution of population within those counties reflecting existing trends of declining densities in the older and larger central city areas. Under the optimistic-decentralized scenario, the population of the three-county area would be expected to increase by about 7 percent, or about 82,000 persons, to a total resident population of 1.31 million persons by the year 2010.

Under the intermediate-centralized scenario, total employment within the three Counties containing the study area would increase by about 84,000 jobs, or about 13 percent, from about 647,000 jobs in 1985 to about 731,000 jobs by the year 2010. About twice that increment is envisioned under the optimistic-decentralized scenario, with total employment in the three-county area expected to reach about 814,000 jobs by the year 2010.

RECOMMENDED LAND USE PLAN

Under the IH 94 South Corridor planning program, two alternative corridor land use plans were prepared for consideration, an intermediate-centralized plan and an optimistic-decentralized plan. The plans were designed to accommodate the population and economic activity levels within the IH 94 South Corridor which could be anticipated under the corresponding regional growth scenarios. The plans differ significantly in terms of the scale of future urban development within the IH 94 South Corridor, with the optimistic-decentralized plan accommodating more than twice the population and employment increments envisioned under the intermediate-centralized plan. The two alternative plans are shown graphically on Maps 51 and 52 in Chapter VII of this report.

After careful review and evaluation of the alternative plans, the Advisory Committee directed that the intermediate-centralized plan be used as the basis for development of the recommended plan for the IH 94 South Corridor. In making this recommendation, however, the Advisory Committee directed that the plan be modified to identify land reserves for future commercial and industrial use significantly beyond the areas which would be needed to accommodate the growth in economic activity in the corridor anticipated under the intermediate-centralized scenario. In addition, the Committee directed that a residential land reserve be added to the plan, such reserve to reflect the outer extent of planned sanitary sewer service areas that have already been approved by the Wisconsin Department of Natural Resources. The inclusion of the major land use reserve areas within the recommended plan was intended to provide landowners and local governments with a measure of flexibility in the location and timing of new urban development, particularly commercial and industrial development. All lands within the reserve areas may be viewed as being available for urban development with the next 20 years, even though it is recognized that not all such lands will be needed for urban development during that period. A summary of the key features of the recommended land use plan for the IH 94 South Corridor follows.

Population, Households, and Employment

Under the recommended land use plan, the resident population of the IH 94 corridor would increase to a year 2010 level of about 72,200 persons, an increase of about 22,400 persons, or 45 percent, over the 1985 resident population of about 49,800. Much of the increment would occur in the Milwaukee County portion of the corridor, where the resident population would increase by about 18,100 persons, or 74 percent. Under the plan, the populations of the Kenosha and Racine County portions of the study area would increase by about 2,700 persons, or 23 percent, and 1,600 persons, or 12 percent, respectively.

Under the plan, the number of households in the corridor would increase by about 10,100, or about 62 percent, from about 16,400 households in 1985 to about 26,500 households in the year 2010. Like population, most of the increase in households would occur in the Milwaukee County portion of the corridor.

The number of jobs in the corridor would approximately double over the plan design period to a level of about 57,400. The most significant change in employment would occur in the Kenosha County portion of the corridor, where the planned increment of 14,700 jobs would result in a level about four times the 1985 employment. Employment in the Racine County portion of the corridor would more than double, while employment in the Milwaukee County portion would increase by about 45 percent.

Urban Land

In order to accommodate the aforementioned increases in population, households, and employment, the recommended land use plan proposes to convert about 9.8 square miles of land from rural to urban uses by the year 2010. Land devoted to urban uses would thus increase by about 31 percent over the 1985 area of about 31.8 square miles. Of the planned urban land increment, about 3.0 square miles would be located in Kenosha County; 5.0 square miles in Milwaukee County; and 1.8 square miles in Racine County.

Under the plan, residential land use in the corridor would increase by about 4.1 square miles, or 30 percent, with the great majority of this increase recommended to occur at medium densities, defined as from 2.3 to 6.9 dwelling units per net residential acre. The plan envisions a net increase, excluding off-street parking, of just under 0.4 square miles of commercial land, and just under 1.7 square miles of industrial land, representing relative increases of about 48 percent and 96 percent, respectively. Under the plan, the remaining categories of urban land uses, transportation and utility, governmental and institutional, and park and recreational, would together increase by about 3.7 square miles, or 24 percent.

As noted above, the recommended land use plan identifies land reserves for future commercial and industrial use encompassing areas substantially greater than needed to accommodate the increases in economic activity in the corridor anticipated under centralized-intermediate growth scenario. Ten predominantly commercial land reserves are identified in the plan, including seven in Kenosha County, one in Milwaukee County, and two in Racine County. These ten reserve areas encompass about 5.7 square miles more developable land than the amount needed to meet the anticipated demand under the intermediate-centralized growth scenario. Nine

predominantly industrial land reserves, including two in Kenosha County, three in Milwaukee County, and four in Racine County, have also been identified. These nine reserve areas encompass about 12.0 square miles more developable land than is expected to be needed under the intermediate-centralized scenario.

The recommended plan also identifies land reserves for future residential land substantially greater than would be required to accommodate the increases in the resident population in the corridor anticipated under the centralized-intermediate growth scenario. The boundaries of the residential reserve areas reflect the outer extent of long planned and committed sanitary sewer service areas tributary to the following sewage treatment plants: the Milwaukee Metropolitan Sewerage District South Shore plant; the City of Racine plant; the City of Kenosha plant; the Village of Pleasant Prairie District D plant; and the Village of Pleasant Prairie District 73-1 plant. Together, these identified reserves encompass nearly 20 square miles of developable land, substantially more than is expected to be needed under the intermediate-centralized growth scenario.

Agricultural and Other Open Land

The conversion of land to urban use envisioned under the recommended land use plan would result in a concomitant decrease of about 9.8 square miles, or about 7 percent, in agricultural and other open lands in the IH 94 South Corridor. Importantly, the plan seeks to minimize the conversion of prime agricultural lands to urban use. Under the plan, only about 1.2 square miles of prime agricultural lands, or about 2 percent of the total of such lands in the study corridor, would be lost to urban development.

Environmentally Sensitive Land

The recommended land use plan proposes the maintenance in essentially natural, open uses of environmentally sensitive lands encompassing about 29.4 square miles, or 16 percent of the corridor study area. Of this total, about 8.0 square miles are comprised of primary environmental corridors; about 7.0 square miles are comprised of secondary environmental corridors; and about 3.7 square miles are comprised of isolated natural areas; with the remaining 10.7 square miles consisting of floodplains lying beyond the outer limits of the environmental corridors and isolated natural areas.

RECOMMENDED TRANSPORTATION SYSTEM PLAN

The recommended transportation system plan for the IH 94 South Corridor includes recommendations regarding arterial street and highway improvements and transit system improvements needed in support of the recommended design year 2010 corridor land use plan. While intended to accommodate urban growth and development as envisioned under the recommended land use plan, the recommended transportation system has been designed so that it can readily be further improved and expanded should urban development in the corridor over the next 20 years exceed the level envisioned under the recommended land use plan.

Arterial Streets and Highways

The process of preparing an arterial street and highway system plan for the IH 94 South Corridor was carried out in a manner which built upon previously completed and concurrent transportation planning efforts affecting the corridor. Recommendations for arterial street and highway system development within the corridor already included in the adopted regional transportation system plan, together with proposals to amend that plan which have already been advanced through concurrent transportation studies, including a new Racine County jurisdictional highway system plan adopted in 1990, formed a base plan for the IH 94 South Corridor. The recommended arterial street and highway system plan for the IH 94 South Corridor, then, consists of the base system plan plus recommendations for certain additional arterial street and highway improvements determined to be necessary to accommodate urban growth and development envisioned under the recommended corridor land use plan.

The recommended arterial street and highway system plan for the IH 94 South Corridor is shown on Map 67 presented in Chapter VIII of this report, while the specific arterial highway improvements and expansions called for under the recommended plan are identified on Map 68. The key arterial street and highway improvements recommended in corridor transportation system plan are indicated below:

1. The widening of IH 94 South throughout the entire corridor to provide for eight through travel lanes instead of the present six lanes.

2. The unbraiding, or separation, of all free-way on- and off-ramps from the network of frontage roads except where environmental constraints make such unbraiding infeasible. In those case, at the STH 158 and Kenosha County CTH C interchanges, the plan recommends converting limited sections of the frontage road network to one-way operation.
3. The addition of three new interchanges on IH 94 South at Puetz Road and Drexel Avenue in the City of Oak Creek and Kenosha County CTH ML in the Village of Pleasant Prairie and Town of Bristol.
4. The reconstruction for additional capacity of the following interchanges in the corridor: College Avenue (Milwaukee County CTH ZZ), Racine County CTH K, STH 20, CTH KR, STH 158, STH 50, and Kenosha County CTH Q.
5. The construction of the long-proposed Lake Arterial facility through the Milwaukee and Racine County portions of the corridor, terminating at a junction with STH 31 in the Town of Somers, Kenosha County.
6. Major arterial street and highway widening projects, including: STH 31 from the Illinois state line to STH 50 and from STH 142 to the Lake Arterial junction; STH 50 from IH 94 to 39th Avenue; STH 20 from IH 94 to Stuart Road; STH 100 from S. 76th Street to USH 41 and from STH 38 to STH 32; Kenosha County CTH Q from relocated western frontage road to STH 32; CTH KR from IH 94 to STH 32; Racine County CTH K from IH 94 to STH 38; Rawson Avenue from S. 76th Street to USH 41; and College Avenue (Milwaukee County CTH ZZ) from STH 36 to USH 41 and from Milwaukee County CTH V to the Chicago and North Western Railway line.

The recommended arterial system in the corridor would include 265 miles of streets and highways, representing an increase of about 13 miles, or 5 percent, over the 252 miles of arterial streets and highways that served the corridor in 1985. The changes in the system can also be measured in the number of arterial lane miles provided. In 1985, the number of lane miles on the arterial system was 760. Under the recommended plan,

the number of arterial lane miles would increase by 220, or 29 percent, to a total of 980 by the year 2010.

The corridor transportation plan also recommends the level of government which should be responsible for the construction, operation, and maintenance of each facility making up the arterial system (see Map 67). The plan recommends jurisdictional responsibilities for proposed new facilities as well as changes in jurisdictional responsibilities for certain existing facilities. Under the plan the state trunk highway system mileage would increase from 96 miles in 1985 to 108 miles in the year 2010, and would account for 41 percent of the planned arterial highway system in the plan design year. County trunk mileage would increase from 98 in 1985 to 112 in the year 2010, and would comprise 42 percent of the arterial system mileage. Local trunk mileage within the corridor would decrease from just over 58 miles in 1985 to 45 miles in the year 2010 and would represent 17 percent of the planned arterial system mileage.

The total capital cost of implementing the recommended arterial street and highway system plan for the IH 94 South corridor, including the cost of right-of-way acquisition, is estimated at \$306.4 million. Of the total cost, about \$241.3 million, or about 79 percent, would be required to preserve, improve, and expand the state trunk highway system in the corridor. The estimated state expenditure includes about \$119.6 million for the provision of two additional through traffic lanes along the entire length of IH 94 within the corridor, including attendant interchange reconstruction and expansion projects and frontage road projects; about \$43.8 million for construction of the Lake Arterial within the corridor; and about \$77.9 million for other existing and proposed state trunk highways in the corridor. Estimated capital costs for the preservation, improvement, and expansion of the planned county and local trunk highway systems within the corridor approximate \$46.1 million and \$19.1 million, respectively.

As previously indicated, the arterial street and highway improvements proposed under the recommended transportation system plan for the IH 94 South Corridor are intended to serve urban development conditions through the year 2010 as envisioned under the recommended corridor land use plan. Urban development significantly beyond that anticipated under the recommended

land use plan may be expected to require additional improvements to the arterial system. The improvements required under "ultimate" development conditions, as represented by the optimistic-decentralized land use plan alternative, were also identified under the IH 94 South Corridor planning effort. The additional improvements thus identified, beyond those called for under the recommended plan, include the realignment to the north of Racine CTH C from a point just west of the Soo Line Railroad (former Chicago, Milwaukee, St. Paul & Pacific Railroad) to a junction with Kraut Road at a point just east of IH 94 and continuing west along Kraut Road to the proposed relocated western frontage road; the construction of a new interchange on IH 94 at the realigned CTH C; improvements to increase the capacity of certain other interchanges on IH 94; substantial modification of the IH 94 frontage road system, including the replacement of certain frontage road segments with four-lane divided arterial highways; the widening of certain surface arterial highways; and, potentially, the construction of several local trunk highway segments parallel to IH 94.

The capital costs associated with the additional arterial street and highway improvements necessary to accommodate urban development under ultimate development conditions total just under \$41.5 million. Of this total, about \$33.2 million, or about 80 percent, would be expended on the state trunk highway system and frontage roads supporting IH 94; about \$8.0 million, or about 19 percent, would be expended on the county trunk highway system; and about \$0.3 million, or just under 1 percent, would be expended on the local arterial system, for system preservation.

Public Transit Service

The public transit service recommendations of the recommended transportation system plan for the IH 94 South Corridor represent a refinement and detailing of the transit service element of the adopted regional transportation system plan. The recommended corridor transportation plan calls for the provision of bus-based rapid transit service over the IH 94 South freeway connecting the Cities of Kenosha, Racine, and Oak Creek with the Milwaukee central business district. Such service would be supported by a system of park-ride lots, four of which would be located within the IH 94 South Corridor, including one

existing park-ride lot and three proposed new lots. The plan also calls for the provision of special local circulator transit service within the developing economic activity centers along IH 94; the provision of express bus service from the Racine central business district to the Lakeview Corporate Park and economic activity centers along IH 94 in Kenosha County; and the extension of local transit service to the expanded areas of medium-density residential development which have been proposed in the recommended corridor land use plan.

The adopted regional transportation system plan includes an upper tier of recommendations which calls for the replacement of the bus-on-freeway service with commuter rail service between Milwaukee, Racine, and Kenosha along a route lying east of the IH 94 South Corridor, if the need for, feasibility, and cost-effectiveness of, such commuter rail service is demonstrated. The transit system element of the corridor transportation plan recommends that, if such commuter rail service is provided, the Cities of Kenosha and Racine provide express bus service connecting stations along the proposed commuter rail line with areas of proposed retail, office, and industrial development within the IH 94 South Corridor.

PLAN IMPLEMENTATION

Successful implementation of the IH 94 South Corridor land use and transportation plans will depend upon the cooperative actions of a number of local, state, and federal agencies and units of government. Implementation responsibilities attendant to the recommended land use and transportation plans are described in detail in Chapter IX of this report. An overview of the major types of required plan implementation activities follows.

Implementation of the Recommended Land Use Plan

Implementation of the recommended land use plan will be dependent, to a large extent, on the judicious application of land use controls by county and local unit of government. In this respect, successful implementation of the land use plan will require the adjustment of zoning ordinances, including zoning district regulations and zoning district maps, to guide land use development in time and space in accordance with the pattern of land uses recommended for

the corridor; the administration of subdivision control regulations so as to prevent urban subdivisions in areas proposed to remain in nonurban use; the use of official mapping powers to reserve lands as appropriate for future public use; and the amendment of existing land use controls to incorporate urban design criteria and performance standards in order to ensure a more attractive, safer, and more functional urban land development pattern.

Implementation of the recommended corridor land use plan will also depend upon sound public policies with respect to the provision of basic public utilities and services, particularly, public sanitary sewer and water supply service and public safety services. The plan recommends that new intensive urban development within the IH 94 South Corridor should, to the maximum extent possible, be provided with public sanitary sewer and water supply service. To ensure the rational extension of sanitary sewer service, the plan recommends that the Milwaukee Metropolitan Sewerage District and the governing bodies of all sewer utility and sanitary districts amend, as necessary, the sanitary sewer service area recommendations of the regional water quality management plan, taking into account the proposed pattern of urban land uses, including the various urban reserves, shown on the recommended corridor land use plan as well as the results of public utility studies being concurrently conducted for the Kenosha and Racine County portions of the IH 94 South Corridor. The plan further recommends that local units of government in the corridor provide the additional fire suppression and rescue service facilities needed to ensure adequate response times as urban development proceeds within the corridor.

Implementation of the Recommended Transportation System Plan

Under the recommended corridor transportation plan, much of the responsibility for the proposed arterial street and highway system improvement would rest with the Wisconsin Department of Transportation. The Department would be responsible for all recommended freeway improvements, including the widening of IH 94 throughout the entire corridor, the construction of new interchanges and improvement of existing interchanges on IH 94, and the unbraiding of freeway on- and off-ramps from the network of frontage roads. The Department would also be

responsible for the construction of the new Lake Arterial facility through Milwaukee and Racine Counties to its proposed terminus in Kenosha County. Under the plan, the responsibility for the other proposed surface arterial street and highway improvements would rest with the Department of Transportation for improvements on the planned state trunk highway system; with Kenosha, Milwaukee, and Racine Counties for the improvements on the planned county trunk highway systems; and, to a limited extent, with municipalities in the corridor for local arterial streets.

While the Wisconsin Department of Transportation has the broadest responsibility with respect to the recommended arterial street and highway system improvements within the IH 94 South Corridor, county and local units of government may be asked to pay a portion of the costs of proposed improvements to the state trunk highway system. It is the Department's policy that local jurisdictions and private interests directly benefitting from a highway project should share in the project costs, with the level of participation reflecting the degree of benefit. For example, current department policy requires that local jurisdictions pay 25 percent of the cost of new state trunk highways as well as the cost of additional traffic lanes on state trunk highways where such projects will serve significant local traffic. New access intersections or interchanges with a state trunk highway requires a 50 percent local cost share if there is a local public benefit, while the modification or upgrading of such access requires a 25 percent local cost share, assuming a local public benefit. The cost of new or improved access to a state trunk highway serving only a private road or driveway must be paid entirely by the developer. Many unique situations, such as the unbraiding of freeway ramps and frontage roads along IH 94, may occur in which the local cost share will have to be negotiated by the Department and the local jurisdiction on the basis of the relative state and local benefits which may accrue. With respect to the unbraiding of freeway ramps, the Department has indicated that, under certain conditions, it would be willing to share in the required preliminary engineering studies on a 50 percent state, 50 percent local cost-sharing basis.

The plan recommends that the Wisconsin Department of Transportation, along with Kenosha, Milwaukee, and Racine Counties and the

concerned municipalities, as appropriate, conduct the preliminary engineering studies to establish precise alignments for the proposed new arterial streets and highways and existing arterial facilities designated for widening and to evaluate attendant environmental impacts; to reserve land needed for the planned facilities through official mapping; to proceed with right-of-way acquisition and facility construction; and to seek cooperatively the jurisdictional transfers proposed in the plan. Of primary concern are those arterial street and highway system improvements needed in support of the recommended land use plan. The state, county, and local units of government concerned should also take steps to define and reserve the rights-of-way necessary for those additional facilities which would be required should the future rate of development in the corridor exceed that envisioned under the recommended land use plan.

Under the plan, Milwaukee County along with the Cities of Kenosha and Racine, acting through their respective transit committees and commissions, would be responsible for implementing the transit service recommendations of the corridor transportation system plan. The Wisconsin Department of Transportation would, however, be responsible for provision of the additional park-ride lots in support of the bus-on-freeway service proposed under the plan.

CONCLUDING REMARKS

This report has presented long-range plans for land use and supporting transportation facility development within the IH 94 South Corridor through southern Milwaukee County and Kenosha and Racine Counties.

The recommended corridor land use plan would accommodate population and economic activity levels which may reasonably be expected within the corridor through the plan design year 2010. The land use plan would also accommodate, through the designation of major urban land reserves, population and economic activity levels substantially greater than forecast, reflecting a commitment on the part of local units of government and private interests to accelerated economic growth in the corridor. The recommended corridor transportation system plan would accommodate the urban development conditions envisioned under the recommended land use plan. The transportation system was designed so that it could readily be further improved and expanded should urban development in the corridor over the next 20 years exceed the forecast levels.

The inclusion of the major land reserves within the recommended plan provides private interests and local units of government with a measure of flexibility in the location and timing of new urban development. With the flexibility so provided, local government officials should be able to resist pressures to convert to urban uses lands proposed to be retained in agricultural and other open space uses. The concentration of new urban development within the designated urban land reserves is essential to the protection of the underlying and sustaining natural resource base and the preservation of the agricultural resource base of the corridor and surrounding areas. The concentration of new urban development in well-planned reserves will also maintain the visual attractiveness of the IH 94 South Corridor as a principal entry to the State of Wisconsin.

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APPENDICES

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Appendix A

APPLICATION OF JURISDICTIONAL CLASSIFICATION CRITERIA TO FRONTAGE ROADS

MEMORANDUM

TO: All Members of the IH 94 South Corridor Advisory Committee
FROM: SEWRPC Staff
DATE: August 9, 1991
SUBJECT: APPLICATION OF JURISDICTIONAL
CLASSIFICATION CRITERIA TO FRONTAGE ROADS

INTRODUCTION

The only item remaining for Committee determination involves the issue attendant to the jurisdiction over the frontage roads along IH 94 in Racine and Kenosha Counties. The following summarizes Committee consideration of this issue to date:

1. The Commission staff submitted to the Committee—on page 28 of the preliminary draft of Chapter VIII of the Committee's report—a proposal that the entire network of 47.5 miles of frontage roads along IH 94 South in Racine and Kenosha Counties continue to be maintained by the Wisconsin Department of Transportation. The State initially constructed and has maintained those frontage roads since the conversion of USH 41 to a freeway in 1958. The frontage roads not only were functionally integrated with the freeway ramps at interchanges along IH 94, but also provided access to individual land parcels which formerly took direct access from USH 41. Presumably, it was determined at the time of the freeway conversion project that the provision and continued maintenance of such frontage roads was more cost effective than eliminating such access through acquisition of the parcels concerned. The frontage roads are also used from time-to-time to route freeway traffic during traffic accidents or construction periods.
2. The Wisconsin Department of Transportation has taken exception to the Commission staff's proposal, noting that under present policy the Department is relinquishing jurisdiction over frontage road segments at such time as a freeway ramp unbraiding project is completed. It is the Department's position that, once the frontage roads and the freeway ramps are no longer functionally integrated, the frontage roads serve a pure land access function and, accordingly, should be under the jurisdiction of the local unit of government concerned.
3. This matter was discussed at the Committee meeting held on April 15, 1991. Concern was expressed by a number of Committee members that, given the number of local government jurisdictions involved and further given that the Committee's work has indicated a high likelihood that certain of the frontage road segments will eventually have to serve as high level arterial facilities as land use development proceeds beyond that envisioned in the recommended future to the "ultimate" future, state or county jurisdiction of the frontage roads would be more appropriate than the local jurisdiction that is evolving under current State policy. At the end of that discussion, the Committee directed that the Commission staff develop additional information by applying the jurisdictional classification criteria developed under the Racine and Kenosha County jurisdictional highway system plans to the system of frontage roads.

This memorandum is intended to respond to that Committee direction, presenting for Committee consideration the results of that application process. In addition, a possible course of action is outlined based upon the results of the application process that will permit the Committee to complete its work.

CRITERIA FOR JURISDICTIONAL CLASSIFICATION

Criteria for the jurisdictional classification of arterial highways were developed as part of the jurisdictional highway planning processes for Kenosha and Racine County.¹ The criteria are based upon three basic characteristics of arterial facilities: 1) the trips served, measured by average trip length; 2) the land uses served, there being a hierarchy of land use types ranging from those land uses of statewide or regional significance, to those of countywide significance, to those of local significance; and 3) the operational characteristics of the facilities, including such factors as system continuity, spacing, average weekday traffic volumes, travel speeds, and the degree of access control.

Tables A-1 and A-2 summarize the criteria adopted for jurisdictional classifications for arterial streets and highways in Kenosha and Racine Counties, respectively. Only minor differences exist in the criteria as developed for Kenosha and Racine Counties. In general, the application of these criteria ensure that state trunk highways serve the longest trip lengths; the most important land uses in terms of areawide significance; and provide the highest level of traffic service. County trunk highways would accommodate somewhat shorter trip lengths, serve land uses of countywide significance, and provide a somewhat lower level of traffic service. Local trunk highways would accommodate relatively short trips, serve land uses of local significance, and provide a relatively low level of traffic service.

APPLICATION OF JURISDICTIONAL CLASSIFICATION CRITERIA FOR IH 94 SOUTH FRONTAGE ROADS

Pursuant to the Advisory Committee's direction, the Commission staff applied the criteria for jurisdictional classification to the 47.5 mile system of frontage roads along IH 94 South. The results of the application of the criteria may be summarized as follows:

1. Application of Criteria Under the Recommended Land Use Plan Future

Based upon the analyses described in draft Chapter VIII of the Committee's report, none of the segments of frontage roads along IH 94 South in Kenosha and Racine Counties could be expected to function as arterial highways under the level of urban development envisioned in the recommended plan future. Under that future, population in the corridor would increase by about 45 percent, or by about 22,400 persons, from a 1985 level of 49,800 to a year 2010 level of 72,200; households in the corridor would increase by about 62 percent, or by about 10,100 households, from a 1985 level of 16,400 to a 2010 level of about 26,500; employment in the corridor would increase by about 105 percent, or by about 29,400 jobs, from a 1985 level of 28,000 jobs to a year 2010 level of about 57,400 jobs; and urban land use in the corridor would increase by about 31 percent, or by about 10 square miles, from a 1985 level of about 32 square miles to a year 2010 level of about 42 square miles.

The frontage road system along IH 94 South under this future is shown on Map A-1. Since none of the frontage roads along IH 94 South may be expected to function as arterial highways under the recommended plan future, by definition the jurisdictional classification criteria cannot be applied, such criteria being developed to be applied only to arterial streets and highways. Consequently, all 47.5 miles of frontage roads under the recommended plan future would be classified as nonarterial highways. Normally, nonarterial highways are under the jurisdiction of the local units of government concerned.

2. Application of Criteria Under the "Ultimate" Land Use Plan Future

Based upon the analyses described in draft Chapter VIII of the Committee's report, about 14.1 miles, or about 30 percent, of the 47.5 mile system of frontage roads along IH 94 South would

¹See SEWRPC Planning Report No. 24, A Jurisdictional Highway System Plan for Kenosha County and SEWRPC Planning Report No. 22, A Jurisdictional Highway System Plan for Racine County.

Table A-1

SUMMARY OF FUNCTIONAL CRITERIA FOR JURISDICTIONAL CLASSIFICATION OF ARTERIAL HIGHWAYS IN KENOSHA COUNTY

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk) ^a
S E R V I C E	Average Trip Length (Miles)	<u>Urban</u> 20.0 or More <u>Rural</u> 50.0 or More	<u>Urban</u> 10.0 to 19.9 <u>Rural</u> Less than 50.0	<u>Urban</u> Less than 10.0 --
	Transportation Terminals	<u>Urban^b and Rural^c</u> Connect and serve interregional rail, bus, and major truck terminals; air carrier airports; and seaports.	<u>Urban^b and Rural^c</u> Connect and serve freeway interchanges, general aviation airports, pipeline terminals, rail terminals, major intraregional truck terminals, and rapid transit and modified rapid transit system loading and unloading points not served by Type I arterials.	<u>Urban^b</u> Connect and serve truck terminals generating 50 or more truck trips per average weekday, and off-street parking facilities having a minimum of 150 parking spaces not served by Type I and II arterials.
L A N D U S E S E R V I C E	Recreational Facilities	<u>Urban and Rural</u> Connect and serve all state parks having a gross area of 500 acres or more.	<u>Urban and Rural</u> Connect and serve regional parks and special recreational use areas of countywide significance.	<u>Urban</u> Connect and serve community parks and special recreational use areas of local significance not served by Type I and II arterials.
	Commercial Centers	<u>Urban and Rural</u> Connect and serve major retail and service centers.	<u>Urban and Rural</u> Connect and serve community retail and service centers not served by Type I arterials.	<u>Urban</u> Connect and serve neighborhood retail and service commercial centers not served by Type I and II arterials.
	Industrial Centers	<u>Urban and Rural</u> Connect and serve major regional industrial centers.	<u>Urban and Rural</u> Connect and serve major community industrial centers not served by Type I arterials.	<u>Urban</u> Connect and serve minor community industrial centers not served by Type I and II arterials.
	Institutional	<u>Urban and Rural</u> Connect and serve universities, county seats, and state institutions.	<u>Urban and Rural</u> Connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; and community hospitals not served by Type I arterials.	<u>Urban</u> Connect and serve city, village, and town halls and high schools not served by Type I and II arterials.
	Urban Areas	<u>Rural</u> Connect and serve urban areas of 2,500 or more population.	<u>Rural</u> Connect and serve developed areas of 500 or more population.	--

Table A-1 (continued)

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk) ^a
OPERATIONAL CHARACTERISTICS	System Continuity	<u>Urban and Rural</u> Interregional or regional continuity comprising total systems at the regional and state levels.	<u>Urban and Rural</u> Intermunicipality and inter-county continuity comprising integrated systems at the county level.	<u>Urban</u> Intracommunity continuity comprising an integrated system at the city or village level.
	Spacing	<u>Urban and Rural</u> Minimum 2 miles.	<u>Urban and Rural</u> Minimum 1 mile.	<u>Urban</u> Minimum 0.5 mile.
	Volume	<u>Urban</u> Minimum 13,500 vehicles per average weekday (1990 forecast).	<u>Urban</u> 6,300 to 13,499 vehicles per average weekday (1990 forecast).	<u>Urban</u> Less than 6,300 vehicles per average weekday (1990 forecast).
		<u>Rural</u> Minimum 6,300 vehicles per average weekday (1990 forecast).	<u>Rural</u> Maximum 6,300 vehicles per average weekday (1990 forecast).	--
	Traffic Mobility	<u>Urban</u> Average overall travel speed ^d 30 to 70 miles per hour.	<u>Urban</u> Average overall travel speed ^d 25 to 50 miles per hour.	<u>Urban</u> Average overall travel speed ^d 20 to 40 miles per hour.
<u>Rural</u> Average overall travel speed 40 to 70 miles per hour.		<u>Rural</u> Average overall travel speed 30 to 60 miles per hour.	--	
Land Access Control	<u>Urban and Rural</u> Full or partial control of access. ^{e,f}	<u>Urban and Rural</u> Partial control of access. ^f	<u>Urban</u> Minimum control of access. ^g	

^a A rural subcategory for Type III arterials is not provided.

^b Urban arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 1 mile; Type II arterial facility, 0.5 mile; and Type III arterial facility, 0.25 mile.

^c Rural arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 2 miles; and Type II arterial facility, 1 mile.

^d Average overall travel speed is defined as the sum of the distances traveled by all vehicles using a given section of highway during an average weekday divided by the sum of the actual travel times, including traffic delays.

^e Full control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to movement of through traffic by providing access connections only at selected public roads via grade-separated interchanges.

^f Partial control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic to a degree that, in addition to access connections at selected public roads, there may be some direct access to abutting land uses, with generally one point of reasonably direct access to each parcel of abutting land as these parcels existed at the time of an official declaration that partial control of access shall be exercised.

^g Minimum control of access is defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Source: SEWRPC.

Table A-2

SUMMARY OF FUNCTIONAL CRITERIA FOR JURISDICTIONAL CLASSIFICATION OF ARTERIAL HIGHWAYS IN RACINE COUNTY

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk) ^a
S T E R R I V I P I C E	Average Trip Length (Miles)	<u>Urban</u> More than 19 Rural 30 or more	<u>Urban</u> 7 to 19 Rural Less than 30	<u>Urban</u> Less than 7 --
		Transportation Terminals Connect and serve inter-regional rail, bus, and major truck terminals; and air-carrier airports.	<u>Urban^b and Rural^c</u> Connect and serve freeway interchanges, general aviation airports, pipeline terminals, major intraregional truck terminals, and rapid transit and modified rapid transit system loading and unloading points not served by Type I arterials.	<u>Urban^b</u> Connect and serve truck terminals generating 250 or more truck trips per average weekday, and off-street parking facilities having a minimum of 500 parking spaces not served by Type I and II arterials.
L A N D U S E S E R V I C E	Recreational Facilities	<u>Urban and Rural</u> Connect and serve all state parks having a gross area of 500 acres or more.	<u>Urban and Rural</u> Connect and serve regional parks and special recreational use areas of county-wide significance.	<u>Urban</u> Connect and serve community parks not served by Type I and II arterials.
	Commercial Centers	<u>Urban and Rural</u> Connect and serve major retail and service centers.	<u>Urban and Rural</u> Connect and serve community retail and service centers not served by Type I arterials.	<u>Urban</u> Connect and serve neighborhood retail and service commercial centers not served by Type I and II arterials.
	Industrial Centers	<u>Urban and Rural</u> Connect and serve major regional industrial centers.	<u>Urban and Rural</u> Connect and serve major community industrial centers not served by Type I arterials.	<u>Urban</u> Connect and serve minor community industrial centers not served by Type I and II arterials.
	Institutional	<u>Urban and Rural</u> Connect and serve universities, county seats, and state institutions.	<u>Urban and Rural</u> Connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; and community hospitals not served by Type I arterials.	<u>Urban</u> Connect and serve city and village halls and high schools not served by Type I and II arterials.
	Urban Areas	<u>Rural</u> Connect and serve urban areas of 2,500 or more population.	<u>Rural</u> Connect and serve developed areas of 500 or more population.	--

Table A-2 (continued)

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk)
OPERATIONAL CHARACTERISTICS	System Continuity	<u>Urban and Rural</u> Interregional or regional continuity comprising total systems at the regional and state level.	<u>Urban and Rural</u> Intermunicipality and intercounty continuity comprising integrated systems at the county level.	<u>Urban</u> Intracommunity continuity comprising an integrated system at the city or village level.
	Spacing	<u>Urban and Rural</u> Minimum 2 miles.	<u>Urban and Rural</u> Minimum 1 mile.	<u>Urban</u> Minimum 0.5 mile.
	Volume	<u>Urban</u> Minimum 10,000 vehicles per average weekday (1990 forecast).	<u>Urban</u> 3,500 to 10,000 vehicles per average weekday (1990 forecast).	<u>Urban</u> Less than 3,500 vehicles per average weekday (1990 forecast).
		<u>Rural</u> Minimum 6,500 vehicles per average weekday (1990 forecast).	<u>Rural</u> Maximum 6,500 vehicles per average weekday (1990 forecast).	--
	Traffic Mobility	<u>Urban</u> Average overall travel speed ^d 30 to 70 miles per hour.	<u>Urban</u> Average overall travel speed ^d 25 to 50 miles per hour.	<u>Urban</u> Average overall travel speed ^d 20 to 40 miles per hour.
<u>Rural</u> Average overall travel speed 40 to 70 miles per hour.		<u>Rural</u> Average overall travel speed 30 to 60 miles per hour.	--	
Land Access Control	Full or partial control of access. ^{e,f}	Partial control of access. ^f	Minimum control of access. ^g	

^aA rural subcategory for Type III arterials is not provided.

^bUrban arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 1 mile; Type II arterial facility, 0.5 mile; Type III arterial facility, 0.25 mile.

^cRural arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 2 miles; Type II arterial facility, 1 mile.

^dAverage overall travel speed is defined as the sum of the distances traveled by all vehicles using a given section of highway during an average weekday divided by the sum of the actual travel times, including traffic delays.

^eFull control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to movement of through traffic by providing access connections only at selected public roads via grade-separated interchanges.

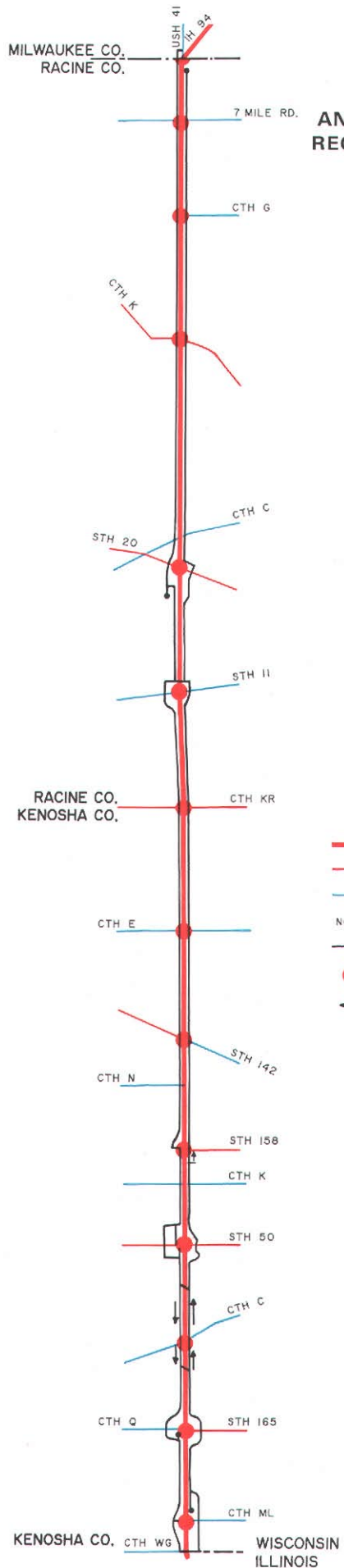
^fPartial control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic to a degree that, in addition to access connections at selected public roads, there may be some direct access to abutting land uses with generally one point of reasonably direct access to each parcel of abutting land as these parcels existed at the time of an official declaration that partial control of access shall be exercised.

^gMinimum control of access is defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Source: SEWRPC.

Map A-1

**EAST AND WEST FRONTAGE
ROADS ALONG IH 94 IN RACINE
AND KENOSHA COUNTIES UNDER THE
RECOMMENDED LAND USE PLAN: 2010**



LEGEND

- STATE TRUNK HIGHWAY-FREEWAY
- STATE TRUNK HIGHWAY-NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- NONE
- FRONTAGE ROAD-NONARTERIAL
- FREEWAY-NONFREEWAY INTERCHANGE
- DIRECTION OF TRAFFIC FLOW (ONE-WAY STREETS)



NOT TO SCALE

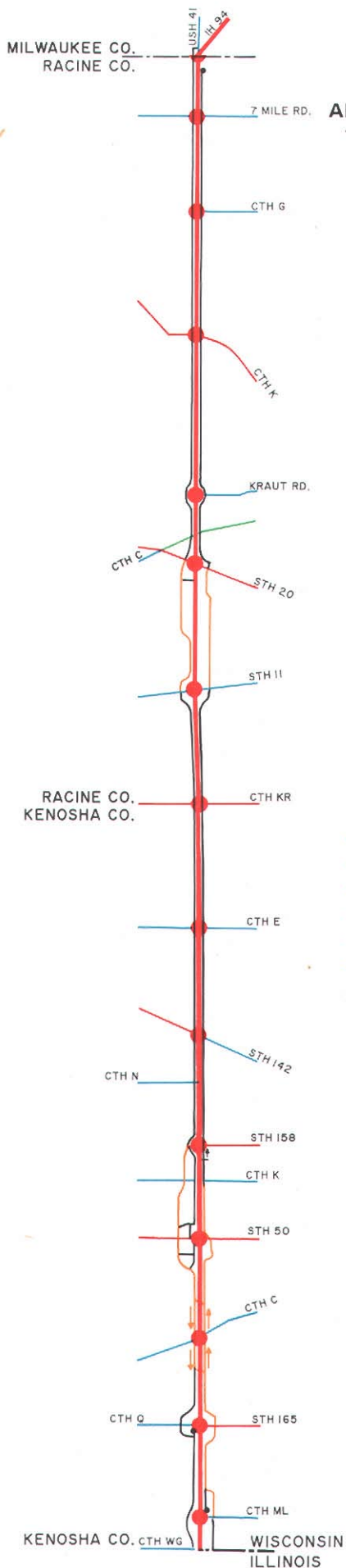
be needed to function as arterial highways under the greater level of urban development envisioned in the "ultimate" plan future. Under that future, population in the corridor would increase by about 94 percent, or by about 46,700 persons, from a 1985 level of 49,800 to a year 2010 level of 96,500; households in the corridor would increase by 101 percent, or by about 16,500 households, from a 1985 level of 16,400 to a year 2010 level of about 32,900; employment in the corridor would increase by about 238 percent, or by about 66,500 jobs, from a 1985 level of 28,000 jobs to a year 2010 level of 94,500 jobs; and urban land use in the corridor would increase by about 57 percent, or by about 18 square miles, from a 1985 level of 32 square miles to a year 2010 level of about 50 square miles.

The frontage road system along IH 94 South under this future is shown on Map A-2. Nonarterial frontage roads remain in black on this map, while those segments of the frontage road system needed to serve as arterial highways are shown in orange. The application of the jurisdictional classification criteria to the segments of frontage roads required to serve as arterial highways is summarized in Table A-3. The following comments pertain to the information included in this table:

- a. In all cases, application of the trip service criterion, i.e., average trip length, results in classification of the frontage roads as state trunk highways. This is to be expected given the types of commercial and industrial land uses of areawide significance that are existing and proposed at key interchange locations along IH 94 South in both Kenosha and Racine Counties under the Committee's recommended land use plan.
- b. In all cases, application of the land use service criterion results in classification of the frontage roads as local trunk highways. This comes about not because of the relative insignificance of the commercial and industrial land uses to be served along IH 94 South, but rather because the application of the criteria does not envision redundant service. All of the commercial and industrial land uses concerned at the subject interchanges are considered to be already adequately served in both the north-south and east-west directions by either existing or proposed state trunk or county trunk highways. Accordingly, in order to avoid redundancy, the classification for this criterion in all cases is local trunk highway.
- c. In all cases, the application of the frontage roads system continuity criterion results in classification of the frontage roads as county trunk highways. A review of the system plan indicates that the state trunk highway system is fully continuous and that the frontage roads are not necessary for system continuity. As between the assignment as county trunk highways versus local trunk highways, the more rational application is for county trunk highways given the multiplicity of local governments concerned with the segments of frontage roads involved.
- d. In all cases, the application of the spacing criterion results in classification of the frontage roads as local trunk highways. In each case, the frontage road segment concerned is less than one mile from a state trunk or county trunk arterial highway. The classification criteria require minimum two mile spacing of state trunk highways and minimum one mile spacing of county trunk highways.
- e. In four of the six frontage road segments concerned, the application of the traffic volume criterion results in classification as county trunk highways. In two cases—one each in Kenosha and Racine Counties—the application of the traffic volume criterion results in a classification as either a county trunk highway or a state trunk highway, the range of volumes concerned spanning the volume threshold between state and county trunk highway criteria.
- f. In all cases, application of the traffic mobility criterion—which is dependent upon design speeds—results in classification of the frontage roads as either state trunk highways or county trunk highways, there being overlap in the classification criteria.

Map A-2

EAST AND WEST FRONTAGE ROADS ALONG IH 94 IN RACINE AND KENOSHA COUNTIES UNDER THE "ULTIMATE" LAND USE PLAN: 2010



LEGEND

- STATE TRUNK HIGHWAY-FREEWAY
- STATE TRUNK HIGHWAY-NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- FRONTAGE ROAD-NONARTERIAL
- FRONTAGE ROAD-ARTERIAL
- FREEWAY-NONFREEWAY INTERCHANGE
- ← DIRECTION OF TRAFFIC FLOW (ONE-WAY STREETS)



NOT TO SCALE

Table A-3

**APPLICATION OF THE JURISDICTIONAL CLASSIFICATION CRITERIA
TO THOSE SEGMENTS OF IH 94 SOUTH FRONTAGE ROADS ANTICIPATED TO
FUNCTION AS ARTERIAL HIGHWAYS UNDER THE "ULTIMATE" DEVELOPMENT PLAN**

County	Frontage Road Segment	Trip Service (Average Trip Length)	Land Use Service	Operational Characteristics					Summary of Findings	Recommended Jurisdiction
				System Continuity	Spacing	Volume	Traffic Mobility	Land Access Control		
Kenosha	East—CTH ML to STH 50 (4.9 miles)	STH (22-38 miles)	LTH	CTH	LTH (less than 1 mile)	CTH (6,000-13,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	3 meet STH 4 meet CTH 2 meet LTH	CTH
	East—STH 50 to CTH K (1.1 miles)	STH (18-21 miles)	LTH	CTH	LTH (less than 1 mile)	CTH (5,000-10,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	3 meet STH 4 meet CTH 2 meet LTH	CTH
	West—STH 50 to STH 158 (1.6 miles)	STH (23-27 miles)	LTH	CTH	LTH (less than 1 mile)	STH and CTH (7,000-24,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	4 meet STH 4 meet CTH 2 meet LTH	CTH
	West—STH 50 to East Frontage Road South of CTH C (2.3 miles)	STH (18-27 miles)	LTH	CTH	LTH (less than 1 mile)	CTH (7,000-13,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	3 meet STH 4 meet CTH 2 meet LTH	CTH
Racine	East—STH 11 to STH 20 (1.9 miles)	STH (15-32 miles)	LTH	CTH	LTH (less than 1 mile)	CTH (8,000-12,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	3 meet STH 4 meet CTH 2 meet LTH	CTH
	West—STH 11 to STH 20 (2.3 miles)	STH (20-31 miles)	LTH	CTH	LTH (less than 1 mile)	STH and CTH (12,000-17,000 vpd)	STH and CTH (45-55 mph)	STH and CTH (partial control)	4 meet STH 4 meet CTH 2 meet LTH	CTH

NOTE: The criteria for jurisdictional classification of arterial highways are set forth in SEWRPC Planning Reports No. 22, A Jurisdictional Highway System Plan for Racine County, February 1975; and No. 24, A Jurisdictional Highway system Plan for Kenosha County, April 1975; the frontage road segments subjected to the criteria are considered to be "urban" arterial facilities under future land use conditions.

Source: SEWRPC.

- g. In all cases, application of the land access control criterion results in a classification of the frontage roads as either state trunk highways or county trunk highways, the Committee's draft plan calling for partial control of access. That level of control is specified under both the state trunk highway and county trunk highway classification criteria.
- h. In summary, application of the jurisdictional classification criteria indicate that a county trunk highway classification is most appropriate for the arterial segments of frontage roads concerned. Viewed on an overall basis, the county classification criteria were met a majority of times in all instances.

POSSIBLE COURSE OF ACTION

It is important that the Advisory Committee conclude its work, that the Committee's recommendations in terms of both land use and transportation be published, and that the Committee's report be formally transmitted to the county and local units of government concerned for their consideration. Given the foregoing analyses attendant to the jurisdictional classification of frontage roads, a possible course of action would be for the Committee to endorse the following text modifications. This text would replace in its entirety the first two full paragraphs on page 28 of draft Chapter VIII of the Committee's report:

"The present network of frontage roads along IH 94 South in Kenosha and Racine Counties totals about 47.5 miles. Historically, given the functional relationship that existed between these frontage roads and the freeway on- and off-ramps in these two counties, the Wisconsin Department of Transportation has maintained jurisdiction over such frontage roads, bearing the full cost of maintenance and reconditioning as necessary. More recently, as local units

of government have sought state projects to separate the freeway on- and off-ramps from the frontage roads at key interchanges where urban land use development has accelerated, the policy of the State has been to relinquish jurisdiction over the segments of frontage roads concerned, turning the roads over to the local governments. The rationale for this change in jurisdiction is that elimination of the ramp braiding changes the primary function of the frontage roads to one of land access.

“Under the level of urban development envisioned in the recommended land use plan, it is not anticipated that the system of frontage roads or any segments thereof will perform an arterial highway function. Should the level of urban development along IH 94 exceed that forecast under the recommended plan, however, it will be necessary, as indicated earlier in this chapter, to convert about 14.1 miles of the frontage roads to arterial facilities. In those cases, the facilities will have to be widened and improved, providing a high level of service with a significant degree of access control. Consequently, it will be particularly important for all parties concerned to give proper attention to this potential future function as ramp unbraiding projects proceed and the frontage roads are realigned.

“In order to determine a recommended course of action with respect to the question of proper jurisdiction of the frontage road system, the Advisory Committee applied the jurisdictional classification criteria for arterial highways as previously developed under jurisdictional highway system planning efforts for Kenosha and Racine Counties.² The results of this analysis indicated that, taking all factors into account, those segments of the frontage road system which may be needed to function as high level arterial highways under future land conditions should be under the jurisdiction of the counties concerned. The Committee also recognized, however, that state and local governments will derive important benefits from the arterial frontage road system, the State benefitting because of the relief that such arterial frontage roads will provide to segments of the mainline freeway and to certain interchanges and the local governments benefitting from the property tax revenues derived from the intensive commercial and industrial development along the frontage roads that contributes significantly to the need to convert certain frontage road segments to arterials. Accordingly, after careful consideration of this matter, the Advisory Committee made the following recommendations attendant to the frontage roads:

1. The Wisconsin Department of Transportation take the lead in sponsoring the engineering studies necessary throughout the entire length of IH 94 in Kenosha and Racine Counties to determine the best way in which to unbraid all freeway on- and off-ramps from the frontage road system, realigning such roads as necessary. The cost of conducting such engineering studies should be shared on a 50 percent State and 50 percent county basis, conditioned upon the willingness of the County and local governments concerned to assume jurisdiction upon the completion of the study and the ramp unbraiding projects. These studies should be completed as soon as possible in order to define future right-of-way requirements for the frontage road system and to thereby help local and county governments in the land use regulation and development process.
2. Upon completion of ramp unbraiding projects at those locations along IH 94 South where the corridor plan does not envision a potential need for a future arterial highway on the alignment of the frontage road, jurisdiction over the frontage roads concerned should be taken by the local units of government. The ramp unbraiding projects should include resurfacing and reconstruction as may be necessary of the frontage roads concerned so that those roads are in good condition when turned back to the local units of government.

²See SEWRPC Planning Report No. 24, *A Jurisdictional Highway System Plan for Kenosha County* and SEWRPC Planning Report No. 22, *A Jurisdictional Highway System Plan for Racine County*.

3. Upon completion of ramp unbraiding projects along those segments of the frontage road system where the plan envisions a potential need to develop an arterial highway on the frontage road alignment, Kenosha and Racine Counties should assume jurisdiction over the frontage road segments concerned and operate those roads as part of the county trunk system, it being understood, however, as discussed below, that there remains a state interest in ensuring that the segments concerned can be readily converted to arterial highways in future years and that the State would benefit from such conversion in lieu of additional improvements on IH 94 South and at certain interchanges along IH 94 South.
4. The ultimate improvement of some of the frontage road segments as arterial highways will depend upon the level of land use development permitted by the county and local governments concerned within the framework of the corridor land use plan. Should development occur in excess of that envisioned in the recommended land use plan, and should it then become necessary to construct arterial highways along certain identified frontage road segments, it is recommended that the costs of such construction be borne on a 50 percent state, 50 percent county basis under the Local Roads Improvement Program (LRIP) created by the 1991-93 State Budget Act."