COMMUNITY ASSISTANCE
PLANNING REPORT NO. 201

A LAND USE AND TRANSPORTATION SYSTEM DEVELOPMENT PLAN FOR THE IH 94 WEST FREEWAY CORRIDOR: 2010

WAUKESHA COUNTY WISCONSIN

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WAUKESHA COUNTY, WISCONSIN

Prepared by the

Southeastern Wisconsin Regional Planning Commission
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September 21, 1994

TO: The Wisconsin Department of Transportation and the County Executive and County Board of Supervisors of Waukesha County

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 West freeway corridor. The plan was prepared in response to a request received by the Commission from the Wisconsin Department of Transportation and pertains to an approximately four-mile-wide corridor centered on IH 94 from approximately CTH T west to the Waukesha County line, a distance of about 15 miles. As a subregional planning area, the corridor encompasses a total of about 60 square miles and lies in portions of three towns, four villages, and three cities in Waukesha County. An Advisory Committee consisting of representatives of various interests from throughout the corridor, including representatives of the County, of the local municipalities within the corridor, of the Wisconsin Department of Transportation, and of the Federal Highway Administration provided guidance in the plan preparation.

The plan was prepared in response to a recognition that economic and land use development conditions are rapidly changing within the IH 94 West freeway corridor. To cope with these changing conditions, the report proposes a coordinated set of land use and transportation system development plans set within the context of broader regional plans. The corridor land use plan sets forth a recommended land use pattern to meet the anticipated land use demand in the freeway corridor over approximately the next two decades. Importantly, the recommended land use development pattern seeks to place the majority of new commercial and industrial development at strategic locations along the freeway, and thereby avoid creating a land use pattern of continuous strip commercial development along the 15-mile stretch of freeway.

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 widening IH 94 between the STH 16-CTH T and the CTH G interchanges to six traffic lanes; widening STH 83 to four traffic lanes on a divided roadway from the Bark River Commerce Center entrance south to USH 18; widening STH 67 to four traffic lanes from IH 94 south to USH 18, and to six traffic lanes north from IH 94 to CTH B; constructing the Waukesha bypass along the Meadowbrook Road alignment, including the extension of CTH TT, to provide four traffic lanes; extending CTH KE from CTH E to STH 83 as a two-traffic-lane facility; extending CTH SS from CTH G to CTH T as a two-traffic-lane facility; widening CTH T from IH 94 north to CTH JJ to four traffic lanes; widening CTH T from IH 94 south to Northview Road to four traffic lanes on a divided urban section pavement; constructing the proposed Oconomowoc Parkway, including its extension through the Pabst Farms to CTH P, as a two-traffic-lane facility; and the provision of a full directional diamond interchange at CTH P and major improvements at all other existing interchanges in the corridor along IH 94 to unbraid all freeway on- and off-ramps from frontage roads and to improve capacity for anticipated traffic. Additional transit service in the corridor is also recommended.

If the recommended plan is implemented, a proper balance between land use and transportation system development will be achieved in this important travel corridor and the evolving land use pattern within the corridor provided with an efficient and effective transportation system. The Regional Planning Commission is pleased to have been able to be of assistance to the Wisconsin Department of Transportation, Waukesha County, and the communities that comprise the IH 94 West freeway corridor in carrying out this cooperative planning effort. The Commission, of course, stands ready to assist the Wisconsin Department of Transportation, Waukesha County, and the communities concerned in implementing the recommended plans over time.

Sincerely,

Kurt W. Bauer
Executive Director

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INTRODUCTION

BACKGROUND AND PURPOSE OF STUDY

On January 12, 1990, the District Director of the Wisconsin Department of Transportation formally requested that the Southeastern Wisconsin Regional Planning Commission undertake a land use and transportation study along the IH 94 West Freeway Corridor extending from the CTH T interchange in the City of Waukesha and Town of Pewaukee west to the Waukesha County line. In response to this request, the Commission, on January 17, 1990, authorized the Commission staff to undertake the requested study. The Wisconsin Department of Transportation request followed a fall 1989 intergovernmental meeting, called by the Commission at the request of then State Senator J. Mac Davis. At that meeting, Senator Davis articulated his concern that land use changes were rapidly occurring in this freeway corridor, that such changes were contributing to increased traffic congestion and related problems in the corridor, and that there was a need to seek cooperative agreement among Waukesha County and the local governments concerned as to a future land use pattern for the corridor, and, based upon that land use pattern, to develop a supporting arterial highway system, including consideration of additional freeway interchanges and the reconfiguration of existing freeway interchanges and frontage roads.

This report documents the results of the requested study, presenting alternative and recommended land use development and transportation system plans for the IH 94 West Freeway Corridor in Waukesha County. The corridor land use plan is intended to carry adopted regional plan elements into greater detail while meeting local development objectives. It recommends a land use pattern that can meet the social and economic needs of the residents and communities of the corridor, while protecting the natural resource base and preserving the overall quality of the environment in the corridor. In conducting the corridor land use planning effort, an attempt was made to identify the physical development constraints imposed upon, and the development opportunities open to, the local communities within the corridor. The transportation system plan identifies, functionally and jurisdictionally, a system of arterial streets and highways designed to meet the traffic needs generated by the existing and planned land use development within the corridor, while recognizing the interregional and interstate travel function of the IH 94 freeway. The plan identifies the arterial street and highway improvements in the corridor needed to meet the current and probable future traffic demands, including arterial widenings, extensions, and reconfigurations and freeway interchange and ramp realignments. In addition, key plan implementation efforts needed to effectively carry out the recommended plans are identified. Particular emphasis is given to the needed modifications to local zoning and official maps. Implementation of the recommended land use plan through local zoning and other land use regulations is particularly important to ensuring that the planned transportation facilities function properly in the plan design year. Local failure to carry out the land use plan could lead to overloading of key transportation facilities, with costly traffic congestion and safety problems.

With the completion of this IH 94 West Freeway Corridor study, detailed corridor plans will have been completed for the entirety of the IH 94 West Freeway from the Zoo Interchange of IH 94, IH 894, and USH 45 to the west Waukesha County line. A prior study for the Blue Mound Road corridor similarly examined land use and transportation system needs along IH 94 West from the Zoo Interchange to Waukesha County CTH T.[1]

Concurrently with the system planning studies along the IH 94 West Freeway, the Wisconsin Department of Transportation carried out the preliminary engineering and environmental assessment efforts needed to implement the system level plan recommendations, in particular the recommended freeway and related interchange improvements. The detailed engineering

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[1] *See SEWRPC Community Assistance Planning Report No. 151, A Transportation System Plan for the Blue Mound Road (USH 18) Corridor.*

and assessment work efforts of the Department were fully coordinated with the work involved in preparing the IH 94 West Freeway Corridor plan herein documented.

STUDY AREA

The geographic planning area selected for the IH 94 West Corridor study is identified on Map 1. The study area is an approximately rectangular area extending four miles in a north-south direction and 15 miles in an east-west direction, with the study boundary being defined along U. S. Public Land Survey section lines. The approximately 60-square-mile study area contains portions of three cities, four villages, and three towns (see Table 1 and Map 2). All of the study area lies within Waukesha County.

The lands included within the study area extend at least one mile south and at least 1.5 miles north of the IH 94 West Freeway, and the study area is believed to encompass all of the developable land along the freeway that can be expected to be significantly influenced directly by the presence of the freeway. In this respect, it should be understood that while a study area boundary was established for the corridor planning, the work was accomplished within the broader framework of the adopted regional land use and transportation system plans. More specifically, all of the travel demand analyses carried out under the study were conducted within the framework of the entire Southeastern Wisconsin Region, and thus take into account planned land use changes outside, as well as within, the study corridor.

ADVISORY COMMITTEE

When the Commission authorized the undertaking of the IH 94 West Freeway Corridor study, the Commission also acted to create an Intergovernmental Coordinating and Advisory Committee to direct and assist the Commission in the preparation of the requested corridor land use and transportation system development plans. The Committee consists of 14 elected and appointed public officials representing the Federal and State Departments of Transportation, Waukesha County, and each of the significantly affected local municipalities in the study 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 units and agencies of government concerned in the corridor planning process. The Committee is charged with the responsibility of reviewing and approving the geographic boundary of the study area; reviewing and approving drafts of the report documenting the findings and recommendations of the study as produced by the Commission staff; evaluating alternative land use and transportation system plans for the corridor; selecting a recommended plan; and helping to identify practical means of plan implementation. The Committee is also intended to help familiarize the political, business, and industrial leadership within the corridor with the findings and recommendations of the study.

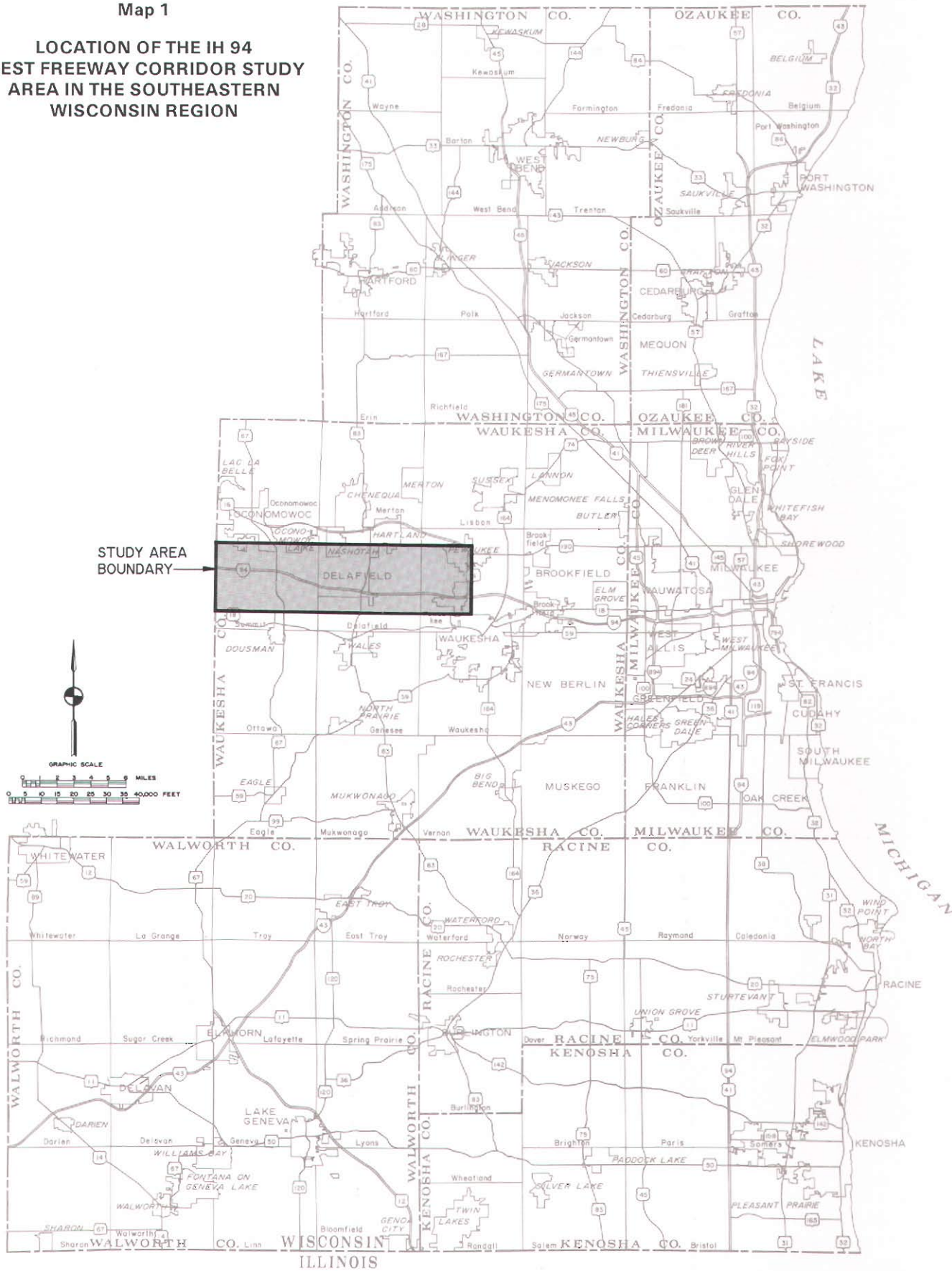
THE PLANNING PROCESS

As already noted, the recommended land use and transportation system development plans for the IH 94 West Freeway Corridor, as presented in this report, were prepared within the context of the adopted regional land use and transportation system plans, refining and detailing those plans as necessary. As such, the plans were developed in accordance with a well-defined planning process involving the following basic steps:

1. Inventory and Analyses
   Reliable basic planning data are essential to the formulation of workable development plans. Consequently, following study design, inventory becomes the first operational step in the planning process. The importance of factual information in the planning process should be evident, since no intelligent forecasts can be made or alternative actions evaluated without knowledge of the current state of the systems being planned. In the IH 94 West Freeway Corridor, the preparation of more detailed development plans requires that factual data be developed on such items as resident population, housing units, employment, natural resource base, transportation facilities and services, public utility facilities and services, and locally proposed land use patterns as expressed in local plans and zoning ordinances. The inventories and accompanying analyses of such data not only describe existing conditions and development trends, but also provide a basis for identifying problems

Map 1

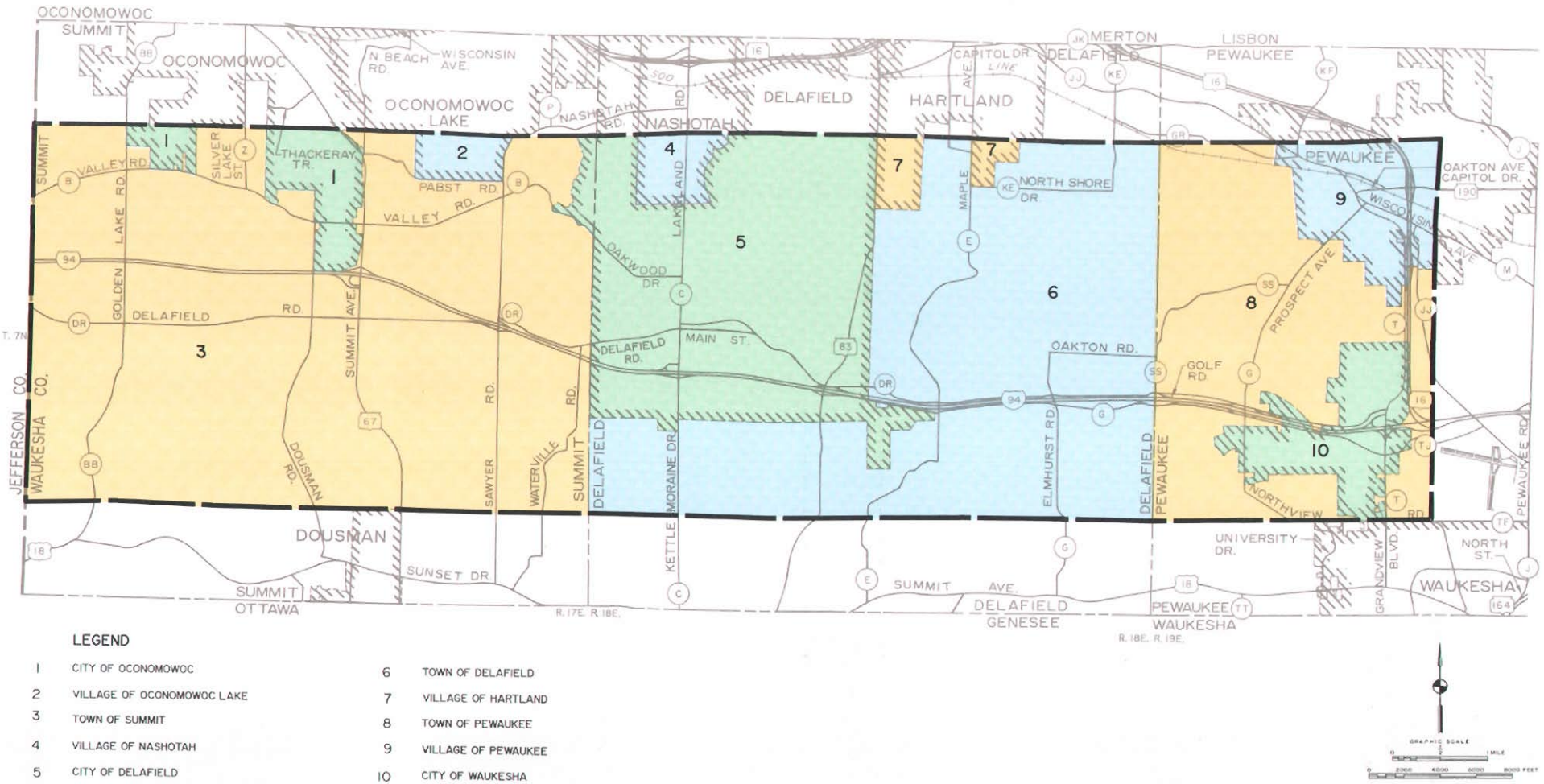
LOCATION OF THE IH 94 WEST FREEWAY CORRIDOR STUDY AREA IN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

Map 2

CIVIL DIVISIONS IN THE IH 94 WEST CORRIDOR



LEGEND

1	CITY OF OCONOMOWOC	6	TOWN OF DELAFIELD
2	VILLAGE OF OCONOMOWOC LAKE	7	VILLAGE OF HARTLAND
3	TOWN OF SUMMIT	8	TOWN OF PEWAUKEE
4	VILLAGE OF NASHOTAH	9	VILLAGE OF PEWAUKEE
5	CITY OF DELAFIELD	10	CITY OF WAUKESHA

Source: SEWRPC.

Table 1

CIVIL DIVISIONS IN THE IH 94 WEST FREEWAY CORRIDOR STUDY AREA

Civil Division	U. S. Public Land Survey		Area (square miles)	Percent of Study Area
	Township	Section		
Cities				
Delafield	T7N, R17E	12		
	T7N, R18E	7-9,16-22, 27, 30	8.9	14.9
Oconomowoc	T7N, R17E	8-10, 15	1.2	2.0
Waukesha	T7N, R19E	20, 21, 28-30	1.9	3.2
Villages				
Hartland	T7N, R18E	10, 11	0.6	1.0
Nashotah	T7N, R18E	7, 8	0.6	1.0
Oconomowoc Lake	T7N, R17E	11, 12	0.5	0.8
Pewaukee	T7N, R19E	8, 9, 16, 17	2.0	3.3
Towns				
Delafield	T7N, R18E	10-15, 22-30	14.3	23.9
Pewaukee	T7N, R19E	7, 8, 16-21, 28-30	8.0	13.3
Summit	T7N, R17E	7-30	21.9	36.6
Total	--	--	59.9	100.0

Source: SEWRPC.

that may result from poorly planned development in the corridor, as well as opportunities and potentials for furthering good development in the corridor.

2. Formulation of Objectives and Standards
An objective may be defined as a goal or end toward the attainment of which plans and polices are directed. Planning is a rational process for formulating and meeting objectives. The objectives developed, together with supporting principles and standards, serve as a guide to the preparation of the plans, and also can provide a sound basis for the selection of recommended plans from among alternatives considered.

   For the IH 94 West Freeway Corridor study, it is intended that the objectives, principles, standards, and related design criteria, already in place as a result of regional land use and transportation planning efforts, be used as a basis for the preparation of land use and transportation system plans. It is believed that basic agreement already exists on these objectives and supporting standards, and such objectives and standards, therefore, should provide a proper foundation for planning preparation and evaluation.[2] The objectives and standards were, however, reviewed by the Advisory Committee and are presented in Chapter III of this report as approved by that Committee.

3. Forecasts
Anticipated future requirements provide the basis for the preparation of alternative plans. Forecasts are required of future events and conditions which are outside the scope of the systems being planned. The demand for land for facilities will

[2]*The objectives and standards referred to are documented in SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume Two, Alternative and Recommended Plans, Chapter II, pp. 9 through 33.*

depend primarily upon the nature of the future resident population and economic activity levels. In a freeway corridor planning effort, such levels must be forecast for the broader regional area of which the corridor is a part. These levels, in turn, are used to determine the probable future demand for land use and transportation facilities within the corridor. For the IH 94 West Corridor study, alternative projections of population and employment were prepared in an effort to bracket the reasonable range of growth and development that could be expected to occur.

4. Alternative and Recommended Plans
Once the probable range of future demand for land use and transportation facilities in the corridor was determined, alternative plans which could meet these demands were developed. After considering those alternatives, the Advisory Committee prepared a recommended land use plan and a supporting transportation system plan.

5. Plan Implementation
Plan implementation is achieved through the formulation of a policy program, i.e., a series of actions which will ensure plan implementation. In the IH 94 West Corridor study, the focus was on identifying those actions needed to effect implementation of the land use plan primarily at the county and local levels of government through zoning ordinances, and with respect to the transportation system plan, through capital improvements programming and other actions which need to be taken primarily at the county and state levels of government.

FORMAT OF PLAN PRESENTATION

Following this introductory chapter, the findings and recommendations of the IH 94 West Freeway Corridor study are presented in six additional chapters. Chapter II, "Inventory Findings," presents pertinent data on the resident population, housing units, employment, land use, natural resource base, transportation facilities, public utility facilities, and local plans and zoning within the corridor. Chapter III, "Objectives and Standards," presents the development objectives, principles, standards, and related design criteria as approved by the Advisory Committee. Chapter IV, "Alternative Land Use Development Plans," presents specific resident population, household, and employment forecasts and describes two alternative land use plans for the corridor consistent with two alternative futures. Chapter V, "Recommended Land Use and Transportation Plans," sets forth recommended land use and transportation plans selected by the Advisory Committee. Chapter VI, "Plan Implementation," outlines a series of plan implementation recommendations. Chapter VII, "Summary and Conclusions," provides an overview of the study findings and recommendations.

Chapter II

INVENTORY FINDINGS

INTRODUCTION

The proper formulation of a development plan for the IH 94 West Corridor requires that factual data be assembled on historical and existing population and economic activity levels, land use, natural resources, transportation facilities, and public utility facilities, as well as local community plans and regulatory measures. Accordingly, the first section of this chapter describes the demographic and economic base of the IH 94 West Corridor, providing information on population levels; household units, size, and income; labor force characteristics; and employment. The second section provides information on historic and existing land use patterns in the Corridor. The third section presents data on the natural resource base of the Corridor, including data on soils; surface waters, wetlands, and floodlands; woodlands; wildlife habitat; topography and scenic vistas; historic sites; and environmentally sensitive areas. The fourth presents data on the transportation facilities of the Corridor, including the existing arterial street and highway system and the railway and public transit systems. The fifth presents data on public utility facilities, including public sanitary sewer and water systems. The final section of this chapter presents information on local plans and related land use regulations which have been adopted by the local governmental units in the Corridor.

DEMOGRAPHIC AND ECONOMIC BASE

Inventories of population and economic activity are essential to sound comprehensive planning. Future urban land development needs within the IH 94 West Corridor will depend in part upon the population and economic activity levels in Waukesha County and in the Southeastern Wisconsin Region, of which the Corridor is an integral part. This section summarizes the findings of the socioeconomic inventories conducted under the IH 94 West Corridor study.

Population

The resident population levels of the Southeastern Wisconsin Region, Waukesha County, and the IH 94 West Corridor from 1950 to 1990 are set forth in Table 2. The resident population of the Region increased by 515,500 persons, or about 42 percent, between 1950 and 1970, but by only 54,300 persons, or about 3.1 percent, between 1970 and 1990. The estimated resident population of the Region of 1.81 million persons in 1990 represents an increase of about 45,600 persons, or about 2.6 percent, over the population enumerated in 1980. It should be noted that the inventory base year for the economic and demographic data, including the size and distribution of population, households, and jobs in the Corridor, is 1985. The 1990 United States Census of Population and Housing was completed toward the end of the planning effort. The 1990 population and housing unit counts are presented for the Region, Waukesha County, and the IH 94 West Corridor in Table 3, along with the 1985 population and housing unit estimates used in the current study. As indicated in that table, according to the Census, the resident population of the Region stood at about 1,810,400 persons in 1990, about 67,700 persons, or about 4 percent, more than the 1985 estimate of 1,742,700; the resident population of Waukesha County stood at 304,700 persons, about 18,800 persons, or about 7 percent more than the 1985 estimate of 285,900; the resident population of the IH 94 West Corridor stood at 23,800 persons, about 1,100 persons, or about 5 percent, more than the 1985 estimate of 22,700 persons. The Census results do not indicate any major changes in overall population growth trends in the Region, Waukesha County, or the IH 94 West Corridor. Accordingly, the base year 1985 demographic data should provide a sound basis for the preparation of a development plan for the IH 94 West Corridor.

The rate of population increase in Waukesha County over the period 1950 through 1990 has been significantly higher than in the Region, with large population gains having been experienced in each decade from 1950 through 1980. Since 1980, total population in the County continued to increase, but at more modest rates. The resident population of Waukesha County of 304,700 persons in 1990 represents an increase of about 24,500 persons, or about 9 percent, over the population enumerated in 1980.

Table 2

HISTORICAL POPULATION FOR THE SOUTHEASTERN WISCONSIN REGION, WAUKESHA COUNTY, AND THE IH 94 WEST CORRIDOR: 1950-1990

Year	Region		Waukesha County		IH 94 West Corridor	
	Number	Percent Change from Preceding Time Period	Number	Percent Change from Preceding Time Period	Number	Percent Change from Preceding Time Period
1950	1,240,618	--	85,901	--	--	--
1960	1,573,614	26.8	158,249	84.2	--	--
1970	1,756,083	11.6	231,335	46.2	15,901	--
1980	1,764,796	0.5	280,203	21.1	20,577	29.4
1985	1,742,742	-1.2	285,904	2.0	22,666	10.2
1990	1,810,364	3.9	304,715	6.6	23,809	5.0

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

Table 3

TOTAL POPULATION AND HOUSING UNITS IN WAUKESHA COUNTY, THE IH 94 WEST CORRIDOR, AND THE SOUTHEASTERN WISCONSIN REGION: ESTIMATED 1985 AND 1990 CENSUS

Area	Total Population				Total Housing Units			
			1985-1990 Change				1985-1990 Change	
	1985[a]	1990[b]	Number	Percent	1985[c]	1990[b]	Number	Percent
Waukesha County	285,900	304,700	18,800	6.6	97,500	110,500	13,000	13.3
Southeastern Wisconsin Region	1,742,700	1,810,400	67,700	3.9	681,600	717,200	35,600	5.2
IH 94 West Corridor	22,700	23,800	1,100	5.0	7,900	9,000	1,100	14.6

[a] *Wisconsin Department of Administration estimate.*

[b] *1990 Census.*

[c] *SEWRPC estimate.*

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

Table 4

HOUSING UNITS IN THE SOUTHEASTERN WISCONSIN REGION, WAUKESHA COUNTY, AND THE IH 94 WEST CORRIDOR: 1960-1990

Year	Region		Waukesha County		IH 94 West Corridor	
	Number	Percent Change from Preceding Time Period	Number	Percent Change from Preceding Time Period	Number	Percent Change from Preceding Time Period
1960	499,986	--	47,301	--	--	--
1970	566,756	13.4	65,249	37.9	--	--
1980	664,934	17.3	92,583	41.9	7,125	--
1985	681,555	2.5	97,461	5.3	7,860	10.3
1990	717,117	5.2	110,452	13.3	9,009	14.6

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

The rate of population increase in the IH 94 West Corridor over the time periods 1970 through 1980 and 1980 through 1985, was higher than either the Region or Waukesha County during the same time periods. The estimated resident population of the Corridor of 23,800 persons in 1990 represents an increase of about 3,200 persons, or about 16 percent, over the population enumerated in 1980. The 1990 resident population within the IH 94 West Corridor represented about 7.8 percent and 1.3 percent of the estimated resident population of Waukesha County and the Region, respectively.

Household Units, Size, and Income

The number of housing units in the Southeastern Wisconsin Region, in Waukesha County, and in the IH 94 West Corridor study area over the period 1960 through 1990 is shown in Table 4. Corresponding household size data are set forth in Table 5. Growth in the number of housing units in the Region, Waukesha County, and the Corridor was strong through the 1970s and into the 1980s. In 1990, there were about 9,000 housing units in the IH 94 West Corridor study area, representing about 8.2 percent and 1.3 percent of the total housing units in Waukesha County and the Region, respectively.

The Region, the County, and the Corridor have all experienced a decline in average household size. The number of persons per occupied housing unit in the Region declined significantly from about 3.30 in 1960 to about 2.62 in 1990. The decline in Waukesha County was similar to that of the Region, decreasing from 3.66 persons per household in 1960 to about 2.83 in 1990. As shown in Table 5, the size of households within the IH 94 West Corridor study area, which was about 2.78 persons in 1990, decreased at a significantly slower rate than in either the Region or Waukesha County, reflecting the essentially suburban character of the residential land use development that has occurred within the study area.

Household income in the Southeastern Wisconsin Region and in Waukesha County by income range is shown in Table 6. This income is for calendar year 1989, the last year for which detailed household income data are available. Estimated per capita incomes in the Southeastern Wisconsin and Waukesha County for the years 1979 and 1987 are provided in Table 7. These per capita income data are based upon the population 15 years of age or older, representing

Table 5

PERSONS PER OCCUPIED HOUSING UNIT IN THE SOUTHEASTERN WISCONSIN REGION, WAUKESHA COUNTY, AND THE IH 94 WEST CORRIDOR: 1960-1990

Year	Region	Waukesha County	IH 94 West Corridor
1960	3.30	3.66	- -
1970	3.20	3.66	3.37
1980	2.75	3.11	3.04
1985	2.64	3.02	3.02
1990	2.62	2.83	2.78

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

that portion of the population of income earning age. As shown in this table, per capita income in Waukesha County is higher than in the Southeastern Wisconsin Region. The change in per capita income over the eight-year period was higher in Waukesha County than in the Region, 61 and 56 percent, respectively. When measured in constant 1979 dollars, per capita income between 1979 and 1987 decreased by about 6 percent in the Region and about 3 percent in Waukesha County.

Labor Force and Employment

The size of the civilian labor force in the Southeastern Wisconsin Region and in Waukesha County over the period 1960 through 1990 is shown in Table 8. The regional labor force increased by about 47 percent over that time period, while the Waukesha County labor force increased by over 190 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, increased significantly within the Region, from about 58 percent in 1960 to about 68 percent in 1990. In 1990, the unemployment rate in the Region was estimated to be 5.5 percent, while the unemployment rate for Waukesha County in that year was estimated to be 2.9 percent.

Employment trends in the Southeastern Wisconsin Region, in Waukesha County, and in the IH 94 West Corridor study area are shown in Table 9. At the regional level, employment over the 18-year period 1972 through 1990 increased by about 32 percent, from nearly 749,000 jobs in 1972 to about 990,300 jobs in 1990. It should be noted that the decline in the number of jobs between 1980 and 1985 reflects the effects of the severe economic recession experienced in the

Table 6

HOUSEHOLD INCOME IN THE SOUTHEASTERN WISCONSIN REGION AND WAUKESHA COUNTY: 1989

Income Range	Region		Waukesha County	
	Number	Percent	Number	Percent
$0-$4,999	24,879	3.7	1,520	1.4
$5,000-$9,999	63,191	9.3	4,172	3.9
$10,000-$14,999	55,612	8.2	4,766	4.5
$15,000-$24,999	113,686	16.8	11,936	11.3
$25,000-$34,999	109,345	16.2	14,297	13.5
$35,000-$49,999	140,584	20.8	25,093	23.7
$50,000-$74,999	114,418	16.9	27,564	26.0
$75,000-$99,999	31,826	4.7	9,491	8.9
$100,000-$149,999	14,399	2.1	4,455	4.2
$150,000 or More	8,653	1.3	2,757	2.6
Total	676,593	100.0	106,051	100.0

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

Table 7

ESTIMATED PER CAPITA INCOME IN THE SOUTHEASTERN WISCONSIN REGION AND WAUKESHA COUNTY: 1979 AND 1987

Area	1979	1987	Change	
			Amount	Percent
Southeastern Wisconsin Region				
Actual	$8,154	$12,734	$4,580	56.2
Constant 1979 Dollars	8,154	7,698	-456	-5.6
Waukesha County				
Actual	$9,205	$14,837	$5,632	61.2
Constant 1979 Dollars	9,205	8,969	-236	-2.6

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

Table 8

COMPARATIVE CIVILIAN LABOR FORCE IN THE SOUTHEASTERN WISCONSIN REGION AND WAUKESHA COUNTY: 1960-1990

Area	Year					Percent Change				
	1960[a]	1970[b]	1980[b]	1985[b,c]	1990[b]	1960-1970	1970-1980	1980-1985	1985-1990	1960-1990
Region										
Civilian										
Labor Force	636,897	736,078	876,154	874,700	934,153	15.6	19.0	-0.2	6.8	46.7
Employed	612,723	708,800	826,458	813,700	882,716	15.7	16.6	-1.5	8.5	44.1
Unemployed	24,174	27,278	49,696	61,000	51,437	12.8	82.2	22.7	-15.7	112.8
Waukesha County										
Civilian										
Labor Force	58,216	92,390	142,774	148,400	169,369	58.7	54.5	3.9	14.1	190.9
Employed	56,586	89,519	136,327	139,800	164,509	58.2	52.3	2.5	17.7	190.7
Unemployed	1,630	2,871	6,447	8,600	4,860	76.1	124.6	33.4	-43.5	198.2

[a] *Fourteen years of age and older.*

[b] *Sixteen years of age and older.*

[c] *Based upon 1985 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, WAUKESHA COUNTY, AND THE IH 94 WEST CORRIDOR: 1972, 1980, 1985, AND 1990

Area	Number of Jobs				Change							
					1972-1980		1980-1985		1985-1990		1972-1990	
	1972	1980	1985	1990	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Southeastern Wisconsin Region												
Agricultural	15,350	15,300	13,300	12,100	-50	-0.3	-2,000	-13.1	-1,200	-9.0	-3,250	-21.2
Industrial	300,120	331,090	288,200	310,500	30,970	10.3	-42,890	-13.0	22,300	7.7	10,380	3.5
Transportation, Communication, and Utility	34,810	39,600	39,000	40,900	4,790	13.8	-600	-1.5	1,900	4.9	6,090	17.5
Governmental and Institutional	93,520	120,660	129,200	139,500	27,140	29.0	8,540	7.1	10,300	8.0	45,980	49.2
Retail and Service	305,100	377,550	402,200	487,300	72,450	23.7	24,650	6.5	85,100	21.2	182,200	59.7
Total	748,900	884,200	871,900	990,300	135,300	18.1	-12,300	-1.4	118,400	13.6	241,400	32.2
Waukesha County												
Agricultural	1,910	3,440	3,210	2,900	1,530	80.1	-230	-6.7	-310	-9.7	990	51.8
Industrial	31,090	52,010	57,720	65,080	20,920	67.3	5,710	11.0	7,360	12.8	33,990	109.3
Transportation, Communication, and Utility	2,800	5,640	6,060	6,420	2,840	101.4	420	7.4	360	5.9	3,620	129.3
Governmental and Institutional	11,000	16,550	16,840	20,090	5,550	50.5	290	1.8	3,250	19.3	9,090	82.6
Retail and Service	24,700	49,960	57,470	77,810	25,260	102.3	7,510	15.0	20,340	35.4	53,110	215.0
Total	71,500	127,600	141,300	172,300	56,100	78.5	13,700	10.7	31,000	21.9	100,800	141.0
IH 94 West Corridor												
Agricultural	160	180	250	230	20	12.5	70	38.9	-20	-8.0	70	43.8
Industrial	700	2,930	4,290	2,930	2,230	318.6	1,360	46.4	-1,360	-31.7	2,230	318.6
Transportation, Communication, and Utility	70	130	130	200	60	85.7	0	0.0	70	53.8	130	185.7
Governmental and Institutional	990	2,580	2,850	2,670	1,590	160.6	270	10.5	-180	-6.3	1,680	169.7
Retail and Service	1,030	2,710	3,030	4,780	1,680	163.1	320	11.8	1,750	57.8	3,750	364.1
Total	2,950	8,530	10,550	10,810	5,580	189.2	2,020	23.7	260	2.5	7,860	266.4

Source: SEWRPC.

Region from 1979 through 1983. Waukesha County, however, exhibited steady growth in the number of available jobs from 1972 through 1990.

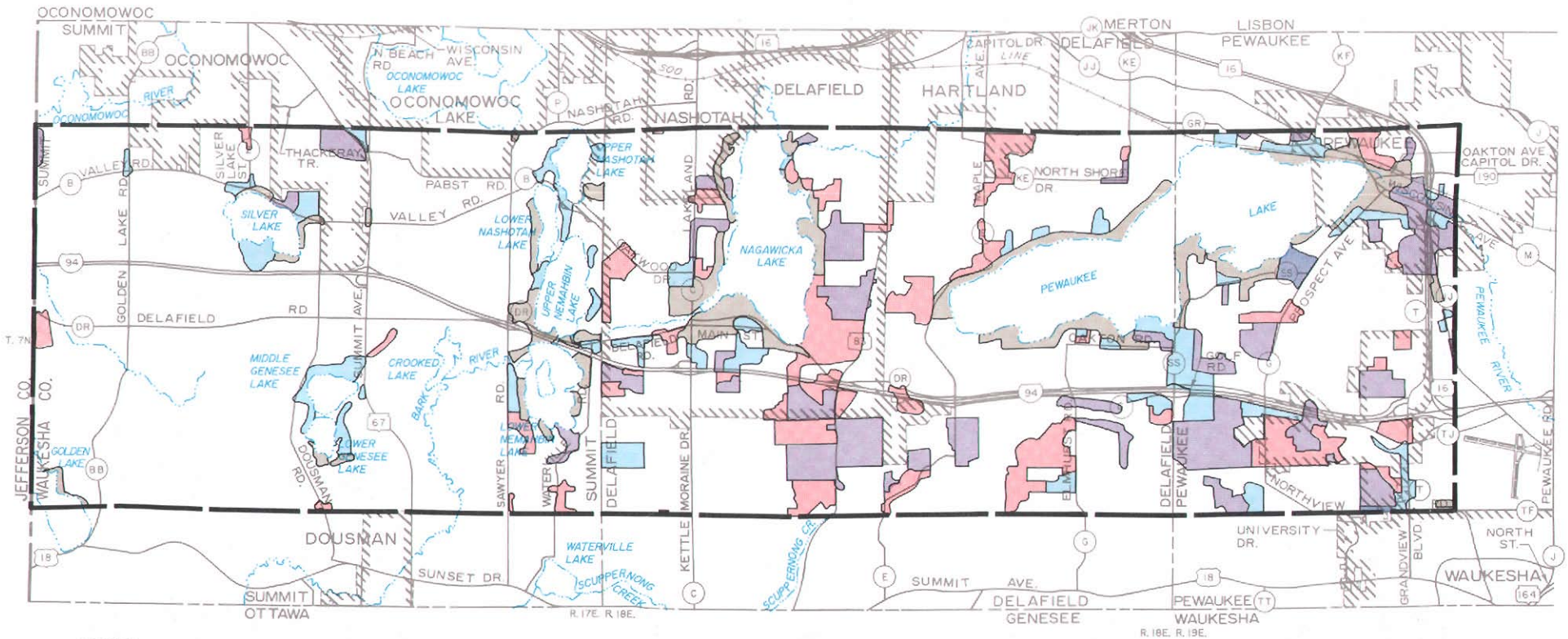
In the IH 94 West Corridor study area, the number of jobs increased from about 3,000 in 1972 to about 8,500 in 1980, and to about 10,800 in 1990, a significantly faster rate of job growth than experienced in either the Region or in Waukesha County. The pattern of continued employment growth in Waukesha County and particularly in the IH 94 West Corridor study area reflects a general trend of job decentralization in the Region.

HISTORIC DEVELOPMENT PATTERNS AND LAND USE

One of the central concepts underlying the IH 94 West Corridor study is that land use and transportation are closely interrelated. The type, intensity, and spatial distribution of land use determines the number and variety of trips generated. An understanding of past development trends and an accurate inventory of existing land use is required to determine the quantitative relationships existing between land use and travel for transportation system planning in the Corridor.

Map 3

HISTORIC URBAN GROWTH IN THE IH 94 WEST CORRIDOR



LEGEND

- 1950
- 1963
- 1975
- 1985

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Historic Development Patterns

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-1800s, it was not until the mid-1900s that any significant amount of urban development began to take place within the IH 94 West Corridor.[1]

As shown on Map 3, the only urban development in the Corridor by 1950 was that surrounding the major lakes in the Corridor, such as Upper and Lower Nashotah Lakes, Upper and Lower Nemahbin Lakes, Nagawicka Lake, Pewaukee Lake, and Silver Lake, and was primarily residential and recreational in character. By 1950, urban development in the Corridor totaled about 2.4 square miles, or about 4 percent of the total Corridor study area of about 60 square miles (see Table 10). By 1963, when the Regional Planning Commission conducted its first regional land use inventory, an additional 2.4 square miles of urban development had taken place within the Corridor. This additional development continued to cluster around the lakes in the Corridor. By 1975, an additional 3.6 square miles of urban development had taken place in the Corridor. The effect of the opening of IH 94 within the Corridor in 1963 and 1964[2] could now be seen in the form of new highway-oriented commercial and scattered residential development.

By 1985 an additional 3.2 square miles of urban development had occurred in the Corridor. Thus, by 1985, about 11.6 square miles, or about 19 percent, of the Corridor was in urban use.

Table 10

HISTORIC URBAN DEVELOPMENT IN THE IH 94 WEST CORRIDOR: 1950, 1963, 1975, AND 1985

IH 94 West Corridor	Urban Development Area (square miles)			
	1950	1963	1975	1985
Square Miles	2.4	4.8	8.4	11.6
Percent of Corridor . . .	4.1	8.1	13.9	19.4

Source: SEWRPC.

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 in 1985. By comparing the findings of these two land use inventories, trends in land use development and change in the Corridor can be accurately quantified. The findings of the 1963 and 1985 land use inventories are set forth for the study area in Table 11. The findings of the 1985 land use inventory are summarized in graphic form on Map 4.

For analytical purposes, urban land uses are defined as including residential, commercial, industrial, governmental and institutional, park and recreational, transportation and utility, 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 occupied about 6,000 acres in 1963, or about nine square miles and about 15 percent of the total area of the Corridor area. By 1985 urban land uses had increased by about 62 percent to about 9,600 acres, or about 15 square miles, and occupied over 25 percent of

[1] *For the purposes of this analysis, urban development is defined as those areas where houses or other buildings have been constructed in relatively compact groups or where a closely spaced network of minor streets has been constructed, 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 land uses, such as agriculture, woodlands, or wetlands, were present and the above conditions were generally absent.*

[2] *That portion of IH 94 between CTH SS and Sawyer Road was opened to traffic in June 1963; the portion from Sawyer Road west to the Waukesha County line was opened to traffic in August 1964.*

Table 11

EXISTING LAND USE IN THE IH 94 WEST CORRIDOR STUDY AREA: 1963 AND 1985

Land Use Category	1963			1985			Change 1963-1985	
	Acres	Percent of IH 94 West Corridor	Percent of Urban or Rural Subtotal	Acres	Percent of IH 94 West Corridor	Percent of Urban or Rural Subtotal	Acres	Percent
Urban								
Residential								
Single-Family	2,974	7.8	49.9	4,930	12.9	51.2	1,956	65.8
Two-Family	4	-- [a]	0.1	33	0.1	0.4	29	725.0
Multi-Family	2	-- [a]	-- [a]	90	0.2	0.9	88	4,400.0
Subtotal	2,980	7.8	50.0	5,053	13.2	52.5	2,073	69.6
Commercial	61	0.2	1.0	118	0.3	1.2	57	93.4
Industrial	29	0.1	0.5	120	0.3	1.2	91	313.8
Governmental and Institutional	236	0.6	4.0	420	1.1	4.4	184	78.0
Parks and Recreational	700	1.8	11.8	1,141	3.0	11.9	441	63.0
Transportation and Utilities								
Streets and Highways	1,664	4.3	27.9	2,246	5.9	23.3	582	35.0
Truck and Bus Terminals	2	-- [a]	-- [a]	8	-- [a]	0.1	6	300.0
Railroads	23	0.1	0.4	23	0.1	0.2	--	--
Airports	6	-- [a]	0.1	6	-- [a]	0.1	--	--
Communication and Utilities	117	0.3	2.0	166	0.4	1.7	49	41.9
Off-Street Parking	51	0.1	0.9	229	0.6	2.4	178	349.0
Subtotal	1,863	4.8	31.3	2,678	7.0	27.8	815	43.7
Extractive and Landfill	84	0.2	1.4	101	0.3	1.0	17	20.2
Urban Subtotal	5,953	15.5	100.0	9,631	25.2	100.0	3,678	61.8
Rural								
Prime Agricultural	14,092	36.8	43.5	9,580	24.9	33.4	-4,512	-32.0
Other Agricultural and Open Lands	5,417	14.1	16.7	6,326	16.5	22.0	909	16.8
Water	4,920	12.8	15.2	5,058	13.1	17.6	138	2.8
Wetlands	4,419	11.5	13.6	4,403	11.5	15.3	-16	-0.4
Woodlands	3,564	9.3	11.0	3,367	8.8	11.7	-197	-5.5
Rural Subtotal	32,412	84.5	100.0	28,734	74.8	100.0	-3,678	-11.3
Total	38,365	100.0	--	38,365	100.0	--	--	--

[a] *Less than 0.05 percent.*

Source: SEWRPC.

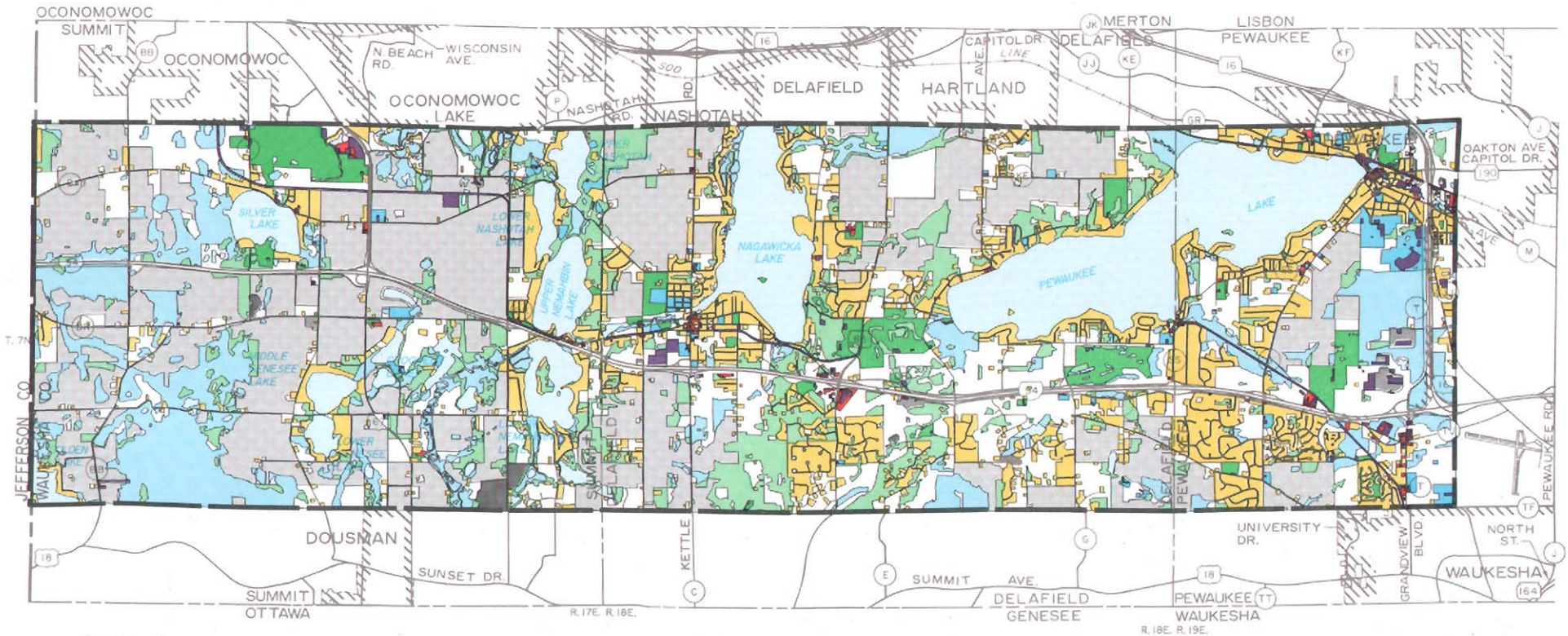
the study area. This increase in urban land use occurred in all the urban land use categories, although growth was greatest in the residential land use category.

Concomitantly, rural land uses in the Corridor, which totaled about 32,400 acres, or about 51 square miles, and represented nearly 85 percent of the total Corridor area in 1963, declined over the 22-year period to about 28,700 acres, or 45 square miles, in 1985, or about 75 percent of the Corridor. While there were some minor changes in the water, wetlands, and woodlands land use categories, nearly all the land converted from rural to urban use over the 22-year period was agricultural.

Rural land uses, then, continue to dominate the landscape in the IH 94 West Corridor study area, accounting for about three out of every four acres of land. Despite the intrusion of urban development in the Corridor, agricultural land uses still account for about 40 percent of all lands within the Corridor. Of urban land uses, which constitute about 25 percent of the Corridor study area, about 53 percent is devoted to residential land uses, about 28 percent to transportation and utility land uses, about 12 percent to park and recreational land uses, and about 4 percent to governmental and institutional land uses. The remaining land use categories, commercial, industrial, and extractive and landfill, comprise about 1 percent each.

Map 4

LAND USE IN THE IH 94 WEST CORRIDOR: 1985



LEGEND

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- EXTRACTIVE AND LANDFILL
- TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
- GOVERNMENTAL AND INSTITUTIONAL
- RECREATIONAL
- WETLANDS
- WOODLANDS
- WATER
- PRIME AGRICULTURAL LANDS
- AGRICULTURAL AND OTHER OPEN LANDS

GRAPHIC SCALE

Source: SEWRPC.

Residential Land Use: In 1963 there were about 3,000 acres, or about five square miles, of developed residential land in the Corridor, representing nearly 8 percent of its area. By 1985, the amount of land developed for residential purposes had increased to about 5,100 acres, or nearly eight square miles, representing about 13 percent of the total area. As shown in Table 11 and on Map 4, residential land use is distributed throughout the study Corridor. While much of the residential development is concentrated in the cities and villages of the Corridor, significant residential development can be found in the civil towns adjacent to lakes and in scattered subdivisions throughout the Corridor.

The residential development in the cities and villages of the Corridor, as well as adjacent to Pewaukee Lake, are served with public sanitary sewers. There are, however, scattered subdivisions and bands of residential development surrounding other lakes in the Corridor which currently rely on onsite sewage disposal systems, which may have an adverse effect on water quality. The regional water quality management plan has recommended that most of these areas be provided with public sanitary sewer service in the future.

Commercial Land Use: In 1963 there were only 61 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 increased to a total of 118 acres. In 1963 land developed for commercial purposes was largely concentrated in the City of Delafield and in the Village of Pewaukee. Between 1963 and 1985 the commercial development pattern showed the impacts of the construction of the IH 94 West Freeway, with the most pronounced increases in commercial development occurring near freeway interchanges, particularly the STH 83 interchange and the CTH T interchange.

Industrial Land Use: In 1963 there were 29 acres of land in the study area developed for industrial purposes. By 1985 there were 120 acres devoted to industrial land use, a fourfold 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 concentrated at the intersection of IH 94 and CTH T, associated with the development of the General Electric Medical Systems site, and in the Village of Pewaukee industrial area south of West Capitol Drive on both sides of STH 16.

Governmental and Institutional Land Uses: In 1963 there were about 240 acres of land in governmental and institutional land uses in the study Corridor. By 1985, that amount had almost doubled to about 420 acres. This increase in land use was distributed throughout the study Corridor, with the increases concentrated particularly in the Village of Pewaukee, where expansion of the Waukesha County Technical College site occurred.

Park and Recreational Land Uses: In 1963 there were about 700 acres of land in the study Corridor devoted to public and private park and recreational land uses. By 1985 there were about 1,100 acres devoted to such uses, representing an increase of about 63 percent. The major developed park and recreational land uses in the Corridor include Naga-Waukee Park, the Olympia Ski Resort, Lakeside Golf Course, Paganica Golf Course, Western Lakes Golf Course, and Willow Run Golf Course.

Transportation, Communication, and Utility Land Uses: In 1963 there were nearly 1,900 acres of land devoted to transportation, communication, and utility uses in the Corridor, representing about three square miles, or about 5 percent of the total study area. By 1985, there were about 2,700 acres devoted to such uses, representing about four 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 between 1963 and 1985 resulted from the additional need throughout the Corridor for streets and highway development to serve residential development and for off-street parking associated with new industrial and commercial land uses.

Extractive and Landfill Land Uses: In 1963 there were about 84 acres of land devoted to either extractive or landfill uses in the study Corridor. By 1985, this figure had increased to about 101 acres, an increase of about 20 percent.

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: the farm unit must be at least 35 acres in area, 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 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 nearly 14,100 acres, or about 22 square miles, representing nearly 37 percent of the study area. By 1985 the amount of prime agricultural land had decreased significantly, to about 9,600 acres, representing about 15 square miles, or about 25 percent of the Corridor study area. Much of the decrease in prime agricultural land over the period was caused by scattered development and reduction in parcel size, which resulted in land which, though previously classified prime agricultural lands, no longer met the aforenoted criteria. There still remain, however, large areas of the Corridor that are well suited for farming and that have not yet experienced significant intrusion of urban uses.

In 1963 wetlands totaling about 4,400 acres, or about seven square miles and nearly 12 percent of the total study area were found throughout the Corridor. Between 1963 and 1985, the amount of wetlands remained relatively constant, decreasing by less than 20 acres, or 0.4 percent.

Woodlands in the study area in 1963 totaled nearly 3,600 acres, or about six square miles and about 9 percent of the study area. By 1985 woodlands had decreased by nearly 6 percent to about 3,400 acres, or about five square miles, and were mainly located in the City and Town of Delafield.

Finally, in 1963, nonprime agricultural and other open lands totaled about 5,400 acres, or about nine square miles, representing about 14 percent of the total study area. By 1985, such lands totaled about 6,300 acres, or about 10 square miles. This increase resulted from the conversion of agricultural lands, previously classified as prime, to a general agricultural classification throughout the Corridor, as already noted.

Recent Development Trends

The preceding section has presented information on land use changes in the IH 94 West Corridor during the period from 1963 to 1985. Some additional significant development has occurred within the Corridor since 1985. Residential subdivisions which have been developed, or are under development, within the Corridor include the Dover Bay, High Ridge, and Wildwood Hills Settlement subdivisions in the Town of Delafield; Valley Road subdivision in the City of Delafield; expansion of the Hartridge subdivision in the Village of Hartland; and the Meadowbrook Estates and Rocky Point subdivision in the Town of Pewaukee.

Major new commercial developments in the study area include the motel, fast-food restaurants, and a Wal-Mart facility at the intersection of IH 94 and STH 83 in the City of Delafield, the construction of a new post office and a fast-food restaurant at the intersection of STH 16 and Capitol Drive in the Village of Pewaukee, the expansion of the Silvernail shopping center in the City of Waukesha, and the expansion of the Hartland Industrial Park in the Village of Hartland.

These new residential, commercial, and industrial land uses have added about 715 acres of urban land to the 9,630 acres in place within the Corridor in 1985.

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 West 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 West 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 the current planning effort, the principal elements of the natural resource base were defined as soils; surface waters, wetlands, and associated floodlands; woodlands; wildlife habitat; and topographic features and scenic vistas. In addition, while not a natural resource base element, historic sites were considered as being culturally significant and worthy of consideration in the IH 94 West planning effort. The following sections summarize the inventory findings with respect to these resources.

Soils

In the early 1960s, 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 with respect to farming and agriculture and certain types of urban development in the IH 94 West Corridor planning effort are soil interpretations. The suitability of soils in the IH 94 West Corridor for farming and agriculture is summarized on Map 5. As can be seen on this map, a substantial amount of the land within the Corridor is well suited to farming and agriculture. These soil properties account for the fact, as already noted, that nearly 15 square miles, or about 25 percent of the study area, remains classified as prime agricultural land.

Interpretations of soil surveys for specific types of urban land use are of great importance in southeastern Wisconsin. Among the most important land uses concerned are residential with public sanitary sewer service and residential without public sanitary sewer service. The most important soil properties relating to these land uses are depth to bedrock, depth to water table, permeability, presence of coarse textures and/or gravels and stones, flooding hazard, and slope.

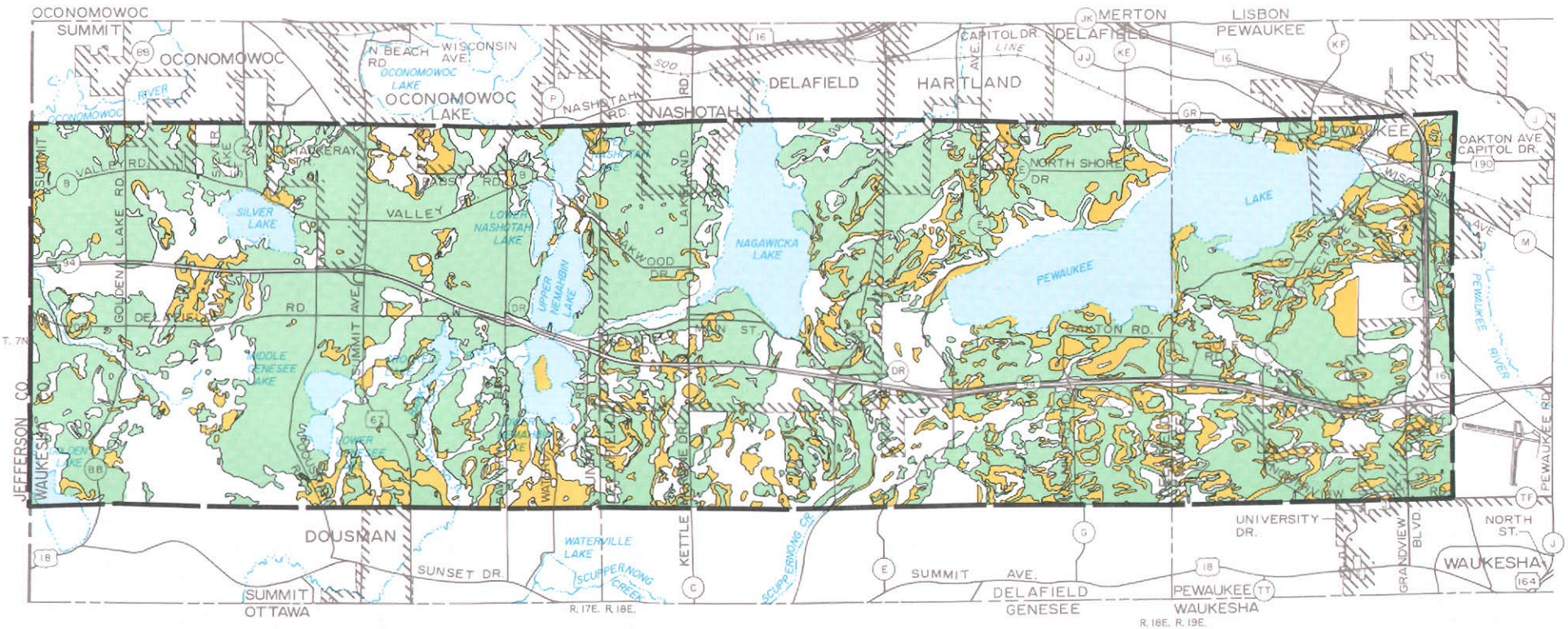
Detailed soil surveys show that portions of the IH 94 West Corridor have severe limitations for one or more of these types of urban development. Map 6 shows that approximately 15 square miles, or about 29 percent of the land area of the Corridor, are covered by soils which have severe limitations for residential development with public sanitary sewer service, or, stated differently, are poorly suited for residential development of any kind.

The technology and practices for onsite disposal of domestic sewage are continuing to change rapidly. The ongoing changes in technology and regulations require new interpretations of soil mapping units for residential development which rely on this technology for onsite disposal of sewage. At the time the detailed soil survey of the Region was made, disposal of domestic sewage was based primarily on one type of technology, the conventional septic tank and filter-field system, involving trenches or beds which rely on gravity distribution of treated sewage effluent below the natural surface of the soil. Interpretations of soil suitability for onsite sewage disposal as previously set forth in SEWRPC Planning Report No. 8, Soils of Southeastern Wisconsin, 1966, and in the detailed soil survey reports of the U. S. Soil Conservation Service are based on that conventional technology. In the past 15 years alternative onsite sewage disposal systems, such as mound soil absorption systems, have been designed, field tested, and, in some cases, approved for use under more limiting soil conditions than those for which conventional systems would be acceptable.

Administrative rules which govern the conventional and the currently approved alternative private sewage disposal systems are given in Chapter ILHR 83 of the Wisconsin Administrative Code. Soil and site specifications in Chapter ILHR 83 provide a basis for interpreting map units of the detailed soil surveys of southeastern Wisconsin for onsite soil absorption sewage disposal systems. Maps 7 and 8 show the suitability of soils in the Region for onsite soil absorption sewage disposal systems based upon the criteria in Chapter ILHR 83. Specifically, Map 7 depicts soil suitability for conventional onsite sewage disposal systems based upon the criteria set forth in Section ILHR 83.10 and Map 8 depicts soil suitability for alternative onsite sewage disposal system based upon

Map 5

SUITABILITY OF SOILS FOR AGRICULTURE IN THE IH 94 WEST CORRIDOR



LEGEND

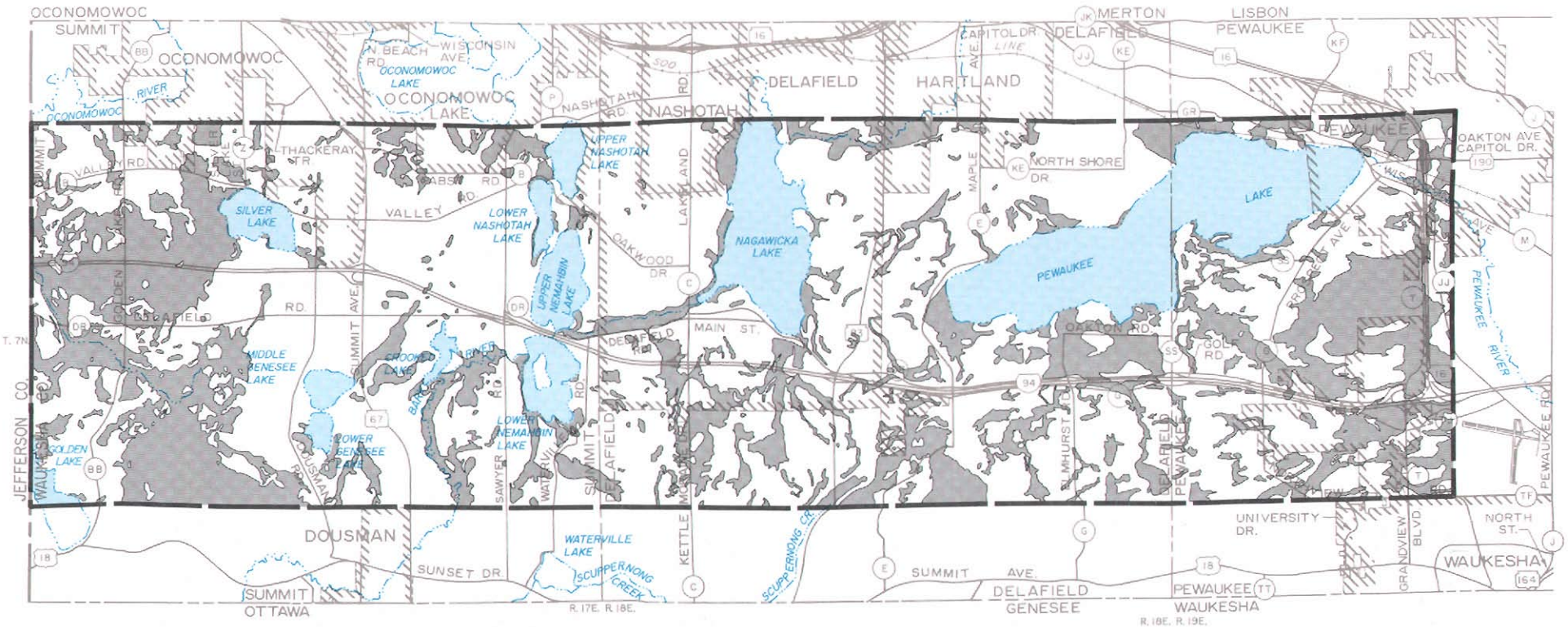
- SOILS VERY WELL SUITED FOR AGRICULTURE (NATIONAL PRIME SOILS)
- SOILS WELL SUITED FOR AGRICULTURE (STATE SIGNIFICANT SOILS)
- OTHER SOILS
- WATER

GRAPHIC SCALE

Source: SEWRPC.

Map 6

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



LEGEND

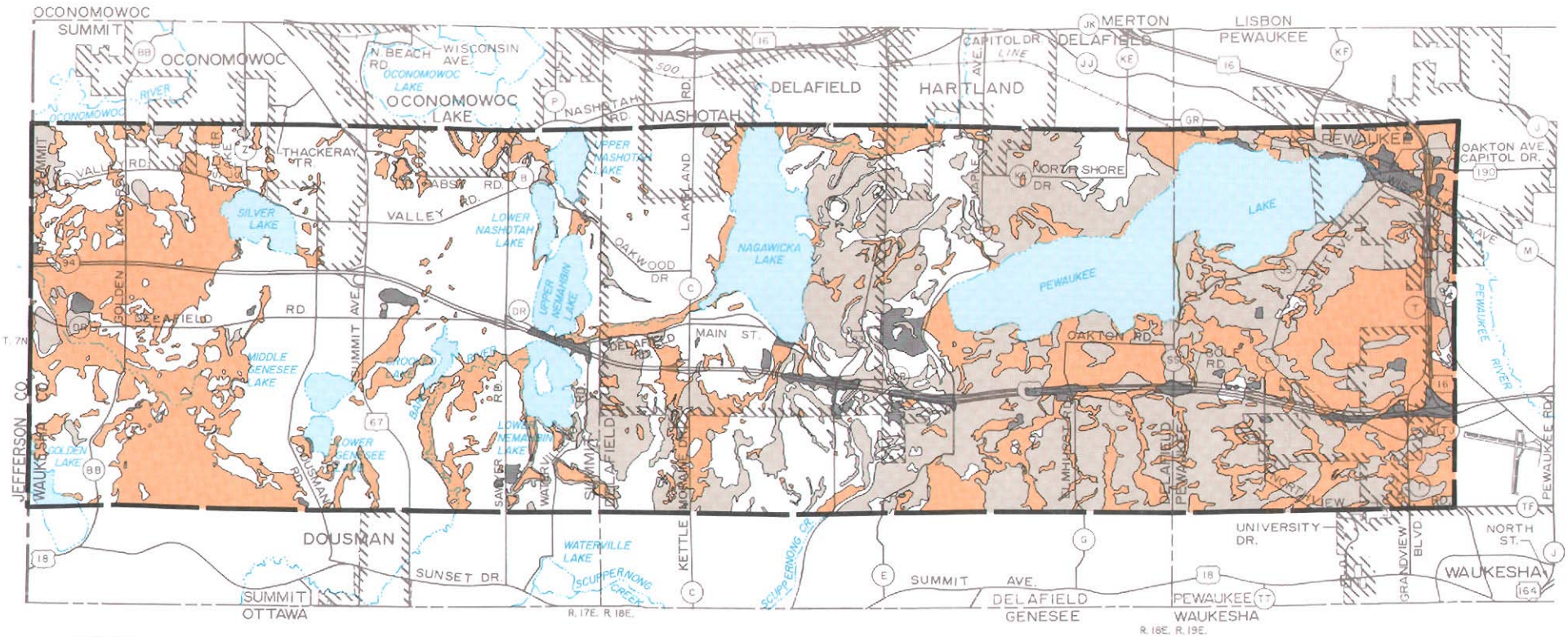
AREAS COVERED BY SOILS HAVING SEVERE LIMITATIONS FOR RESIDENTIAL DEVELOPMENT WITH PUBLIC SANITARY SEWER SERVICE

WATER

Source: SEWRPC.

Map 7

SUITABILITY OF SOILS FOR CONVENTIONAL ONSITE SOIL ABSORPTION SEWAGE DISPOSAL SYSTEMS IN THE IH 94 WEST CORRIDOR



LEGEND

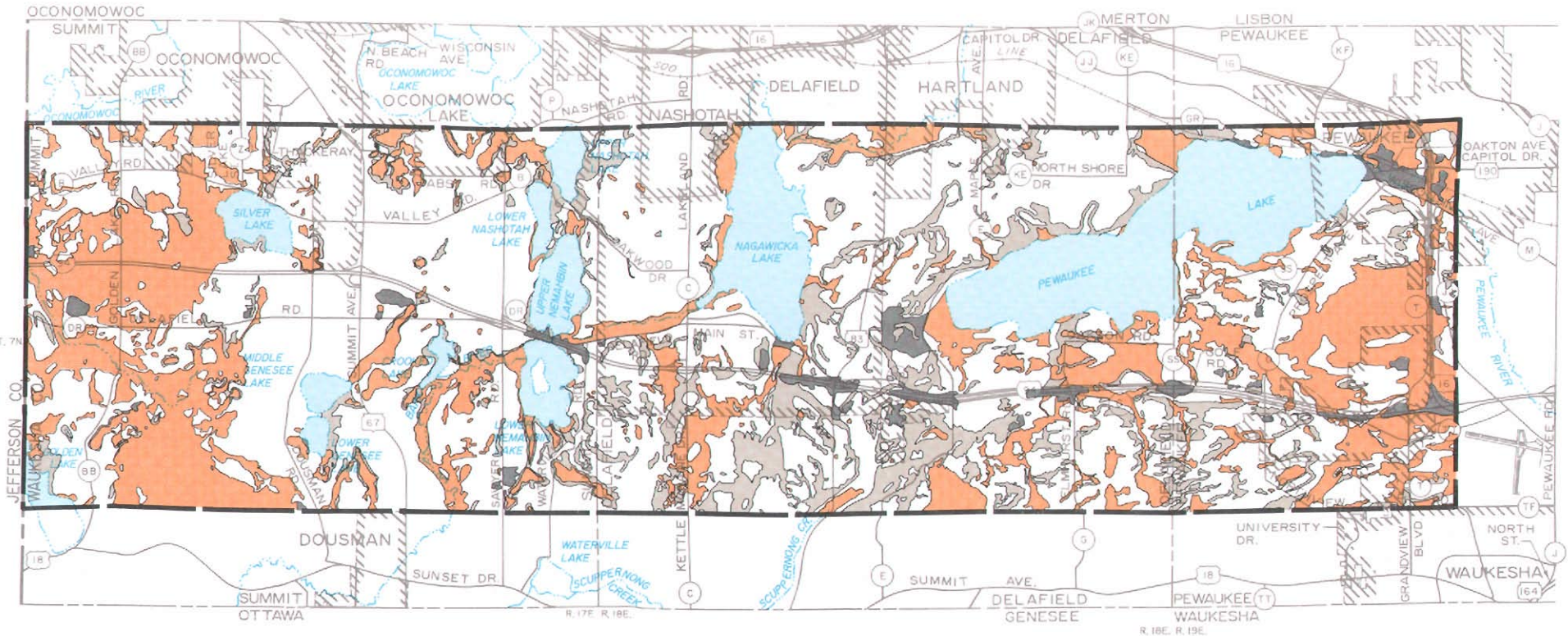
- UNSUITABLE: AREAS COVERED BY SOILS HAVING A HIGH PROBABILITY OF NOT MEETING THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING CONVENTIONAL ONSITE SEWAGE DISPOSAL SYSTEMS
- UNDETERMINED: AREAS COVERED BY SOILS HAVING A RANGE OF CHARACTERISTICS AND/OR SLOPES WHICH SPAN THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING CONVENTIONAL ONSITE SEWAGE DISPOSAL SYSTEMS SO THAT NO CLASSIFICATION CAN BE ASSIGNED
- SUITABLE: AREAS COVERED BY SOILS HAVING A HIGH PROBABILITY OF MEETING THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING CONVENTIONAL ONSITE SEWAGE DISPOSAL SYSTEMS
- OTHER: AREAS CONSISTING FOR THE MOST PART OF DISTURBED LAND FOR WHICH NO INTERPRETIVE DATA ARE AVAILABLE
- WATER

NOTE: ONSITE INVESTIGATIONS ARE ESSENTIAL TO THE DETERMINATION OF WHETHER ANY SPECIFIC TRACT OF LAND IS SUITABLE FOR DEVELOPMENT SERVED BY A CONVENTIONAL ONSITE SEWAGE DISPOSAL SYSTEM.

Source: SEWRPC.

Map 8

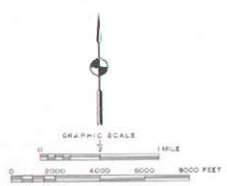
SUITABILITY OF SOILS FOR ALTERNATIVE ONSITE SOIL ABSORPTION SEWAGE DISPOSAL SYSTEMS IN THE IH 94 WEST CORRIDOR



LEGEND

- UNSUITABLE: AREAS COVERED BY SOILS HAVING A HIGH PROBABILITY OF NOT MEETING THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING MOUND SEWAGE DISPOSAL SYSTEMS
- UNDETERMINED: AREAS COVERED BY SOILS HAVING A RANGE OF CHARACTERISTICS AND/OR SLOPES WHICH SPAN THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING MOUND SEWAGE DISPOSAL SYSTEMS SO THAT NO CLASSIFICATION CAN BE ASSIGNED
- SUITABLE: AREAS COVERED BY SOILS HAVING A HIGH PROBABILITY OF MEETING THE CRITERIA OF CHAPTER ILHR 83 OF THE WISCONSIN ADMINISTRATIVE CODE GOVERNING MOUND SEWAGE DISPOSAL SYSTEMS
- OTHER: AREAS CONSISTING FOR THE MOST PART OF DISTURBED LAND FOR WHICH NO INTERPRETIVE DATA ARE AVAILABLE
- WATER

NOTE: ONSITE INVESTIGATIONS ARE ESSENTIAL TO THE DETERMINATION OF WHETHER ANY SPECIFIC TRACT OF LAND IS SUITABLE FOR DEVELOPMENT SERVED BY A MOUND SEWAGE DISPOSAL SYSTEM



Source: SEWRPC.

criteria set forth in Section ILHR 83.23. On these maps, areas shown as "suitable" include areas covered by soils having a high probability of meeting the code requirements for the system being considered. Areas shown as "unsuitable" include areas covered by soils having a high probability of not meeting the code requirements for the system being considered. Areas shown as "undetermined" include soils having a range of characteristics including slopes which spans the criteria of the applicable administrative code, requiring onsite investigations to distinguish suitable from unsuitable areas. Areas shown as "other" consist largely of disturbed areas for which no interpretive data are available. It should be recognized that Maps 7 and 8 are intended to illustrate the overall pattern of soil suitability for onsite sewage disposal systems. Detailed site investigations based on the requirements of Chapter ILHR 83 are essential to the determination of whether or not the soils on any specific tract of land are suitable for development served by onsite sewage disposal systems.

Map 7 indicates that much of the IH 94 West Corridor is covered by soils that are not well suited for conventional onsite soil absorption sewage disposal systems based upon the standards of the Wisconsin Administrative Code. Such areas encompass 29 square miles, or about 55 percent of the total land area of the Corridor, and include areas shown on Map 7 as unsuitable or of undetermined, or questionable, suitability for conventional systems. Such soils occur throughout the Corridor, often being interspersed with soils which meet Wisconsin Administrative Code requirements for conventional onsite sewage disposal systems. Conversely, areas shown on Map 7 as covered by soils that are suitable for conventional onsite sewage disposal systems encompass 23 square miles, or about 43 percent of the land area of the Corridor. One square mile, or 2 percent of the land area of the Corridor, consists of disturbed land for which no soils survey data are available.

The general pattern of soil suitability for alternative onsite sewage disposal systems, such as mound soil absorption systems, is shown on Map 8. Areas that are not well suited for alternative systems, including areas shown on Map 8 as unsuitable or of undetermined suitability for such systems, encompass 19 square miles, or 37 percent, of the land area of the Corridor. Soils shown on Map 8 as suitable for alternative onsite sewage disposal systems covered 32 square miles, or 61 percent of the land area of the Corridor, significantly more than is identified on Map 7 as suitable for conventional onsite systems. It should be noted that, while more area is suitable for alternative systems than for conventional systems, certain areas are suitable for conventional systems but unsuitable for alternative systems under Chapter ILHR 83, a result of more restrictive slope requirements established for mound systems under Chapter ILHR 83 of the Wisconsin Administrative Code.

Soil and site criteria for alternative onsite sewage disposal systems have been under systematic study and development since Chapter ILHR 83 was adopted in 1985. Criteria developed under the research activities of the Small Scale Waste Management Project of the University of Wisconsin-Madison and University of Wisconsin-Extension are currently under consideration by the Wisconsin Department of Industry, Labor and Human Relations for possible inclusion in a revision of Section ILHR 83.23 of the Wisconsin Administrative Code. Adoption of the proposed criteria could increase the area considered suitable for alternative systems owing, in large measure, to the inclusion of a wider range of permissible land slopes.

Surface Waters, Wetlands, and Floodlands

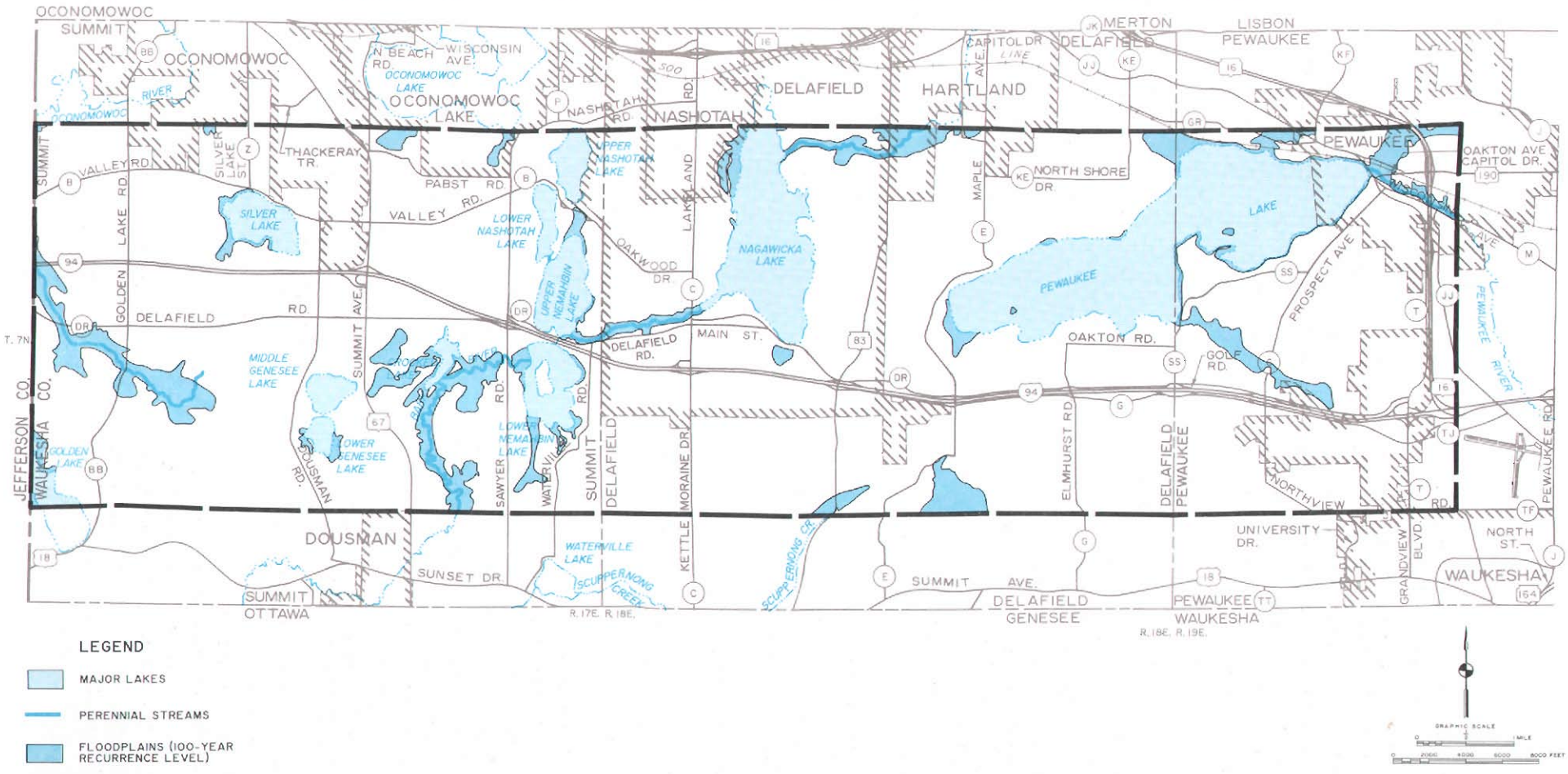
As indicated on Map 9, the IH 94 West Corridor study area is comprised of parts of three watersheds. The Fox River watershed occupies the east end of the study area and contains two major stream tributaries, the Pewaukee River and Pebble Creek, which drain to the main stem of the Fox River, lying just east of the study area. In total, the Fox River watershed comprises about 22 square miles, or 37 percent of the area of the Corridor.

Lying west of the Fox River watershed is the Bark River watershed. In addition to the main stem of the Bark River, the study area includes the Scuppernong Creek tributary. In total, the Bark River watershed occupies about 23 square miles, or 39 percent of the area of the Corridor.

The Oconomowoc River watershed occupies an area of about 15 square miles, or about 24 percent of the Corridor's area. Lying at the western edge of the Corridor, the Oconomowoc River watershed includes Battle Creek, as well as the main stem of the Oconomowoc River.

Map 9

MAJOR LAKES, PERENNIAL STREAMS, AND FLOODPLAINS IN THE IH 94 WEST CORRIDOR



Source: SEWRPC.

The perennial stream system in the study area and the floodplains associated with that system are also shown on Map 9. For planning and regulatory purposes, floodplains are 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 West Corridor cover approximately 10 square miles, or about 17 percent of the area of the Corridor.

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, bullrushes, 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 in the study area identified under the Wisconsin Wetlands Mapping Program encompass a total of about seven square miles, representing about 12 percent of the Corridor's area. In recent years, wetland preservation regulations have been enacted at the federal, state, and local levels of government with important ramifications for future urban development in the IH 94 West Corridor.

Woodlands

As reported earlier in this chapter, woodlands occupy a total area of about five square miles, or 9 percent, of the Corridor's total area. For the most part, the remaining woodland resources in the study area are concentrated in the south-central portion of the study area. 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 rabbits and squirrels; some predators, such as foxes and raccoons; game birds, including waterfowl; and panfish and game fish. Deer are also found, but the herds are small compared to those in 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 inventory classified these wildlife habitats on the basis of diversity, territorial requirements, vegetation, location, and disturbance into three classes: Class I, defined as wildlife habitat areas containing a good diversity of wildlife of such size to meet all 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.

Taken together, the significant wildlife habitat remaining in the study area encompasses about 16 square miles, or about 27 percent of the total area. Of this total, about seven square miles, or about 45 percent, fall into the Class I category; an additional six square miles, or 40 percent, fall into the Class II category; and the remaining three square miles, or 15 percent, fall into the Class III category. The most significant wildlife habitat remaining in the study area is concentrated in riverine areas, wetlands, and woodlands.

Topographic Features and Scenic Vistas

The dominant topographic feature in the IH 94 West Corridor is the Kettle Moraine, an inter-

lobate glacial deposit, or moraine, which includes Lapham Peak, one of the highest points in southeastern Wisconsin. The Kettle Moraine, which is oriented in a general northeast-southwest direction across western Washington, Waukesha, and Walworth Counties, is a complex system of kames, or crudely stratified conical hills; kettle holes marking the site of glacial ice blocks that became separated from the ice mass and melted to form depressions; and eskers, or long, narrow ridges of drift deposited in abandoned drainageways. It forms some of the most attractive and interesting landscapes within the Region, and is the area of the highest elevation and the area of greatest local elevation difference, or relief, within southeastern Wisconsin. The Kettle Moraine of Wisconsin, much of which lies within the Southeastern Wisconsin Region, including the IH 94 West Corridor, is considered one of the finest examples of glacial interlobate moraine in the world. Because of its still predominantly rural character and its exceptional natural beauty, the Kettle Moraine and the surrounding area is and may be expected to continue to be subjected to increasing pressure for urban development.

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 pasture lands, 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 West Corridor study area, it was determined that three basic criteria should be met: a variety of features to be viewed should exist harmoniously in a land- or cityscape; 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 the viewpoint should permit an unobstructed observation area from which the variety of natural features can be seen.

An inventory of scenic vistas meeting these criteria was conducted for the IH 94 West Corridor study area. 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, with a ridge of at least 200 feet in length and a view of at least three natural 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 West Corridor study area, 43 areas were identified as having scenic vistas using this methodology. The 43 scenic viewpoints, together with the topography of the Corridor, are displayed on Map 10.

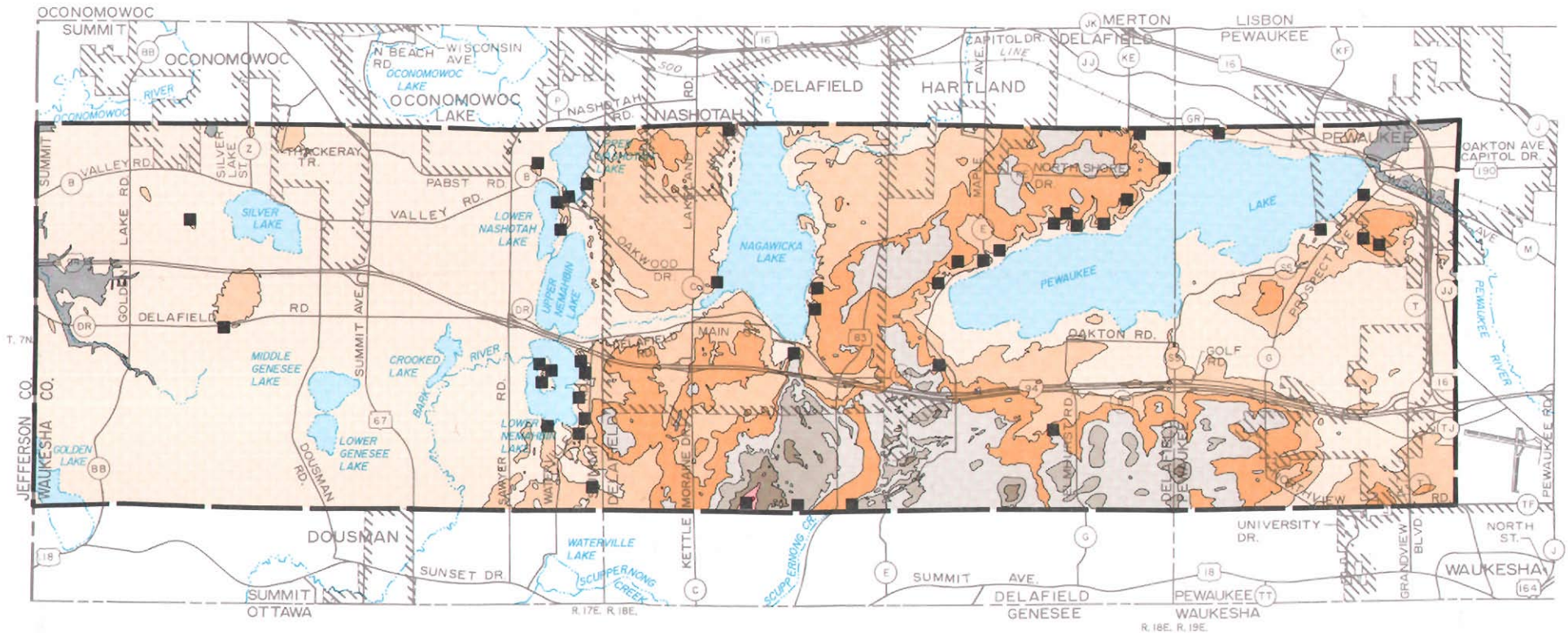
Historic Sites

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.

As shown on Map 11, seven sites in the IH 94 West Corridor study area are of such historical significance that they have been listed on the

Map 10

TOPOGRAPHY AND SCENIC VISTAS IN THE IH 94 WEST CORRIDOR



LEGEND

- SCENIC VISTA SITES

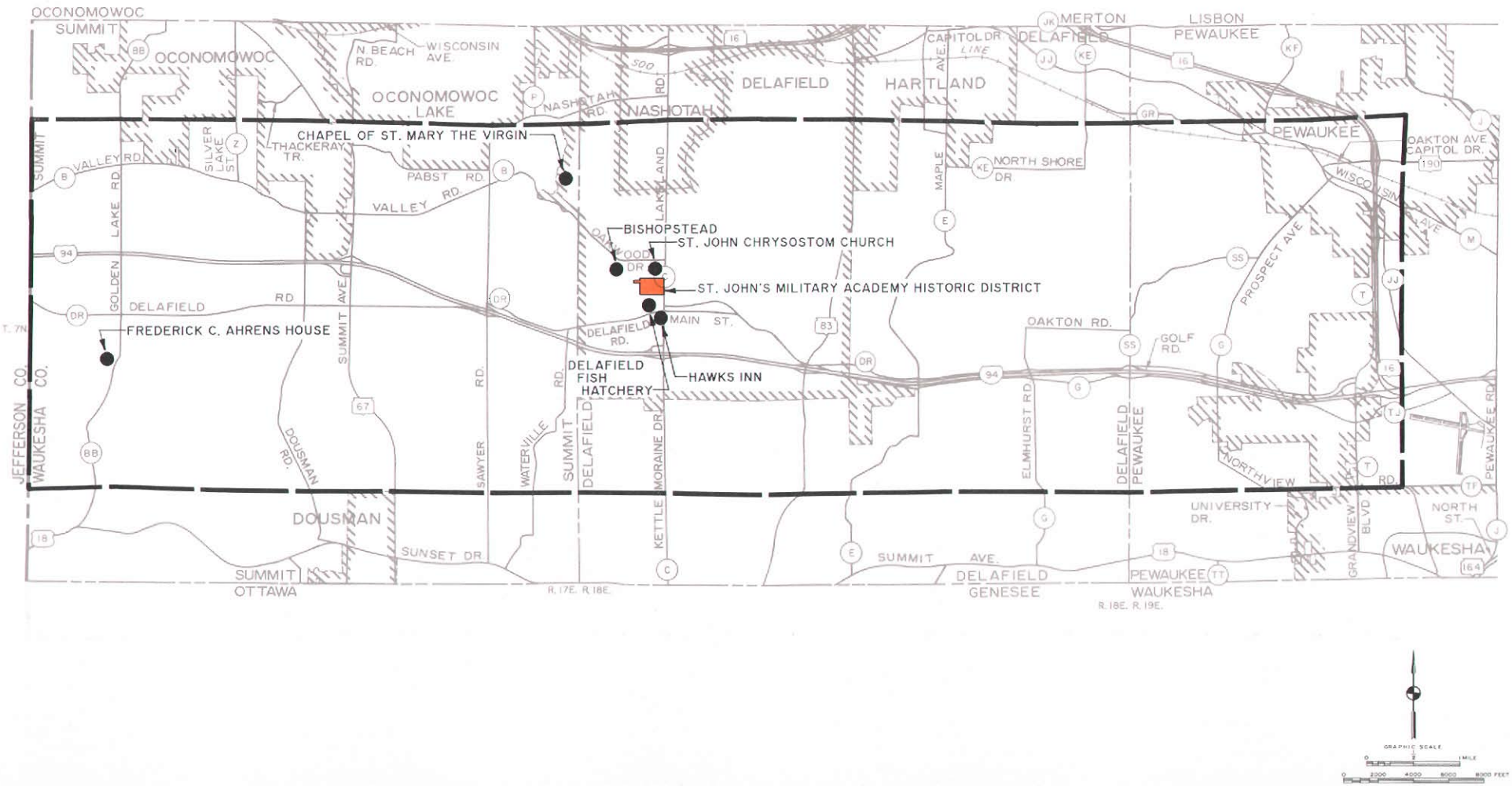
ELEVATION IN FEET ABOVE NATIONAL GEODETIC VERTICAL DATUM

- 800-850
- 850-900
- 900-950
- 950-1,000
- 1,000-1,050
- 1,050-1,100
- 1,100-1,150
- 1,150-1,200
- 1,200-1,250
- WATER

Source: SEWRPC.

Map 11

SITES LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES IN THE IH 94 WEST CORRIDOR



Source: SEWRPC.

National Register of Historic Places. Five of these sites are located in the City of Delafield: Hawks Inn, St. John Chrysostom Church, St. John's Military Academy Historic District, Delafield Fish Hatchery, and Bishopstead. The remaining two sites, the Chapel of St. Mary the Virgin and the Frederick E. Sherms House, are located in the Town of Summit.

Environmental Corridors

Any comprehensive planning effort should give consideration to the regulation of environmentally sensitive areas, including concentrations of recreational, aesthetic, ecological, and cultural resources, and which, therefore, should be preserved and protected in essentially natural open uses. Such areas normally include one or more of the following seven elements of the natural resource base which are essential to the maintenance of both the ecological balance and natural beauty of southeastern Wisconsin: 1) lakes, rivers, and streams and their associated shorelands and floodlands, 2) wetlands, 3) woodlands, 4) prairies, 5) wildlife habitat areas, 6) wet, poorly drained, and organic soils, and 7) rugged terrain and high-relief topography.

While the foregoing elements make up the integral parts of the natural resource base, there are five additional elements which, although not part of the natural resource base per se, are closely related to, or centered upon, that base and are a determining factor in identifying and delineating areas with recreational, aesthetic, ecological, and cultural value. These five additional elements are: 1) existing park and open space sites, 2) potential park and open space sites, 3) historic sites, 4) scenic areas and vistas, and 5) natural and scientific area sites.

The delineation of these 12 natural resource and natural resource-related elements on a map results in an essentially linear pattern of relatively narrow, elongated areas which have been termed "environmental corridors" by the Regional Planning Commission.[3] Primary environmental corridors include a wide variety of the above referenced important natural resource and resource-related elements and are at least 400 acres in size, two miles in length, and 200 feet in width. Secondary environmental corridors generally connect with the primary environmental corridors and are at least 100 acres in size and one mile in length. In addition, isolated natural areas are at least five acres in size. Such areas generally consist of those smaller concentrations of natural resource base elements that are separated physically from the environmental corridors by intensive urban or agricultural land uses.

In any consideration of environmental corridors, it is important to note that the preservation of such corridors can assist in flood flow attenuation, water pollution abatement, noise pollution abatement, glare reduction, and favorable climate modification. In addition, because of the many interacting relationships existing between living organisms and their environment, the destruction or deterioration of one important element of the total environment may lead to a chain reaction of deterioration and destruction in other elements. The drainage of wetlands, for example, may destroy fish spawning areas, wildlife habitat, groundwater recharge areas, and natural filtration and floodwater storage areas of interconnecting stream systems. The resulting deterioration of surface water quality may, in turn, lead to a deterioration of the quality of the groundwater which serves as a source of domestic, municipal, and industrial water supply, and upon which low flows of rivers and streams may depend. In addition, the intrusion of intensive urban land uses into such areas may result in the creation of serious and costly problems, such as failing foundations for pavements and structures, wet basements, excessive operation of sump pumps, excessive clear water infiltration into sanitary sewerage systems, and poor drainage. Similarly, destruction of ground cover may result in soil erosion, stream siltation, more rapid runoff, and increased flooding, as well as the destruction of wildlife habitat. Although the effects of any one of these environmental changes may not in and of itself be overwhelming, the combined effects must eventually lead to a serious deterioration of the underlying and sustaining natural resource base and of the overall quality of the environment for life. The need to maintain the integrity of the remaining environmental corridors and isolated natural areas in the IH 94 West Corridor should, thus, be apparent.

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[3] *A detailed description of the process of refining the delineation of environmental corridors in southeastern Wisconsin is presented in SEWRPC Technical Record, Vol. 4, No. 2, pp. 1-21.*

The location and extent of the environmental corridors in the IH 94 West Corridor in 1985 are shown on Map 12. As already noted, there are a wide variety of resource features within the environmental corridors. A number of individual resource features often occupy the same location within the environmental corridors. For example, a single area may be classified as wetlands, floodlands, shorelands, wildlife habitat, and poor soils. As another example, a single area may be classified as woodlands, an area of steep slope, a scenic viewpoint, and wildlife habitat. However, certain resource features within the environmental corridors are mutually exclusive. Moreover, these features characterize the types of resources generally found in individual environmental corridor segments. In order to characterize the types of natural resource base and related elements within the primary and secondary environmental corridors and isolated natural areas, the following four resource categories have been identified: 1) surface water, 2) wetlands, 3) woodlands, and 4) other resource features, which generally include wildlife habitat areas and either areas of steep slopes or areas of wet, poorly drained or organic soil.

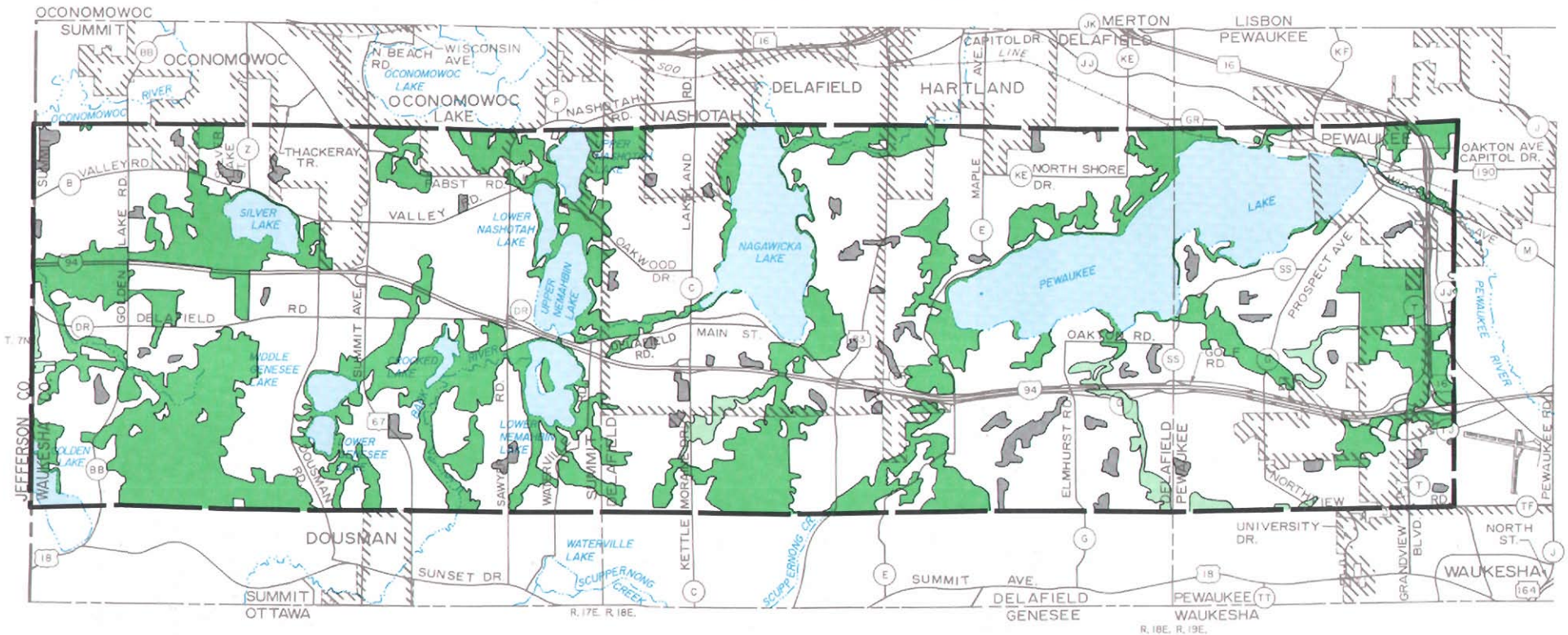
Primary Environmental Corridors: As shown on Map 12, the primary environmental corridors in the study area are located along the main stems of the principal rivers and streams in the study area, the Bark River, Oconomowoc River, Pebble Creek, Pewaukee River, and Scuppernong Creek. They include many of the major lakes in the County, such as Golden, Pewaukee, Nagawicka, and Silver Lake and the Genesee, Nashotah and Nemahbin Lakes; encompass large areas of wetlands in the western portion of the study area; and encompass significant concentrations of woodlands in the Kettle Moraine area in the south-central portion of the study area. These primary environmental corridors contain almost all of the best remaining woodlands, wetlands, and wildlife habitat areas in the study area; are, in effect, a composite of the best remaining elements of the natural resource base; and have immeasurable environmental and recreational value. The protection of the primary environmental corridors from additional intrusion by incompatible land uses, and thereby from degradation and destruction, should be one of the principal objectives of any land use planning effort. The preservation of these corridors in an essentially open, natural state, including park and open space uses, will serve to maintain a high level of environmental quality in the study area, protect the remaining natural beauty, and provide valuable recreation opportunities. It should be noted that very low-density country estate residential development, five acres per housing unit, is a compatible use within the corridor and serves to maintain the corridor in a natural open state. As indicated in Table 12, in 1985 primary environmental corridors encompassed 19.3 square miles, or about 32 percent of the total area of the IH 94 West Corridor.

As indicated in Table 12, surface water, including Golden Lake, Pewaukee Lake, Nagawicka Lake, and Silver Lake and the Genesee, Nashotah, and Nemahbin Lakes group, comprised 7.8 square miles, or about 40 percent of the total area of the primary environmental corridors in the study area. As further indicated in Table 12, wetlands comprised 6.5 square miles, or about 34 percent; woodlands comprised 4.0 square miles, or about 21 percent; and other natural resources comprised 1.0 square mile, or about 5 percent of the total area of primary environmental corridors in the study area.

Secondary Environmental Corridors: As shown on Map 12, secondary environmental corridors in the IH 94 West Corridor are located generally along the small perennial and intermittent streams within the Corridor. These secondary environmental corridors also contain a variety of resource elements, often remnant resources from primary environmental corridors which have been developed for intensive agricultural and urban purposes. Secondary environmental corridors facilitate surface water drainage, maintain pockets of natural resource features, and provide corridors for the movement of wildlife, as well as for the movement and dispersal of seeds for a variety of plant species. Such corridors, while not as important as primary environmental corridors, should also be preserved in essentially natural, open uses as development proceeds within the study area, particularly when the opportunity is presented to incorporate secondary environmental corridors into urban stormwater retention basins, associated drainageways, and neighborhood parks. In 1985 about 0.5 square miles, or about 0.8 percent of the total study area, were encompassed within secondary environmental corridors.

Map 12

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



LEGEND

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

Source: SEWRPC.

Table 12

INVENTORY OF PRIMARY ENVIRONMENTAL CORRIDOR COMPONENTS IN THE IH 94 WEST CORRIDOR: 1985

Component	Area (square miles)	Percent of Primary Environomental Corridor	Percent of IH 94 West Corridor
Surface Water	7.8	40.4	13.0
Wetlands	6.5	33.7	10.8
Woodlands	4.0	20.7	6.6
Other Resources	1.0	5.2	1.7
Total	19.3	100.0	32.1

Source: SEWRPC.

Isolated Natural Areas: In addition to the primary and secondary environmental corridors, other smaller pockets or concentrations of natural resource base elements exist within the IH 94 West Corridor. These pockets are isolated from the environmental corridors by urban development or agricultural use, and, although separated from the environmental corridor network, these isolated natural areas have important natural value. Isolated natural areas may provide the only available wildlife habitat in an area, provide good locations for local parks, and lend unique aesthetic character and natural diversity to an area. The isolated natural areas in the study area are shown on Map 12 and include isolated wetlands, woodlands, and wildlife habitat areas located throughout the study area. These isolated natural areas should be protected and preserved in a natural state whenever possible. In 1985, about 1.2 square miles, or about 2 percent of the total area of the study area, were in 1985 encompassed within isolated natural areas.

TRANSPORTATION FACILITIES AND SERVICES

Transportation facilities are among the most critical elements that influence travel characteristics and shape the spatial distribution of rural and urban development within an area. The availability or lack of transportation facilities will influence the path and mode, as well as the frequency, of personal travel. The accessibility of a site to population and employment concentrations and to community facilities and services will influence the type and intensity of its development, and this accessibility is, in turn, a function of the transportation system. Thus, transportation facilities form the basic framework for both rural and urban development, and to a considerable extent, determine the efficiency of the other functional elements of such development. Accordingly, this section presents information on the existing arterial street and highway system, and the railway and public transit systems in the IH 94 West Corridor.

Table 13

MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 WEST CORRIDOR BY TYPE OF FACILITY

Arterial Streets and Highways	Miles	Percent of Total
Freeway	18.3	21.8
Standard Arterial	65.7	78.2
Total	84.0	100.0

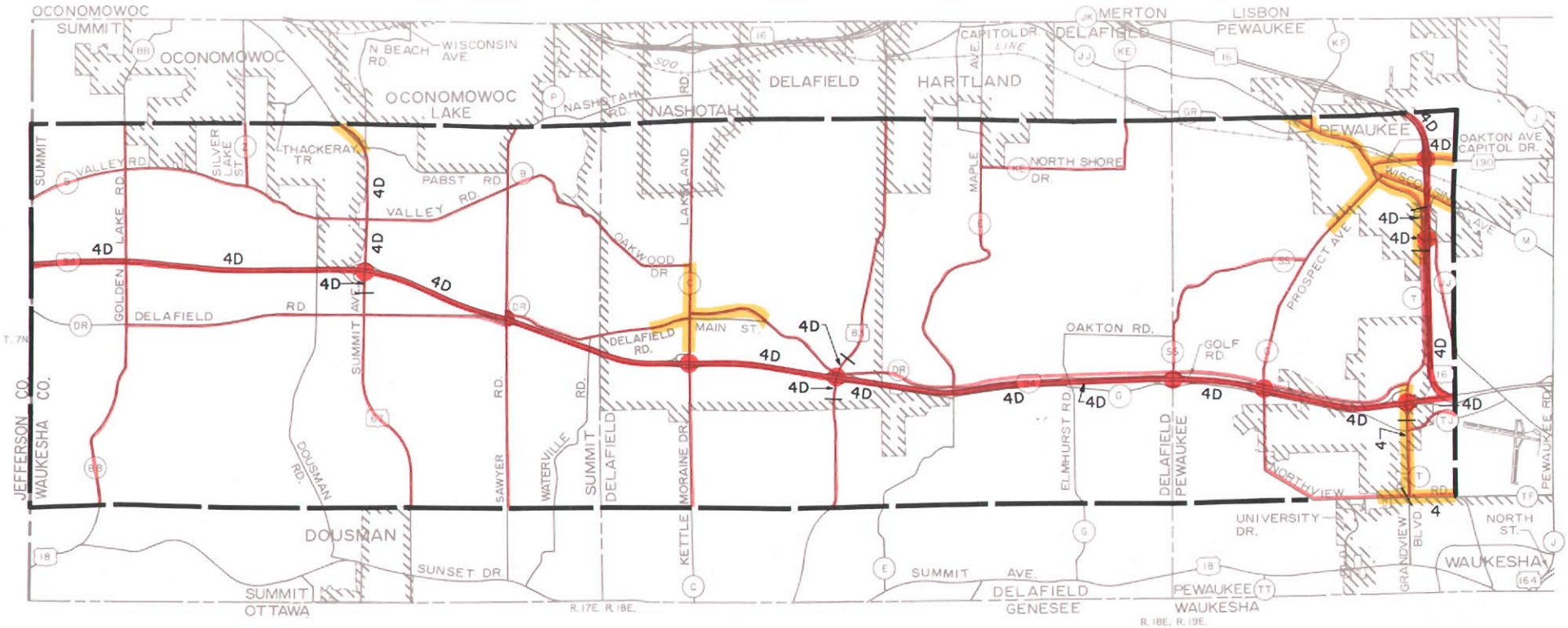
Source: SEWRPC.

Arterial Street and Highway System

The arterial street and highway system currently serving the IH 94 West Corridor study area is shown on Map 13. The extent of that system is summarized in Table 13. The system totals about 84 miles in length, of which over 18 miles, or nearly 22 percent, consist of the IH 94 and STH 16 freeways. As shown on Map 13, the existing arterial network is appropriately spaced to serve rural and low-density development, with arterials occurring at about two mile intervals in both the north-south and east-west directions throughout most of the Corridor. Also identified on Map 13 is the

Map 13

EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 WEST CORRIDOR: 1990



LEGEND

- FREEWAY
- STANDARD ARTERIAL-RURAL CROSS SECTION
- STANDARD ARTERIAL-URBAN CROSS SECTION
- FREEWAY INTERCHANGE
- PARTIAL FREEWAY INTERCHANGE
- D DIVIDED ROADWAY
- 4 NUMBER OF TRAFFIC LANES (TWO LANES WHERE UNNUMBERED)
- | INDICATES A CHANGE IN THE NUMBER OF TRAFFIC LANES

Source: SEWRPC.

number of traffic lanes provided on each arterial street and highway segment; an indication as to whether or not, in the case of multi-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 21 miles, or about 25 percent of the system, consists of divided facilities. Of this total, however, over 18 miles consist of the IH 94 and STH 16 freeways. About eight miles, or about 10 percent of the system, have been constructed to urban standards. These include the following roadway segments: Genesee Street, Main Street, and Milwaukee Street within the City of Delafield; Grandview Boulevard and Northview Road within the City of Waukesha; and Wisconsin Avenue, Main Street, Capitol Drive, and Prospect Avenue within the Village of Pewaukee.

As part of the IH 94 Corridor study, a special inventory was conducted of the intersection traffic control and approach lane configurations of the existing arterial street and highway system and frontage roads along IH 94 through the Corridor. The results of this inventory are graphically summarized on Map 14. 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 Waukesha County consists of braided freeway entrance and exit ramps with two-way frontage roads extending along IH 94 from the CTH G interchange to the STH 83 interchange.

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 shown on Map 15. In 1989, traffic volumes on the IH 94 freeway ranged from a low of about 23,500 vehicles per average weekday just west of STH 67 to a high of about 53,900 vehicles just west of the STH 16 freeway. Traffic volumes on the STH 16 freeway ranged from a low of about 20,000 vehicles per average weekday just north of IH 94 to a high of about 27,300 vehicles just north of STH 190. An estimated 20 percent of the traffic on IH 94 at the Jefferson County line was truck traffic, or about 4,500 trucks per average weekday. About 10 percent of the traffic on IH 94 at the eastern end of the Corridor was truck traffic, or about 5,300 trucks per average weekday. The most heavily traveled surface arterial streets in the urban portions of the Corridor are Grandview Boulevard in the City of Waukesha, Capitol Drive (STH 190), in the Village of Pewaukee, and STH 67 in the City of Oconomowoc. The most heavily traveled surface arterial highways in the rural areas of the Corridor include STH 83 and STH 67. The estimated amount of travel in on an average weekday in 1989 on the arterial street and highway system in the Corridor was 890,000 vehicle miles, including 635,000 vehicle miles per average weekday on the IH 94 and STH 16 freeways, and 255,000 vehicles miles on the surface arterials in the Corridor.

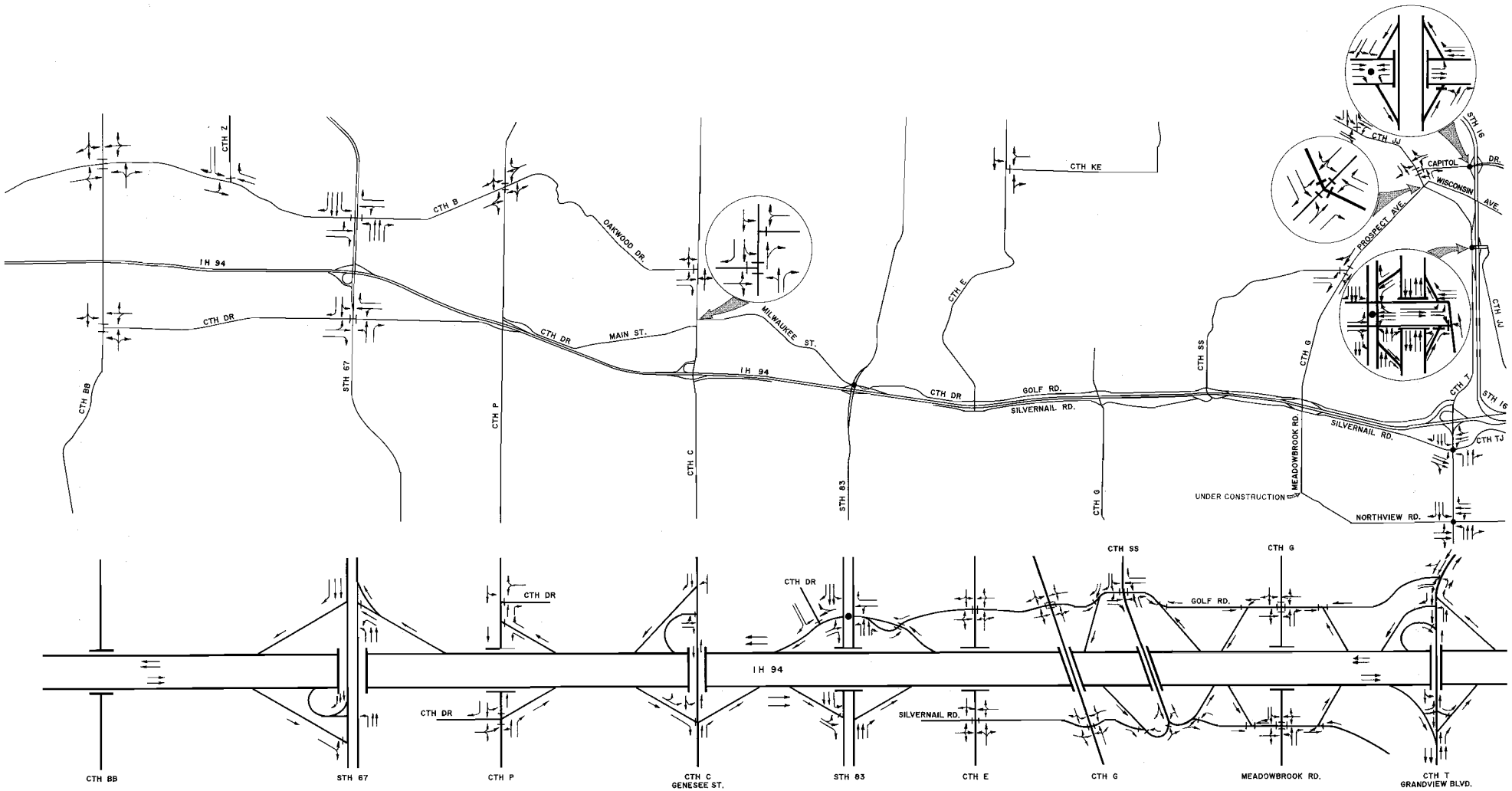
Information on peak-hour traffic volumes was also collated as part of the study and is summarized on Map 16.

The existing level of travel congestion in the IH 94 West Corridor study area, as measured by comparing average weekday traffic volumes to average weekday traffic design capacities, is summarized on Map 17 and in Table 14. Of the approximately 84 miles of arterial streets and highways in the study area, nearly five miles, or about 6 percent, are currently operating over the design capacity of the facility. These include segments of CTH T and Grandview Boulevard, segments of STH 83 both north and south of IH 94, and a segment of STH 67 south of IH 94. Another four miles of facilities, representing an additional 5 percent of the arterial street and highway system, are currently operating at the design capacity of the facility. These included STH 83 north of IH 94 and STH 67 south of IH 94.

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, however, which provide access to recreational facilities within the Region and carry traffic through the Region to recreational facilities located outside the Region, do experience weekend traffic volumes that exceed average weekday traffic volumes. Interstate Highway 94 West is such a facility. Table 15 compares the average weekday and average weekend day traffic at two selected locations along IH 94. The first is IH 94 at Busse Road in Waukesha County, located east of the eastern boundary of the IH 94 West study area, the second location is at STH 26 and IH 94 located in Jefferson

Map 14

INTERSECTION TRAFFIC CONTROL AND APPROACH LANE CONFIGURATION FOR THE EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM ON THE IH 94 FRONTAGE ROADS IN THE IH 94 WEST CORRIDOR: 1990



LEGEND

TRAFFIC CONTROL

- TRAFFIC SIGNAL AT INTERSECTION
- SIGN AT INTERSECTION APPROACH
- ONE WAY TRAFFIC

LANE MOVEMENT

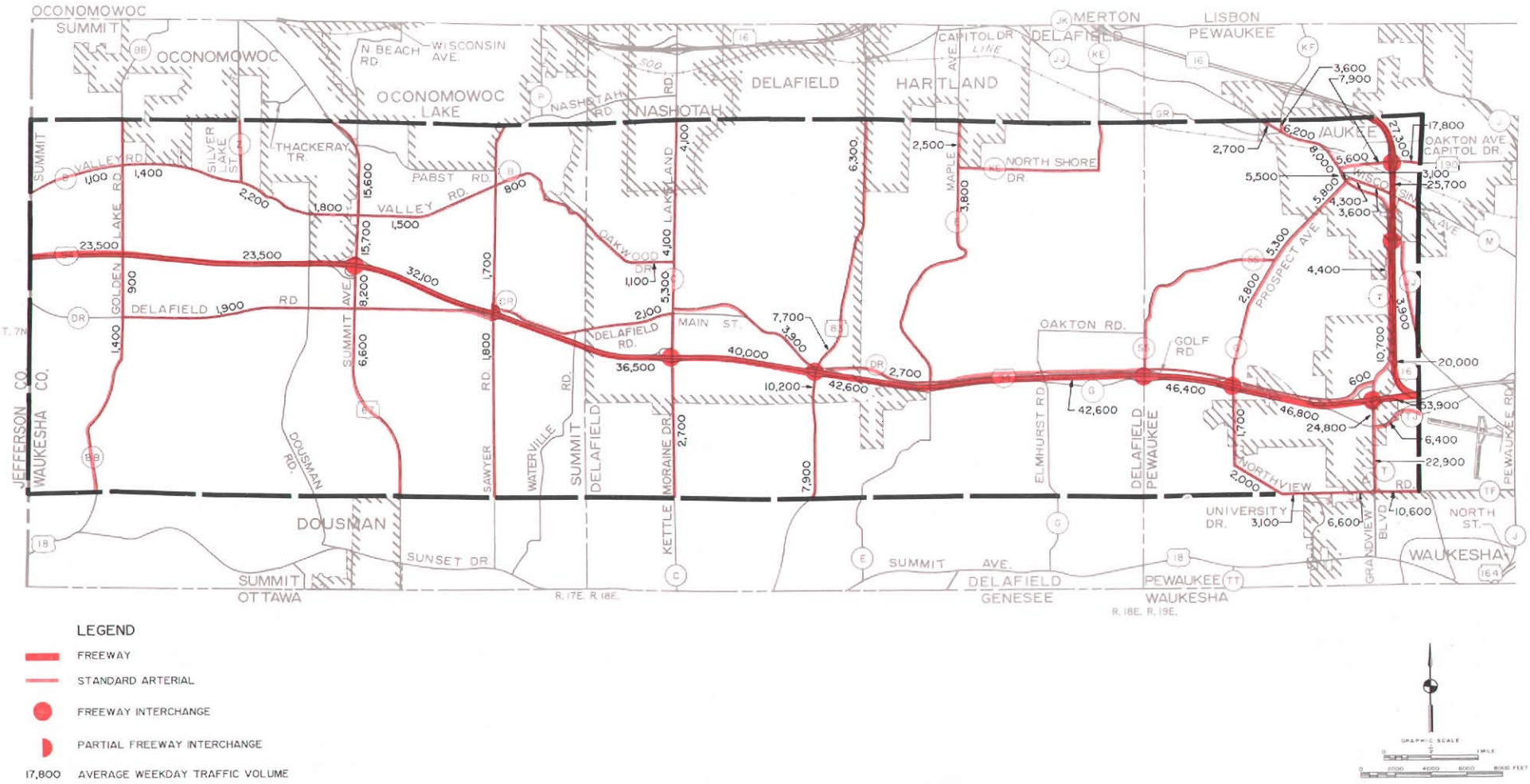
- EXCLUSIVE THROUGH LANE
- EXCLUSIVE LEFT TURN LANE
- EXCLUSIVE RIGHT TURN LANE
- SHARED LEFT TURN AND THROUGH LANE
- SHARED RIGHT TURN AND THROUGH LANE
- SHARED LEFT TURN AND RIGHT TURN LANE
- SHARED LEFT TURN, RIGHT TURN, AND THROUGH LANE

Source: SEWRPC.

NOT TO SCALE

Map 15

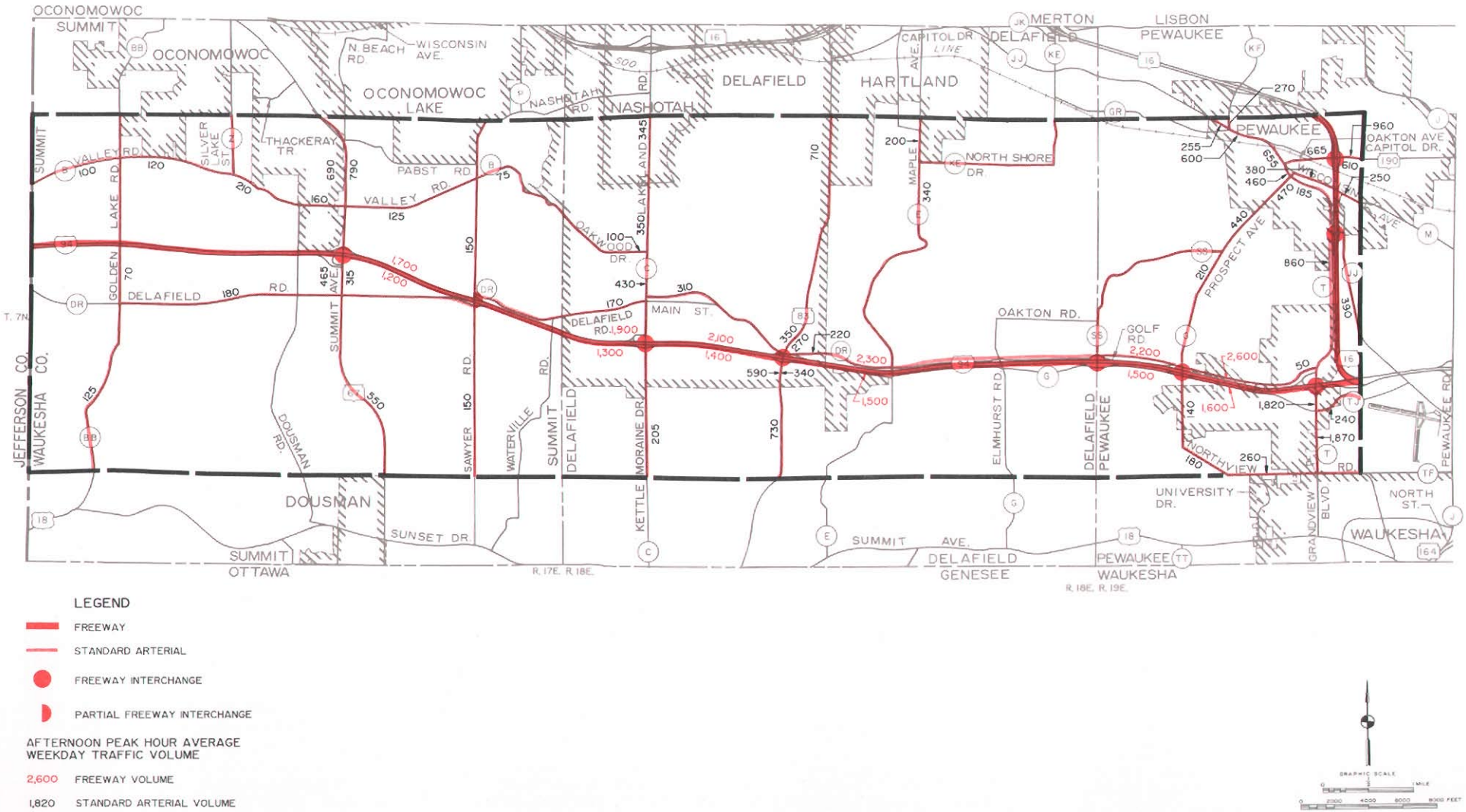
EXISTING AVERAGE WEEKDAY TRAFFIC VOLUMES ON SEGMENTS OF ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 WEST CORRIDOR



Source: SEWRPC.

Map 16

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



Source: SEWRPC.

Map 17

TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 WEST CORRIDOR: 1989

Source: SEWRPC.

Table 14

MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 WEST CORRIDOR BY LEVEL OF CONGESTION: 1990

Level of Congestion	Miles	Percent of Total
Under Design Capacity[a]	75.0	89.3
At Design Capacity[b]	4.4	5.2
Over Design Capacity[c]	4.6	5.5
Total	84.0	100.0

[a]*Defined as having a volume-to-capacity ratio of 0.00 to 0.90 based on average weekday traffic volumes.*

[b]*Defined as having a volume-to-capacity ratio of 0.91 to 1.00 based on average weekday traffic volumes.*

[c]*Defined as having a volume-to-capacity ratio greater than 1.00 based on average weekday traffic volumes.*

Source: SEWRPC.

County approximately 12 miles west of the western study area boundary. At the western location average weekend day traffic exceeds the average weekday traffic by about 3,900 vehicles, or by approximately 18 percent. At the eastern end of the Corridor, however, average weekday traffic volumes exceed average weekend day traffic volumes by about 12,200 vehicles, or by approximately 19 percent. Table 16 compares average weekday and average weekend day peak hour peak direction traffic volumes at the same two locations. As shown in Table 16, average weekend day peak hour volumes exceed weekday peak hour volumes at the western end of the study Corridor. Conversely, at the eastern end of the Corridor, average weekday peak hour traffic flows exceed average weekend day peak period traffic flows. From the foregoing, it may be concluded that within the study area IH 94 is primarily a commuter traffic-oriented facility, with heaviest loadings on weekdays.

Arterial System Jurisdiction

The current jurisdiction attendant to the arterial street and highway system serving the IH 94 West Corridor is shown on Map 18 and summarized in Table 17.

Table 15

AVERAGE WEEKDAY AND WEEKEND DAY TRAFFIC VOLUMES AT SELECTED LOCATIONS ALONG IH 94 WEST: 1989

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)
Waukesha County				
IH 94 at Busse Road	75,340	66,040	60,190	63,120
Jefferson County				
IH 94 at STH 26	21,730	24,190	26,970	25,580

Source: SEWRPC.

Table 16

AVERAGE WEEKDAY AND WEEKEND DAY PEAK-HOUR, PEAK-DIRECTION TRAFFIC VOLUMES AT SELECTED LOCATIONS ALONG IH 94 WEST: 1989

Location	Weekday	Weekend Day		
	Average Weekday (vehicles per hour)	Average Saturday (vehicles per hour)	Average Sunday (vehicles per hour)	Average Weekend Day (vehicles per hour)
Waukesha County				
IH 94 at CTH F	3,520 (westbound)	3,110 (westbound)	2,680 (westbound)	2,895
Jefferson County				
IH 94 at STH 26	830 (westbound)	1,000 (eastbound)	1,300 (eastbound)	1,150

Source: SEWRPC.

Map 18

EXISTING JURISDICTIONAL HIGHWAY SYSTEM IN THE IH 94 WEST CORRIDOR: 1990

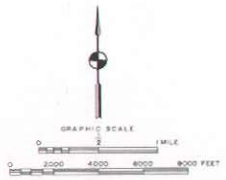
LEGEND

ARTERIAL FACILITIES

- STATE TRUNK FREEWAY
- STATE TRUNK NONFREEWAY
- COUNTY TRUNK
- LOCAL TRUNK
- STATE MAINTAINED FRONTAGE ROAD

NONARTERIAL FACILITIES

- COUNTY TRUNK



Source: SEWRPC.

Table 17

MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 WEST CORRIDOR BY JURISDICTION: 1990

Arterial Miles of Streets and Highways	Miles	Percent of Total Arterial Miles
State Trunk Highway		
Freeway	18.3	21.8
Standard Arterial	9.2	10.9
Subtotal	27.5	32.7
State-Maintained		
Frontage Road	4.5	5.4
County Trunk Highway	40.9	48.7
Local	11.1	13.2
Total	84.0	100.0

[a]*Waukesha County also has jurisdictional responsibliity for 4.9 miles of nonarterial highways in the study corridor.*

Source: SEWRPC.

Table 18

MILES OF ARTERIAL STREETS AND HIGHWAYS IN THE IH 94 WEST CORRIDOR BY FEDERAL AID CLASSIFICATION: 1990

Arterial Miles of Streets and Highways	Miles	Percent of Total Arterial Miles
Federal Aid Classificaiton		
Interstate	15.2	18.1
Primary	12.3	14.6
Secondary	21.2	25.3
Urban[a]	17.8	21.2
Nonfederal Aid	17.5	20.8
Total	84.0	100.0

[a]*The Federal Aid Urban system in Waukesha County also includes the following proposed facilities: CTH SS from CTH G east 1.2 miles to CTH T; and Meadowbrook Road from Northview Road 0.3 mile south to the south study area limits. Both facilities are planned future arterials identified on the adopted regional transportation system plan.*

Source: SEWRPC.

Of the 84-mile-long arterial street and highway system, 32 miles, or about 38 percent, are state trunk highways and state-maintained frontage roads. An additional 41 miles, or 49 percent, are county trunk highways, while the remaining 11 miles, or about 13 percent, are under local jurisdiction. Map 18 also identifies those additional county trunk highways in Waukesha County that are not classified as arterial highways. As discussed later in this chapter, the adopted jurisdictional highway system plan for Waukesha County recommends a realignment of the state trunk, county trunk, and local trunk highway systems to reflect changing traffic conditions within the area.

Federal Aid Classification of Arterial System

The classification of the arterial street and highway system in the IH 94 West Corridor study area for federal aid purposes is shown on Map 19 and summarized in Table 18. Of the 84-mile-long arterial system, about 15 miles, or about 18 percent, are on the Federal Aid Interstate system; about 12 miles, or about 15 percent, are on the Federal Aid Primary system; nearly 21 miles, or about 25 percent, are on the Federal Aid Secondary system; and about 18 miles, or about 21 percent, are on the Federal Aid Urban system. The remaining nearly 18 miles, or about 21 percent of the total, have not been placed on the federal aid system as of this date. The adopted county jurisdictional highway system plan recommends 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; and 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.

Railways

The railway system currently serving IH 94 West Corridor study area and its immediate environs is shown on Map 20. Currently, one railway company serves the Corridor: the Soo Line Railroad Company, 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 Seattle via St. Paul.

Map 19

EXISTING FEDERAL AID HIGHWAY SYSTEM IN THE IH 94 WEST CORRIDOR: 1990

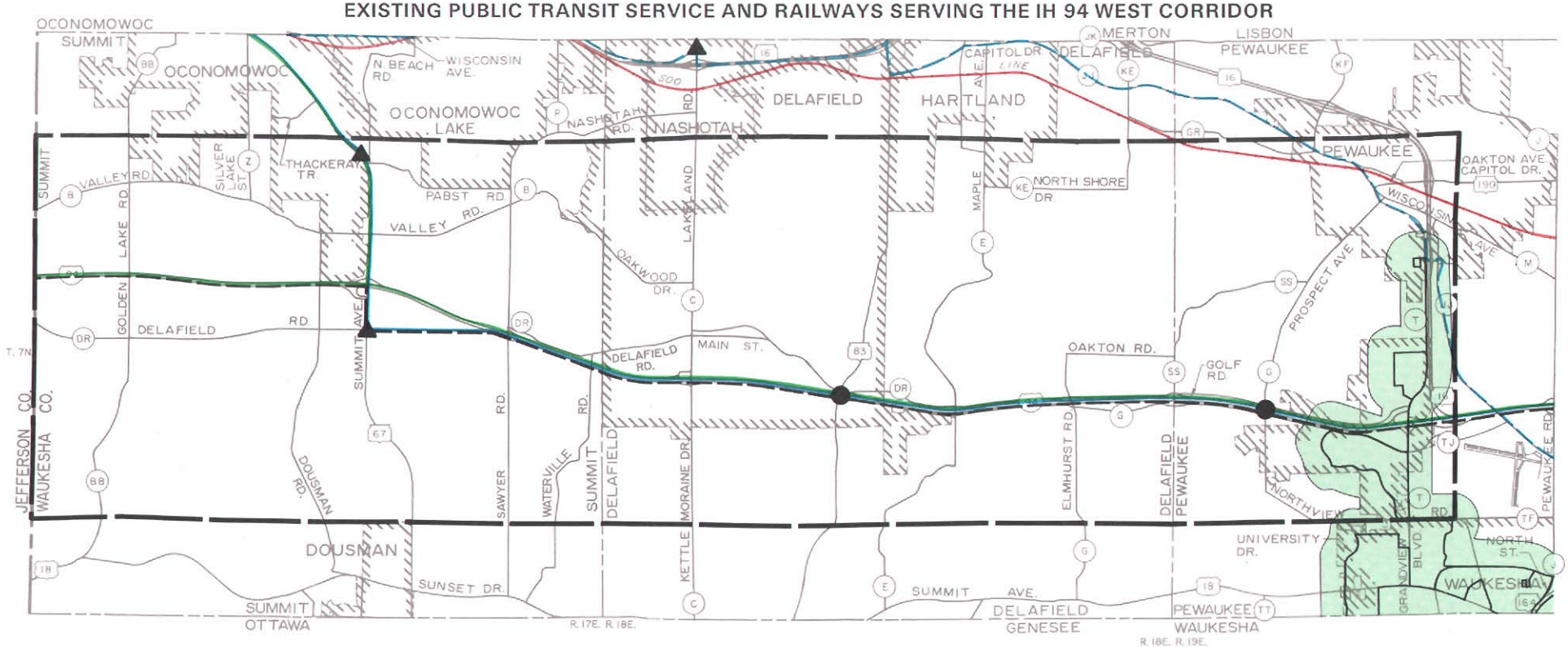
LEGEND

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

Source: SEWRPC.

Map 20

EXISTING PUBLIC TRANSIT SERVICE AND RAILWAYS SERVING THE IH 94 WEST CORRIDOR



LEGEND

LOCAL BUS SERVICE

- LOCAL BUS ROUTE
- LOCAL TRANSIT SERVICE AREA

FREEWAY FLYER/EXPRESS BUS SERVICE

- FREEWAY FLYER BUS ROUTE
- EXPRESS BUS ROUTE
- PARK-RIDE LOT
- FREEWAY RAMP STOP

INTERCITY BUS ROUTE

- GREYHOUND LINES, INC.
- BADGER COACHES, INC.

SOO LINE RAILROAD COMPANY

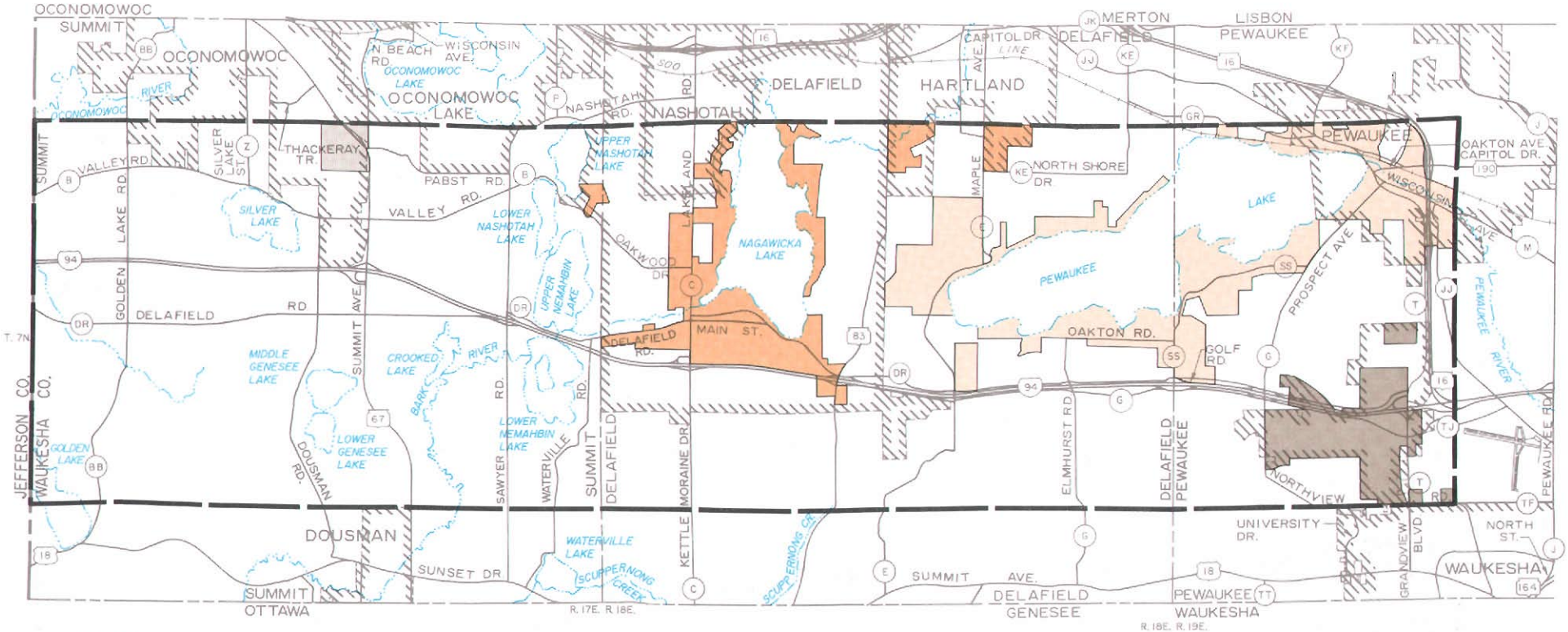
- ACTIVE RAILROAD LINE

GRAPHIC SCALE
0 1/2 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 21

EXISTING SANITARY SEWER SYSTEMS SERVING THE IH 94 WEST CORRIDOR



LEGEND

AREAS TRIBUTARY TO THE FOLLOWING SEWAGE TREATMENT PLANTS:

- CITY OF BROOKFIELD
- DELAFIELD-HARTLAND WATER POLLUTION CONTROL COMMISSION
- CITY OF OCONOMOWOC
- CITY OF WAUKESHA

Source: SEWRPC.

Table 19

SELECTED CHARACTERISTICS OF EXISTING PUBLIC WASTEWATER TREATMENT FACILITIES SERVING THE IH 94 WEST CORRIDOR STUDY AREA

				Design Capacity			Existing Loading			Wisconsin Pollutant Discharge Elimination System Permit Limits				
Name of Public Sewage Treatment Plant	Date of Original Construction and Major Modification	Level of Treatment Provided	Disposal of Effluent	Average Hydraulic (mgd)	Peak Hydraulic (mgd)	Average Organic (pounds BOD_5/day)	Annual Average Hydraulic (mgd)	Maximum Monthly Average Hydraulic (mgd)	Average Organic (pounds BOD_5/day)	BOD_5 (mg/l)	Suspended Solids (mg/l)	Ammonia Nitrogen (mg/l)	Phosphorus (mg/l)	Dissolved Oxygen (mg/l)
City of Brookfield	1973, 1985	Secondary, advanced, tertiary, and auxiliary	Fox River	10.0	24.0	16,700	5.2	7.3	6,510	10[a]	10[a]	2.0-3.5[b]	1.0[a]	6.0[c]
Delafield-Hartland Water Pollution Control Commission	1981	Secondary, advanced, and auxiliary	Bark River	2.2	5.5	3,670	1.3	1.4	2,130	10-15[d]	10-15[d]	1.5-8.0[e]	--	6.0[c]
City of Oconomowoc	1977	Secondary, tertiary, and auxiliary	Oconomowoc River	4.0	9.0	8,340	2.2	2.6	3,230	10[a]	10[a]	--	--	--
City of Waukesha	1928, 1949, 1967, 1980	Secondary, advanced, tertiary, and auxiliary	Fox River	16.0[f]	28.0[f]	20,000[f]	10.9	15.9	19,750	10[a]	10[a]	2.0-13.0[g]	1.0[a]	6.0[c]

[a] *Monthly average limits.*

[b] *Weekly average limits 2.0 mg/l May through October, 3.5 mg/l November through April.*

[c] *Minimum.*

[d] *Monthly average limits 10.0 mg/l May through October, 15.0 mg/l November through April.*

[e] *Weekly average limits 1.5 mg/l May through October,8.0 mg/l November through April.*

[f] *Based upon design data developed for 1980 expansion. Current permit limits would not likely be met consistently at these loadings.*

[g] *Weekly average limits 2.0 at pH 7.2 to 9.0 and 4.0 at pH 6.0 to 7.2 May through October; 6.0 at pH 7.2 to 9.0 and 13.0 at pH 6.0 to 7.2 November through April.*

Source: SEWRPC.

Public Transit Service

The location and extent of existing public transit service within the IH 94 West Corridor study area and its immediate environs is summarized on Map 20. Local bus service is provided to very limited areas on the southeastern edge of the Corridor. This service, provided by the City of Waukesha, extends outward from the central business district to the Pebble Valley and Pebble Valley Windings residential areas, and north to serve the Waukesha County Technical College. Freeway flyer, or commuter-oriented, bus service to the central business district of Milwaukee is also provided by Waukesha County through the Corridor. This service, extending from the City of Oconomowoc, is routed over STH 67 and IH 94, with park-ride facilities located along STH 67 and freeway on-ramp/off-ramp stops located at STH 83 and CTH G. The availability of intercity bus service is also identified on Map 20. The intercity service consists of buses operated by Badger Coaches, Inc., and Greyhound Lines, Inc., over IH 94 between Milwaukee and Madison.

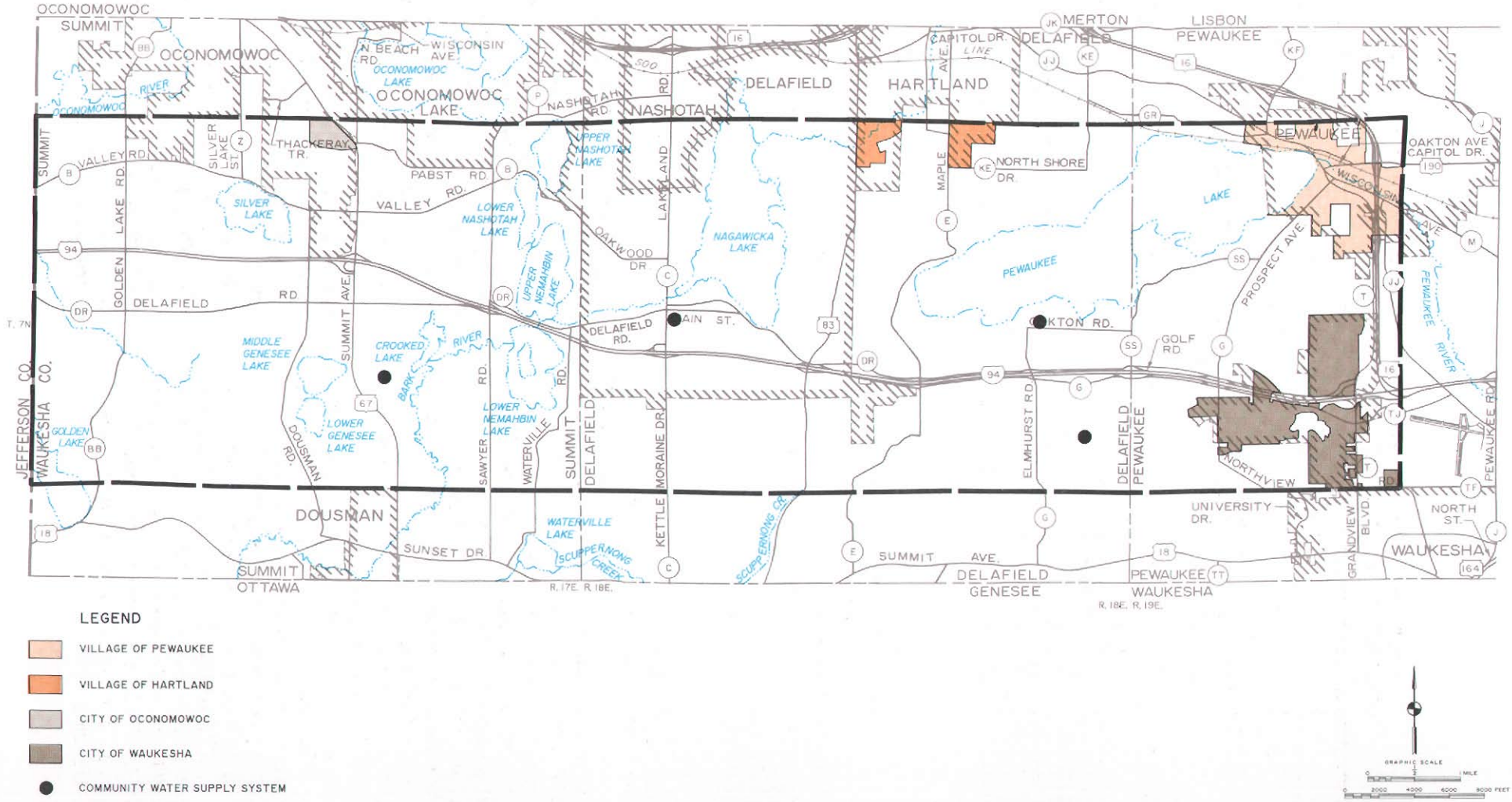
UTILITY FACILITIES AND SERVICES

Public Sanitary Sewerage Systems

As shown on Map 21, in 1989 there were four public sanitary sewerage systems serving the IH 94 West Corridor study area. Selected characteristics attendant to the four treatment plants serving these systems are set forth in Table 19. At the east end of the Corridor, the City of Brookfield system serves by contract the Village of Pewaukee, the Lake Pewaukee Sanitary District, and Town of Pewaukee Sanitary District No. 3. The City of Waukesha system serves the southeast portion of the Corridor. In the middle portion of the Corridor, the Delafield-Hartland Water Pollution Control Commission serves the Villages of Hartland and Nashotah and the City of Delafield. The City of Oconomowoc sewerage system serves the western portion of the Corridor. In total, the four public sewerage systems currently serving the Corridor provide sanitary sewer service to about eight square miles, or about 13 percent, of the 60-square-mile Corridor. About 15,300 persons, representing

Map 22

EXISTING PUBLIC AND PRIVATE COMMUNITY WATER SUPPLY SYSTEMS SERVING THE IH 94 WEST CORRIDOR: 1990



LEGEND

- VILLAGE OF PEWAUKEE
- VILLAGE OF HARTLAND
- CITY OF OCONOMOWOC
- CITY OF WAUKESHA
- COMMUNITY WATER SUPPLY SYSTEM

Source: SEWRPC.

about 68 percent of the resident population of the Corridor, are currently served.

Public Water Supply Systems

The portions of the IH 94 West Corridor study area served by public water supply systems are shown on Map 22. Four public water supply systems presently serve the Corridor. These four systems are operated by the City of Waukesha, the City of Oconomowoc, the Village of Hartland, and the Village of Pewaukee. All these public water supply systems utilize groundwater as the supply source.

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

The total areal extent of public water supply service in the IH 94 West Corridor approximates two square miles, or about 3 percent of the 60-square-mile study Corridor. Public water supply service is provided to about 7,900 persons, representing about 35 percent of the resident population of the Corridor. State-regulated private community supply water systems provide service to an additional 200 persons.

PLANS AND LAND USE REGULATIONS

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

Regional Plan Framework

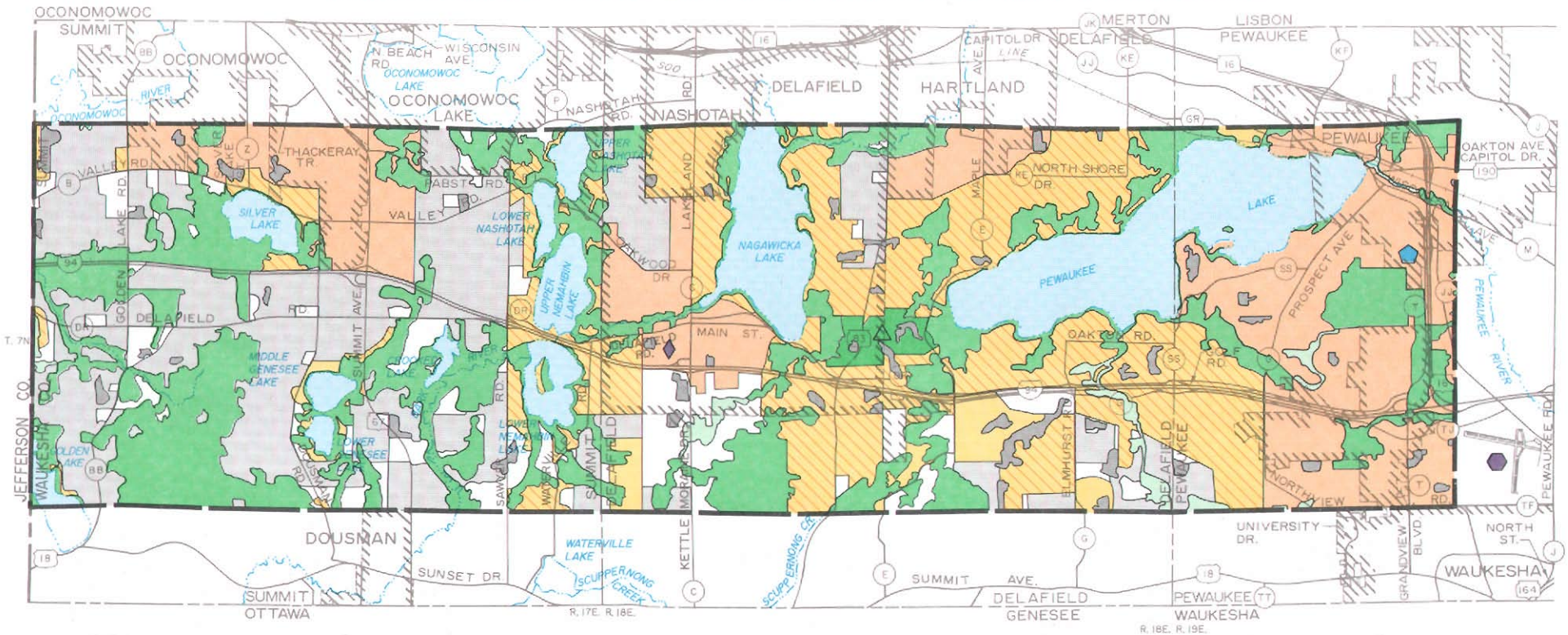
Since its creation in 1960, the Southeastern Wisconsin Regional Planning Commission, in cooperation with the county and local units of government concerned and with the guidance and advice of many advisory committees, has prepared and adopted a number of regional plans which are intended to provide a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

Of particular importance to the IH 94 West Freeway Corridor are certain recommendations contained in the adopted regional land use plan, regional park and open space plan, regional transportation system plan, regional water quality management plan, and in the Fox River watershed plan. A brief description of the major recommendations of each of these plans as they currently pertain to the IH 94 West 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, public 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. They not only interact strongly with the need for areawide utility, recreation, and transportation facilities, but exert a heavy demand upon a limited natural resource base. Recognizing the fundamental importance of land use development, then, the Commission has placed great emphasis on the preparation and maintenance of a regional land use plan.

Map 23

REGIONAL LAND USE PLAN FOR THE IH 94 WEST CORRIDOR AS AMENDED THROUGH 1990



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)
- MAJOR PUBLIC OUTDOOR RECREATION CENTER
- MAJOR TRANSPORTATION CENTER
- MAJOR UTILITY CENTER
- MAJOR GOVERNMENTAL OR INSTITUTIONAL CENTER
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- PRIME AGRICULTURAL LAND
- OTHER AGRICULTURAL AND OPEN LAND
- SURFACE WATER

Source: SEWRPC.

The currently adopted regional land use plan, as that plan pertains to the IH 94 West Corridor, is spatially depicted on Map 23. 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 23 reflects amendments that have come about through subregional studies that have refined and detailed the regional land use plan. These studies include the Fox River watershed plan;[4] the joint land use plan for the Village and Town of Pewaukee;[5] and detailed sanitary sewer service area plans for the City of Delafield, and the Village of Nashotah;[6] the Village of Hartland; the City of Oconomowoc; the Village and Town of Pewaukee; and the City of Waukesha.[7]

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 West Corridor to date, these areas are shown in orange and yellow on Map 23.

2. Protection and Preservation of Environmentally Sensitive Lands. The plan recommends that new urban development be discouraged from occurring in primary environmental corridors, as shown in dark green on Map 23. 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 23, are recommended for consideration by local officials for preservation as needed for park, drainageway, 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 23, also be protected and preserved

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[4]*See SEWRPC Planning Report No. 12, A Comprehensive Plan for the Fox River Watershed, Volume One, Inventory Findings and Forecasts, December 1970; and Volume Two, Alternative Plans and Recommended Plan, October 1971.*

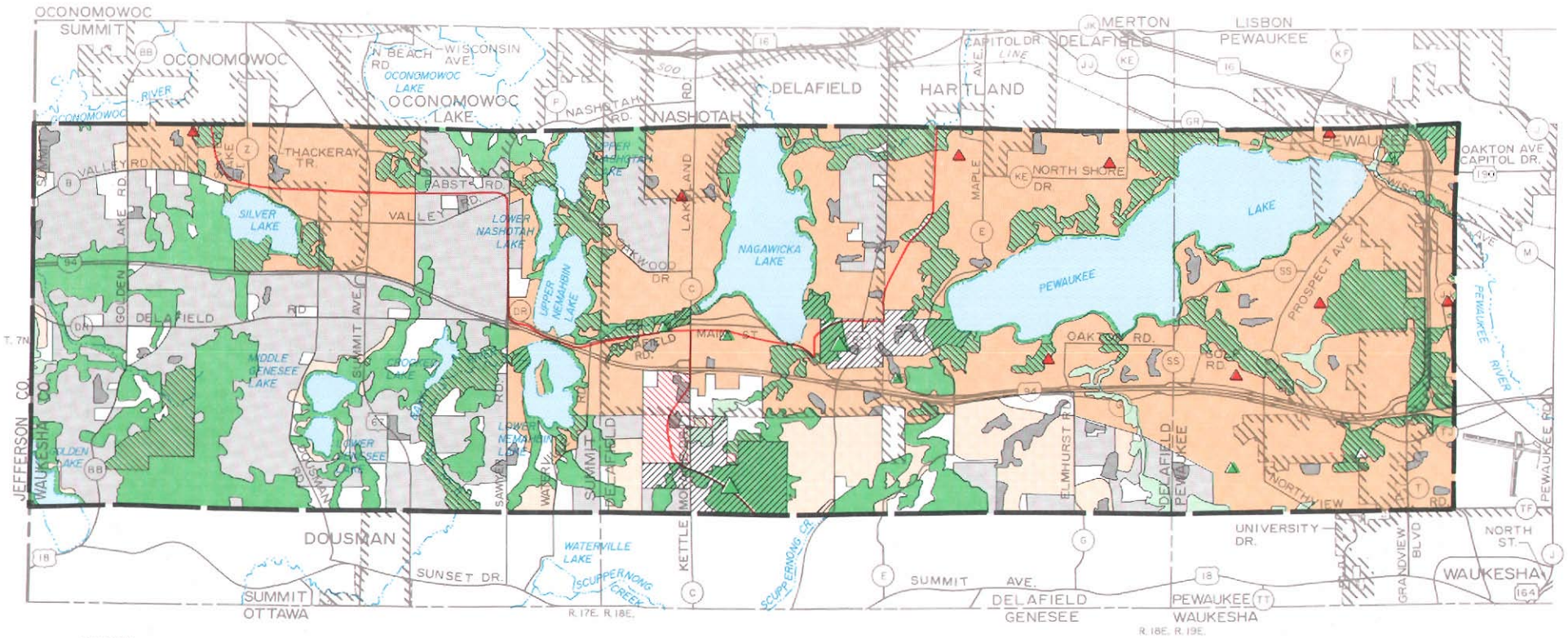
[5]*See SEWRPC Community Assistance Planning Report No. 76, A Land Use Plan for the Town and Village of Pewaukee: 2000, December 1982.*

[6]*See SEWRPC Community Assistance Planning Report No. 127, Sanitary Sewer Service Area for the City of Delafield and the Village of Nashotah and Environs, Waukesha County, Wisconsin, October 1985. Information presented in this chapter, including the environmental corridors displayed on Map 12, are based on the findings of this report which, although prepared and published by this Commission, has not yet been approved by the Wisconsin Department of Natural Resources.*

[7]*See SEWRPC Community Assistance Planning Report No. 93, Sanitary Sewer Service Areas for the Village of Hartland, Waukesha County, Wisconsin, April 1985; No. 100, Sanitary Sewer Service Area for the City of Waukesha and Environs, Waukesha County, Wisconsin, June 1985; No. 113, Sanitary Sewer Service Area for the Town of Pewaukee Sanitary District No. 3, Lake Pewaukee Sanitary District, and the Village of Pewaukee, Waukesha County, Wisconsin, June 1985; and No. 172, Sanitary Sewer Service Area for the City of Oconomowoc and Environs, February 1987.*

Map 24

REGIONAL PARK AND OPEN SPACE PLAN FOR THE IH 94 WEST CORRIDOR AS AMENDED THROUGH 1990



LEGEND

OPEN SPACE PRESERVATION ELEMENT

ENVIRONMENTAL CORRIDOR COMPONENT

- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- EXISTING PUBLIC OWNERSHIP
- PROPOSED PUBLIC OWNERSHIP

PRIME AGRICULTURAL COMPONENT

- PRIME AGRICULTURAL LAND

OUTDOOR RECREATION ELEMENT

RESOURCE ORIENTED COMPONENT

- REGIONAL-(TYPE I:250 OR MORE ACRES) OR OTHER MAJOR PUBLIC PARK SITE-(TYPE II: 100-249 ACRES)
- EXISTING OWNERSHIP
- PROPOSED OWNERSHIP
- STATE OR COUNTY RECREATION CORRIDOR (TRAIL)

URBAN ORIENTED COMPONENT

- EXISTING OR PLANNED URBAN DEVELOPMENT REQUIRING COMMUNITY AND NEIGHBORHOOD PARK SITES

COMMUNITY-(TYPE III:25-99 ACRES) OR NEIGHBORHOOD PARK SITE-(TYPE IV: 5-24 ACRES)

- EXISTING
- PROPOSED

OTHER LAND USE

- OTHER EXISTING URBAN DEVELOPMENT
- OTHER AGRICULTURAL AND OPEN LAND
- SURFACE WATER

GRAPHIC SCALE

Source: SEWRPC.

from urban encroachment. As discussed earlier in this chapter, 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 West Freeway Corridor amount to nearly 20 square miles, or about 33 percent of the total Corridor. Of these 20 square miles, about nine square miles, or about 45 percent, are currently unused and proposed for new urban development. The lands proposed for new urban development could be expected to accommodate an incremental resident population of about 13,000 persons, or about 57 percent more than the current population of 22,700 persons. The lands proposed for new urban development could also be expected to accommodate an incremental employment of about 8,700 jobs, or about 82 percent more than the current employment of 10,600 jobs.

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 the acquisition and development of park sites, for parkway acquisition 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 regarding 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 West Corridor, is shown on Map 24. 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 24 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 Waukesha County, the Town and Village of Pewaukee, the City of Oconomowoc, and the City of Waukesha.[8]

The adopted park and open space plan contains the following specific recommendations for lands in the IH 94 West Corridor:

1. Park Site Acquisition and Development. Two major public parks are recommended to be maintained within the Corridor. One such major park is Naga-Waukee Park, a Waukesha County-owned site located in the City and Town of Delafield; the other such park is that portion of the Kettle Moraine State Forest—Lapham Peak Unit, a State-owned site in the Town of Delafield, proposed for development for active recreation use. Recommended additional facility development at Naga-Waukee Park includes the provision of additional picnic areas and trails, beach improvements and shoreline erosion control on Nagawicka Lake, and additional park support facilities, including a multipurpose building and restrooms. The Lapham Peak park site proposed for recreation facility development in the Kettle Moraine State Forest—Lapham Peak Unit approximates 200 acres and includes provision of family camping facilities, trail facilities, additional picnic areas, a visitor center and a nature center, and additional support facilities, such as roads and parking lots.

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 most of the primary environmental

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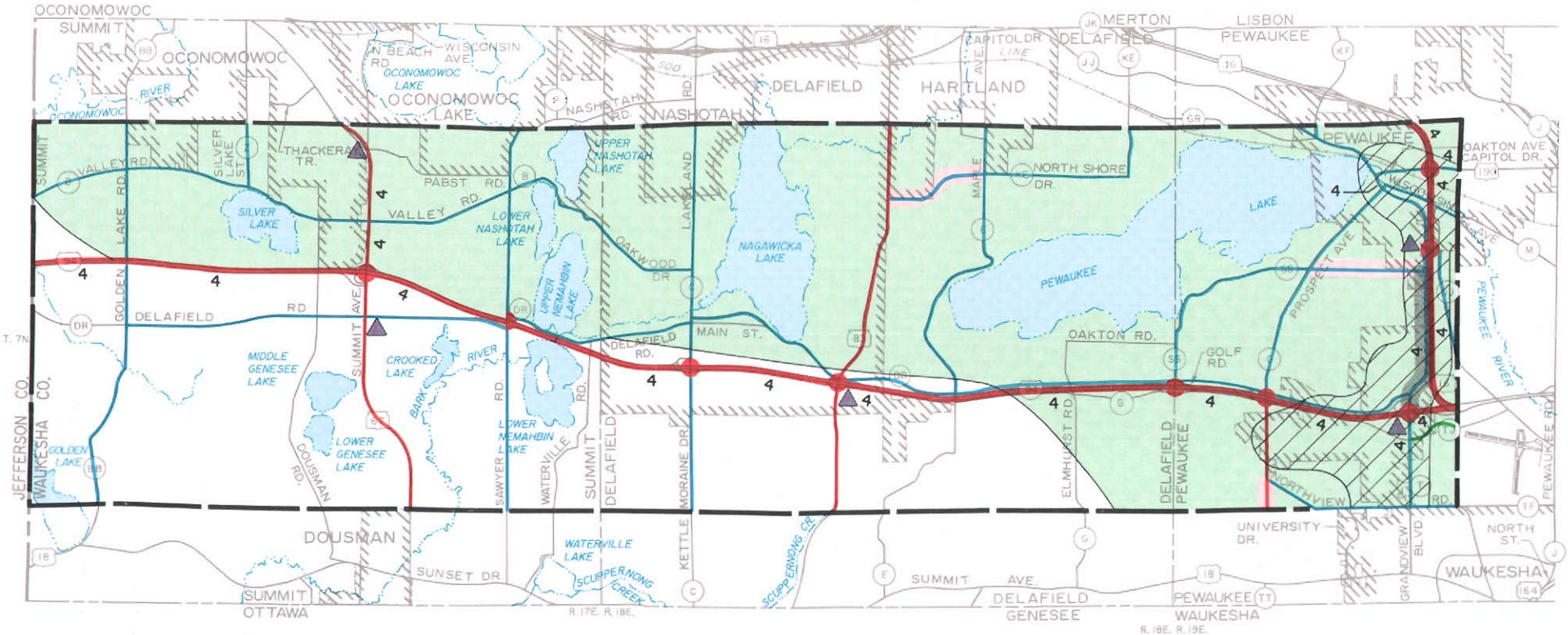
[8]*See SEWRPC Community Assistance Planning Report No. 137, A Park and Open Space Plan for Waukesha County, December 1989; No. 42, A Park and Open Space Plan for the Town and Village of Pewaukee, October 1980; No. 72, A Park and Open Space Plan for the City of Oconomowoc, November 1987; and the City of Waukesha publication, A Park and Open Space Plan for the City of Waukesha, July 1988.*

Map 25

REGIONAL TRANSPORTATION PLAN FOR THE IH 94 WEST CORRIDOR AS AMENDED THROUGH 1990



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

JURISDICTIONAL CLASSIFICATION

- STATE TRUNK FREEWAY
- STATE TRUNK NONFREEWAY
- COUNTY TRUNK
- LOCAL TRUNK
- FREEWAY-NONFREEWAY INTERCHANGE
- PARTIAL FREEWAY INTERCHANGE
- 4 — NUMBER OF TRAFFIC LANES (TWO LANES WHERE UNNUMBERED)
- NEW ARTERIAL FACILITIES
- ARTERIAL FACILITY WIDENINGS

URBAN MASS TRANSIT SYSTEM

- LOCAL TRANSIT SERVICE AREA
- ALL DAY COMMUTER BUS SERVICE AREA
- TRANSIT STATION WITH PARKING

GRAPHIC SCALE
0 1/2 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

corridors within urbanizing areas for public parkway purposes. Recommended land acquisition, by state, county, and local units and agencies of government combined, for primary environmental corridor preservation within the IH 94 West Corridor approximates 2,840 acres to bring the total of such lands to 3,180 acres. Acquisition recommendations are made to protect primary environmental corridors near the Bark River and other rivers and streams in the Kettle Moraine Area and around the major lakes in the study area. Acquisition of such lands for public purposes can come about through gifts, through dedications during the land subdivision process as development occurs, and through purchase.

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 the IH 94 West Corridor specifically, the plan recommends that two such trail facilities, the Lake Country Trail and the Ice Age Trail, be provided in the manner shown on Map 24.

Regional Transportation Plan: The regional transportation system plan is designed to serve effectively the urban and rural development patterns recommended 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 also 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 West Corridor, is summarized on Map 25. 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 25 reflects plan amendments that have come about through subsequent studies, including a rapid transit study[9] and a special study to review the jurisdictional classification of selected facilities in Waukesha County.[10]

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

1. New Arterial Facilities. New arterial facilities proposed in the plan include the extension for about one mile of CTH SS from CTH G easterly to CTH T, the 1.1 mile extension of Meadowbrook Road from Northview Road southerly to USH 18, and the extension for about one mile of CTH KE from CTH E westerly to STH 83.

2. Arterial Street Widenings. Currently one important arterial street widening to provide additional traffic-carrying capacity is recommended in the adopted plan. It is identified on Map 25 and consists of the widening of about 1.7 miles of CTH T from IH 94 northerly to the Waukesha County Technical College.

3. Jurisdictional Highway Transfers. Map 25 identifies the recommended jurisdiction of the planned arterial streets and highways serving the IH 94 West Corridor, that is, which of the planned arterial facilities should be state trunk highways, which

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[9]*See SEWRPC Planning Report No. 33, A Primary Transit System Plan for the Milwaukee Area, June 1982.*

[10]*See SEWRPC document, Amendment to the Regional Transportation Plan—2000, Waukesha County, December 1982.*

should be county trunk highways, and which should be under local government jurisdiction. The following jurisdictional transfers would have to be undertaken in order to carry out this element of the recommended plan:

a. Meadowbrook Road from Northview Road to IH 94: from local (Town of Pewaukee and City of Waukesha) to state jurisdiction.

b. Golf Road from CTH T to CTH E: from state-maintained frontage road to county jurisdiction.

c. Northview Road from eastern Corridor boundary: from local (Town of Pewaukee and City of Waukesha) to county jurisdiction.

d. Milwaukee Street from STH 83 to CTH C, Main Street from CTH C to CTH DR, Genesee Street from IH 94 to CTH C, and Oakwood Drive from CTH C to CTH B: from local (City of Delafield) to county jurisdiction.

e. Main Street from W. Wisconsin Avenue to CTH T, Prospect Avenue from CTH G to E. Wisconsin Avenue, W. Wisconsin Avenue from CTH JJ to Oakton Avenue, E. Wisconsin Avenue from CTH M to Oakton Avenue, and Capitol Drive from W. Wisconsin Avenue to STH 16: from local (Village of Pewaukee) to county jurisdiction.

f. CTH TJ from Grandview Boulevard to eastern Corridor boundary: from county to local (Town of Pewaukee and City of Waukesha) jurisdiction.

g. CTH E from south Corridor boundary to CTH DR and CTH G from south Corridor boundary to CTH SS: from county to local (Town of Delafield) jurisdiction.

h. CTH TJ from western terminus to Grandview Boulevard: from county to local (City of Waukesha) jurisdiction.

i. CTH GR from northern boundary of the Corridor to its eastern terminus: from county to local (Town of Pewaukee) jurisdiction.

4. Transit Service. Map 25 also identifies the planned transit service areas within the IH 94 West Corridor study area. These service areas include 133 round trip route miles of commuter-oriented service proposed in the adopted plan over STH 16 and IH 94 between Oconomowoc, Delafield, Pewaukee, Waukesha, and Milwaukee. With respect to transit-oriented park-ride lots, the plan envisions three new lots in addition to the two lots already provided. One of the two existing lots is located at STH 67 and CTH DR, just south of IH 94, while the other is located at the intersection of STH 67 and Pabst Road in the Olympia shopping center parking lot. The three new lots would be located near the STH 83 interchange with IH 94 in the City of Delafield, near the CTH T interchange with IH 94 in the City of Waukesha, and near the CTH JJ interchange with STH 16 in the Village of Pewaukee.

The adopted plan also holds open the possibility of operating a commuter rail route on a trial, or demonstration, basis in and adjacent to the IH 94 West Corridor. This route would emanate from the Milwaukee central business district and proceed along the Soo Line Railroad Company trackage to Oconomowoc, a distance of 32.2 miles. The plan envisions that an adequate test of this commuter rail service would require a commitment for at least one year and that proper surveys would be conducted to help evaluate the demonstration project. Whether or not such a demonstration would be undertaken would be dependent upon the extent of public interest in, and concern for, the possible reestablishment of commuter rail service in the Region.

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.

The Waukesha County-Crites Field Airport, one of the 11 airports in the planned regional system, is located partly within the IH 94 West Corridor study area. Most of the major recommendations envisioned in the adopted plan have been completed with the recent land acquisition and extension of the primary northwest/southeast runway and taxiway. However, some additional improvements are recommended, including terminal and hangar improvements. No major additional site acquisition is envisioned in the plan.

Regional Water Quality Management Plan: The regional water quality management plan is intended to provide recommendations to help meet a mandate of the U. S. Congress 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.

Of particular importance to the IH 94 West 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 26.

As shown on Map 26, within the IH 94 West Corridor study area there are four individual planned sanitary sewer service areas served by four different public sewage treatment facilities. Collectively, the four areas total about 26 square miles, or 51 percent of the total land area in the Corridor. Service is currently provided to about eight square miles. The planned increment thus approximates 18 square miles. Map 26 also identifies the existing and planned major trunk sewers designed to serve these planned sewer service areas.

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. Taken together, these plans form the regional floodland management and stormwater drainage plan. With respect to the IH 94 West Corridor, the Commission has, to date, completed and adopted watershed plans only for that portion of the IH 94 West Corridor encompassed in the Fox River watershed.[11] A floodland management plan which was developed as a refinement to the Fox River watershed plan was prepared for the Village of Pewaukee in 1978.[12]

This watershed plan recommended that a major turf-lined channel, supplemented with low earthen dikes and floodwalls, be constructed along the Pewaukee River reach between the Soo Line Railroad (the former Chicago, Milwaukee, St. Paul & Pacific Railroad) and CTH SS, with the downstream two-thirds consisting of only minor channel bottom lowering (see Map 27). In addition, selected structure floodproofing and preservation of certain floodlands for recreation and related open space uses was recommended to solve existing and potential flood problems along the Pewaukee River and the Pewaukee Lake Outlet in the Village of Pewaukee. In addition to abating flood damages within the

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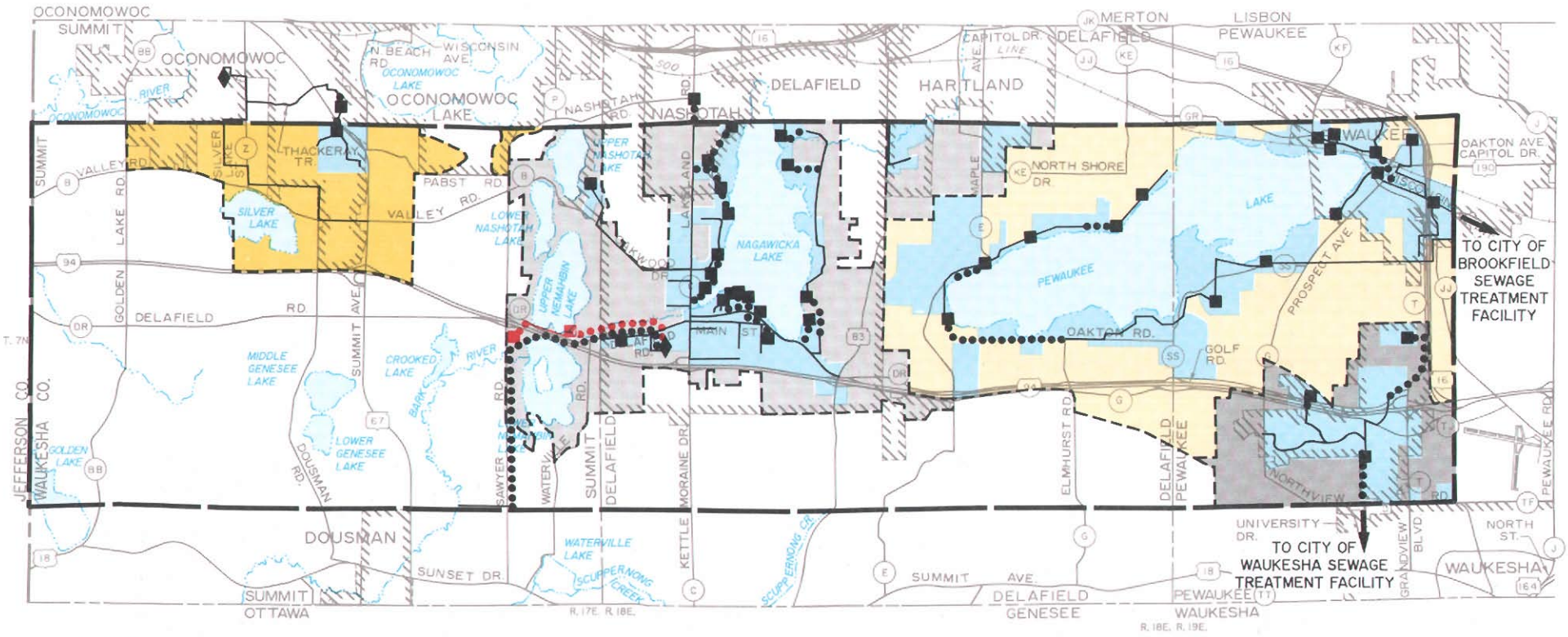
[11] *See SEWRPC Planning Report No. 12, A Comprehensive Plan for the Fox River Watershed, 1971.*

[12] *See SEWRPC Community Assistance Planning Report No. 14, Floodland Management Plan for the Village of Pewaukee, February 1978.*

Map 26

REGIONAL WATER QUALITY PLAN FOR THE IH 94 WEST CORRIDOR AS AMENDED THROUGH 1990



LEGEND

- EXISTING SANITARY SEWER SYSTEM: 1985

PLANNED AREAS TRIBUTARY TO THE FOLLOWING SEWAGE TREATMENT FACILITIES

- CITY OF BROOKFIELD
- DELAFIELD-HARTLAND WATER POLLUTION CONTROL COMMISSION
- CITY OF OCONOMOWOC
- CITY OF WAUKESHA
- PLANNED SANITARY SEWER SERVICE AREA BOUNDARY

SEWERAGE FACILITIES

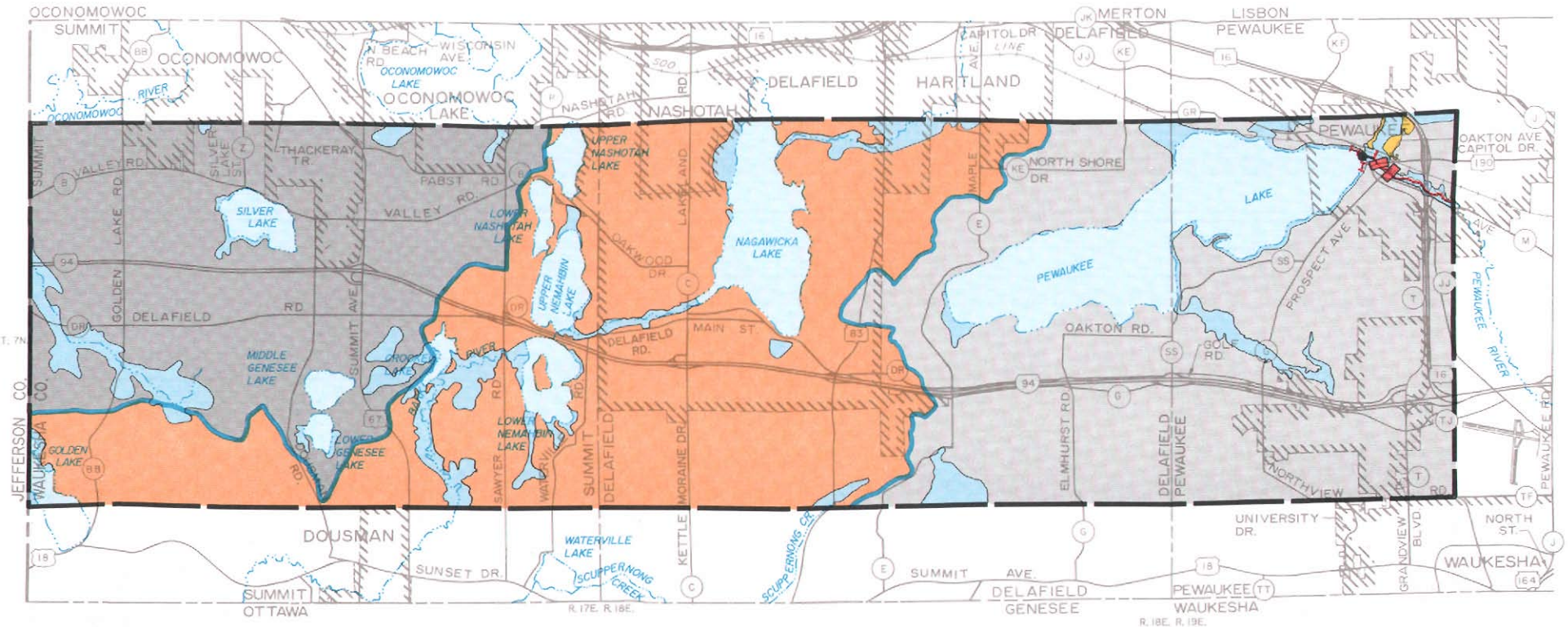
- EXISTING PUBLIC SEWAGE TREATMENT FACILITY
- EXISTING TRUNK SEWER
- EXISTING FORCE MAIN
- EXISTING LIFT OR PUMPING STATION
- PROPOSED TRUNK SEWER
- PROPOSED FORCE MAIN
- PROPOSED PUMPING STATION

GRAPHIC SCALE
0 1 2 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 27

COMPREHENSIVE WATERSHED PLAN RECOMMENDATIONS FOR THE IH 94 WEST CORRIDOR AS AMENDED THROUGH 1990



LEGEND

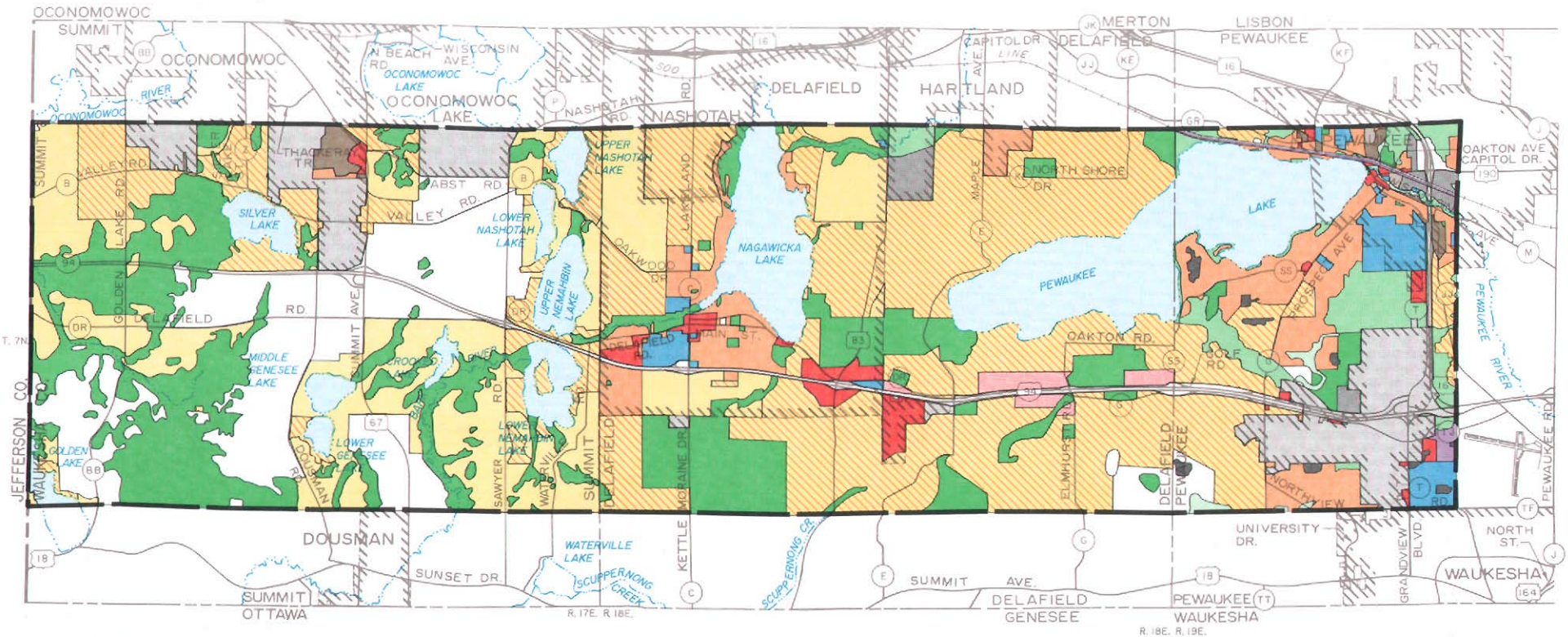
- WATERSHED BOUNDARY AS DELINEATED BY SEWRPC
- BARK RIVER WATERSHED
- FOX RIVER WATERSHED
- OCONOMOWOC RIVER WATERSHED
- EXISTING 100-YEAR RECURRENCE INTERVAL FLOODLANDS
- EXISTING 100-YEAR RECURRENCE INTERVAL FLOODLANDS THAT WOULD BE ELIMINATED UNDER PLANNED CHANNEL CONDITIONS
- APPROXIMATE LATERAL EXTENT OF PROPOSED MAJOR TURF OR CONCRETE CHANNEL WITH SUPPLEMENTAL DIKE/FLOODWALL
- PROPOSED EARTHEN DIKE
- PROPOSED BRIDGE REPLACEMENT
- PROPOSED PEWAUKEE LAKE LEVEL CONTROL STRUCTURE
- APPROXIMATE LOCATION OF PROPOSED PEWAUKEE LAKE OUTLET CONDUIT

GRAPHIC SCALE
0 1 2 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 28

LOCALLY ADOPTED LAND USE PLANS IN THE IH 94 WEST CORRIDOR: 1985



LEGEND

- HIGH DENSITY RESIDENTIAL DEVELOPMENT (7.0-17.9 DWELLING UNITS PER NET ACRE)
- HIGH-MEDIUM DENSITY RESIDENTIAL DEVELOPMENT (4.4-6.9 DWELLING UNITS PER NET ACRE)
- MEDIUM DENSITY RESIDENTIAL DEVELOPMENT (2.3-4.3 DWELLING UNITS PER NET ACRE)
- LOW DENSITY RESIDENTIAL DEVELOPMENT (0.7-2.2 DWELLING UNITS PER NET ACRE)
- SUBURBAN RESIDENTIAL DEVELOPMENT (LESS THAN 0.7 DWELLING UNITS PER NET ACRE)
- COMMERCIAL DEVELOPMENT
- GOVERNMENTAL AND INSTITUTIONAL DEVELOPMENT
- MANUFACTURING, WHOLESALE, AND EXTRACTIVE
- OFFICE DEVELOPMENT
- TRANSPORTATION, COMMUNICATION, AND UTILITIES
- PARKS, CONSERVATION, AND RECREATIONAL AREAS
- SURFACE WATER
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- OTHER AGRICULTURAL AND RURAL LAND
- LAND NOT INCLUDED IN A LOCAL PLAN

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Village of Pewaukee, this approach would help to accomplish two desirable related objectives. First, the channel improvements recommended would eliminate overland flooding in the Village business district and the contiguous residential areas, thereby enhancing the development potential of the central business district. Second, the composite channel and floodproofing recommendations would provide an opportunity to develop a water-oriented greenway along the Pewaukee River through the business-commercial area, thereby improving the aesthetic character of the center portion of the Village.

Local Plans and Studies

In addition to working closely with the Regional Planning Commission in developing regional plans, county and local units of government in the IH 94 West Corridor are continuously undertaking the preparation of local development plans. These local plans are generally set within the regional plan framework and refine and detail the recommendations contained in the regional plans. A basic understanding of these local plans is important in order to ensure the integration of locally desired development objectives into the development plan for the IH 94 West Corridor. While many local planning studies have been completed within the area encompassed by the Corridor, only pertinent contemporary plans, that is, plans which have been adopted since 1970, and which contain land use elements will be reported on in this chapter. The eight plans concerned are presented in graphic form on Map 28. A brief description of the elements of those eight local plans covering nine municipalities which have significance for the preparation of the IH 94 Corridor plan follows.

City of Delafield: In 1976, the City of Delafield adopted a comprehensive land use and thoroughfare plan,[13] with both land use and transportation elements. The plan recommendations are basically consistent with the adopted regional plans and carry those plans into greater detail, particularly with respect to land use. Areas identified for urban development concentrations in the City are all within planned areawide sewer service areas. The plan also properly seeks to protect most of the environmental corridors as identified in adopted regional plans.

Town of Delafield: In June 1990, the Town of Delafield adopted a land use plan.[14] Unlike the adopted regional land use plan, this plan envisions development of most of the area of the Town for low-density urban residential use. In addition, the Town plan does not identify primary environmental corridors or prime agricultural lands, thereby ignoring the need to protect and preserve these resources.

Village of Hartland: In 1981, the Village of Hartland adopted a comprehensive plan for the Village,[15] with both land use and transportation elements, basically carrying the regional plans into greater detail.

Village of Nashotah: In 1980, the Village of Nashotah adopted a comprehensive plan,[16] consisting of both land use and transportation elements. The plan recommendations are basically consistent with the adopted regional plans and carry those plans into greater detail, particularly with respect to land use. Areas identified for urban development are all within the planned areawide sewer service area. The plan properly identifies and protects the environmental corridors.

City of Oconomowoc: In 1971, the City of Oconomowoc completed a comprehensive plan for the City.[17] The plan consists of land use, transportation, and community facility elements. The plan recommendations are basically consistent with the adopted regional plans and carry those plans into greater detail, particularly with respect to land use and community facility elements. It should be noted that most of the area of the City included in the IH 94 West Corridor was not a part of the City when the plan was adopted and, therefore, was not

[13] *See A Comprehensive Land Use and Thoroughfare Plan for the City of Delafield, Wisconsin, Donohue & Associates, Inc., February 1976.*

[14] *See land use plan map prepared by Jahnke & Jahnke Associates, Inc., June 1990.*

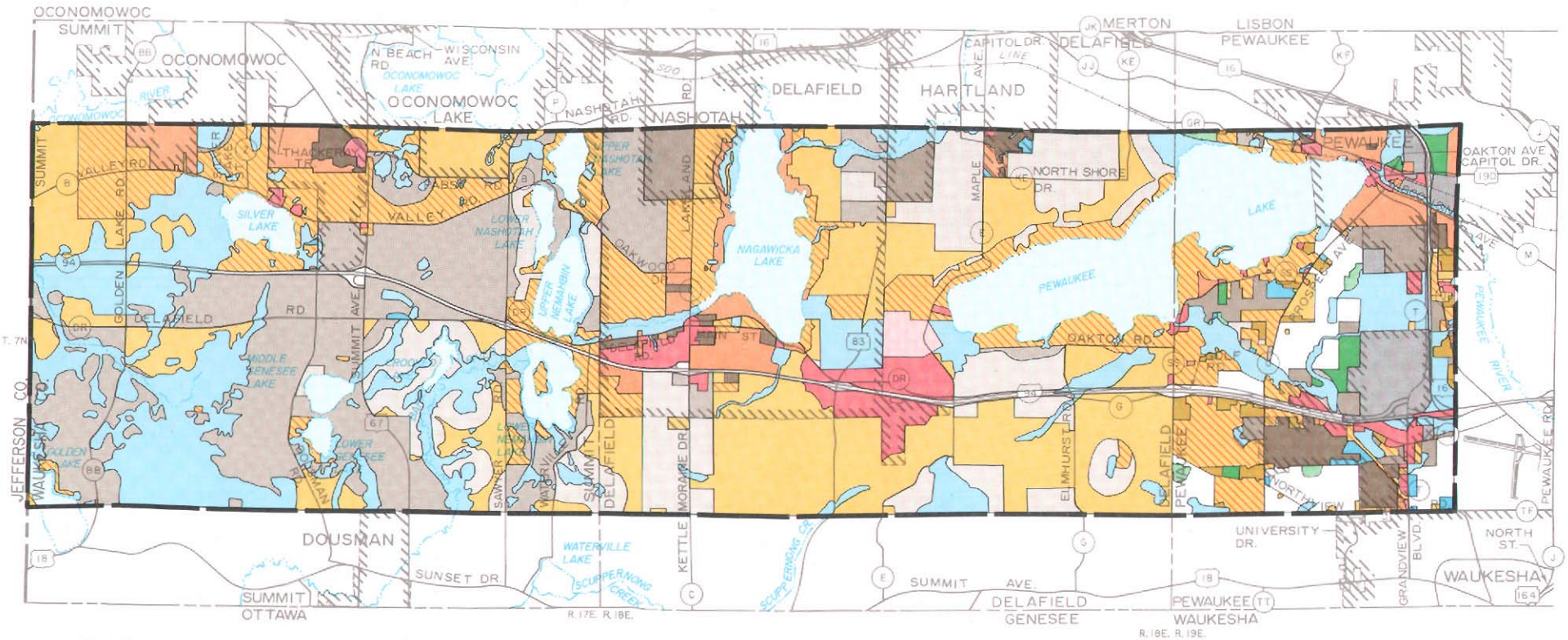
[15] *See SEWRPC Community Assistance Planning Report No. 49, A Land Use and Traffic Circulation Plan for the Village of Hartland: 2000, July 1981.*

[16] *See Village of Nashotah Comprehensive Land Use and Thoroughfare Plan, Graef, Anhalt, Schloemer and Associates, Inc., 1980.*

[17] *See A Master Plan for the City of Oconomowoc, Wisconsin, 1971, Elmer Krieger.*

Map 29

LOCALLY PROPOSED GENERALIZED LAND USE IN THE IH 94 WEST 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-1.4 ACRES)
- SUBURBAN (1.5-4.9 ACRES)
- RURAL ESTATE (5.0 ACRES OR GREATER)
- COMMERCIAL
- INDUSTRIAL
- GOVERNMENTAL AND INSTITUTIONAL
- RECREATION
- LOWLAND CONSERVANCY
- UPLAND CONSERVANCY
- SURFACE WATER

AGRICULTURE

- 35.0 ACRES OR GREATER
- 5.0-34.9 ACRES
- 2.0-4.9 ACRES
- LESS THAN 2.0 ACRES
- UNZONED

GRAPHIC SCALE
0 1 2 MILE
0 2000 4000 8000 FEET

Source: SEWRPC.

included in the plan. The detailed land use plan for that portion of the City of Oconomowoc included in the plan and in the Corridor is shown on Map 29.

Village of Oconomowoc Lake: The Village of Oconomowoc Lake adopted a land use plan in October 1990.[18]

Village and Town of Pewaukee: In 1982, the Village and Town of Pewaukee jointly prepared and adopted a land use plan,[19] a refinement of the adopted regional plans.

Town of Summit: In February 1979, the Town of Summit adopted a land use plan.[20] Like the adopted regional land use plan, this plan seeks to protect the primary environmental corridors in the Town. However, unlike the regional plan, this plan envisions development of most of the remaining area of the Town for low-density urban residential use, with lot sizes ranging from one to three acres, thereby ignoring the need to protect and preserve prime agricultural land and promoting scattered urban residential development without centralized sanitary sewer and water supply services.

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 West 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. 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 Commission one inch equals 2,000 feet 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 in the Corridor is shown on Map 29. The areal extent of lands lying within each of the generalized zoning districts is set forth in Table 20.

Collectively as of 1985, local units of government in the Region have zoned about 36 percent of the Corridor for residential development, representing about 13,900 acres, or about 22 square miles. Residential is the dominant zoning in the study area, with one exception in the southern one-half of the Town of Summit, where conservancy and agricultural use are the dominate zoning.

Local communities have zoned about 5 percent of the Corridor for commercial and industrial development, such areas totaling about 1,900 acres, or about three square miles. Major concentrations of commercially zoned land use are found in the Cities and Villages of the Corridor, as well as at each of the major intersections of IH 94, including the intersections with CTH T, STH 83, and STH 67. The industrially zoned land lies primarily in the City of Waukesha and Village of Pewaukee.

Agricultural zoning in the Corridor has been applied to about 11,300 acres of land, or about 17.7 square miles, representing about 29 percent of the Corridor's total area. Of that total, about 1,000 acres, or about 1.6 square miles, representing about 3 percent of the area, has been zoned for exclusive agricultural use, that is, placed into a zoning category that has a minimum farm size of 35 acres. All of the exclusive agricultural zoning within the Corridor is located in the Town of Pewaukee. Marginal agricultural zoning providing for a minimum lot size of five acres, but less than 35 acres, applies to another 1.5 square miles, or about 3 percent of the Corridor's total area. The remaining agricultural zoning is agricultural in name only since it permits nonfarm-related residential development on less than five-acre parcels. Such zoning occurs in the Towns of Delafield, Pewaukee, and Summit. This zoning category comprises about 14.5 square miles and represents about 24 percent of the Corridor area.

[18]*See The Village of Oconomowoc Lake Master Plan, Camiros Ltd.*

[19]*See SEWRPC Community Assistance Planning Report No. 76, A Land Use Plan for the Town and Village of Pewaukee: 2000, December 1982.*

[20]*See Town Plan: Town of Summit, prepared by Nelson and Associates, February 1979.*

Table 20

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

Generalized Zoning District Class	Total Area Zoned (acres)	Percent of Total Corridor Area
Residential		
High-Density (less than 6,000 square feet per dwelling unit)	605	1.6
Medium-Density (6,000-19,999 square feet per dwelling unit)	1,584	4.1
Low-Density (20,000 square feet-1.4 acres per dwelling unit)	4,970	13.0
Suburban-Density (1.5-4.9 acres per dwelling unit)	6,495	16.9
Rural-Estate-Density (5.0 or more acres per dwelling unit)	258	0.7
Mobile Homes	0	0.0
Subtotal	13,912	36.3
Commercial	1,259	3.3
Industrial	688	1.8
Transportation, Communication, and Utility	0	0.0
Governmental and Institutional	143	0.4
Recreational	327	0.8
Conservation		
Lowland	5,768	15.0
Upland	71	0.2
Subtotal	5,839	15.2
Extractive	0	0.0
Water	4,895	12.8
Agricultural		
35 or More Acres per Farm	1,048	2.7
5.0-34.9 Acres per Farm	980	2.5
2.0-4.9 Acres per Farm	5,721	14.9
Less than 2.0 Acres per Farm	3,556	9.3
Subtotal	11,305	29.4
Total	38,368	100.0

Source: SEWRPC.

Conservancy zoning to protect natural resources is prevalent throughout the IH 94 West Corridor. In total, local units of government have applied lowland conservancy zoning to nearly 5,800 acres, or about nine square miles, representing about 15 percent of the Corridor area. In addition, upland conservancy zoning has been applied in the Town of Pewaukee to about 70 acres of land lying within the Corridor. As shown on Map 29, the conservancy zoning has been applied to most of the riverine and wetland areas of the Corridor.

An 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 West Corridor. This

Table 21

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

Residential Development Type	Vacant Lands Zoned Residential (acres)[a]	Development Potential	
		Number of Housing Units[b]	Population[c]
High-Density	96	738	2,231
Medium-Density	318	994	3,004
Low-Density	1,587	1,456	4,401
Suburban-Density[d]	10,013	4,908	14,834
Rural-Estate-Density	153	26	79
Total	12,167	8,122	24,549

[a]*Does not include vacant lands within primary environmental corridors.*

[b]*Assumes 13 acres per 100 dwelling units for high density; 32 acres per 100 dwelling units for medium density; 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.*

[c]*Assumes 3.02 persons per household.*

[d]*Includes about 6,800 acres of agriculturally zoned land which permits nonfarm development on lots of five acres or less.*

Source: SEWRPC.

analysis was conducted by comparing the areal extent of the primary environmental corridors as depicted on Map 12 to the conservancy zoning depicted on Map 29 and to property ownership maps. For the Corridor as a whole, about 80 percent of the primary environmental lands, representing over nine square miles, have been either acquired or properly placed in conservancy zoning districts.

A special analysis was conducted of the development potential of vacant lands currently zoned for residential, commercial, and industrial use in the IH 94 West Corridor. The results of this analysis are summarized in Table 21 for residential development and Table 22 for commercial and industrial development. As shown in Table 21, there are nearly 12,200 acres, or about 19 square miles, of vacant land in the IH 94 West Corridor zoned for either residential development, or agricultural use permitting nonfarm related residential development on parcels of less than five acres. Based upon the densities at which development is permitted within these zoned areas, these lands have the capability of accommodating about 8,100 incremental housing units and an incremental resident population of about 24,500 persons. In addition, local units of government in the Corridor have collectively zoned about 650 acres of land for commercial or industrial use. Together, if they are developed at industrial and commercial densities generally found in southeastern Wisconsin, these lands have the capability of providing for nearly 9,700 incremental jobs.

Table 22

DEVELOPMENT POTENTIAL OF VACANT LANDS CURRENTLY ZONED FOR COMMERCIAL OR INDUSTRIAL USE IN THE IH 94 WEST CORRIDOR: 1985

Development Type	Vacant Lands Zoned Commercial or Industrial (acres)[a]	Development Potential[b] (number of jobs)
Commercial	441	7,350
Industrial	207	2,300
Total	648	9,650

[a]*Does not include vacant lands within primary environomental corridors.*

[b]*Assumes six acres per 100 employees for commercial development and nine acres per 100 exployees for industrial development.*

Source: SEWRPC.

Table 23

STATUS OF LAND DIVISION REGULATION BY LOCAL UNIT OF GOVERNMENT IN THE IH 94 WEST CORRIDOR: 1985

Governmental Unit	Has Governing Body Adopted a Land Division Ordinance?	Ordinance Applies to Divisions of Land Other than Subdivisions as Defined in State Statues	Scope of Minor Land Division Review
County			
Waukesha	Yes, shoreland areas only	Yes	All land divisions resulting in a parcel 20 acres in size or less
Cities or Villages			
Delafield	Yes	Yes	All land divisions resulting in a parcel 1.5 acres in size or less
Hartland	Yes	Yes	All land divisions resulting in a parcel four acres in size or less
Nashotah	Yes	Yes	All land divisions
Oconomowoc	Yes	Yes	All land divisions resulting in a parcel five acres in size or less
Oconomowoc Lake	Yes	No	- -
Pewaukee	Yes	Yes	All land divisions resulting in a parcel four acres in size or less
Waukesha	Yes	Yes	All land divisions
Towns			
Delafield	Yes	Yes	All land divisions resulting in a parcel 20 acres in size or less
Pewaukee	Yes	Yes	All land divisions
Summit	Yes	Yes	All land divisions

Source: SEWRPC.

An analysis was also conducted to compare the amount of vacant lands located within those areas which are zoned to allow urban development as set forth on Map 29, with the areas proposed for urban development as set forth in the adopted year 2000 land use plan and as set forth on Map 23. Of the 12,800 acres of vacant land zoned for urban development, about 7,340 acres, or about 57 percent, are located in areas identified for urban development in the adopted year 2000 regional land use plan. The remaining 5,460 acres, or about 43 percent, of vacant land zoned for urban development are located in areas recommended to remain in agricultural or other rural uses under the adopted year 2000 regional land use plan.

Land Division Regulation

In 1985 the Regional Planning Commission inventoried all land division ordinances enacted by county and local units of government in the Region. 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 adequate arterial and collector street rights-of-way are appropriately located, and dedicated or reserved; that access to arterial streets and highways is appropriately limited in order to preserve the traffic-carrying capacity of such facilities; that parks, school sites, drainageways and other

open spaces are preserved; that street, block, and lot layouts are appropriate; and that adequate public improvements are provided. 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 for both counties and towns to have concurrent jurisdiction over land divisions.

All cities, villages, and towns within the IH 94 West Corridor have adopted land division ordinances. In addition, Waukesha County has adopted a land division ordinance, but this jurisdiction is confined to the unincorporated shoreland areas of the County. For the purposes of the IH 94 West Corridor study, each of the subject ordinances was reviewed solely to determine whether or not the regulatory scope of each ordinance could ensure public review and approval of land divisions so that those farm and lot size minimum required to implement the regional land use plan can be observed. The results of this analysis are set forth in Table 23. In four of the 11 ordinances, those enacted by the City of Waukesha, the Village of Nashotah, and the Towns of Pewaukee and Summit, there is no size restriction specified. Hence, in those cases, the local community reviews and approves all land divisions and can thereby ensure compliance with the plan recommendations. In the remaining seven ordinances, various minimum parcel sizes are specified, ranging from 20 acres or less in the Town of Delafield and in Waukesha County to 1.5 acres in the City of Delafield. In those cases, land divisions could occur at variance with the plan recommendations without public review and approval.

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 identify precisely 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 West Corridor, official maps have been formally adopted only by the Cities of Oconomowoc and Waukesha. In addition, a street and highway width map has been adopted by Waukesha County. With one exception, these maps are consistent with the adopted regional transportation plan recommendations. The single exception is the proposed extension of CTH KE in the Town of Delafield, where the Town Board did not ratify the County's action.

SUMMARY

This chapter has described the demographic and economic base, historic and existing land use, natural resource base, transportation facilities, public utility facilities, and local plans and land use regulations of and for the IH 94 West Corridor study area. Of significance to the preparation of a development plan for the Corridor are the following findings:

1. After periods of rapid growth in the 1950s and 1960s, the resident population of the Southeastern Wisconsin Region stabilized at an estimated 1.81 million persons in 1990, an increase of about 45,000 persons, or about 3.0 percent, over the population enumerated in 1980. In Waukesha County, the resident population has increased from 280,200 in 1980 to an estimated 304,700 in 1990, an increase of 24,500, or 9 percent.

2. The increase in the resident population of the IH 94 West Corridor has been more rapid than that of the Region or of Waukesha County. Between 1980 and 1990, the resident population of the Corridor increased by about 3,200 persons, or about 16 percent, from about 20,600 persons to about 23,800 persons.

3. The number of housing units in the Region, in Waukesha County, and in the IH 94 West Corridor has increased faster than the resident population. In 1990 there were about 9,000 housing units in the IH 94 West Corridor and the average household size was about 2.8 persons, greater than the regional level of 2.6 persons. This difference reflects the essentially single-family housing unit character of the residential development in the Corridor study area.

4. Per capita income in 1987 in the Corridor was about $14,800. When measured in constant 1979 dollars, the per capita

income in the Corridor declined by about 3 percent over the six-year period from 1979 through 1985.

5. The labor force in Waukesha County, including the IH 94 West Corridor, totaled about 169,400 persons in 1990. Of that total, about 4,900 were unemployed, an unemployment rate of only 2.9 percent.

6. The number of jobs in Waukesha County totaled about 172,300 in 1990. Of that total, 10,800, or nearly 6 percent, were located within the Corridor. Employment growth since 1972 has been at a significantly faster rate in the Corridor then in either the Region or Waukesha County. The pattern of job growth in Waukesha County, and particularly in the Corridor, reflects a general trend of job decentralization in the Region.

7. In 1950, the only urban development in the Corridor was residential and recreational development on the shoreline of the major lakes in the Corridor. Since 1950, urban development in the Corridor has consisted largely of two types: residential land uses at sites throughout the Corridor, and highway-oriented commercial land uses located within the Corridor at major interchanges on the IH 94 Freeway, which opened to traffic between CTH SS and Sawyer Road in June 1963 and between Sawyer Road and the Waukesha County line in August 1964. By 1985, there were about 12 square miles of urban development in the Corridor, or about 19 percent of the total area of the Corridor.

8. Rural land uses continue to dominate the landscape in the IH 94 West Corridor study area, with three out of every four acres of land in 1985 still devoted to agriculture, wetlands, woodlands, or other open uses. Agricultural land uses account for 25 square miles, or nearly 40 percent, of all lands within the Corridor. Prime agricultural land in 1985 accounted for about 15 square miles of the study area, or about 25 percent of the Corridor area. Major concentrations of agricultural land uses thus continue to be maintained in the Corridor, providing the Corridor and the Region with an economic, environmental, and aesthetic asset. Most of the soils in the Corridor are particularly well suited for agricultural use.

9. In 1985, urban land uses constituted about 25 percent of the Corridor's area. Of such uses, about 53 percent were devoted to residential use; about 28 percent to transportation and utility land uses, including off-street parking; about 12 percent to park and recreational use; and nearly 4 percent to governmental and institutional use. Commercial, industrial, and extractive and landfill uses each comprised about 1 percent of the Corridor area.

10. About 15 square miles, or 29 percent of the land area of the Corridor, are covered by soils which have severe limitations for urban development even with public sanitary sewers. The rest of the Corridor is covered by soils which are suitable for urban development with public sanitary sewers. About 23 square miles, or 43 percent of the land area of the Corridor, appears to be suitable for conventional onsite sewage disposal systems, while about 32 square miles, or about 61 percent of the land area of the Corridor, appears to be suitable for alternative onsite sewage disposal systems.

11. Surface waters and floodplains, wetlands, woodlands, and wildlife habitat areas are particularly important elements of the natural resource base. Floodplains within the Corridor approximate 10 square miles, or 17 percent of the area of the Corridor. Wetlands comprise about seven square miles, or 12 percent of the Corridor area, and woodlands occupy about five square miles, or 9 percent of the Corridor. Significant wildlife habitat totals about 16 square miles, or 27 percent of the Corridor.

12. 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, are found

to occur in linear concentrations, termed environmental corridors by the Regional Planning Commission. The preservation and protection of these corridors are essential to the maintenance of a good environment for life within the Corridor. In particular, primary environmental corridors, which are the largest, longest, and widest such corridors, should be preserved in essentially natural, open uses. Such corridors total about 19 square miles, or 32 percent of the study area.

13. The IH 94 West Corridor study area is well served by an arterial street and highway system totaling about 84 miles in length. The arterial network is appropriately spaced at about two-mile intervals in both the north-south and east-west directions throughout much of the Corridor. About 21 miles, or about 25 percent of the system, consists of divided facilities, while about eight miles, or about 10 percent of the system, have been constructed to urban standards.

14. The IH 94 freeway is the most heavily traveled facility in the Corridor, with 1989 average weekday traffic volumes ranging from a low of about 25,300 vehicles west of STH 67 to a high of about 53,900 vehicles just west of STH 16. The most heavily traveled surface arterial streets and highways consist of Grandview Boulevard, Capitol Drive, STH 67, and STH 83.

15. About five miles, or 6 percent, of the 84-mile arterial system serving the Corridor were, in 1989, operating over design capacity and exhibiting traffic congestion during peak travel periods. Another four miles of facilities, representing an additional 5 percent of the system, were operating at design capacity with incipient congestion.

16. A comparison of average weekday travel with average weekend travel along IH 94 leads to the conclusion that at the eastern end of the Corridor, the design of IH 94 to serve weekday travel demands should be sufficient to meet weekend travel demands as well. In the western end of the Corridor, the design of the facility to serve average weekday travel demand on IH 94 should be sufficient to meet weekend travel demands as well. Connecting surface arterials should also be designed to serve average weekday travel demand with appropriate consideration of peaking.

17. State trunk highways and frontage roads maintained by the State constitute nearly 32 miles, or about 38 percent, of the 84-mile arterial system within the Corridor. County trunk highways total an additional 41 miles, or about 49 percent of the system; with the remaining 11 miles, or about 13 percent, under local jurisdiction. All but 18 miles of the system, or about 21 percent, have been placed on the Federal Aid Interstate, Federal Aid Primary, Federal Aid Secondary, or Federal Aid Urban systems, and are thus eligible for such categorical aids.

18. Railway service is provided in the Corridor by one private company, the Soo Line Railroad (former Chicago, Milwaukee, St. Paul & Pacific Railroad), with one interstate line serving the Corridor. This railway facility provides freight service to industrial concentrations within the Corridor. The facility also provides the routing of the federally subsidized Amtrak passenger service between Chicago, Milwaukee, St. Paul, and Seattle. However, no stops are provided within the Corridor. Given the predominantly rural nature of the study area, only limited public transit service is currently provided within the Corridor.

19. Four public sanitary sewerage systems serve the IH 94 West Corridor: the Brookfield, Waukesha, Delafield-Hartland, and Oconomowoc systems. Together, these four systems provide service to about eight square miles, or 13 percent of the Corridor, and serve about 15,300 persons, or 68 percent of the resident population of the Corridor.

20. Four public water supply systems presently supply the Corridor: the Waukesha, Oconomowoc, Hartland, and Pewaukee systems. All four systems utilize groundwater as the supply source. Together, these four systems serve about two square miles, or about 3 percent of the Corridor, and provide service to about 7,900 persons, or about 35 percent of the resident population of the Corridor.

21. A number of regional plans have been prepared that apply to the study Corridor. This framework of areawide 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, the regional water quality management plan, and the Fox River watershed plan. The IH 94 West Corridor plan should serve to refine and detail these regional plan elements as may be found necessary or desirable.

22. 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 about an additional nine square miles of land from rural to urban use in the IH 94 West Freeway Corridor. These lands could be expected to accommodate an incremental resident population of about 13,000 persons, or about 57 percent more than the current population of 22,700 persons. These lands could also be expected to accommodate an incremental employment of about 8,700 jobs, or about 82 percent more than the current employment of 10,600 jobs.

23. The regional park and open space plan contains recommendations attendant to park site acquisition and development, parkway acquisition, and recreational trail development. The plan contains recommendations for maintenance of two existing major public parks in the Corridor, Naga-Waukee Park, and the Lapham Peak recreation area, as well as expansion of the Lapham Peak recreation area. Parkway acquisition recommendations apply to primary environmental corridor lands along the Bark River in the Kettle Moraine area and around the major lakes in the Corridor. Recreational trails are recommended to be provided to complete the Lake Country Trail and the Ice Age Trail through the Corridor.

24. 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. Of particular importance to the IH 94 West Corridor is the extension of CTH SS from CTH G easterly to CTH T, the extension of Meadowbrook from Northview Road southerly to USH 18, the extension of CTH KE from CTH E westerly to STH 83, and the widening of CTH T from IH 94 northerly to the Waukesha County Technical College. In addition, the plan holds open the possibility of operating, on a demonstration basis, commuter rail service between Oconomowoc and Milwaukee on the Soo Line trackage that generally parallels the Corridor.

25. 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 West Corridor is Waukesha County-Crites Field, one of the 11 public use airports comprising the recommended regional airport system. Major improvements at Waukesha County-Crites Field have recently been completed. No major additional land acquisition is envisioned in the plan.

26. The regional water quality management plan provides recommendations of significance to the IH 94 West Corridor. An important element of that plan pertains to sanitary sewer service areas. Together, the planned sewer service areas attendant to the four sewerage systems serving the Corridor total about 26 square miles, or 51 percent of the total land area of the Corridor. Such services are currently provided to about eight square miles, making the planned increment about 18 square miles.

27. The comprehensive plan for the Fox River watershed recommends that the flooding problems along the Pewaukee Lake Outlet and the Pewaukee River in the Village of

Pewaukee be resolved through a combination of projects that would include an enlarged turf-lined channel, low earthen dikes and floodwalls, and selected structure floodproofing. Such improvements would eliminate overland flooding in the business district of the Village and thereby enhance its redevelopment potential.

28. 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 West Corridor plan. Detailed land use plans have been prepared for the Cities of Delafield and Oconomowoc; the Villages of Hartland, Nashotah, Oconomowoc Lake, and Pewaukee; and the Towns of Delafield, Pewaukee, and Summit. Except for the Towns of Delafield and Summit, the local land use plans are generally consistent with the recommendations contained in the regional plan. In the case of the Town of Delafield, the Town plan envisions a substantial amount of unsewered, low-density urban residential use on lands identified either as prime agricultural or primary environmental corridor in the regional land use plan. In the case of the Town of Summit, the Town plan seeks to protect most of the primary environmental corridors, but encourages a substantial amount of unsewered, low-density residential use on lands identified as prime agricultural in the regional land use plan.

29. An analysis of local development objectives as expressed through adopted zoning district maps indicates that, collectively, local units of government in the Corridor have zoned about 22 square miles, or 36 percent of the study Corridor, for residential use; about three square miles, or about 5 percent of the Corridor, for commercial and industrial use; about 18 square miles, or nearly 29 percent of the Corridor, for agricultural use; and about nine square miles, or about 15 percent of the Corridor, for conservancy use. Given current zoning, the local communities in the Corridor have collectively set aside enough land to accommodate about 8,100 incremental housing units and an incremental residential population of about 24,500, plus enough land to accommodate nearly 9,700 incremental jobs. At present, the Corridor has a resident population of 23,800, 9,000 housing units, and 10,800 jobs.

30. Based on an analysis of zoning and publicly owned lands, about nine square miles, or about 80 percent of the primary environmental corridor lands in the IH 94 West Corridor, have been acquired or properly placed in conservancy zoning districts.

31. All cities, villages, and towns in the Corridor have adopted land division ordinances. In addition, Waukesha County has adopted a land division ordinance that applies only to the unincorporated shoreland areas of the County. In addition, the Cities of Oconomowoc and Waukesha have formally adopted official maps consistent with the regional transportation plan. Waukesha County has adopted a street and highway width map. That map is consistent with the adopted regional transportation plan except for the proposed extension of CTH KE in the Town of Delafield, where the Town Board did not ratify the County's action.

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Chapter III

DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS

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 West Corridor study area. Encompassing parts of one county and 10 municipalities, the Corridor is set within the broader context of the southeastern Wisconsin metropolitan region. Consequently, development objectives for the Corridor must reflect, to the extent possible, such objectives for both the county and local communities concerned, as well as the larger seven-county Region. The objectives must also recognize the setting of the Corridor along a major interstate highway that forms the principal transportation link between the Milwaukee and Madison metropolitan areas.

The development objectives set forth in this chapter were based primarily, then, upon area-wide 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. 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.

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, and standards presented herein. The development objectives, principles, and standards, as approved by the Advisory Committee for the IH 94 West 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 agricultural lands preservation and protection, and 4) the transportation system. 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 24.

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.

   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.

Table 24

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

Land Use Category	Development Standard (gross area)[a]
Residential	
Single-Family Dwellings	
Rural-Estate-Density (5.0-acre lots or greater)	588 acres per 100 dwelling units
Suburban-Density (1.5- to 5.0-acre lots)	204 acres per 100 dwelling units
Low-Density Urban (20,000- to 62,000-square-foot lots)	109 acres per 100 dwelling units
Medium-Density Urban (8,400- to 20,000-square-foot lots)	32 acres per 100 dwelling units
Residential	
Multi-Family Dwellings	
High-Medium-Density Urban (5.2 to 7.3 dwelling units per net residential acre)	17 acres per 100 dwelling units
High-Density Urban (7.4 to 16.1 dwelling units per net residential acre)	9 acres per 100 dwelling units
Commercial	
Major	3 acres per 100 commercial employees
Other Commercial	6 acres per 100 commercial employees
Industrial	9 acres per 100 industrial employees[b]
Governmental/Institutional	
Major	12 acres per 1,000 persons
Schools	
Public Elementary	0.3 acres per 100 students
Public Middle School	0.3 acres per 100 students
Public High School	0.3 acres per 100 students
Church	2.5 acres per 1,000 persons
Other	12 acres per 1,000 persons
Public Outdoor Recreation	
Regional and Multi-Community	As recommended in the Regional Park and Open Space Plan
Community	
In Park Sites	2.2 acres per 1,000 persons
In Middle School or High School Sites	0.9 acres per 1,000 persons
Neighborhood	
In Park Sites	1.7 acres per 1,000 persons
In Elementary School Sites	1.6 acres per 1,000 persons

[a] *Gross 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.*

[b] *Assumming a net land-to-building ratio of from 5:1 to 7:1. If the net land-to-building ratio is between 3:1 and 5:1, then six acres per 100 employees is a more realistic standard to use.*

Source: SEWRPC.

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.

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 0.25 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. 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 0.5 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.

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 25.

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.

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.

Table 25

FACILITY SITE AREA AND SERVICE RADIUS STANDARDS FOR THE IH 94 WEST 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	0.75	3	--
Community Retail and Service Center	10,000-75,000	15-40	1.50	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	--	--	0.25	--	--
Educational Facilities					
Public Elementary School (grades K-6)	550 students	11[b]	1.50	--	--
Public Middle School (grades 7-8)	900 students	19[b]	1.50	15	20
Public Senior High School (grades 9-12)	2,300 students	48[b]	--	20	30
Outdoor Recreational Facilities					
Subneighborhood	--	--	--	--	--
Neighborhood	6,500	10	0.50	--	--
Community	--	25-99	--	20	--
Multi-Community	--	100-249	4.00 (urban)	--	--
	--	--	10.00 (rural)	--	--
Regional	--	250 or more	10.00	--	--

[a] *Indicates minimum average weekday traffic volume required on abutting freeway or arterial street or highway.*

[b] *Including land for the school facility and for associated school-related outdoor recreation facilities.*

Source: SEWRPC.

n. Allowance for internal expansion of the office development area in order to accommodate future office expansion land needs.

o. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as a planned office district.

p. Adequate off-street parking and loading areas onsite.

q. 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.

r. The provision of properly located and controlled points of vehicular ingress and egress to prevent safety problems and traffic congestion on adjacent arterial streets.

s. The provision of acceptable landscaping to serve as a buffer between office uses and adjacent nonoffice uses, and to help screen accessory uses within the development, such as parking lots, from the view of office personnel.

t. 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. An office park should allow for the internal expansion of the office development area in order to accommodate future office land needs.

o. Site microclimate and site orientation to climate should not adversely impact the site or surrounding areas for its use as an office park.

p. Adequate off-street parking and loading areas onsite.

q. 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.

r. 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.

s. The provision of acceptable landscaping to serve as a buffer between office uses and adjacent nonoffice uses, and to help screen accessory uses within the development, such as parking lots, from the view of office personnel.

t. 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 exceeding 6 percent generally may not be suitable for industry-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. The planned industrial district 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. 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.

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.

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 industry-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. Industrial parks should allow for the internal expansion of the industrial area in order to accommodate future industrial 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 industrial district.

q. Adequate off-street parking and loading areas onsite.

r. 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.

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 industrial uses and adjacent incompatible nonindustrial 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.

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 five 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 noxious 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. The state-mandated wetland conservancy zoning program, which places protective regulations on wetlands at least five acres in area lying within shoreland areas, is being carried out under the direction of the Wisconsin Department of Natural Resources with respect to county zoning in unincorporated areas under Chapter NR 115 of the Wisconsin Administrative Code and with respect to city and village zoning under Chapter NR 117 of the 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. Other Agricultural Lands

Principle

While less important to the production of food and fiber than prime 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 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, the State, and the 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.

   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 vanpooling and carpooling should be considered for provision within 0.25 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 0.5 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.

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[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.*

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]

Arterial 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
Freeway		
Posted Speed 50 mph	40-50	--
Posted Speed 55 mph	45-55	45-55
Posted Speed 65 mph	--	55-65
Standard Arterial		
Posted Speed 30 mph	18-27	--
Posted Speed 40 mph	27-37	30-40
Posted Speed 55 mph	--	40-55

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[2]*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 five 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.

Design capacity may be identified as the upper limit of level of service "C." Arterials carrying traffic volumes under their design capacity are operating at levels of service A, B, and C. Arterials operating at design capacity are carrying traffic volume for level of service C. Arterials operating over design capacity are operating at levels of service D, E, and F. Figure A-1 in Appendix A illustrates standard arterial operation for "at" design capacity and "over" design capacity operation. Figure A-2 in Appendix A illustrates freeway operation of levels of service A through F. Levels of service D through F represent over-design-capacity operation.

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-Lanes (undivided)	13,000	7,000
Four-Lanes		
Undivided	17,000	- -
Divided	25,000	22,000
Six-Lanes (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 volumes[3] 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 mph design speed and according to Wisconsin Department of Transportation standards as documented in the Wisconsin Department of Transportation's Facility

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[3] *The 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.*

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:

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.

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[4] *To 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.

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Chapter IV

ALTERNATIVE LAND USE DEVELOPMENT PLANS

INTRODUCTION

Previous chapters of this report have presented in summary form data pertinent to the preparation of land use and transportation system development plans for the IH 94 West 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, and the public utility base. In addition, information was presented on areawide and local plans relating to proposed development projects in the Corridor, as well as development objectives, principles, and standards and related urban design criteria for the Corridor.

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

LAND USE DEVELOPMENT PLAN FRAMEWORK

A framework for the development of a land use plan for the IH 94 West Corridor was prepared as a basis for the allocation of future land uses to the Corridor. That framework is graphically summarized on Map 30 and is quantitatively summarized in Table 26. The development framework was drawn in part from past planning and development activities relating to the part of the broader planning Region in which the Corridor is located, but also recognizes the urban land market forces which have resulted in a growing demand for commercial and industrial land use development along the IH 94 West 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 30 and described in Chapter II of this report. Existing urban land uses, including transportation uses but excluding recreational uses, together encompass about 13.2 square miles, or about 22 percent of the 60-square-mile study area. The lands concerned are fully committed to urban use and must be recognized as such in any recommended land use plan for the Corridor.

2. Environmental and Recreational Land Reserve
   In order to protect and preserve the natural resource base, certain lands in the 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 30 and consist of the following:

   a. Primary and secondary environmental corridors and isolated natural areas as described in Chapter II of this report.

   b. Major existing park and recreational land uses, including public park and parkway lands acquired but not yet developed for recreational use.

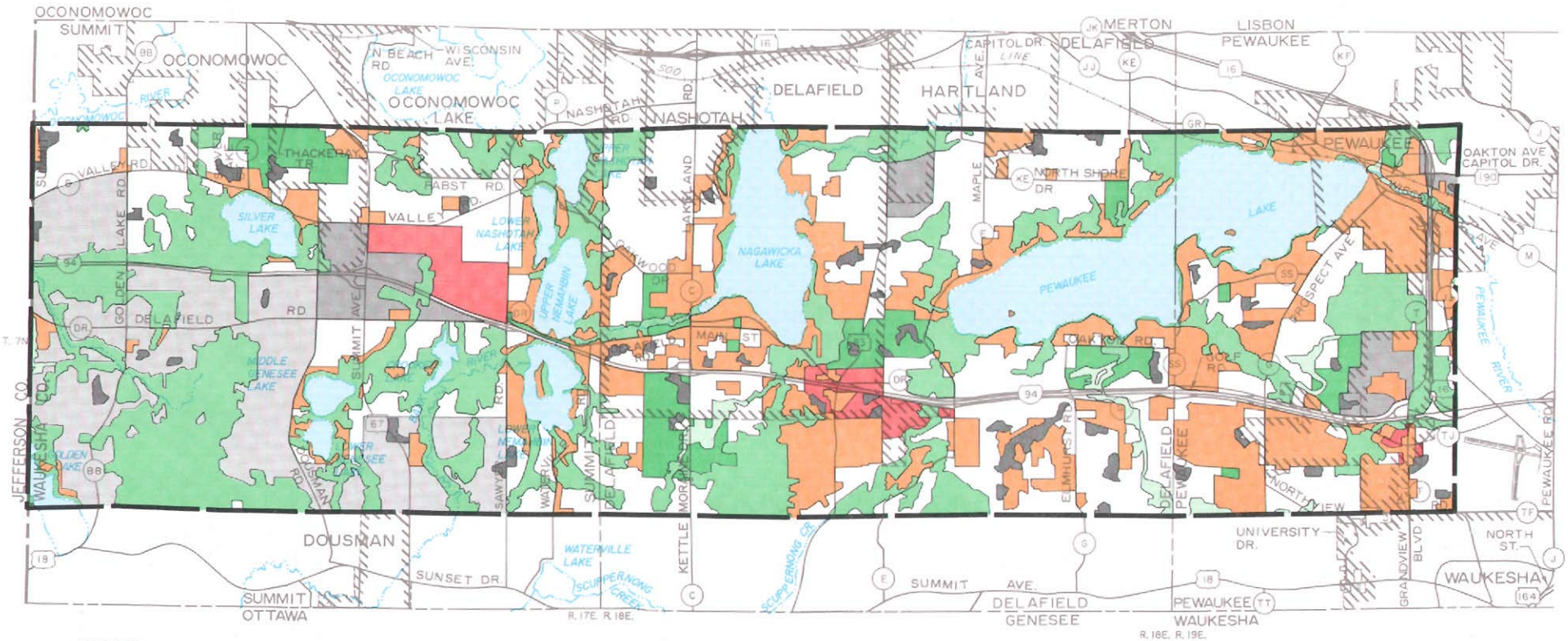
   c. Major outdoor recreation and open space areas previously proposed in adopted regional and local plan elements, including the proposed addition of 350 acres of land to the Kettle Moraine State Forest—Lapham Peak Unit and proposed Bark River and Pewaukee River parkway lands.

   As shown in Table 26, the environmental and major outdoor recreational land reserve encompasses about 23.5 square miles, or about 39 percent of the study area.

3. Agricultural Land Reserve
   Agriculture remains an important part of the regional economy. While it is recog-

Map 30

FRAMEWORK FOR THE IH 94 WEST CORRIDOR DEVELOPMENT PLAN



LEGEND

- GENERALIZED EXISTING URBAN DEVELOPMENT:1985
- ENVIRONMENTAL AND RECREATIONAL LAND RESERVE
  - PRIMARY ENVIRONMENTAL CORRIDOR
  - SECONDARY ENVIRONMENTAL CORRIDOR
  - ISOLATED NATURAL AREA
  - RECREATIONAL LAND
- PERMANENT AGRICULTURAL LAND USE RESERVE
- MAJOR COMMERCIAL LAND USE RESERVE
- MAJOR INDUSTRIAL LAND USE RESERVE
- RESIDUAL AREA AVAILABLE FOR ALL OTHER NEW URBAN DEVELOPMENT

Source: SEWRPC.

Table 26

DEVELOPMENT FRAMEWORK FOR THE IH 94 WEST CORRIDOR

Lands Not Available for New Urban Development (square miles)			
Existing Urban Land (1985)	Environmental and Major Recreational Land Reserve	Agricultural Land Reserve	Total
13.2	23.5	5.2	41.9

Lands Available for New Urban Development (square miles)			
Proposed Major Commercial Land Use Reserve	Proposed Major Industrial Land Use Reserve	Residual Area	Total
1.1	1.5	15.5	18.1

Development Capability of Available Lands			
Number of New Commercial Jobs	Number of New Industrial Jobs	Number of New Housing Units	Incremental Resident Population
30,400	10,800	14,300	41,500

Source: SEWRPC.

nized that certain lands along IH 94 are being, and additional lands may be expected to be, converted to urban development, it should also be recognized that not all undeveloped lands in the Corridor will be needed to accommodate even a greatly increased urban land market demand. Accordingly, it is proposed that certain lands in the Town of Summit portion of the study area lying primarily west of STH 67 and south of CTH B be held in an agricultural reserve except those lands in that area 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 or industrial uses. These lands, as shown on Map 30, total about 5.2 square miles, or nearly 9 percent of the study area. The great majority of such lands were identified in Chapter II of this report as prime agricultural lands, 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.

The delineation of the prime agricultural land presented in this chapter is based on the delineation of prime agricultural land as set forth in The Waukesha County Agricultural Land Preservation Plan, 1984. The criteria used for the delineation of prime agricultural lands in that report are as follows: 1) the farm unit must be at least 35 acres in area, 2) at least 50 percent of the farm unit must be covered by soils which meet the U. S. Soil Conservation Service standards for national prime farmland or farmland of statewide importance, and 3) the farm unit should be located in a block of farmland at least 100 acres in size.

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 urban land market to capitalize on the perceived need for enhanced levels of service to the traveling public by providing such facilities as restaurants and automobile service stations. In addition, however, some of the commercial land use demand may be

attributed to the attempt to capitalize on the provision of a variety of shopping opportunities, as well as office space. In order to accommodate this market demand, it is proposed that major commercial land use activities in the IH 94 West Corridor be concentrated in three specific locations. The locations and proposed extent of these three major commercial reserves are shown on Map 30. These three areas are:

a. A major commercial land use reserve in the City of Waukesha south of IH 94 at the intersection of CTH TJ and CTH T. This reserve totals about 30 acres of undeveloped, but developable, land.

b. A major commercial land use reserve in the City of Delafield at the interchange of IH 94 and STH 83 totaling 215 acres.

c. A major commercial land use reserve in the Town of Summit on the north side of IH 94 east of STH 67 totaling 445 acres.

Together, these three major commercial land use reserves encompass about 1.1 square miles, or about 2 percent, of the 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 West 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 Land Use 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, including corporate headquarters. In order to accommodate industrial demand, it is proposed that major industrial land reserves be established at four specific locations in the Corridor. The locations and proposed extent of these four major industrial reserves are shown on Map 30. These four areas are:

a. A major industrial land use reserve in the Village of Pewaukee at the interchange of USH 16 and STH 190. This reserve totals about 35 acres of undeveloped, but developable, land.

b. A major industrial land use reserve in the City of Waukesha and Town of Pewaukee on the north side of IH 94 west of USH 16. This reserve, which accommodates the General Electric Company, Medical Systems Group, headquarters, totals 255 acres.

c. A major industrial land use reserve in the Village of Hartland west of STH 83 and south of the Bark River. This reserve totals 190 acres.

d. A major industrial land use reserve in the City of Oconomowoc and Town of Summit at the interchange of IH 94 and STH 67. This reserve totals 495 acres.

Together, these four major industrial land use reserves represent an area of 1.5 square miles, or about 2 percent, of the study area. Like the commercial land reserves, it is envisioned that the lands so designated would be permanently reserved for industrial 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 West 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 15.5 square miles, or about 26 percent of the study area. These areas are also shown on Map 30.

In locating the proposed commercial and industrial land reserves in the IH 94 West Corridor, 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 15-mile length of IH 94 through the study area would not be developed as a continuous linear strip of commercial and industrial land uses. Within the proposed framework, the IH 94 West freeway would 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 recreational and residential land between such centers.

In total, the lands identified on Map 30 and included within the major commercial land use reserves, the major industrial land use reserves, and the residual area available for new development total approximately 18.1 squares miles, or about 30 percent of the area of the Corridor. The approximate development capability of such lands, assuming development densities that generally prevail locally in the area, is summarized in Table 26. If all such lands were developed, the new commercial land would accommodate about 30,400 incremental jobs, the new industrial land would accommodate nearly 10,800 incremental jobs, and the residual land available for development could accommodate about 14,300 new housing units and a resident population of about 41,500 persons. In 1985, there were about 3,000 commercial jobs, 4,300 industrial jobs, about 7,900 housing units, and 22,700 residents in the 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 West Corridor. This system is shown on Map 31. Basically, the system includes all 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 in the eastern portion of the Corridor as set forth in SEWRPC Community Assistance Planning Report No. 151, A Transportation System Plan for the Blue Mound Road (USH 18) Corridor. It is this initially assumed arterial street and highway system that is proposed as the point of departure for the transportation system analysis which is to be based upon the recommended land use plan and reported on in the next chapter of this report.

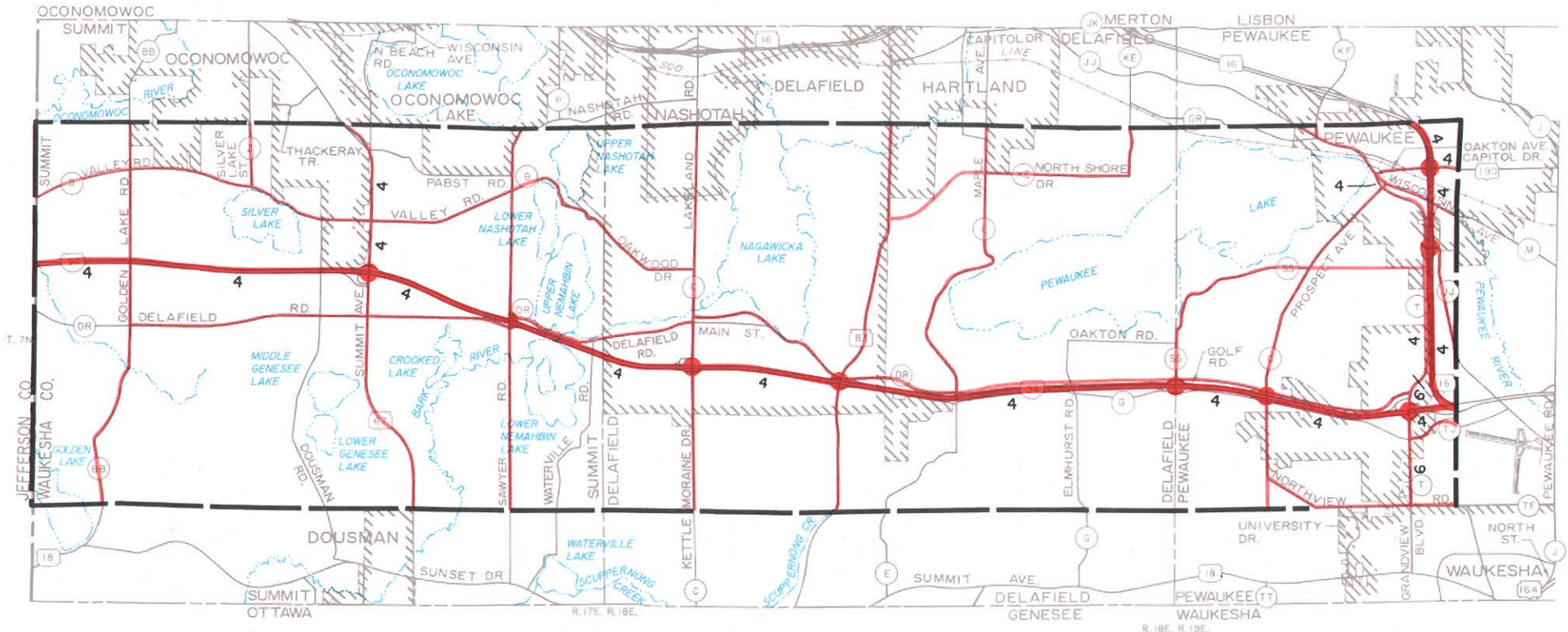
ANTICIPATED FUTURE GROWTH AND CHANGE

The recommended land use plan for the IH 94 West Corridor was prepared within the context of the aforedescribed development framework and the proposed third-generation regional land use plan for the Southeastern Wisconsin Region. The latter plan was under preparation simultaneously with the plan for the Corridor, and, like that plan, has a plan design year of 2010. In order to cope with the change in the socioeconomic characteristics of the Region that became evident in the 1970s and 1980s, 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 period 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 reasonable high-growth" 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 reasonable low-growth" future scenario was postulated by combining those socioeconomic factors that would tend to create unfavorable conditions for

Map 31

INITIALLY ASSUMED SUPPORTING ARTERIAL STREET AND HIGHWAY NETWORK IN THE IH 94 WEST CORRIDOR



Source: SEWRPC.

Table 27

POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN WAUKESHA COUNTY: EXISTING 1985 AND PROPOSED 2010 UNDER THE INTERMEDIATE-GROWTH CENTRALIZED AND HIGH-GROWTH DECENTRALIZED ALTERNATIVE FUTURE SCENARIOS

Element	Existing 1985	Intermediate-Growth Centralized Scenario			High-Growth Decentralized Scenario		
		2010	Change		2010	Change	
			Number	Percent		Number	Percent
Population	285,900	364,300	78,400	27.4	529,800	243,900	85.3
Households	93,190	132,580	39,390	42.3	177,220	84,030	90.2
Employment	141,300	200,080	58,780	41.6	257,550	116,250	82.3

Source: SEWRPC.

economic and 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.[1]

For the purposes of the IH 94 West 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-growth centralized scenario and an high-growth 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 West Corridor study area. The projected resident populations of Waukesha County, in which the study area is located, under the two selected alternative future scenarios are set forth in Table 27. With respect to population growth, it is envisioned that under the intermediate-growth centralized scenario, the resident population of the County would increase by over 78,000 persons, or about 27 percent, from a level about 286,000 persons in 1985 to about 364,000 persons by 2010.[2] Under the high-growth decentralized scenario, the population of the County is envisioned to increase by about 85 percent, or by about 244,000 persons, to a total resident population of about 530,000 persons in 2010.

Corresponding data relating to households for the two scenarios are also shown in Table 27. Under the intermediate-growth centralized scenario, the number of households is envisioned to increase by about 39,400, or about 42 percent, from a level of 93,200 in 1985 to 132,600 households in 2010, reflecting a projected continuing decline in household size. Under the high-growth decentralized scenario, the number of households would increase by about 90 percent, or by over 84,000 to a level of about 177,200 by 2010. Table 27 also identifies envisioned changes in employment for the County under the two scenarios. Under the intermediate-growth centralized scenario, total employment would increase by about 42 percent, representing an

[1] *For more information concerning the alternative futures technique and its application in southeastern Wisconsin, see SEWRPC Technical Report No. 25, Alternative Futures for Southeastern Wisconsin, December 1980; SEWRPC Technical Report No. 11 (2nd Edition), The Population of Southeastern Wisconsin, June 1984; and SEWRPC Technical Report No. 10 (2nd Edition), The Economy of Southeastern Wisconsin, May 1984.*

[2] *The 1990 resident population of the County totaled, according to the U. S. Census, 304,715 persons.*

absolute increase of about 59,000 jobs, to a total of about 200,000 jobs by 2010. Under the high-growth decentralized scenario, total employment would increase by about 82 percent, representing an absolute increase in jobs of about 116,000, to a total of 257,000 in 2010.

The data set forth in Table 27 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 County, and indeed were set within a plan context of the entire Region. The following sections of this chapter quantitatively and graphically describe the two plans as applicable to the IH 94 West Corridor study area.

INTERMEDIATE-GROWTH CENTRALIZED FUTURE LAND USE PLAN

A land use plan for the intermediate-growth centralized future scenario as it applies to the IH 94 West Corridor is shown on Map 31. The salient aspects of this plan as set forth in Tables 28 and 29 may be summarized as follows:

1. Population Increment
   This future would accommodate a population increase in the Corridor of about 8,000 persons. This represents a 36 percent increase in the resident population of the Corridor, which in 1985 stood at 22,700 persons.[3] Much of the increase in the resident population under the scenario would occur in the Delafield, Hartland, Pewaukee, and Waukesha urbanizing areas. By the year 2010, under this scenario, the Corridor would have a resident population of about 30,700 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 4,100 households in the Corridor, a 57 percent increase over the 1985 level of about 7,200. Like population, most of the household increment under this scenario would occur in the Delafield, Hartland, Pewaukee, and Waukesha urbanizing areas. By the year 2010, the number of households in the Corridor would total about 11,300.

3. Employment Increment
   The number of jobs in the Corridor under the intermediate-growth centralized future scenario would increase by about 4,400, or 41 percent, over the plan design period to a level of about 14,900. The most significant change in employment would be expected to occur in the major commercial and industrial reserve areas in the Delafield, Hartland, Oconomowoc, Pewaukee, and Waukesha areas.

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 III of this report, it would be necessary to convert to urban use about 3.9 square miles of land in the study area over the 25-year period from 1985 through 2010 (see Table 29).

5. Residential Land Use
   The distribution by density of the increment in residential land needed to accommodate the increments in population and households noted above is also identified in Table 29. The planned increment in residential land use totals about 2.5 square miles. Most of this, about 1.4 square miles, or about 57 percent, is recommended to be at medium residential densities, defined as from 2.3 to 6.9 dwelling units per net residential acre. However, almost one square mile, or about 39 percent, is envisioned to occur at low density, defined as 0.7 to 2.2 dwelling units per net residential acre.

6. Commercial Land Use
   The plan envisions a 34 percent increase in the amount of land devoted to commercial use in the study area. As shown in Table 29, the planned net increase in commercial land is 40 acres, "net" being defined to exclude the off-street parking areas needed to serve the commercial development. Off-street parking areas are

[3] *The 1990 resident population of the corridor totaled, according to the U. S. Census, 23,400 persons.*

Table 28

EXISTING AND PROPOSED POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN THE IH 94 WEST CORRIDOR: 1985 AND 2010 INTERMEDIATE-GROWTH CENTRALIZED LAND USE PLAN

Element	Existing 1985		Planned Increment		Planned 2010	
	Number	Percent of Waukesha County	Number	Percent Change	Number	Percent of Waukesha County
Population	22,670	7.9	8,050	35.5	30,720	8.4
Households	7,220	7.7	4,080	56.5	11,300	8.5
Employment	10,550	7.5	4,350	41.2	14,900	7.4

Source: SEWRPC.

Table 29

EXISTING AND PROPOSED LAND USE IN THE IH 94 WEST CORRIDOR: 1985 AND 2010 INTERMEDIATE-GROWTH CENTRALIZED LAND USE PLAN

Land Use	Existing 1985		Planned Increment		Total 2010	
	Acres	Percent of Major Category	Acres	Percent Change	Acres	Percent of Major Category
Urban						
Residential	5,053	53.0	1,575	31.2	6,628	55.1
High-Density	59	0.6	12	20.3	71	0.6
Medium-Density	1,043	10.9	902	86.5	1,945	16.2
Low-Density	3,439	36.1	608	17.7	4,047	33.6
Suburban-Density	512	5.4	53	10.4	565	4.7
Commercial	118	1.2	40	33.9	158	1.3
Industrial	120	1.3	115	95.8	235	2.0
Governmental and Institutional	420	4.4	43	10.2	463	3.8
Transportation, Communication, and Utility[a]	2,678	28.1	566	21.1	3,244	27.0
Park and Recreation[b]	1,141	12.0	160	14.0	1,301	10.8
Subtotal	9,530	100.0	2,499	26.2	12,029	100.0
Rural						
Prime Agricultural	9,580	33.2	-758	-7.9	8,822	33.5
Other Open Lands[c]	19,255	66.8	-1,741	-9.0	17,514	66.5
Subtotal	28,835	100.0	-2,499	-8.7	26,336	100.0
Total	38,365	--	--	--	38,365	--

[a] *Includes off-street parking.*

[b] *Consists of intensively used outdoor recreation lands.*

[c] *Includes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.*

Source: SEWRPC.

classified as a transportation land use, and, if properly allocated, would add about 80 acres to the net commercial use. The commercial land uses shown on Map 32 include associated onsite parking. As shown on Map 32, much of the new commercial development envisioned in the plan is recommended to occur within the three major commercial land use reserves, with some additional commercial development occurring in urbanizing areas within the Corridor in accordance with local needs. In this respect it is intended that all new office development in the Corridor be located in the three major commercial land use reserves.

7. Industrial Land Use
A planned increment of 115 acres in industrial land is identified in the plan. This would nearly double the amount of such land now found in the study area. All the new industrial land is recommended to be located within the four major industrial land use reserves identified on Map 32. Like the increments for commercial land, these industrial land increments represent net figures and do not include areas devoted to off-street parking. Such parking would add about 35 acres to the net industrial use. The industrial land uses shown on Map 32 include associated onsite 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 29. 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 Waukesha County-Crites Field located in the Corridor, the planned increments in these three categories of urban land uses are based upon the land use plan design standards identified in Chapter III of this report and are not specifically shown on Map 32, but rather are assumed to be distributed in proportion to the new residential land.

9. Agricultural Land
The conversion to urban use of nearly four 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 29. As shown in this table, about 1.2 square miles of lands currently classified as prime agricultural, or about 8 percent of the total of such lands in the Corridor, would be converted to urban use under the plan.

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. In total, these lands encompass over 21 square mile. Of this total, about 19.4 square miles are comprised of primary environmental corridors, about 0.5 square mile of secondary environmental corridors, and about 1.2 square miles of isolated natural areas. Each of these areas is specifically identified on Map 32.

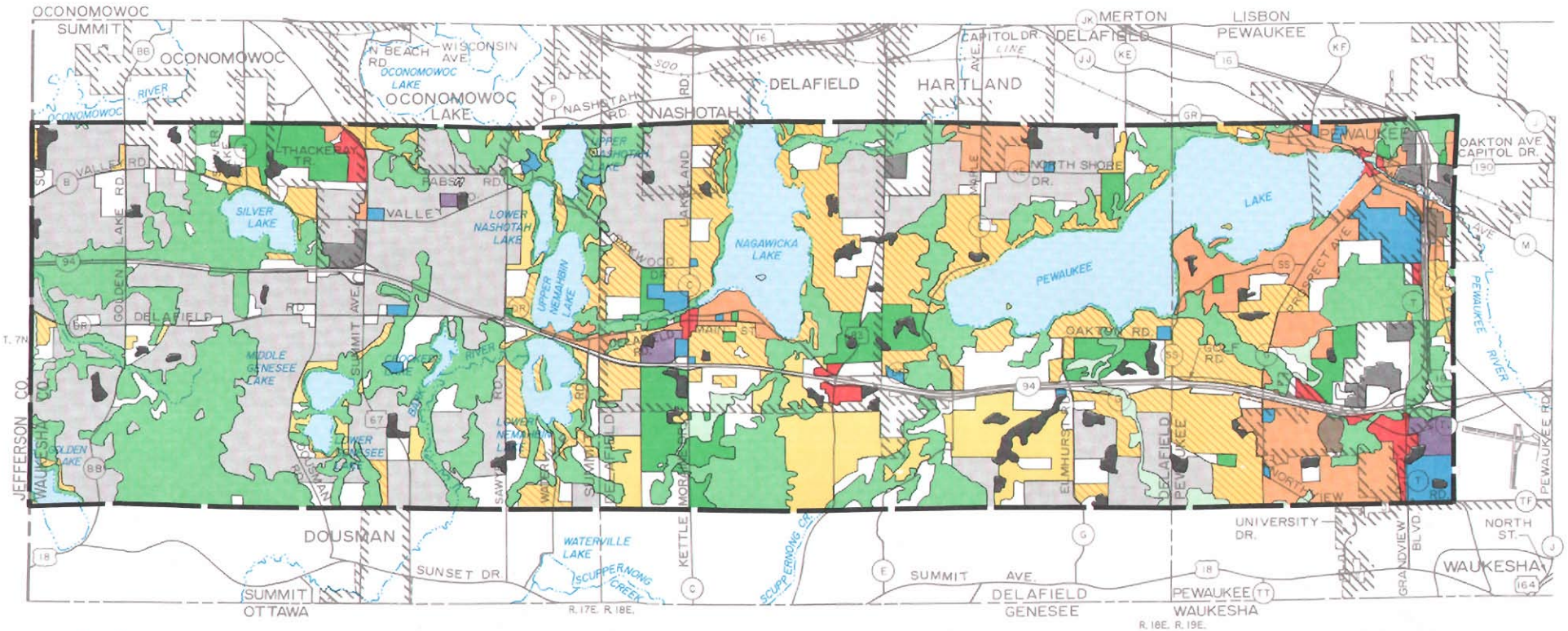
HIGH-GROWTH DECENTRALIZED FUTURE LAND USE PLAN

A land use plan for the high-growth decentralized future scenario as it applies to the IH 94 West Corridor is shown on Map 33. The salient aspects of this plan as set forth in Tables 30 and 31 may be summarized as follows:

1. Population Increment
This future would accommodate a population increase in the Corridor of about 25,500 persons. This represents more than triple the population increment under the intermediate-growth centralized future land use plan. This also represents more than a doubling of the current population level of about 22,700 persons. The increase in population under this scenario would occur primarily in the Delafield, Hartland, Oconomowoc, Pewaukee, and Waukesha urbanizing areas. By the year 2010, the Corridor

Map 32

INTERMEDIATE-GROWTH CENTRALIZED FUTURE LAND USE PLAN FOR THE IH 94 WEST CORRIDOR



LEGEND

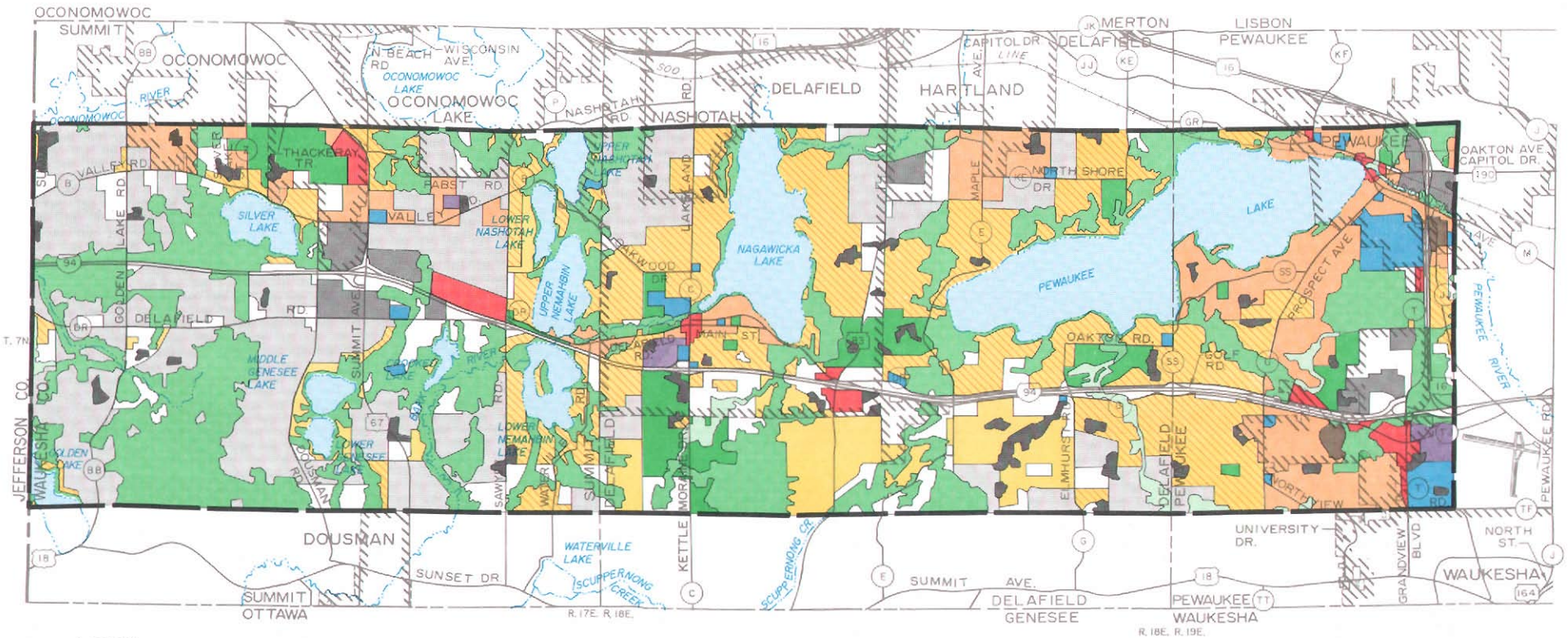
- PREDOMINANTLY SUBURBAN RESIDENTIAL
- PREDOMINANTLY LOW DENSITY RESIDENTIAL
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL
- PREDOMINANTLY HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATION, AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- PARK AND RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL AREA
- PREDOMINANTLY PRIME AGRICULTURAL LAND
- OTHER AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 33

HIGH-GROWTH DECENTRALIZED LAND USE PLAN FOR THE IH 94 WEST CORRIDOR



LEGEND

- PREDOMINANTLY SUBURBAN RESIDENTIAL
- PREDOMINANTLY LOW DENSITY RESIDENTIAL
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL
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- PRIMARY ENVIRONMENTAL CORRIDOR
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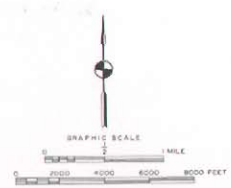
- ISOLATED NATURAL AREA
- PREDOMINANTLY PRIME AGRICULTURAL LAND
- OTHER AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND



Source: SEWRPC.

Table 30

EXISTING AND PROPOSED POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN THE IH 94 WEST CORRIDOR: 1985 AND 2010 HIGH-GROWTH DECENTRALIZED LAND USE PLAN

Element	Existing 1985		Planned Increment		Planned 2010	
	Number	Percent of Waukesha County	Number	Percent Change	Number	Percent of Waukesha County
Population	22,670	7.9	25,450	112.3	48,120	9.1
Households	7,220	7.7	9,160	126.9	16,380	9.2
Employment	10,550	7.5	15,570	147.6	26,120	10.2

Source: SEWRPC.

Table 31

EXISTING AND PROPOSED LAND USE IN THE IH 94 WEST CORRIDOR: 1985 AND 2010 HIGH-GROWTH CENTRALIZED LAND USE PLAN

Land Use	Existing 1985		Planned Increment		Total 2010	
	Acres	Percent of Major Category	Acres	Percent Change	Acres	Percent of Major Category
Urban						
Residential	5,053	53.0	3,256	64.4	8,309	56.0
High-Density	59	0.6	12	20.3	71	0.5
Medium-Density	1,043	10.9	1,826	175.1	2,869	19.4
Low-Density	3,439	36.1	1,388	40.4	4,827	32.5
Suburban-Density	512	5.4	30	5.9	542	3.7
Commercial	118	1.2	109	92.4	227	1.5
Industrial	120	1.3	391	325.8	511	3.4
Governmental and Institutional	420	4.4	92	21.9	512	3.5
Transportation, Communication, and Utility[a]	2,678	28.1	1,220	45.6	3,898	26.3
Park and Recreation[b]	1,141	12.0	227	19.9	1,368	9.2
Subtotal	9,530	100.0	5,295	55.6	14,825	100.0
Rural						
Prime Agricultural	9,580	33.2	-2,372	-24.8	7,208	30.6
Other Open Lands[c]	19,255	66.8	-2,923	-15.2	16,332	69.4
Subtotal	28,835	100.0	-5,295	-18.4	23,540	100.0
Total	38,365	--	--	--	38,365	--

[a] *Includes off-street parking.*

[b] *Consists of intensively used outdoor recreation lands.*

[c] *Includes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.*

Source: SEWRPC.

would, under this scenario, have a resident population of about 48,100 persons.

2. Household Increment
Under the high-growth decentralized future scenario, there would be an increment of about 9,200 households in the Corridor, representing more than a doubling of the 1985 level. By the year 2010, the number of households in the Corridor would total about 16,400.

3. Employment Increment
The number of jobs in the Corridor under the high-growth decentralized future scenario would increase significantly over the plan design period, from a 1985 level of about 10,500 to a 2010 level of about 26,100, an increment of about 15,600 jobs, or about 148 percent. The most significant increase in employment levels would be expected to occur in the commercial and industrial reserve area located at the IH 94 and STH 67 interchange.

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 III of this report, it would be necessary to convert about 8.3 square miles of land to urban use over the 25-year period from 1985 through 2010 (see Table 31).

5. Residential Land Use
The distribution by density of the increment in residential land needed to accommodate the increments in population and households noted above is identified in Table 31. The planned increment in residential land use totals about 5.1 square miles. Again, most, almost 3 square miles, or 56 percent, of this is recommended to be at medium residential densities, defined as from 2.3 to 6.9 dwelling units per net residential acre. However, over two square miles, or about 43 percent, is envisioned to be at low densities, 0.7 to 2.2 dwelling units per net residential acre.

6. Commercial Land Use
The plan envisions a 92 percent increase in the amount of land devoted to commercial land use in the study area. As shown in Table 31, the planned net increase in commercial land is 109 acres, "net" being defined to exclude the off-street parking areas needed to serve commercial development. Such parking would add about 170 acres to the net commercial use. The commercial land use shown on Map 33 includes associated onsite parking. Like the intermediate-growth centralized land use plan, the high-growth decentralized land use plan recommends most of the new commercial development occur within the three major commercial land use reserves identified on Map 33, with the remaining incremental commercial uses distributed throughout the Corridor in accordance with local needs. Again, it is intended that all new office development in the Corridor be located in the three major commercial land use reserves.

7. Industrial Land Use
A planned increment of nearly 400 acres in industrial land is identified in the high-growth decentralized land use plan for the Corridor. Whereas the intermediate-centralized plan would nearly double the industrial land now found in the Corridor, the high-growth decentralized plan would more than triple the amount of such land. All the new industrial land is recommended to occur within the four major industrial land use reserves shown on Map 33. Like the commercial land increments, these industrial land increments are net in nature and do include areas devoted to off-street parking. Such parking would add about 110 acres to the net industrial use. The industrial land uses shown on Map 33 include associated onsite 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 31. 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 III of this report and are not specifically shown on

Map 33, but rather are assumed to be distributed in proportion to the new residential land.

9. Agricultural Land
   The conversion to urban use of about 8.3 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 31. As shown in this table, under the plan about 3.7 square miles of lands currently classified as prime agricultural lands would be converted to urban use, about 25 percent of such lands in the study area.

10. Environmentally Sensitive Lands
    The high-growth decentralized future land use plan is identical to the intermediate-growth centralized future land use plan with respect to the environmentally sensitive lands. As such, the plan would recommend that over 21 square miles of land be protected and preserved in essentially natural, open uses.

SUMMARY

This chapter has presented two alternative land use development plans for the IH 94 West Corridor. These plans were developed within the framework of the broader regional planning effort for southeastern Wisconsin, they consider, however, the urban land market forces which have resulted in a growing demand for commercial and industrial development along the IH 94 West freeway. The study Advisory Committee utilized these two alternatives as a basis for further consideration of land use development and for the preparation of a recommended plan for the Corridor.

The first alternative land use plan is based upon an intermediate level of future growth combined with a centralized development pattern. Under this alternative, the resident population of the IH 94 West Corridor would increase by about 8,000 persons, or about 36 percent, from a 1985 level of about 22,700 persons to a 2010 level of about 30,700 persons. This would be accompanied by a corresponding increase of about 4,100 households in the Corridor, representing a 57 percent increase over the 1985 level of about 7,200 households. By the year 2010, the number of households in the Corridor would total about 11,300. In addition, the number of jobs in the Corridor under this alternative would increase by about 4,400, or 41 percent, from a 1985 level of about 10,500 to a year 2010 level of about 14,900.

Under the high-growth decentralized future land use scenario, population in the Corridor would more than double to a year 2010 level of 48,100, an increase of about 25,500 persons. Similarly, households in the Corridor would more than double to nearly 16,400, an increase of nearly 9,200 over the 1985 level of about 7,200 households. Finally, employment in the Corridor would increase by nearly 150 percent, reaching a level of about 26,100 in the year 2010 compared to the 1985 level of about 10,500.

Both alternative land use plans would provide for the protection in essentially natural, open uses of environmentally sensitive lands, including about 19 square miles of primary environmental corridors. The plans differ only with respect to how much land would be converted from agricultural and other open space uses to urban uses. The intermediate-growth centralized plan requires the conversion of about 3.9 square miles from rural to urban use and the high-growth decentralized plan requires the conversion of about 8.3 square miles of land from rural to urban use. These two alternative land use plans provided the basis for the selection by the Advisory Committee of the recommended land use plan set forth in Chapter V of this report.

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Chapter V

RECOMMENDED LAND USE AND TRANSPORTATION SYSTEM PLANS

INTRODUCTION

The preceding chapter of this report set forth land use development plans for the IH 94 West Corridor on the basis of two alternative future regional growth and development pattern scenarios: an intermediate-growth centralized development scenario and a high-growth decentralized development scenario. As the Advisory Committee was considering these two alternative land use plans, two private development initiatives which would represent a departure, in part, from the alternative plans presented in Chapter IV were advanced. These two private development initiatives may be briefly described as follows:

1. Pabst Farms Development Project[1]
   The proposed Pabst Farms development project encompasses the approximately 1,700-acre Pabst Farms, located in the northeast, southeast, and southwest quadrants of the interchange of STH 67 and IH 94. While detailed site planning for the project has yet to be completed, a preliminary general site plan, advanced as the IH 94 West Corridor study was underway, would ultimately accommodate about 1,400 households and 12,000 jobs on the entire site. The owners of the site envision an approximately 40-year "build-out" period for the entire project, indicating that full development of the site would not be expected before the year 2030. The preliminary development plan includes a tentative year 2010 stage which would accommodate about 740 households and about 4,050 jobs.

   The intermediate-growth centralized development alternative land use plan set forth in Chapter IV does not envision any urban development on the Pabst Farms site; rather, that alternative plan envisions that the Pabst Farms site would remain in agricultural and open space uses at least through the plan design year 2010. The high-growth decentralized development plan, however, does envision substantial urban development on the Pabst Farms site. Under that alternative, about 680 households and about 7,800 jobs would be accommodated on the Pabst Farms site by the year 2010. Thus, the year 2010 stage of the Pabst Farms project as proposed by the owners would seek to accommodate more development than proposed under the intermediate-growth centralized alternative land use plan, which envisions no urban development on the site, but less than the amount of new urban development that would be accommodated on the site under the high-growth decentralized alternative. Ultimate development of the Pabst Farms, however, in the manner envisioned by the owners, would exceed the level of urban development under the high-growth decentralized development scenario, but probably not until the year 2030.

2. Golf Road Corporate Center
   The second private development initiative to be specifically considered consists of a proposed office park to be located on an approximately 50-acre site adjacent to the Western Lakes Golf Course in the northwest quadrant of the interchange of CTH SS and IH 94. The site development plan prepared for this project indicates that when fully developed the project would accommodate about 1,500 jobs. Neither the

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[1] *The scope of the Pabst Farms development project described in this section is derived from a document entitled, Pabst Farms Master Plan, prepared by Mooney LeSage Consulting, Ltd., and dated February 25, 1992. The analyses set forth through page 116 and Table 36 in this chapter are based upon the development scope described in that document. A revised preliminary plan for the Pabst Farms dated June 16, 1992, also prepared by Mooney LeSage Consulting, Ltd., was used for all technical analyses concerning the Pabst Farms project and reported on following page 116 and Table 36. The revised master plan significantly adjusted the projected employment on the site downward to about 6,100 jobs. The revised plan did not, however, adjust the residential component of the site development plan, which remained at about 1,400 households.*

intermediate-growth centralized future nor the high-growth decentralized future alternative land use plans described in Chapter IV of this report envisioned the development of an office park at this location; rather, both of those plans envisioned that the site would be developed for residential use.

The Town of Summit, on behalf of the Pabst Farms development project, and the Town of Delafield, on behalf of the Golf Road Corporate Center project, requested that the Advisory Committee give consideration to these private development initiatives as the Committee formulated a recommended land use plan for the Corridor. The Advisory Committee directed that consideration be given to these two private development initiatives in the transportation analyses of the alternative land use plans.

On the basis of the evaluation of the alternatives considered, this chapter presents a recommended land use plan and transportation system plan for the Corridor. The chapter begins with a description of a base transportation system plan for the Corridor, including public transit and arterial street and highway system elements. That base plan is comprised of the recommendations for public transit and arterial street and highway system development already included in the adopted regional transportation system plan. The base transportation system plan 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 high-growth futures and under the two additional private development initiatives, assuming that the public transit and arterial street and highway improvements included in the base plan are implemented. The resultant additional needed arterial street and highway system improvements are presented for both the intermediate- and high-growth futures, as well as for the two private land development initiatives within the Corridor, on the basis of this information. The potential for an enhanced public transit element of the plan to reduce the additional traffic is reviewed. The final sections of this chapter present a recommended land use plan and a recommended transportation system plan for the Corridor.

DESCRIPTION OF BASE TRANSPORTATION SYSTEM PLAN

Arterial Street and Highway System Element

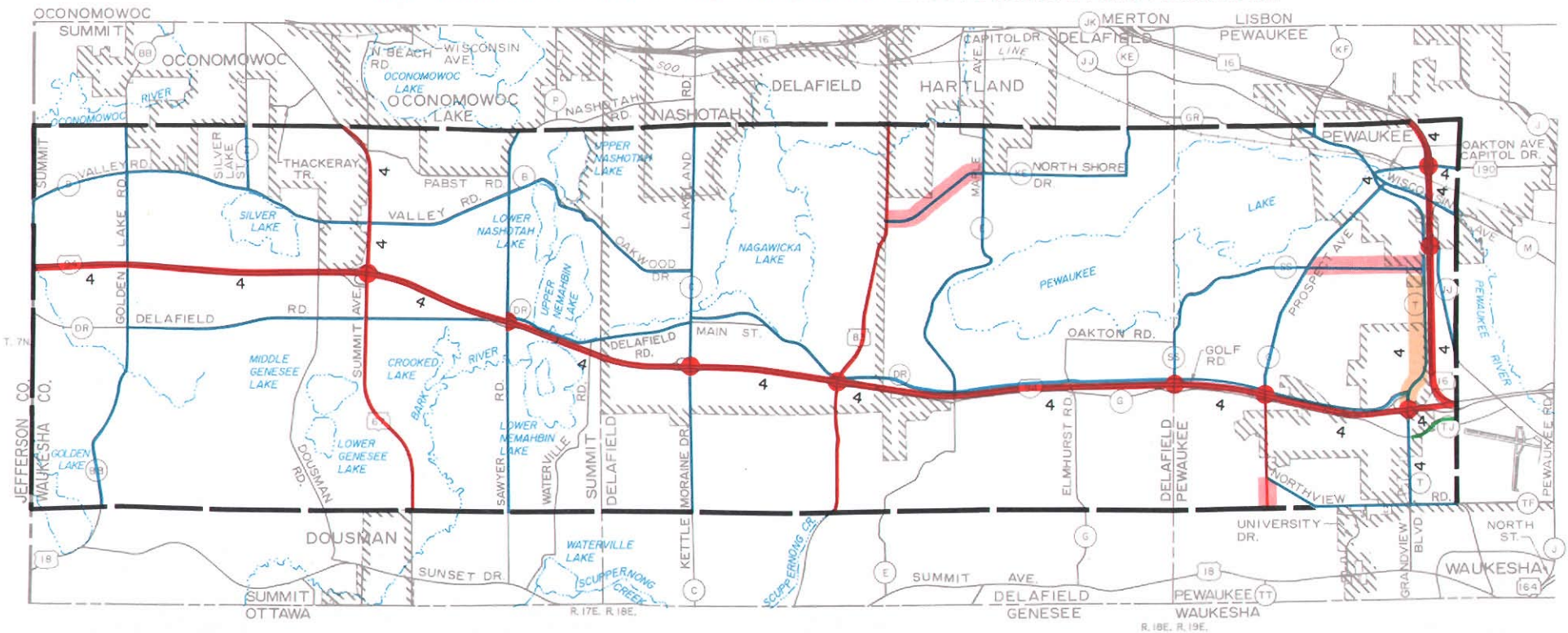
The designation of a base arterial street and highway system plan as a point of departure for the transportation system analyses is particularly appropriate for the IH 94 West Corridor for two reasons. First, the designation of a base plan recognizes that the Corridor is set within the broader areawide context of Waukesha County and the Southeastern Wisconsin 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 long-planned Waukesha bypass and the CTH SS extension. There is no reason to reconfirm that need as part of the current Corridor study. The previously agreed-upon improvements were assumed, collectively, to be committed for the purposes of the IH 94 West Corridor study.

A second reason the designation of a base arterial street and highway system plan is particularly appropriate for the IH 94 West Corridor relates to the character of the new land use development being proposed along IH 94. It is desirable to identify to the greatest extent possible those additional arterial improvement needs which may be attributable to the new alternative land use development patterns proposed in the IH 94 West Corridor plans and to the two private land development initiatives. Unlike prior areawide plans, the new Corridor plan alternatives, and particularly the two private development initiatives, would accommodate, and indeed promote, urban development at selected locations along IH 94 West. It is useful to identify those incremental arterial street and highway improvements and the attendant costs that may be substantially attributed to this major change in the planned urban development pattern.

The recommended base arterial street and highway system plan for the IH 94 West Corridor is shown on Map 34. The improvements identified in the base plan are included in the existing regional plan and county jurisdictional highway system plan. The new arterial street

Map 34

BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

- STATE TRUNK - FREEWAY
- STATE TRUNK - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- FREEWAY - NONFREEWAY INTERCHANGE
- PARTIAL FREEWAY-NONFREEWAY INTERCHANGE
- NEW ARTERIAL FACILITY
- WIDENING OF EXISTING FACILITY TO PROVIDE ADDITIONAL LANES
- 4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)

GRAPHIC SCALE

0 1 MILE

0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Table 32

ARTERIAL STREET AND HIGHWAY SYSTEM IMPROVEMENTS INCLUDED IN THE BASE PLAN FOR THE IH 94 WEST CORRIDOR

Types of Facility	Facility	Termini	Length	Description
New Facilities	CTH SS extension	CTH G to CTH T	1.2 miles	Construct two traffic lanes on new alignment
	CTH KE extension	CTH E to STH 83	1.0 mile	Construct two traffic lanes on new alignment
	Waukesha bypass extension	Northview Road to USH 18	1.1 miles	Construct two traffic lanes on new alignment (ultimate four lanes)
Improved Facilities	CTH T	IH 94 to WCTC	1.7 miles	Widen from two to four traffic lanes

Source: SEWRPC.

and highway facilities and the major arterial street and highway widenings included in the base plan are listed in Table 32 and shown on Map 34.

The capital costs of carrying out the improvements identified in the base arterial street and highway plan for the IH 94 West Corridor were estimated. New arterial facilities included in the base plan have an estimated cost of $3.6 million. The arterial street widenings identified in the base plan would have a capital cost of about $2.6 million. Thus, the total capital cost of implementing the base arterial street and highway plan is estimated at $6.2 million, exclusive of any cost of preserving through resurfacing and reconstruction those arterial streets in the Corridor that would not be widened.

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 alternative IH 94 West Corridor land use development patterns.

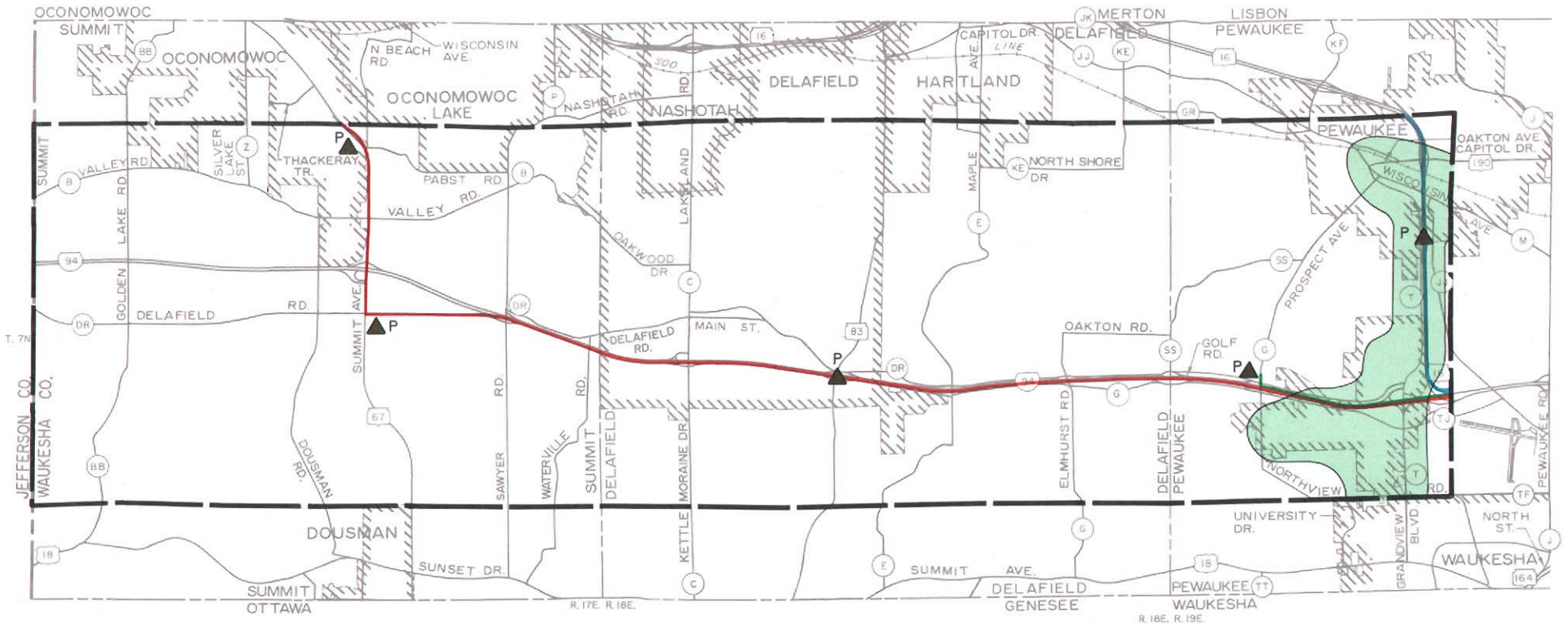
Public Transit Element

The adopted regional transportation system plan also includes recommendations for public transit service within the IH 94 West Corridor as part of the Corridor's base transportation system plan. The public transit recommendations of the adopted plan call for specific actions to strengthen and expand public transit service within the Region.

Within the IH 94 West corridor, the adopted plan recommends that substantially improved rapid transit service be provided over bus-on-freeway routes connecting the Cities of Oconomowoc and Waukesha and the remainder of the Corridor with the Milwaukee central business district and the Milwaukee area. The principal bus-on-freeway route serving the Corridor would operate some 66 round-trip route miles over IH 94 between Oconomowoc, Delafield, Pewaukee, and Milwaukee (see Map 35). Two other proposed routes would provide much more limited service within the corridor. One route would operate approximately 67 round-trip route miles over STH 16 and IH 94 between Oconomowoc and Milwaukee with a stop serving Pewaukee; the other route would operate about 48 round-trip route miles over IH 94 between Pewaukee and Milwaukee with a stop serving Pewaukee and western Waukesha. The plan proposes a significant expansion in the areas served by the existing IH 94 and STH 16 commuter bus routes serving the Corridor by providing service from a total of five park-ride lots. These include three existing park-ride lots located at STH 67 and Pabst Road in the City of Oconomowoc, at STH 67 and CTH DR in the Town of Summit, and at IH 94 and CTH G in the Town of Pewaukee; and two new park-ride lots located at IH 94 and STH 83 in the City of Delafield and at STH 16 and CTH JJ in the Village of Pewau-

Map 35

BASE PUBLIC TRANSIT SYSTEM FOR THE IH 94 WEST CORRIDOR



LEGEND

- OCONOMOWOC-MILWAUKEE VIA IH 94
- OCONOMOWOC-MILWAUKEE VIA STH 16
- WAUKESHA-MILWAUKEE
- LOCAL TRANSIT SERVICE AREA
- TRANSIT STATION WITH PARKING

GRAPHIC SCALE

Source: SEWRPC.

kee.[2] In addition, all three bus-on-freeway routes would also make a stop at IH 94 and S. 84th Street in the City of Milwaukee to allow for transfers to and from local and express routes serving western Milwaukee County.

The adopted plan also envisions that the bus-on-freeway routes serving the Corridor would provide significantly higher service levels than the existing commuter-oriented express routes currently serving the Corridor. Under the plan, the principal route serving the Corridor operated over IH 94 would provide hourly service only during weekday peak periods in the peak travel direction. Service over the other two routes serving the Corridor would be provided throughout the entire service day weekdays in both directions of travel, at headways of 20 to 30 minutes during the morning and afternoon peak periods and 60 minutes during the midday and evening off-peak periods. The proposed service levels would result in six one-way bus trips each weekday over the proposed IH 94 bus-on-freeway route serving the park-ride lots in the western and central portions of the Corridor and approximately 100 one-way bus trips each weekday over the routes serving park-ride lots in the eastern portion of the Corridor. By comparison, the existing service over the two commuter-oriented express routes currently operated over IH 94 and STH 16 within the Corridor consists of a total of four one-way bus trips each weekday.

The plan also envisions that the buses providing bus-on-freeway service will receive preferential treatment on the Milwaukee area freeway system as a result of the implementation of the freeway traffic management system proposed under the transportation system management component of the adopted regional transportation system plan. In addition, the adopted plan holds open the possibility of operating a commuter rail route on a trial or demonstration basis in and adjacent to the IH 94 West Corridor. This route would operate from the Milwaukee central business district along the CP Rail System (formerly Chicago, Milwaukee, St. Paul & Pacific Railroad Company) trackage to Oconomowoc, a distance of 32.2 miles.

TRAFFIC AND CONGESTION UNDER ALTERNATIVE FUTURE DEVELOPMENT SCENARIOS

As documented in Chapter IV, the Advisory Committee reviewed two alternative future land use development plans: an intermediate-growth centralized plan and a high-growth decentralized plan. This section of the chapter presents the anticipated transportation impacts of these two alternative growth and development scenarios and the transportation impacts that may be associated with the two private development initiatives noted earlier in this chapter, the Pabst Farms development and the Golf Road Corporate Center, to the extent that those development projects deviate from the particular alternative scenario concerned.

First, the future average weekday traffic volumes and related traffic congestion levels which may be anticipated under each of the development scenarios for the Corridor are presented. This is followed by a description of the resultant additional arterial street improvements, beyond those in the base plan, needed to serve the proposed growth and development. Second, the additional traffic volumes, traffic congestion, and arterial street improvement needs connected with each of the two private development projects are presented. Since the proposed Golf Road Corporate Center was not included in either of the two alternative plans considered, the incremental effects of that development could be readily isolated and documented. With respect to the Pabst Farms development proposal, the analysis sets forth the anticipated impacts to the extent to which that the proposal goes beyond the level of urban development envisioned in the high-growth decentralized land use plan. Accordingly, the impacts attendant to the Pabst Farms project proposal set forth in this chapter assume full development of the Pabst Farms as proposed by

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[2]*The Corridor would also be served by three park-ride lots recommended under the plan but located just outside the corridor. These would include one existing park-ride lot located at STH 16 and CTH C in the Village of Nashotah, and two new park-ride lots located at Main Street and Wisconsin Avenue in the City of Oconomowoc and at Merton Avenue and STH 16 in the Village of Hartland. These three park-ride lots would be served by the proposed bus-on-freeway route operated between Oconomowoc and Milwaukee via STH 16 and IH 94 stopping within the Corridor in Pewaukee.*

Table 33

ARTERIAL VEHICLE MILES OF TRAVEL ON AN AVERAGE WEEKDAY IN THE IH 94 WEST CORRIDOR: EXISTING 1989 AND FORECAST 2010

Facility	Existing 1989	2010 Intermediate-Growth Centralized Plan		2010 High-Growth Decentralized Plan	
	Average Weekday Vehicle Miles of Travel	Average Weekday Vehicle Miles of Travel	Percent Increase	Average Weekday Vehicle Miles of Travel	Percent Increase
Freeways	635,000	880,000	39	1,110,000	75
Standard Arterials	255,000	415,000	62	570,000	123
Total	890,000	1,295,000	45	1,680,000	89

Source: SEWRPC.

the owners of the site to the year 2030, even though it is recognized that the planned stage development in the year 2010 may be significantly less. Third, a recommended land use plan formulated by the Advisory Committee, based upon the preceding information, is presented. Fourth, following the presentation of the recommended land use plan, a companion recommended transportation plan is presented.

Intermediate-Growth Centralized Development Plan and High-Growth Decentralized Development Plan

Under the intermediate-growth centralized future scenario for the Corridor, its population would increase by about 35 percent, or by about 8,050 persons, from a 1985 level of 22,670 to a year 2010 level of 30,720; households in the Corridor would increase by about 56 percent, or by about 4,080 households, from a 1985 level of 7,220 to a 2010 level of about 11,300; and, employment in the Corridor would increase by about 41 percent, or by about 4,350 jobs, from a 1985 level of 10,550 jobs to a 2010 level of about 14,900 jobs.

Under the high-growth decentralized future scenario, population in the Corridor would increase by about 112 percent, or by about 25,450 persons, from a 1985 level of 22,670 to a year 2010 level of 48,120; households in the Corridor would increase by 127 percent, or by about 9,160 households, from a 1985 level of 7,220 to a year 2010 level of about 16,380; and employment in the Corridor would increase by about 148 percent or by about 15,580 jobs, from a 1985 level of 10,550 jobs a year to a year 2010 level of 26,130 jobs.

Traffic assignments under each future were made to the previously described base transportation plan utilizing the Commission's battery of travel and traffic simulation models. Traffic assignments were made both for the intermediate-growth centralized future land use plan and the high-growth decentralized future land use plan for the Corridor, set in the context of land use and transportation system plans for the Region as a whole.

Information on travel in the IH 94 West Corridor is provided in Table 33. About 0.89 million vehicle miles of arterial travel took place within the Corridor on an average weekday in 1989. About 71 percent of this total travel took place on the IH 94 and STH 16 freeways. Under the intermediate-growth centralized land use plan, average weekday travel in the Corridor may be expected to increase by about 45 percent by the year 2010, to about 1.29 million vehicle miles of travel. The proportion of travel on the freeway versus the surface arterial system would decrease slightly to about 68 percent.

Under the high-growth decentralized land use plan, average weekday travel in the Corridor may be expected to increase by the year 2010 to about 1.68 million vehicle miles of travel; an increase of 89 percent over the 1989 level, and an increase of about 30 percent over the year 2010 level anticipated under the intermediate-growth future. Under the high-growth future, the proportion of freeway travel to arterial travel may also be expected to decrease slightly to about 66 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 year 2010 traffic volumes shown on Map 36. That map also displays the anticipated future year 2010 average weekday traffic volumes under the high-growth decentralized land use plan. Significant increases in traffic volumes are anticipated, particularly under the high-growth future, and particularly along the IH 94 Freeway and on certain north-south arterial facilities that interchange with that freeway.

Map 36 also shows the extent of traffic congestion which may be anticipated in the Corridor by the year 2010 under both intermediate- and high-growth futures. The mileage of arterial facilities within the Corridor which may be expected to operate under congested conditions, that is, carrying traffic volumes exceeding design capacity, may be expected to increase from 4.6 miles, or about 5 percent of the total arterial highway system within the Corridor, to 8.5 miles, or 10 percent, under the intermediate-growth future; and to 20.3 miles, or 23 percent, under the high-growth future.

Currently, an estimated 2.5 miles, or about 3 percent, of the arterial system in the Corridor operate substantially over design capacity and experience severe congestion, that is, traffic volumes which exceed design capacity by over 30 percent. Under the intermediate-growth future, 4.5 miles, or 5 percent of the Corridor arterial system, may be expected to experience severe congestion; under the high-growth future, 6.0 miles, or 7 percent of the Corridor, may be expected to experience severe congestion. Table 34 summarizes the extent of current and anticipated future congestion on the Corridor's arterial system. It is important to note that these forecasts of congestion assume full implementation of the public transit and arterial street and highway improvements recommended in the base plan.

Under the intermediate-growth future, arterial facilities operating under congested conditions by the plan design year would include IH 94 between CTH T and CTH SS and the Waukesha bypass facility from IH 94 south, assuming the latter facility would be built as a two-lane arterial highway as originally recommended. Also under the intermediate-growth future, arterial facilities operating under severely congested conditions by the plan design year would include STH 67 south of IH 94, STH 83 south of IH 94, CTH T south of IH 94, and IH 94 between CTH T and STH 16.

Under the high-growth future, arterial facilities expected to operate under congested conditions by the plan design year would include IH 94 between CTH T and CTH P, STH 67 north of CTH B, CTH C north of CTH B and south of IH 94, and STH 83 north of IH 94. Also under the high-growth future, arterial facilities expected to operate under severely congested conditions by the plan design year would include CTH P north of CTH B, STH 67 between IH 94 and CTH B, and the Waukesha bypass facility south of IH 94.

Table 34

ARTERIAL STREET MILEAGE WITHIN THE IH 94 WEST CORRIDOR EXPERIENCING TRAFFIC CONGESTION EXISTING 1989 AND FORECAST 2010

Status	Operation over Design Capacity (100 to 130 percent of design capacity)	Operation Severely over Design Capacity (131 percent or more of design capacity)	Total Operation over Design Capacity
Existing 1989			
Miles	2.1	2.5	4.6
Percent of System	2.5	3.0	5.5
2010 Intermediate-Growth Centralized Plan			
Miles	4.0	4.5	8.5
Percent of System	4.6	5.2	9.8
2010 High-Growth Decentralized Plan			
Miles	17.0	6.0	23.0
Percent of System	19.6	6.9	26.5

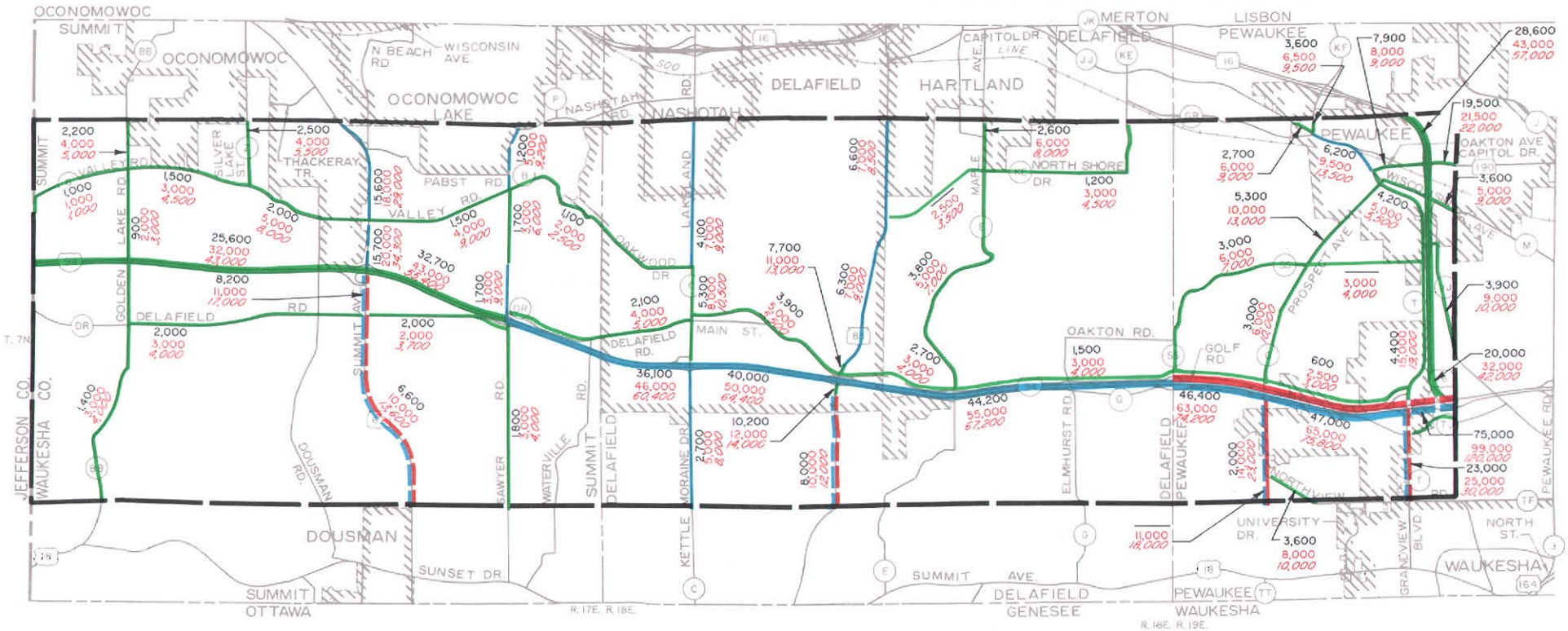
Source: SEWRPC.

POTENTIAL ADDITIONAL NECESSARY ARTERIAL STREET AND HIGHWAY IMPROVEMENTS: INTERMEDIATE- AND HIGH-GROWTH FUTURES

Given the anticipated traffic congestion under the two alternative land use plans described in the preceding section, additional arterial street and highway system improvements to abate that congestion were considered. Under each future the separation of the frontage roads from the freeway-to-surface arterial street interchanges in the Corridor was assumed. Such

Map 36

FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE BASE ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR: 2010 INTERMEDIATE- AND HIGH-GROWTH FUTURES



LEGEND

- ARTERIAL STREET OR HIGHWAY OPERATING UNDER OR AT DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING OVER (100 PERCENT TO 130 PERCENT) DESIGN CAPACITY UNDER THE INTERMEDIATE GROWTH FUTURE
- ARTERIAL STREET OR HIGHWAY OPERATING OVER (100 PERCENT TO 130 PERCENT) DESIGN CAPACITY UNDER THE HIGH GROWTH FUTURE
- ARTERIAL STREET OR HIGHWAY OPERATING SEVERELY OVER (131 PERCENT OR MORE) DESIGN CAPACITY UNDER THE INTERMEDIATE GROWTH FUTURE
- ARTERIAL STREET OR HIGHWAY OPERATING SEVERELY OVER (131 PERCENT OR MORE) DESIGN CAPACITY UNDER THE HIGH GROWTH FUTURE

44,200 EXISTING AVERAGE WEEKDAY TRAFFIC VOLUME

55,000 FORECAST 2010 AVERAGE WEEKDAY TRAFFIC VOLUME UNDER THE INTERMEDIATE GROWTH FUTURE

67,200 FORECAST 2010 AVERAGE WEEKDAY TRAFFIC VOLUME UNDER THE HIGH GROWTH FUTURE

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

separation would be needed under both the intermediate- and the high-growth futures. In formulating additional, or incremental, arterial improvements beyond the base plan, sufficient traffic carrying capacity was proposed to provide Level of Service C conditions, that is, to permit the arterial facilities to operate within their design capacity.

Freeway Interchange and Frontage Road Separation

As the IH 94 West freeway corridor study was under way, the Wisconsin Department of Transportation was undertaking detailed engineering studies to identify how best to separate frontage roads from each of the freeway interchanges in the corridor. These improvements are needed under both futures for the corridor and also currently, because of the existing and potential future urban development within the corridor and the existing and potential future traffic on IH 94. Map 37 reproduces the preliminary recommended designs for the frontage road separation projects as identified by the Wisconsin Department of Transportation.

Arterial Street System Improvements

The additional improvements to the surface arterial street system serving the IH 94 West Corridor necessary to accommodate anticipated travel demand under the intermediate-growth centralized land use plan are as follows:

- The widening of Grandview Boulevard (CTH T) to furnish four traffic lanes, divided, between Northview Road and Silvernail Road and six traffic lanes, divided, between Silvernail Road and IH 94.
- The construction of the Waukesha bypass with four, rather than two, traffic lanes between USH 18 and IH 94.
- The widening of STH 83 to four traffic lanes between IH 94 and USH 18.
- The widening of STH 67 between IH 94 and USH 18 to four traffic lanes.
- The widening of IH 94 between STH 16 and CTH SS to six traffic lanes.

Under the high-growth decentralized land use plan, the arterial street improvements identified above would be necessary to accommodate future traffic demand along with the additional improvements identified below:

- The widening of Grandview Boulevard (CTH T) to a divided six rather than a divided four traffic-lane facility between Silvernail Road and Northview Road.
- The widening of CTH C to four traffic lanes between USH 18 and IH 94 and between Oakwood Drive and STH 16.
- The widening of CTH P to four traffic lanes between CTH B and STH 16 and between IH 94 and the proposed Captain's Boulevard.
- The widening of STH 83 to four traffic lanes between IH 94 and STH 16.
- The widening to provide four traffic lanes on Wisconsin Avenue between CTH KF and Capitol Drive.
- The widening of STH 67 to six lanes between IH 94 and the STH 67 Oconomowoc bypass.
- The widening of IH 94 between CTH SS and CTH P to six traffic lanes.

Map 38 shows the street improvements needed under each of the two futures for the Corridor.

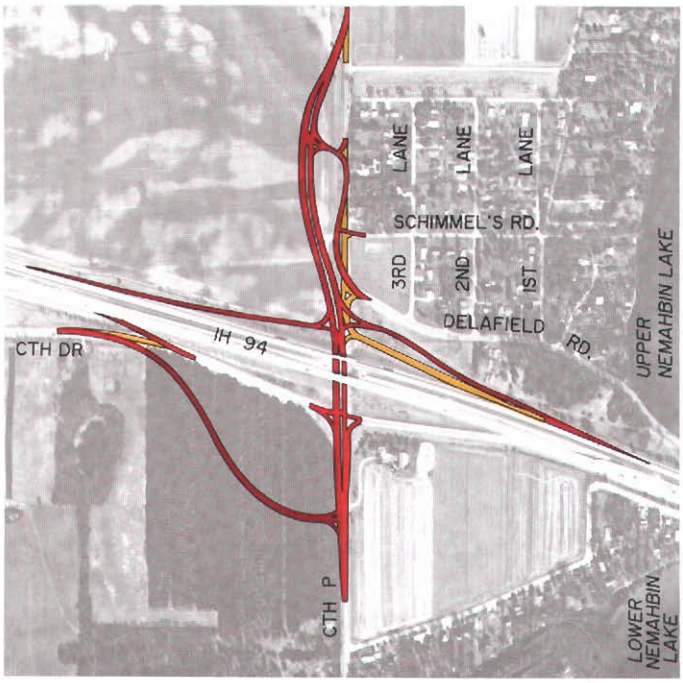
Traffic Implications of Private Development Initiatives

As already noted, two private land development initiatives have been proposed which in part depart from the Commission-prepared alternative land use plans. The substantially larger of the two private initiatives is known as the Pabst Farms development project and encompasses the approximately 1,700-acre Pabst Farms, located in the northeast, southeast, and southwest quadrants of the interchange of STH 67 and IH 94. A development plan for the Pabst Farms dated February 25, 1992, would ultimately accommodate 12,000 jobs and 1,400 households. The intermediate-growth centralized future land use plan for the IH 94 West Corridor would not accommodate any of the future envisioned in the Pabst Farm development plan, while the high-growth decentralized future land use plan would accommodate approximately 65 percent of the proposed jobs and 50 percent of the proposed

Map 37

PROPOSED FRONTAGE ROAD SEPARATION FROM FREEWAY INTERCHANGES IN THE IH 94 WEST CORRIDOR

CTH P

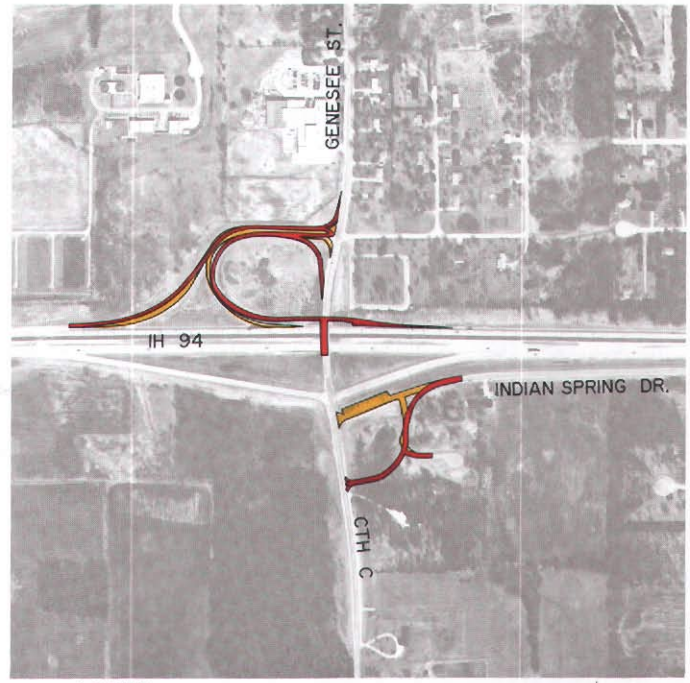


LEGEND

NEW PAVEMENT

REMOVED PAVEMENT

CTH C

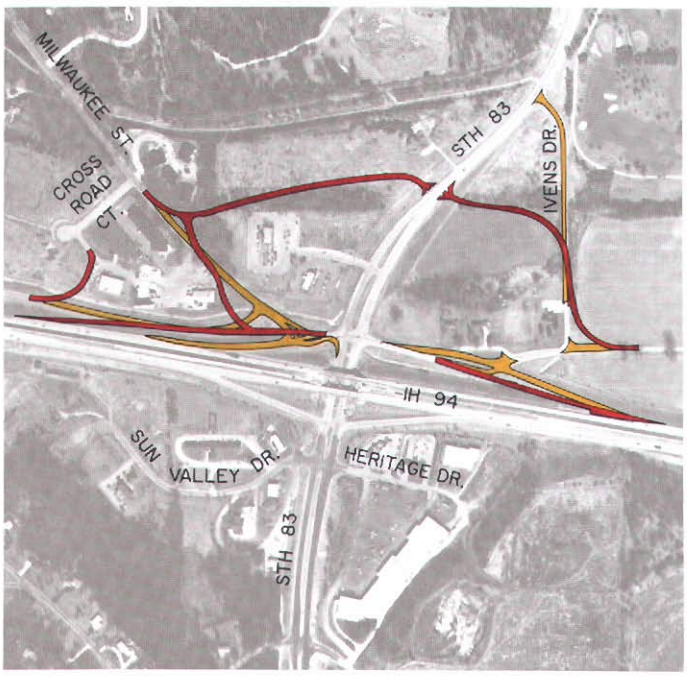


LEGEND

NEW PAVEMENT

REMOVED PAVEMENT

STH 83

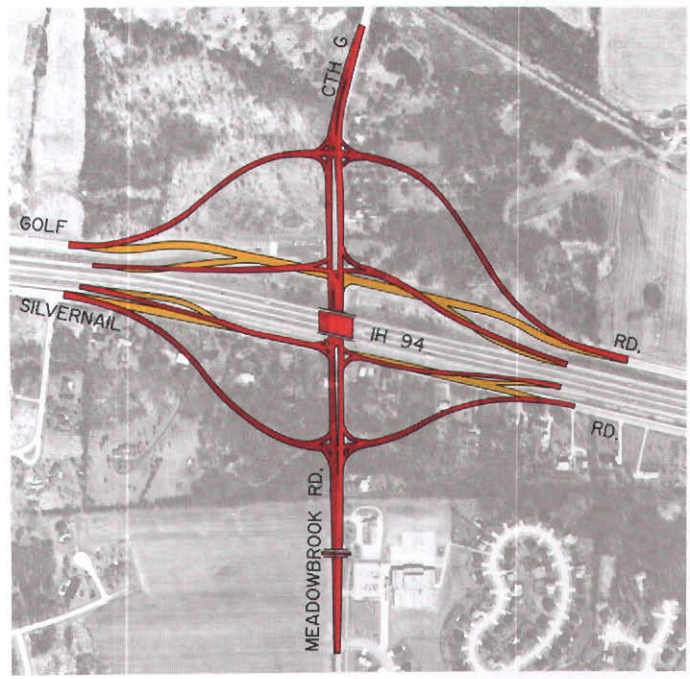


LEGEND

NEW PAVEMENT

REMOVED PAVEMENT

CTH G

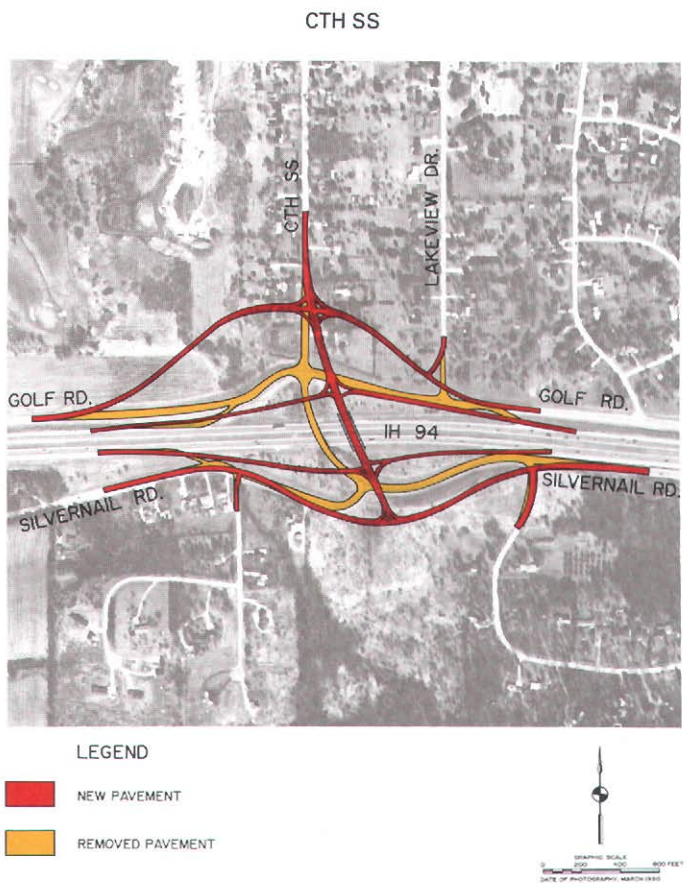


LEGEND

NEW PAVEMENT

REMOVED PAVEMENT

Map 37 (continued)



Source: Wisconsin Department of Transportation.

households, assuming full development of the Pabst Farms project. The smaller private initiative would be located on 50 acres in the northwest quadrant of the interchange of CTH SS and IH 94. That development plan proposes an office center with approximately 1,500 jobs, none of which are incorporated in either the intermediate-growth centralized plan or high-growth decentralized plan for the Corridor.

The traffic implications of the two private development initiatives, together with the two land use plans for the Corridor, are summarized in Table 35. Table 35 presents the forecast increase in year 2010 traffic volume and traffic congestion for selected arterial streets which may be expected to experience traffic impacts if the private development initiatives are implemented. Table 36 presents the additional arterial street improvements which may be connected with implementation of each private development initiative.

RECOMMENDED LAND USE PLAN

Upon review of alternative plans, the Advisory Committee requested that a recommended land use plan be prepared for the IH 94 West Corridor. In developing that recommended plan, the Committee asked that the following factors be taken into account:

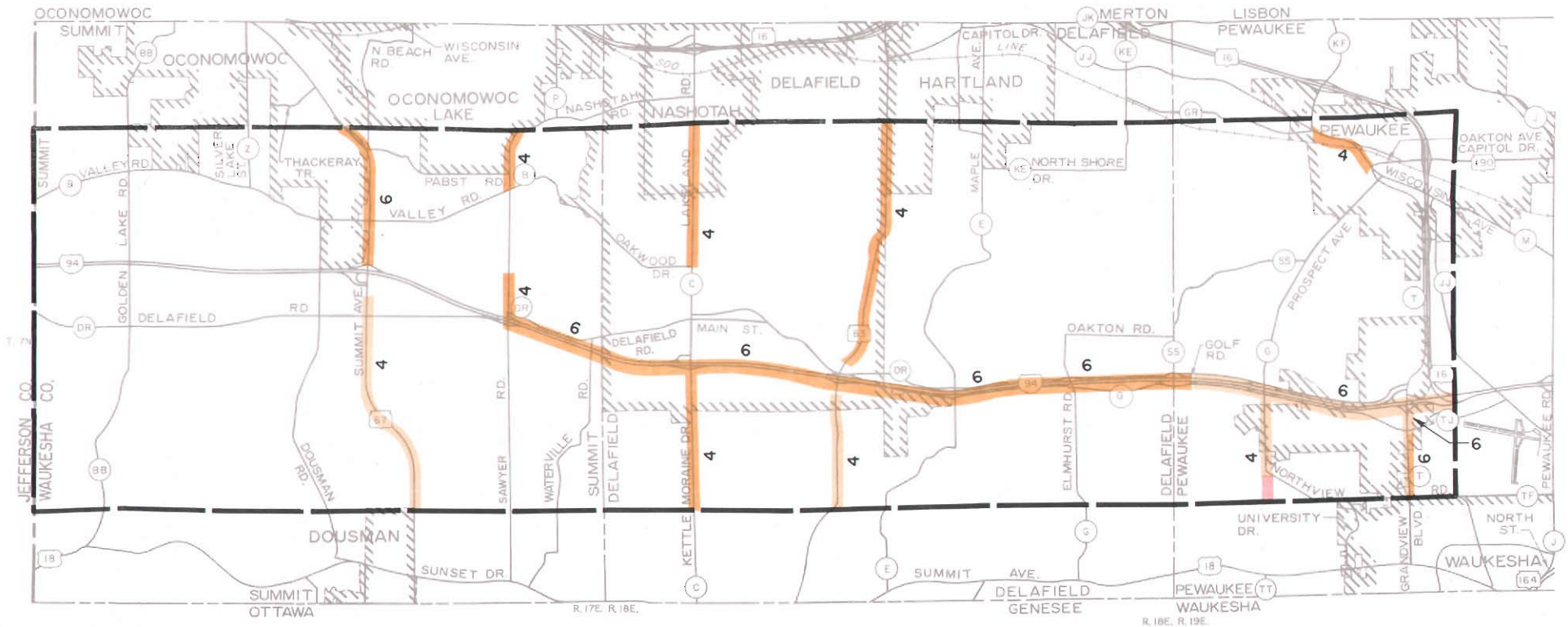
- The urban and rural development framework for the Corridor as outlined in Chapter IV.
- The two alternative Corridor land use plans, the intermediate-growth centralized and the high-growth decentralized, described in Chapter IV.
- The results of the traffic, congestion, and transportation system improvement analyses attendant to the levels of urban growth and development postulated under the two alternative land use plans set forth in this chapter.
- The traffic, congestion, and transportation system improvement analyses attendant to the "buildout" of the Pabst Farms and Golf Road Corporate Center private development initiatives described in the foregoing section of this chapter.

Recognizing the substantial real estate market pressures to provide suitable sites in the Corridor for both commercial and industrial development, and, in particular, for retail centers and business or office parks, and recognizing also the substantial public sector commitments that have already been made at least in part in response to those market pressures, the Advisory Committee more specifically asked that the recommended Corridor land use plan be based upon the following assumptions:

- Substantial, if not full, development of the Bark River Commerce Center in the Village of Hartland. In this instance, the Committee recognized the commitment made by the Village and the developers to the entire project, including proceeding with substantial infrastructure improvements.
- Substantial, if not full, development of the proposed Golf Road Corporate Center near the CTH SS interchange with IH 94 in the Town of Delafield. This position by the Committee was coupled with a correspond-

Map 38

ARTERIAL STREET IMPROVEMENTS ATTENDANT TO INTERMEDIATE-GROWTH CENTRALIZED LAND USE PLAN AND HIGH-GROWTH DECENTRALIZED LAND USE PLAN: 2010



LEGEND

- EXISTING LOCATION (WIDENING) UNDER INTERMEDIATE GROWTH-CENTRALIZED LAND USE PLAN
- EXISTING LOCATION (WIDENING) UNDER HIGH GROWTH-DECENTRALIZED LAND USE PLAN ONLY
- NEW LOCATION UNDER INTERMEDIATE GROWTH-CENTRALIZED LAND USE PLAN
- 4 NUMBER OF LANES

Source: SEWRPC.

Table 35

EXISTING 1990 AND FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUME AND CONGESTION ON SELECTED ARTERIAL STREETS IN THE IH 94 WEST CORRIDOR UNDER THE TWO ALTERNATIVE LAND USE PLANS AND TWO PRIVATE DEVELOPMENT INITIATIVES

Arterial Facility	Average Weekday Traffic Volume[a]						
		Intermediate-Growth Centralized Land Use Plan 2010			High-Growth Decentralized Land Use Plan 2010		
	Existing 1990	2010 Plan	2010 Plan with CTH SS Development	2010 Plan with Full Build-Out of Pabst Farms[b]	2010 Plan	2010 Plan with CTH SS Development	2010 Plan with Full Build-Out of Pabst Farms[b]
IH 94 between CTH G/Waukesha Bypass and CTH T	47,000	○65,000	○66,400	○73,000	○75,800	○77,200	●79,000
IH 94 between CTH SS and CTH G/Waukesha Bypass	46,400	○63,000	○65,400	○72,500	○74,200	○76,400	●78,000
IH 94 between CTH SS and STH 83	44,200	55,000	55,500	○65,400	○67,200	○67,700	○71,300
IH 94 between STH 83 and CTH P	36,200	46,000-50,000	46,300-50,300	○57,300-61,500	○60,400-64,400	○60,700-64,700	○65,200-69,200
IH 94 between CTH P and STH 67	32,700	43,000	43,300	47,800	55,400	55,800	57,800
IH 94 between STH 67 and the Waukesha-Jefferson County Line	25,600	32,000	32,100	40,000	43,000	43,100	46,300
CTH SS between Golf Road and IH 94	3,000	7,000	9,900	7,200	8,000	10,900	8,200
Golf Road between Proposed Office Development and CTH SS	1,500	3,000	6,600	3,000	4,000	7,600	4,000
Golf Road between Proposed Office Development and CTH G	1,500	3,000	3,900	3,000	4,000	4,900	4,000
Waukesha Bypass between IH 94 and Northview Road	2,000	14,000	15,000	15,500	23,000	24,000	24,800
STH 67 between USH 18 and CTH DR	6,600	●10,000	●10,000	●13,900	●13,600	●13,600	●14,900
STH 67 between CTH DR and IH 94	○8,200	●11,000	●11,000	●18,900	●17,000	●17,000	●19,900
STH 67 between IH 94 and CTH B	15,700	20,000	20,000	●39,600	●34,300	●34,300	●41,600
STH 67 between CTH B and Oconomowoc STH 67 Bypass	15,600	18,000	18,000	●34,000	○29,000	○29,000	●36,600
CTH DR between STH 67 and CTH P	2,000	2,000	2,000	4,700	3,700	3,700	4,700
CTH P between IH 94 and Proposed Captain's Boulevard	1,700	3,000	3,000	11,900	○9,000	○9,000	●12,300
CTH P between Proposed Captain's Boulevard and CTH B	1,700	3,000	3,000	○7,500	6,000	6,000	○7,700
CTH P between CTH B and STH 16	1,200	3,000	3,000	12,500	●9,200	●9,200	●12,700

[a]Moderately over design capacity operation, 100 to 130 percent of design capacity, is represented by an open circle (○) and severely over design capacity operation is represented by a filled circle (●).

[b]Full build-out of the Pabst Farms is proposed by the developer to occur about 2030. Based upon a master plan document dated February 25, 1992, at full build-out the Pabst Farms project would accommodate about 1,400 dwelling units and 12,000 jobs. The year 2010 stage of the Pabst Farms project, defined by the developer as 740 dwelling units and 4,050 jobs, was not explicitly analyzed since that level of development is encompassed within the overall level of urban development proposed in Chapter IV under the "high-growth decentralized" land use plan.

Source: SEWRPC.

ing position that the Town of Delafield should amend its local land use plan to eliminate additional proposed office park development both north and south of IH 94 between CTH SS and CTH E.

- Substantial, if not full, development of the entire planned commercial center in the City of Delafield at the STH 83 interchange with IH 94. In making this decision, the Committee recognized the substantial development activity that had occurred at this interchange and the fact that the City of Delafield has made significant commitments to the development of land at the interchange, both through commercial zoning that is already in place and in terms of the creation of a tax incremental financing district to construct a public water supply system, and perhaps other infrastructure improvements, to serve the commercial center.

Table 36

ARTERIAL STREET IMPROVEMENT REQUIREMENTS ATTENDANT TO FORECAST TRAFFIC VOLUMES IN THE IH 94 WEST CORRIDOR UNDER THE BASE PLAN, THE TWO ALTERNATIVE LAND USE PLANS, AND THE TWO PRIVATE DEVELOPMENT INITIATIVES

	Improvement Requirements Attendant to Forecast Traffic Volume						
		Intermediate-Growth Centralized Land Use Plan 2010			High-Growth Decentralized Land Use Plan 2010		
Arterial Facility	Base Plan	2010 Plan	2010 Plan with CTH SS Development	2010 Plan with Full Build-Out of Pabst Farms[a]	2010 Plan	2010 Plan with CTH SS Development	2010 Plan with Full Build-Out of Pabst Farms[a]
IH 94 between CTH G/Waukesha Bypass and CTH T	--	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes
IH 94 between CTH SS and CTH G/Waukesha Bypass	--	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes
IH 94 between CTH SS and STH 83	--	--	--	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes
IH 94 between STH 83 and CTH P	--	--	--	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to six lanes
IH 94 between CTH P and STH 67	--	--	--	--	--	--	--
IH 94 between STH 67 and the Waukesha-Jefferson County Line	--	--	--	--	--	--	--
CTH SS between Golf Road and IH 94	--	--	Provide turning lanes	--	--	Provide turning lanes	--
Golf Road between Proposed Office Development and CTH SS	--	--	Provide turning lanes	--	--	Provide turning lanes	--
Golf Road between Proposed Office Development and CTH G	--	--	--	--	--	--	--
Waukesha Bypass between IH 94 and Northview Road	New two-lane facility	New four-lane facility	New four-lane facility	New four-lane facility	New four-lane facility	New four-lane facility	New four-lane facility
STH 67 between USH 18 and CTH DR	--	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes
STH 67 between CTH DR and IH 94	--	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes
STH 67 between IH 94 and CTH B	--	--	--	Improve to eight lanes	Improve to six lanes	Improve to six lanes	Improve to eight lanes
STH 67 between CTH B and Oconomowoc STH 67 Bypass	--	--	--	Improve to six lanes	Improve to six lanes	Improve to six lanes	Improve to eight lanes
CTH DR between STH 67 and CTH P	--	--	--	--	--	--	--
CTH P between IH 94 and Proposed Captains Boulevard	--	--	--	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes
CTH P between Proposed Captains Boulevard and CTH B	--	--	--	Improve to four lanes	--	--	Improve to four lanes
CTH P between CTH B and STH 16	--	--	--	Improve to four lanes	Improve to four lanes	Improve to four lanes	Improve to four lanes

[a] *Full build-out of the Pabst Farms is proposed by the developer to occur about 2030. At full build-out, the Pabst Farms project would accommodate about 1,400 dwelling units and 12,000 jobs. The year 2010 stage of the Pabst Farms project, defined by the developer as 740 dwelling units and 4,050 jobs, was not explicitly analyzed since that level of development is encompassed within the overall level of urban development proposed in Chapter IV under the "high-growth decentralized" land use plan.*

Source: SEWRPC.

Table 37

EXISTING AND PROPOSED POPULATION, HOUSEHOLDS, AND EMPLOYMENT IN THE IH 94 WEST CORRIDOR: 1985 AND 2010 RECOMMENDED LAND USE PLAN

Item	Existing 1985	Planned Increment		Planned 2010
		Number	Percent Change	
Population	22,670	9,730	43	32,400
Households	7,220	4,680	65	11,900
Employment	10,550	11,450	109	22,000

Source: SEWRPC.

- Substantial, if not full, development of the Olympia/Oconomowoc-Target Corporate Center lands located in the northwest quadrant of the interchange of STH 67 with IH 94. The Committee took note that these lands were already fully committed to development with sewer and water infrastructure substantially in place and the lands zoned for such development.

- Partial development of the Pabst Farms in recognition of the location of these lands immediately adjacent to the Oconomowoc urban area, including the Olympia/Oconomowoc-Target Corporate Center lands, and in further recognition of the installation of public sewer and water infrastructure to serve a portion of the lands concerned. In 1989, about 390 acres of the Pabst Farms, representing nearly one-quarter of the entire site, were placed within the Oconomowoc planned sewer service area as approved by the Wisconsin Department of Natural Resources. In making this determination, the Advisory Committee also acknowledged the unique nature of the Pabst Farms as a potential large-scale planned unit development, recognizing that a commitment would have to be made in the Corridor plan to the ultimate development of the entire site, but seeking to constrain development by the year 2010 to a level that would be commensurate with the demand for urban development, but not to exceed the level envisioned for this subarea of the Region in the high-growth decentralized land use plan.

Population and Economic Activity Levels

The existing and planned population, household, and employment levels in the IH 94 West Corridor are set forth in Table 37. These levels may be summarized as follows:

- Under the recommended plan, population in the Corridor would increase from a 1985 level of nearly 22,700 persons to a year 2010 level of about 32,400 persons, an increase of about 9,700 persons, or 43 percent. This planned increase approximates the increase envisioned under the intermediate-growth centralized Corridor land use plan, an increment of about 8,000 persons. This increase is significantly less than that envisioned under the high-growth decentralized Corridor land use plan, an increment of about 25,400 persons.

- Under the recommended plan, households in the Corridor would increase from a 1985 level of about 7,200 households to a year 2010 level of about 11,900 households, an increase of nearly 4,700, or 65 percent. As in the case of population, this increase approximates the increase envisioned under the intermediate-growth centralized Corridor land use plan, an increment of about 4,100 households. This increase is also significantly less than that envisioned under the high-growth decentralized Corridor land use plan, an increment of nearly 9,200 households.

- Under the recommended plan, employment in the Corridor would increase from a 1985

level of about 10,500 jobs to a year 2010 level of about 22,000 jobs, an increase of about 11,500 jobs, or 109 percent. This planned increase is less than the increase envisioned under the high-growth decentralized Corridor land use plan, an increment of about 15,600 jobs, but substantially more than the increase envisioned under the intermediate-growth centralized Corridor land use plan, an increment of about 4,400 jobs. The envisioned increase in jobs reflects the Committee determination to recognize the substantial commitment already made by the local governments concerned to industrial and commercial development within the Corridor.

Land Use Development: Design Year 2010

The pre-public hearing recommended land use plan for the IH 94 West Corridor is shown in graphic summary form on Map 39. With respect to the planned areal extent of urban land use, the plan draws heavily upon the commitments to urban development already made by the local units of government in the Corridor and reflected, in particular, in the planned sanitary sewer service areas already adopted by the local governments and approved by the Wisconsin Department of Natural Resources.

Except for the Pabst Farms area, the recommended land use plan does not propose to change in any respect the areal extent of those already approved planned sanitary sewer service areas. In the case of the Pabst Farms, about one-quarter of that area is already included in the planned Oconomowoc sanitary sewer service area.[3] The recommended land use plan calls for the incorporation of all the remaining portion of the Pabst Farms lying north of Delafield Road within a planned sewer service area. It is recognized, however, that within the time-frame of the plan, through the year 2010, not all the Pabst Farms area will be needed to accommodate probable future urban development. Consequently, the plan does not envision full buildout of the Pabst Farms until beyond the year 2010. This situation is also true for other planned sewer service areas within the Corridor. The extent to which such areas already provide for urban development in excess of needs through the year 2010 is addressed below.

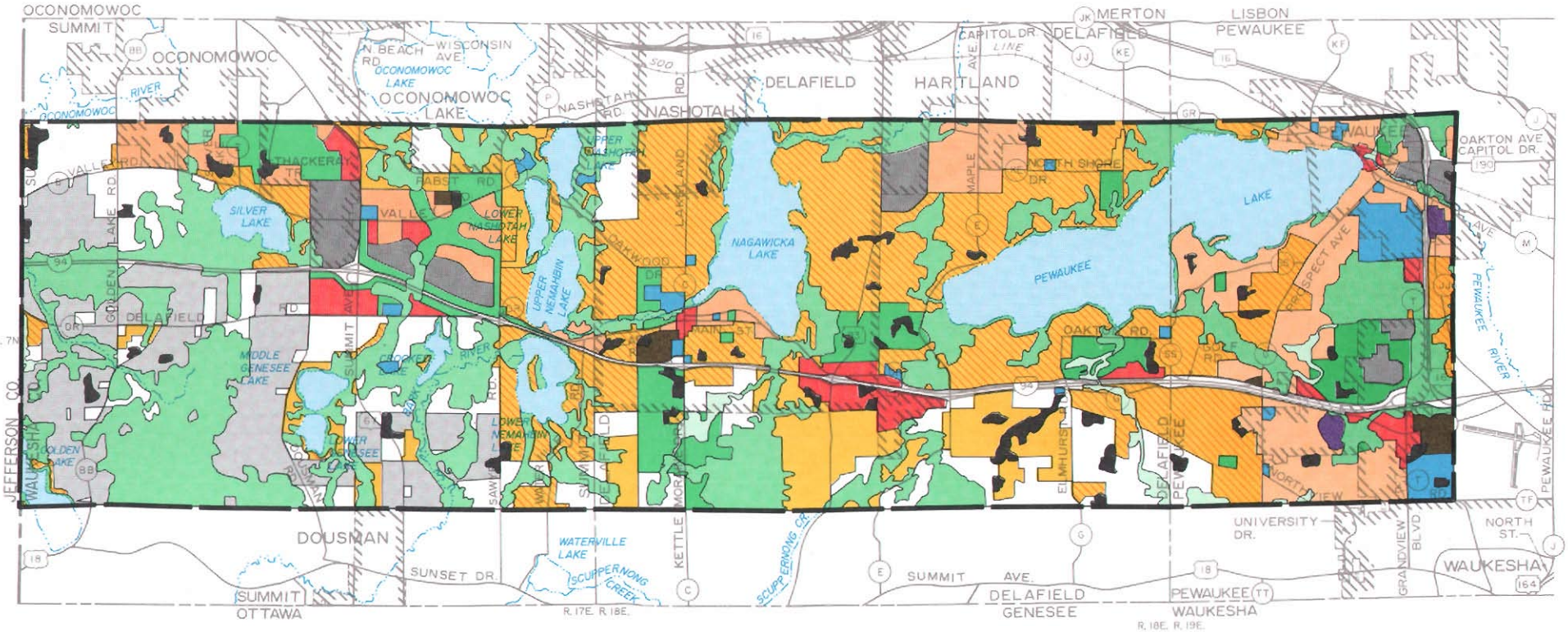
To accommodate the forecast population, household, and economic activity levels, it will be necessary to convert about 5.3 square miles of land from rural to urban use within the Corridor over the 25-year period from 1985 through 2010 (see Table 38). This represents an increase of about one-third over the 1985 extent of urban development in the Corridor of about 14.9 square miles. This planned rural-to-urban land conversion is nearly equally divided between future residential and future nonresidential urban uses. The increment in residential land use is estimated at 2.6 square miles, of which about one-half is proposed to take place at medium densities, defined as 2.3 to 6.9 dwelling units per net residential acre. Nearly all the remaining residential land would be developed at low densities, defined as 0.7 to 2.2 dwelling units per net residential acre. The new medium-density residential development would be largely concentrated in the Oconomowoc, Hartland, Waukesha, and eastern Pewaukee sewer service areas, while the low-density residential development would be largely concentrated in the Delafield, Nashotah, and western Pewaukee sewer service areas.

The envisioned population and household levels by the year 2010 within each of the four sanitary sewer service areas in the Corridor are set forth in Table 39. Assuming full plan implementation, nearly 29,600 persons, representing about 91 percent of the total Corridor planned population level of 32,400 persons, would reside in areas provided with public sanitary sewer service. This planned sewered population is expected to reside in nearly 11,000 households. As shown in Table 39, there are about 5,800 acres of developable land for residential purposes within the four planned sewer service areas. The area required to accommodate the planned level of population and households in the Corridor is estimated at 1,900 acres, assuming development at prevailing local densities within each of those four areas. Thus, about one-third of the land available for residential development in the planned

[3] *A separate study has been proposed, in part to help determine the most cost-effective manner in which service to the Pabst Farms can be provided. See SEWRPC Prospectus for the Preparation of a Sanitary Sewerage System Plan for the Northwestern Waukesha County Area, September 1993.*

Map 39

PRE-PUBLIC HEARING RECOMMENDED LAND USE PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

- PREDOMINANTLY SUBURBAN DENSITY 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)
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL (2.3-6.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
- PREDOMINANTLY HIGH DENSITY RESIDENTIAL (7.0-17.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATION AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- PRIME AGRICULTURAL LAND
- PARK, RECREATION, AND RELATED OPEN SPACE
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL RESOURCE AREA
- SURFACE WATER
- AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND

GRAPHIC SCALE
0 1 2 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Table 38

EXISTING AND PROPOSED LAND USE IN THE IH 94 WEST CORRIDOR 1985 AND 2010 PRE-PUBLIC HEARING RECOMMENDED LAND USE PLAN

Land Use			Existing 1985				Planned Increment		Total 2010			
Group	Class	Category	Acres	Percent of Class	Percent of Group	Percent of Total	Acres	Percent Change	Acres	Percent of Class	Percent of Group	Percent of Total
Urban	Residential	High-density	73	1.4	0.8	0.2	14	19.2	87	1.3	0.7	0.2
		Medium-density	1,043	20.6	10.9	2.7	800	76.7	1,843	27.3	14.3	4.8
		Low-density	3,439	67.9	36.2	9.0	825	24.0	4,264	63.1	33.0	11.1
		Suburban-density	512	10.1	5.4	1.3	47	9.2	559	8.3	4.3	1.5
		Subtotal	5,067	100.0	53.3	13.2	1,686	33.3	6,753	100.0	52.3	17.6
	Nonresidential	Commercial	194	4.3	2.0	0.5	390	201.0	584	9.5	4.5	1.5
		Industrial	165	3.7	1.7	0.4	522	316.4	687	11.1	5.3	1.8
		Governmental and institutional	485	10.9	5.1	1.3	46	9.5	531	8.6	4.1	1.4
		Transportation, communication, and utility[a]	2,453	55.0	25.7	6.4	486	19.8	2,939	47.7	22.8	7.7
		Park and recreation[b]	1,166	26.1	12.2	3.0	258	22.1	1,424	23.1	11.0	3.7
		Subtotal	4,463	100.0	46.7	11.6	1,702	38.1	6,165	100.0	47.7	16.1
	All	Subtotal	9,530	--	100.0	24.8	3,388	35.6	12,918	--	100.0	33.7
Rural	All	Prime agricultural	9,580	33.2	33.2	25.0	-6,866	-71.7	2,714	10.7	10.7	7.1
		Other open lands[c]	19,255	66.8	66.8	50.2	3,478	18.1	22,733	89.3	89.3	59.2
		Subtotal	28,835	100.0	100.0	75.2	-3,388	-11.7	25,447	100.0	100.0	66.3
--	--	Total	38,365	--	--	100.0	--	--	38,365	--	--	100.0

[a] *Parking included with associated use.*

[b] *Consists of intensively used outdoor recreation lands.*

[c] *Includes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.*

Source: SEWRPC.

Table 39

POPULATION, HOUSEHOLDS, AND GROSS RESIDENTIAL DEVELOPABLE LAND IN THE IH 94 WEST CORRIDOR BY SANITARY SEWER SERVICE AREA UNDER THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS: 2010

	Population				Households				Land Use Development			
		Planned 2010				Planned 2010						
Sanitary Sewer Service Area	Existing 1985	Increment over 1985	Total	Potential Additional upon Full Development[a]	Existing 1985	Increment over 1985	Total	Potential Additional upon Full Development[a]	Available Gross Residential Developable Land (acres)	Gross Area Required to Accommodate Planned 2010 Level of Residential Development (acres)	Approximate Percent of Available Area Proposed for Development by 2010	Gross Area Available for Full Residential Development[a] (acres)
Pewaukee-Brookfield	9,063	4,724	13,787	5,029	3,071	2,148	5,219	1,815	2,348	971	41	1,377
Delafield-Hartland	5,955	2,241	8,196	8,721	1,930	1,040	2,970	3,145	2,242	497	22	1,745
Oconomowoc	728	527	1,255	4,597	250	223	473	1,745	836	105	13	731
Waukesha	4,287	2,036	6,323	448	1,179	1,127	2,306	160	372	329	88	43
Total	20,033	9,528	29,561	18,795	6,430	4,538	10,968	6,865	5,798	1,902	33	3,896

[a] *This analysis reflects full urban development of all lands identified in the recommended Corridor land use plan for conversion to urban use. For analysis purposes, all of the Pabst Farms land was assumed to be within the Oconomowoc sanitary sewer service area.*

Source: SEWRPC.

Table 40

COMMERCIAL LAND USE AND EMPLOYMENT AT SELECTED LOCATIONS IN THE IH 94 WEST CORRIDOR UNDER THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS: 2010

Commercial Location			Employment				Land Use Development			
				Planned 2010						
Number[a]	Name	Civil Division	Existing 1985	Increment over 1985	Total	Potential Additional upon Full Development	Available Developable Land at Designated Location (acres)	Gross Area Required to Accommodate Planned 2010 Level of Development (acres)	Approximate Percent of Available Area Proposed for Development by 2010	Gross Area Available for Full Development (acres)
C-1	Grandview-Silvernail Commercial Center	City of Waukesha; Town of Pewaukee	1,200	600	1,800	0	30	30	100	0
C-2	Pewaukee Village Business District[b]	Village of Pewaukee	400	50	450	0	--	--	100	--
C-3	Golf Road Corporate Center	Town of Delafield	0	1,000	1,000	500	50	40	80	10
C-4	Delafield City Business District[b]	City of Delafield	350	0	350	0	--	--	100	--
C-5	Delafield STH 83 Commercial Center	City of Delafield; Town of Delafield	300	3,700	4,000	700	235	200	85	35
C-6	Pabst Corporate Center	Town of Summit	0	600	600	1,250	170	55	32	115
C-7	Pabst Village Center	Town of Summit	0	100	100	1,000	70	10	14	60
C-8	Olympia Commercial Center	City of Oconomowoc	550	300	850	0	30	30	100	0
--	Total	--	2,800	6,350	9,150	3,450	585	365	62	220

[a] *See Map 40.*

[b] *This center is considered to be fully developed; it is recognized that some redevelopment will take place to accommodate new land uses.*

Source: SEWRPC.

sanitary sewer service areas may be expected to be needed to accommodate the levels of development anticipated.

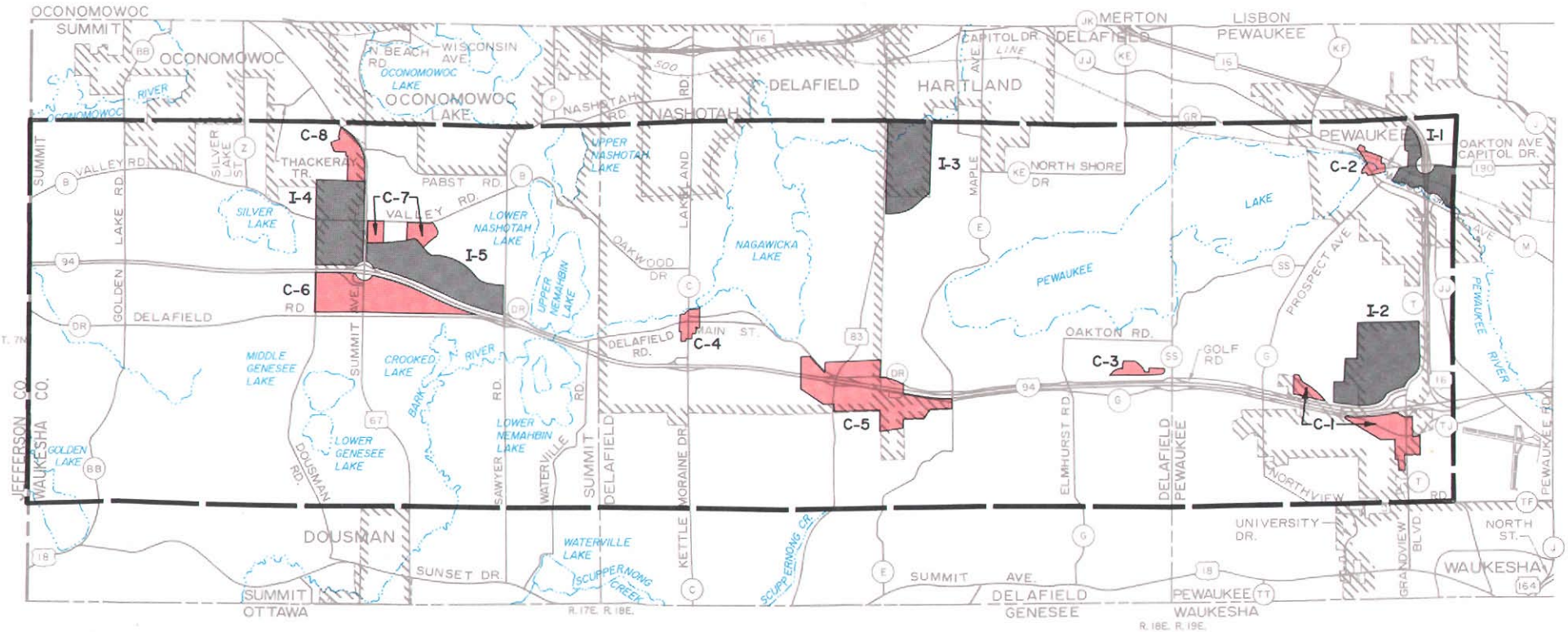
The planned commercial and industrial centers, which would be the site of the majority of the jobs in the Corridor, are shown on Map 40. The existing and planned levels of employment at the eight commercial centers are set forth in Table 40. Under the plan, employment in these eight centers, which stood at about 2,800 jobs in 1985, is expected to increase to nearly 9,200 jobs by the year 2010. In keeping with the Advisory Committee guidance, the plan would distribute those incremental jobs in such a way as to call for complete, or nearly complete, development of the Grandview-Silvernail Commercial Center, the Golf Road Corporate Center, the Delafield-STH 83 Commercial Center, and the Olympia Commercial Center. By the year 2010, those commercial centers would be no less than 80 percent developed in terms of land area. By way of contrast, the plan allocates less commercial employment to the proposed Pabst Corporate Center and Pabst Village Center, where lower levels of commercial land use development are envisioned by the year 2010: 32 percent and 14 percent of full land use development, respectively.

The existing and planned levels of employment at the five industrial centers is shown in Table 41. Under the plan, employment in these five centers, which stood at about 4,000 jobs in 1985, is expected to increase to about 7,800 jobs by the year 2010. Again in keeping with the Advisory Committee guidance, these jobs have been distributed in the plan to reflect substantial levels of development at the Bark River Commerce Center and the Oconomowoc-Target Corporate Center, with a lower level of employment at the Pabst Employment Center, the latter proposed to be at 58 percent of full land use development in the year 2010.

The conversion to urban use of about 5.3 square miles of land, as recommended under the plan, results in a concomitant decrease in agricultural and other open lands. Those changes as they relate to prime agricultural and other agricultural and open lands are identified in Table 38.

Map 40

COMMERCIAL AND INDUSTRIAL CENTERS IN THE IH 94 WEST CORRIDOR
2010 PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS



LEGEND

COMMERCIAL CENTER

- C-1 GRANDVIEW-SILVERNAIL COMMERCIAL CENTER
- C-2 PEWAUKEE VILLAGE BUSINESS DISTRICT
- C-3 GOLF ROAD CORPORATE CENTER
- C-4 DELAFIELD CITY BUSINESS DISTRICT
- C-5 DELAFIELD STH 83 COMMERCIAL CENTER
- C-6 PABST CORPORATE CENTER
- C-7 PABST VILLAGE CENTER
- C-8 OLYMPIA COMMERCIAL CENTER

INDUSTRIAL CENTER

- I-1 PEWAUKEE VILLAGE INDUSTRIAL CENTER
- I-2 GENERAL ELECTRIC CENTER
- I-3 BARK RIVER COMMERCE CENTER
- I-4 OCONOMOWOC-TARGET CORPORATE CENTER
- I-5 PABST EMPLOYMENT CENTER

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Table 41

INDUSTRIAL LAND USE AND EMPLOYMENT AT SELECTED LOCATIONS IN THE IH 94 WEST CORRIDOR UNDER THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS: 2010

Industrial Location			Employment				Land Use Development			
				Planned 2010						
Number[a]	Name	Civil Division	Existing 1985	Increment over 1985	Total	Potential Additional upon Full Development	Available Developable Land at Designated Location (acres)	Gross Area Required to Accommodate Planned 2010 Level of Development (acres)	Approximate Percent of Available Area Proposed for Development by 2010	Gross Area Available for Full Development (acres)
I-1	Pewaukee Village Industrial Center	Village of Pewaukee	750	50	800	150	25	10	40	15
I-2	General Electric Center	City of Waukesha	3,250	-750	2,500	750	5	0	0	5
I-3	Bark River Commerce Center	Village of Hartland	0	1,300	1,300	800	190	120	63	70
I-4	Oconomowoc-Target Corporate Center	City of Oconomowoc	0	1,400	1,400	550	280	230	82	50
I-5	Pabst Employment Center	Town of Summit	0	1,800	1,800	1,300	225	130	58	95
--	Total	--	4,000	3,800	7,800	3,550	725	490	68	235

[a] *See Map 40.*

Source: SEWRPC.

Under the plan, about 10.7 square miles of land classified as prime agricultural lands, representing about 72 percent of the total such lands in the Corridor, would either be converted to urban use or reclassified as nonprime agricultural and other open space lands because of their inclusion within planned urban service areas.

Finally, the recommended Corridor land use plan proposes that certain lands classified as environmentally sensitive in nature be preserved and protected in essentially natural open uses. In total, these lands encompass about 21.1 square miles. Of this total, about 19.4 square miles are classified as primary environmental corridors, about 0.5 square mile is classified as secondary environmental corridors, and about 1.2 square miles are classified as isolated natural resource areas. These areas are depicted graphically on Map 39.

Full Development of Planned Sanitary Sewer Service Areas

As noted above, not all the land included within the existing and proposed planned sanitary sewer service areas is anticipated to be required to accommodate the conversion of land from rural to urban use to support the planned population and economic activity levels by the year 2010. With the exception of most of the Pabst Farms, this situation may be attributed in large part to two factors: 1) the extension of sanitary sewers over the past 25 years to relatively large areas of the Corridor, particularly along lakeshores, in order to resolve problems associated with onsite sewage disposal system failures and, in so doing, making sanitary sewer available to significant amounts of intermediate and adjacent undeveloped land and 2) the recognized desirability of providing a measure of flexibility in delineating sanitary sewer service areas to account for such market factors as landowner willingness to develop and changing density preferences. Similarly, local communities have made conscious decisions to make available to the urban land market relatively large amounts of land for commercial and industrial development, seeking to capture an increasing share of the market demand for new economic activity centers.

The Pabst Farms situation is unique within the Corridor with respect to development potential, owing to the single-ownership control of a large site that extends over 1,700 acres. It is recognized that development of such a large tract will have to take place over several decades, extending well beyond the plan design year 2010. Yet, if a unified development scheme is to be achieved for this unique parcel, it is necessary to commit the entire site to urban development and to stage development within that site in accordance with plan recommendations.

Table 42

SELECTED DATA RELATING THE PROPOSED PABST FARMS DEVELOPMENT PROJECT TO THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS FOR THE IH 94 WEST CORRIDOR

Development Item	Pabst Farms Development Plan[a]		Recommended Corridor Land Use Plan 2010	
	2010 Stage	Full Development	Amount	Percent Corridor Plan of Full Development
Employment Level				
Pabst Corporate Center Jobs	778	1,843	600	32.6
Pabst Village Center Jobs	774	1,129	100	8.9
Pabst Employment Center Jobs	2,493	3,102	1,800	58.0
Total	4,045	6,074	2,500	41.2
Residential Level				
Number of Households	740	1,416	286	20.2
Resident Population	1,916	3,992	775	19.4
Urban Land Use Development (acres)				
Gross Commercial	101	241	65	27.0
Gross Industrial	68	226	130	57.5
Gross Residential	273	577	110	19.1
Total	442[b]	1,044[b]	305[b]	29.2

[a] *Pabst Farms Master Plan, prepared by Mooney LeSage Consulting, Ltd., June 16, 1992.*

[b] *In addition, the Pabst Farms development plan and the recommended Corridor land use plan both call for the preservation of 130 acres of primary environmental corridor and the development of 488 acres in recreational and other open space uses.*

Source: SEWRPC.

An analysis was conducted to ascertain the approximate amount of additional urban development that could be accommodated within the planned sanitary sewer service areas beyond the recommended year 2010 levels. As indicated in Table 39, there would be nearly 3,900 acres of developable land available for residential uses after the year 2010. That land is estimated to have a capacity to accommodate an additional nearly 6,900 households and nearly 19,000 additional persons. These household and population increments would be over and above the planned year 2010 Corridor levels of 11,900 households and 32,400 persons.

Similarly, within the planned commercial land use centers, about 220 acres would remain available for development after the year 2010; within the planned industrial centers, about 235 acres would be available. These areas would accommodate about 3,450 additional jobs and about 3,550 jobs, respectively. About one-half of these new jobs would be located in the Pabst Farms development. Thus, there would be enough land set aside to accommodate a total of 7,000 jobs in the Corridor beyond the planned year 2010 employment level of about 22,000 jobs.

The potential impacts of complete urban development within the planned sanitary sewer service areas on the arterial street and highway system are addressed in a following section of this chapter. Table 42 summarizes development activity on the Pabst Farms, comparing the level of development recommended by the year 2010 for the Farms in the Corridor land use plan with the preliminary development plan prepared for the Farms.

RECOMMENDED TRANSPORTATION PLAN

Total Amount of Vehicle Travel: 2010

Using the Commission battery of travel and traffic simulation models, traffic forecasts and assignments were made for planned future land

Table 43

ARTERIAL VEHICLE MILES OF TRAVEL ON AN AVERAGE WEEKDAY IN THE IH 94 WEST CORRIDOR: EXISTING 1989 AND PLANNED 2010

Type of Facility	Average Weekday Vehicle Miles of Travel		
	Existing 1989	Planned 2010	Percent Increase 1989-2010
Freeway	635,000	995,000	57
Standard Arterial	255,000	444,000	74
Total	890,000	1,439,000	62

Source: SEWRPC.

use conditions. The traffic forecasts resulting from these assignments were developed within the context of, and assumed implementation of, the adopted long-range regional transportation system plan and, in particular, the arterial street and highway and public transit improvement recommendations set forth in that plan and described earlier in this chapter under the heading "Base Transportation System Plan." The traffic assignment was made as the initial step in the process of determining what additional transportation system improvements, if any, should be recommended for inclusion in the final Corridor plan.

As shown in Table 43, about 0.89 million vehicle miles of arterial travel took place within the Corridor on an average weekday in 1989. About 71 percent of this travel occurred on the IH 94 and STH 16 freeways. Under the recommended land use plan, average weekday travel in the Corridor may be expected to increase by about 62 percent by the year 2010, to about 1.44 million vehicle miles. The proportion of travel on the freeway versus the surface arterial system may be expected to decrease slightly to about 69 percent.

Traffic Volumes and Congestion: 2010

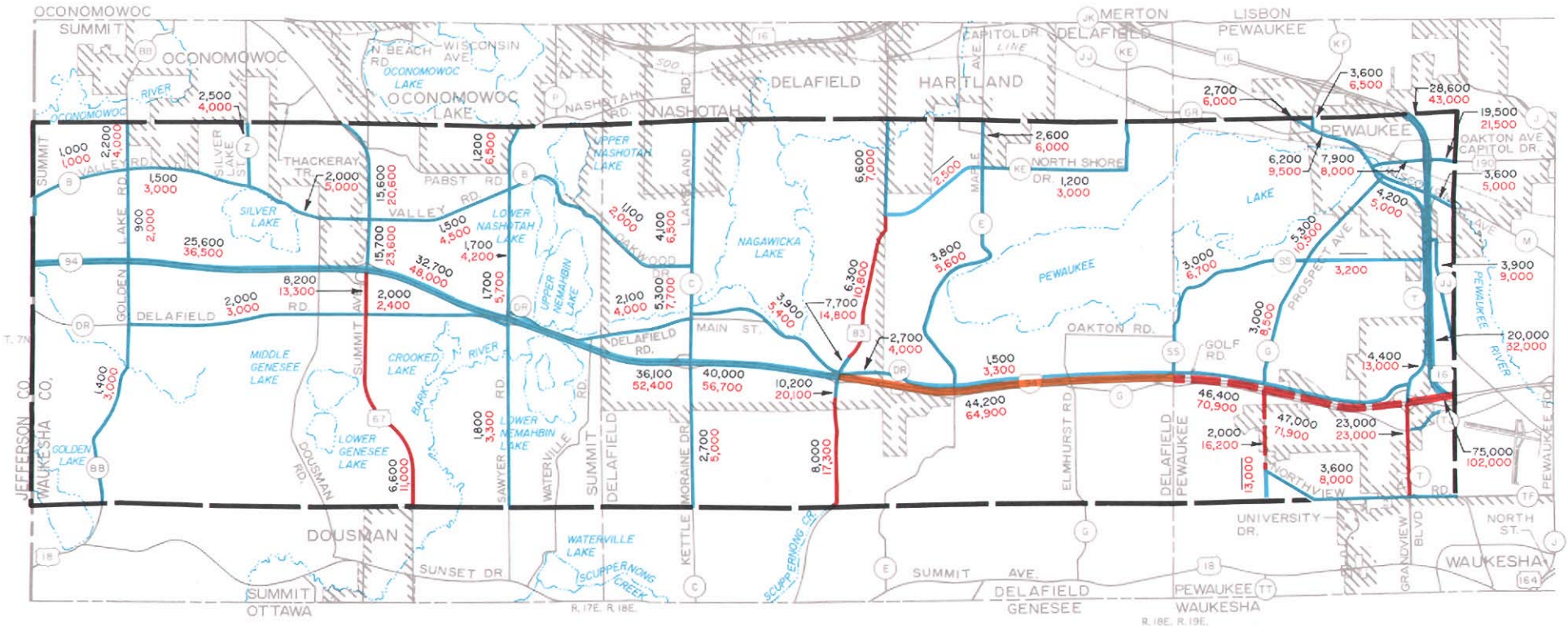
The assignment of travel demand to the base plan arterial street and highway and transit systems under the recommended year 2010 planned land use conditions results in the anticipated future traffic volumes shown on Map 41. Significant increases in traffic volumes may be expected, particularly on the IH 94 freeway and on several of the north-south arterial facilities that interchange with that freeway.

Map 41 also identifies those arterial street and highway facilities which are anticipated to experience traffic congestion by the year 2010. For the Corridor as a whole, the number of miles of facilities operating under congested conditions may be expected to increase from about 4.6 miles, or about 5 percent of the total arterial highway system within the Corridor in 1989, to about 13.7 miles, or about 15.8 percent of the planned arterial highway system as defined in the year 2010 base plan (see Table 44). Consequently, unless additional system improvements are made over and above those defined in the base plan, traffic congestion in the Corridor may be expected to increase significantly over the next two decades.

The specific facilities that may be anticipated to experience congested conditions are identified in Table 45. At the present time, the IH 94 freeway through the Corridor operates under uncongested conditions except for a short segment at the interchange of IH 94 with the USH 16 freeway and CTH T. By the year 2010, and assuming no widening of the freeway west of the USH 16 interchange as postulated in the base plan, the IH 94 freeway in the Corridor may be expected to operate under a "severe" level of congestion through the CTH T interchange, at a "substantial" level of congestion from the CTH T interchange west to the CTH SS interchange, and at a "moderate" level of congestion between the CTH SS interchange and the STH 83 interchange. West of the STH 83 interchange, the freeway may be expected to operate under uncongested conditions, assuming the levels of urban development set forth in the recommended Corridor land use plan.

Map 41

FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE BASE ARTERIAL STREET AND HIGHWAY SYSTEM FOR THE IH 94 WEST CORRIDOR: 2010 RECOMMENDED PLAN



LEGEND

CONGESTION ON THE BASE ARTERIAL SYSTEM

- ARTERIAL STREET OR HIGHWAY OPERATING UNDER OR AT DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING MODERATELY OVER (100 PERCENT TO 115 PERCENT) DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING SUBSTANTIALLY OVER (116 PERCENT TO 130 PERCENT) DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING SEVERELY OVER (131 PERCENT OR MORE) DESIGN CAPACITY

AVERAGE WEEKDAY TRAFFIC VOLUMES ON THE BASE ARTERIAL SYSTEM

32,700 EXISTING AVERAGE WEEKDAY TRAFFIC VOLUME

43,800 FORECAST 2010 AVERAGE WEEKDAY TRAFFIC VOLUME UNDER THE RECOMMENDED PLAN

Source: SEWRPC.

Table 44

TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE IH 94 CORRIDOR: EXISTING 1989 AND PLANNED 2010

Congestion Status[a]	Existing 1989		Base Plan 2010		Recommended Plan 2010	
	Number of Miles	Percent of Total	Number of Miles	Percent of Total	Number of Miles	Percent of Total
Uncongested	79.4	94.5	72.8	84.2	82.7	95.6
Moderately Congested	1.8	2.1	3.4	3.9	3.4	3.9
Substantially Congested	0.3	0.4	3.7	4.3	0.0	0.0
Severely Congested	2.5	3.0	6.6	7.6	0.4	0.5
Total	84.0	100.0	86.5	100.0	86.5	100.0

[a] *Congestion categories defined as follows:*
Under: At or under design capacity.
Moderate: At 101 to 115 percent of design capacity.
Substantial: At 116 to 130 percent of design capacity.
Severe: At 131 percent or more of design capacity.

Source: SEWRPC.

The surface arterial streets that may be expected to experience "severe" congestion levels, absent improvements beyond those called for in the base plan, are STH 83 both north and south of the IH 94 interchange, STH 67 south of the IH 94 interchange, and CTH T (Grandview Boulevard) between the IH 94 freeway and Northview Road. In addition, the proposed Waukesha bypass facility between its interchange with the IH 94 freeway and Northview Road may be expected to operate under "substantial" levels of congestion.

Proposed Incremental Arterial Street and Highway Improvements: 2010

Given the anticipated future traffic congestion under the recommended land use plan, and further given that the base transportation system plan already took into account at a regional system planning scale measures related to travel demand management and transit improvements, additional arterial street and highway improvements to abate the anticipated congestion will be required. These improvements would be in addition to the freeway interchange and freeway ramp-frontage road separation projects described earlier in this chapter, which are required in any case. The interchange and frontage road separation projects are being identified in detail in a separate preliminary engineering study sponsored by the Wisconsin Department of Transportation and being conducted on a simultaneous and coordinated basis with this systems level planning effort.

The additional improvements to the arterial street and highway system serving the Corridor needed to accommodate the changes in land use development identified in the recommended Corridor land use plan are shown on Map 42. A comparison between those improvements and the improvements for the same facilities as identified in the base plan is set forth in Table 46. The following major changes to the base plan will be required:

- The widening of IH 94 from the STH 16 interchange west to the CTH SS interchange to provide six travel lanes. The base plan did not include such widening. Given the level of congestion for that facility which, as noted above, is anticipated to operate under either "severe" or "substantial" levels of congestion, the freeway widening would be warranted. No such widening is proposed, however, for that portion of the freeway from CTH SS west to STH 83, which is expected to experience "moderate" levels of congestion.

Table 45

AVERAGE WEEKDAY TRAFFIC VOLUME AND CONGESTION ON SELECTED ARTERIAL STREET IN THE IH 94 WEST CORRIDOR: EXISTING 1990 AND PLANNED 2010

Arterial Facility	Existing 1990		Recommended Corridor Land Use Plan: 2010	
	Average Weekday Traffic Volume	Level of Congestion[a]	Average Weekday Traffic Volume	Level of Congestion[a]
IH 94 between USH 16 and CTH T	75,000	Substantial	102,000	Severe
IH 94 between CTH G/Waukesha Bypass and CTH T	47,000	Under	71,900	Substantial
IH 94 between CTH SS and CTH G/Waukesha Bypass	46,400	Under	70,900	Substantial
IH 94 between CTH SS and STH 83	44,200	Under	64,900	Moderate
STH 83 between Proposed IH 94 Interchange Development and CTH KE (extended)	6,300	Under	10,800	Severe
STH 83 between South Study Area Boundary and Proposed IH 94 Interchange Development	8,000	Moderate	17,300	Severe
STH 67 between South Study Area Boundary and IH 94	6,600	Under	11,000	Severe
Waukesha Bypass between IH 94 and Northview Road	2,000	Under	16,200	Substantial
CTH T between IH 94 and Northview Road	23,000	Severe	23,000	Severe

[a] *Congestion categories defined as follows:*
Under: At or under design capacity.
Moderate: At 101 to 115 percent of design capacity.
Substantial: At 116 to 130 percent of design capacity.
Severe: At 131 percent or more of design capacity.

Source: SEWRPC.

- The widening of STH 83 to four travel lanes from the IH 94 interchange north to the entrance to the Bark River Commerce Center. The base plan recommended that this facility be maintained with two travel lanes.

- The widening of STH 83 from the IH 94 interchange south beyond the Corridor boundary to USH 18 to four travel lanes. The base plan recommended that this facility be maintained with two travel lanes.

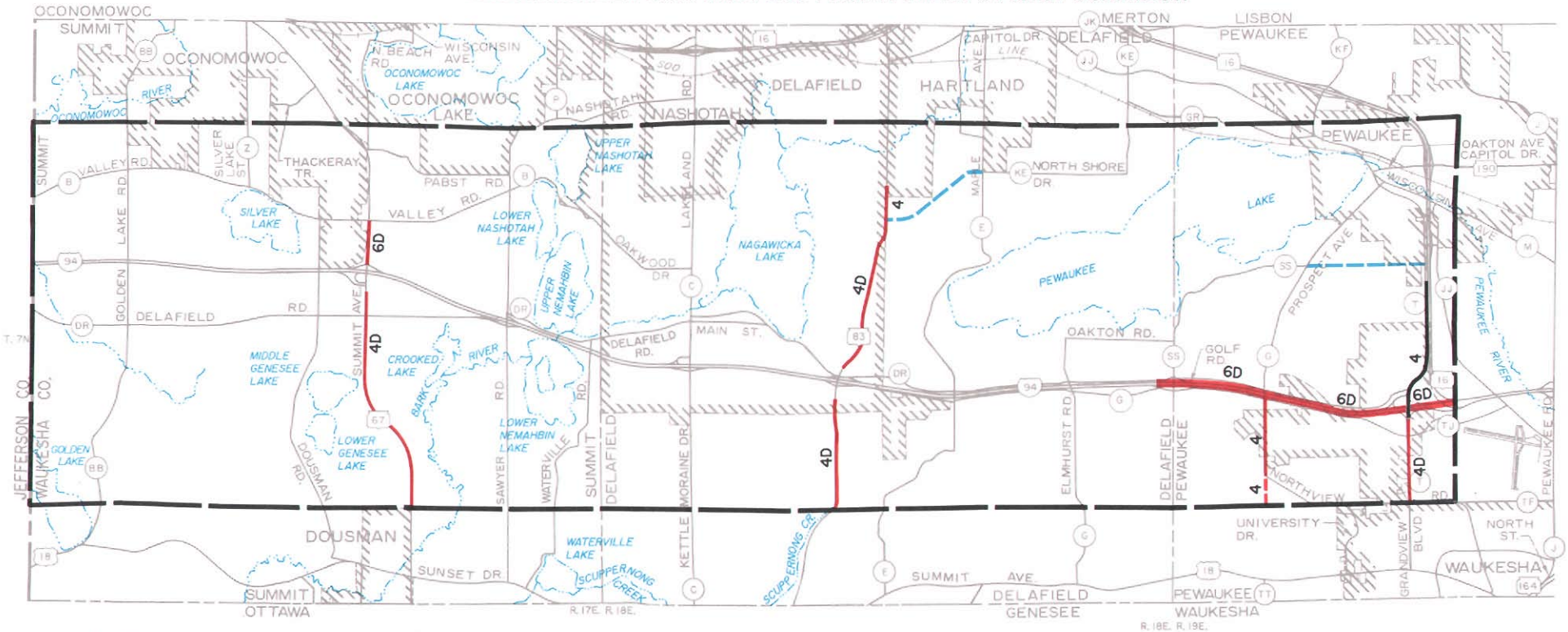
- The widening of STH 67 from the IH 94 interchange south beyond the Corridor boundary to USH 18 to four travel lanes, and north from the interchange to CTH B to six travel lanes. The base plan recommended that this facility be maintained with two travel lanes south of IH 94 and four travel lanes north of IH 94 to CTH B.

- The construction of the proposed Waukesha bypass facility (CTH TT extended) from Northview Road beyond the south Corridor boundary to USH 18 as a four-lane facility, rather than as a two-lane facility, as proposed in the base plan. This recommendation is coupled with a proposal to widen existing Meadowbrook Road between IH 94 and Northview Road to four travel lanes, also as part of the bypass.

- The provision of a four-lane divided facility on CTH T (Grandview Boulevard)

Map 42

CAPACITY IMPROVEMENTS ATTENDANT TO THE RECOMMENDED 2010 LAND USE PLAN IN THE IH 94 WEST CORRIDOR



LEGEND

4 NUMBER OF TRAFFIC LANES (TWO WHERE UNNUMBERED)

D DENOTES NEED FOR MEDIAN DIVIDED FACILITY

BASE PLAN CAPACITY IMPROVEMENTS

EXISTING LOCATION (WIDENING)

NEW LOCATION

ADDITIONAL IMPROVEMENTS

EXISTING LOCATION (WIDENING)

NEW LOCATION

Source: SEWRPC.

Table 46

ARTERIAL STREET IMPROVEMENTS ATTENDANT TO THE BASE PLAN AND THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS WITHIN THE IH 94 WEST CORRIDOR

Arterial Facility	Base Plan	Recommended Plan
IH 94 between CTH SS and CTH T	Resurfacing or reconstructing for existing capacity (four lanes)	Widen to six lanes
STH 83 between CTH KE (extended) and IH 94	Resurfacing or reconstructing for existing capacity (two lanes)	Widen to four lanes
STH 83 between South Study Area Boundary and IH 94	Resurfacing or reconstructing for existing capacity (two lanes)	Widen to four lanes[a]
STH 67 between South Study Area Boundary and IH 94	Resurfacing or reconstructing for existing capacity (two lanes)	Widen to four lanes[a]
STH 67 between CTH B and IH 94	Resurfacing or reconstructing for existing capacity (four lanes)	Widen to six lanes
Waukesha Bypass (CTH TT extended) between South Study Area Boundary and Northview Road	Constructing new two-lane facility[b]	Construct new four-lane facility[a]
Meadowbrook Road between Northview Road and IH 94	Resurfacing or reconstructing for existing capacity (two lanes)	Widen to four lanes
CTH T between IH 94 and CTH JJ	Widening to four lanes	Widen to four lanes
CTH T between IH 94 and Northview Road	Resurfacing or reconstructing for existing capacity (four lanes)	Widen to four-lane divided facility
Extension of CTH SS from CTH G to CTH T	Constructing new two-lane facility	Construct new two-lane facility
Extension of CTH KE from CTH E to STH 83	Constructing new two-lane facility	Construct new two-lane facility

[a] *Required widening would extend south to USH 18.*

[b] *Required construction would extend south to USH 18.*

Source: SEWRPC.

between IH 94 and Northview Road, rather than maintaining the existing undivided four-lane facility, as recommended in the base plan.

No changes are proposed to three additional improvement recommendations identified in the base plan: the extension of CTH KE from CTH E to STH 83 as a two-travel-lane facility, the extension of STH SS from CTH G to CTH T as a two-travel-lane facility, and the widening of CTH T from IH 94 to the proposed CTH SS extension to provide four travel lanes.

The estimated costs associated with the foregoing arterial street and highway improvements are summarized in Table 47. The total costs of implementing the arterial street and highway improvements identified in the base plan approximated $6.2 million. The cost of implementing the base plan plus the recommended incremental system improvements is estimated at $25.7 million. Thus, the incremental arterial street and highway improvement cost associated with the more intensive recommended land use pattern in the Corridor is estimated at $19.5 million. None of the above costs include the substantial costs associated with the freeway interchange and freeway ramp-frontage road separation projects which are believed to be necessary, even under current land use conditions, in order to provide a safe and efficient operating environment at each of the interchanges along IH 94. The costs of those improvements are currently estimated by the Wisconsin Department of Transportation at $65.2 million, exclusive of right-of-way acquisition.

Table 47

ESTIMATED COST AND DISRUPTION ATTENDANT TO THE BASE TRANSPORTATION PLAN AND ADDITIONAL ARTERIAL IMPROVEMENTS ASSOCIATED WITH THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS FOR THE IH 94 WEST CORRIDOR

Factors	Transportation Base Plan	Recommended Transportation Plan
Miles of Street Widening		
Freeways	0.0	3.1
Standard Arterial	1.3	9.2
Total	1.3	12.3
Construction Cost of Street Widening[a]	$2,600,000	$22,028,000
Miles of New Arterial Streets		
Freeways	0.0	0.0
Standard Arterial	2.7	2.7
Total	2.7	2.7
Construction Cost of New Arterial Streets[b]	$3,590,000	$ 3,680,000
Disruption Attendant to Street Widening and New Roadways		
Residential Units	0	15
Businesses	1	1
Acres of Prime Agriculture Land	12.8	28.2
Acres of Primary Environmental Corridor	8.36	11.87

[a] *Construction costs do not include costs attendant to freeway interchange reconstruction as a result of proposed widenings and/or reconfiguration of the arterial street termini of freeway on- and off-ramps.*

[b] *Construction costs do not include costs attendant to freeway interchange reconstruction as a result of proposed arterials and/or reconfiguration of the arterial street termini of freeway on- and off-ramps.*

Source: SEWRPC.

Pre-Public Hearing Recommended Arterial Street and Highway System Plan

The pre-public hearing recommended arterial street and highway system plan for the IH 94 West Corridor for the year 2010 is shown on Map 43. This map identifies the entire extent of the 86.5-mile system in the Corridor, the number of travel lanes proposed to be provided on each segment of the system, and the proposed jurisdictional responsibility for each segment of the system. The following sections identify the specific functional improvements and jurisdictional realignments proposed to be undertaken by the year 2010 to effect full implementation of the recommended plan.

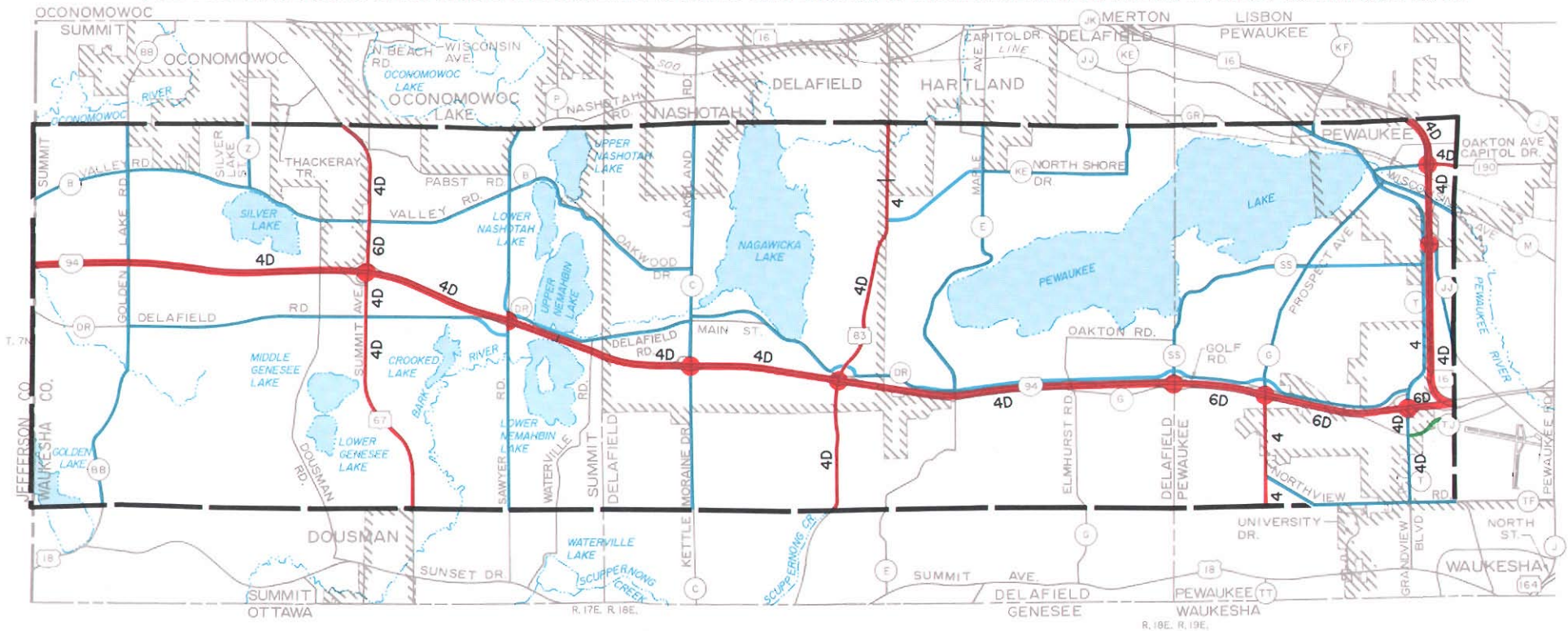
Functional Improvements: The preliminary recommended functional improvements to the arterial street and highway system in the Corridor are identified in Table 48 and graphically summarized on Map 44. These improvements consist of the following:

1. The widening of IH 94 from four to six travel lanes between the STH 16-CTH T interchange and the CTH SS interchange, a distance of 3.1 miles.

2. The undertaking of major improvements at the STH 16-CTH T, CTH G, CTH SS, STH 83, CTH C, CTH P, and STH 67 interchanges along IH 94. The annotations on Map 44 identify the specific proposed interchange improvements as those improvements have been defined by the

Map 43

PRE-PUBLIC HEARING RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

JURISDICTIONAL CLASSIFICATION

- STATE TRUNK FREEWAY
- STATE TRUNK NONFREEWAY
- COUNTY TRUNK
- LOCAL TRUNK

- FREEWAY-NONFREEWAY INTERCHANGE
- PARTIAL FREEWAY-NONFREEWAY INTERCHANGE
- 4 NUMBER OF TRAFFIC LANES (TWO LANES WHERE UNNUMBERED)
- D DENOTES DIVIDED FACILITY

GRAPHIC SCALE
0 1 MILE
0 2000 4000 8000 FEET

Source: SEWRPC.

Table 48

ESTIMATED CONSTRUCTION COST OF ALL ARTERIAL STREET AND HIGHWAY IMPROVEMENTS ATTENDANT TO THE PRE- AND POST-PUBLIC HEARING RECOMMENDED LAND USE PLANS FOR THE IH 94 WEST CORRIDOR

Type of Improvement	Facility Limits	Miles	Estimated Cost
New Facility	Waukesha Bypass (CTH TT extended) between south study area boundary and Northview Road	0.3	$ 600,000
	Extension of CTH KE from CTH E to STH 83	1.2	2,040,000
	Extension of CTH SS from CTH G to CTH T	1.2	1,040,000
	Subtotal	2.7	$ 3,680,000
Widen Facility	IH 94 between CTH SS and CTH T	3.1	$ 4,960,000
	Meadowbrook Road between Northview Road and IH 94	0.9	1,760,000
	STH 67 between south study area boundary and IH 94	2.9	4,792,000
	STH 83 between south study area boundary and IH 94	1.4	2,176,000
	STH 83 between CTH KE (extended) and IH 94	2.1	3,360,000
	CTH T between IH 94 and CTH JJ	1.3	2,600,000
	CTH T between IH 94 and Northview Road	1.2	2,380,000
	Subtotal	12.8	$ 22,028,000
Resurface or Reconstruct for Existing Capacity	Freeways		
	Mainline	15.5	$ 6,196,000
	Interchanges	--	65,200,000[a]
	Surface Arterials	55.5	7,286,000[b]
	Subtotal	71.0	$ 78,682,000
--	Total	86.5	$104,390,000

[a] *Estimated costs for the reconstruction of freeway on-ramps, off-ramps, and supporting frontage roads do not include the cost of the right-of-way which is anticipated to be required for such reconstruction.*

[b] *Estimated costs are based on the assumption that all arterial facilities in this category will be resurfaced once during the period 1993 through 2010.*

Source: SEWRPC.

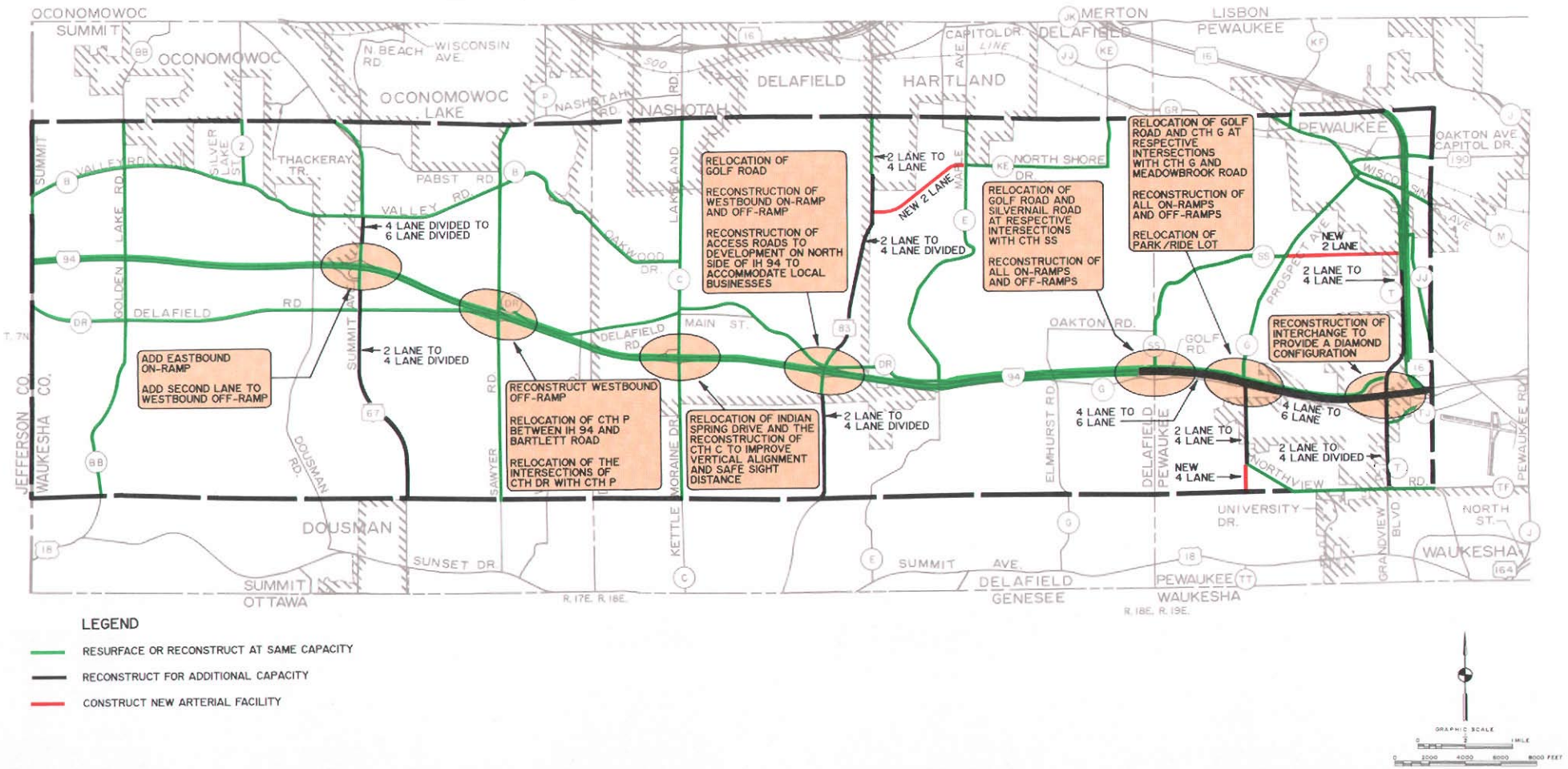
Wisconsin Department of Transportation in its concurrent preliminary engineering study.[4]

3. The widening of STH 83 from two to four travel lanes on a divided roadway from the entrance of the Bark River Commerce Center on the north to USH 18 outside the study Corridor area on the south.

[4] *No changes are being proposed that would create a new interchange on IH 94 at the present CTH E crossing in the Town of Delafield. From a systems planning standpoint, the creation of an interchange at CTH E would have two distinct negative impacts: 1) encouraging traffic to use CTH E to access the freeway system, thereby increasing the volumes on CTH E north of IH 94 along a roadway with a relatively poor vertical and horizontal alignment, an alignment that would be very difficult and disruptive to correct; and 2) encouraging traffic to use present CTH E south of IH 94, a road that has long been recommended to function as a nonarterial street and to be removed from the county trunk highway system. The planned extension of CTH KE from CTH E west to STH 83 would provide better access to IH 94 over STH 83. Moreover, in the preliminary engineering study conducted by the Wisconsin Department of Transportation, a finding was made that construction of an interchange at the CTH E crossing would be too close to the present STH 83 interchange, thereby violating recommended interchange spacing standards. Consequently, no further consideration was given in the IH 94 West Corridor study to the creation of an interchange on IH 94 with present CTH E.*

Map 44

ARTERIAL STREET AND HIGHWAY IMPROVEMENTS UNDER THE PRE-PUBLIC HEARING RECOMMENDED PLAN FOR THE IH 94 WEST CORRIDOR: 2010



Source: SEWRPC.

4. The widening of STH 67 from two travel lanes to four travel lanes on a divided roadway from IH 94 South beyond the Corridor study area boundary to USH 18 and from four travel lanes to six travel lanes from IH 94 north to CTH B.

5. The construction of the Waukesha bypass facility to provide four travel lanes, including a new arterial facility along the alignment of CTH TT extended north from USH 18 and the widening of existing Meadowbrook Road from Northview Road to IH 94.

6. The extension of CTH KE from CTH E to STH 83 as a two-travel-lane facility.

7. The extension of CTH SS from CTH G to CTH T as a two-travel-lane facility.[5]

8. The widening of CTH T from IH 94 to CTH JJ to provide four travel lanes.

9. The widening of CTH T (Grandview Boulevard) from IH 94 to Northview Road to provide four travel lanes on a divided urban section.

10. Resurfacing, or reconstruction as necessary, to preserve the existing capacity of all remaining facilities in the Corridor, including about 15.5 miles of freeway and about 56.0 miles of existing arterial highway facilities.

As shown in Table 48, the total cost of these arterial street and highway improvements is estimated at $104.4 million. About 62 percent of that cost, or about $65.2 million, is required for the reconstruction of the freeway interchanges and attendant frontage roads and ramp facilities. The cost of the IH 94 freeway widening project from CTH T-STH 16 to CTH SS is estimated at nearly $5.0 million.

Jurisdictional Realignments: The recommended changes in jurisdictional responsibility attendant to the arterial street and highway system in the IH 94 West Corridor are identified in Table 49 and summarized graphically on Map 45. All the changes being recommended are consistent with the past recommendations included in the adopted Waukesha County jurisdictional highway system plan. These jurisdictional changes together would transfer about 1.2 miles of facilities to the State trunk highway system, about 15.1 miles of facilities to the County trunk highway system, and about 0.6 mile of facilities to the local trunk highway system. They would further transfer about 7.3 miles of existing County trunk facilities and State-maintained frontage roads to the local jurisdictions, reclassifying such facilities as nonarterials.[6]

Given the planned arterial highway system and the planned changes in jurisdictional responsibility, Table 50 identifies the total length of the planned arterial system by jurisdictional level and by improvement category, be that preservation, improvement, or expansion. In addition, the estimated costs of implementing the plan are identified in Table 50 by jurisdictional level. Of the total cost of $104.4 million, about $89.6 million, or about 86 percent, would be borne by the State government; about $14.8 million, or about 14 percent, would be borne by Waukesha County; and only a nominal $60,000 would be borne by local government.

It should be noted that at present the Wisconsin Department of Transportation has adopted a cost-sharing policy under which local units of government in the Corridor may be asked to pay a portion of the costs of proposed improvements to the State trunk highway system. That policy requires that local jurisdictions pay up to 25 percent of the cost of new State trunk highways, as well as the cost of additional traffic lanes on State trunk highways, when the new facility or the additional lanes are required to serve significant local traffic. The Department has defined the term "significant local traffic" as traffic that uses or will use a segment of road and that has a trip end, origin or destination, within 0.5 mile of the project limits, either currently or in the design year. Cost-sharing is required when

[5]*This project was under construction in the fall of 1993.*

[6]*See SEWRPC Planning Report No. 18, A Jurisdictional Highway System Plan for Waukesha County, 1974. This plan is currently being updated in a companion planning effort.*

there is, or is anticipated to be, 40 percent or more local traffic on a segment that is to be improved. The Department applies this policy on a project-by-project basis. There is little experience to date in the application of that policy. The policy is not meant to be applied at the systems planning level, and, therefore, it is not possible to ascertain in advance the precise impacts that such a policy may have on the local governments in the Corridor. It is, however, important that the local units of government keep this policy in mind as land use development proceeds.

In addition, the Department has a cost-sharing policy regarding the reconstruction of freeway interchanges with county trunk highways. Where those interchange projects require additional capacity, the Department may impose a 25 percent local cost share on the county concerned. In the case of the IH 94 West freeway, imposition of this policy would impose costs on Waukesha County connected with the rebuilding of five of the seven interchanges in the study area: CTH T, CTH G, CTH SS, CTH C, and CTH P. In addition, the Department may seek, on a case-by-case basis, local cost-sharing in connection with the relocation of frontage roads at interchanges. Finally, the Department has a cost-sharing policy regarding to the provision of additional freeway access through new interchanges. Where additional freeway access is provided by the Department at the request of a local unit of government, that government will be assessed a 50 percent share of the cost.

Recommended Transit System Plan

The public transit element of the base plan for the IH 94 West Corridor consists of the IH 94 West commuter-oriented bus-on-freeway service from Oconomowoc to Milwaukee with stops at the intersections of Summit Avenue and Pabst Road in Oconomowoc, STH 67 and IH 94 in Summit, STH 83 and IH 94 in Delafield, and CTH G and IH 94 in the Waukesha-Pewaukee area. Service in the base plan is limited to peak period-peak direction with 60-minute headways.

To serve the recommended land use pattern in the IH 94 West Corridor, it is proposed that the base plan be modified in the following respects:

1. Reflecting the creation of new economic activity centers in the Corridor and the need for reverse commuting, it is proposed that service on the IH 94 bus route be increased to all-day service operated in both directions.[7] During the peak period, service would be provided at 20- to 30-minute headways; during the off-peak period, service would be provided at 60-minute headways.

2. At the western end of the route, in the Oconomowoc area, the route is proposed to be split into two branches, one branch operating through the park-ride lot at the intersection of STH 67 and CTH DR and the other to serve a new stop in the proposed Pabst Farms development. As shown on Map 46, both branches would rejoin STH 67 near the new Target distribution center.

3. Local fixed-route bus service in the City of Waukesha and environs is recommended to be expanded to serve the park-ride lot at CTH G and IH 94. This would permit transfers to Oconomowoc-bound bus service.

4. In the Oconomowoc, Hartland, and Pewaukee urban areas, it is proposed that consideration be given to establishing new public transit service using shared-ride taxicabs.

5. As the economic activity centers proposed for the STH 83 and STH 67 interchange areas develop over time, it is recommended that consideration be given to providing special local circulator service within those centers. Under this proposal, small vans would distribute and collect passengers who use the line-haul bus service on IH 94.

The costs associated with providing the recommended transit services are summarized in Table 51. The capital costs associated with implementing the base plan, including the acquisition of buses and the development of park-ride lots, are estimated at nearly $2.6 million. The incremental capital costs associated with providing additional buses and expanded park-ride lot capacity owing to the recommended enhanced level of service beyond the base plan is estimated at $1.3 million. Thus, the total

[7] *All-day service is defined as service between 6:00 a.m. and 10:00 p.m.*

Table 49

RECOMMENDED CHANGES IN ARTERIAL HIGHWAY JURISDICTIONAL RESPONSIBILITY IN THE IH 94 WEST CORRIDOR

Civil Division	Facility	From	To	Distance (miles)	Jurisdiction	
					Existing	Planned
City of Delafield	Delafield Road	Mill Road	Genesee Street	0.96	Local trunk highway	County trunk highway
	Genesee Street	Main Street	IH 94	0.48	Local trunk highway	County trunk highway
	Milwaukee Street	Genesee Street	STH 83	1.82	Local trunk highway	County trunk highway
	Oakwood Drive	Mill Road	CTH C	1.13	Local trunk highway	County trunk highway
	Subtotal	--	--	4.39	--	--
City of Waukesha	Meadowbrook Road	IH 94	Northview Road	0.88	Local trunk highway	State trunk highway
	Golf Road	CTH T	CTH G	1.59	Local trunk highway	County trunk highway
	Northview Road	Meadowbrook Road	East study limits	2.1	Local trunk highway	County trunk highway
	CTH TJ	CTH T	East study limits	0.6	County trunk highway	Local trunk highway
	Silvernail Road	CTH G	CTH T	1.0	State-maintained frontage road	Local nonarterial
	Subtotal	--	--	6.17	--	--
Village of Pewaukee	Main Street	Park Avenue	East study limits	0.67	Local trunk highway	County trunk highway
	Oakton Avenue/Capitol Drive	Main Street	STH 16	0.52	Local trunk highway	County trunk highway
	Prospect Avenue	Maple Street	E. Wisconsin Avenue	0.65	Local trunk highway	County trunk highway
	E. Wisconsin Avenue	Park Avenue	East study limits	0.94	Local trunk highway	County trunk highway
	W. Wisconsin Avenue	0.13 miles west of CTH KF	Park Avenue	0.86	Local trunk highway	County trunk highway
	Subtotal	--	--	3.64	--	--
Town of Delafield	CTH KE extension	STH 83	CTH E	1.2	New facility	County trunk highway
	CTH E	IH 94	South study limits	1.66	County trunk highway	Local nonarterial
	CTH G	South study limits	CTH SS	3.2	County trunk highway	Local nonarterial
	Subtotal	--	--	6.06	--	--
Town of Pewaukee	Waukesha bypass	Northview Road	South study limits	0.3	New facility	State trunk highway
	Golf Road	CTH SS	CTH G	0.96	Local trunk highway	County trunk highway
	CTH SS extension	CTH G	CTH T	1.2	New facility	County trunk highway
	CTH G	CTH SS	Meadowbrook Road	0.89	County trunk highway	Local nonarterial
	CTH GR	North study limits	Western limits of Village of Pewaukee	0.59	County trunk highway	Local nonarterial
	Subtotal	--	--	3.94	--	--
--	Total	--	--	24.20	--	--

Source: SEWRPC.

capital cost of the transit element of the Corridor transportation system plan is estimated at nearly $3.9 million. Of this amount, about $3.1 million, or 80 percent, would be eligible to be funded through transit capital assistance programs administered by the Federal Transit Administration (FTA). The remaining $800,000, or 20 percent, would need to be funded from County and local sources.

As is also shown in Table 51, the total annual operating cost is estimated at $1.25 million. The public subsidy required to provide the recommended level of transit service in the Corridor is estimated at $0.8 million per year. Of this amount, about $600,000, or about 75 percent, would be expected to be funded through Federal and State transit operating assistance programs, and the remaining $200,000, or 25 percent, would need to be funded from County and other local sources.

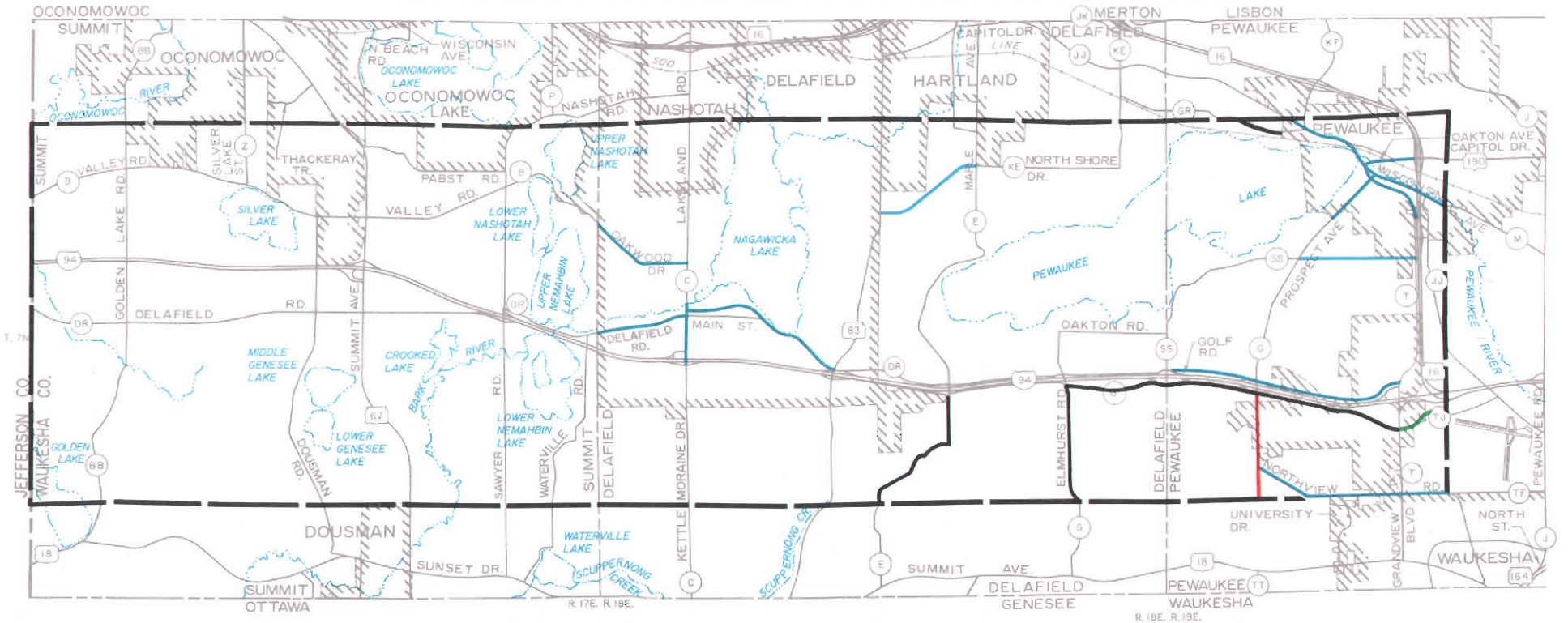
Analysis of Implications of the Full Buildout of Developed Areas

As noted earlier in this chapter, sufficient land has been set aside within the planned urban areas of the Corridor to accommodate substantial development over and above that called for in the recommended Corridor land use plan. Such land could accommodate an incremental population of nearly 19,000 persons residing in nearly 6,900 incremental households. In addition, there is set aside enough land to accommodate an incremental employment level of 16,500 jobs.

An analysis was undertaken to ascertain the arterial street and highway improvement implications attendant to the full buildout of the urban areas as depicted in the land use plan. Again, the Commission battery of travel and traffic simulation models was applied and forecasts of traffic volumes were generated. The results of this analysis are shown on Map 47 in

Map 45

CHANGES IN HIGHWAY SYSTEM JURISDICTIONAL RESPONSIBILITY UNDER THE PRE-PUBLIC HEARING RECOMMENDED PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

PLAN TRANSFERS TO:

- STATE TRUNK HIGHWAY SYSTEM
- COUNTY TRUNK HIGHWAY SYSTEM
- LOCAL TRUNK HIGHWAY SYSTEM
- LOCAL (NON-ARTERIAL) SYSTEM

GRAPHIC SCALE

0 1 MILE

0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Table 50

ESTIMATED COST OF THE IH 94 WEST CORRIDOR ARTERIAL HIGHWAY SYSTEM PLAN BY IMPROVEMENT CATEGORY AND RECOMMENDED JURISDICTIONAL CATEGORY[a]

Item	Planned Arterial Mileage: Year 2010			
	State	County	Local	Total
Preservation	18.0	52.4	0.6	71.0
Improvement[b]	10.3	2.5	0.0	12.8
Expansion[c]	0.3	2.4	0.0	2.7
Total	28.6	57.3	0.6	86.5

Item	Estimated Construction Cost (including right-of-way)			
	State	County	Local	Total
Preservation	$71,919,000[d]	$ 6,703,000	$60,000	$ 78,682,000
Improvement[b]	17,048,000	4,980,000	0	22,028,000
Expansion[c]	600,000	3,080,000	0	3,680,000
Total[e]	$89,567,000	$14,763,000	$60,000	$104,390,000

[a] *Prior to Advisory Committee modification of recommended improvements and attendant cost estimates.*

[b] *Widening to provide additional traffic lanes on existing arterials.*

[c] *Construction of new facilities.*

[d] *Includes $65,200,000 for the reconstruction of freeway interchanges and supporting frontage roads. This $65,200,000 figure, however, does not include the cost of right-of-way anticipated to be required for such construction.*

[e] *The estimated average annual cost of operating and maintaining the arterial street and highway system in the Corridor over the plan implementation period is $1.9 million.*

Source: SEWRPC.

Table 51

ESTIMATED OPERATING AND CAPITAL COSTS FOR PROPOSED PUBLIC TRANSIT SERVICES IN THE IH 94 WEST CORRIDOR: 2010 BASE AND RECOMMENDED PLANS

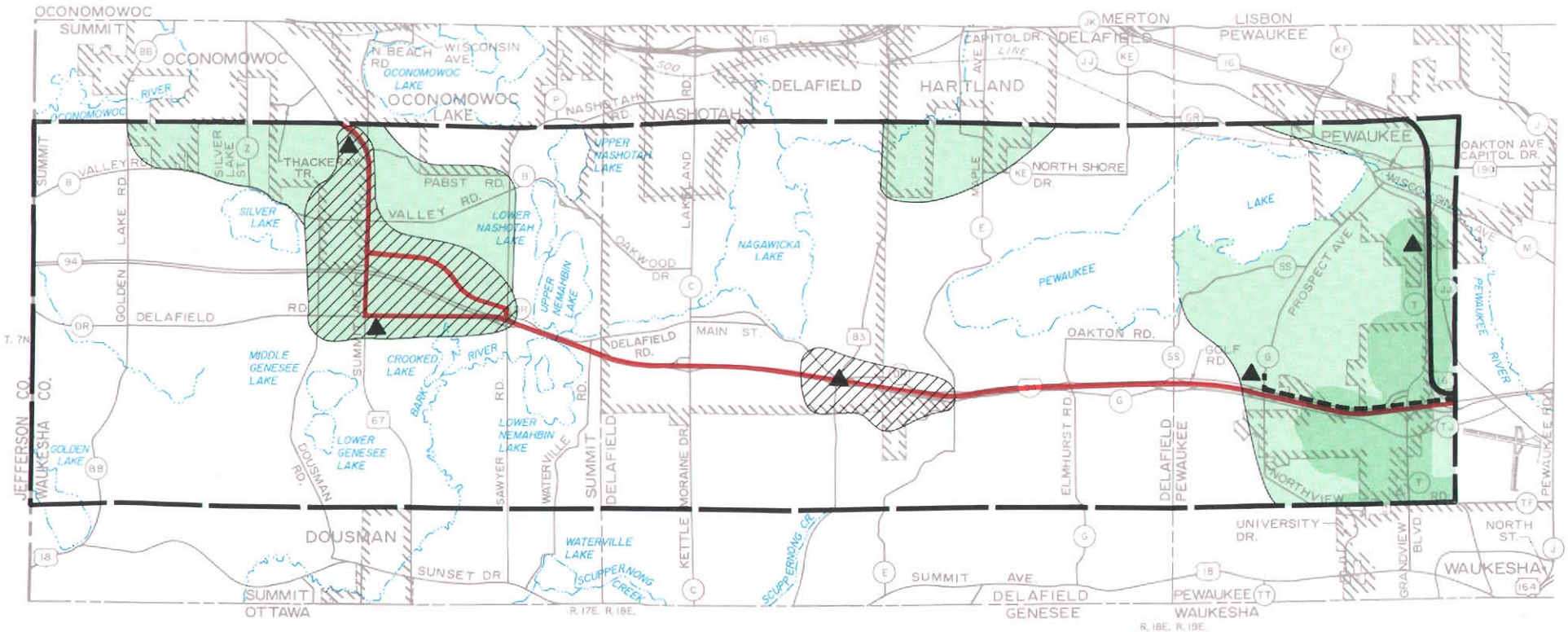
Cost Element	Cost (millions)		
	Base Plan	Recommended Plan	
		Increment	Total Cost
Annual Operating Expenses[a]			
Total Operating Expenses	$0.66	$0.59	$1.25
Total Operating Revenues	0.31	0.17	0.48
Total Operating Deficits	0.35	0.42	0.77
Total Capital Costs[a]			
Vehicles	$1.58	$1.12	$2.70
Park-Ride Lots	0.97	0.22	1.19
Total	$2.55	$1.34	$3.89

[a] *Excludes the operating and vehicle-related capital costs for the proposed bus-on-freeway route between Oconomowoc and the Milwaukee central business district operated over STH 16 because only a small segment of this route would directly serve the Corridor. The additional expenses for this route under both the base and recommended plans would include total annual operating expenses of $0.74 million, total annual operating deficits of $0.48 million, and total vehicle-related capital costs of $1.8 million.*

Source: SEWRPC.

Map 46

PROPOSED PUBLIC TRANSIT SYSTEM FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

TRANSIT ROUTES

- OCONOMOWOC-MILWAUKEE VIA IH 94
- OCONOMOWOC-MILWAUKEE VIA STH 16
- WAUKESHA-MILWAUKEE

TRANSIT STATION

- WITH PARKING

LOCAL TRANSIT SERVICE AREA

- EXISTING 1990
- PROPOSED 2010
- PROPOSED CIRCULATOR SERVICE (DEMONSTRATION)

GRAPHIC SCALE

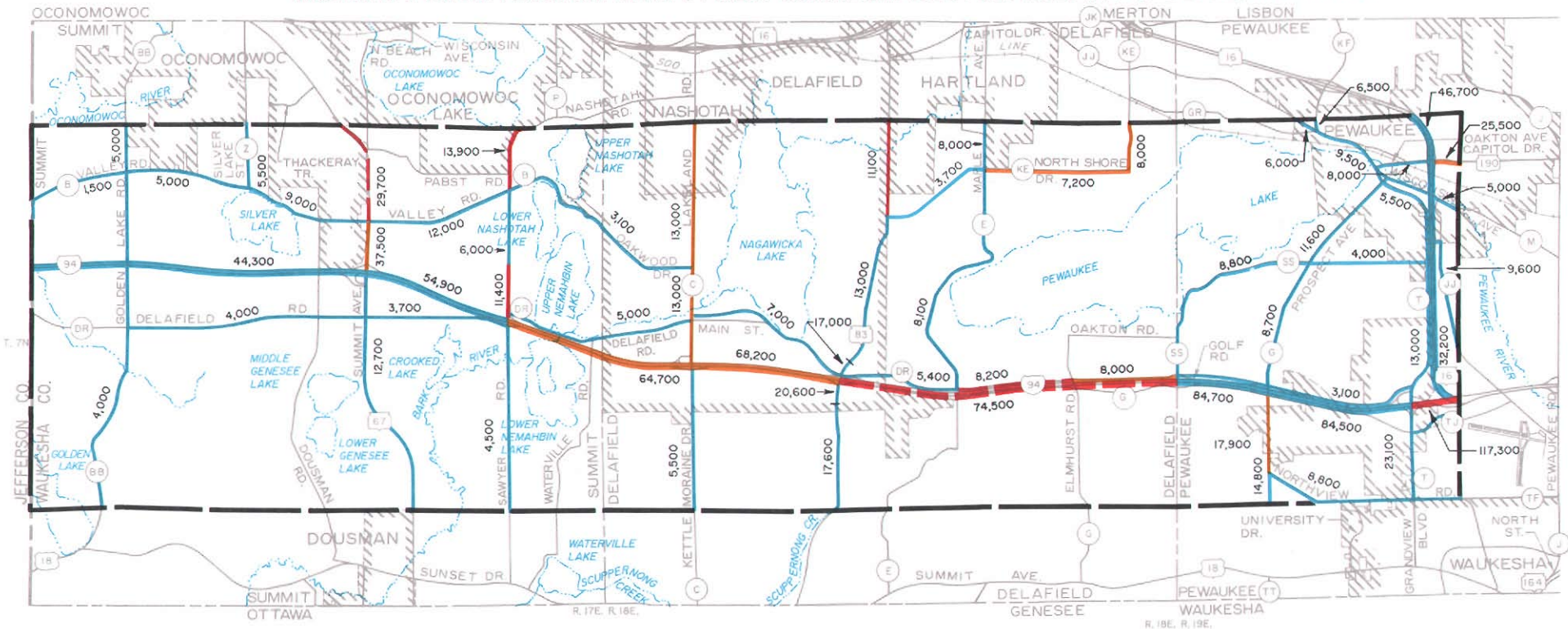
0 1 MILE

0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 47

FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR: 2010 FULL BUILDOUT OF DEVELOPED AREAS



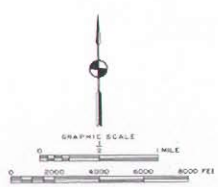
LEGEND

CONGESTION IN THE BASE ARTERIAL SYSTEM

- ARTERIAL STREET OR HIGHWAY OPERATING UNDER OR AT DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING MODERATELY OVER (100 PERCENT TO 115 PERCENT) DESIGN CAPACITY UNDER RECOMMENDED PLAN
- ARTERIAL STREET OR HIGHWAY OPERATING SUBSTANTIALLY OVER (116 PERCENT TO 130 PERCENT) DESIGN CAPACITY UNDER RECOMMENDED PLAN
- ARTERIAL STREET OR HIGHWAY OPERATING SEVERELY OVER (131 PERCENT OR MORE) DESIGN CAPACITY UNDER RECOMMENDED PLAN

AVERAGE WEEKDAY TRAFFIC VOLUMES ON THE BASE ARTERIAL SYSTEM

78,000 FORECAST 2010 AVERAGE WEEKDAY TRAFFIC VOLUME UNDER THE RECOMMENDED PLAN AND FULL BUILD-OUT OF DEVELOPED AREAS



Source: SEWRPC.

terms of the traffic volumes that may be anticipated upon full buildout of the planned sewer service areas. The improvement implications attendant to those traffic volumes are graphically shown on Map 48 and may be summarized as follows:

1. IH 94 would have to be reconstructed to provide six-travel-lanes from CTH SS west to CTH P, a distance of about 7.1 miles.

2. STH 190 (Capitol Drive) east of the STH 16 freeway would have to be reconstructed from the present divided four-travel-lane roadway to a divided six-travel-lane roadway.

3. The proposed Waukesha bypass facility would have to be constructed as a divided four-travel-lane roadway rather than an undivided four-travel-lane roadway.

4. STH 83 north of the proposed extension of CTH KE would have to be constructed as a divided four-travel-lane roadway rather than in part an undivided four-travel-lane roadway and in part a two-travel-lane roadway.

5. STH 67 north of IH 94 would have to be constructed, in part, as a divided eight-travel-lane roadway and in part as a divided six-travel-lane roadway rather than as a divided four-travel-lane roadway.

6. STH 67 between IH 94 and CTH DR would have to be reconstructed as a divided six-travel-lane roadway rather than as a divided four-travel-lane roadway.

7. CTH KE (North Shore Drive) east of CTH E would have to be constructed as a four-travel-lane divided roadway rather than remain a two-travel-lane roadway.

8. Golf Road between CTH E and CTH SS would have to be constructed as a four-travel-lane divided roadway rather than remain as a two-travel-lane roadway.

9. CTH C north of IH 94 would have to be reconstructed as a four-travel-lane roadway rather than remain as a two-travel-lane roadway.

10. CTH P north of IH 94 would have to be reconstructed as a four-travel-lane roadway rather than remain as a two-lane roadway.

11. A westbound on-ramp and an eastbound off-ramp would be constructed at the CTH P interchange with IH 94, providing for a full diamond interchange.

Together, the foregoing incremental improvements to the arterial street and highway system may be expected to cost about $25.5 million. These improvements have not been included in the recommended arterial street and highway system plan for the Corridor since they would not be required if urban development within the Corridor is encouraged to take place substantially in accord with the recommended Corridor land use plan.

Implications of New Federal Transportation and Air Quality Legislation

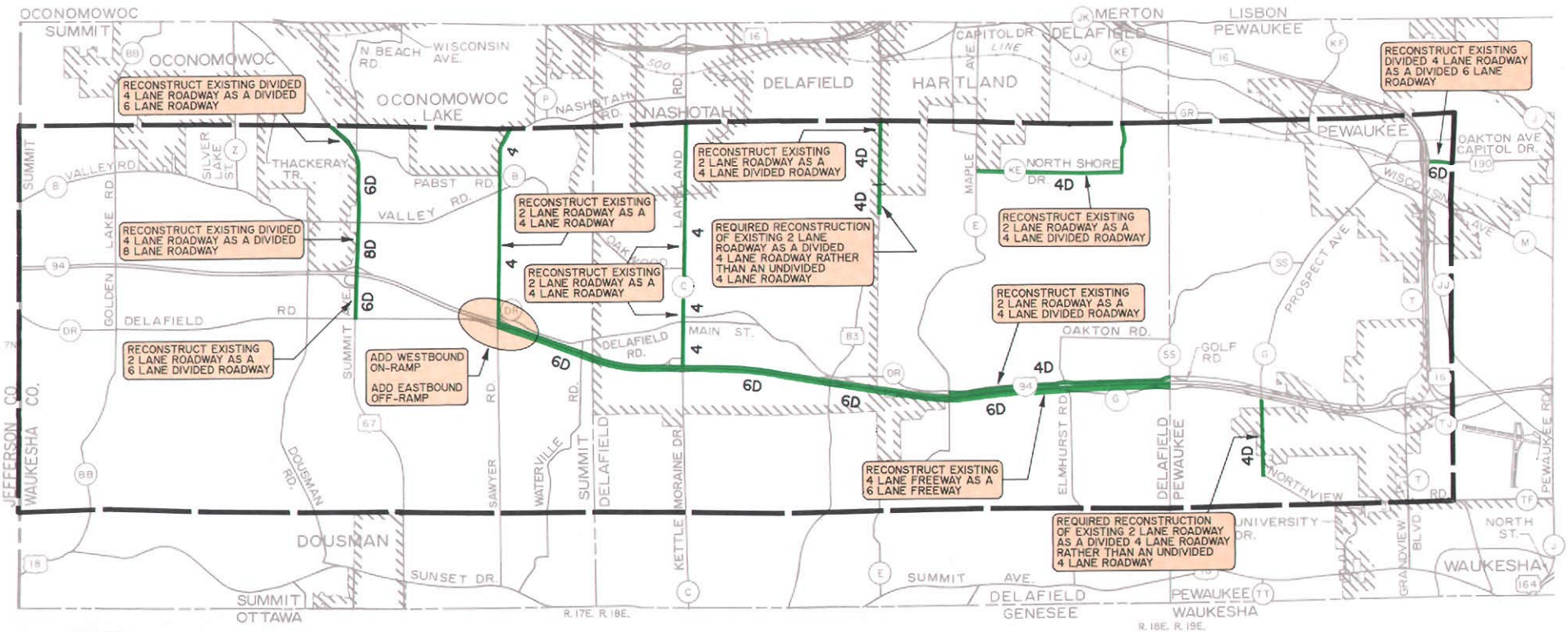
The IH 94 West Corridor study was nearing conclusion at the time (November 1993) that the Federal government was promulgating new rules governing the Federally mandated metropolitan transportation planning efforts. The rules were intended to carry out Congressional directives set forth in both the Federal Clean Air Act of 1990 and the Federal Intermodal Surface Transportation Efficiency Act of 1991. In essence, the rules impose the following two major requirements:

1. A new regional transportation system plan must be prepared and adopted for Southeastern Wisconsin. The plan must be fully coordinated with a new State air quality management plan, to be prepared by the Wisconsin Department of Natural Resources. The new regional transportation system plan must be completed as soon as possible, and, as a practical matter, will be nearing completion in the spring of 1994. The State air quality management plan must, by Federal law, be completed by Fall 1994. Given this sequence of events, it may be necessary in late 1994 or early 1995 to amend the new regional transportation system plan so that it is fully reflective of the new State air quality management plan.

2. The new regional transportation system plan must demonstrate that there are no feasible alternatives available to avoid the provision of additional lane capacity for use by single-occupant vehicles during peak travel periods. Essentially, this demonstration must show that full consideration has been given in the planning process to managing transportation

Map 48

CAPACITY IMPROVEMENTS BEYOND THOSE IN THE RECOMMENDED IH 94 WEST CORRIDOR ARTERIAL STREET AND HIGHWAY PLAN REQUIRED UPON FULL BUILDOUT OF PLANNED URBAN AREAS



LEGEND

ADDITIONAL IMPROVEMENTS

- EXISTING LOCATION (WIDENING)
- 4 — NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)
- D — DENOTES NEED FOR MEDIAN DIVIDED FACILITY

Source: SEWRPC.

demand through such measures as land use control and pricing mechanisms and through the provision of realistic levels of public transit so that, to the greatest extent feasible, the provision of additional arterial lane capacity for single-occupant vehicles is avoided. The Commission believes that its past regional land use and transportation planning efforts have indeed been carried out in accord with the spirit of this new requirement. It remains to replicate and fully document that process as a third-generation regional transportation system plan is prepared.[8]

As adoption of the IH 94 West Corridor plan proceeds it will be important to keep in mind that, following the completion and adoption of the new regional transportation system plan and the State air quality management plan in 1994, it may be necessary to reconsider one or more of the recommendations in the Corridor plan to provide additional arterial lane capacity intended for use by single-occupant vehicles during peak travel periods. Given the comprehensive nature of the Commission's land use and transportation planning efforts and the fact that, with the exception of pricing mechanisms, those efforts have been structured to ensure that all reasonable transportation management measures, including public transit, are undertaken before recommendations to add additional lane capacity are made, it may be reasonably expected that the planning process to be completed in 1994 will confirm most, if not all, of the arterial street and highway recommendations contained in the Corridor plan. Thus, the new Federal planning guidelines should not stand in the way of formal adoption and endorsement of the Corridor plan as soon as possible.

PUBLIC REACTION TO THE RECOMMENDED PLANS AND SUBSEQUENT ACTION OF THE ADVISORY COMMITTEE

A formal hearing was held on March 28, 1994, on the preliminary land use and transportation system plans for the IH 94 West Corridor. The hearing was conducted on behalf of the Regional Planning Commission by the Intergovernmental Coordinating and Technical Advisory Committee for the IH 94 West Freeway Corridor Development Planning Program, with the Chairman of that Committee presiding. The purpose of the hearing was to present the findings of the Corridor study and the preliminary land use and transportation system plans for the Corridor for public review and comment. The hearing was announced through a news release sent to all media serving the Corridor, through letters to the heads of all of the local units of government concerned, and through display advertisements purchased by the Commission in The Freeman (Waukesha) and the Oconomowoc Enterprise. Copies of the draft planning report, as well as a briefing document, were made available for public review prior to the hearing. The hearing was held at the Waukesha County Exposition Center in the Town of Pewaukee.[9]

A record of the public hearing, including a summary of all comments and questions raised at the hearing, together with all documentation submitted for the public record, was published by the Commission and provided to all members of both the Advisory Committee and the Regional Planning Commission for review and consideration prior to final adoption of the recommended land use and transportation system plans.[10]

The record of the public hearing clearly indicates general support for the preliminary recommended plans on the part of local units of government, including the City of Oconomowoc, the Village of Pewaukee, and the Town of Pewaukee. The record also indicates, however, concern with certain of the preliminary plan recommendations on the part of two local units of government—the Towns of Delafield and Summit—and on the part of a number of citizens

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[8]*The third-generation regional transportation system plan is being documented in SEWRPC Planning Report No. 41, A Regional Transportation System Plan for Southeastern Wisconsin: 2010, forthcoming.*

[9]*The Town of Summit sponsored a public informational meeting on the draft plans for Town residents at the Town Hall on February 2, 1994.*

[10]*See Record of Public Hearing, A Land Use and Transportation System Development Plan for the IH 94 West Freeway Corridor, Waukesha County: 2010, SEWRPC.*

and landowners in the Town of Summit. These concerns, which were focused primarily on the land use plan, may be summarized as follows:

1. Substantial concern was repeatedly expressed over the recommendations in the preliminary land use plan to identify significant areas of the Town of Summit within the Corridor for prime agricultural use, and to a lesser degree other areas of the Town within the Corridor for rural-density residential development. These concerns were raised by the Town Board and Town Plan Commission of the Town of Summit and by 17 owners of land within the Town. One Summit landowner supported the proposed land use plan, but only if a substantial change in the property tax structure could be effected so that agriculture could remain an economically viable land use. Essentially, the statements all indicated that farming was no longer an economically viable land use in the Town of Summit; that the owners of land currently being farmed were doing so for personal reasons related to short-term objectives and fully intend to proceed in future years to develop the lands concerned for urban use, or to convey the land to others for such development; that the local zoning in the Town of Summit has for several decades evidenced a public policy to permit and foster low-density suburban residential development in the Town; that landowners have in good faith relied upon these historical expressions of public policy; and that, therefore, it was now unfair and inequitable to propose a fundamental change in public policy that would impose on the landowners concerned zoning and land division restrictions substantially different from those currently in place.

2. One landowner in the Town of Summit expressed concern that the preliminary land use plan inappropriately included within a delineated primary environmental corridor lands used for tree farming.

3. The Town Plan Commission of the Town of Delafield expressed concern that the preliminary land use plan inappropriately proposed low-density residential land use for currently undeveloped lands lying along IH 94 generally between Elmhurst Road and CTH E. The Town Plan Commission noted that the adopted Town land use plan proposed such lands for commercial office development owing to the environmental problems presented by a location in proximity to the freeway. The Town also provided information concerning a commitment to recreational use of certain parcels in the Corridor that had not been identified as such on the plan map.

4. A member of the general public requested that the plan explicitly identify anticipated annual operating and maintenance costs associated with the proposed arterial street and highway system in the corridor.

Each of these four issues is briefly discussed below, together with the Advisory Committee's response thereto. Changes to the preliminary plans as proposed by the Advisory Committee, and as documented earlier in this chapter, are specifically noted.

Concerns over Agricultural and Rural Development Proposed for the Town of Summit

The Advisory Committee gave careful attention to the land use concerns raised by Town officials and landowners in the Town of Summit. The Committee also received a briefing regarding a companion land use planning effort designed to prepare a Waukesha County development plan. In that briefing, the Committee learned that the County-wide planning effort was also addressing questions and concerns attendant to the preservation of prime agricultural land in the County, and that work in that effort had proceeded to the stage where the Waukesha County Development Plan Advisory Committee had made a determination to redefine prime agricultural lands so as to result in the identification of relatively large blocks of prime farmland for preservation, blocks encompassing at least five square miles in area. Application of this more stringent definition of prime agricultural land would result in a situation where none of the land in the Town of Summit lying within the IH 94 West Corridor would be classified as prime agricultural land. On this basis, then, the Advisory Committee for the Corridor planning effort determined to remove from the final recommended land use plan any identification of prime agricultural lands in that part of the Town of Summit lying within the Corridor. Since no

other area of the Corridor had been identified as having such lands, this resulted in a situation where there would be within the Corridor no prime agricultural lands recommended for preservation. The recommended Corridor land use plan, thus revised, is shown on Map 49 and quantified in Table 52.

Accordingly, the Advisory Committee recommended that all of that part of the Town of Summit within the Corridor not committed in the preliminary land use plan to urban development and not lying within primary environmental corridors be identified on the final plan as suitable for residential development at densities not greater than one dwelling unit per five acres of site area. In making this recommendation, the Advisory Committee further encouraged the Town of Summit to explore and apply innovative rural development zoning and land division concepts that would seek to cluster residential development on appropriate sites while permanently preserving in open space uses, including agricultural uses, the remaining areas of the parcels proposed for development.

Concern over Inclusion of Tree Farming in Primary Environmental Corridor

In reviewing the concern expressed by one landowner that a tree farm had been included on the margin of a primary environmental corridor located in the Town of Summit, the Advisory Committee concurred with the position of the landowner that the silvicultural activities concerned should continue to exist without any encumbrances that might be associated with the designation of the lands concerned as primary environmental corridor. Accordingly, the Advisory Committee directed that the final recommended land use plan exclude the subject tree farm, which lies in the northwest one-quarter of Section 23, Township 7 North, Range 17 East, Town of Summit, and which comprises about 29 acres, from the primary environmental corridor land in that area.

Concern over Proposed Land Uses in the Town of Delafield Adjacent to the Freeway

The Advisory Committee also gave careful attention to the concerns expressed by officials of the Town of Delafield related to lands lying immediately adjacent to, and on both sides of, the freeway west of Elmhurst Road. The Committee noted that it would be inappropriate to simply incorporate standard commercial office use recommendations for these lands—which total about 170 acres, including 110 acres lying north of the freeway and 60 acres lying south of the freeway—owing to the relatively intensive development that would be permitted under the Town of Delafield Zoning Ordinance and to the impacts that such development would have on the arterial street and highway system. The Advisory Committee did, however, agree with the Town of Delafield Plan Commission that the subject lands, given their proximity to the freeway, could be used for a number of nonresidential uses that would be compatible with the freeway location.

Accordingly, the Advisory Committee determined that the lands concerned should be given a "special use" identification on the final recommended corridor plan land use map for the express purpose of recognizing that the subject lands might be suitable for low-density corporate office campus use which maximized open space preservation, certain institutional uses, recreational uses, facilities to house riding academies and stables, and similar uses having limited traffic generation, as well as exceptionally well planned and screened residential development incorporating setbacks and landscaped buffers which would mitigate the environmental problems associated with the freeway while providing an aesthetically pleasing landscape. The Advisory Committee suggested that final decisions as to the specific land uses to be allowed in these two areas should be made jointly by the Town of Delafield and Waukesha County on a case-by-case basis within the foregoing general guidelines. The Advisory Committee also wanted the record to indicate that a normal-density commercial office park would not meet the guidelines. By way of providing further guidance, the Advisory Committee suggested that the floor area ratio for any office campus development proposed for the subject lands not exceed 15 percent.

The Advisory Committee also determined to change the recommended land use plan map to reflect two Town of Delafield park sites brought to the attention of the Committee in the public hearing record. These two park sites are shown on Map 49. The change results in the addition of 28 acres of land to the stock of existing and planned park and recreational lands in the Corridor.

Table 52

EXISTING AND PROPOSED LAND USE IN THE IH 94 WEST CORRIDOR
1985 AND 2010 POST-PUBLIC HEARING RECOMMENDED LAND USE PLAN

Land Use			Existing 1985				Planned Increment		Total 2010			
Group	Class	Category	Acres	Percent of Class	Percent of Group	Percent of Total	Acres	Percent Change	Acres	Percent of Class	Percent of Group	Percent of Total
Urban	Residential	High-density	73	1.4	0.8	0.2	14	19.2	87	1.3	0.7	0.2
		Medium-density	1,043	20.6	10.9	2.7	800	76.7	1,843	27.8	14.2	4.8
		Low-density	3,439	67.9	36.2	9.0	715	20.8	4,154	62.5	31.9	10.8
		Suburban-density	512	10.1	5.4	1.3	47	9.2	559	8.4	4.3	1.4
		Subtotal	5,067	100.0	53.3	13.2	1,576	31.1	6,643	100.0	51.1	17.2
	Nonresidential	Commercial	194	4.3	2.0	0.5	390	201.0	584	9.4	4.5	1.5
		Industrial	165	3.7	1.7	0.4	522	316.4	687	11.1	5.3	1.8
		Governmental and institutional	485	10.9	5.1	1.3	46	9.5	531	8.6	4.1	1.4
		Transportation, communication, and utility[a]	2,453	55.0	25.7	6.4	486	19.8	2,939	47.5	22.6	7.7
		Park and recreation[b]	1,166	26.1	12.2	3.0	286	24.5	1,452	23.4	11.1	3.8
		Subtotal	4,463	100.0	46.7	11.6	1,730	38.8	6,193	100.0	47.6	16.2
	Other	Special-Use (Town of Delafield)	--	--	--	--	170	100.0	170	100.0	1.3	0.5
	All	Subtotal	9,530	--	100.0	24.8	3,476	36.4	13,006	--	100.0	33.9
Rural	All	Prime agricultural	9,580	33.2	33.2	25.0	-9,580	-100.0	--	--	--	--
		Other open lands[c]	19,255	66.8	66.8	50.2	6,104	31.7	25,359	100.0	100.0	66.1
		Subtotal	28,835	100.0	100.0	75.2	-3,476	-12.1	25,359	100.0	100.0	66.1
--	--	Total	38,365	--	--	100.0	--	--	38,365	--	--	100.0

[a] *Parking included with associated use.*

[b] *Consists of intensively used outdoor recreation lands.*

[c] *Includes nonprime agricultural lands, water, woodlands, wetlands, quarries, and unused lands.*

Source: SEWRPC.

Request for Annual Operating Cost of Recommended Arterial Street and Highway System

In response to a request by a member of the general public, the Advisory Committee directed that an estimate be made of the annual operating and maintenance costs associated with the recommended arterial street and highway system in the Corridor. In response to this direction, the Commission staff has estimated such costs at $1.9 million annually on an average annual basis over the plan implementation period. This figure has been added as a footnote to Table 50, presented earlier in this chapter.

Other Considerations

In addition to reviewing the public hearing record, the Advisory Committee received a briefing on the recommendations being made in a third-generation regional transportation system plan under preparation as the Corridor plan was being completed. This briefing led the Advisory Committee to make three changes to the arterial street and highway system element of the Corridor transportation plan as that plan was taken to public hearing. These three changes are:

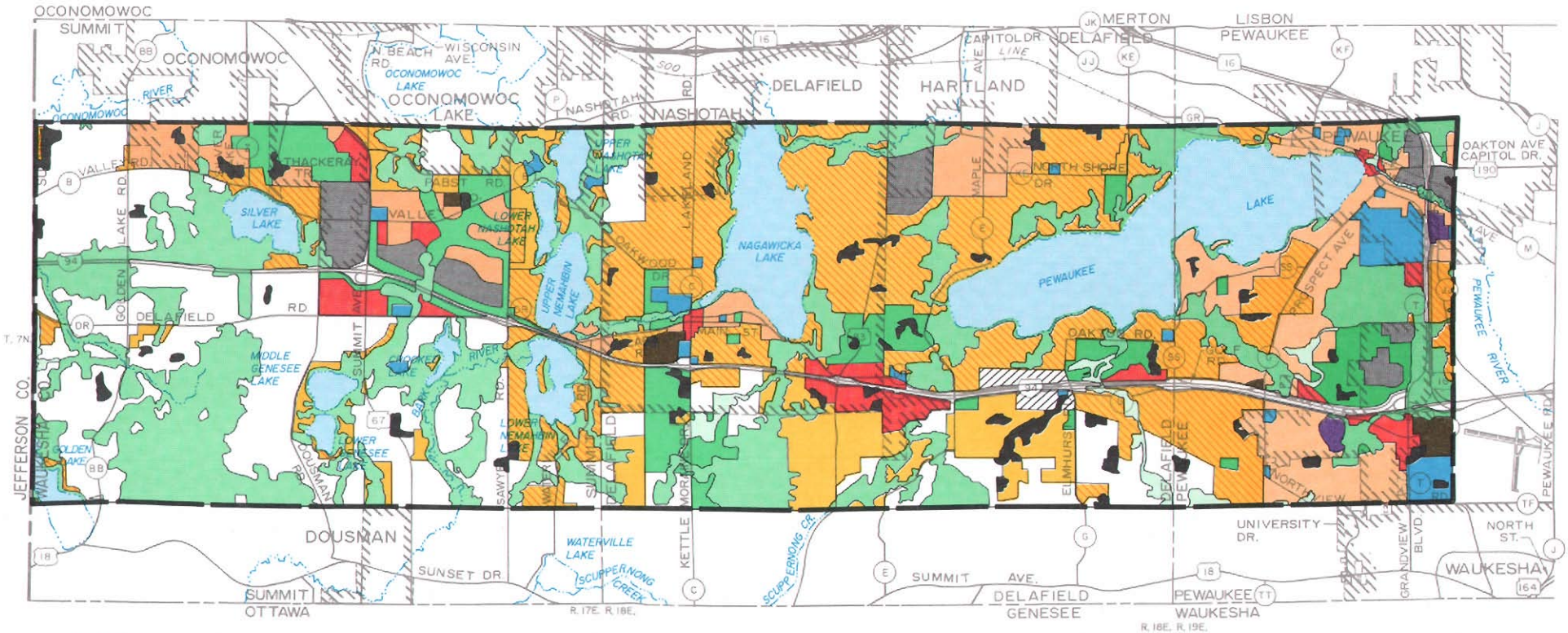
1. The elimination of the previously proposed widening of IH 94 to provide six travel lanes from CTH G west to CTH SS, a distance of about one mile.

2. The provision of a full directional diamond interchange at CTH P to provide better service to anticipated urban development on the Pabst Farms.

3. The addition of a new local arterial facility—termed the Oconomowoc Parkway—from the north study area limits to an intersection with STH 67, together with an

Map 49

POST-PUBLIC HEARING RECOMMENDED LAND USE PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

- PREDOMINANTLY SUBURBAN DENSITY 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)
- PREDOMINANTLY MEDIUM DENSITY RESIDENTIAL (2.3-6.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
- PREDOMINANTLY HIGH DENSITY RESIDENTIAL (7.0-17.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATION AND UTILITY
- GOVERNMENTAL AND INSTITUTIONAL
- SPECIAL USE
- PARK, RECREATION, AND RELATED OPEN SPACE
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL RESOURCE AREA
- SURFACE WATER
- AGRICULTURAL, OPEN, AND RURAL RESIDENTIAL LAND

GRAPHIC SCALE
0 1 MILE
0 2000 4000 6000 8000 FEET

Source: SEWRPC.

extension of the proposed parkway through the Pabst Farms to an intersection with CTH P. This addition would be coupled with the elimination of existing CTH B (Valley Road) from CTH Z to CTH P.

The Advisory Committee also recommended that, as the Wisconsin Department of Transportation completes preliminary engineering attendant to planned interchange and cross-bridge improvements along IH 94 West, the ultimate provision of six travel lanes on the freeway extending from CTH G west to STH 67 be accommodated. The final recommended arterial street and highway system plan for the Corridor is shown on Map 50. Forecast traffic volumes and anticipated congestion levels on the final recommended arterial system in 2010 are shown on Map 51. The specific improvements recommended are shown on Map 52, while the recommended changes in jurisdictional responsibility are shown on Map 53. The changes in freeway improvements made by the Committee following the public hearing had the net effect of increasing the estimated capital cost of implementing the highway element of the plan from about $104.4 million to about $104.8 million.

SUMMARY AND CONCLUSIONS

This chapter has described recommended land use and transportation system plans for the IH 94 West Corridor study area. The recommended plans are set within a framework that takes into account past planning and development activities within the study Corridor, strong urban land market forces which have produced a growing demand for commercial and industrial land use development along the freeway, and the commitments already made by local governments in the study Corridor in reaction to those market forces. The development framework also recognizes the need to protect properly the natural resource base features that are found within the Corridor.

The plans have a 2010 design year. Between 1985, the base year of the planning effort, and 2010, the design year of the plans, the recommended land use plan would convert about 5.4 square miles of land from rural to urban use within the Corridor. That amount of land would be sufficient to accommodate a 43 percent increase in Corridor resident population, from 22,700 to 32,400; a 65 percent increase in Corridor resident households, from 7,200 to 11,900; and an approximate doubling of the number of jobs located in the Corridor, from 10,500 to 22,000. The recommended plan recognizes the substantial commitment already made in the Corridor to the conversion of additional land from rural to urban use that would provide for even greater increases in population and economic activity should subsequent planning efforts deem those increases to be desirable. Specifically, the plan recognizes the commitments already made in terms of zoning and infrastructure development to accommodate the Bark River Commerce Center, the Oconomowoc-Target Corporate Center, the Olympia commercial center, and the Delafield-CTH 83 commercial center. The plan recognizes that these centers will probably be fully developed over the next two decades. The plan also recognizes the strategic location of the Pabst Farms and its unique nature in terms of single-ownership control over an approximately 1,700-acre contiguous tract of land. The plan recognizes that in order to take advantage of the unique nature of this site, a commitment will have to be made to develop the entire Pabst Farms area as a planned project over a long period of time stretching beyond the design year of the plan. By the year 2010, the plan recommends that land use development on the Pabst Farms be limited to about 29 percent of its full capacity as an employment and residential center.

Implementation of the recommended land use plan would:

1. Provide a sound basis for accommodating a strong market demand for commercial and industrial development sites in the IH 94 West Corridor.

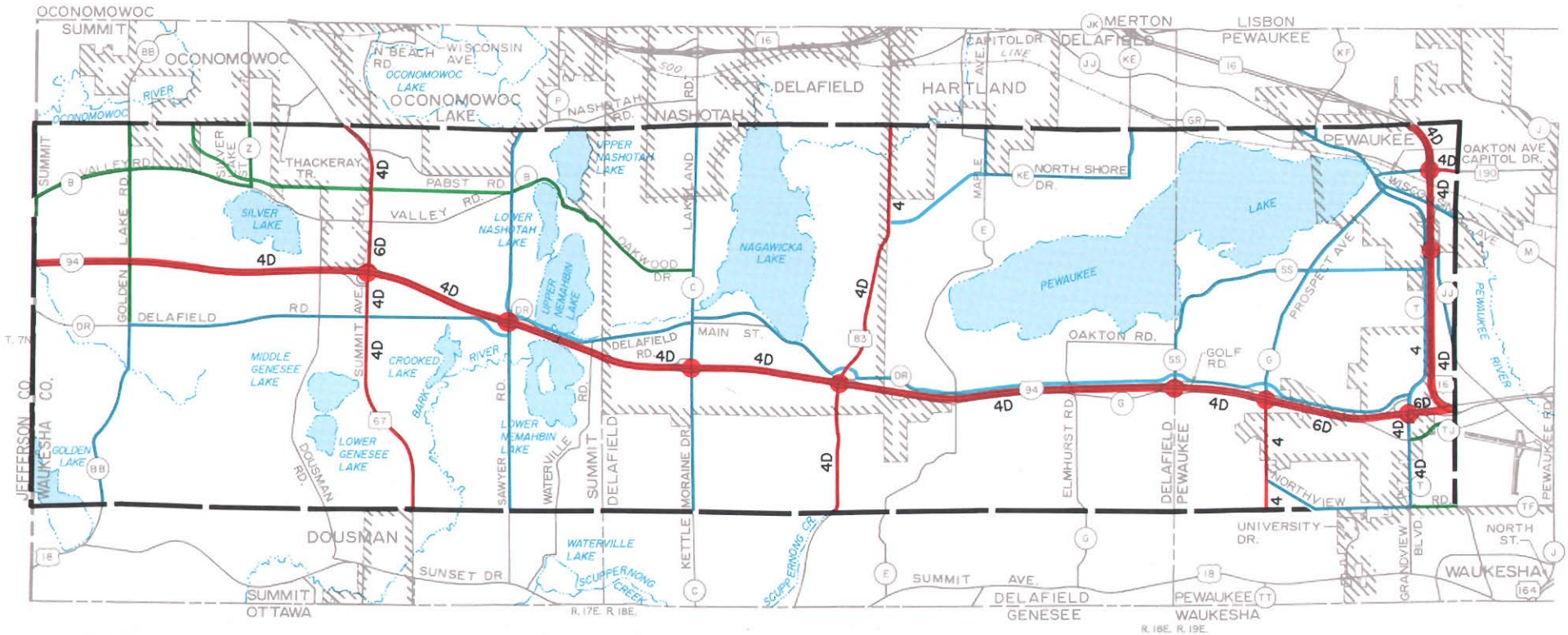
2. Protect and enhance the natural resource base in the Corridor by protecting environmentally sensitive lands from development.

3. Provide a sound basis for evaluating how best to extend essential public sanitary sewer and water supply systems to those lands in the Corridor recommended to be converted to urban use.

4. Assure that urban industrial and commercial development is placed at strategic locations along the IH 94 West freeway so

Map 50

POST-PUBLIC HEARING RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

JURISDICTIONAL CLASSIFICATION

- STATE TRUNK FREEWAY
- STATE TRUNK NONFREEWAY
- COUNTY TRUNK
- LOCAL TRUNK

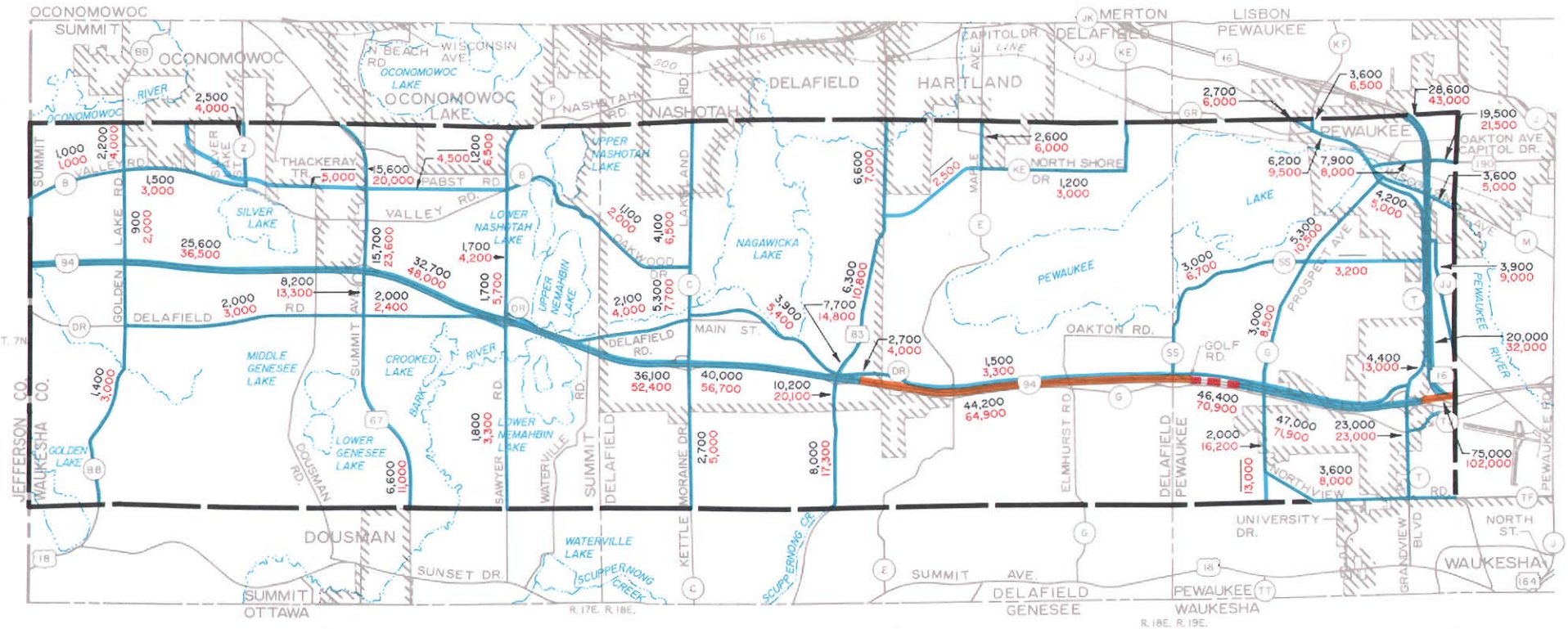
- FREEWAY-NONFREEWAY INTERCHANGE
- 4 NUMBER OF TRAFFIC LANES (TWO LANES WHERE UNNUMBERED)
- D DENOTES DIVIDED FACILITY

GRAPHIC SCALE

Source: SEWRPC.

Map 51

FORECAST TRAFFIC VOLUMES AND CONGESTION ON THE FINAL RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

CONGESTION ON THE BASE ARTERIAL SYSTEM

- ARTERIAL STREET OR HIGHWAY OPERATING UNDER OR AT DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING MODERATELY OVER (100 PERCENT TO 115 PERCENT) DESIGN CAPACITY
- ARTERIAL STREET OR HIGHWAY OPERATING SUBSTANTIALLY OVER (116 PERCENT TO 130 PERCENT) DESIGN CAPACITY
- NONE ARTERIAL STREET OR HIGHWAY OPERATING SEVERELY OVER (131 PERCENT OR MORE) DESIGN CAPACITY

AVERAGE WEEKDAY TRAFFIC VOLUMES ON THE BASE ARTERIAL SYSTEM

- 32,700 EXISTING AVERAGE WEEKDAY TRAFFIC VOLUME
- 43,800 FORECAST 2010 AVERAGE WEEKDAY TRAFFIC VOLUME UNDER THE RECOMMENDED PLAN

GRAPHIC SCALE

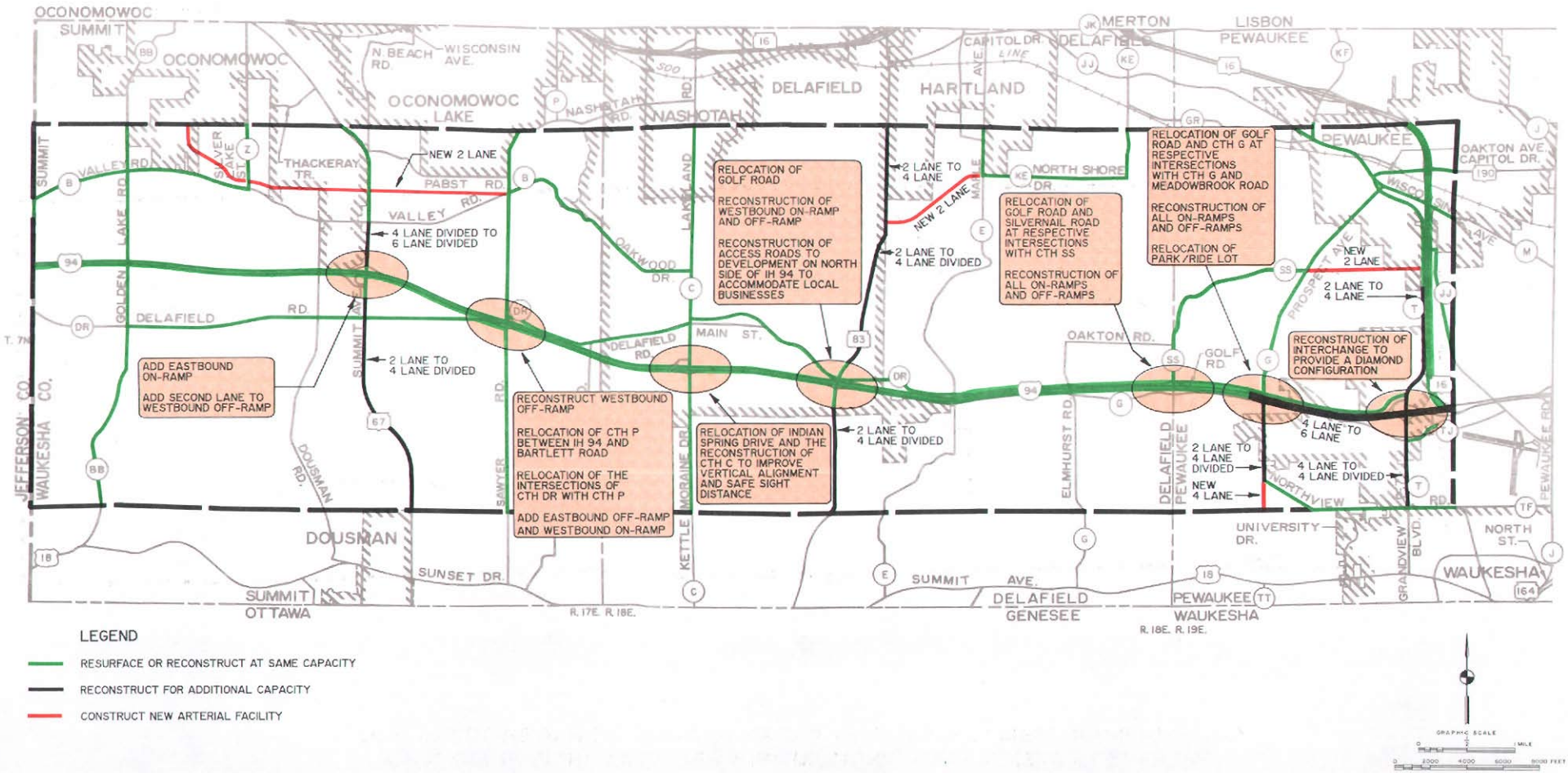
0 1/2 1 MILE

0 2000 4000 6000 8000 FEET

Source: SEWRPC.

Map 52

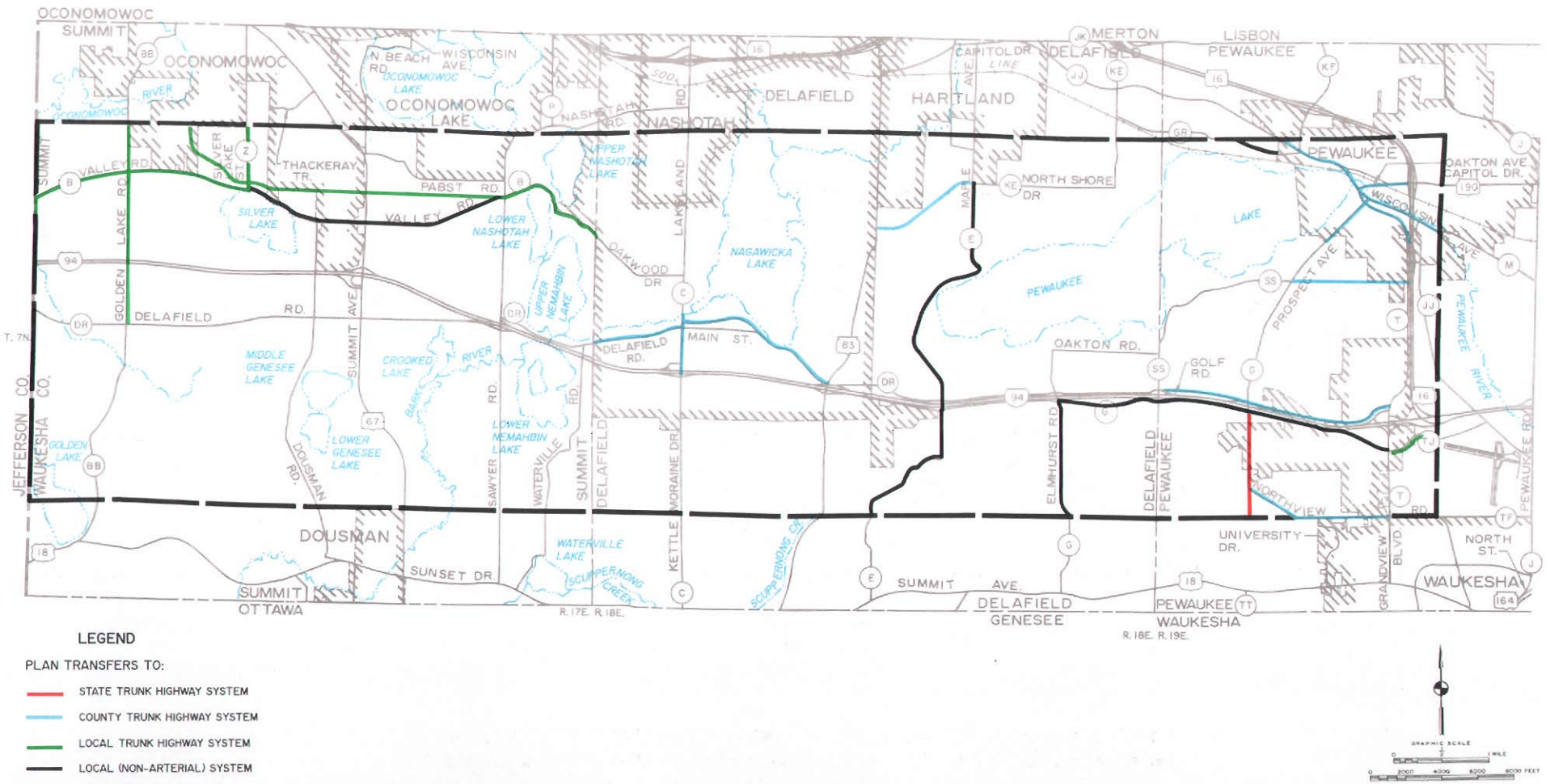
ARTERIAL STREET AND HIGHWAY IMPROVEMENTS UNDER THE POST-PUBLIC HEARING RECOMMENDED PLAN FOR THE IH 94 WEST CORRIDOR: 2010



Source: SEWRPC.

Map 53

CHANGES IN HIGHWAY SYSTEM JURISDICTIONAL RESPONSIBILITY UNDER THE POST-PUBLIC HEARING RECOMMENDED PLAN FOR THE IH 94 WEST CORRIDOR: 2010



LEGEND

PLAN TRANSFERS TO:

- STATE TRUNK HIGHWAY SYSTEM
- COUNTY TRUNK HIGHWAY SYSTEM
- LOCAL TRUNK HIGHWAY SYSTEM
- LOCAL (NON-ARTERIAL) SYSTEM

Source: SEWRPC.

that the resulting urban land use pattern is not one of continuous strip of commercial and industrial development along the freeway.

5. Provide a sound basis for the planning, design, and development of transportation facilities and services in the Corridor.

The recommended transportation system plan has been designed to serve the recommended year 2010 land use plan. Implementation of the recommended transportation system plan would provide highway and transit systems generally able to meet the service level standards set forth in Chapter III of this report, except for that segment of the IH 94 freeway extending from CTH G west to STH 83, which would operate during peak traffic periods under congested conditions and therefore not meet the desired level of service set forth in Chapter III. The key recommendations included in the transportation plan are:

1. The widening of IH 94 between the STH 16-CTH T and the CTH G interchanges to provide six travel lanes, as well as the provision of accommodations for the ultimate provision of six travel lanes on IH 94 from CTH G west to STH 67.

2. The undertaking of major improvements at all existing interchanges in the Corridor along IH 94 in order to unbraid all freeway on- and off-ramps from frontage roads and to provide better capacity for anticipated traffic movements at these interchanges. No new interchanges are recommended. However, it is recommended that a full directional diamond interchange be provided at CTH P to provide better service to anticipated urban development at the Pabst Farms.

3. The widening of STH 83 to provide four travel lanes on a divided roadway, beginning at STH 16 beyond the Corridor study area and extending south, beyond the study Corridor, to USH 18.

4. The widening of STH 67 to four travel lanes south from IH 94 to USH 18 beyond the Corridor study area and to six travel lanes north from IH 94 to CTH B.

5. The construction of the Waukesha bypass facility along the Meadowbrook Road alignment, including the extension of CTH TT, to provide four travel lanes.

6. The extension of CTH KE from CTH E to STH 83 as a two-travel-lane facility, in part to provide improved access to IH 94 from the northern part of the study Corridor.

7. The extension of CTH SS from CTH G to CTH T as a two-travel-lane facility, in part to provide better access to the Waukesha County Technical College.

8. The widening of CTH T north of IH 94 to CTH JJ to provide four travel lanes.

9. The widening of CTH T (Grandview Boulevard) south of IH 94 to Northview Road to provide four travel lanes on a divided urban section.

10. The addition of a new local arterial facility—the Oconomowoc Parkway—from the north study area limits to an intersection with STH 67, together with an extension of the proposed parkway through the Pabst Farms to an intersection with CTH P. The existing CTH B (Valley Road) would be eliminated from CTH Z to CTH P.

11. The provision of express bus service on IH 94 connecting Oconomowoc, Summit, Delafield, Waukesha, and Pewaukee to the Milwaukee central business district and provision as well of service in the reverse direction. Service in both directions would be all day, providing no greater than 30-minute headways in the peak period and 60-minute headways in the off-peak period.

12. The provision of local bus services in several areas of the study Corridor, including the extension of the City of Waukesha fixed-route service to the park-ride lot at CTH G and IH 94; potential shared-ride taxicab services in the Oconomowoc, Hartland, and Pewaukee urban areas; and potential van-based local circulator service within the commercial and industrial land use areas at the STH 83 and STH 67 interchange areas.

The total capital cost of implementing the arterial street and highway system plan for the Corridor is estimated at nearly $105 million. About $70 million, or 67 percent of this cost, is required for the reconstruction of the freeway interchanges and related frontage road and ramp facilities and for the IH 94 freeway widening from STH 16-CTH T to CTH G. The remaining $35 million, or 33 percent, is required for the arterial street extensions and widenings and to maintain, through resurfacing, with reconstruction as needed, those arterial street and highway facilities that are not recommended to be widened.

An analysis was also undertaken to determine what additional arterial street and highway improvements might ultimately be required should urban development exceed the levels of population and economic activity that underlie the recommended land use plan. A number of such potential future additional improvements were identified, including the addition of two travel lanes on IH 94 from CTH G west to CTH P, about eight miles. Together, this potential future freeway widening project, not recommended at this time, plus other arterial widenings to accommodate the potential incremental traffic demand, would be expected to cost about $25.5 million. Consequently, it will be important for Waukesha County and the local governments in the Corridor to carefully regulate the amount of new urban development permitted in the Corridor if these incremental costs are to be avoided.

The total capital costs of implementing the transit plan for the Corridor is estimated at $3.9 million; the total annual operating cost is estimated at $1.25 million. The public subsidy requested to provide the recommended level of transit service in the Corridor is estimated at $0.8 million per year.

The IH 94 West Corridor plan was completed at the time that new Federal rules governing the regional transportation planning process were being issued by the U. S. Department of Transportation. Basically, those new rules require full coordination of regional transportation plans with State air quality management plans and a demonstration that in the regional transportation planning process full consideration was given first to transportation demand management measures before concluding that additional arterial lane capacity for single-occupant vehicles is warranted. The Commission regional transportation planning activities over the past three decades have been carried out in accordance with the spirit of the new Federal planning requirements. Accordingly, it may be reasonably anticipated that the new regional transportation system plan due to be completed in late 1994 will confirm the arterial street and highway improvement recommendations set forth in the plan for the IH 94 West Corridor.

Finally, the IH 94 West Corridor plan was taken to public hearing on March 28, 1994. The record of that hearing indicates substantial support for the proposed land use and transportation system plans, as well as certain land use concerns on the part of the Towns of Delafield and Summit. The Advisory Committee carefully considered the record of the public hearing and adjusted the recommended land use plan for the Corridor in the following three ways: 1) the elimination of the designation of any lands in the Town of Summit within the Corridor as prime agricultural in nature in favor of reclassifying such lands as suitable for agriculture and residential development with densities not to exceed one dwelling unit per five acres of site area; 2) the elimination from the delineated primary environmental corridor of a tree farm on the margin of that delineated primary environmental corridor in the Town of Summit; and 3) the creation in the Town of Delafield of a special conditional-use category for lands lying immediately adjacent to the IH 94 Freeway and that are adversely impacted environmentally by proximity to the freeway. The conditions relate to trip generation. In addition, the Advisory Committee made three changes to the Corridor transportation plan so as to make that plan fully consistent with a forthcoming third-generation regional transportation system plan: 1) the elimination of proposed freeway widening to six lanes west of the CTH G interchange one mile to CTH SS; 2) the provision of a full directional diamond interchange at CTH P by the plan design year 2010; and 3) the addition to the arterial system of the proposed Oconomowoc Parkway and its extension through the Pabst Farms to CTH P.

Chapter VI

PLAN IMPLEMENTATION

INTRODUCTION

The recommended land use and transportation system plans presented in the previous chapter of this report, taken together, provide a guide for land use development and supporting transportation system development within the IH 94 West 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 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 carried out fully. 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 Waukesha County Board and the County Park and Planning Commission; and the governing bodies of the sanitary districts and sewer and water utilities serving the Corridor. Responsibility for implementation of the recommended Corridor transportation system plan rests primarily with the Waukesha County Board, the Wisconsin Department of Transportation, and the U. S. Department of Transportation, Federal Highway and Federal Transit Administrations.[1]

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 transmit the plans to the Waukesha County Board of Supervisors and County Executive for their consideration. Upon adoption of the plans by Waukesha County, the Commission will consider adoption of the plans. Following that adoption, the Commission will transmit a certified copy of the plans to the remainder of 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 governmental levels and to enable their staffs to program the necessary implementation work. The following specific actions are recommended in this respect:

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[1] *For a description of the plan implementation powers of these units and agencies of government, see SEWRPC Planning Report No. 40, A Regional Land Use Plan for Southeastern Wisconsin—2010, January 1992, and SEWRPC Planning Report No. 41, A Regional Transportation System Plan for Southeastern Wisconsin: 2010, scheduled for publication in 1994.*

1. It is recommended that the Waukesha County Board, upon the recommendation of the County Park and Planning Commission and the County Public Works Committee, 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 West 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 governing bodies of all municipal utilities and sanitary districts in the IH 94 West Corridor 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 Waukesha Transit System Utility Board adopt the recommended Corridor transportation plan and integrate that plan as a guide to the provision of public transit facilities and services within the IH 94 West 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 the plan into its broad range of transportation planning and development responsibilities.

6. It is recommended that the U. S. Department of Transportation, Federal 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 operation and for highway-related construction and management, respectively, in the Region.

As indicated in Chapter II, Waukesha County and the local units of government within the IH 94 West Corridor are continuously undertaking the preparation and amendment of local development plans. Local development plans have been prepared for much of the Corridor; in most cases, the development plans include land use and transportation plan elements. Upon adoption of the IH 94 West Corridor plan, cities, villages, and towns which have completed local development plans, including the City of Delafield, the Town of Delafield, the Village of Hartland, the Village of Nashotah, the City of Oconomowoc, the City of Waukesha, the Village of Oconomowoc Lake, the Village and Town of Pewaukee and the Town of Summit, should review those plans and amend them as appropriate to incorporate the land use and transportation system development recommendations of the Corridor plan. In most cases, currently adopted local plans are generally consistent with the recommended Corridor plan and only minor adjustments will be required. In other cases, however, particularly in the Towns of Delafield and Summit, adjustment of the local development plans will be required. The Town of Delafield plan should be adjusted to reduce the amount of low-density residential development proposed in the southern portion of the Town and to replace proposed strip office development along IH 94 with a single office park near IH 94 and CTH SS as proposed in the Corridor plan. The Town of Summit plan should be adjusted to reflect the Corridor plan recommendations to accommodate agricultural and other open space uses and rural-density residential development.

LAND USE PLAN IMPLEMENTATION

The land use plan presented in Chapter V of this report provides recommendations with respect to the amount, spatial distribution, and arrangement of the various land uses within the IH 94 West Corridor through the plan design year 2010. The recommended land use plan takes into account past planning and development activities within the Corridor, strong urban land market forces which have produced a growing

demand for commercial and industrial land use development along the freeway, and the commitments already made by local governments in the Corridor in reaction to those market forces. The plan seeks to accommodate continued urbanization of the Corridor while properly protecting its most important natural resource base features.

The recommended Corridor land use plan is shown in graphic form on Map 49 in Chapter V. With respect to the planned areal extent of urban land use, the plan draws heavily upon the commitments to urban development made in past years by the local units of government in the development of sewer service area plans. The locally adopted planned sewer service areas contain more land than is needed to accommodate the population and economic activity levels envisioned under the recommended Corridor plan. The full buildout of the urban areas shown on the recommended plan map, which areas largely reflect adopted sewer service area plans, is not expected to occur by the year 2010. Accordingly, implementation of the recommended plan will require judicious efforts to guide and shape urban development in time and as well as in space.

The staging of development over time will be particularly important with respect to the Pabst Farms area. The Corridor plan recognizes the strategic location of the Pabst Farms and its unique nature in terms of single-ownership control over a large tract of land. In order to take advantage of these conditions, the entire Pabst Farms site, including the area south of Delafield Road, should be designed as a planned unit. Development should, however, be staged in phases through, and well beyond, the year 2010. In this respect, the Corridor land use plan would be intended to accommodate by the year 2010 about 30 percent of the urban land use development that is proposed to take place ultimately on the Pabst Farms. This urban development could be expected to accommodate about 20 percent of the number of residential dwelling units proposed to be ultimately located on the Pabst Farms and about 40 percent of the number of jobs that are proposed to be ultimately provided in the Pabst Farms employment centers.

Implementation of the recommended land use plan will depend, to a large extent, on the judicious application of land use controls by Waukesha County and the local units of government within the Corridor and on sound public utility 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, and sewer 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 zoning ordinances, including zoning district regulations and zoning district delineations. Within the IH 94 West Corridor, all the cities, villages, and towns administer general, or comprehensive, zoning ordinances. In addition, Waukesha County administers a shoreland zoning ordinance within the statutory shoreland areas of the Towns of Delafield, Pewaukee, and Summit.

The following steps should be taken to foster implementation of the Corridor land use plan through zoning:

1. It is recommended that Waukesha County, in cooperation with the Towns of Delafield, Pewaukee, and Summit, review the County shoreland zoning ordinance, including zoning district regulations and zoning district maps, and adopt those amendments necessary to reflect the recommended Corridor land use development plan in accordance with Section 59.971 of the Wisconsin Statutes. While county shoreland zoning by Statute does not require town board approval, a cooperative county-town approach to shoreland zoning is recommended.

2. It is recommended that the Cities of Delafield, Oconomowoc, and Waukesha; the Villages of Hartland, Nashotah, Oconomowoc Lake, and Pewaukee; and the Towns of Delafield, Pewaukee, and Summit 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 following recommendations are made to all zoning agencies in the IH 94 West Corridor to assist them in the task of reviewing and revising

zoning district regulations and maps to foster implementation of the Corridor land use plan.

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. The recommended Corridor land use plan is a long-range, design year 2010 plan. Many of the areas designated for future urban use will not be developed until well into the planning period; some of the proposed urban areas may not be developed for years, or even decades, after the plan design year 2010. In view of the substantial amount of land designated for future urban use in the plan, it is very important that zoning ordinances be administered to guide and shape urban development both temporally and spatially. The application of urban zoning districts should proceed incrementally in response to the operation of the urban land market and as allowed by the availability of public facilities. 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 to which the provision of basic urban services and facilities may be difficult and costly.

Accordingly, it is recommended that only existing urban areas and areas already committed to urban use in locally approved development plans be placed in appropriate exclusive residential, commercial, industrial, governmental, recreational, and other urban zoning districts. Other proposed urban areas should be placed in agricultural or urban holding districts. Such districts should be rezoned into appropriate urban districts only when the need for the proposed development has been demonstrated and essential services and facilities can be readily provided.

Agricultural Areas: The Corridor plan envisions that the areas shown in white on the final recommended land use plan map will not be needed for urban development purposes through the plan design year 2010 and, perhaps, for many years beyond that plan design year. Such lands should be placed either in general agricultural or rural residential zoning districts. Such districts should permit residential development to occur only at truly rural densities, with no more than one dwelling unit for every five acres of site area. Properly done, such development preserves the rural character of the landscape, can be sustained without public sanitary sewer and water supply services and extensive engineered and constructed stormwater management systems, and allows for the preservation and creation of woodlands, wetlands, and wildlife habitat areas. Moreover, rural-density development affords ample opportunity for replacement of onsite sewage disposal systems as necessary. Such rural residential zoning districts should not only accommodate traditional five-acre-lot rural subdivisions, but should allow, and perhaps promote, a rural landscape which allows for clusters of residential development at appropriate locations combined with open space reservations that are held in common by the owners of the residential lots. Such open space reservations can continue to be used for agriculture, can be reforested and converted into wildlife habitat, or can be used for recreation and related open space purposes.

Environmental Corridors, Isolated Natural Areas, and Floodlands: Areas which have been designated as primary environmental corridors, secondary environmental corridors, and isolated natural resource areas should be placed in one of several zoning districts to ensure their preservation in essentially natural, open use. The type of district to be used should be related to the nature of the resource features to be protected. All lakes, rivers, streams, wetlands, and associated undeveloped floodlands and shorelands, should be placed in lowland conservancy or floodland protection districts which prohibit nearly all forms of urban development. Upland wooded areas and areas of steep slope should be placed in appropriate upland conservancy, rural-density residential, or park and recreational districts. Placement of the environmental corridors and isolated natural resource areas in these zoning districts would generally promote their preservation in natural, open use.

While calling for the preservation of environmental corridors, the Corridor land use plan recognizes that certain transportation and utility facilities may of necessity have to be accommodated within the environmental corridors. The plan also recognizes that certain environmental corridor lands provide highly desirable settings for residential and recreational development and that certain limited residential and recreational uses may be accom-

modated within the corridors without jeopardizing the overall integrity of the corridors. Recommended guidelines for the development of transportation and utility facilities, recreational facilities, and rural density housing within environmental corridors are set forth in SEWRPC Planning Report No. 40.[2] Table 166 of that report summarizes those guidelines.

Subdivision Plat Review and Regulation

As indicated in Chapter II of this report, each city, village, and town within the IH 94 West Corridor has adopted a land division ordinance. In addition, Waukesha County has adopted a land division ordinance, the jurisdiction of which is confined to the unincorporated statutory shoreland area of the County. 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.

As also reported in Chapter II, four civil divisions in the IH 94 Corridor, the City of Waukesha, the Village of Nashotah, and the Towns of Pewaukee and Summit, regulate all land divisions, regardless of the size of parcels being created. The other civil divisions in the Corridor should review the scope of their land division ordinances to ensure proper coverage. In general the land division ordinance should regulate the creation of parcels ranging in size up to the largest minimum parcel size provided for under the local zoning ordinance.

Sewer Service Extensions Policies

In Wisconsin, public and private sanitary sewer extensions must be in conformance with an adopted areawide water quality management plan. If a locally proposed sanitary sewer extension is designed to serve areas not recommended for such service in an areawide water quality management plan, State regulatory agencies must deny approval of the extension. In Southeastern Wisconsin, proposed sanitary sewer service areas are identified in the areawide water quality management plan adopted by the Regional Planning Commission in 1979 and in numerous amendments to that plan. Amendments to the regional plan establishing the planned sewer service area boundaries have been prepared and adopted for lands served by each of the sewerage systems operating within the Corridor.

The recommended Corridor land use plan proposes to change the currently adopted planned sanitary sewer service boundaries only as necessary to include the portion of the Pabst Farms located north of Delafield Road which has not yet been included in a planned sewer service area. It should be noted that in 1993 a separate study was proposed to determine the most cost-effective manner for the provision of sanitary sewer service throughout the northwestern area of Waukesha County. That study, if mounted, may be expected to recommend arrangements for the provision of sanitary sewer service to the Pabst Farms.[3]

With the single exception of the Pabst Farms, then, no further changes to the currently adopted planned sanitary sewer service area boundaries within the IH 94 West Corridor are recommended. As already noted, not all of the land included within the proposed sanitary sewer service areas within the Corridor would be required to accommodate the population and economic activity levels envisioned by the year 2010 under the recommended plan. The planned service areas are sufficiently large to accommodate population and economic activity well in excess of the projected levels, affording local units of government considerable flexibility with respect to the location of new urban development. In the interest of orderly growth and development, including efficiency in the provision of public utilities and transportation facilities, local units of government should avoid the further expansion of planned sewer service areas in the Corridor, other than the recommended inclusion of the Pabst Farms.

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[2]*See Chapter XII, "Plan Implementation," of SEWRPC Planning Report No. 40, A Regional Land Use Plan for Southeastern Wisconsin—2010, January 1992.*

[3]*See SEWRPC Prospectus for the Preparation of a Sanitary Sewerage System Plan for the Northwestern Waukesha County Area, September 1993.*

TRANSPORTATION SYSTEM PLAN IMPLEMENTATION

The transportation system plan for the IH 94 West 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, Waukesha County, and the local units of government in the Corridor. 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 West 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 between the STH 16-CTH T interchange and the CTH G interchange and the unbraiding of freeway on- and off-ramps from the network of frontage roads and other freeway interchange improvements. Under the plan, responsibility for the proposed surface arterial improvements would rest largely with the Wisconsin Department of Transportation for improvements on the planned State trunk highway system and with Waukesha County for improvements on the planned County trunk highway system. Other than the Oconomowoc Parkway and its extension through the Pabst Farms to CTH P, the plan does not call for any improvements to planned local trunk highways.

While the Wisconsin Department of Transportation has the primary responsibility with respect to the recommended arterial street and highway system improvements within the IH 94 West Corridor, Waukesha 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 project will serve significant local traffic. In addition, current Department policy requires that the requesting local unit of government pay 50 percent of the cost of providing additional freeway access. Many unique situations, such as the unbraiding of freeway ramps and frontage roads, may occur, in which the local cost share is negotiated by the Department and the local jurisdiction on the basis of the relative State and local benefits which may accrue.

The recommended Corridor transportation plan not only assigns jurisdictional responsibility for arterial system improvements, but also proposes changes in jurisdictional responsibility for certain existing arterial streets and highways. All such proposed jurisdictional changes are shown graphically on Map 53 of Chapter V.

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 West Corridor:[4]

1. It is recommended that the Wisconsin Department of Transportation, Waukesha County, the City of Oconomowoc, and the Town of Summit 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.[5]

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[4] *All the proposed Waukesha County Board and municipal governing body actions assume involvement and approval by the County Public Works Committee and the respective local plan commissions.*

[5] *Preliminary engineering studies with respect to the frontage road separations and other freeway interchange improvements were being carried out under the sponsorship of the Wisconsin Department of Transportation concurrently with the Corridor planning program.*

2. It is recommended that the Waukesha County Board review and revise, as appropriate, its existing County highway width map to reflect properly the needed State and County trunk highway rights-of-way; that the Towns of Delafield, Pewaukee, and Summit subsequently adopt any such amendments to the County highway width map; that the Cities of Oconomowoc and Waukesha review and revise their official maps, as appropriate, and identify thereon the recommended arterial highway facilities; and that the governing bodies of the other municipalities in the Corridor establish local official maps, pursuant to Section 62.23(6) of the Wisconsin Statutes, identifying thereon the recommended arterial highway facilities.

3. It is recommended that the Wisconsin Department of Transportation, Waukesha County, the City of Oconomowoc, and the Town of Summit 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 Waukesha County Board, and the municipal governing bodies within the Corridor cooperatively arrange for the jurisdictional transfers proposed in the recommended transportation plan.

Public Transit Service

The public transit recommendations of the recommended transportation system plan for the IH 94 West Corridor represent a refinement and detailing of the transit service element of the adopted regional transportation system plan. As indicated in Chapter V, the recommended Corridor transportation plan calls for an increase in the level of commuter-oriented bus-on-freeway service between Oconomowoc and Milwaukee through the IH 94 West Corridor. The plan recommends that service levels on the IH 94 bus route be increased to all-day service, that is, between the hours of 6:00 a. m. and 10:00 p. m., in both directions, with headways not to exceed 30 minutes during peak periods and not to exceed 60 minutes during off-peak periods. Attendant to the bus-on-freeway service, the plan calls for a total of five park-ride lots within the Corridor, including two existing park-ride lots and three proposed new lots. The proposed new lots would be located at STH 83 and IH 94, at CTH G and IH 94, and at CTH JJ and STH 16. The plan also recommends that local fixed-route bus service provided by the City of Waukesha on the east side of the Corridor be expanded to serve the park-ride lot at CTH G and IH 94; that consideration be given to establishment of new public transit service in the form of shared-ride taxicabs in the Oconomowoc, Hartland, and Pewaukee urban areas; and that consideration be given to providing special local circulator service, using small vans, within the STH 83 and STH 67 interchange economic activity centers.

The following steps should be taken to facilitate implementation of the public transit service element of the IH 94 West Corridor plan:

1. It is proposed that the Waukesha County Board, through its Public Works Committee and contracting with public or private transit service operators as appropriate, provide the increased level of express bus-on-freeway service proposed in the plan.

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 West Corridor.

3. It is recommended that the Waukesha County Board, through its Public Works Committee and in conjunction with concerned private interests, investigate possible arrangements for local circulator transit service within the economic activity centers at STH 83 and STH 67. Alternatives in this regard include service sponsored by Waukesha County as an extension of the County-subsidized bus-on-freeway transit system and private sector service provision arranged for by private interests within the respective centers.

4. It is recommended that the City of Waukesha, through its Transit System Utility Board, extend local bus service to the proposed park-ride lot at CTH G and IH 94.

5. It is recommended that the City of Oconomowoc and the Villages of Hartland and Pewaukee explore the need for, and feasibility of, public transit service in the form of shared-ride taxicab service within their respective urban areas and implement such transit systems as warranted.

Table 53

AGENCY RESPONSIBILITIES FOR IMPLEMENTATION OF THE IH 94 WEST CORRIDOR LAND USE PLAN

Implementation Activity	Waukesha County Board/ Waukesha County Park and Planning Commission	Municipal Governing Bodies/ Plan Commissions	Sanitary Districts and Sewer Utilities
Plan Endorsement/Adoption	X	X	X
Zoning Ordinance Amendment	X[a]	X	--
Regulation of Land Subdivisions	X[a]	X	--
Sanitary Sewer Service Extension Policies	--	X	X

[a] *Waukesha County administers zoning and land subdivision regulations in the IH 94 West Corridor within the statutory shoreland areas of the Towns of Delafield, Pewaukee, and Summit.*

Source: SEWRPC.

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 West 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, in the case of the City of Waukesha, the Transit System Utility Board; at the county level, the Waukesha County Board, through the County Public Works Committee and the County Park and Planning Commission; at the State level, the Wisconsin Department of Transportation; and at the Federal level, the U. S. Department of Transportation, Federal Highway Administration and Federal Transit Administration. Local sanitary districts and municipal utilities also have important plan implementation responsibilities. Implementation responsibilities attendant to the recommended land use plan and recommended transportation plan for the IH 94 West Corridor are summarized by agency in Tables 53 and 54.

Table 54

AGENCY RESPONSIBILITIES FOR IMPLEMENTATION OF THE IH 94 WEST CORRIDOR TRANSPORTATION PLAN

Implementation Activity	Waukesha County Board/Public Works Committee	Municipal Governing Bodies/ Plan Commissions/ Transit Commissions	Wisconsin Department of Transportation	Federal Highway Administration	Federal Transit Administration
Plan Endorsement/Adoption	X	X	X	X	X
Arterial Street and Highway Element					
Preliminary Engineering Studies, Right-of-Way Acquisition, and Facility Construction:					
Freeway Widening and Interchange 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	--	--
Administration of Federal Highway Aids	--	--	--	X	--
Transit Service Element					
Provision of Bus-on-Freeway Transit Service	X	--	--	--	--
Development of Park-Ride Lots	--	--	X	--	--
Expansion of Fixed-Route Local Bus Service	--	X[a]	--	--	--
Provision of Special Circulator Transit Service Within Economic Activity Centers along IH 94	X[b]	--	--	--	--
Provision of Shared-Ride Taxicab Transit Service	--	X[c]	--	--	--
Administration of Federal Aids for Transit System Development and Operation	--	--	--	--	X

[a] *City of Waukesha.*

[b] *Service could be provided by Waukesha County as an extension of the County bus-on-freeway transit system. Service could also be provided by private interests within the respective centers.*

[c] *City of Oconomowoc, Village of Hartland, and Village of Pewaukee.*

Source: SEWRPC.

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Chapter VII

SUMMARY AND CONCLUSIONS

INTRODUCTION

On January 12, 1990, the Wisconsin Department of Transportation requested that the Regional Planning Commission undertake a land use and transportation study of the IH 94 West Freeway Corridor in central and western Waukesha County. That request grew out of a concern that land use changes were rapidly occurring in this freeway Corridor and that such changes were contributing to increased traffic congestion and related problems and out of a perceived need to seek cooperative agreement on the part of Waukesha County and the local units of government concerned as to a future land use pattern for the Corridor and a supporting arterial highway system.

The Regional Planning Commission, in cooperation with Waukesha County and local units of government within the Corridor, completed the requested planning program in 1994. It resulted in a development plan for the IH 94 West Corridor consisting of a land use plan element and transportation plan element. The recommended land use plan element was prepared within the framework of the year 2010 regional land use plan, taking into account local development objectives and needs as evidenced by local plans and zoning and by local public utility extension policies. The transportation element identifies the arterial street and highway system and transit system improvements needed in support of the recommended land use plan.

This report has described the findings and recommendations of the planning effort for the IH 94 West Corridor. A summary of the key findings and recommendations is presented in this chapter.

THE PLANNING AREA

The IH 94 West Corridor planning area is a rectangular area encompassing the IH 94 West Freeway from approximately CTH T west to the Waukesha County line. The area extends about four miles in a north-south direction and 15 miles in an east-west direction, with the study area boundary defined along U. S. Public Land Survey section lines. The approximately 60-square-mile study area contains portions of three cities, four villages, and three towns, all in Waukesha County.

The lands included within the study area extend at least one mile south and at least 1.5 miles north of the IH 94 West Freeway. The study area is believed to encompass all of the developable land along the freeway that can be expected to be significantly influenced directly by the presence of the freeway. In this respect it is important to note that, while a study area boundary was established for the Corridor planning, the work was accomplished within the broader framework of the adopted regional land use and transportation system plans. All the travel demand analyses carried out under the study were conducted within the framework of the entire Southeastern Wisconsin Region and thus took into account planned land use changes outside, as well as inside, the study Corridor.

ECONOMIC AND DEMOGRAPHIC BASE

Future urban development needs within the IH 94 West Corridor will depend in part upon the population and economic activity levels within Waukesha County and the larger Southeastern Wisconsin Region, of which the Corridor is an integral part. 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 periods of rapid growth in the 1950s and 1960s, the resident population of the Southeastern Wisconsin Region grew much more slowly during the 1970s and 1980s, reaching about 1.81 million persons in 1990, an increase of about 45,000 persons, or about 3 percent, over the 1980 population level. In Waukesha County, however, the resident population increased from 280,200 persons in 1980 to 304,700 in 1990, an increase of about 24,500 persons, or 9 percent. The rate of population growth in the IH 94 West Corridor has exceeded that of the Region and of the County. During the past decade, the resident population of the Corridor increased by about

3,200 persons, or about 16 percent, from about 20,600 persons in 1980 to about 23,800 persons in 1990.

The number of housing units in the Region, in Waukesha County, and in the IH 94 West Corridor has increased faster than the resident population. Between 1980 and 1990, the number of housing units in the Region, the County, and the Corridor increased by about 8 percent, 19 percent, and 26 percent, respectively. In 1990, there were about 9,000 housing units in the IH 94 West Corridor; the average household size was about 2.8 persons. The average household size in the Corridor was larger than the regional average, 2.6 persons, owing in part to the predominance of single-family housing in the Corridor.

Labor Force and Employment

The civilian labor force in Waukesha County, including the IH 94 West Corridor, totaled about 169,000 persons in 1990. The County labor force increased by about 191 percent over the past three decades, a considerably greater increase than the 47 percent increase in the regional labor force. The rapid increase in the County labor force reflects an increase in the labor force participation rate along with a substantial increase in the resident population.

The number of jobs in Waukesha County totaled about 172,300 in 1990. Of that total, about 10,800 jobs, or about 6 percent, were located within the Corridor. Over the past approximately two decades, employment in the Corridor increased by 266 percent, compared to about 141 percent for the County and about 32 percent for the Region. The pattern of job growth in Waukesha County, and particularly in the Corridor, reflects a general trend of job decentralization in the Region.

HISTORIC URBAN GROWTH

In 1950, the only urban development in the Corridor was residential and recreational development surrounding the major lakes in the Corridor, including Upper and Lower Nashotah Lakes, Upper and Lower Nemahbin Lakes, Nagawicka Lake, Pewaukee Lake, and Silver Lake. Since 1950, urban development in the Corridor has consisted largely of two types: residential land uses at sites throughout the Corridor and highway-oriented commercial land uses located within the Corridor at major interchanges on the IH 94 Freeway, which opened to traffic in stages in 1963 and 1964. By 1985, there were about 12 square miles of urban development in the Corridor, representing about 19 percent of the total area of the Corridor.[1]

EXISTING LAND USE

For analytical purposes, urban land uses are defined as including residential, commercial, industrial, governmental and institutional, park and recreational, and transportation, communication, and utility. As identified in the Commission regional land use inventory, such uses together encompassed about 15 square miles in the IH 94 West Corridor, or about 25 percent of the Corridor area, in 1985. Of this total, 53 percent was devoted to residential use; about 28 percent to transportation and utility land uses; about 12 percent to park and recreational uses; and about 4 percent to governmental and institutional use. Commercial and industrial uses each comprised about 1 percent of the Corridor area. Between 1963 and 1985, such urban uses increased by about 5.7 square miles, or by

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[1] *The 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 of urban land. The Commission land use inventory identifies all lands actually in urban use wherever located. The greater urban area indicated by the land use inventory relative to the urban growth ring analysis within the IH 94 West 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 ring 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.*

62 percent. This increase occurred in all the urban land use categories, although growth was greatest in the in the residential land use category.

While the scattered pattern of urban land uses has created an impression of widespread urbanization, nonurban land uses still predominate in the IH 94 West Corridor. Nonurban uses encompassed about 45 square miles, or 75 percent of the total area of the Corridor, in 1985. Wetlands, woodlands, and surface water in combination accounted for about 20 square miles, or about 45 percent of the nonurban lands; agricultural lands comprised about 25 square miles, or about 55 percent of the total. The urbanization of the Corridor has been accompanied by a decline in the nonurban land area, from about 51 square miles in 1963 to 45 square miles in 1985. While there were some minor changes in the water, wetland, and woodland areas, nearly all the land converted from rural to urban use over the 22-year period was agricultural.

Agricultural lands encompassing a total of 15 square miles, or 25 percent of the Corridor area, were classified as prime agricultural lands in 1985 on the basis of agricultural soil capability, the size of the individual farm units, and overall size of the farming area. Between 1963 and 1985, the prime agricultural land area decreased by about seven square miles, or by 32 percent.[2] Despite this substantial loss of prime agricultural lands in the Corridor since 1963, large areas that are well suited for farming and that have not yet experienced significant intrusion of urban uses remain.

[2]*For planning purposes, prime agricultural lands have been identified as farm units which 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 farms of at least 100 acres in size. Much of the prime farmland lost between 1963 and 1985 consisted of lands which were taken out of agricultural production and converted to urban development or other use. Some of the lost prime farmland consist of lands which remained in agricultural use but which no longer met the farm unit or farm block size criteria inherent in the definition of prime agricultural land.*

NATURAL RESOURCE BASE

Soils

Soils within the Corridor have a wide range of characteristics which significantly affect their suitability for various urban and rural land uses. About 15 square miles, or 29 percent of the land area of the Corridor, are covered by soils which have severe limitations for residential development with public sanitary sewer service and are, therefore, poorly suited for residential development of any kind. At last 23 square miles, or 43 percent of the land area of the Corridor, is suitable for the use of conventional onsite sewage disposal systems; at least 32 square miles, or 61 percent of the land area, is suitable for the use of mound sewage disposal systems.

Surface Water Resources

The IH 94 West Corridor lies in three watersheds. The Fox River watershed comprises the eastern portion of the Corridor and encompasses about 22 square miles, or 37 percent of the Corridor area; it contains two major stream tributaries, the Pewaukee River and Pebble Creek, which drain to the main stem of the Fox River, lying just east of the study area. The Bark River watershed is located in the central area of the Corridor and encompasses 23 square miles, or 39 percent of the area of the Corridor; it contains the main stem of the Bark River and the Scuppernong Creek tributary. The Oconomowoc River watershed comprises the western portion of the study Corridor and encompasses about 15 square miles, or 24 percent of the Corridor area; it contains the main stem of the Oconomowoc River and Battle Creek.

The Corridor includes all or portions of 11 "major" lakes, defined as those lakes having 50 acres or more of surface water area, a size capable of supporting reasonable recreational use with relatively little degradation of the resource. Major lakes located wholly or partially in the Corridor include Pewaukee Lake in the Fox River watershed; Upper and Lower Nashotah, Upper and Lower Nemahbin, Nagawicka, Golden, and Crooked Lakes in the Bark River watershed; and Silver Lake and Middle and Lower Genesee Lakes in the Oconomowoc River watershed.

Floodplains in the Corridor, including all lands subject to inundation during a 100-year recurrence interval flood event, encompass about 10 square miles, or about 17 percent of the area of the Corridor.

Other Natural Resource Elements and Related Features

In 1985, wetlands encompassed about seven square miles, or 12 percent of the total Corridor area, while woodlands encompassed five square miles, or 9 percent. Lands encompassing a total of 16 square miles, including many of the existing wetland and woodland areas, were identified as important wildlife habitat as part of a wildlife habitat inventory cooperatively carried out in 1985 by the Regional Planning Commission and the Wisconsin Department of Natural Resources.

The Corridor area includes many scenic vistas, particularly in the Kettle Moraine area and around the major lakes. The Corridor encompasses a number of historic sites, including seven sites listed on the National Register of Historic Places.

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 park sites, significant scenic areas and vistas, and historic and archaeological sites, when considered in combination, are found to occur in linear pattern in the landscape in Southeastern Wisconsin. 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 corridor encompass about 19 square miles, or about 32 percent of the total are of the IH 94 West Corridor in 1985. Of this total area, 7.8 square miles, or 40 percent, consisted of surface water; 6.5 square miles, or 34 percent, consisted of wetlands; four square miles, or 21 percent, consisted of woodlands; and one square mile, or 5 percent, consisted of other natural resource features.

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 West 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 developmental problems such as wet and flooded basements, foundation failures, and excessive clear water infiltration and inflow into sanitary sewerage systems.

EXISTING TRANSPORTATION AND UTILITY FACILITIES AND SERVICES

Arterial Streets and Highways

The IH 94 West Corridor study area is well served by an arterial street and highway system. The system totaled about 84 miles in length in 1990, of which about 18 miles, or 22 percent, consisted of the IH 94 and STH 16 freeways. The arterial network is appropriately spaced at about two-mile intervals in both the north-south and east-west directions through much of the Corridor.

The IH 94 freeway is the most heavily traveled facility in the Corridor, with 1989 average weekday traffic volumes ranging from a low of about 23,500 vehicles per day west of STH 67 to a high of about 53,900 vehicles per day just west of STH 16. The most heavily traveled surface arterial streets and highways consisted of Grandview Boulevard, Capitol Drive, STH 67, and STH 83, carrying from 10,200 to 24,800 vehicles per day.

About five miles, or 6 percent, of the 84-mile arterial system serving the Corridor were, in 1989, operating over design capacity and exhibiting traffic congestion during peak travel periods. Another four miles of facilities, representing an additional 5 percent of the system, were operating at design capacity, with incipient congestion.

State trunk highways and frontage roads maintained by the State constituted nearly 32 miles, or about 38 percent, of the 84-mile arterial system within the Corridor in 1990. County trunk highways totaled an additional 41 miles, or about 49 percent of the system. The remaining 11 miles, or about 13 percent, were under local jurisdiction.

Railways

Railway service is provided in the Corridor by one private company, the CP Rail System (formerly the Soo Line Railroad and once the Chicago, Milwaukee, St. Paul & Pacific Railroad), with one interstate line serving the Corridor. This railway facility provides freight service to industrial concentrations within the Corridor. The facility also provides the routing of the Federally subsidized Amtrak passenger service between Chicago, Milwaukee, St. Paul, and Seattle. There are, however, no Amtrak stops within the Corridor.

Transit Service

Bus-on-freeway commuter service is provided by Waukesha County through the Corridor between the City of Oconomowoc and the Milwaukee central business district, under contract with a private bus operator. Service is routed over STH 67 and IH 94, with park-ride facilities located along STH 67 and freeway on-ramp/off-ramp stops at STH 83 and CTH G.

Local bus service is provided on a very limited basis within the Corridor. The only fixed-route local bus service is that provided by the City of Waukesha along the eastern edge of the Corridor. Intercity bus service through the Corridor consists of buses operated by Badger Coaches, Inc., and Greyhound Lines, Inc., over IH 94 between Milwaukee and Madison.

Public Utilities

Four public sanitary sewerage systems served the IH 94 West Corridor study area in 1990. The City of Brookfield system served, by contract, the Village of Pewaukee, the Lake Pewaukee Sanitary District, and the Town of Pewaukee Sanitary District No. 3, all in the northeastern portion of the study area. The City of Waukesha system served the southeasternmost portion of the study area. In the central portion of the study area, the Delafield-Hartland Water Pollution Control Commission served the Villages of Hartland and Nashotah and the City of Delafield. The City of Oconomowoc sewerage system served portions of the City of Oconomowoc in the west side of the study area. In total, the four public sewerage systems provided sanitary sewer service to about eight square miles, or about 13 percent of the 60-square-mile Corridor. About 15,300 persons, or two-thirds of the resident population of the Corridor, were served.

Four public water supply systems, operated by the City of Waukesha, the City of Oconomowoc, the Village of Hartland, and the Village of Pewaukee, served the Corridor in 1990. All four utilized groundwater as the supply source. These systems served a combined area of about two square miles, or about 3 percent of the total Corridor area. The resident population of the areas served was 7,900 persons, representing about one-third of the total Corridor population.

EXISTING PLANS AND LAND USE REGULATIONS

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 with the seven-county Region. Of particular importance to the IH 94 West Corridor are certain recommendations contained in the adopted regional land use plan, regional park and open space plan, regional transportation system plan, and regional water quality management plan, as indicated below:

- The regional land use plan contains recommendations with respect to the amount, location, and intensity of urban land use development; the protection and preservation of environmentally sensitive lands; and the protection and preservation of prime agricultural lands.

- The regional park and plan space plan contains recommendations concerning park site acquisition and development, parkway acquisition, and recreational trail development. Recommendations pertaining to the IH 94 West Corridor include the expansion of the Lapham Peak recreation area; acquisition of certain environmental Corridor lands, including lands along the Bark River, for parkway purposes; and completion of major recreation trail segments through the Corridor.

- The regional transportation system plan contains recommendations for the construction of new arterial facilities, for arterial street widenings, for changes in arterial system jurisdictional responsibilities, and for the provision of public transit service. Of particular importance to the IH 94 West

Corridor are the recommended extension of CTH SS from CTH G easterly to CTH T, the extension of Meadowbrook Road from Northview Road southerly to USH 18, the extension of CTH KE from CTH E westerly to STH 18, and the widening of CTH T from IH 94 northerly to the Waukesha County Technical College.

- The regional water quality management plan contains recommendations concerning sanitary sewerage system improvements and sanitary sewer service areas. In 1990, the planned sewer service areas attendant to the four sewerage systems serving the Corridor encompassed about 26 square miles within the Corridor, or 51 percent of the total land area of the Corridor.

County and Local Land Use Plans

County and local units of government have undertaken a number of important local planning efforts that had to be taken into account in the formulation of a development plan for the IH 94 West Corridor. Detailed land use plans have been prepared for the Cities of Delafield and Oconomowoc; the Villages of Hartland, Nashotah, Oconomowoc Lake, and Pewaukee; and the Towns of Delafield, Pewaukee, and Summit. Except for the plans for the Towns of Delafield and Summit, which envision substantial unsewered urban density residential use on prime agricultural lands, the local land use plans are generally consistent with the recommendations contained in the regional plans.

In 1984, the Waukesha County Board adopted a countywide farmland preservation plan as authorized under Chapter 91 of the Wisconsin Statutes. That plan identified prime agricultural lands within the County, recommending those which ought to be preserved indefinitely and identifying others which could be expected to be converted to urban use. The recommendations of the County farmland preservation plan have been incorporated into the third-generation, design year 2010, regional land use plan.

Local Land Use Regulations

An analysis of local development objectives as expressed through zoning ordinances in effect in 1985 indicates that, together, the County and local units of government in the Corridor had zoned about 22 square miles, or 36 percent of the study Corridor, for residential use; about three square miles, or about 5 percent, for commercial and industrial use; about 0.7 square mile, or about 1 percent, for governmental, institutional, and recreational use; about 18 square miles, or 29 percent, for agricultural use; and about nine square miles, or about 15 percent, for conservancy use. Given current zoning, the County and communities in the Corridor had set aside enough land to accommodate about 8,100 incremental housing units and an incremental resident population of about 24,500 persons, as well as enough land to accommodate nearly 9,700 incremental jobs.

All cities, villages, and towns in the Corridor have adopted land division ordinances. In addition, Waukesha County has adopted a land division ordinance, which applies only to the unincorporated shoreland areas of the County.

The Cities of Oconomowoc and Waukesha have formally adopted official maps consistent with the regional transportation plan. Waukesha County has adopted a street and highway width map. That map is consistent with the adopted regional transportation plan except for the proposed extension of CTH KE in the Town of Delafield, where the Town Board did not ratify the County's action.

OBJECTIVES, PRINCIPLES, AND STANDARDS

A set of development objectives, principles, and standards was formulated as a basis for the preparation and evaluation of development plans for the IH 94 West Corridor study area. 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. The development objectives were based primarily 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, principles, and standards reflect county and local community objectives as articulated by members of the Advisory Committee.

ANTICIPATED GROWTH AND CHANGE

The preparation of the plan for the IH 94 West Corridor was undertaken within the context of the third-generation, design year 2010 regional land use plan for Southeastern Wisconsin, adopted by the Regional Planning Commission in 1992. In order to cope with the major changes in socioeconomic conditions in the Region that became evident in the 1970s and 1980s, 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 considers a number of alternative futures representative of conditions which may be reasonably expected to occur over the plan design period.

Three alternative future scenarios were postulated for the purpose preparing the new regional land use plan. Two scenarios, the high-growth and the low-growth scenario were intended to identify reasonable extremes with respect to future population and economic activity levels. A third scenario, the intermediate-growth scenario, was intended to identify a most probable future that lies between the extremes. 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 the purposes of the IH 94 West Corridor study, two of the alternatives considered by the Regional Planning Commission in its regional planning effort, an intermediate-growth centralized and a high-growth decentralized scenario, were explored. These two scenarios were believed to best represent the range of possible futures for growth and development in that part of the Region encompassing the IH 94 West Corridor study area.

Under the intermediate-growth centralized scenario, the population of Waukesha County would increase by 78,400 persons, or 27 percent, from 285,900 persons in 1985 to 364,300 persons in the year 2010. Under the high-growth decentralized scenario, the County population would increase by 243,900 persons, or 85 percent, to a level of 529,800 persons in the year 2010. Likewise, under an intermediate-growth centralized scenario, total employment in the County would increase by 58,800 jobs, or 42 percent, from 141,300 in 1985 to 200,100 in 2010. Under the high-growth decentralized scenario, employment in the County would increase by 116,300 jobs, or 82 percent, to a level of 257,600 jobs in the year 2010.

RECOMMENDED LAND USE PLAN

Under the IH 94 West Corridor planning program, two alternative Corridor land use plans were prepared for consideration: an intermediate-growth centralized plan and a high-growth decentralized plan. The plans were designed to accommodate the population and economic activity levels which could be anticipated under the corresponding regional growth scenarios. The alternative plans differ significantly in terms of the scale of future urban development within the IH 94 West Corridor, with the high-growth decentralized plan accommodating more than three times the population and employment increments envisioned under the intermediate-growth centralized plan. The two alternative plans are shown graphically on Maps 32 and 33 in Chapter IV of this report.

As the Advisory Committee was considering these two alternative land use plans, two major private development initiatives which would represent a departure, in part, from those alternatives, the proposed Pabst Farms development near the STH 67-IH 94 interchange and an office park proposed to be located near the CTH SS-IH 94 interchange, were advanced. These proposals are indicative of the strong urban land market forces which have produced a growing demand for commercial and industrial land use development along the freeway. After careful consideration of the alternative plans and assessment of the changing land market conditions, the Advisory Committee directed the preparation of a recommended land use plan within the parameters of the aforementioned alternative plans, stipulating, however, that the recommended plan should take into account the apparently accelerated demand for commercial and industrial land use development within the Corridor and the commitments already made by local government in the Corridor in reaction to that demand. That preliminary recommended plan, shown on Map 39 in Chapter V of this report, was taken to public hearing on March 28, 1994. After the hearing, the

Advisory Committee adjusted the recommended plan in the manner described in Chapter V of this report.

Population, Households, and Employment

Under the recommended plan, population in the Corridor would increase from a 1985 level of about 22,700 persons to a year 2010 level of about 32,400 persons, an increase of about 9,700 persons, or 43 percent. This increase approximates that envisioned under the intermediate-growth centralized Corridor land use plan, an increase of about 8,000 persons. The increase is significantly less than that envisioned under the high-growth decentralized Corridor land use plan, an increase of about 25,400 persons.

Under the recommended plan, households in the Corridor would increase from a 1985 level of about 7,200 households to a year 2010 level of about 11,900 households, an increase of about 4,700 households, or 65 percent. As in the case of population, this increase approximates the increase envisioned under the intermediate-growth centralized Corridor land use plan, an increase of about 4,100 households. This increase is also significantly less than that envisioned under the high-growth decentralized Corridor land use plan, an increment of nearly 9,200 households.

Under the recommended plan, employment in the Corridor would approximately double, from about 10,500 jobs in 1985 to about 22,000 jobs in the year 2010. This planned increase of 11,500 jobs is less than the increase envisioned under the high-growth decentralized Corridor land use plan, an increment of about 15,600 jobs, but substantially more than the increase envisioned under the intermediate-growth centralized Corridor land use plan, an increment of about 4,400 jobs. The planned increase in jobs is reflective of the Advisory Committee determination to recognize the substantial commitment to industrial and commercial development within the Corridor already made by the local government concerned.

Urban Land

The final recommended land use plan for the IH 94 West Corridor is shown in graphic form on Map 49 in Chapter V of this report. With respect to the planned areal extent of urban land use, the plan draws heavily upon the commitments to urban development made in past years by the local units of government, particularly as reflected in locally adopted and State-approved public sanitary sewer service area plans. Except for the Pabst Farms area, the recommended land use plan does not propose to change, in any respect, the areal extent of the adopted planned sanitary sewer service areas. In the case of the Pabst Farms, about one-quarter of that area is already included in a planned sewer service area. The recommended plan calls for the incorporation of all of the remaining portion of the Pabst Farms lying north of Delafield Road within a planned sewer service area. It is important to recognize that within the time frame of the plan, through the year 2010, not all of the Pabst Farms area, nor, for that matter, of the other planned sewer service areas, will be needed to accommodate urban development. The full build-out of the urban areas shown on the recommended plan map, which areas largely reflect adopted sewer service area plans, is not expected to occur by the year 2010.

In order to accommodate the increases in population, households, and employment anticipated in the Corridor by the year 2010, the recommended land use plan proposes to convert about 5.4 square miles of land from rural to urban uses. Most of the increase in urban lands would be in the form of residential, commercial, and industrial development and supporting transportation uses.

Residential Development: The recommended plan envisions that residential lands will increase by about 2.5 square miles, or 31 percent, between 1985 and 2010. About half the proposed increase would take place at medium densities, defined as 2.3 to 6.9 dwelling units per net residential acre, with nearly all of the remaining land to be developed at low densities, defined as 0.7 to 2.2 dwelling units per net residential acre. The new medium-density residential development would largely be concentrated in the Oconomowoc, Hartland, Waukesha, and eastern Pewaukee sewer service areas, while the low-density residential development would be largely concentrated in the Delafield, Nashotah, and western Pewaukee sewer service areas.

Commercial and Industrial Development: Under the plan, the commercial land area of the Corridor would approximately triple, from 0.30 square mile in 1985 to about 0.91 square mile in 2010; the industrial land area would about quadruple, from about 0.26 square mile in 1985 to about 1.07 square miles in 2010. The plan envisions a total of eight commercial centers and

five industrial centers in the Corridor in the year 2010. The plan recognizes the significant commitments in terms of zoning and infrastructure already made by local units of government at a number of locations, including the Bark River Commerce Center, the Oconomowoc-Target Corporate Center, the Olympia commercial center and the Delafield-STH 83 commercial center. The plan recommends that these centers be substantially developed over the next two decades.

The plan envisions the partial development of the Pabst Farms by the plan design year 2010. The plan recognizes the strategic location of the Pabst Farms and its unique nature in terms of single ownership control over an approximately 1,700-acre contiguous tract of land. The plan recognizes that in order to take advantage of the unique nature of this site, a commitment will have to be made to design and develop the entire Pabst Farms area as planned unit, with development occurring in phases through, and well beyond, the year 2010. The Corridor land use plan would be intended to accommodate by the year 2010 about 30 percent of the urban land use development that is proposed to ultimately take place on the Pabst Farms. This urban development could be expected to accommodate about 20 percent of the number of residential dwelling units proposed to be ultimately located on the Pabst Farms, and about 40 percent of the number of jobs that are proposed to be ultimately provided in the Pabst Farms employment centers.

Nonurban Land

The conversion to urban use of about 5.4 square miles of land, as envisioned under the recommended plan, would result in a concomitant decrease in agricultural and other open lands. Those agricultural lands remaining would continue to be used for agriculture or, if converted to residential use, be so converted at a rural density of no more than one dwelling unit per five acres of land.

The recommended plan proposes the maintenance in essentially natural, open uses of environmentally sensitive lands encompassing about 21.1 square miles, or about 35 percent of the total area of the Corridor. Of this total, about 19.4 square miles are classified as primary environmental corridor, about 0.5 square mile is classified as secondary environmental corridor, and about 1.2 square miles are classified as isolated natural resource areas.

RECOMMENDED TRANSPORTATION PLAN

The transportation system plan for the IH 94 West Corridor includes recommendations regarding arterial street and highway improvements and regarding transit system improvements needed in support of the recommended design year 2010 Corridor land use plan. The recommended transportation plan incorporates, as appropriate, the recommendations of previous planning work, including the regional transportation system plan and County jurisdictional highway system plan, and recommends additional highway and transit service improvements necessary to support the more intensive urban development within the Corridor envisioned under the recommended Corridor land use plan.

Arterial Streets and Highways

The final recommended arterial street and highway system plan for the IH 94 West Corridor is shown on Map 50, presented in Chapter V of this report. The key arterial street and highway improvements recommended in the Corridor transportation system plan are indicated below:

1. The widening of IH 94 between the STH 16-CTH T and the CTH G interchanges to provide for six travel lanes.

2. The widening of STH 83 to provide four travel lanes on a divided roadway from STH 16 beyond the Corridor study area south to USH 18, beyond the study area.

3. The widening of STH 67 to four travel lanes from IH 94 south to USH 18, beyond the study area, and to six travel lanes north from IH 94 to CTH B.

4. The construction of the Waukesha bypass facility along the Meadowbrook Road alignment, including the extension of CTH TT, to provide for four travel lanes.

5. The extension of CTH KE from CTH E to STH 83 as a two-travel-lane facility.

6. The extension of CTH SS from CTH G to CTH T as a two-travel-lane facility.[3]

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[3]*This project was under construction in the fall of 1993, as the corridor study was being completed.*

7. The widening of CTH T from IH 94 north to CTH JJ to provide four travel lanes.

8. The widening of CTH T from IH 94 south to Northview Road to provide four travel lanes on a divided urban section.

9. The construction of the Oconomowoc Parkway and its extension through the Pabst Farms to CTH P as a two-travel-lane facility.

10. The undertaking of major improvements at all the existing interchanges in the Corridor along IH 94 in order to unbraid all freeway on- and off-ramps from frontage roads and provide better capacity for anticipated traffic movements at these interchanges. In particular, a full directional diamond interchange would be provided at CTH P.

The recommended arterial system in the Corridor would include about 85 miles of streets and highways. This represents an increase of about 1 percent over the 84 miles of arterial streets and highways that served the Corridor in 1990. The proposed highway system would generally be able to meet the service level standards set forth in Chapter III of this report, except for that segment of the IH 94 freeway extending from CTH G west to STH 83, which would operate under congested conditions during periods of peak traffic. The Corridor transportation plan also recommends the level of government which should be responsible for the construction, operation, and maintenance of each facility comprising the proposed arterial system.

The total capital costs of implementing the recommended arterial street and highway system plan for the IH 94 West Corridor are estimated at nearly $105 million. About $70 million is required for the reconstruction of the freeway interchanges and attendant frontage road and ramp facilities and the freeway widening from STH 16-CTH T to CTH G. The remaining $35 million is required for the proposed arterial street widenings and for maintenance, through resurfacing or reconstruction, of those arterial street and highway facilities not proposed to be widened.

As previously noted, not the entire area included in the configuration of urban land uses shown on the recommended Corridor land use plan is intended to be converted to urban use by the year 2010. Some of the planned urban areas, including part of the Pabst Farms site, would not be developed until well beyond the plan design year. An analysis was undertaken to ascertain the arterial street and highway improvement implications related to the full build-out of the urban areas shown on the land use plan. A number of potential additional improvements were identified, including the addition of two travel lanes on the approximately eight-mile segment of IH 94 from CTH G west to CTH P. The cost of the freeway widening and other potential improvements identified in this analysis is estimated to be $25.5 million, over and above the costs attendant to the recommended plan.

Public Transit

The recommended Corridor transportation plan includes the following recommendations with respect to the provision of public transit service:

1. It is recommended that the level of express bus service on IH 94 connecting Oconomowoc, Summit, Delafield, Waukesha, and Pewaukee to the Milwaukee central business district be significantly increased. The plan envisions all-day service in both directions, with peak-period headways not to exceed 30 minutes and off-peak headways not to exceed 60 minutes.[4] Integral to such service is a proposed system of park-ride lots, five of which would be located within the IH 94 West Corridor, including two existing park-ride lots and three proposed new lots. The new park-ride lots are proposed to be located at STH 83 and IH 94, at CTH G and IH 94, and at CTH JJ and STH 16.

2. It is recommended that local fixed-route bus service provided by the City of Waukesha on the east side of the Corridor be extended to serve the proposed park-ride lot at CTH G and IH 94.

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[4] *All-day service is defined as service between the hours of 6:00 a.m. and 10:00 p.m.*

3. It is recommended that consideration be given to the provision of shared-ride taxicab transit service within the Hartland, Oconomowoc, and Pewaukee urban areas.

4. It is recommended that consideration be given to the provision of van-based local circulator transit service within the commercial and industrial centers at the STH 83-IH 94 and STH 67-IH 94 interchanges.

The total capital costs of implementing the transit plan for the Corridor is estimated at $3.9 million. The total annual operating cost is estimated at $1.25 million. The public subsidy required to provide the recommended level of transit service in the Corridor is estimated at $0.8 million per year.

PLAN IMPLEMENTATION

Successful implementation of the IH 94 West Corridor development plan will depend upon the cooperative actions of a number of units and agencies of government. Responsibility for implementation of the land use plan element rests largely with city councils, village boards, and town boards and their respective plan commissions; the Waukesha County Board and County Park and Planning Commission; and the governing bodies of the sanitary districts and municipal utilities serving the Corridor. Responsibility for implementation of the transportation plan element rests primarily with the Waukesha County Board; the Wisconsin Department of Transportation; and the U. S. Department of Transportation, Federal Highway and Federal Transit Administrations. The plan implementation process should begin with formal adoption or endorsement of the plan by the concerned units and agencies of government, followed by integration of the Corridor plan into local development plans and incorporation of the plan into State and Federal agency work programs.

Implementation responsibilities attendant to the recommended land use and transportation plans are described in detail in Chapter VI of this report. An overview 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 Waukesha County and local units of government in the Corridor. 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; 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 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 service. The planned urban areas shown on the land use plan map generally reflect currently adopted planned sanitary sewer service areas. The planned sewer service areas contain more than enough land to accommodate population and employment levels in the Corridor through the year 2010. Accordingly, except for the recommended inclusion of the Pabst Farms, further expansion of the planned sewer service areas during the planning period should be avoided.

Implementation of the Recommended Transportation System Plan

Under the recommended Corridor transportation system 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 on the east side of the Corridor and the unbraiding of freeway on- and off-ramps from the network of frontage roads and other freeway interchange improvements. Under the plan, responsibility for the proposed surface arterial improvements would rest largely with the Department of Transportation for improvements

on the planned State trunk highway system and with Waukesha County for improvements on the planned County trunk highway system. While the Wisconsin Department of Transportation has the broadest responsibility with respect to the recommended arterial street and highway system improvements within the Corridor, the County and local units of government may be asked to pay a portion of the cost of proposed improvements to the State trunk highway system.

The plan recommends that the Wisconsin Department of Transportation and Waukesha County, in cooperation with the County and 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.

Under the plan, Waukesha County would be responsible for the provision of bus-on-freeway transit service between Oconomowoc and Milwaukee and, potentially, for the provision of local circulator transit service within the economic activity centers at STH 67 and STH 83. The City of Waukesha would be responsible for the expansion of local fixed-route bus service in the eastern portion of the Corridor. The Wisconsin Department of Transportation would be responsible for the provision of the three proposed new park-ride lots in the Corridor. The City of Oconomowoc and the Villages of Hartland and Pewaukee would be responsible for exploring the need for, and feasibility of, shared-ride taxicab service and for the provision of such service, as warranted, within their respective urban areas.

RELATION OF THE RECOMMENDED CORRIDOR PLAN TO OTHER PLANNING STUDIES

Two planning programs potentially affecting the IH West 94 Corridor were underway as the Corridor plan was nearing completion at the end of 1993. One involves the preparation of a new regional transportation system plan for Southeastern Wisconsin; the other involves the preparation of a development plan for Waukesha County.

A planning program leading to the preparation of a new, third-generation transportation system plan for Southeastern Wisconsin is scheduled for completion by the Regional Planning Commission in 1994. Under Federal planning guidelines, the new regional transportation plan must demonstrate that there are no feasible management alternatives available to avoid the provision of additional lane capacity for use by single-occupant vehicles during peak travel periods. Upon completion of the regional transportation system plan, it may be necessary to reconsider one or more of the recommendations of the Corridor plan to provide additional arterial lane capacity. Given the comprehensive nature of the Commission's land use and transportation planning efforts and the care taken to evaluate all reasonable transportation system management measures before recommendations to add additional lane capacity are made, it may reasonably be expected that the regional transportation planning process to be completed in 1994 will confirm most, if not all, of the arterial street and highway recommendations of the Corridor plan.

A planning program leading to the preparation of a county development plan for Waukesha County, as provided for under Section 59.97(3) of the Wisconsin Statutes, is also scheduled for completion in 1994. The resulting plan will serve as a long-range guide to land use development and housing development within the County through the year 2010. The planning program was in the data collection and analysis phase at the end of 1993; work on formulating the development plan itself is scheduled for 1994. It is anticipated that the major recommendations of the IH 94 West Corridor plan will be incorporated essentially without change into the Waukesha County development plan.

CONCLUDING REMARKS

This report has presented long-range, design year 2010, plans for land use and supporting transportation facility development within the IH 94 West Corridor in Waukesha County. Implementation of the recommended land use plan would provide a sound basis for accommodating a strong market for commercial and industrial land use

development in the Corridor, providing for commercial and industrial centers at strategic locations along the IH 94 West freeway; would accommodate new residential development in planned neighborhood units in areas which can be readily served with urban services and facilities, including, importantly, public sanitary sewer service; and would provide for the protection and enhancement of the most significant remaining natural resource features. The Corridor transportation system plan recommends the arterial highway facilities and transit facilities needed in support of the population and employment levels and the distribution of urban land uses envisioned in the Corridor land use plan.

Successful implementation of the Corridor development plan will depend upon effective efforts to guide and shape urban development in time as well as in space. It must be recognized that not all of the area included in the configuration of urban land uses shown on the recommended Corridor plan are intended to be developed by the year 2010. Under the plan, certain of these areas, including portions of the Pabst Farms, would not be needed for urban uses until well after the plan design year. Analyses conducted under the Corridor planning study indicated that substantial additional public costs would be incurred for transportation system improvements required for a full build-out of the entire urban area. It is essential that Waukesha County and the local units of government in the Corridor, through judicious use of their land use regulatory powers, accommodate urban growth at a rate in locations and at densities that are consistent with the Corridor plan.

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APPENDICES

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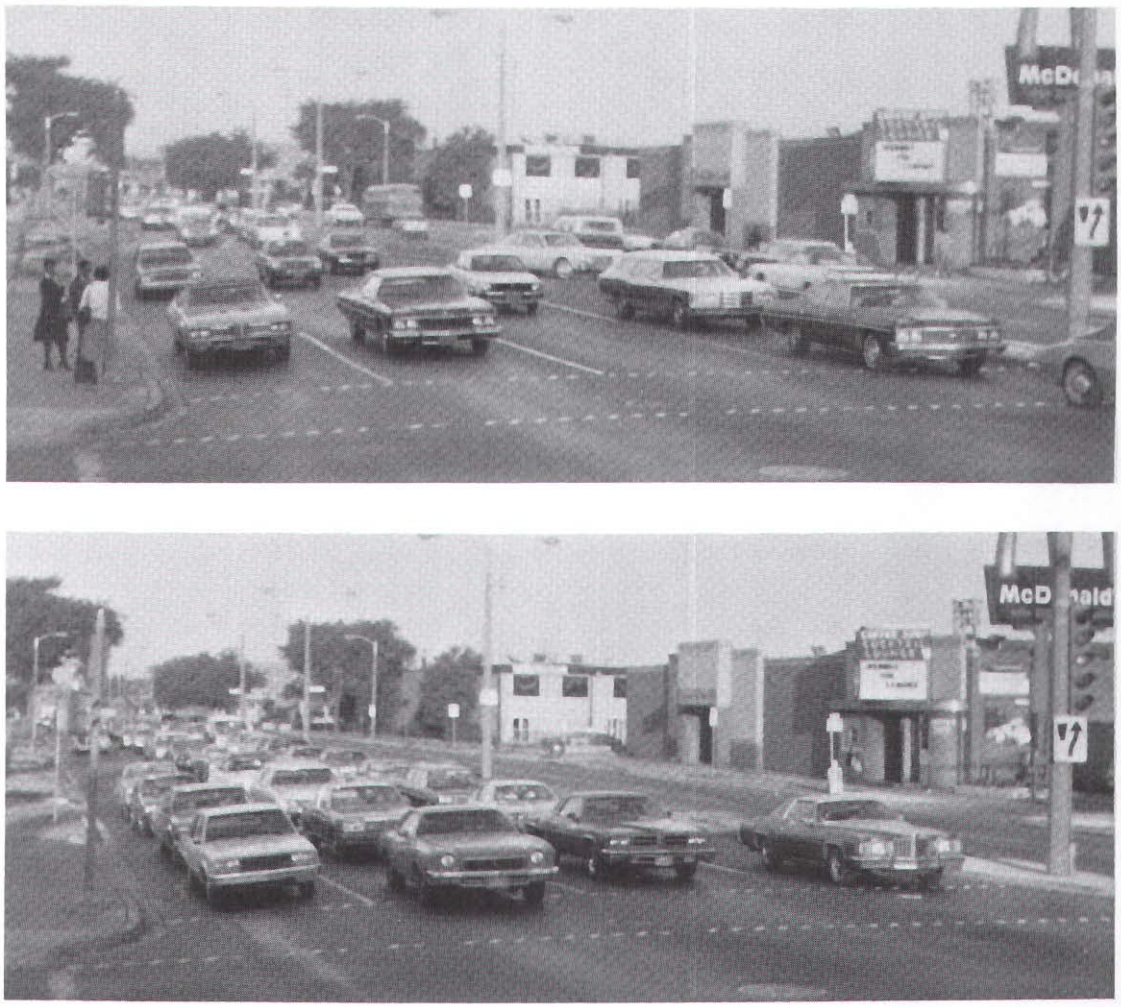
Appendix A

ARTERIAL STREET AND FREEWAY CAPACITY CONDITIONS

Figure A-1

TYPICAL ARTERIAL STREET "AT" AND "OVER" DESIGN CAPACITY OPERATING CONDITIONS



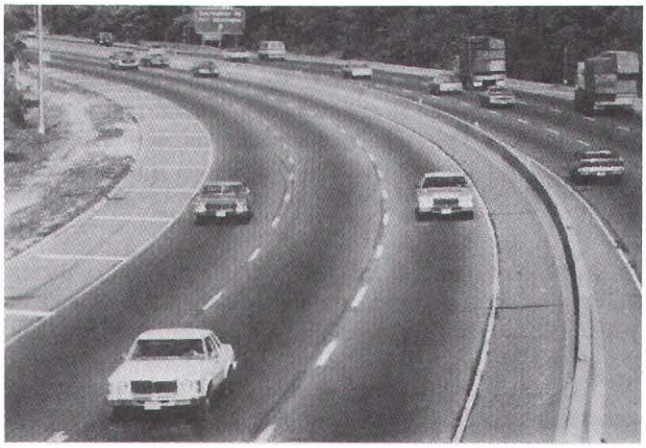
The above photographs of the eastbound approach to the intersection of W. Capitol Drive with N. 27th Street depict typical arterial street "at" design capacity and "over" design capacity operating conditions during the morning peak travel period. The upper photograph, depicting "at" design capacity operation, indicates a steady flow of traffic with some attendant restrictions on a driver's opportunity to change from one traffic lane to another, slightly reduced vehicle operating speed, and short delays at some intersections. The lower photograph, depicting "over" design capacity operation, indicates a heavier flow of traffic, precluding a driver's opportunity to change from one traffic lane to another, substantially reduced vehicle operating speeds, and extended delays at intersections caused by backups of vehicles at the intersection.

Source: SEWRPC.

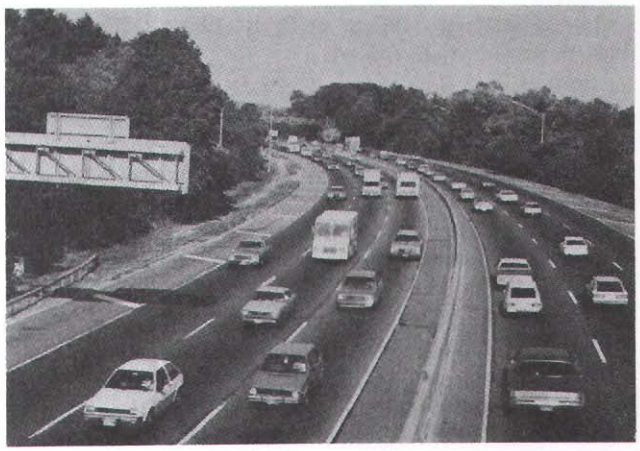
Figure A-2

BASIC FREEWAY SEGMENTS

LEVEL-OF-SERVICE A

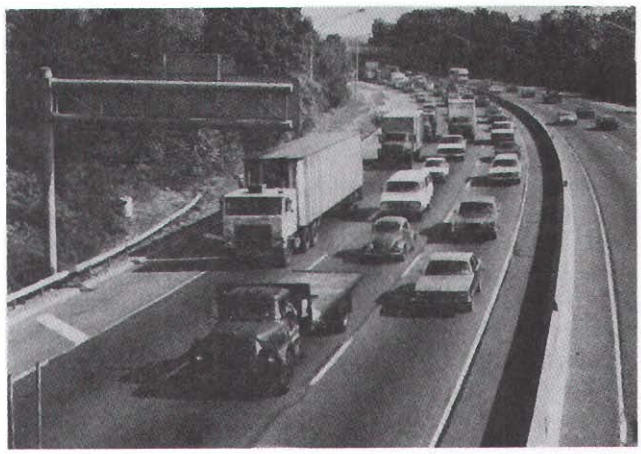


LEVEL-OF-SERVICE D

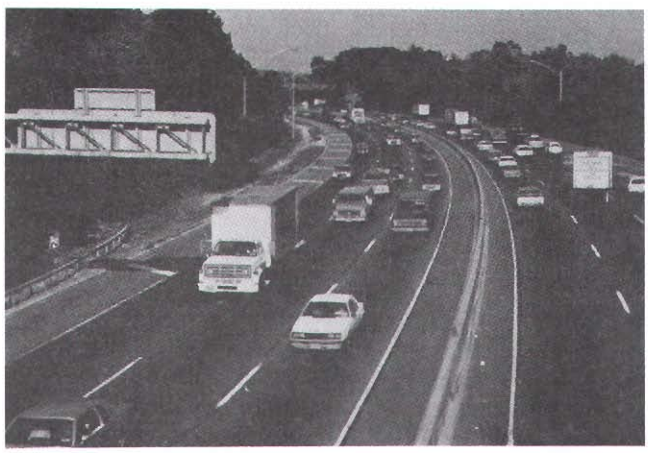


LEVEL-OF-SERVICE B

LEVEL-OF-SERVICE E



LEVEL-OF-SERVICE C



LEVEL-OF-SERVICE F

Source: Transportation Research Board, National Research Council, Highway Capacity Manual, Washington D. C., 1985.