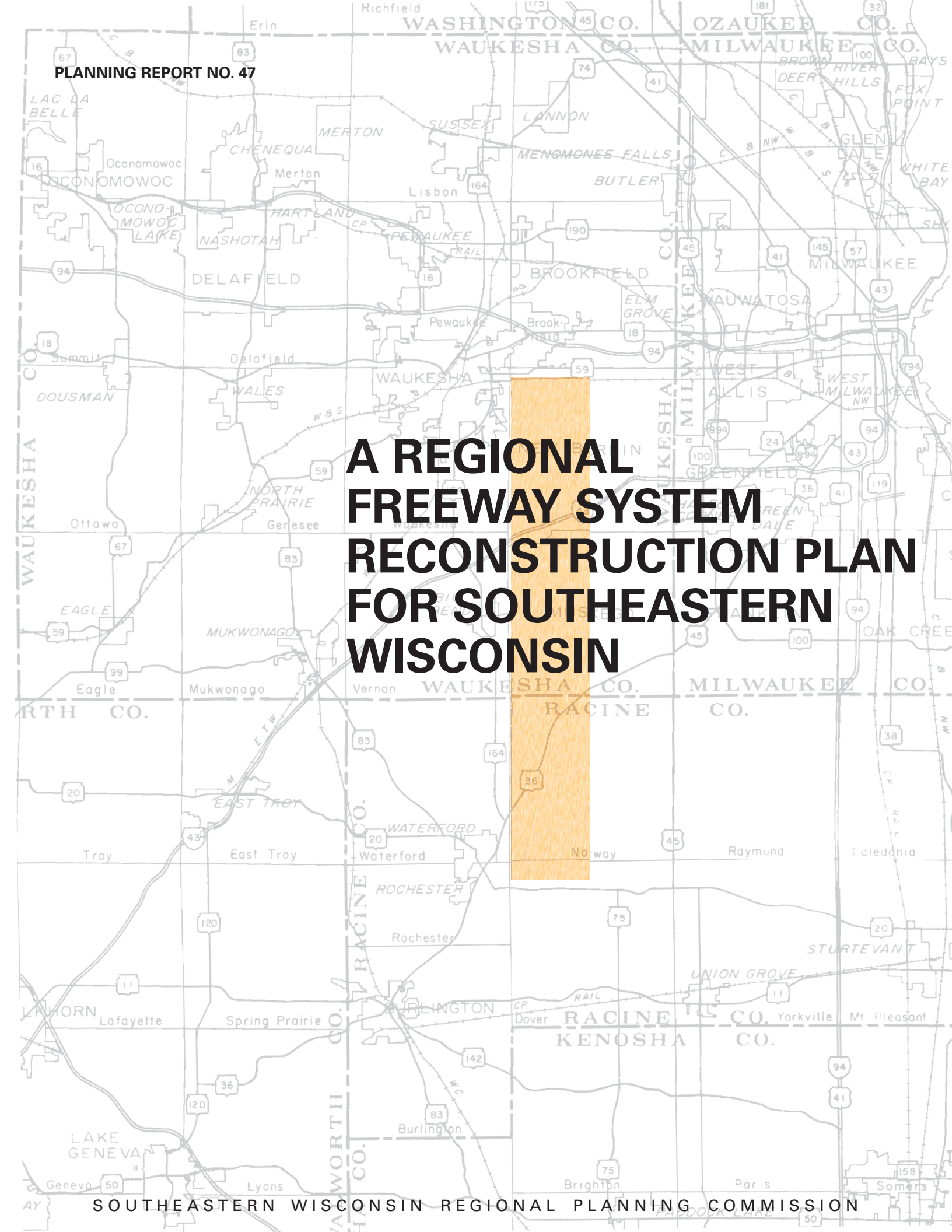
PLANNING REPORT NO. 47

A REGIONAL FREEWAY SYSTEM RECONSTRUCTION PLAN FOR SOUTHEASTERN WISCONSIN



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Special acknowledgment is due the following individuals who formerly served on the Technical Subcommittee: Mr. David A. Novak, Director of Public Works, Milwaukee County; Mr. Edward J. Friede, Systems Planning Manager, District 2, Wisconsin Department of Transportation.

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Special acknowledgment is due the following individuals who formerly served on the Advisory Committee during the course of the study: Mr. F. Thomas Ament, Milwaukee County Executive; Ms. Kathryn C. Bloomberg, Mayor, City of Brookfield; Mr. Frank Busalacchi, Secretary/Treasurer, Teamsters Local 200; Mr. William K. Fung, Wisconsin Division Administrator, Federal Highway Administration, U.S. Department of Transportation; Mr. Allen L. Morrison, Chairperson, Walworth County, Board of Supervisors; Ms. Karen Ordinans, Chairman, Milwaukee County, Board of Supervisors; Ms. Betty Pearson, Executive Vice-President, West Bend Chamber of Commerce; Mr. Philip J. Scherer, Executive Director, Transportation Development Association of Wisconsin; Ms. Katherine L. Smith, Chairperson, Ozaukee County Board of Supervisors.

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
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May 21, 2003

SUBJECT: Certification of Amendment to the Year 2020 Regional Transportation Plan for Southeastern Wisconsin (Regional Freeway System Reconstruction Plan)

TO: The Legislative Bodies of All the Local Units of Government within the Southeastern Wisconsin Region, Consisting of the Counties of Kenosha, Milwaukee, Ozaukee, Racine Walworth, Washington, and Waukesha

This is to certify that at a special meeting of the Southeastern Wisconsin Regional Planning Commission held at the State Fair Park Wisconsin Exposition Center, West Allis, Wisconsin, on the 21st day of May 2003, the Commission, by a vote of all Commissioners present, being 15 ayes and 1 nay, and by appropriate resolution, a copy of which is made a part hereof and is incorporated by reference to the same force and effect as if it had been specifically set forth herein in detail, did adopt an amendment to the fourth generation regional transportation plan, which plan was originally adopted by the Commission on the 3rd day of December, 1997, and amended on the 1st day of February 2001, and extended to the year 2025 on the 20th day of March 2003, as part of the master plan for the physical development of the Region. Said amendment is documented in SEWRPC Planning Report No. 47, *A Regional Freeway Reconstruction Plan for Southeastern Wisconsin*, published in May 2003, which is attached hereto and made a part hereof. Such action taken by the Commission is hereby recorded on and is part of said plan, which plan is hereby transmitted to all concerned levels and agencies of government in the Southeastern Wisconsin Region for implementation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal and cause the Seal of the Southeastern Wisconsin Regional Planning Commission to be hereto affixed.

Dated at the City of Pewaukee, Wisconsin, this 21st day of May 2003.

Thomas H. Buestrin, Chairman
Southeastern Wisconsin
Regional Planning Commission

Attest:

Philip C. Evenson

Philip C. Evenson, Deputy Secretary

RESOLUTION NO. 2003-04

RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AMENDING THE ADOPTED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN, THE PLAN BEING A PART OF THE MASTER PLAN FOR THE PHYSICAL DEVELOPMENT OF THE REGION CONSISTING OF THE COUNTIES OF KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH, WASHINGTON, AND WAUKESHA IN THE STATE OF WISCONSIN

WHEREAS, pursuant to Section 66.945(10) of the *Wisconsin Statutes*, the Southeastern Wisconsin Regional Planning Commission, at a meeting held on the 3rd day of December 1997, duly adopted a regional transportation system plan as documented in SEWRPC Planning Report No. 46, *A Regional Transportation System Plan for Southeastern Wisconsin: 2020*; and

WHEREAS, it is envisioned in the adopted regional transportation system plan that the plan will be amended and extended from time to time as elements of the plan are prepared in greater detail and/or as changing conditions may indicate or require; and

WHEREAS, the adopted regional transportation system plan contains recommendations attendant to the freeway and arterial street and highway system and the public transit systems of the Region; and

WHEREAS, the Secretary of the Wisconsin Department of Transportation, recognizing that the regional freeway system was nearing the end of its useful and functional life, requested that the Commission undertake a special study for the purpose of developing a freeway reconstruction plan aimed at ensuring that growing traffic levels can be handled safely, effectively, and efficiently, thereby helping to meet the existing and future transportation needs of the Region and the State; and

WHEREAS, the Commission created an Advisory Committee to guide the conduct of the regional freeway reconstruction study, such Committee charged by the Commission with the responsibility of identifying a regional consensus on the specific elements of a regional freeway reconstruction plan; and

WHEREAS, the preliminary recommendations of that Advisory Committee were subjected to a lengthy and extensive public review process, including review and comment on the plan recommendations by the county boards of supervisors and county executives in the Region; and

WHEREAS, the Advisory Committee has taken into account all of the public comment received on its preliminary recommendations and has reflected upon all of the actions on the preliminary recommendations taken by the county boards of supervisors, county executives, and other local governmental bodies in the Region; and

WHEREAS, the Advisory Committee has concluded its work and has recommended a final freeway reconstruction plan that includes, among many recommendations, the provision of additional lane capacity on certain freeway segments not presently proposed in the adopted transportation system plan for widening; and

WHEREAS, the results of the regional freeway reconstruction study indicate that the regional freeway reconstruction plan endorsed by the Advisory Committee would, if implemented by the Wisconsin Department of Transportation, improve the safety and efficiency of the regional freeway system, with negligible impacts upon ambient air quality and with impacts attendant to land acquisition that do not disproportionately affect low-income or minority population groups; and

WHEREAS, the regional freeway reconstruction plan is documented in SEWRPC Planning Report No. 47, *A Regional Freeway System Plan for Southeastern Wisconsin*, published in May 2003.

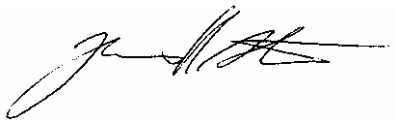
NOW THEREFORE, BE IT HEREBY RESOLVED:

FIRST: That the regional transportation plan for the year 2020, being a part of the master plan for the physical development of the Region and set forth in SEWRPC Planning Report No. 46, which plan was adopted by the Commission as part of the master plan on the 3rd day of December 1997, amended on the 1st day of February 2001, and extended to the year 2025 on the 20th day of March 2003, be and hereby is amended to incorporate the regional freeway reconstruction plan recommendations as set forth in SEWRPC Planning Report No. 47, *A Regional Freeway System Plan for Southeastern Wisconsin*, May 2003.

SECOND: That the said SEWRPC Planning Report No. 47, together with all maps, plats, charts, programs, and descriptive and explanatory matter contained therein, are hereby made a matter of public record, and the originals and true copies thereof shall be kept at all times at the offices of the Southeastern Wisconsin Regional Planning Commission, presently located in the City of Pewaukee, Waukesha County, and State of Wisconsin, or at any subsequent office that the Commission may occupy, for examination and study by whomsoever may desire to examine same.

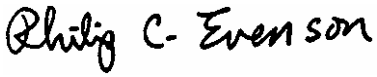
THIRD: That a true, correct, and exact copy of this resolution and the aforereferenced planning report shall be forthwith distributed to the Governor, the Secretary of the Wisconsin Department of Transportation, the Legislative Reference Bureau, and to such other governmental units, agencies, or individuals as the law may require, or as the Commission or its Executive Committee or its Executive Director in their discretion shall determine and direct.

The foregoing resolution upon motion duly made and seconded was regularly adopted at the meeting of the Southeastern Wisconsin Regional Planning Commission held on the 21st day of May 2003, the vote being: Ayes 15, Nays 1.



Thomas H. Buestrin, Chairman

ATTEST:



Philip C. Evenson, Deputy Secretary

PLANNING REPORT
NUMBER 47

A REGIONAL FREEWAY SYSTEM RECONSTRUCTION PLAN FOR SOUTHEASTERN WISCONSIN

May 2003

Prepared by the

Southeastern Wisconsin Regional Planning Commission
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Inside Region $10.00
Outside Region $20.00

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May 21, 2003

STATEMENT OF THE CHAIRMAN

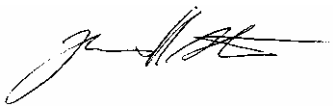
In carrying out its responsibilities as the comprehensive regional planning agency for southeastern Wisconsin, the Commission has prepared and adopted a regional transportation system plan. That plan has elements relating to arterial streets and highways, including freeways; public transit; bicycle and pedestrian systems; and aviation facilities. Those plan elements are routinely updated and extended from time to time.

At the request of the Secretary of the Wisconsin Department of Transportation, the Commission undertook a special study attendant to the needs of the regional freeway system in southeastern Wisconsin. That system, about 270 miles in length, is of critical importance not only in meeting the mobility needs of the nearly two million people that live in the Region and the businesses and industries that are located in the Region, but also in terms of serving as a gateway to travel in Wisconsin. Indeed, the system serves about one-third of all daily travel in the Region. Recognizing that the regional freeway system was nearing the end of its useful and functional life, the Commission was asked by the Secretary to examine the system with a view toward identifying a reconstruction plan that would enjoy strong local support. The Secretary indicated that the freeway reconstruction plan must ensure that growing traffic levels can be handled safely, effectively, and efficiently; that the plan would meet the existing and future transportation needs of the Region; and that the plan would provide pertinent information to allow State legislators and other elected officials to make well-informed decisions about critical freeway transportation needs.

The freeway reconstruction plan set forth in this document meets the objectives set forth by the Secretary. Importantly, the plan was guided in its development by a 25-member Advisory Committee that included the chief elected officials from the seven counties of the Region and from key municipalities. The plan set forth in this report was subjected to a lengthy and extensive public review process. The plan recommends that as the Wisconsin Department of Transportation approaches the reconstruction over the next three decades of all segments of the regional freeway system, the Department address numerous identified design and safety deficiencies documented in the report. Moreover, the plan recommends that, in an effort to reduce traffic congestion in the long run, additional lane capacity be provided on a total of 127 miles of the most heavily used freeways in the Region.

Like all Commission plans, this freeway reconstruction plan is advisory to the Wisconsin Department of Transportation and to the State Legislature and the Governor which oversee that Department and which must provide the funding necessary to meet system reconstruction requirements. The Commission very much appreciates the efforts made by State and local officials as this planning effort was conducted over a period of many months. The Commission believes that the plan being submitted will help provide a sound framework for the reconstruction of the regional freeway system, bearing in mind that there are other needs as well that will have to be met in the coming years, including the further development of public transit in the Region and the continued renewal and improvement of the surface arterial street system.

Very truly yours,



Thomas H. Buestrin
Chairman

TABLE OF CONTENTS

LIST OF APPENDICES

Appendix Page

Appendix Page

Appendix Page

LIST OF TABLES

Chapter VI

LIST OF FIGURES

LIST OF MAPS

Chapter II

Chapter III

Chapter IV

Chapter V

Chapter VI

Chapter VII

Chapter I

INTRODUCTION

This report presents a recommended plan and program for the reconstruction of the freeway system of Southeastern Wisconsin. The recommended plan documented in this report identifies those segments of the freeway system which will require reconstruction over the next thirty years, and recommends whether each freeway segment to be reconstructed should be rebuilt as is, or with minor redesign, with substantial redesign, or with additional traffic-carrying capacity, that is, additional traffic lanes. The recommendations from this report will necessarily require further consideration through preliminary and final engineering, and depending upon the form of freeway reconstruction recommended, the preparation of an environmental assessment or impact statement prior to construction.

This report also documents the findings of the study leading to this plan. These findings include a review of the role and function of the freeway system, as well as a determination of the remaining life of each segment of the freeway system and the need for, and necessary timing of, its reconstruction. The findings of the study also include an identification of the physical geometric design problems of the freeway system, the traffic safety problems of the freeway system, and the traffic congestion problems of the freeway system. The study findings also include an evaluation of the costs and benefits of alternatives with respect to the reconstruction of the freeway system.

At the request of the Wisconsin Department of Transportation, which is the owner and manager of the freeway system, the study was conducted by the Southeastern Wisconsin Regional Planning Commission under the guidance of an advisory committee made up of representatives from Federal, State, County, and local governments, and the business, labor, and environmental communities. The Regional Planning Commission is the official areawide planning agency for the seven county Southeastern Wisconsin Region and the officially designated metropolitan transportation planning organization (MPO) for the Region. Consideration of the reconstruction of the freeway system was conducted within the context of the Commission's adopted regional land use and transportation system plans.[1] As may be necessary, this report is intended to serve as a basis for amending the regional transportation system plan.

NEED FOR STUDY

The principal reason for the conduct of the study was the anticipated need to initiate and complete the reconstruction of the freeway system over the next 30 years. The freeway system is of critical importance to daily travel within Southeastern Wisconsin, as approximately one-third of all travel within the Region on an average weekday

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[1] *SEWRPC Planning Report No. 45,* A Regional Land Use Plan for Southeastern Wisconsin: 2020*, and SEWRPC Planning Report No. 46,* A Regional Transportation System Plan for Southeastern Wisconsin: 2020.

is made on the freeway system. Segments of the freeway system do no meet current freeway design standards including lane drops at interchanges, left-hand entrance and exit ramps, inadequate merging and diverging lane lengths, and inadequate shoulders and lateral clearance. The freeway system is also experiencing increasing traffic congestion. Upon its reconstruction, the freeway system may be expected to serve the Region and the State for 50 years. The costs and benefits of addressing the freeway system's acknowledged deficiencies deserve careful consideration before system reconstruction. The most cost-effective time to correct deficiencies will be during the reconstruction of the system. Freeway system reconstruction may be expected to entail substantial public resources; retrofitting the freeway system ten-to-twenty years after reconstruction would again require substantial public reinvestment.

FORMAT OF REPORT

This report consists of seven chapters. This first chapter provides an introduction to the study report. Chapter II, "Overview of the Regional Freeway and Transportation System," provides a description of the regional freeway system along with the other components of the regional transportation system. The current and future importance of the freeway and other component systems in serving regional travel, and the financial resources presently used in the development and operations of the regional transportation system are presented. Chapter III, "The Function of the Freeway System and Its Components," describes the function of each major segment of the regional freeway system, as well as of the freeway system as a whole. Chapter IV, "The Condition of the Freeway System and Need for Reconstruction," describes the age and expected remaining life of each freeway segment, and the time period within which each freeway segment may require reconstruction. Chapter V, "Freeway System Problems and Deficiencies: Physical Design, Traffic Safety, and Traffic Congestion," describes for each freeway segment and for the freeway system as a whole, its physical geometric design deficiencies, traffic safety problems, and traffic congestion problems. In this chapter, the existing and potential future traffic congestion problems of the freeway system are identified, including the traffic congestion which may be expected to remain even with the implementation of planned public transit and other transportation improvement measures recommended in the regional transportation system plan, and potential public transit and other alternatives which go beyond the presently adopted regional transportation system plan. Chapter VI, "Design, Evaluation, and Consideration of Freeway System Reconstruction Alternatives," presents and evaluates alternatives for rebuilding the freeway system segment by segment and for the freeway system as a whole and describes the preliminary recommended freeway system plan and attendant costs and benefits. Chapter VII, "Recommended Freeway System Plan and Program," describes the final recommended freeway system plan and a potential program to implement the final plan.

Chapter II

OVERVIEW OF REGIONAL FREEWAY AND TRANSPORTATION SYSTEM

INTRODUCTION

This chapter provides a description of the regional freeway system, including its extent and use. The chapter also describes the other major elements of the regional transportation system, including surface arterial streets and highways and public transit. The chapter concludes with fiscal data and a summary of the presently adopted regional land use and transportation plans.

REGIONAL FREEWAY SYSTEM

A freeway is defined as a divided arterial highway with full control of access, including grade separations at all intersections. All access to a freeway is provided at interchanges through on- and off-ramps; there are no driveways or street intersections, and also no at-grade railway crossings or movable bridges over watercourses[1]. Of all streets and highways, freeways provide the highest traffic carrying capacity—about two and one-half times that of a standard surface arterial street or highway with the same number of traffic lanes—and the highest traffic speeds—50 to 65 miles per hour. As a result, freeways receive significantly more daily use than a standard surface arterial street. In 1995, freeways in Southeastern Wisconsin on average carried 47,300 vehicle miles of travel on an average weekday per mile, compared to 7,700 vehicle miles of travel on an average weekday per mile for standard surface arterials.

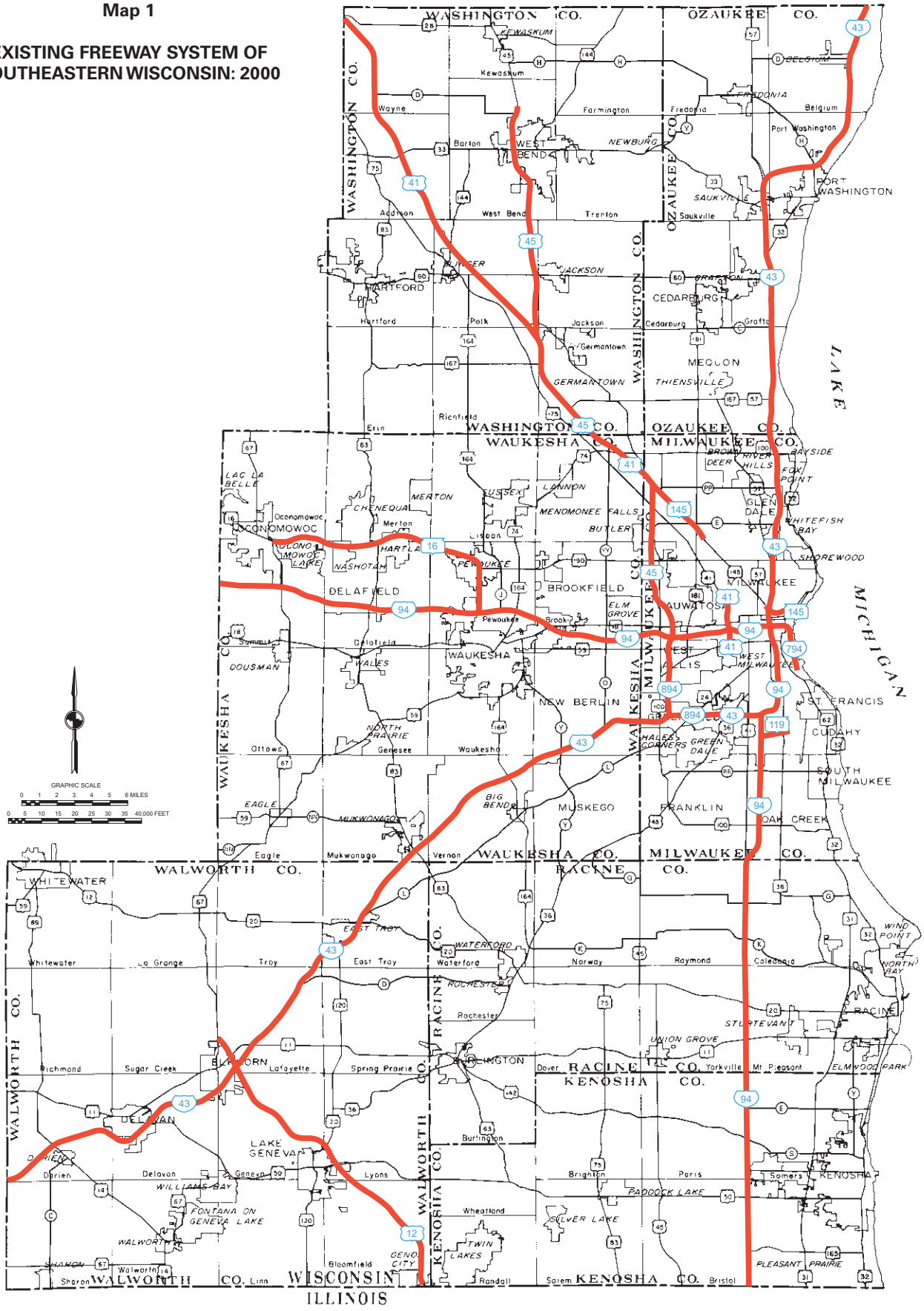
The existing freeway system of Southeastern Wisconsin is shown on Map 1 and summarized in Table 1. There are approximately 273 miles of freeways within Southeastern Wisconsin, including 172 miles of four traffic lane and 99 miles of six traffic lane, and two miles of eight traffic lane freeways.

Current adopted regional and county plans propose only limited improvement and expansion of this freeway system. The only proposed system expansion is the extension of USH 12 through Walworth County from Elkhorn to Whitewater, and the extension of the STH 16 Oconomowoc bypass. The only proposed system widening is on IH 43 from four to six lanes from Bender Road in Milwaukee County to Highland Road in Ozaukee County, a distance of about eight miles. Four new interchanges connecting the freeway system to surface arterial streets are proposed, including IH 94 with CTH ML in Kenosha County, IH 94 with Calhoun Road in Waukesha County,

[1] *Rare exceptions to the characteristics that define a freeway may exist on some freeway segments.*

Map 1

EXISTING FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN: 2000



Source: SEWRPC.

Table 1

EXISTING STREET SYSTEM OF SOUTHEASTERN WISCONSIN: 1995

County	1995 Street Mileage			
	Arterial		Collector and Land Access	Total
	Freeway	Surface Arterial		
Kenosha	12.0	305.5	661.8	979.3
Milwaukee	69.2	706.2	2,075.0	2,850.4
Ozaukee	27.4	261.1	561.3	849.8
Racine	12.0	337.2	841.1	1,190.3
Walworth	50.0	380.0	1,007.8	1,437.8
Washington	42.7	356.5	949.4	1,348.6
Waukesha	59.6	657.9	1,893.9	2,611.4
Total	272.9	3,004.4	7,990.3	11,267.6

Source: SEWRPC.

IH 43 with Highland Road in Ozaukee County, and IH 43 with CTH O in Walworth County[2]. The expansion of one interchange—IH 94 with CTH P in Waukesha County—is proposed to serve travel in both directions on IH 94.

REGIONAL TRANSPORTATION SYSTEM

Average Weekday Travel on the Transportation System

The freeway system of Southeastern Wisconsin is a critical element of the regional transportation system, as it carries about one-third of all travel in Southeastern Wisconsin on an average weekday. The types of travel on an average weekday in Southeastern Wisconsin are shown on Figure 1. Travel can be divided into personal travel and freight travel. Personal travel includes travel by the household residents of the Region, as well as by non-residents, for work, shopping, personal business, and other purposes. Personal travel includes travel by personal vehicle (automobile, van, sport utility vehicle, or truck) or urban public transit, walking and bicycling, taxi and paratransit, and motorcycle.

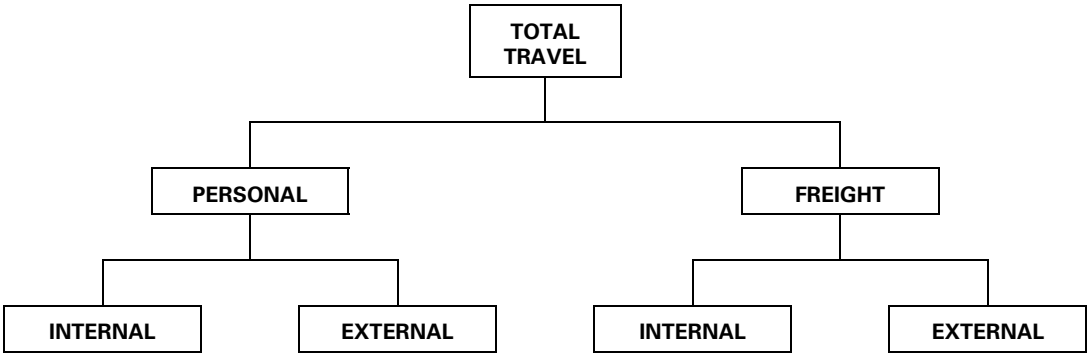
Travel can be further divided into travel internal to the seven county Southeastern Wisconsin Region and travel external to that Region. Internal travel to the Region consists of travel where both ends of the trip lie within the Region. External travel to the Region consists of travel where either one trip end, or both trip ends, are located outside the region.

The Commission conducts surveys of travel within Southeastern Wisconsin approximately every ten years in coordination with the U.S. Census. The last such survey was conducted in 1991, and the next travel survey will be conducted in 2001. Figure 2 summarizes the results of the personal travel element of the 1991 survey. The overwhelming majority of personal travel occurring in Southeastern Wisconsin on an average weekday is by personal vehicle on the Region's streets and highways. On an average weekday in 1991, about 92 percent of total personal travel, including both internal personal and external personal travel, was by personal vehicle

[2] *The Regional Planning Commission is currently conducting a review and update of the Walworth County Jurisdictional Highway System Plan in cooperation with Walworth County, each municipality within Walworth County, and the Wisconsin Department of Transportation. The preliminary recommendations of the plan review and update propose to remove the planned interchange of IH 43 with CTH O from the county highway and regional transportation plans.*

Figure 1

CLASSIFICATION OF TRAVEL WITHIN SOUTHEASTERN WISCONSIN ON AN AVERAGE WEEKDAY



Source: SEWRPC.

(automobile, van, sport utility vehicle, or truck). About 3 percent of all personal travel on an average weekday was made by public transit, either urban public bus transit with respect to internal travel, or intercity bus, Metra commuter rail, or Amtrak rail with respect to external travel. School bus trips represent about 4 percent of total personal travel. Bicycle and walking, motorcycle, taxi, and airplane travel each represent less than 1 percent of all personal travel made within or through Southeastern Wisconsin on an average weekday. Clearly, the Region's street and highway system, and its freeway system as the highest capacity and level of service element of that street and highway system, are of critical importance to serving the overwhelming majority of daily personal travel within Southeastern Wisconsin. The variation of personal travel made for each county within the Region, and for the Kenosha, Milwaukee, and Racine central business districts, is shown on Tables 2 and 3. About 13 percent of personal travel in the Milwaukee central business district is made on public transit, as compared to 6 percent for Milwaukee County, and 3 percent for the Region as a whole.

The freight travel by truck within Southeastern Wisconsin on an average weekday in 1991 is shown on Figure 3. Of all truck travel which occurred within Southeastern Wisconsin in 1991, about 92 percent is internal to Southeastern Wisconsin, that is, has both trip ends located within Southeastern Wisconsin. Trucks are the dominant form of freight traffic, carrying—in Southeastern Wisconsin—nearly all internal freight traffic and most external freight traffic. According to the U.S. Department of Transportation and Wisconsin Department of Transportation, about 88 percent by weight and 93 percent by value of all freight moved within and to and from the State of Wisconsin is moved by truck, with 7 percent by weight and 3 percent by value moved by rail. With respect to only freight traffic moved into and out of Wisconsin, about 53 percent is moved by truck, 27 percent by rail, 20 percent by water, and less than 1 percent by air.

The dominant form of personal travel, both internal and external, is then, by automobile over streets and highways. In addition, the dominant form of freight travel, both internal and external, is by truck over streets and highways.

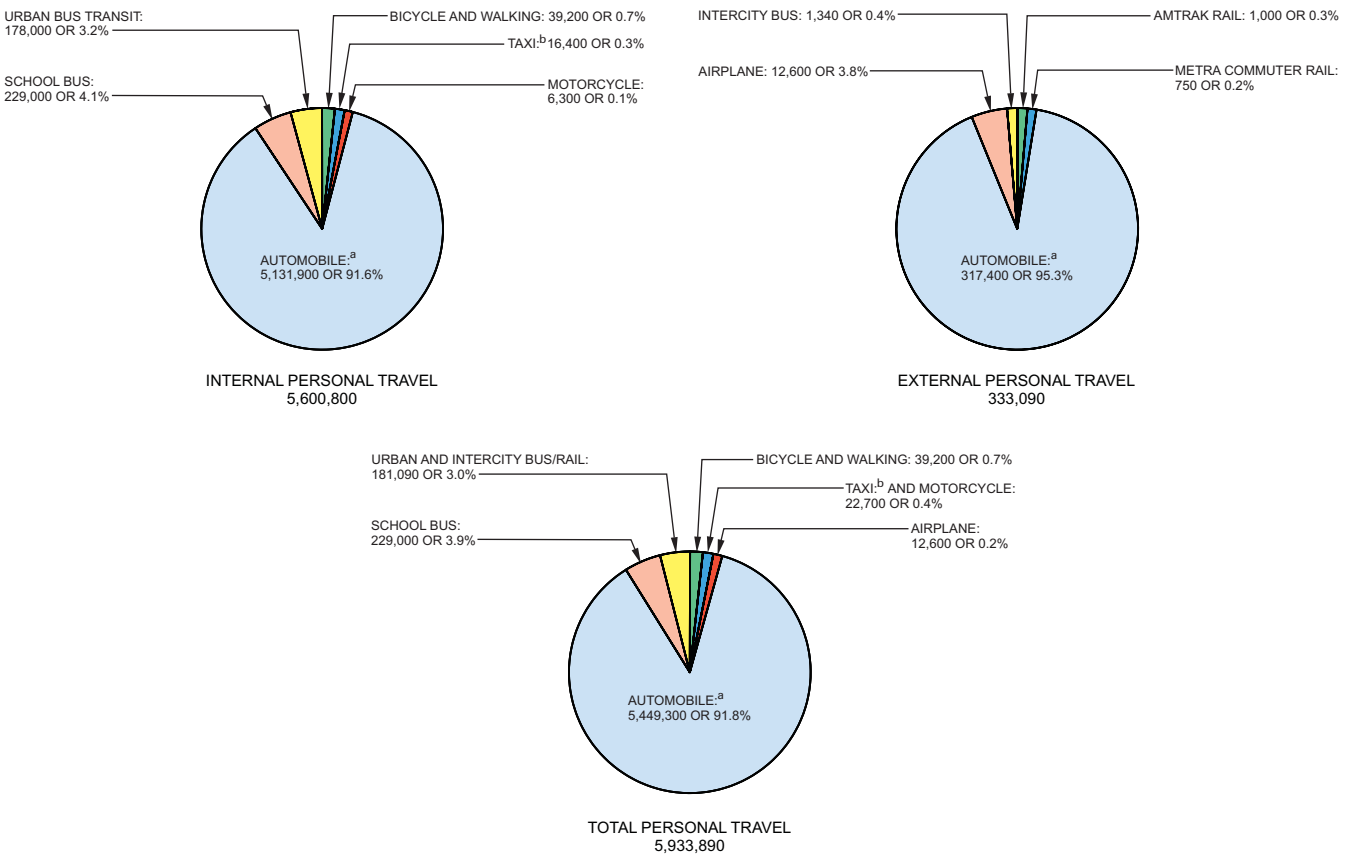
STREET AND HIGHWAY SYSTEM OF SOUTHEASTERN WISCONSIN

There were an estimated 11,268 miles of streets and highways in the seven-county Region in 1995 (see Table 4). The street and highway system must serve several important functions, including providing for the movement of through vehicular traffic; providing for access of vehicular traffic to abutting land uses; providing for the

Figure 2

PERSONAL TRAVEL WITHIN SOUTHEASTERN WISCONSIN: 1991

NUMBER OF TRIPS ON AN AVERAGE WEEKDAY



[a] INCLUDES AUTOMOBILES, VANS, SPORT UTILITY VEHICLES, AND TRUCKS.

[b] INCLUDES TAXIS AND PARATRANSIT VEHICLES.

Source: SEWRPC.

movement of pedestrian and bicycle traffic; and serving as the location for utilities and stormwater drainage facilities.

Two of these functions—traffic movement and land access—are basically incompatible. As a result, street and highway system design is based upon a functional grouping or classification of streets and highways, based upon primary function served. Three functional classifications of streets and highways are recognized: 1) arterial streets; 2) collector streets, and 3) land access streets.

Arterial streets are defined as streets and highways which are principally intended to provide a high degree of travel mobility, serving the through movement of traffic and providing transportation service between major subareas of an urban area or through the area. Together, the arterial streets should form an integrated, areawide system. Access to abutting property may be a secondary function of some types of arterial streets and highways, but it should always be subordinate to the primary function of traffic movement.

Land access streets are defined as streets and highways which are intended to serve primarily as a means of access to abutting properties, principally serving the residential areas of a community.

Table 2

MODE OF PERSONAL TRAVEL WITHIN SOUTHEASTERN WISCONSIN ON AN AVERAGE WEEKDAY BY COUNTY: 1991

County	Personal Vehicle		Public Transit		Other[a]	
	Trips	Percent	Trips	Percent	Trips	Percent
Kenosha	359,420	94.8	4,110	1.1	15,370	4.1
Milwaukee	2,578,690	90.0	158,960	5.6	124,520	4.4
Ozaukee	213,940	93.5	920	0.4	14,010	6.1
Racine	542,120	94.1	6,440	1.1	27,880	4.8
Walworth	188,010	92.8	460	0.2	14,160	7.0
Washington	255,980	92.6	1,280	0.5	19,140	6.9
Waukesha	993,410	92.9	5,900	0.6	69,270	6.5
Region	5,131,570	91.7	178,070	3.2	284,350	5.1

[a]*Includes school bus, bicycle, walk, and taxi trips.*

Source: SEWRPC.

Table 3

MODE OF PERSONAL TRAVEL ON AN AVERAGE WEEKDAY WITHIN THE KENOSHA, MILWAUKEE, AND RACINE CENTRAL BUSINESS DISTRICTS: 1991

City	Personal Vehicle		Public Transit		Other[a]	
	Trips	Percent	Trips	Percent	Trips	Percent
Kenosha	11,540	96.2	250	2.1	200	1.7
Milwaukee	119,850	83.2	18,800	13.1	5,320	3.7
Racine	17,240	94.6	430	2.4	550	3.0

[a]*Includes school bus, bicycle, walk, and taxi trips.*

Source: SEWRPC.

Table 4

DISTRIBUTION OF TOTAL STREET AND HIGHWAY MILEAGE WITHIN THE REGION BY COUNTY: 1995

County	1995			
	Arterial	Collector and Land Access	Total[a]	Arterial Mileage as a Percentage of Total Mileage
Kenosha	317.5	661.8	979.3	32.4
Milwaukee	775.4	2,075.0	2,850.4	27.2
Ozaukee	288.5	561.3	849.8	33.9
Racine	349.2	841.1	1,190.3	29.3
Walworth	430.0	1,007.8	1,437.8	29.9
Washington	399.2	949.4	1,348.6	29.6
Waukesha	717.5	1,893.9	2,611.4	27.5
Region	3,277.3	7,990.3	11,267.6	29.1

[a]*Total street and highway mileage does not include private streets and roads or roadways in public parks and on institutional lands.*

Source: SEWRPC.

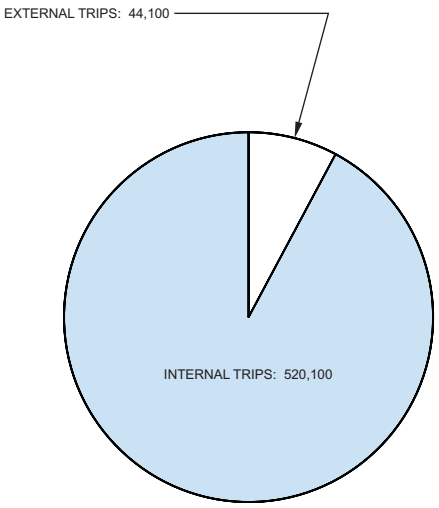
Collector streets are defined as streets and highways which are intended to serve primarily as connections between the arterial system and the land access street system. In addition to collecting traffic from, and distributing traffic to, the land access streets, the collector streets usually provide the same principal function as land access streets, that of providing access to abutting property. As a result, collector and land access streets are sometimes combined and referred to as nonarterial, or local, streets.

Arterial streets account for about one-third of the mileage of the total street and highway system. The Regional Planning Commission has long recommended that arterial streets be spaced at about one-half mile intervals in high-density areas, one-mile intervals in medium-density areas, two-mile intervals in low-density areas, and intervals of more than two miles in rural areas. To serve travel effectively, and to make efficient use of public resources, the arterial street system should be planned as an integrated system, irrespective of jurisdictional boundaries and jurisdictional responsibilities for streets and highways, with consideration of existing and future traffic volumes, and with traffic capacities fitted to serve those traffic volumes.

Figure 3

FREIGHT TRAVEL BY TRUCK WITHIN SOUTHEASTERN WISCONSIN: 1991

NUMBER OF TRIPS ON AN AVERAGE WEEKDAY



Source: SEWRPC.

The Commission's regional transportation planning addresses only the arterial street and highway element of the total street and highway system. Arterial streets and highways are the only element of the total street and highway system for which existing and future traffic volume, and the need for additional traffic lanes or for a new arterial facility to relieve traffic, is a consideration in facility and system design.

Working with local governments and the Wisconsin Department of Transportation, the Commission has defined the arterial street system of the Region for over 35 years. The definition of arterials has been determined by an evaluation of four major factors: 1) traffic characteristics—traffic volume and type, operating speeds, and average trip length; 2) physical characteristics—horizontal and vertical alignment, pavement width, and pavement type; 3) system integration—system continuity and facility spacing; and 4) land use service—the areawide significance of the land use activities served.

Collector and land access streets should form a street system within neighborhoods, with the boundaries of those neighborhoods determined by arterial streets, or other constructed, or natural boundaries. Desirably, collector and land access streets should not extend directly through a neighborhood, or from neighborhood to neighborhood. Through traffic may begin to occur on the collector and land access streets, particularly if the arterial street system is experiencing traffic congestion. Neighborhood residents experience traffic concerns at relatively low levels of traffic volume, specifically, 1,500 to 2,500 vehicles per average weekday, or about one-eighth to one-fifth of the potential traffic-carrying design capacity of a two-lane urban arterial street. The collector and land access street system within a neighborhood should be designed to discourage through traffic from traveling within the neighborhood, but should also be designed to permit reasonably direct travel—by personal vehicle, bicycle, and walking—within the neighborhood by its residents to neighborhood parks, neighborhood schools, neighborhood commercial centers, and as well to all parts of the neighborhood, and to each arterial street along the neighborhood boundary. Otherwise, traffic internal to a neighborhood may almost exclusively be made by automobile, and unnecessarily over the arterials which form the boundaries of the neighborhood.

Arterial Street and Highway System

The arterial street and highway system of the Region may be further described and classified in a number of different ways. The arterial street system may be divided into freeway facilities and nonfreeway or standard surface arterial streets and highways. A freeway is a special type of arterial—the highest type of arterial—providing the highest degree of mobility and the most limited degree of access. A freeway is a divided arterial highway with full control of access and grade separations at all intersections. Standard arterial streets and highways are arterials with at-grade intersections and may provide as well direct access to abutting properties through driveways.[3]

Table 5 shows the design capacity of freeways and standard arterials. The design capacity is the average number of vehicles per average weekday that an arterial can carry before it begins to experience traffic congestion during morning and afternoon peak traffic periods. The design capacity of an arterial is less than the maximum capacity of traffic that an arterial may carry under extremely congested conditions. A freeway provides approximately two and one-half times more design capacity than a standard surface arterial with the same number of lanes. Compared to a standard surface arterial, a freeway has no at-grade intersections with other arterials at which capacity must be shared, and has no interference from abutting parking or driveways, local streets, or pedestrian traffic.

Streets and highways may also be classified according to jurisdiction. Jurisdictional classification establishes which level of government—State, county, or local—has responsibility for the design, construction, maintenance, and operation of each segment of the total street and highway system. The existing jurisdictional highway subsystems are the result of a long evolutionary process influenced by many complex political, administrative, financial, and engineering considerations and constraints. Over the past 30 years, the Commission has recommended changes in the jurisdictional classification of the arterial street and highway system so that the arterial street system is indeed grouped into logical subsystems of jurisdictional responsibility with the appropriate streets and highways under the jurisdiction of each level of government—State, county, and local. The county jurisdictional highway system plans prepared by the Commission are based upon criteria established by the Commission in cooperation with Federal, State, County, and local units of government which include: 1) trip service—the average trip length on each segment during an average weekday; 2) land use service—the areawide significance of land use activities to be connected and served; and 3) facility operational characteristics and system continuity, including facility spacing, traffic volume, traffic mobility, and land access. State trunk highways should be those facilities intended to provide the highest level of mobility, to serve trips with the longest length, to provide minimal land access, to serve land uses of regional and statewide significance, and to have interregional continuity. State trunk highways are those arterial facilities which would principally serve travel through a county, and travel between counties. The freeway system of Southeastern Wisconsin is entirely on the State trunk highway system. County trunk highways should be those arterial facilities intended to provide an intermediate level of traffic mobility and land access, to serve land uses of countywide significance, and to have intercommunity continuity. County trunk highways are those arterial facilities which would principally serve travel between the various municipalities of a county. Local or municipal arterial streets are intended to be those facilities that provide the lowest level of arterial traffic mobility and the highest degree of arterial land access, and which have intra-community continuity and serve principally arterial travel within a municipality. Table 6 presents the distribution of existing arterial highway mileage within the Region in 1995 by State, county, and the local jurisdictional classification.

The average weekday traffic volume on each segment of the arterial street and highway system within the Region in 1995 is graphically displayed on Map 2. The estimate of average weekday traffic volume is based upon traffic volume counting conducted principally by the Wisconsin Department of Transportation, supplemented by county and municipal governments, particularly the City of Milwaukee. The magnitude of arterial street and traffic volume can also be measured in terms of total arterial system average weekday vehicle-miles of travel, which is the average weekday traffic volume on each segment of arterial highway multiplied by the length in miles of each

[3] *An expressway is a divided surface arterial highway with full or partial control of access and with grade separations at some, but not necessarily all, intersections.*

Table 5

AVERAGE WEEKDAY TRAFFIC CARRYING DESIGN CAPACITY OF ARTERIAL STREETS

Arterial Facility Type	Design Capacity[a] (vehicles per average weekday)
Freeway	
Four-Lane	60,000
Six-Lane	90,000
Urban Standard Arterial	
Two-Lane	13,000
Four-Lane Undivided	17,000
Four-Lane Divided	25,000
Six-Lane Divided	35,000
Eight-Lane Divided	45,000
Rural Standard Arterial	
Two Lane	7,000
Four-Lane Divided	25,000

[a]*Design traffic carrying capacity is the average number of vehicles an arterial may carry before it begins to experience traffic congestion (such as reduced speeds and restrictions in maneuverability) during peak traffic hours. The design capacity is less than the maximum capacity that an arterial facility can carry under extremely congested conditions.*

Source: Transportation Research Board, National Academy of Sciences and National Academy of Engineering, and SEWRPC.

segment of arterial highway. As shown in Table 7, over 35.9 million vehicle-miles of travel occurred on the arterial street and highway system within the Region on an average weekday in 1995. Commission estimates indicate that about 90 percent of total regional vehicle-miles of travel on the street and highway system occur on the arterial street and highway system, and about 10 percent occur on the nonarterial, or collector and land access streets. Table 7 also compares the arterial vehicle-miles of travel within each county and the Region for the years 1963, 1972, 1991, and 1995. Between 1991 and 1995, the arterial vehicle-miles of travel within the Region on an average weekday increased from 33.1 million vehicle-miles of travel to 35.9 million vehicle-miles of travel, an increase of 8 percent, or 2.1 percent annually. Between 1972 and 1991, arterial vehicle-miles of travel within the Region on an average weekday increased from 20.1 million vehicle-miles of travel to 33.1 million vehicle-miles of travel, an increase of approximately 64 percent, or an annual increase of 2.6 percent. Between 1963 and 1972, the vehicle-miles of travel in the Region on an average weekday increased from 13.1 million to 20.1 million vehicle-miles of travel, an increase of 53 percent, or an annual increase of 4.9 percent. Within Southeastern Wisconsin, the average weekday vehicle miles of travel on the arterial street system has increased at a decreasing annual rate, from about 4.9 percent annually from 1963 to 1972, about 2.6 percent annually from 1972 to 1991, and about 2.1 percent annually from 1991 to 1995. Some of the changes in travel and socioeconomic characteristics which occurred between 1972 and 1991 and influenced the 64 percent growth in vehicle travel which occurred over that period are shown on Figure 4. The annual growth rate of average weekday vehicle-miles of travel for the Region and for each county within the Region is shown on Table 8.

Per mile, freeways in the seven county Southeastern Wisconsin Region carried substantially more traffic than arterials and nonarterials. In 1995, freeways in Southeastern Wisconsin carried 47,300 vehicle-miles of traffic per mile on an average weekday, as compared to 7,700 vehicle-miles of traffic per mile on standard surface arterials, and 500 vehicle-miles of traffic per mile on collector and land access streets. Within Milwaukee County in 1995, freeways carried an average 92,800 vehicle-miles of traffic per mile on an average weekday.

The freeway system in Southeastern Wisconsin carries about 30 percent of all travel on an average weekday within Southeastern Wisconsin, as about 90 to 95 percent of all travel within Southeastern Wisconsin is made by

Table 6

DISTRIBUTION OF EXISTING ARTERIAL STREET AND HIGHWAY MILEAGE WITHIN THE REGION BY COUNTY AND JURISDICTIONAL CLASSIFICATION: 1995

County	State			County		Local		Total	
	Trunk Highways (miles)	Connecting Streets (miles)	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total
Kenosha	105.9	12.7	37.3	139.9	44.1	59.0	18.6	317.5	100.0
Milwaukee	167.9	83.5	32.4	81.6	10.5	442.4	57.1	775.4	100.0
Ozaukee	90.4	10.3	34.9	96.9	33.6	90.9	31.5	288.5	100.0
Racine	139.7	19.2	45.5	124.5	35.7	65.8	18.8	349.2	100.0
Walworth	200.4	13.3	49.7	168.2	39.1	48.1	11.2	430.0	100.0
Washington	179.0	7.1	46.6	148.0	37.1	65.1	16.3	399.2	100.0
Waukesha	218.4	12.9	32.2	321.2	44.8	165.0	23.0	717.5	100.0
Region	1,101.7	159.0	38.4	1,080.3	33.0	936.3	28.6	3,277.3	100.0

Source: Wisconsin Department of Transportation and SEWRPC.

automobiles and trucks over streets and highways, and about one-third of all travel on streets and highways in Southeastern Wisconsin is made over the freeway system.

The freeway system of Southeastern Wisconsin is important not only to the seven county Southeastern Wisconsin Region, but also to the entire State of Wisconsin, and particularly eastern, central, and northern Wisconsin. The Southeastern Wisconsin freeway system is a major truck and tourism route, for example, to Door County, the Green Bay-Fox Valley area, and northeastern Wisconsin. Commission travel surveys indicate that annually two million commercial truck trips and four million automobile trips travel through Southeastern Wisconsin on the freeway system to and from the remainder of the State of Wisconsin. Another 20 million commercial truck trips and 40 million automobile trips travel on the freeway system between Southeastern Wisconsin and the remainder of Wisconsin. Surveys conducted by the Fox Valley Chamber of Commerce indicate that about two-thirds of all goods shipped from the Fox Valley area travel on the Southeastern Wisconsin freeway system.

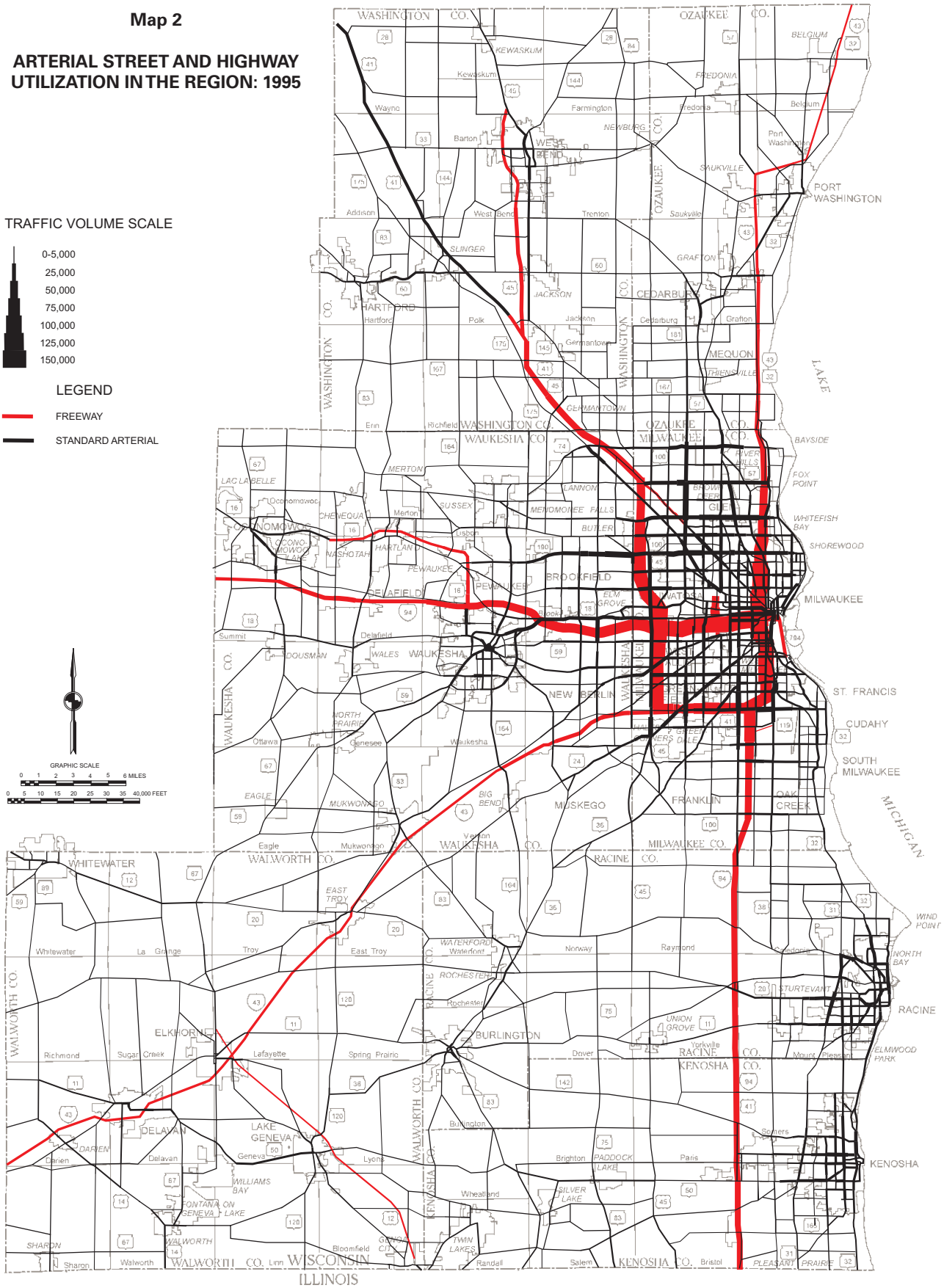
PUBLIC TRANSIT SYSTEM OF SOUTHEASTERN WISCONSIN

This section of this chapter describes the existing provision and utilization of public transit within the Region. Public transit may be defined as the transportation of people by publicly operated vehicles between trip origins and destinations. A classification of all public transportation provided in the Region is provided in Figure 5. Public transportation may be divided into service provided for the general public and service provided to special population groups. Examples of special group public transportation include yellow school bus service operated by area school districts, and fixed-route bus and paratransit van service provided by counties or municipalities for the elderly and disabled. Service to special population groups is considered only implicitly in the planning process, with the exception of paratransit operated within urban fixed-route transit service areas to meet the transportation needs of those persons who because of mental or physical disability are unable to use conventional transit service. Such service is required to be provided within fixed-route urban transit service areas under the Federal Americans with Disabilities Act of 1990, and the costs of such service are explicitly considered by the Commission in regional transportation planning.

As shown in Figure 5, public transit service to the general public may further be divided into three categories: intercity, urban, and rural. Intercity or interregional public transportation provides service across regional boundaries and includes Amtrak railway passenger service, interregional bus service, and commercial air travel. Rural public transportation provides service in and between small urban communities and rural areas, and may provide connections to urban areas. Urban public transportation, commonly referred to as public transit, provides

Map 2

ARTERIAL STREET AND HIGHWAY UTILIZATION IN THE REGION: 1995



Average weekday traffic flows on the arterial street and highway system in the Region in 1995 are shown on the above map. This pattern of traffic flow reflects the high utilization of freeways. It is estimated that about 36 million vehicle-miles of travel occurred on the arterial streets and highways in 1995, with about 13 million vehicle-miles of travel, or nearly 36 percent, occurring on freeways, which represented about 8 percent of all street and highway mileage.

Source: SEWRPC.

Table 7

ARTERIAL VEHICLE-MILES OF TRAVEL WITHIN THE REGION ON AN AVERAGE WEEKDAY BY COUNTY: 1963, 1972, 1991, AND 1995

County	1963					
	Freeway		Standard Arterial		Total	
	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total
Kenosha	204	21.7	734	78.3	938	100.0
Milwaukee	531	7.2	6,817	92.8	7,348	100.0
Ozaukee	20	4.1	464	95.9	484	100.0
Racine	203	18.0	922	82.0	1,125	100.0
Walworth	—	0.0	685	100.0	685	100.0
Washington	345	49.6	351	50.4	696	100.0
Waukesha	159	8.9	1,637	91.1	1,796	100.0
Region	1,462	11.2	11,610	88.8	13,072	100.0

County	1972					
	Freeway		Standard Arterial		Total	
	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total
Kenosha	382	26.8	1,046	73.2	1,428	100.0
Milwaukee	3,977	37.2	6,718	62.8	10,695	100.0
Ozaukee	223	26.2	627	73.8	850	100.0
Racine	415	22.9	1,398	77.1	1,813	100.0
Walworth	56	6.4	817	93.6	873	100.0
Washington	190	16.5	961	83.5	1,151	100.0
Waukesha	970	29.3	2,344	70.7	3,314	100.0
Region	6,213	30.9	13,911	69.1	20,124	100.0

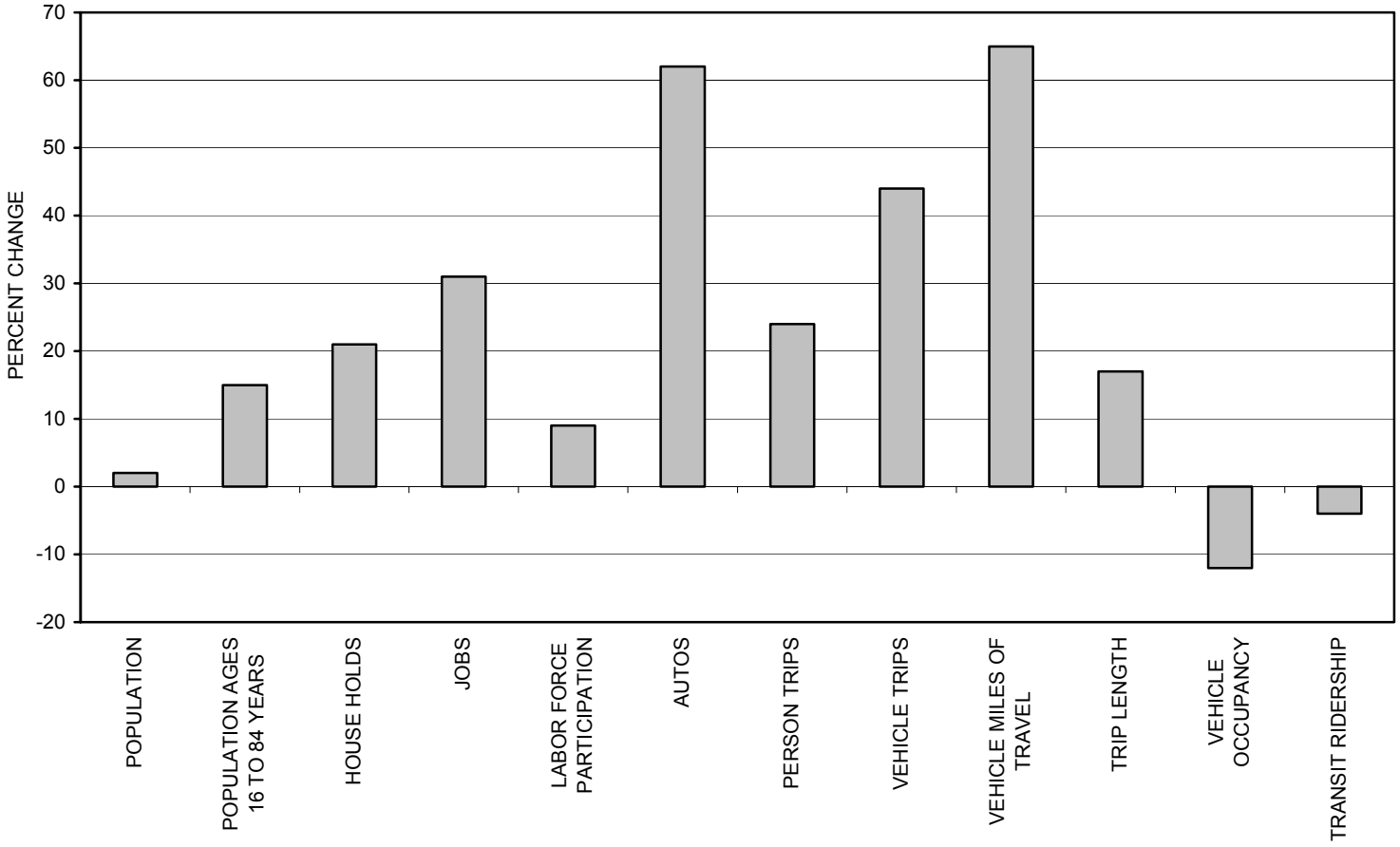
County	1991					
	Freeway		Standard Arterial		Total	
	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total
Kenosha	675	27.0	1,825	73.0	2,500	100.0
Milwaukee	5,945	41.3	8,446	58.7	14,391	100.0
Ozaukee	762	39.2	1,180	60.8	1,942	100.0
Racine	708	23.9	2,258	76.1	2,966	100.0
Walworth	540	28.2	1,373	71.8	1,913	100.0
Washington	546	23.0	1,833	77.0	2,379	100.0
Waukesha	2,421	34.7	4,560	65.3	6,981	100.0
Region	11,597	35.1	21,475	64.9	33,072	100.0

County	1995					
	Freeway		Standard Arterial		Total	
	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total	Vehicle-Miles of Travel (thousands)	Percent of Total
Kenosha	783	29.4	1,880	70.6	2,633	100.0
Milwaukee	6,421	42.5	8,682	57.5	15,103	100.0
Ozaukee	960	41.6	1,345	58.4	2,305	100.0
Racine	814	25.6	2,371	74.4	3,185	100.0
Walworth	648	28.4	1,634	71.6	2,282	100.0
Washington	595	21.2	2,218	78.8	2,813	100.0
Waukesha	2,687	35.3	4,925	64.7	7,612	100.0
Region	12,908	35.9	23,055	64.1	35,963	100.0

Source: SEWRPC

Figure 4

RELATIVE CHANGES IN SELECTED TRAVEL AND SOCIOECONOMIC CHARACTERISTICS WITHIN SOUTHEASTERN WISCONSIN: 1970 TO 1990



Source: SEWRPC.

Table 8

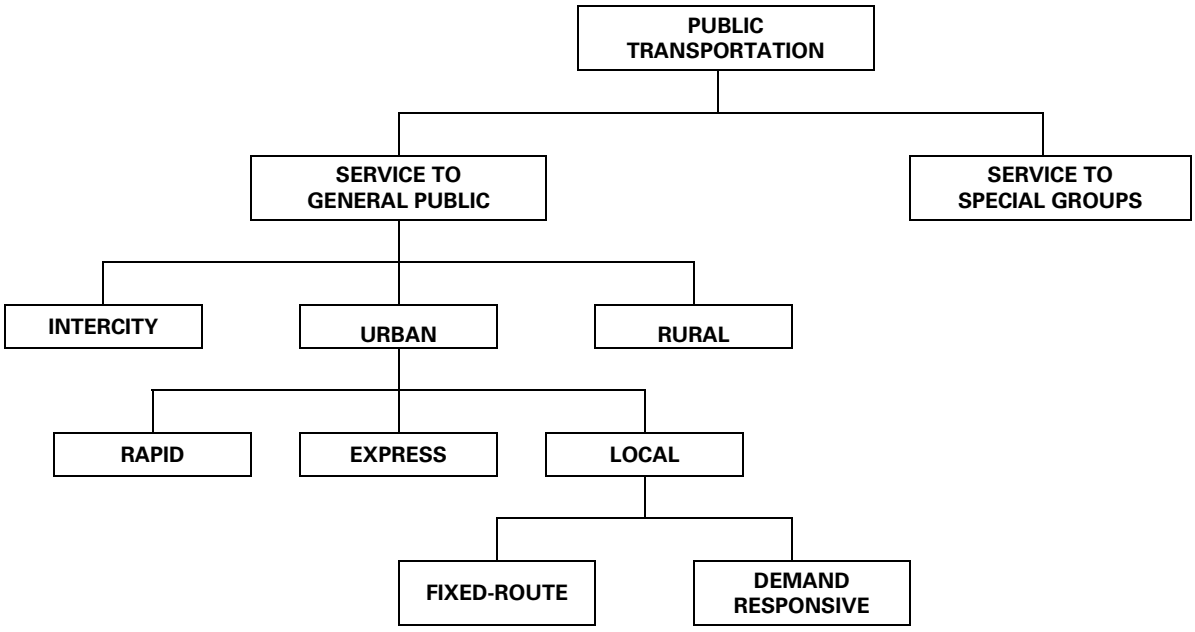
AVERAGE ANNUAL GROWTH RATE OF AVERAGE WEEKDAY VEHICLE-MILES OF TRAVEL WITHIN SOUTHEASTERN WISCONSIN BY COUNTY

County	Average Annual Growth Rate of Average Weekday Vehicle-Miles of Travel			
	1960s	1970s	1980s	1990s
Kenosha	4.8	3.4	2.7	1.6
Milwaukee	4.3	1.5	1.6	1.2
Ozaukee	6.5	4.1	4.6	4.3
Racine	5.4	2.7	2.5	1.8
Walworth	2.7	5.3	3.3	4.4
Washington	5.8	3.6	4.0	4.2
Waukesha	7.0	4.2	3.7	2.2
Region	4.9	2.7	2.6	2.1

Source: SEWRPC.

Figure 5

CLASSIFICATION OF PUBLIC TRANSPORTATION



Source: SEWRPC.

service within and between the large urban areas of the Region. Public transit is essential in any metropolitan area to meet the travel needs of persons unable to use personal automobile transportation and to provide an alternative mode of travel, particularly in heavily traveled corridors within and between urban areas and in densely developed urban communities and activity centers.

The public transit principally addressed in the Commission's regional transportation system planning is urban public transit—the public transit which serves intraregional travel demand, which is open to serving the general public, and which operates within and between the Region's large urban areas. This includes the urban fixed-route bus transit systems operated by Ozaukee, Milwaukee, Washington, and Waukesha Counties and the Cities of Kenosha, Racine, and Waukesha. The Commission's regional transportation planning also addresses rural public transit—public transit which also serves intraregional travel demand, is open to the general public, and operates within the Region's small urban communities and rural areas. This includes nonfixed-route shared-ride taxi systems operated by Ozaukee and Washington Counties, and the Cities of Hartford, Port Washington, Whitewater, and West Bend.[4] Interregional public transit service is considered by the Wisconsin Department of Transportation in statewide transportation planning. Regional transportation planning incorporates this statewide planning, and recognizes that terminal and intermodal facilities, such as airports and intercity bus and railway stations, may comprise major trip generators affecting internal travel demand and patterns. Interregional commercial air travel is explicitly considered by the Commission under a separate comprehensive regional airport

[4]*Fixed-route public transportation operates relatively large vehicles over predetermined routes on regular schedules between or along concentrations of related trip origins and destinations. Nonfixed-route public transportation provides service on a demand-responsive or as-requested basis, and is characterized by the flexible routing and scheduling of relatively small vehicles to provide shared-occupancy door-to-door transportation. Such nonfixed-route demand-responsive transit service is also referred to as paratransit service.*

system planning program. Interregional public transportation travel has historically represented about 5 to 10 percent of all public transportation travel on an average weekday.

Urban public transit may be further divided into rapid, express, and local levels of service. Rapid transit is intended to facilitate relatively fast and convenient transportation along heavily traveled corridors and between major activity centers and high- and medium-density residential communities within the Region. Rapid transit has relatively high average operating speeds and relatively low accessibility, with station spacings one to three miles or more apart. Rapid transit service can be provided by commuter, heavy, or light rail operating over exclusive, grade-separated rights-of-way or by motor buses operating over exclusive, grade-separated busways. Rapid transit can also be provided by motor buses operating in mixed traffic on freeways and by light rail operating over exclusive, though not fully grade-separated, rights-of-way.

Express transit service is provided over arterial streets and highways or on exclusive rights-of-way with stops generally one-quarter to two miles apart at intersecting transit routes, intersecting arterial streets, and major traffic generators. Express transit serves trips of moderate length and can be provided by motor bus or by light rail operating in mixed traffic on shared rights-of-way, in reserved street lanes, or an exclusive rights-of-way. Express transit service provides a greater degree of accessibility at somewhat slower operating speeds than rapid transit and may provide "feeder" service to the rapid transit system.

Local transit service is characterized by a high degree of accessibility and low operating speeds. Local service is provided over arterial and collector streets with stops generally one-eighth to one-quarter miles apart. Such service can be provided by motor bus or electric trolleybus. Local transit service can also be provided on a demand-responsive basis, such as with automobiles or vans operating as a shared-ride taxi.

Existing Urban Public Transit System

Rapid Transit

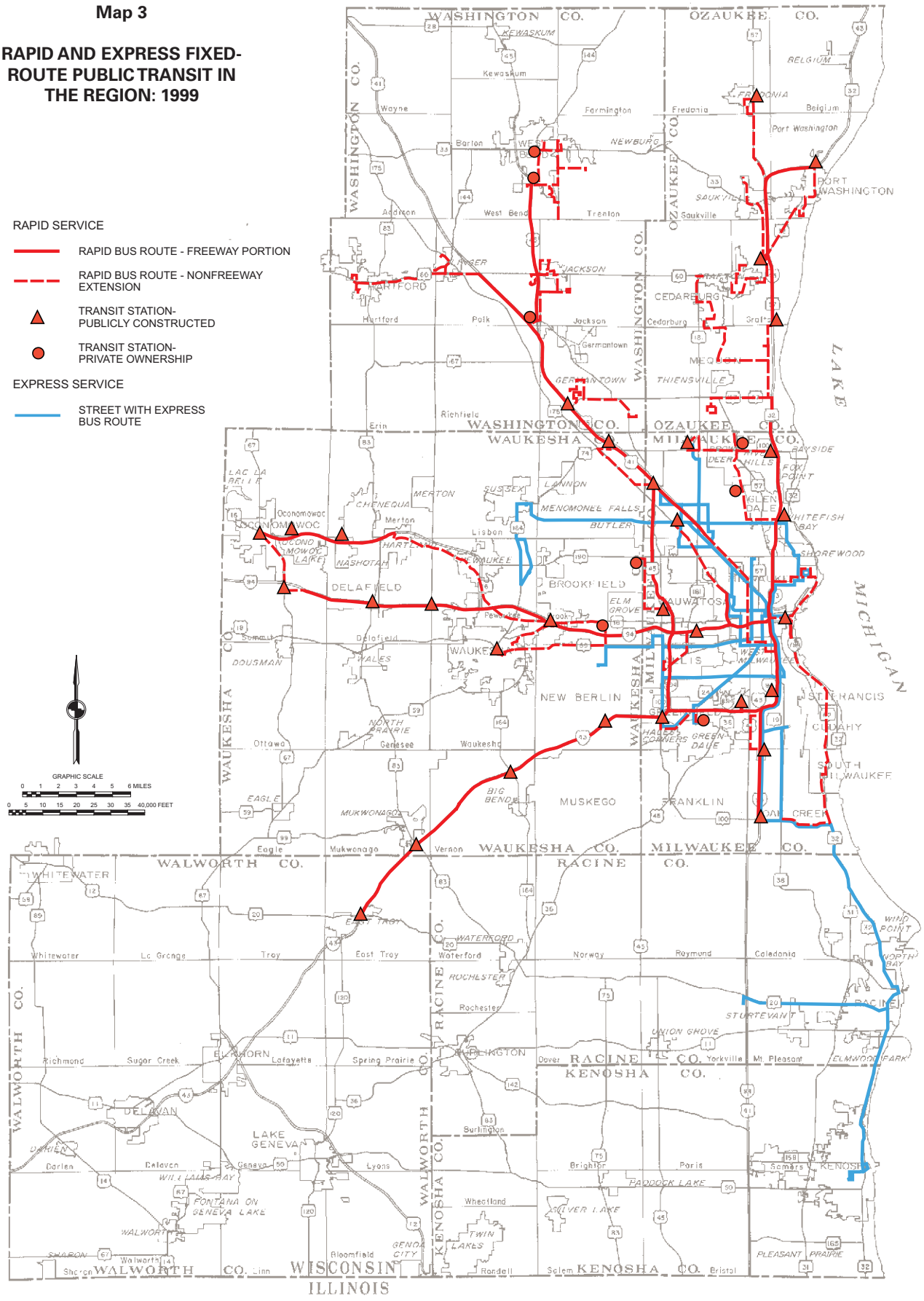
Rapid transit service within the Region in 1999 consisted of 20 freeway flyer motor-bus routes. These routes principally served and connected the Milwaukee urban area, with some extensions beyond the defined urban areas, for example to the communities of Fredonia, Port Washington, and Saukville in Ozaukee County. Twelve routes were provided by Milwaukee County and operated by the Milwaukee County Transit System. Six were provided by Waukesha County. One route between the Village of Menomonee Falls and the central business district (CBD) of Milwaukee was operated for Waukesha County by the Milwaukee County Transit System. The other five routes between the City of Waukesha, City of Oconomowoc, and the Village of Mukwonago and the Milwaukee CBD were operated for Waukesha County by Wisconsin Coach Lines, Inc., a private transit operator (see Map 3). Ozaukee County provided one route between the City of Port Washington and the Milwaukee CBD operated by a private operator, Transit Express, Inc. The remaining route was provided by Washington County between the City of West Bend and the Milwaukee CBD, and was operated under contract by Riteway Bus Service, Inc. Both Ozaukee and Washington Counties also provided connecting shuttle bus and van services as extensions of the rapid bus routes to serve major employment centers.

Express Transit

Express transit service provided within the Region in 1999 is also shown on Map 3. In 1999, express transit service consisted of a total of eleven motor bus routes, including seven routes in Milwaukee County operated by the Milwaukee County Transit System; two routes operated for Waukesha County by the Milwaukee County Transit System; one route between the City of Racine and an industrial park at IH 94 and STH 20 provided by the City of Racine; and one route between the Milwaukee CBD and the Cities of Racine and Kenosha sponsored since 1984 by the City of Racine and operated by Wisconsin Coach Lines, Inc. The most extensive express service in the Region in 1999 was provided by the Milwaukee County Transit System between the Northridge Shopping Center and the Milwaukee CBD, with service operated daily at seven- to 20-minute headways during weekday peak travel periods, and at 15- to 25-minute headways during weekday nonpeak travel periods.

Map 3

RAPID AND EXPRESS FIXED-ROUTE PUBLIC TRANSIT IN THE REGION: 1999



Source: SEWRPC.

Local Transit: Fixed-Route

Fixed-route local public transit service was provided in 1999 within the Kenosha, Milwaukee, and Racine urban areas. Local transit in the Kenosha area was provided by the City of Kenosha Transit Commission, which operated service over 18 fixed routes. The City system included eight regular fixed routes, radial in design and emanating from downtown Kenosha, with direct, nontransfer service from the downtown area to all portions of the City and its immediate environs, including the University of Wisconsin-Parkside (see Map 4). The eight routes included two routes which provided local transit service to major commercial, recreational, and employment centers which have developed outside the regular Kenosha local transit service area. The system also included 10 school day routes to serve Kenosha secondary schools. In 1999, the system provided on most routes service from 6:00 a.m. to 7:30 p.m. every day except Sunday, with 30-minute peak-period headways and 60-minute nonpeak-period headways.

Local transit service was provided in the Milwaukee area by the Milwaukee County Transit System, the City of Waukesha Transit System Utility, and the Waukesha County Transit System. As shown on Map 5, the Milwaukee County Transit System provided local transit service in the Milwaukee area over 51 fixed routes: 15 radial routes emanating from downtown Milwaukee, 16 crosstown routes not serving downtown Milwaukee, 10 feeder routes connecting to the crosstown and radial routes, and 10 routes principally designed to serve secondary schools in Milwaukee County and operated on school days. In 1999, the system provided service seven days a week, typically from 5:00 a.m. to 1:00 a.m. On most routes, peak-period headways were between 15 and 30 minutes.

The fixed-route bus system operated by the City of Waukesha Transit Commission, Waukesha Metro Transit, provided service over 10 fixed radial routes. Nine of the routes began from downtown Waukesha and provided direct nontransfer service from the downtown to all portions of the City and its immediate environs. As shown on Map 5, two of the routes served important traffic generators outside of the City: the Waukesha County Technical College in the Village of Pewaukee and the Goerke's Corners transit station in the Town of Brookfield. The tenth route provided shuttle service from park-ride lots at the Brookfield Square shopping center and Goerke's Corners (IH 94 and Barker Road) to the Waukesha County Technical College and the University of Wisconsin-Waukesha campus. In 1999, the system provided service from 6:00 a.m. to 11:30 p.m. on weekdays and from 8:00 a.m. to 10:00 p.m. on Saturdays, with 30-minute peak-period headways and 60-minute nonpeak-period headways.

Local public transit was provided in the Racine area by the City of Racine Belle Urban System, which operated local service over 13 fixed routes, including 11 regular routes and two school day routes to serve Racine secondary schools. As shown on Map 4, nine of the 11 regular fixed routes were radial in design, emanating from downtown Racine, and provided service to all portions of the City and to its immediate environs. The tenth regular route, a crosstown route, was routed to the west of downtown Racine. The eleventh, a feeder route, served the Town of Caledonia and connected to two of the nine radial routes. In 1999, the system provided service from 5:30 a.m. to 10:30 p.m. on weekdays and from 7:00 a.m. to 6:00 p.m. on Saturdays. Peak-period headways were between 30 and 60 minutes and nonpeak-period headways were between 30 and 60 minutes.

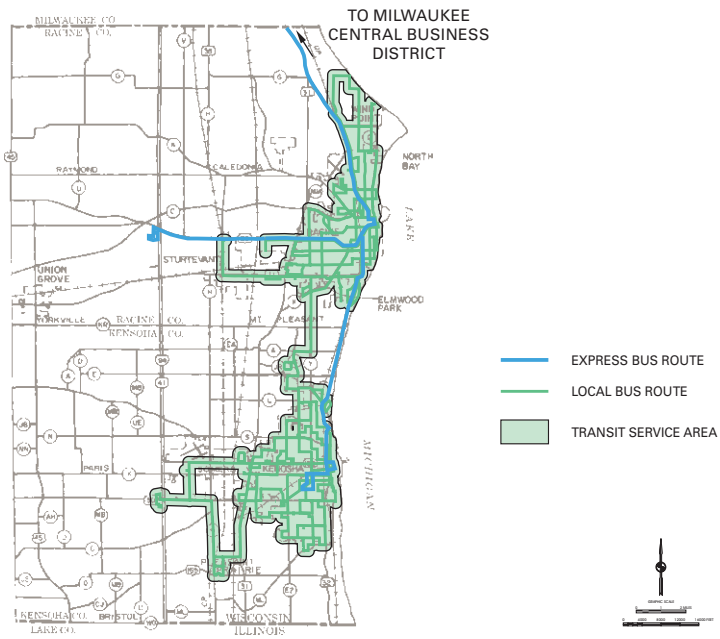
Rural Transit: Demand-Responsive

Demand-responsive rural public transit in the form of publicly operated shared-ride taxicab service was also provided in the Region in 1999 (see Map 6). Shared-ride taxicab service was provided by the City of Port Washington Transport Taxi Service in Ozaukee County and the Hartford City Taxi Service and City of West Bend Taxi Service in Washington County. These three systems served local travel in and immediately adjacent to the sponsoring municipality. In addition, both Ozaukee and Washington Counties provided shared-ride taxicab service on a countywide basis. The two county taxi systems principally served travel in the small urban communities and rural areas in each county and between the rural areas and all communities. These systems did serve some communities located within the Milwaukee urban area including the communities of Germantown in Washington County and Mequon, Cedarburg and Grafton in Ozaukee County. The county taxi systems, however, did not serve trips that could be made on municipal systems in each county—Port Washington in Ozaukee County and Hartford and West Bend in Washington County. Public shared-ride taxicab service was also provided in Walworth County by Browns Cab Service which served local travel in and immediately adjacent to the City of Whitewater.

Each of the taxicab systems in the Region operated seven days a week with the hours of operation varying by system. Typically, the most extensive service was provided on weekdays and Saturdays when taxicab service was available for between 12 and 16 hours a day. The four municipally operated systems provided service with 30-minute maximum response times. The two County systems provided service with 60-minute maximum response times for trips made in the urban communities of each county, and a four-hour maximum response time for trips made between urban areas, between urban and rural areas, or entirely within rural areas. Five of the six taxi systems contract with private companies to provide the service including: Specialized Transportation Services, Inc., which operated both the Port Washington and West Bend taxi systems; G and G Enterprises, Inc., which operated both the Ozaukee and Washington County taxi systems; and Browns Cab Service which operated the Whitewater taxi system. The Hartford City Taxi Service was operated with municipal forces.

Map 4

LOCAL FIXED-ROUTE PUBLIC TRANSIT SERVICE IN THE KENOSHA AND RACINE AREAS: 1999



Source: SEWRPC.

Extent of Transit Service

The extent of public fixed-route transit service provided within the Region may be measured by the vehicle-miles of transit service provided on an average weekday. Vehicle-miles of fixed route transit service is a measure of the extent of transit routes, and the amount or frequency of service provided on those routes. As shown on Table 9, between 1991 and 1999 the vehicle-miles of fixed route transit service provided within the Region increased significantly, by 20 percent. The level of fixed route vehicle-miles of transit service provided within the Region in 1999 is also approximately 20 percent greater than the level provided in 1972. The level of fixed route vehicle-miles of transit service in 1999 is about 10 percent less than the level provided in 1963.

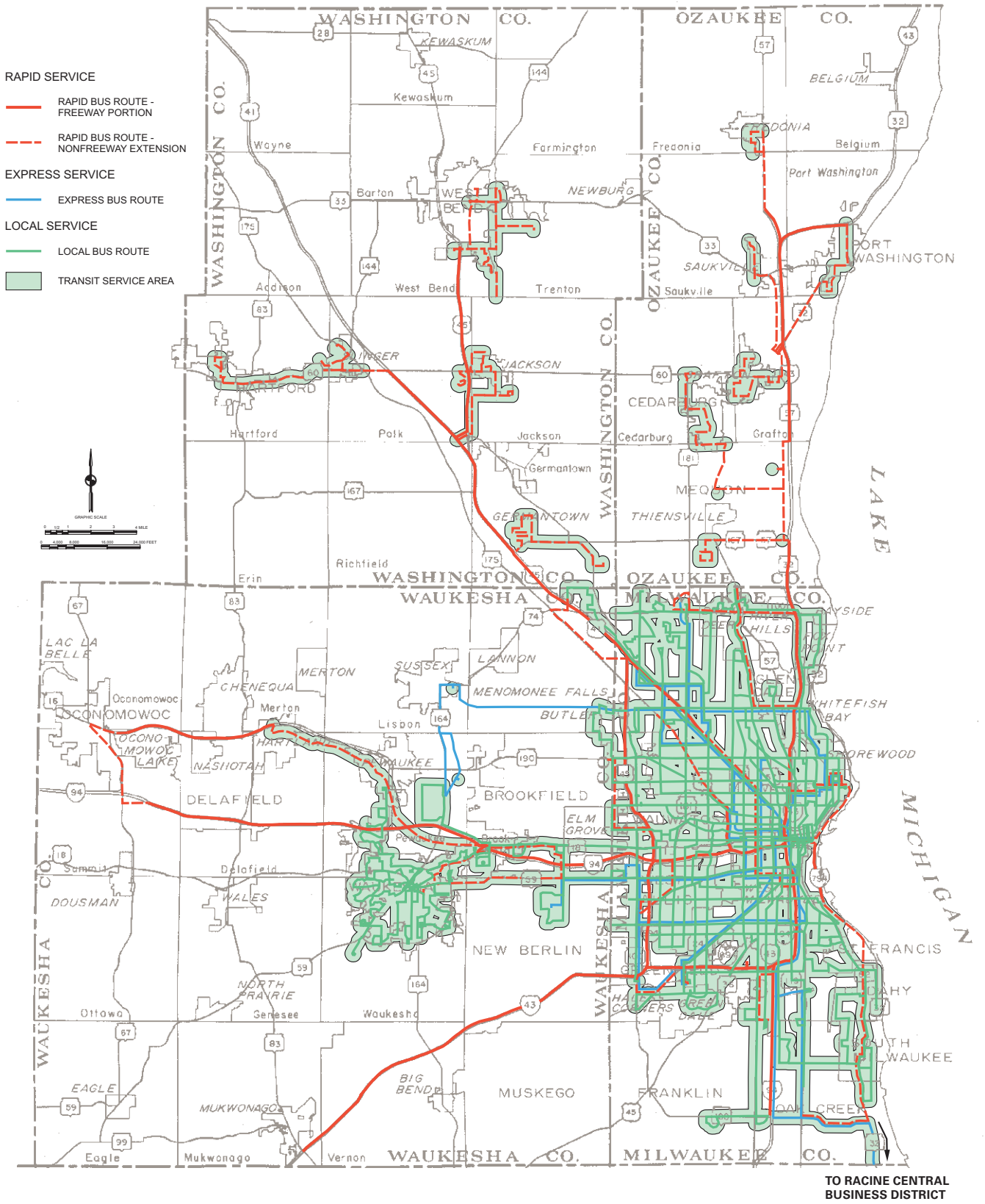
Another measure of transit service provided within the Region is the number of round-trip route-miles of transit service (see Table 10). Between 1991 and 1999, the number of round-trip route-miles of transit service operated within the Region on an average weekday increased by about 40 percent. Between 1972 and 1999, and between 1963 and 1999 as well, round-trip route-miles of transit service operated on an average weekday increased, by about 170 percent and 280 percent, respectively. The more substantial increases in round-trip route-miles of transit service as compared to vehicle-miles of transit service indicate that generally the extension of new transit service has been at relatively low levels of service, and reductions in the frequency of service have been made over the years on existing transit service routes.

Public Transit Ridership

Annual public transit ridership levels recorded in 1963, 1972, 1991, and 1999 within the Region are set forth in Table 11. Public transit ridership within the Region has declined significantly over time. In 1963, over 94.5 million revenue passengers were carried on public transit within the Region, representing about 9 percent of daily regional travel. In 1972, about 53.9 million revenue passengers were carried on public transit, about 43 percent fewer than in 1963, and represented about 4 percent of daily travel. In 1991, about 50.2 million passengers were carried, 47 percent fewer than in 1963 and about 7 percent fewer than in 1972. In 1999, about 52.8 million passengers were carried, about 6 percent more than in 1991, 2 percent less than in 1972, and 44 percent less than

Map 5

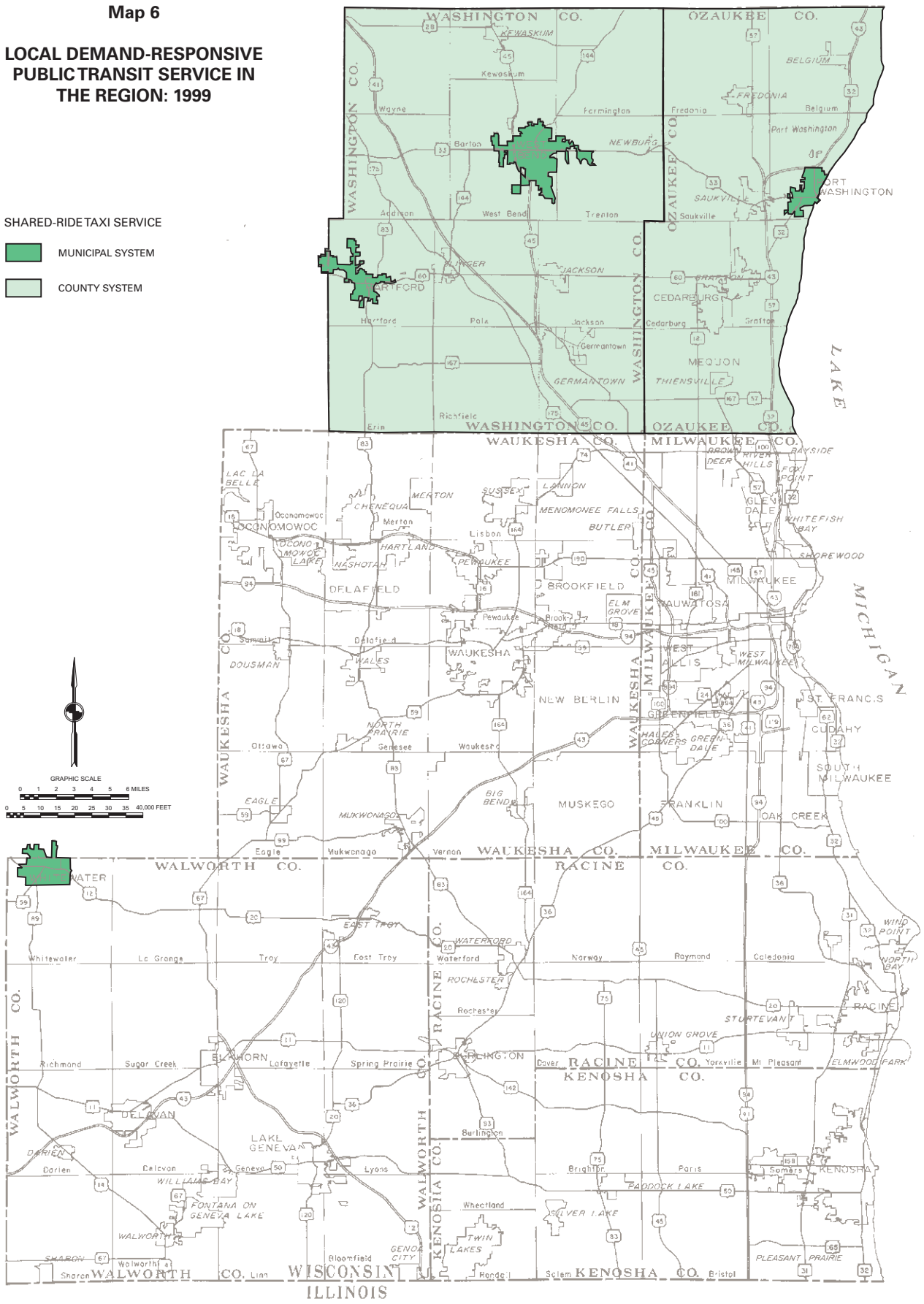
LOCAL FIXED-ROUTE PUBLIC TRANSIT SERVICE IN THE MILWAUKEE AREA: 1999



Source: SEWRPC.

Map 6

LOCAL DEMAND-RESPONSIVE PUBLIC TRANSIT SERVICE IN THE REGION: 1999



Source: SEWRPC.

Table 9

AVERAGE WEEKDAY PUBLIC TRANSIT VEHICLE-MILES PROVIDED IN THE REGION BY SERVICE TYPE AND AREA: 1963, 1972, 1991, AND 1999

Service Type	Area	Average Weekday Revenue Vehicle-Miles[a]			
		1963	1972	1991	1999
Fixed-Route (Bus)	Kenosha Urban Area[b]	2,500	1,100	2,500	3,600
	Milwaukee Urban Area[c]	78,900	61,300	56,400	68,100
	Racine Urban Area[d]	3,500	1,600	4,400	4,500
	Subtotal	84,900	64,000	63,300	76,200
Demand-Responsive (Shared-Ride Taxi)	Milwaukee Urban Area[c]	- -	- -	100	5,700
	Rural Areas[e]	- -	- -	300	200
	Subtotal	- -	- -	400	5,900
All Service	Kenosha Urban Area[b]	2,500	1,100	2,500	3,600
	Milwaukee Urban Area[c]	78,900	61,300	56,500	73,800
	Racine Urban Area[d]	3,500	1,600	4,400	4,500
	Rural Areas[e]	- -	- -	300	200
	Total	84,900	64,000	63,700	82,100

Service Type	Area	Average Weekday Revenue Vehicle-Miles[a]					
		Change: 1963-1999		Change: 1972-1999		Change: 1991-1999	
		Number	Percent	Number	Percent	Number	Percent
Fixed-Route (Bus)	Kenosha Urban Area[b]	1,100	44.0	2,500	227.3	1,100	44.0
	Milwaukee Urban Area[c]	10,800	-13.7	6,800	11.1	11,700	20.7
	Racine Urban Area[d]	1,000	28.6	2,900	181.3	100	2.3
	Subtotal	-8,700	-10.2	12,200	19.1	12,900	20.4
Demand-Responsive (Shared-Ride Taxi)	Milwaukee Urban Area[c]	5,700	- -	5,700	- -	5,600	5,600.0
	Rural Areas[e]	200	- -	200	- -	-100	-33.3
	Subtotal	5,900	- -	5,900	- -	5,500	1,375.0
All Service	Kenosha Urban Area[b]	1,100	44.0	2,500	227.3	1,100	44.0
	Milwaukee Urban Area[c]	-5,100	-6.5	12,500	20.4	17,300	30.6
	Racine Urban Area[d]	1,000	28.6	2,900	181.3	100	2.3
	Rural Areas[e]	200	- -	200	- -	-100	-33.3
	Total	-2,800	-3.3	18,100	28.3	18,400	28.9

[a]*Figures presented in this table are for publicly sponsored transit services for the general public. The data exclude special paratransit services directed at the elderly and disabled population including federally required complementary paratransit services for disabled individuals operated by fixed-route bus systems. On an average weekday during 1999, approximately 22,800 revenue vehicle miles of service were operated in the Region as federally required complementary paratransit services for disabled individuals. Comparable data for 1991 are not available as paratransit service data was not reported by most transit systems in the Region. Complementary paratransit services were not required or provided in 1972 or 1963.*

[b]*Includes the area east of IH 94 in Kenosha County.*

[c]*Includes all of Ozaukee, Milwaukee, Washington, and Waukesha Counties.*

[d]*Includes the area east of IH 94 in Racine County.*

[e]*Includes all nonurban areas in the Region.*

Source: SEWRPC.

Table 10

AVERAGE WEEKDAY FIXED-ROUTE PUBLIC TRANSIT ROUND TRIP ROUTE-MILES PROVIDED IN THE REGION BY AREA: 1963, 1972, 1991, AND 1999

Area	Round-Trip Route-Miles									
					Change: 1963-1999		Change: 1972-1999		Change: 1991-1999	
	1963	1972	1991	1999	Number	Percent	Number	Percent	Number	Percent
Kenosha Urban Area[a]	55	59	171	153	98	178.2	94	159.3	-18	-10.5
Milwaukee Urban Area[b]	716	1,061	1,954	2,883	2,167	302.6	1,822	171.7	929	47.5
Racine Urban Area[c]	76	81	171	177	101	132.9	96	118.5	6	3.5
Rural Areas[d]	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	847	1,201	2,296	3,213	2,366	279.3	2,012	167.5	917	39.9

[a] *Includes the area east of IH 94 in Kenosha County.*

[b] *Includes all of Ozaukee, Milwaukee, Washington, and Waukesha Counties.*

[c] *Includes the area east of IH 94 in Racine County.*

[d] *Includes all nonurban areas in the Region.*

Source: SEWRPC.

in 1963. This represented about 3 percent of daily regional travel. In comparison, the vehicle-miles of transit service provided in 1999 was 20 percent more than in 1991, 20 percent more than in 1972, and 10 percent less than in 1963.

The annual historical trends in ridership since 1950 in the Kenosha, Milwaukee, and Racine urbanized areas—which represent over 99 percent of the transit service and ridership in the Region—are shown in Figure 6. Ridership declined in the 1950s and 1960s, but grew gradually beginning in the early or mid 1970s with the initiation of public transit operations. Motor fuel price increases in the mid and late 1970s contributed to the ridership increases. Transit ridership leveled off in the 1980s and experienced slight decline. Ridership within the Kenosha and Milwaukee urbanized area has again experienced increases in the 1990s, but ridership in the Racine urbanized area has continued to decline. Factors which have contributed to the decline in transit ridership include the location of housing and jobs outside established transit service areas; the continuing decline in population and employment density; the increase in household income and automobile ownership and use, particularly in terms of the number of households with two or more vehicles; increases in transit fares to defer further service reductions; and the inability, owing to lack of funding, to significantly improve and expand transit service to the entire metropolitan area, provide faster express transit and rapid transit service, and reasonably attractive and convenient frequent transit service.

Interregional Public Transit

The only commuter rail service operated in the Region in 1999 was Metra's North Line between Kenosha and Chicago, with intermediate stops in the north shore suburbs of northeastern Illinois. Metra is the commuter rail service division of the Regional Transportation Authority, which serves the six-county northeastern Illinois region. Service on this route was provided by the Union Pacific Railroad under contract with Metra and at no cost to Wisconsin residents. On weekdays in 1999, this service consisted of nine commuter trains in each direction between Kenosha and Chicago. In 1993, this service consisted of nine commuter trains in each direction on weekdays between Kenosha and Chicago. In 1972, weekday commuter railway service in Southeastern Wisconsin consisted of 24 trains, including nine trains in each direction between Kenosha and Chicago, as in 1993; two trains in each direction between the City of Lake Geneva and Chicago; and one train in each direction between the Village of Walworth and Chicago.

Table 11

ANNUAL PUBLIC TRANSIT RIDERSHIP IN THE REGION BY SERVICE TYPE AND AREA: 1963, 1972, 1991, AND 1999

Service Type	Area	Annual Passengers[a]			
		1963	1972	1991	1999
Fixed-Route	Kenosha Urban Area[b]	1,884,400	503,200	1,114,900	1,672,000
	Milwaukee Urban Area[c]	89,761,600	52,875,400	46,866,800	49,298,700
	Racine Urban Area[d]	2,902,000	525,700	1,794,900	1,491,200
	Subtotal	94,548,000	53,904,300	49,776,600	52,461,900
Demand-Responsive	Milwaukee Urban Area[c]	- -	- -	8,100	242,900
	Rural Areas[e]	- -	- -	37,900	23,800
	Subtotal	- -	- -	46,000	266,700
All Service	Kenosha Urban Area[b]	1,884,400	503,200	1,114,900	1,672,000
	Milwaukee Urban Area[c]	89,761,600	52,875,400	46,874,900	49,541,600
	Racine Urban Area[d]	2,902,000	525,700	1,794,900	1,491,200
	Rural Areas[e]	- -	- -	37,900	23,800
	Total	94,548,000	53,904,300	49,822,600	52,728,600

Service Type	Area	Annual Passengers[a]					
		Change: 1963-1999		Change: 1972-1999		Change: 1991-1999	
		Number	Percent	Number	Percent	Number	Percent
Fixed-Route	Kenosha Urban Area[b]	-212,400	-11.3	1,168,800	232.3	557,100	50.0
	Milwaukee Urban Area[c]	-40,462,900	-45.1	-3,576,700	-6.8	2,431,900	5.2
	Racine Urban Area[d]	-1,410,800	-48.6	965,500	183.7	-303,700	-16.9
	Subtotal	-42,086,100	-44.5	-1,442,400	-2.7	2,685,300	5.4
Demand-Responsive	Milwaukee Urban Area[c]	242,900	- -	242,900	- -	234,800	2,898.8
	Rural Areas[e]	23,800	- -	23,800	- -	-14,100	-37.2
	Subtotal	266,700	- -	266,700	- -	220,700	479.8
All Service	Kenosha Urban Area[b]	-212,400	-11.3	1,168,800	232.3	557,100	50.0
	Milwaukee Urban Area[c]	-40,220,000	-44.8	-3,333,800	-6.3	2,666,700	5.7
	Racine Urban Area[d]	-1,410,800	-48.6	965,500	183.7	-303,700	-16.9
	Rural Areas[e]	23,800	- -	23,800	- -	-14,100	-37.2
	Total	-41,819,400	-44.2	-1,175,700	-2.2	2,906,000	5.8

[a]Annual passengers shown in this table approximate the number of one-way trips made by transit between specific origins and destinations. Passengers are counted only once and transfers between routes are not counted as the transfer is a continuation of a single trip. Ridership figures are for publicly sponsored transit services for the general public. The data exclude special paratransit services directed at the elderly and disabled population including federally required complementary paratransit services for disabled individuals operated by fixed-route bus systems. During 1999, approximately 962,800 annual passengers were carried on federally required complementary paratransit services for disabled individuals in the Region, or about 116 percent more than the 446,300 annual passengers were carried on complementary paratransit services in 1991. Complementary paratransit services were not required or provided in 1972 or 1963.

[b]Includes the area east of IH 94 in Kenosha County.

[c]Includes all of Ozaukee, Milwaukee, Washington, and Waukesha Counties.

[d]Includes the area east of IH 94 in Racine County.

[e]Includes all nonurban areas in the Region.

Source: SEWRPC

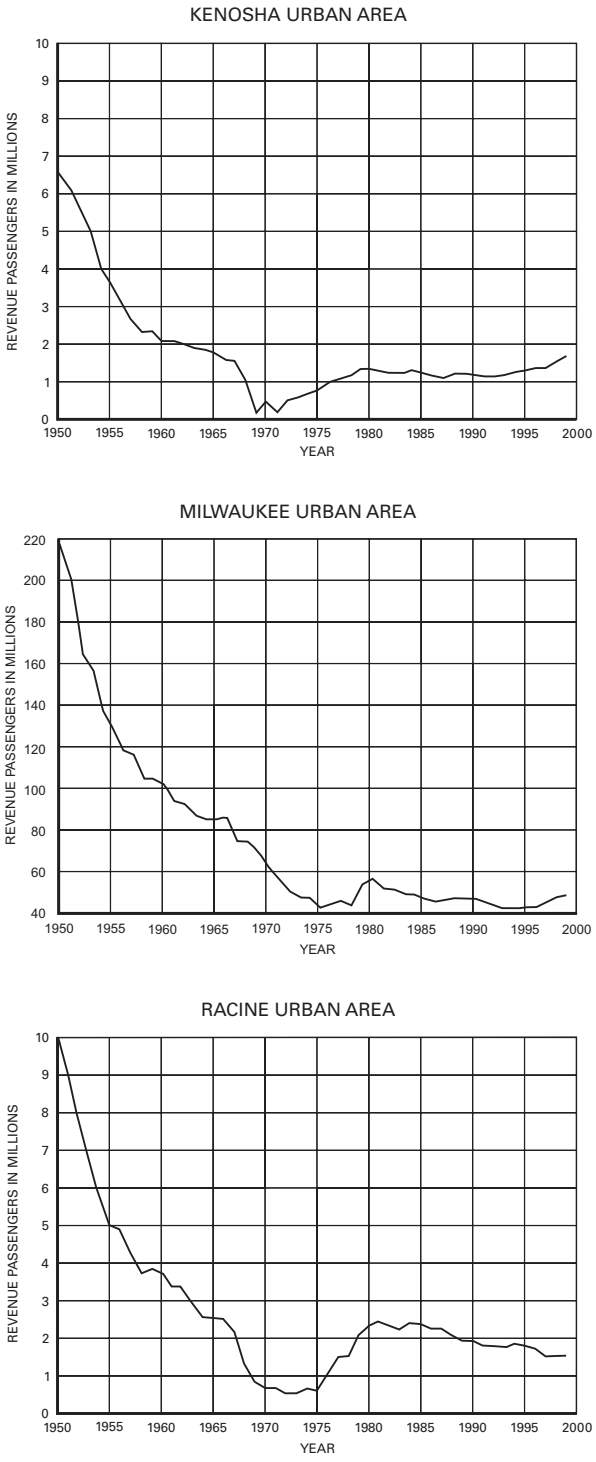
In 1999, scheduled intercity bus services were provided by four carriers: Badger Coaches, Inc.; Greyhound Lines, Inc.; Lamers Bus Lines, Inc. (doing business as Leisure-Way Routes); and United Limo, Inc. Service provided on weekdays by Badger Coaches included six daily round-trips between Madison, downtown Milwaukee, and General Mitchell International Airport. Additional service was operated on certain days. Service provided by Greyhound in Southeastern Wisconsin was centered in Milwaukee, which the carrier used as a regional hub at which passengers had the opportunity to transfer between buses. In 1999, Greyhound operated a total of 27 daily one-way bus trips to and from Milwaukee. Most of these trips were Chicago-based, going to and from Madison, Minneapolis-St. Paul, Green Bay, Stevens Point, Wausau, Minocqua, Marquette, and Calumet. Some of these bus trips made only limited stops and some made local stops. Daily service provided by Lamers Bus Lines included one bus trip in each direction between Milwaukee and Wausau with a stop in Appleton. Weekday service provided by United Limo, Inc., included 11 round-trips between downtown Milwaukee and Chicago O'Hare International Airport with a stop at General Mitchell International Airport. Together, the four intercity motor coach carriers operated a combined total of 63 weekday one-way bus trips.

In 1993, there were four intercity carriers providing service through the operation of 71 weekday one-way bus trips in the Region. Of these 71 weekday one-way bus trips, 39 trips were operated by Greyhound to Chicago, to various locations in Wisconsin and Upper Michigan, and to cities as far away as Minneapolis-St. Paul; 12 trips were operated by Badger Coaches between Milwaukee and Madison; 18 trips were operated by United Limo between Milwaukee and Chicago's O'Hare International Airport with a stop at General Mitchell International Airport; and two trips were operated by Lamers Bus Lines between Milwaukee and Wausau with a stop in Appleton.

In 1972, there were six intercity carriers providing service through the operation of 144 weekday one-way bus trips in the Region. Of these 144 weekday one-way bus trips, 96 trips were operated by Greyhound to Chicago, to various locations in Wisconsin and Upper Michigan, and to cities as far away as Seattle; 12 trips were operated by Tri-State Coach Lines, Inc., between Milwaukee and Chicago's O'Hare International Airport; eight trips were operated by Wisconsin-Michigan Coach Lines, Inc., between Milwaukee and Green Bay, Sister Bay, and Marshfield; four trips were operated by Peoria-Rockford Bus Company between Milwaukee, Rockford, and Dixon, Illinois; 24 trips were operated by Badger Coaches bus between Milwaukee and Madison; and a total of 12 intercity trips

Figure 6

HISTORICAL PUBLIC TRANSIT RIDERSHIP IN THE URBAN AREAS OF THE REGION: 1950-1999



Source: SEWRPC.

were operated by Wisconsin Coach Lines, with four trips operated between Milwaukee and Fond du Lac, four trips operated between Milwaukee and East Troy, and four trips between Milwaukee and Rockford, Illinois.

In 1999, intercity passenger train service in Southeastern Wisconsin was provided by Amtrak over Canadian Pacific Railway trackage, with stops within the Region at Milwaukee and Sturtevant. Amtrak operated six weekday trains in each direction between Milwaukee and Chicago and one weekday train in each direction between Chicago, Milwaukee, St. Paul-Minneapolis, and Seattle. By comparison, Amtrak operated five weekday trains in 1991 in each direction between Milwaukee and Chicago and one weekday train in each direction between Chicago, Milwaukee, St. Paul-Minneapolis, and Seattle. In 1972, Amtrak operated three weekday trains in each direction between Milwaukee and Chicago, two weekday trains in each direction between Milwaukee, Chicago, and St. Louis, and two weekday trains in each direction between Chicago, Milwaukee, St. Paul-Minneapolis, and Seattle.

In 1972, cross-lake car ferry service on Lake Michigan was operated by the Chesapeake & Ohio Railway Company between Milwaukee and Ludington, Michigan. This service, which carried passengers, automobiles, and railway freight cars had two scheduled weekday departures from each port during the summer season and was discontinued in 1984.

Scheduled air carrier service to and from Milwaukee County's General Mitchell International Airport was provided by 17 airline companies in 1999. These airline companies included: Air Canada, America West, American Eagle, American Trans Air, Comair, Continental Airlines, Delta Air Lines, Midwest Express Airlines, Northwest Airlines, Skyway Airlines, Sun Country United Express, Trans World Airlines, United Airlines, US Airways, and US Airways Express. In 1999, these carriers provided a total of 478 scheduled nonstop weekday flights between Mitchell International and 50 other cities or metropolitan areas. Cities with 10 or more nonstop weekday flights to or from Milwaukee included: Chicago, Detroit, Grand Rapids, Atlanta, Cincinnati, New York, Minneapolis-St. Paul, Appleton, Cleveland, Indianapolis, St. Louis, Madison, Dallas-Ft. worth, Kansas City, Philadelphia, Pittsburgh, Toronto, Washington D.C., Columbus, and Denver. Many of these flights continued on to other cities.

Scheduled air carrier service to and from Milwaukee County's General Mitchell International Airport was provided by 16 airline companies in the fall of 1989. These airline companies included: American Airlines, Comair, Continental Airlines, Delta Air Lines, Eastern Airlines, Enterprise Airlines, Express Airlines, Midway Airlines, Midway Commuter, Midwest Express Airlines, Mesaba Airlines, Northwest Airlines, Skyway Airlines, Trans World Airlines, United Airlines, and USAir. In 1989, these carriers provided a total of 364 scheduled nonstop weekday flights between Mitchell International and 33 other cities or metropolitan areas. Cities with 10 or more nonstop weekday flights to or from Milwaukee included: Chicago, Detroit, Grand Rapids, Atlanta, Cincinnati, New York, Minneapolis-St. Paul, Appleton, Cleveland, Indianapolis, St. Louis, Madison, Green Bay, Boston, Columbus, and Wausau. Many of these flights continued on to other cities.

By comparison, in 1971, there were six airline companies providing a total of 250 scheduled nonstop weekday flights between Milwaukee and 32 other cities or metropolitan areas. These airline companies included: Air Michigan, Eastern Airlines, North Central Airlines, Northwest Airlines, Ozark Airlines, and United Airlines. cities with 10 or more nonstop weekday flights to or from Milwaukee included: Chicago, New York Madison, Minneapolis-St. Paul, Detroit, and Oshkosh.

In 1991, Commission survey findings indicated that on an average weekday, 3,090 passengers were being carried on interregional surface public transportation modes, including Amtrak intercity passenger trains, Metra commuter rail trains, and intercity buses serving Southeastern Wisconsin. (See Table 12.) In addition, 12,600 passengers were being carried on an average weekday on scheduled air carrier flights between Milwaukee and other cities. Accordingly, a total of 15,690 interregional passenger trips were being made in the Region on public transportation on an average weekday. Of the 15,690 interregional public transportation trips, 1,340 passengers were carried on the 71 intercity motor coach runs, an average of about 19 passengers per run; 750 passengers were carried on the 18 Metra commuter rail trains, an average of about 42 passengers per train; 1,000

Table 12

NUMBER OF INTERREGIONAL PERSON TRIPS ON INTERCITY MODES IN THE REGION: 1972 AND 1991[d]

Mode	1972		1991	
	Number	Percent	Number	Percent
Public Transportation				
Intercity Motor Bus	1,300	0.7	1,340[a]	0.4
Metra Commuter Rail	170	0.1	750[a]	0.2
Amtrak Intercity Rail	560	0.3	1,000	0.3
Chesapeake & Ohio Cross-Lake Car Ferry	750	0.4	- -	- -
Air Carriers	6,200[b]	3.4	12,600[c]	3.8
Private Transportation				
Private Automobile	176,900	95.1	317,400	95.3
Total	185,880	100.0	333,090	100.0

[a]*Survey taken in 1993.*

[b]*Survey taken in 1971.*

[c]*Survey taken in 1989.*

[d]*In 1999, it was estimated that there was a daily average of about 16,000 trips served by scheduled air carriers, a daily average of about 1,100 trips served by the Amtrak Milwaukee-Chicago Hiawatha Service, and a weekday average of about 600 trips served by Metra commuter train service at the Kenosha station.*

Source: SEWRPC.

passengers were carried on the 12 Amtrak intercity railway passenger trains, an average of about 83 passengers per train; and 12,600 passengers were carried on the 364 scheduled air carrier flights, an average of about 35 passengers per flight.

The estimated number of interregional public transportation trips on an average weekday—15,690 trips in 1991—may be compared to the estimated number of interregional trips made by automobile on an average weekday in 1991—317,400 trips. About 5 percent of all interregional trips are made by public transportation, and 95 percent by automobile.

ESTIMATED EXPENDITURES ON THE REGIONAL TRANSPORTATION SYSTEM

Figure 7 displays transportation revenue and expenditure data for the Wisconsin Department of Transportation pertaining to the entire State of Wisconsin. The data is for the State two-year biennial budget period 1999-2001. Figure 7 also shows total transportation revenues and indicates that over 62 percent of such revenues are derived from State fees and taxes, and about 64 percent of these State fees and taxes are derived from State motor fuel taxes. Figures 7 also indicates the expenditure of these State transportation revenues, of which about 46 percent of total expenditures are on State trunk highways and 39 percent on local aid and assistance programs, and about 5 percent of total expenditures are on public transit aid and assistance programs.

The proportions of State transportation revenues and expenditures attributed with the Southeastern Wisconsin Region in 1999 are displayed in Figure 8. Also displayed are the proportions of the State's population, vehicle-miles traveled, and registered vehicles located in Southeastern Wisconsin. The proportion of State highway-related and total transportation expenditures—including transit-related expenditures and general transportation aids—attributed to the Region in 1999 are similar to the proportion of State transportation revenues associated with the Region.

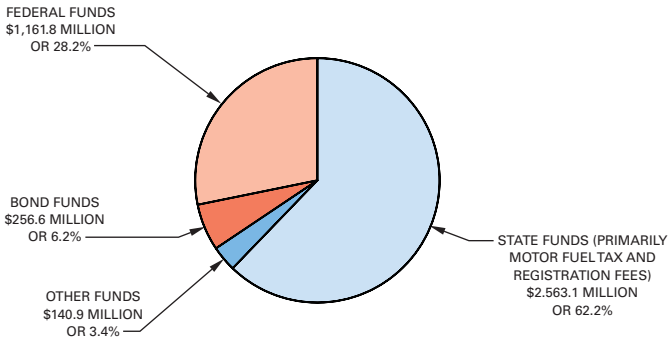
Figure 7

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
REVENUES AND EXPENDITURES: 1999 - 2001 BIENNIAL BUDGET

REVENUES

TOTAL REVENUES

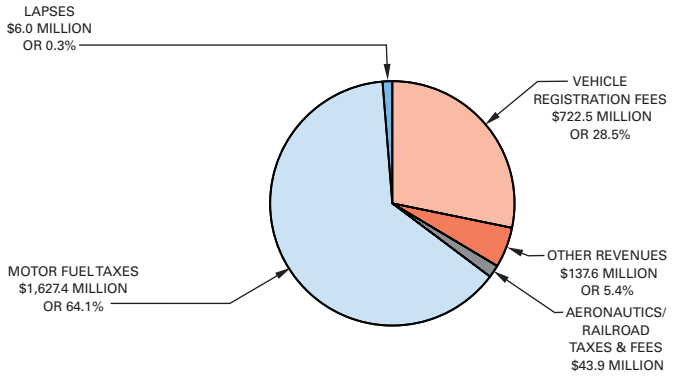
1999 - 2001 TRANSPORTATION REVENUES $4.12 BILLION



REVENUES ALLOCATED TO:	
WISDOT	$4,122.4 MILLION
OTHER AGENCIES	$ 34.3 MILLION
	$4,088.1 MILLION

STATE REVENUES

1999 - 2001 STATE TRANSPORTATION REVENUES $2.54 BILLION

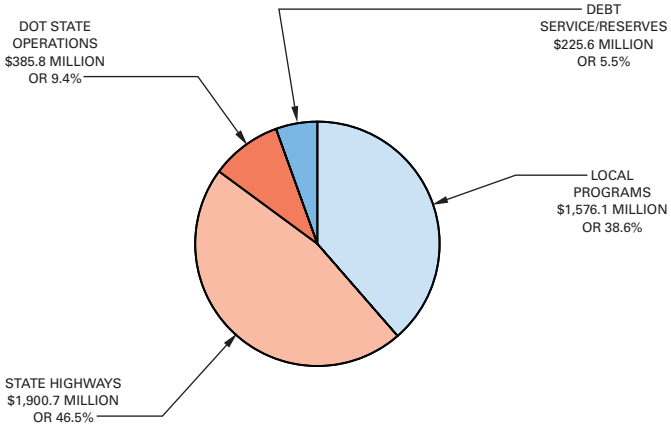


OTHER REVENUES:	
DRIVER'S LICENSES	$61.1 MILLION
MISC. MOTOR VEHICLES	$29.4 MILLION
MOTOR CARRIER FEES	$ 6.9 MILLION
INVESTMENT EARNING	$14.4 MILLION
MISC. DEPT. REVENUES	$25.8 MILLION

EXPENDITURES

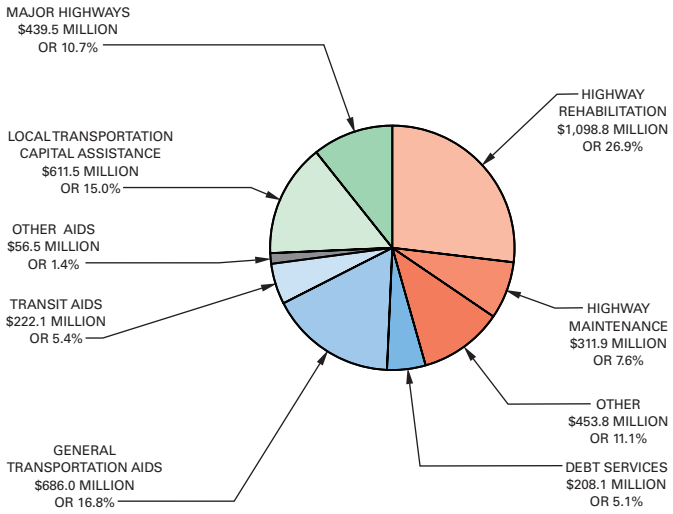
EXPENDITURES BY TYPE

1999 - 2001 TRANSPORTATION BUDGET $4.088 BILLION



EXPENDITURES BY CATEGORY

1999 - 2001 STATE TRANSPORTATION BUDGET $4.088 BILLION

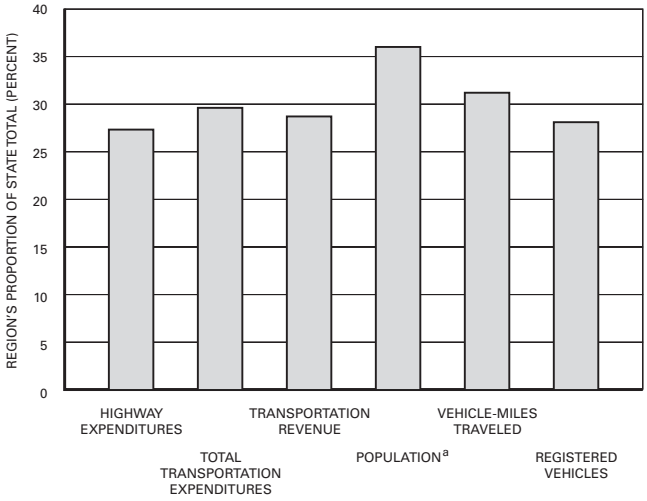


Source: Wisconsin Department of Transportation and SEWRPC.

Figure 9 displays estimated 1999 annual transportation expenditure and revenue data for the regional transportation system (arterial street and highway system and public transit system elements) of the seven-county Southeastern Wisconsin Region. The largest estimated annual expenditure is on county and municipal arterials ($196 million or 44 percent), followed by State highways ($138 million or 31 percent), and public transit ($109 million or 25 percent). With respect to the Federal, State, and local revenues which fund these expenditures, the largest revenues are State funds ($204 million or 46 percent), followed by Federal funds ($136 million or 31 percent), and local funds ($103 million or 23 percent). In addition to funds invested in the arterial street and highway system and the public transit system, substantial annual expenditures are made on the nonarterial street system, or collector or land access streets, of the Region. In 1999, an estimated $143 million was expended on the nonarterial street system of the Region, based upon costs reported to the Wisconsin Department of Revenue by the Region's counties, cities, villages and towns.

Figure 8

COMPARISON OF STATE TRANSPORTATION REVENUES AND EXPENDITURES ASSOCIATED WITH THE SOUTHEASTERN WISCONSIN REGION: 1999



[a] POPULATION IS BASED ON YEAR 2000 U.S. CENSUS DATA.

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

REGIONAL LAND USE AND TRANSPORTATION SYSTEM PLANS FOR SOUTHEASTERN WISCONSIN

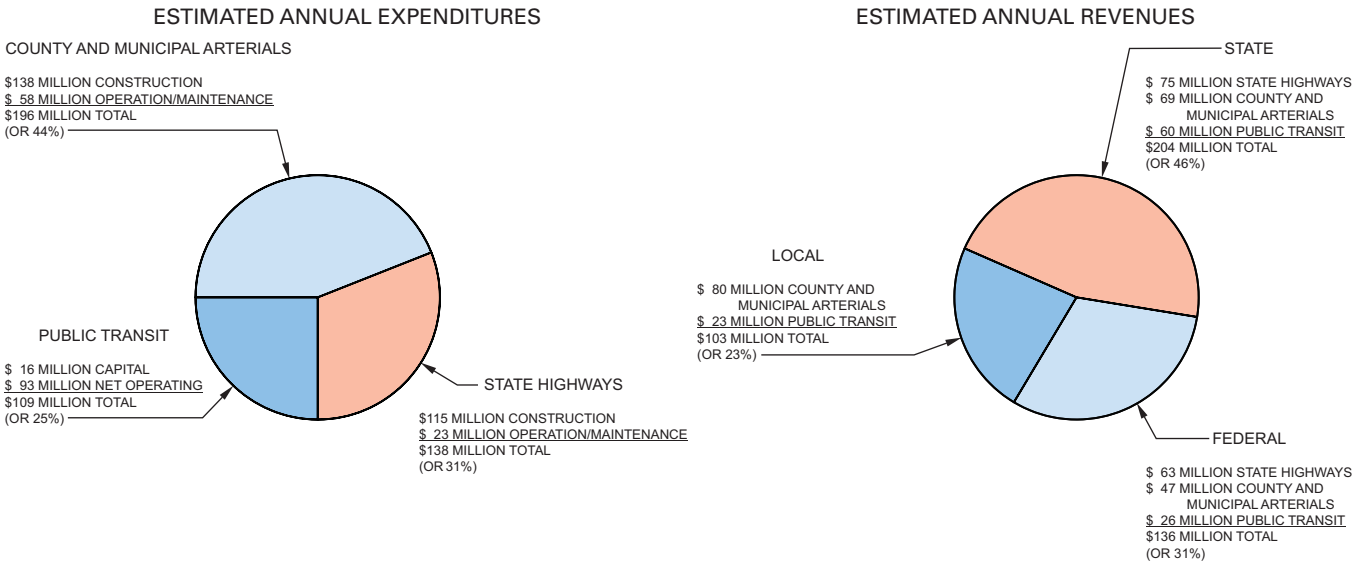
The principal responsibility of the Southeastern Wisconsin Regional Planning Commission is to prepare a comprehensive plan for the physical development of the Region. The most basic regional plan element prepared by the Commission is a regional land use plan upon which all other plan elements, including transportation, are based. The Commission has placed great emphasis upon the preparation of a comprehensive plan for the physical development of the Region. Such a plan is essential to properly coordinate land use development with the development of supporting transportation, utility, and community facility systems. Such a plan is essential as well, to permit the coordination of the development of each of these functional systems and to avoid serious and costly environmental and developmental problems, and to provide a more healthful, attractive, and efficient regional settlement pattern. The remainder of this section describes the Commission's most current version of the regional land use and transportation plans which have a future design year of 2020.

Regional Land Use Plan

The Commission's adopted design year 2020 regional land use plan is described in summary form in Chapter III entitled, "Regional Growth and Change and the Year 2020 Regional Land Use Plan," of SEWRPC Planning Report No. 46, *A Regional Transportation System Plan for Southeastern Wisconsin: 2020*, and is fully documented in SEWRPC Planning Report No. 45, *A Regional Land Use Plan for Southeastern Wisconsin: 2020*. The regional land use plan recommends attainment of a centralized regional settlement pattern and seeks to moderate the current trend toward decentralized land development within the Region. The plan, as shown on Map 7, recommends stabilization and revitalization of the urban centers of the Region, particularly of the Milwaukee, Racine, and Kenosha urbanized areas. It recommends that new urban development be encouraged to occur largely as infill in existing urban centers, and in defined urban growth areas emanating outward from the existing urban centers of the Region. Moreover, new urban development in the defined urban growth areas is proposed to occur at densities which can efficiently and effectively support essential urban services, including water supply, sanitary sewerage, and public transit.

Figure 9

ESTIMATED ANNUAL REVENUES AND EXPENDITURES ON THE REGIONAL TRANSPORTATION SYSTEM OF SOUTHEASTERN WISCONSIN: 1999



Source: Wisconsin Department of Transportation, Wisconsin Department of Revenue, and SEWRPC.

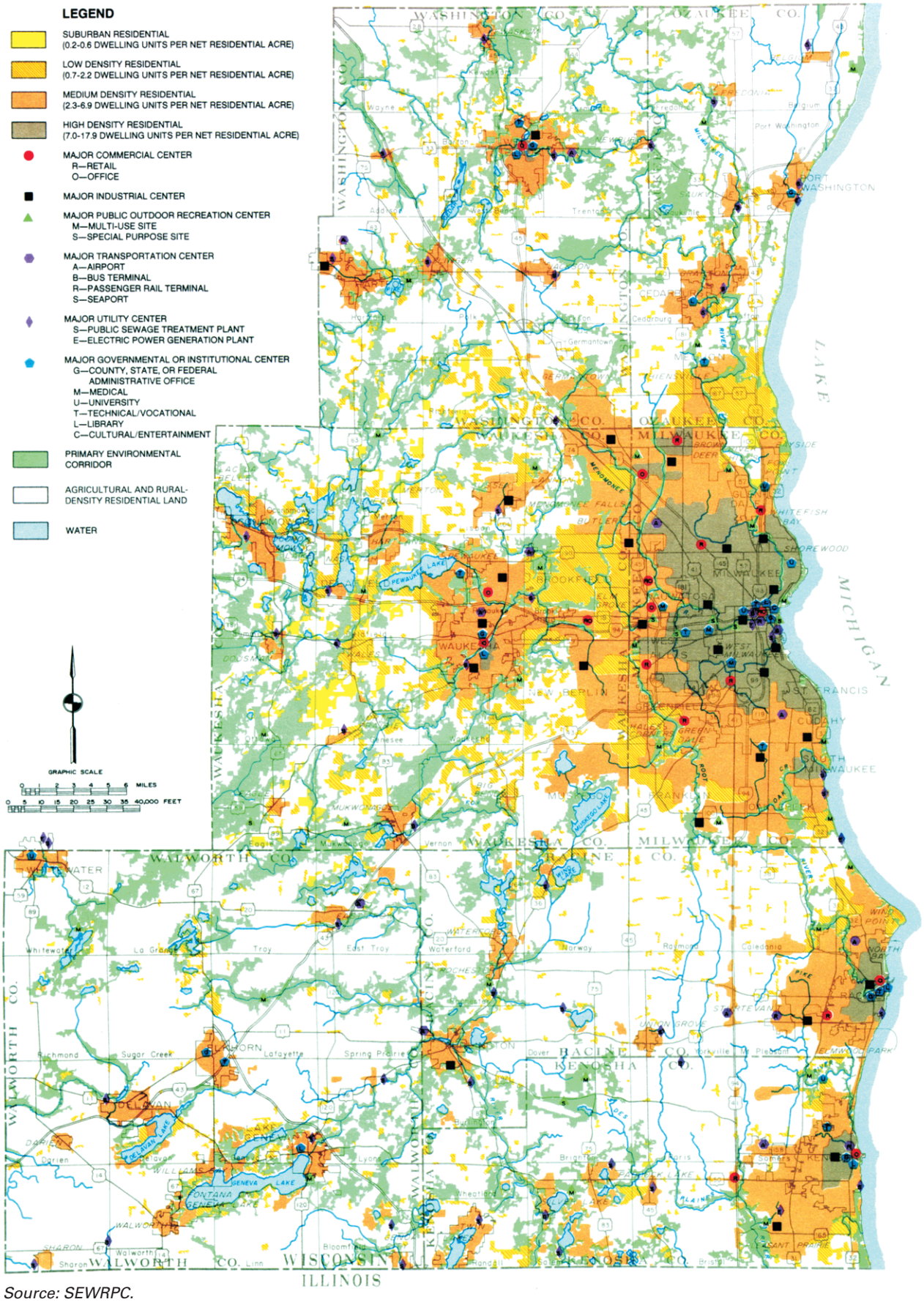
The plan also seeks to discourage and reduce a scattered pattern of urban development, often termed "urban sprawl". This development pattern typically involves the use of onsite sewage disposal and water supply facilities. Such scattered development is costly and difficult, if not impossible, to serve efficiently with public transit, and reduces the potential for carpooling. In addition, the number of trips required to serve such development and the length of those trips may be expected to be higher than for comparable centralized development. Urban development occurring in a scattered, low-density pattern also results in a demand for urban facilities and services, such as improved highways, throughout a widespread area of mixed rural-urban land uses, and can result in conflicts with, and diseconomies for, remaining agricultural uses.

Although the land use plan envisions continued reliance on the private land market as the major determinant of the location, density, and character of future land use development within the Region, it proposes to influence the operation of that market and its effects on land use development through public land use development regulations in order to promote a more orderly and economic regional development pattern, to avoid intensification of existing, and the creation of new, areawide developmental and environmental problems, and to achieve a more healthful and attractive, as well as more efficient, regional settlement pattern.

The plan seeks to influence the operation of the private land market in three significant ways. First, the plan recommends that urban development be encouraged to occur only in those areas of the Region which are covered by soils suitable for such development; which are not subject to special hazards, such as flooding and shoreline erosion; and which can be readily served by essential municipal facilities and services, including centralized public sanitary sewerage, water supply, and public transit services. The plan further recommends that new residential development in the defined urban growth areas occur primarily in planned neighborhoods at medium urban densities, averaging about five dwelling units per net residential acre. In this respect, the plan seeks to moderate the declining trend in urban population density experienced within the Region. The plan envisions a total of 27 major industrial centers and 18 major commercial centers within existing urban areas and areas proposed to be converted to urban use by the plan design year 2020.

Map 7

ADOPTED LAND USE PLAN FOR THE SOUTHEASTERN WISCONSIN REGION: 2020



Source: SEWRPC.

Second, the plan recommends the protection of all remaining primary environmental corridors of the Region from intrusion by incompatible urban development, and discourages the location of urban development, as well, in the secondary environmental corridors and isolated natural areas. The primary environmental corridors encompass only about 17 percent of the total area of the Region and include all the major lakes and streams and most of the associated undeveloped shorelands and floodlands; most of the best remaining woodlands, wetlands, and wildlife habitat areas; areas with rough topography and significant geologic formations; most of the best remaining sites having scenic, historic, and scientific value; the major groundwater recharge and discharge areas; and many existing park sites and most of the best remaining potential park sites. The preservation of these corridors is important to the maintenance of a high level of environmental quality in the Region, to the protection of its natural beauty and cultural heritage, and to the provision of opportunities for certain scientific, educational, and recreational activities. The exclusion of urban development from these corridors will also prevent the creation of serious and costly development problems, such as wet and flooded basements, pavement and building foundation failures, and excessive clearwater infiltration and inflow into sanitary sewerage facilities.

Third, the plan recommends the retention in essentially rural use of almost all remaining prime agricultural lands, consisting of the most productive farmlands and units in the Region. Protection and preservation of this prime agricultural land is recommended not only for economic reasons, but also to assure the wholesomeness of the future regional environment and to contribute to the preservation of the unique cultural heritage of the Region, as well as of its natural beauty. Although the adopted regional land use plan contains many other recommendations for guiding land use development within the Region into a better settlement pattern, the three recommendations summarized above are the most important.

Regional Transportation System Plan

The Commission's year 2020 regional transportation system plan has been designed to serve the regional land use plan and not a projection of current land use development trends toward further decentralization of population, employment, and urban land uses. Thus, if transportation facilities and services do indeed shape land use development, implementation of the regional transportation system plan should promote implementation of the land use plan, which recommends a desirable pattern of future land use with respect to travel requirements. The year 2020 regional transportation system plan is fully documented in SEWRPC Planning Report No. 46, *A Regional Transportation System Plan for Southeastern Wisconsin: 2020.* The plan has three principal components: transportation systems management, public transit, and arterial streets and highways. These three components are described in the following sections.

Highway capacity additions are recommended in the regional transportation plan only as a last resort, that is, to address the congestion which may not be expected to be alleviated by land use, systems management, or public transit measures. The first elements considered for inclusion in the regional transportation plan were the transit and transportation system management elements. The potential of these elements to alleviate congestion was explicitly identified. Highway capacity additions were then recommended to be added to the regional transportation plan to resolve to the extent considered practicable the residual existing and probable future traffic congestion.

Transportation Systems Management Element

The transportation systems management element of the plan is intended to encourage more efficient use of the existing transportation system. It includes travel demand management measures to encourage carpooling and transit travel and thereby reduce vehicular travel. It also includes traffic management measures which seek to obtain the maximum vehicular capacity practicable from existing arterial street and highway facilities. The transportation systems management element of the plan includes the following seven measures:

1. <u>Freeway Traffic Management</u>
   Implementation of an areawide freeway traffic management system, including elements of freeway system operational control, advisory information, and incident management. The systemwide operational control element would control single occupancy vehicle freeway access through ramp meters to reduce freeway traffic flow breakdown and stop-and-go traffic. Buses and high-occupancy vehicles would receive preferential access at the ramps. The advisory information element would

provide information about current and projected freeway travel conditions. The incident management element would provide for improved detection, confirmation, and removal of freeway incidents.

2. Arterial Curb-Lane Parking Restrictions
   Restriction of curb-lane parking as needed during peak periods along about 400 miles, or about 12 percent, of the planned 3,612-mile arterial street and highway system in order to reduce traffic congestion and help provide good transit service. Local governmental units would consider the proposed curb-lane parking restrictions as traffic volumes and congestion increase, and implement these restrictions rather than considering expansion of highway capacity through widening and new construction beyond that envisioned in the plan.

3. Traffic Engineering
   The use of state-of-the-art traffic engineering practices to assist in achieving efficient traffic flow on arterial facilities, including intersection treatments with turn lanes as needed, and efficient traffic signalization, and the facilitation of pedestrian and bicycle movements on arterial streets and highways.

4. Traffic Management Technology
   The application of advanced traffic management technology, known as Intelligent Transportation Systems (ITS), as such technology becomes practicable and available over the plan implementation period. This may include traveler information for transit and highway travel, and advanced traffic management systems for improved transportation facility operation.

5. Travel Demand Management Promotion
   A regionwide program to promote travel through ridesharing, transit use, bicycle use, and pedestrian movement, together with telecommuting and work-time rescheduling as may be found feasible.

6. Detailed Land Use Planning and Site Design
   The preparation and implementation by local governmental units of detailed, site-specific neighborhood land use plans to facilitate travel by transit, bicycle, and pedestrian movement, as recommended in the adopted regional land use plan.

7. Transit Systems Management and Service Enhancement Measures
   The undertaking by the transit agencies in the Region of a range of activities to enhance the quality of transit services and to facilitate transit use, including conduct of marketing and public information and education activities, improvement of bus speeds through priority systems and signal preemption, and promotion of innovative fare-payment systems.

Public Transit

The regional transportation system plan calls for major increases in the levels of rapid and express transit service provided within the Region, as well as increases in the level of local service provided (see Table 13). The plan proposes the development of a true system of rapid and express transit routes integrated with local transit service. Rapid transit routes would operate within all major travel corridors oriented to the Milwaukee central business district (CBD), with express transit operating over a grid pattern of routes largely within Milwaukee County. In total, the plan proposes approximately a 70 percent increase in transit service as measured by vehicle-miles of service, from the 66,100 vehicle-miles of such service in the base year of the plan of 1995, to 111,500 vehicle-miles in 2020. This increase embodies the combined effects of proposed improvements in the frequency of operation of rapid and express transit and the additions and extensions of rapid, express, and local transit routes. The transit recommendations are shown in graphic summary form on Map 8.

Rapid Transit

The plan recommends that existing freeway flyer bus service within the Region continue to be operated from the Milwaukee CBD southwesterly to the Village of Mukwonago and westerly to the Cities of Waukesha and Oconomowoc, and northerly to the Cities of Mequon, Cedarburg, and Port Washington. The plan also proposes the

Table 13

TRANSIT SYSTEM OPERATING CHARACTERISTICS IN THE REGION: 1995 AND 2020 REGIONAL TRANSPORTATION PLAN

Transit Service Characteristics	Existing 1995	2020
Round-Trip Route Length (miles)		
Rapid Routes	523	1,360
Express Routes	437	430
Local Routes		
Kenosha Urbanized Area	192	210
Milwaukee Urbanized Area	1,135	1,530
Racine Urbanized Area	186	200
Subtotal	1,513	1,940
Total	2,473	3,730
Average Weekday Vehicle Requirements[a]		
Peak Period	537	819
Midday Off-Peak Period	286	375
Revenue Vehicle-Miles (average weekday)[b]		
Rapid	3,800	14,700
Express	5,500	21,500
Local	56,800	75,300
Total	66,100	111,500
Revenue Vehicle-Hours (average weekday)		
Rapid	200	600
Express	320	1,400
Local	4,810	6,600
Total	5,330	8,600

[a]*Represents only the vehicles required for daily system operation. Excludes vehicles needed as spare or backup.*

[b]*Since 1995, transit vehicle-miles of service have increased by nearly 15 percent to 76,200 vehicle-miles of service in 1999.*

Source: SEWRPC.

enhancement of the level of freeway flyer bus service provided in these corridors. The plan also calls for the expansion of such service in the south corridor to the Cities of Racine and Kenosha, and in the northwest corridor from its current terminus at the Pilgrim Road transit station in the Village of Menomonee Falls to the City of West Bend. The network of rapid transit routes is shown in red on Map 8. The planned rapid transit system would serve intermediate stations spaced about every three to five miles and would provide service in both directions during both peak periods.

The plan recommends that the number of rapid transit revenue vehicle-miles of service provided be increased by 11,900 vehicle-miles, or about 300 percent, from 3,800 in 1995 to 14,700 by 2020. Similarly, the plan recommends that the number of rapid transit revenue vehicle-hours of service be increased by 400 vehicle-hours, from 200 in 1995 to 600 by 2020.

The rapid transit service provided under the recommended plan would operate primarily during peak periods, from 6:00 a.m. to 8:30 a.m. and from 3:30 p.m. to 6:30 p.m. on weekdays. Midday service would be provided over some routes, with limited weekend and evening service. Headways on the rapid transit system would range from five to

30 minutes during peak periods to 30 to 60 minutes during off-peak periods over those routes provided with service during the midday.

The fares for rapid transit service would remain at 1997 levels, adjusted only for future general price inflation. The freeway flyer rapid transit bus fare for a trip within Milwaukee County would be $1.60.[5] The fare charged for a trip between points within Milwaukee County and the limits of the Milwaukee urbanized area would be $2.10. The fare charged for a trip between the Milwaukee CBD and the outer limits of the rapid transit system would be $3.10.

The plan also recognizes the potential to establish commuter-rail passenger service as an alternative to freeway flyer or exclusive busway rapid transit service in four major Milwaukee-oriented travel corridors: from Milwaukee through the Cities of St. Francis, Cudahy, South Milwaukee, Oak Creek, and Racine to the City of Kenosha over the CP Rail System (former Chicago, Milwaukee, St. Paul & Pacific Railroad Company) and Chicago & North Western Transportation Company railway lines; from Milwaukee through the City of Wauwatosa, Village of Elm Grove, City of Brookfield, Village of Pewaukee, Village of Hartland, City of Delafield, and Village of Nashotah to the City of Oconomowoc over the CP Rail system (former Chicago, Milwaukee, St. Paul & Pacific Railroad Company) railway lines; from Milwaukee through Villages of Germantown and Jackson to the City of West Bend over the CP Rail System (former Chicago, Milwaukee, St. Paul & Pacific Railroad Company), Chicago & North Western Transportation Company, and Wisconsin Central Transportation Corporation (former Chicago & North Western Transportation Company) railway lines; and from Milwaukee through the Village of Brown Deer, City of Cedarburg, and Village of Grafton to the Village of Saukville over the CP Rail System and Wisconsin Central Transportation Corporation (former Chicago, Milwaukee, St. Paul & Pacific Railroad Company) railway lines. The plan also recognizes the potential to provide commuter-rail passenger service in two Chicago-oriented corridors: from the Village of Walworth through Fox Lake, Illinois, to Chicago over Wisconsin & Southern Railroad Company and Metra railway lines (former Chicago, Milwaukee, St. Paul &.Pacific Railroad Company) and from the City of Burlington through the Village of Silver Lake and Antioch, Illinois, to Chicago over Wisconsin Central Transportation Company railway lines (former Soo Line Railroad Company) (see Map 9). Corridor alternatives analysis studies would be required for these potential commuter rail facilities and services; as a result, these facilities and services are not explicitly included in the regional plan. Feasibility studies—a precursor to alternatives analysis studies—are underway in two potential commuter rail corridors—Burlington to Chicago, and Walworth to Chicago—and have been completed in the Milwaukee to Kenosha corridor. A transit corridor alternatives analysis study is underway in the Milwaukee to Kenosha corridor.

Express Transit

The regional transportation system plan recommends that 12 regular express transit bus routes be provided in a grid pattern, largely within Milwaukee County. Within the Milwaukee urbanized area, the express transit would be provided in major travel corridors to connect major activity centers, including the Milwaukee CBD and high- and medium-density residential areas. One express transit route would also connect the CBD's of the Cities of Racine and Kenosha. The planned express routes are shown in blue on Map 8.

Five travel corridors are identified in the plan as having potential for light-rail express or express bus guideway transit service and would represent upgrading of the proposed express bus transit routes. (See Map 9). The ultimate decision concerning the provision of light-rail or express bus guideway facilities in these corridors would be determined in Federally required alternative analysis studies/preliminary engineering studies/final environmental impact statements. Therefore, these facilities have not been explicitly included in the regional transportation plan and the conformity determination of the plan. The potential light-rail or express bus guideway facilities are envisioned to operate with preferential treatment over reserved street lanes within street rights-of-way or over exclusive rights-of-way, such as along railway or former electric interurban railway rights-of-way. Light-rail and express bus guideway operating characteristics may be expected to vary, depending upon the type of right-of-way and adjacent

[5] *Milwaukee County Transit System freeway flyer fares were increased from $1.60 to $1.75 on December 30, 2000.*

development and attendant station spacing, and may approach rapid transit operating characteristics. An alternatives analysis is underway in the Milwaukee CBD investigating bus, light rail, and historic trolley transit circulator system alternatives.

Under the plan, the extent of express transit service would be significantly expanded through the provision of a grid of express routes. The frequency of operation of transit vehicles over the express routes would also be significantly increased. As shown in Table 13, the number of vehicle-miles provided on an average weekday would increase by 16,000 vehicle-miles, or about 300 percent, from about 5,500 in 1995 to about 21,500 in 2020. Similarly, vehicle-hours of express service provided on an average weekday would increase by 1,080 vehicle-hours, from 320 in 1995 to 1,400 in 2020.

Express transit service would be provided on weekdays from 6:00 a.m. to 6:00 p.m. on all routes and during weekday evenings and weekends on some routes. Peak-period headways would range from five to 15 minutes in the Milwaukee urbanized area and extend to 30 minutes on the route connecting Racine and Kenosha. Off-peak headways would range from 20 to 30 minutes within the Milwaukee urbanized area to 60 minutes on the Racine-Kenosha route. Express transit fares under the plan would remain at 1997 levels, $1.35 in Milwaukee County and $1.00 on the Racine-Kenosha route. It is assumed that these fares would increase with general price inflation over the plan design period.[6]

Local Transit

The level of local service envisioned in the plan consists of buses operating over arterial and collector streets, with frequent stops for passenger boarding and alighting. Local fixed-route service would continue to be provided and would be extended within Milwaukee County and the Cities of Waukesha, Racine, and Kenosha and their environs. The plan recommends that the local transit operators undertake detailed implementation studies to identify the best way to provide for service enhancement and extensions, holding open the possibility of transit-center oriented local route systems, and route-deviation or demand-responsive systems to replace, in some areas, existing and potential extensions of grid route systems. As shown on Map 8, these areas of expanded service are generally located in southern and northern Milwaukee County and in the most heavily developed portions of Waukesha County. Under the plan, local transit service would operate over 75,300 vehicle-miles of service on an average weekday round trip route-miles within the Region, representing an increase of 18,500 vehicle-miles, or 33 percent, over the approximately 56,800 vehicle-miles provided in 1995.

The frequency of local transit service would be substantially improved over 1995 levels. Within Milwaukee County, peak-period headways on the major routes in the area south of Silver Spring Drive, east of 76th Street, and north of Layton Avenue would be improved from 10 to 40 minutes to 10 minutes. Peak-period headways in the Racine and Kenosha urban areas would be improved from 20 to 30 minutes to 15 to 30 minutes. Peak-period headways in the Waukesha urban area would be improved such that all routes would operate at 30-minute headways.

Under the plan, local transit fares would remain at 1997 levels, adjusted only for the effects of general price inflation. Accordingly, fares within Milwaukee County would be $1.35; within the Cities of Kenosha, Racine, and Waukesha, $1.00, increasing only with general price inflation.[7] The plan also recognizes the need to provide local transit service in the smaller urban communities of the Region, particularly through shared-ride taxi service, including the continuation of the shared-ride taxi services provided in the Cities of Hartford, Port Washington, West Bend, and Whitewater.

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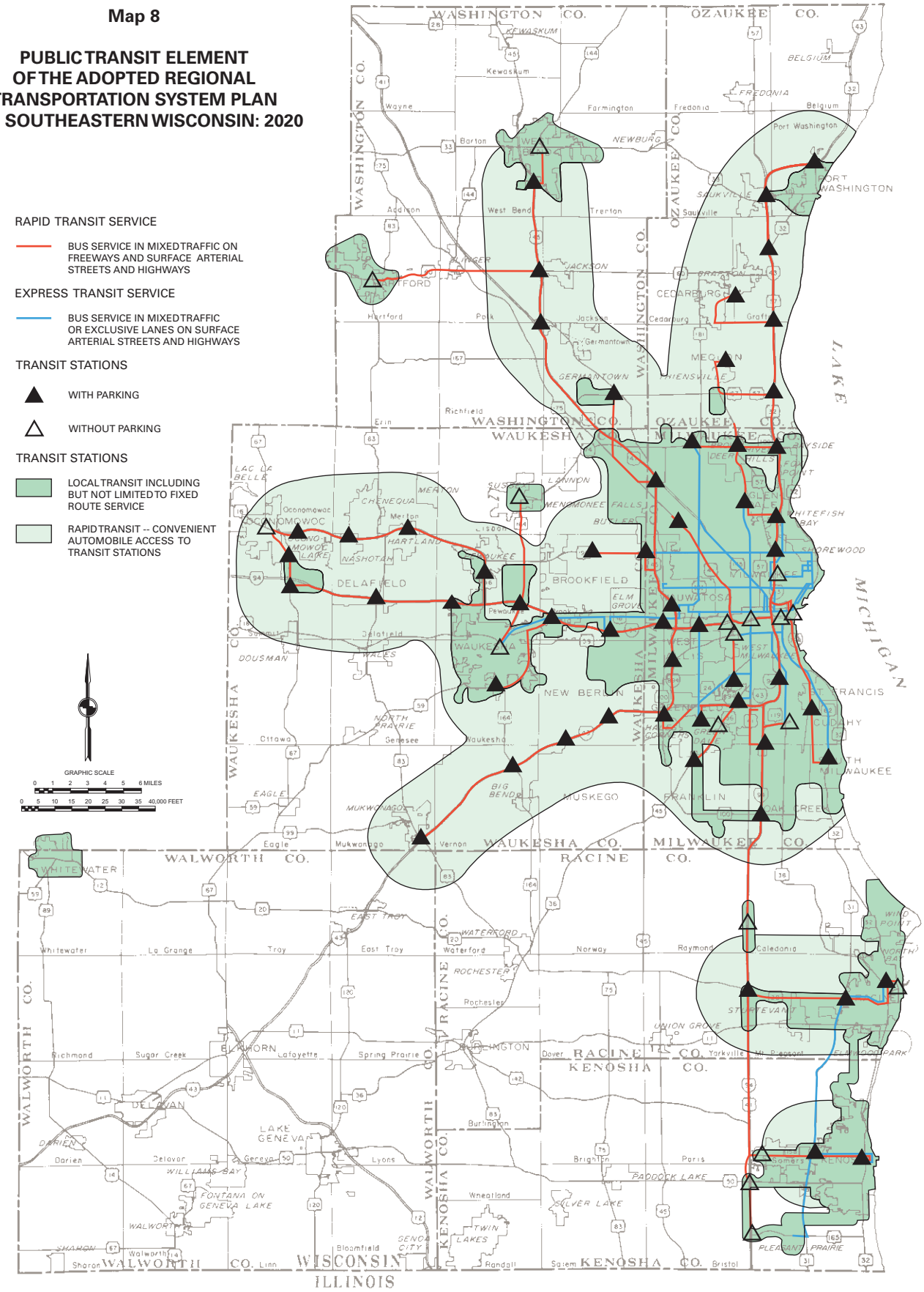
[6] *Milwaukee County Transit System express transit fares were increased $1.35 to $1.50 on December 30, 2000.*

[7] *Milwaukee County Transit System fares were increased from $1.35 to $1.50 on December 30, 2000.*

Map 8

PUBLIC TRANSIT ELEMENT OF THE ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2020

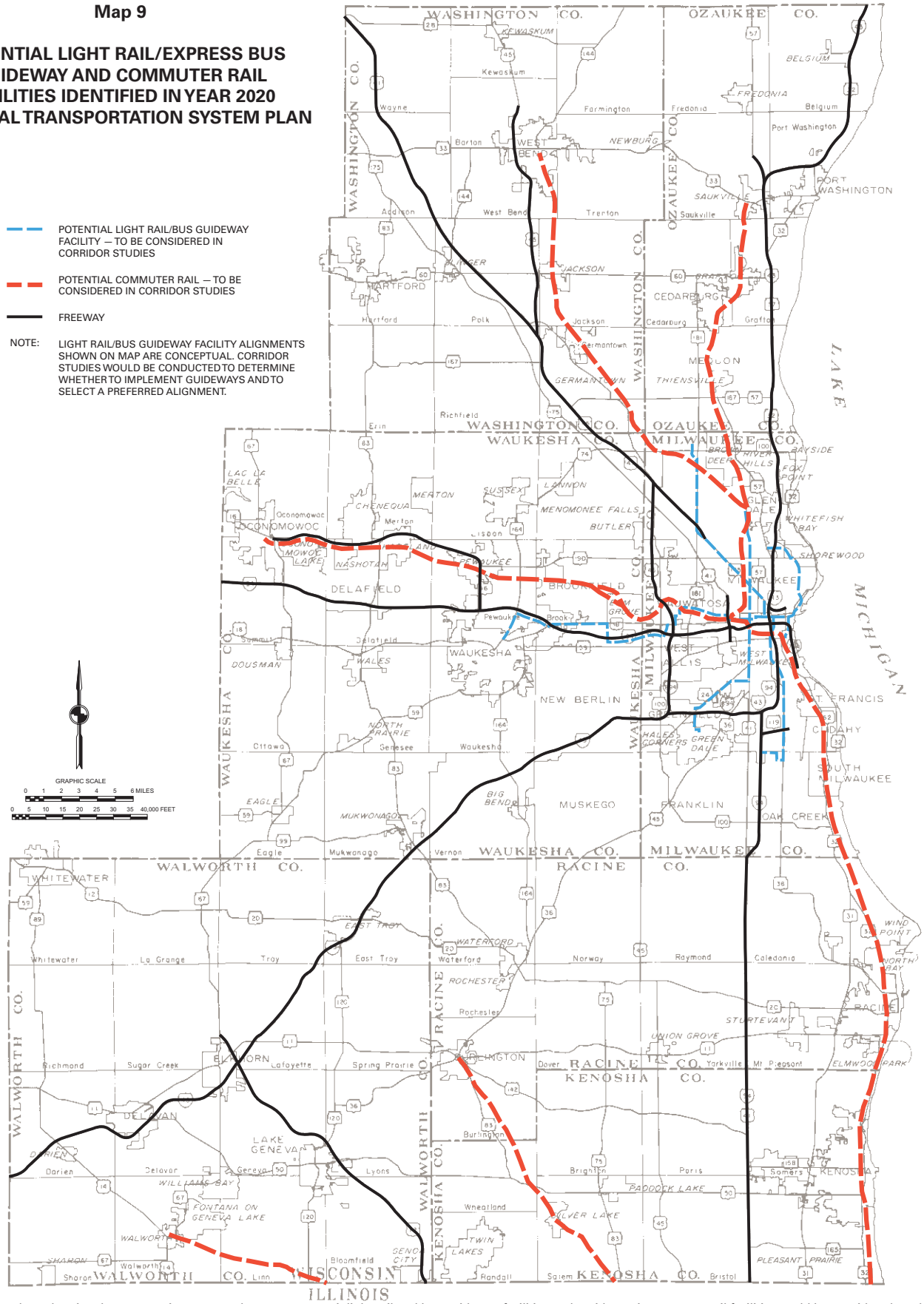


Under the regional transportation system plan, rapid transit commuter rail facilities and express transit light rail facilities would be considered as alternatives to motor-bus transit service over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed transit planning alternatives analysis studies for each of the corridors identified under the plan. The potential corridors for commuter rail and light rail facilities are shown on Map 9. The implementation of these fixed-guideway transit facilities would depend upon the outcome of the corridor studies. Upon completion of each study, the local units of government concerned--particularly, the potential transit operator involved--the Wisconsin Department of Transportation, and the Regional Planning Commission would have to affirm the study findings and, if necessary, amend the regional transportation system plan.

Source: SEWRPC

Map 9

POTENTIAL LIGHT RAIL/EXPRESS BUS GUIDEWAY AND COMMUTER RAIL FACILITIES IDENTIFIED IN YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN



Under the adopted regional transportation system plan express transit light-rail and bus guideway facilities and rapid transit commuter rail facilities could be considered as alternatives to motor-bus transit service in mixed traffic over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed planning transit alternatives analysis studies for each of the identified corridors. The addition of these potential fixed guideway transit facilities to the regional plan, and the ultimate implementation of these fixed guideway transit facilities, depends upon the outcome of the corridor studies. Upon completion of a study, the local units of government concerned -- specifically, the transit operator concerned -- the Wisconsin Department of Transportation and the Regional Planning Commission would have to affirm the study findings, determine to pursue guideway implementation, and, as necessary, amend the regional transportation system plan.

Source: SEWRPC

Arterial Street and Highway System

The planned arterial street and highway system in the Region in the year 2020 is summarized in Table 14. In 1995, the arterial street and highway system in the Region consisted of about 3,277 route-miles of facilities. Under the regional plan, the arterial system would be increased by about 336 route-miles by the year 2020, or about 10 percent, to a total of 3,613 route-miles. The additional arterial mileage reflects primarily the conversion of existing nonarterial facilities to arterial status and function as urban development proceeds within the Region. About 124 route-miles, or 3.4 percent of the proposed total arterial system mileage, would be added through new construction.

The recommended year 2020 arterial street and highway system for the Region identifies the number of traffic lanes to be provided on each segment of arterial street. Arterial facilities are identified as having either two, four, six, or eight lanes. The number of lanes identified refers to through travel lanes, that is, those lanes that would carry traffic directly through intersections. Thus, the number does not include any auxiliary traffic lanes provided at intersections for left- and right-turning movements, for vehicle parking, or for use by vehicles in distress. It was assumed in the regional systems analysis that such right- and left-turn lanes will be provided where the volumes of turning vehicles would adversely affect the movement of vehicles through the intersection. The provision of turn lanes would, therefore, follow a design investigation in connection with a given improvement project. In addition to determining whether or not right- and/or left-turn lanes should be provided at intersections, the design investigation should determine whether or not a given arterial street improvement should be made using a divided or an undivided roadway cross-section. Thus, the precise cross-section to be selected for a given improvement project should be determined by the State, county, and local implementing agencies following appropriate design study.

The recommendations for arterial street and highway system capacity improvement and expansion to add traffic lanes to the existing arterial street system are shown for each county on Maps 10 through 16.

System Expansion: Constructing New Facilities

Arterial system expansion consists of all projects which would significantly increase the capacity of the existing system through construction of new arterial streets and highways. The plan would provide for the construction of 124 route-miles of new arterial facilities. These include such long-planned facilities as the STH 16 bypass of Oconomowoc, the completion of the Waukesha bypass, and the STH 36 bypass of Burlington. In all, proposed new arterial street and highway facilities would represent about 3.5 percent of the total planned arterial route-miles in the year 2020.

System Improvement: Widening Existing Facilities

System improvement consists of all projects which would significantly increase the capacity of the existing system through street widening to provide additional through traffic lanes. Under the plan, a total of 405 route miles of facilities would be widened and improved with respect to traffic carrying capacity. Proposed improvements would include, among others, the widening of CTH J and STH 164 in Washington and Waukesha Counties; of Cleveland Avenue (CTH D) and Racine Avenue (CTH Y) in Waukesha County; of STH 31 and CTH Y in Kenosha and Racine Counties; of Northwestern Avenue (CTH K) and Spring Street (CTH C) in Racine County; of STH 57 and Port Washington Road (CTH W) in Ozaukee County; of STH 33 in Ozaukee and Washington Counties; of Ryan Road (STH 100) in Milwaukee County; and the completion of the widening of STH 50 in Kenosha and Walworth Counties. The system improvement activities would comprise about 11.2 percent of the total planned arterial system.

System Preservation: Maintaining Existing Facilities

System preservation consists of all arterial preservation projects required to maintain the structural adequacy and serviceability of the existing arterial system without significantly increasing the capacity of that system. This would include all projects classified as resurfacing and reconstruction for the same capacity. The plan proposes system preservation activities for about 3,083 route-miles of the arterial system representing about 85 percent of the total planned arterial system in the year 2020.

Included in the category of preservation under the current plan is the need to renew the freeway system in the Milwaukee area. That freeway system, which is the “backbone” of the entire regional arterial street and highway system, is nearing the end of its physical and economic life. The pavement and bridge structures and surfaces are

Table 14

ARTERIAL STREET AND HIGHWAY SYSTEM PRESERVATION, IMPROVEMENT, AND EXPANSION BY ARTERIAL FACILITY TYPE BY COUNTY: 2020 REGIONAL TRANSPORTATION SYSTEM PLAN[a]

County	System Preservation (miles)	System Improvement (miles)	System Expansion (miles)	Total Miles
Kenosha				
Freeway	12.0	--	--	12.0
Standard Arterial	290.3	44.8	8.5	343.6
Subtotal	302.3	44.8	8.5	355.6
Milwaukee				
Freeway	68.5	--	--	68.5
Standard Arterial	678.2	40.3	10.3	728.8
Subtotal	746.7	40.3	10.3	797.3
Ozaukee				
Freeway	27.4	--	--	27.4
Standard Arterial	223.9	47.7	7.0	278.6
Subtotal	251.3	47.7	7.0	306.0
Racine				
Freeway	12.0	--	--	12.0
Standard Arterial	342.0	50.6	21.5	414.1
Subtotal	354.0	50.6	21.5	426.1
Walworth				
Freeway	50.0	--	-16.7	66.7
Standard Arterial	361.0	36.7	17.8	415.5
Subtotal	411.0	36.7	34.5	482.2
Washington				
Freeway	42.7	--	--	42.7
Standard Arterial	361.0	43.1	21.5	425.6
Subtotal	403.7	43.1	21.5	468.3
Waukesha				
Freeway	58.6	1.0	5.7	65.3
Standard Arterial	555.7	141.1	15.0	711.8
Subtotal	614.3	142.1	20.7	777.1
Region				
Freeway	271.2	1.0	22.4	294.6
Standard Arterial	2,812.1	404.3	101.6	3,317.5
Total	3,083.3	405.3	124.0	3,612.6

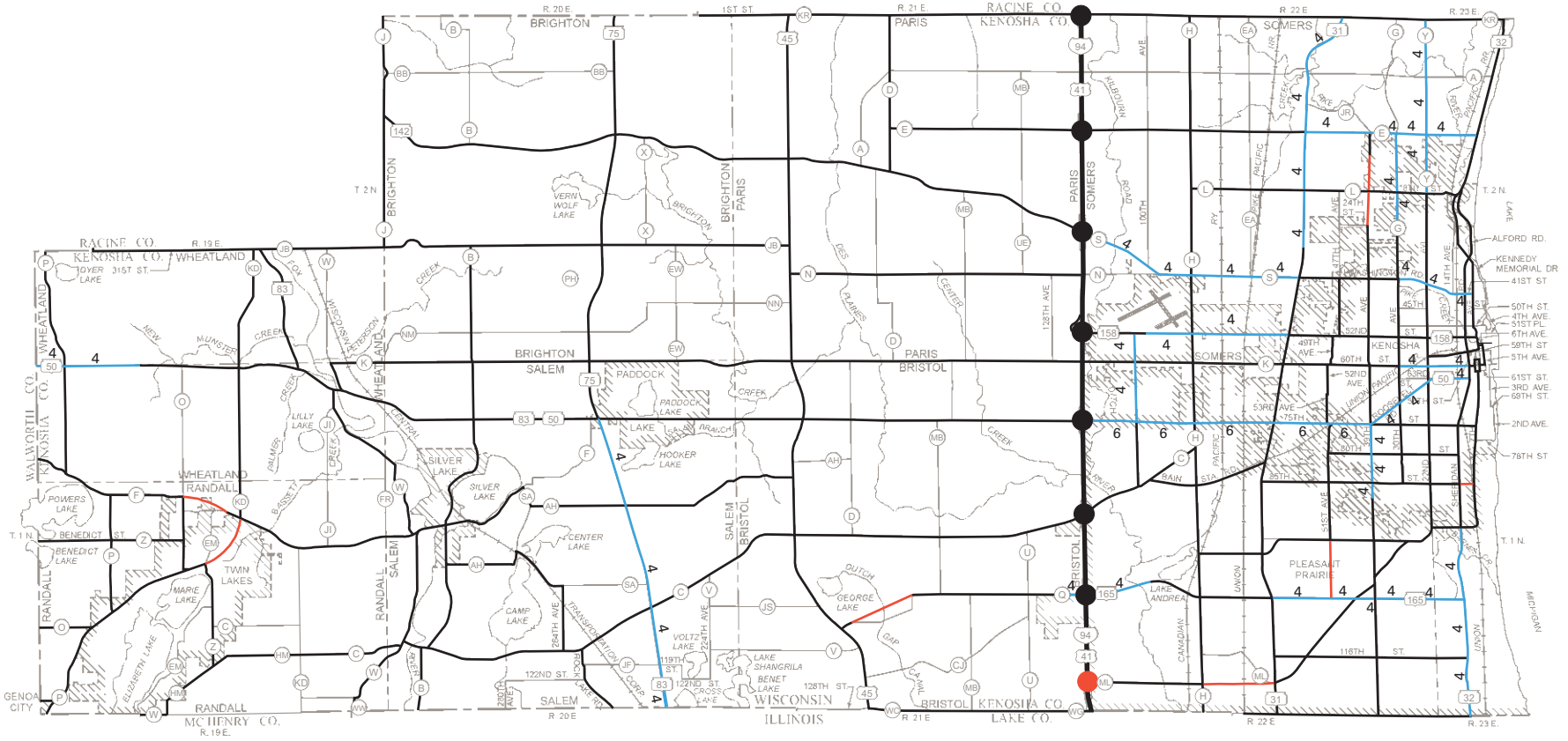
[a]To date, since the completion of the year 2020 plan in 1997, an estimated 75.4 miles of the 529.3 miles of system improvement and expansion have been completed.

Source: SEWRPC.

worn out. In part because the entire regional freeway system was never completed as once planned, the existing components of the Milwaukee-area freeway system already carry far more traffic than they were designed for, and can be expected to carry even heavier traffic loads in future years. Moreover, the geometric design of this freeway system and, in particular, the configuration of the major interchanges, is obsolete and, given the extremely heavy traffic loading, increasingly dangerous.

Map 10

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN KENOSHA COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]



ARTERIAL STREET OR HIGHWAY

- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

- NEW
- EXISTING

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. SUFFICIENT RIGHT-OF-WAY SHOULD BE RESERVED ALONG STH 158 FROM IH 94 TO STH 31 TO ACCOMMODATE ITS ULTIMATE IMPROVEMENT TO SIX TRAVEL LANES.

2. SUFFICIENT RIGHT-OF-WAY SHOULD BE RESERVED ALONG CTH K FROM IH 94 TO STH 31 TO ACCOMMODATE ITS ULTIMATE IMPROVEMENT TO SIX TRAVEL LANES.

3. AS IMPROVEMENTS ARE MADE TO IH 94, THE FRONTAGE ROADS ALONG IH 94, AND THE HIGHWAY FACILITIES WHICH INTERCHANGE WITH OR CROSS IH 94, THE ULTIMATE IMPROVEMENT OF IH 94 TO EIGHT TRAVEL LANES SHOULD BE TAKEN INTO CONSIDERATION.

4. AS IMPROVEMENTS ARE MADE TO IH 94 AND THE FRONTAGE ROADS ALONG IN 94 IN THE VICINITY OF CTH K, THE ULTIMATE PROVISION OF AN INTERCHANGE WITH CTH K SHOULD BE TAKEN INTO CONSIDERATION.

5. AS URBAN DEVELOPMENT PROCEEDS ON LANDS ABUTTING CTH KR BETWEEN IH 94 AND STH 32, SUFFICIENT RIGHT-OF-WAY SHOULD BE RESERVED FOR THE ULTIMATE IMPROVEMENT OF CTH KR TO FOUR TRAVEL LANES.

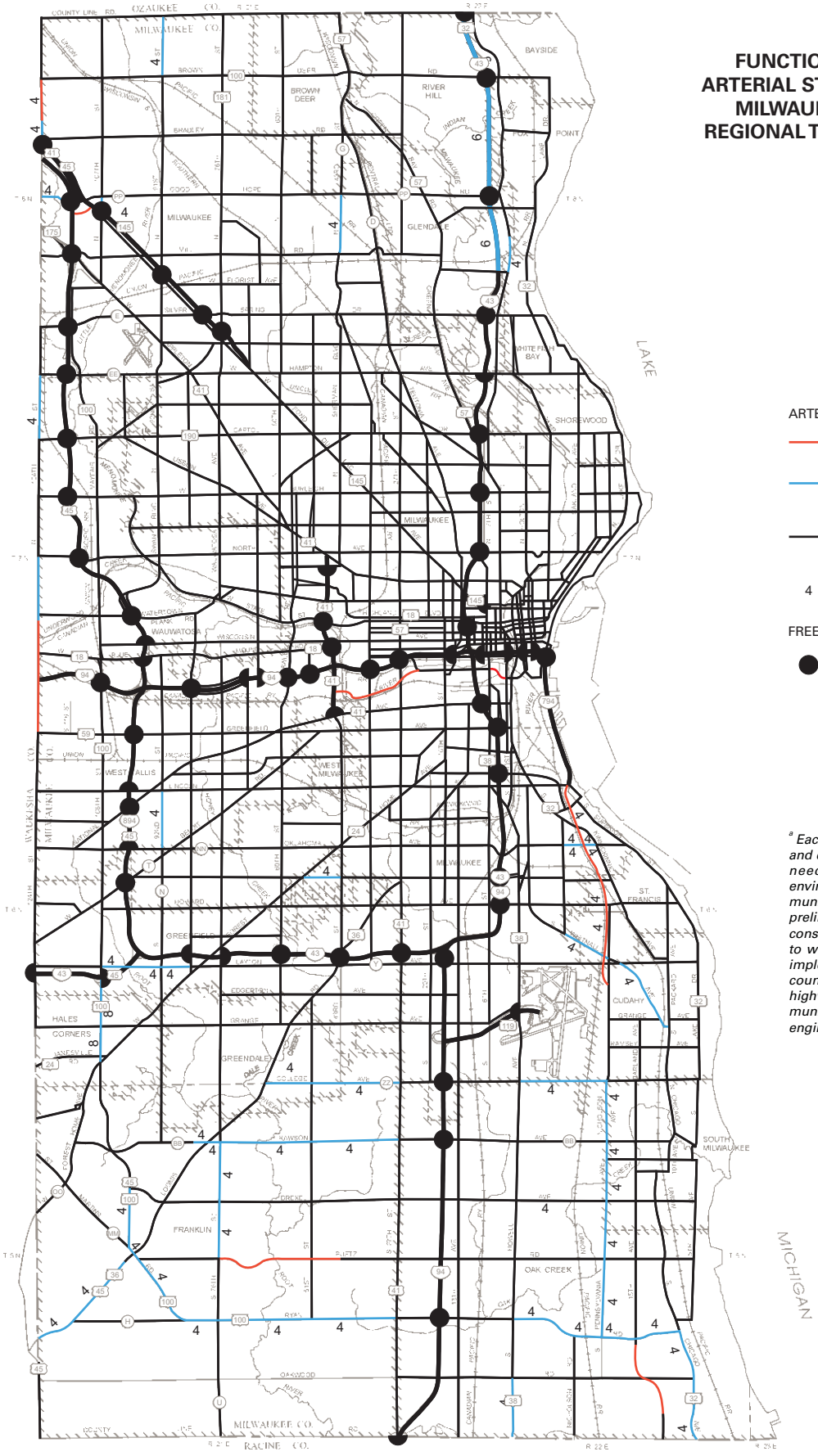
GRAPHIC SCALE
0 1 2 MILES
0 4000 8000 12000 16000 FEET

[a] Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.

Source: SEWRPC.

Map 11

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN MILWAUKEE COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]



ARTERIAL STREET OR HIGHWAY

- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 — NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND /OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

- EXISTING

GRAPHIC SCALE

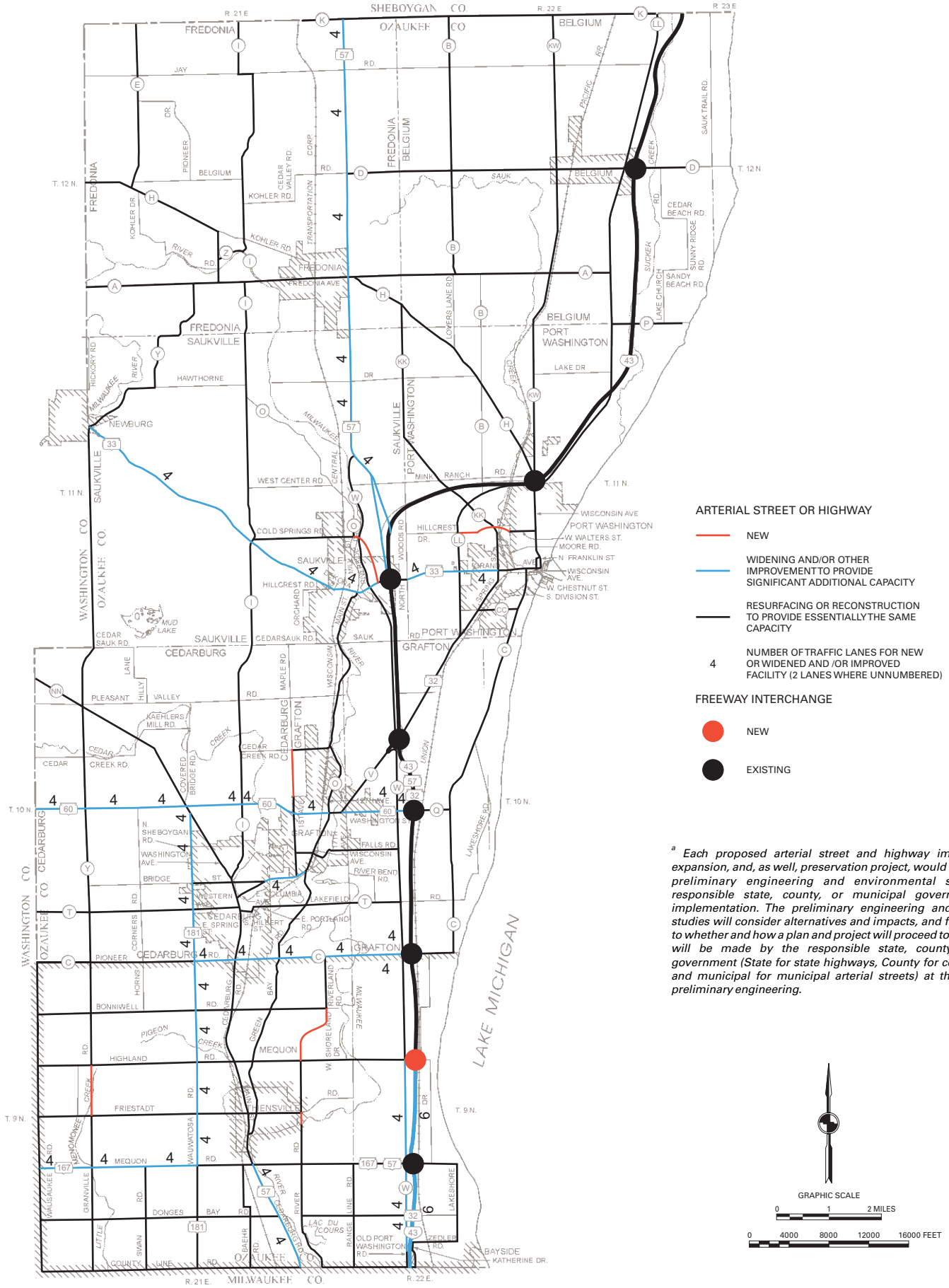
0 1 2 MILES

0 4000 8000 12000 16000 FEET

[a] *Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.*

Source: SEWRPC.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN OZAUKEE COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]

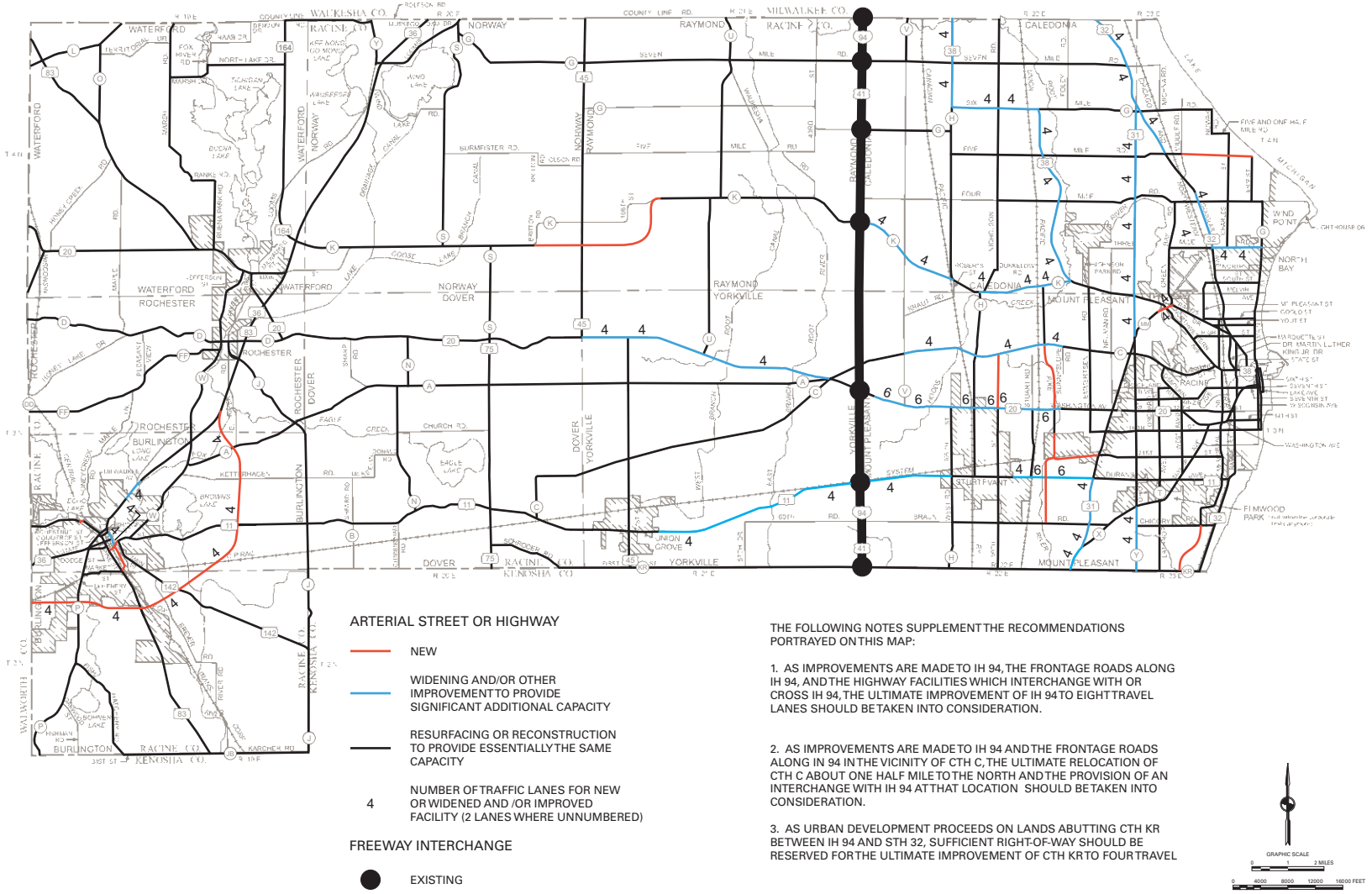


[a] Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.

Source: SEWRPC.

Map 13

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN RACINE COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]

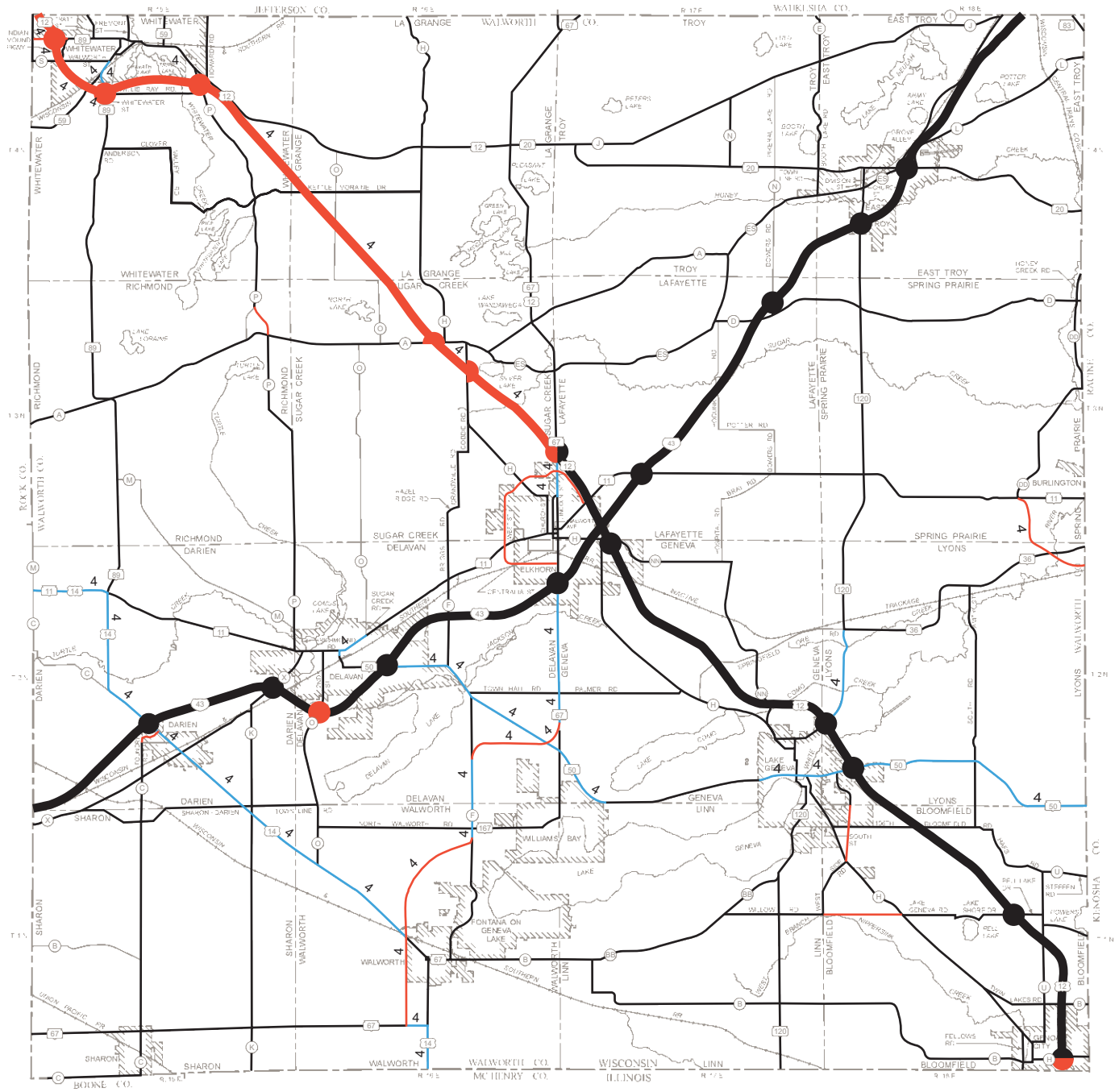


[a] *Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.*

Source: SEWRPC

Map 14

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WALWORTH COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]



ARTERIAL STREET OR HIGHWAY

- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 — NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND /OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

- NEW INTERCHANGE
- NEW HALF INTERCHANGE
- EXISTING

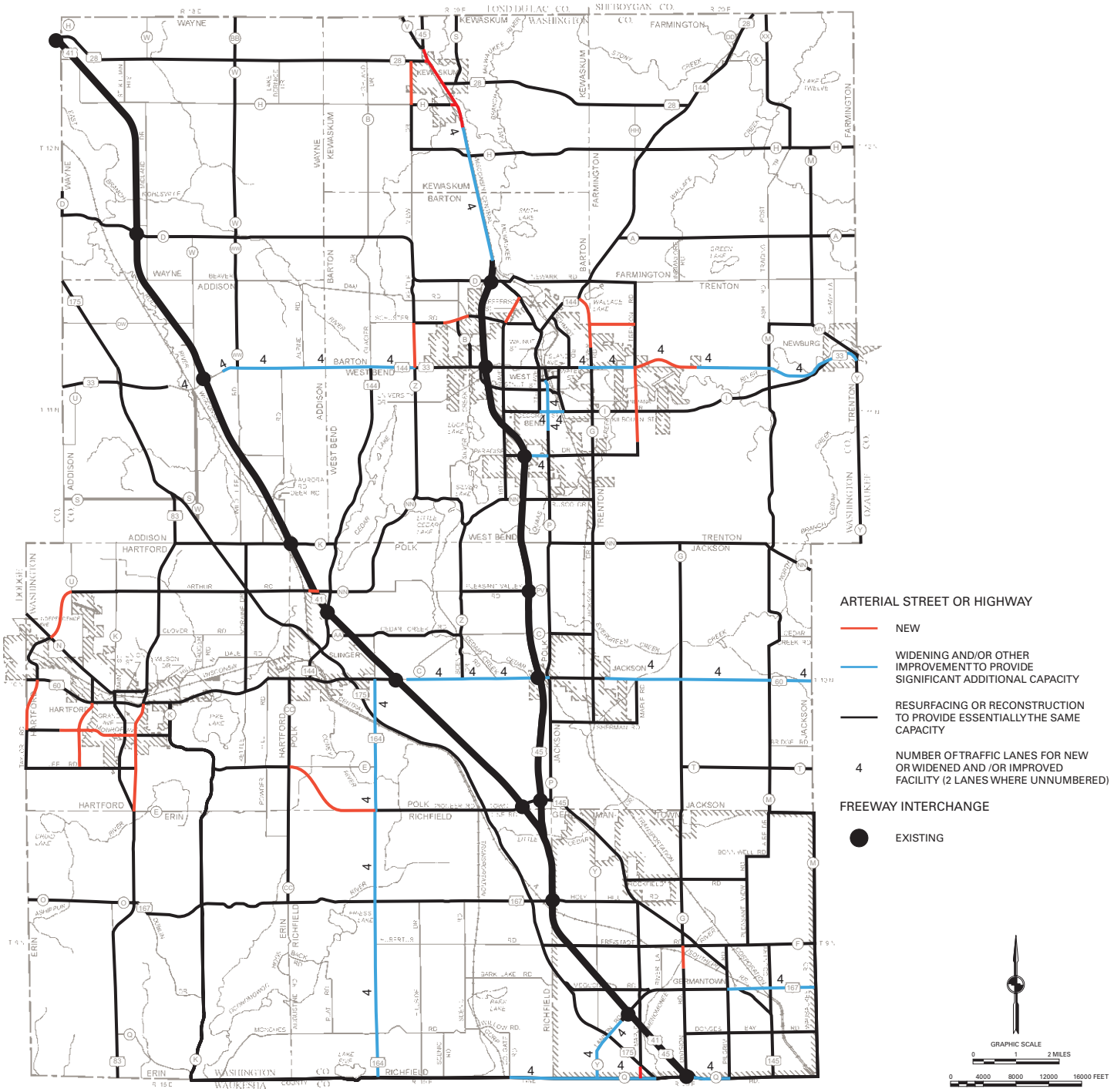
GRAPHIC SCALE

[a] Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.

Source: SEWRPC.

Map 15

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WASHINGTON COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION PLAN [a]

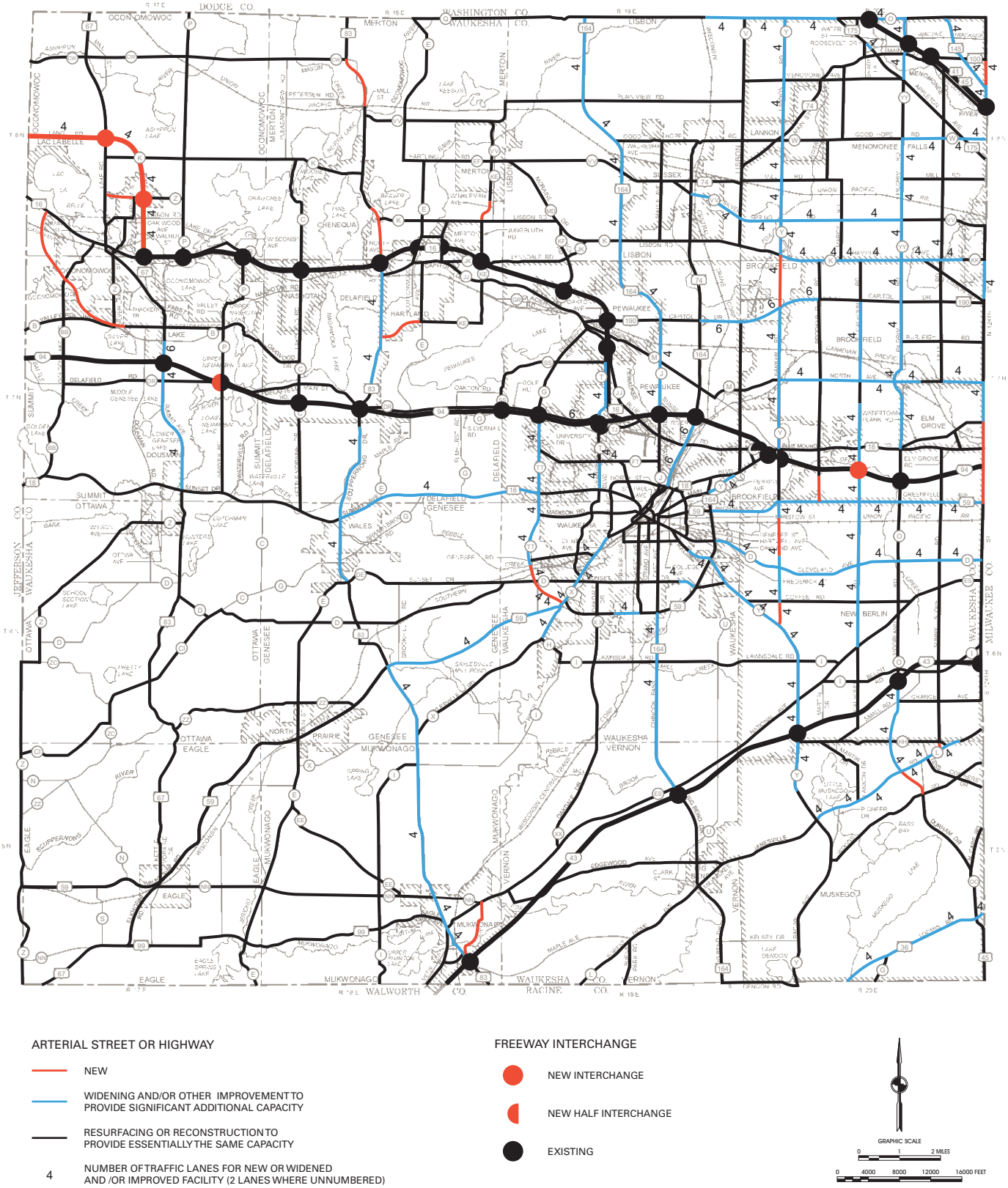


[a] Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.

Source: SEWRPC.

Map 16

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 2020 ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN [a]



[a] Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible state, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible state, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.

Source: SEWRPC.

Estimated Annual Cost of Regional Transportation Plan

The estimated annual cost of the regional transportation system plan is about $530 million annually, of which about $350 million, or 66 percent, is attributable to the arterial street and highway system and about $180 million, or 34 percent, is attributable to the public transit system. With respect to the arterial street and highway system, the estimated annual costs include costs of both construction—resurfacing and reconstruction, widening, and new construction—and operations and maintenance of the entire arterial street and highway system—freeways, State trunk highways, county trunk arterial streets and highways, and municipal arterial streets and highways. With respect to the public transit system, the costs include both capital costs and net operating and maintenance costs. A comparison of estimated available revenues to estimated plan costs indicates a modest funding gap of about $40 million, or 8 percent. This modest funding shortfall is estimated to exist for each plan element—including each element of the arterial street and highway system—freeways, State trunk highways, county trunk highways, and municipal arterial streets and highways—and also the public transit system.

SUMMARY AND CONCLUSIONS

This chapter provides an overview of the travel on an average weekday within the Southeastern Wisconsin Region, of the regional transportation system which serves that travel including the regional freeway system, of funding for the regional transportation system, and of the Commission's long-range regional plans for land use and transportation. A summary of the most important findings of this chapter is as follows:

- The dominant form of travel within the seven counties in Southeastern Wisconsin is by automobile over streets and highways with respect to personal travel and by trucks over streets and highways with respect to freight travel. On an average weekday within Southeastern Wisconsin, about 92 percent of all personal travel within Southeastern Wisconsin was made by automobile, 3 percent by urban and intercity public bus and rail transit, 4 percent by yellow school bus, and less than 1 percent each by bicycle, walking, airplane, taxi, or motorcycle.

- Streets and highways may be classified by function into arterial streets and highways and "non-arterial" collector and land access streets. Arterial streets and highways have as their principal function serving the movement of through traffic, while "nonarterial" collector and land access streets have as their principal function providing access to abutting land uses. Of the 11,268 miles of streets and highways within Southeastern Wisconsin in 1995, about 3,277 miles, or 29 percent, were arterials, and 7,991 miles, or 71 percent, were nonarterials. Of the estimated 39.9 million vehicle-miles of travel occurring on the total street and highway system of Southeastern Wisconsin on an average weekday in 1995, about 90 percent, or 35.9 million vehicle-miles of travel, were made on arterial streets and highways and about 10 percent, or 4.0 million vehicle-miles of travel, were made on nonarterial streets.

- A freeway is a special type—the highest type—of arterial street and highway. A freeway is defined as a divided arterial highway with full control of access, including grade separations at all intersections. All access to a freeway is provided at interchanges through on- and off-ramps. There are no driveways or street intersections, and also no at-grade railway crossings or movable bridges over watercourses. Of all streets and highways, freeways provide the highest traffic carrying capacity—about two and one-half times that of a standard surface arterial street or highway with the same number of traffic lanes—and the highest traffic speeds—50 to 65 miles per hour. As a result, freeways receive significantly more daily use than standard surface arterial streets. In 1995, freeways in Southeastern Wisconsin, which accounted for less than 3 percent of total miles of streets and highways, carried about 33 percent of total vehicle-miles of travel on an average weekday, or about 47,300 vehicle-miles of travel per weekday per mile of freeway. Standard surface arterials accounted for about 27 percent of total miles of streets and highways and carried about 58 percent of total vehicle-miles of travel, or about 7,700 vehicle-miles of travel on an average weekday per mile of surface arterial. Nonarterial collector and land access streets accounted for about 70 percent of total streets and highways and carried about 10 percent of total vehicle-miles of travel on an average

weekday, or about 500 vehicle-miles of travel on an average weekday per mile of collector and land access street.

- Between 1991 and 1995, the arterial vehicle-miles of travel within the Region on an average weekday increased from 33.1 million vehicle-miles of travel to 35.9 million vehicle-miles of travel, an increase of 8 percent, or 2.1 percent annually. Between 1972 and 1991, arterial vehicle-miles of travel within the Region on an average weekday increased from 20.1 million vehicle-miles of travel to 33.1 million vehicle-miles of travel, an increase of approximately 64 percent, or an annual increase of 2.6 percent. Between 1963 and 1972, the vehicle-miles of travel in the Region on an average weekday increased from 13.1 million to 20.1 million vehicle-miles of travel, an increase of 53 percent, or an annual increase of 4.9 percent.

- The freeway system of Southeastern Wisconsin is important not only to the seven-county Southeastern Wisconsin Region, but also to the entire State Wisconsin and in particularly eastern, central, and northern Wisconsin. The Southeastern Wisconsin freeway system is a major truck and tourism route, for example to Door County, the Green Bay—Fox Valley area, and northeastern Wisconsin. Commission travel surveys indicate that annually 2 million commercial truck trips and 4 million automobile trips travel through Southeastern Wisconsin on the freeway system to and from the remainder of the State of Wisconsin. Another 20 million commercial truck trips and 40 million automobile trips travel on the freeway system between Southeastern Wisconsin and the remainder of Wisconsin. Surveys conducted by the Fox Valley Chamber of Commerce indicate that about two-thirds of all goods shipped from the Fox Valley area travel on the Southeastern Wisconsin freeway system.

- The public transit systems serving Southeastern Wisconsin include the urban fixed-route bus transit systems operated by Ozaukee, Milwaukee, Washington, and Waukesha Counties and the Cities of Kenosha, Racine, and Waukesha, and the nonfixed-route rural shared-ride taxi system operated by Ozaukee and Washington Counties, and the Cities of Hartford, Port Washington, Whitewater, and West Bend.

- The extent of public fixed-route transit service provided within the Region may be measured by the vehicle-miles of transit service provided on an average weekday. Vehicle-miles of fixed route transit service is a measure of the extent of transit routes, and the amount or frequency of service provided on those routes. Between 1991 and 1999, the vehicle-miles of fixed route transit service provided within the Region increased significantly, by 20 percent. The level of fixed vehicle-miles of transit service provided within the Region in 1999 is also approximately 20 percent greater than the level provided in 1972. The present level of fixed route vehicle-miles of transit service is about 10 percent less than the level provided in 1963.

- Another measure of transit service provided within the Region is the number of round-trip route-miles of transit service. Between 1991 and 1999, the number of round-trip route-miles of transit service operated within the Region on an average weekday increased by about 40 percent. Between 1972 and 1999, and between 1963 and 1999 as well, round-trip route-miles of transit service operated on an average weekday increased by about 170 percent and 280 percent, respectively. The more substantial increases in round-trip route-miles of transit service as compared to vehicle-miles of transit service indicate that generally the extension of new transit service has been at relatively low levels of service, and reductions in the frequency of service have been made over the years on existing transit service routes.

- Annual public transit ridership has declined significantly over time. In 1963, over 94.5 million revenue passengers were carried on public transit within the Region, representing about 9 percent of daily regional travel. In 1972, about 53.9 million revenue passengers were carried, about 43 percent

fewer than in 1963. This represented about 4 percent of daily travel. In 1991, about 50.2 million passengers were carried, 47 percent fewer than in 1963 and about 7 percent fewer than in 1972. In 1999, about 52.8 million passengers were carried, about 6 percent more than in 1991, 2 percent less than in 1972, and 44 percent less than in 1963. This represented about 3 percent of daily regional travel.

- State of Wisconsin Department of Transportation revenues and expenditures for the 1999-2001 biennial budget period are estimated to be about $2.05 billion annually. About $1.29 billion, or 63 percent of total annual revenues, are from State taxes and fees; $0.58 billion, or 28 percent, from Federal funds; and the remaining $0.18 billion, or 9 percent, from bond and other funds. Estimated total annual expenditures include $0.95 billion, or 46 percent, on State trunk highways; $0.79 billion, or 39 percent, on local programs (including $0.11 billion or 5 percent on public transit); $0.20 billion, or 9 percent, on State Department of Transportation operations; and $0.11 billion, or 6 percent, on debt service/reserves.

- With respect to regional transportation system expenditures in Southeastern Wisconsin in 1999 on the arterial street and highway system and public transit system, the largest estimated annual expenditure is on State highways ($125 million or 36 percent), followed by county and municipal arterials ($115 million or 33 percent), and public transit ($109 million or 31 percent). With respect to the Federal, State, and local revenues which fund these expenditures, the largest revenues are State funds ($154 million or 44 percent), followed by Federal funds ($109 million or 31 percent), and local funds ($86 million or 25 percent).

- The principal responsibility of the Southeastern Wisconsin Regional Planning Commission is to prepare a comprehensive plan for the physical development of the Region. The most basic regional plan element prepared by the Commission is a regional land use plan upon which all other plan elements, including transportation, are based. The regional land use plan recommends attainment of a centralized regional settlement pattern and seeks to moderate the current trend toward decentralized land development within the Region. The plan recommends stabilization and revitalization of the urban centers of the Region, particularly of the Milwaukee, Racine, and Kenosha urbanized areas. It recommends that new urban development be encouraged to occur largely as infill in existing urban centers, and in defined urban growth areas emanating outward from the existing urban centers of the Region. Moreover, new urban development in the defined urban growth areas is proposed to occur at densities which can efficiently and effectively support essential urban services, including water supply, sanitary sewerage, and public transit. The plan seeks to influence the operation of the private land market in three significant ways. First, the plan recommends, that urban development occur only in those areas of the Region which are covered by soils suitable for such development; which are not subject to special hazards, such as flooding and shoreline erosion; and which can be readily served by essential municipal facilities and services, including centralized public sanitary sewerage, water supply, and public transit services. Second, the plan recommends the protection of all remaining primary environmental corridors of the Region from intrusion by incompatible urban development, and discourages the location of urban development, as well, in the secondary environmental corridors and isolated natural areas. Third, the plan recommends the retention in essentially rural use of almost all remaining prime agricultural lands, consisting of the most productive farmlands and units in the Region.

- The Commission's year 2020 regional transportation system plan has been designed to serve the regional land use plan and not a projection of current land use development trends toward further decentralization of population, employment, and urban land uses. Thus, if transportation facilities and services do indeed shape land use development, implementation of the transportation system plan should promote implementation of the land use plan, which recommends a desirable pattern of future land use with respect to travel requirements. The Commission's year 2020 regional transportation system plan has three principal components: transportation systems management, public transit, and

arterial streets and highways. Highway capacity additions are recommended in the regional transportation plan only as a last resort, that is, to address the congestion which may not be expected to be alleviated by land use, systems management, or public transit measures. The first elements considered for inclusion in the regional transportation plan were the transit and transportation system management elements. The potential of these elements to alleviate congestion was explicitly identified. Highway capacity additions were then recommended to be added to the regional transportation plan to resolve the extent considered practicable the residual existing and probable future traffic congestion.

- The transportation systems management element of the regional transportation plan is intended to encourage more efficient use of the existing transportation system, by encouraging carpooling and transit travel and obtaining the maximum vehicular capacity practicable from existing arterial street and highway facilities. The transportation systems management element of the plan includes implementation of an areawide freeway management system, restriction of curb-lane parking during peak periods on about 400 miles of arterial streets and highways, use of state-of-the-art traffic engineering practices, the application of advanced traffic management or intelligent transportation systems technology, the promotion of ridesharing, transit use, bicycle use, and pedestrian movement, together with telecommuting and work-time scheduling, the conduct and implementation by local governmental units of detailed site-specific neighborhood land use planning; and actions to enhance the quality of transit services and to facilitate transit use, including conduct of marketing and public information and education activities, improvement of bus speeds through priority systems and signal preemption, and promotion of innovative fare-payment systems.

- The public transit element of the regional transportation system plan calls for major increases in the levels of rapid and express transit service provided within the Region, as well as increases in the level of local service provided. The plan proposes the development of a true system of rapid and express transit routes integrated with local transit service. Rapid transit routes would operate within all major travel corridors oriented to the Milwaukee central business district (CBD), with express transit operating over a grid pattern of routes largely within Milwaukee County. In total, the plan proposes approximately a 70 percent increase in transit service as measured by vehicle-miles of service, from 66,100 vehicle-miles of such service in the base year of the plan of 1995, to 111,500 vehicle-miles in 2020. This increase embodies the combined effects of proposed improvements in the frequency of operation of rapid and express transit and the additions and extensions of rapid, express, and local transit routes. Since 1995 substantial progress has been made in implementation of the transit element of the regional plan as weekday vehicle-miles of transit service have increased from 66,100 transit vehicle-miles to 76,200 transit vehicle-miles, or 15 percent. Under the regional transportation system plan, rapid transit busway/high-occupancy-vehicle facilities, rapid transit commuter rail facilities, and express transit light rail facilities could be considered as alternatives to expanded and improved motor-bus transit service over arterial street and highway in mixed traffic or reserved arterial street lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed transit planning alternatives analysis studies for each of the corridors identified under the plan. The implementation of these fixed-guideway transit facilities would depend upon the outcome of the corridor studies. Upon completion of each study, the local units of government concerned—particularly, the potential transit operator involved—the Wisconsin Department of Transportation and the Regional Planning Commission would have to affirm the study findings and, if necessary, amend the regional transportation system plan.

- The arterial street and highway system plan element of the regional transportation system plan consists of 3,613 route-miles of arterial streets and highways, including 3,277 miles of existing arterials, 212 miles of existing nonarterial streets which may be expected to convert to arterial status and function as urban development proceeds within the Region and about 124 route-miles, or 3.4 percent of proposed new arterial facilities, would be added through new construction. The recommended year 2020 arterial street and highway system, for the Region identifies the number of

traffic lanes to be provided on each segment of arterial street. Arterial facilities are identified as having either two, four, six or eight travel lanes. Under the plan, a total of 405 route-miles of arterial facilities would be widened to carry additional traffic lanes and thereby significantly improve with respect to traffic carrying capacity. In total, the new arterial facilities and widened arterial facilities proposed under the plan represent about a 15 percent expansion of arterial system capacity. Progress has been made in the implementation of the arterial system element of the regional plan, as 39.5 miles of the plan's recommended 529 miles of arterial widenings and new construction have been completed. System preservation consists of all arterial preservation projects required to maintain the structural adequacy and serviceability of the existing arterial system without significantly increasing the capacity of that system. This would include all projects classified as resurfacing and reconstruction for the same capacity. The plan proposes system preservation activities for about 3,083 route-miles of the arterial system representing about 85 percent of the total planned arterial system in the year 2020.

- The estimated annual cost of the regional transportation system plan is about $530 million annually, of which about $350 million, or 66 percent, is attributable to the arterial street and highway system and about $180 million, or 34 percent, is attributable to the public transit system. With respect to the arterial street and highway system, the estimated annual costs include costs of both construction—resurfacing and reconstruction, widening, and new construction—and operations and maintenance of the entire arterial street and highway system—freeways, State trunk highways, county trunk arterial streets and highways, and municipal arterial streets and highways. With respect to the public transit system, the costs include both capital costs and net operating and maintenance costs. A comparison of estimated available revenues to estimated plan costs indicates a modest funding gap of about $40 million, or 8 percent. This modest funding shortfall is estimated to exist for each plan element—including each element of the arterial street and highway system—freeways, State trunk highways, county trunk highways, and municipal arterial streets and highways—and also the public transit system.

- The freeway system of Southeastern Wisconsin is a truly critical element of the regional transportation system. The 273-mile freeway system, which represents less than 3 percent of all streets and highways and about 8 percent of all arterial streets and highways in terms of system mileage, carries about 30 percent of all travel within Southeastern Wisconsin on an average weekday. The amount of daily travel carried on the freeway system demonstrates the superior level of travel service and speed provided by the freeway system, and the freeway system's contribution to the level of travel mobility and accessibility which has been enjoyed in Southeastern Wisconsin.

- Since the freeway system was constructed in the 1960s and 1970s, it has carried about 30 percent of the average daily traffic carried on the total regional transportation system annually, but has accounted for only about 10 to 15 percent of total annual expenditures on the regional transportation system. In 1999, the freeway system, together with the 988 miles of standard surface arterial State trunk highways, accounted for an estimated 31 percent of total regional transportation system expenditures while carrying together about 65 percent of total regional travel. The 2,017 miles of county and municipal arterials were estimated to carry about 32 percent of total daily regional travel, and to account for about 44 percent of total regional transportation system expenditures. The public transit system element of the regional transportation system was estimated to carry about 3 percent of total daily regional travel, and to account for about 25 percent of total regional transportation system expenditures. The cost of the reconstruction of the freeway system will be substantial, but what will need to be considered along with this cost is the substantial amount of total regional travel carried on the freeway system, the high level of service provided by the freeway system, and the extended life and attendant benefits of the freeway system which the reconstruction investment will provide over the next 35 to 50 years.

Chapter III

THE FUNCTION OF THE FREEWAY SYSTEM AND ITS COMPONENTS

INTRODUCTION

This chapter provides a description of the function of each major segment of the regional freeway system and of the freeway system as a whole. Information is presented on the current jurisdictional and Federal aid classification of each freeway segment and on the traffic volumes, average length of trips, and origins and destinations of trips on each segment of the freeway.

JURISDICTIONAL AND FEDERAL AID CLASSIFICATION

All 272 miles of existing freeways within Southeastern Wisconsin are under the jurisdiction of the State of Wisconsin[1]. As such, the State of Wisconsin has responsibility for the design, construction, maintenance, and operation of each segment of the freeway system. As noted in Chapter II, the primary purpose of highways under State jurisdiction is to serve travel through and between counties in the State of Wisconsin, and as well, the rest of the Nation. State trunk highways also serve to directly connect to land uses of regionwide and statewide importance, such as Milwaukee County's General Mitchell International Airport, the commercial air carrier airport serving Southeastern Wisconsin.

The Wisconsin Department of Transportation (WisDOT) divides the about 11,800 miles of State trunk highways into five subsystems reflecting their importance in supporting statewide mobility and economic activity. In order of their greater importance, these five subsystems are:

- Corridors 2020 Backbone Routes (1,550 miles statewide)—connecting major population and economic centers and providing links to national and international markets;
- Corridors 2020 Connector Routes (2,100 miles statewide)—connecting key communities and regional economic centers to the backbone routes;

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[1]*State, regional, and local plans have been amended to remove the Park East Freeway and replace the freeway with a surface arterial. The removal and replacement is programmed for implementation in 2001. Therefore, in this study, the description of the existing freeway system and planned freeway system will not include a Park East Freeway.*

- Other Principal Arterials (1,450 miles statewide)—providing mobility within specific regions of the State;
- Minor Arterials (5,000 miles statewide)—serving trips within portions of specific regions of the State, and smaller communities of the State; and
- Collectors and Local Roads (1,700 miles statewide)—serving short trips and primarily an access function.

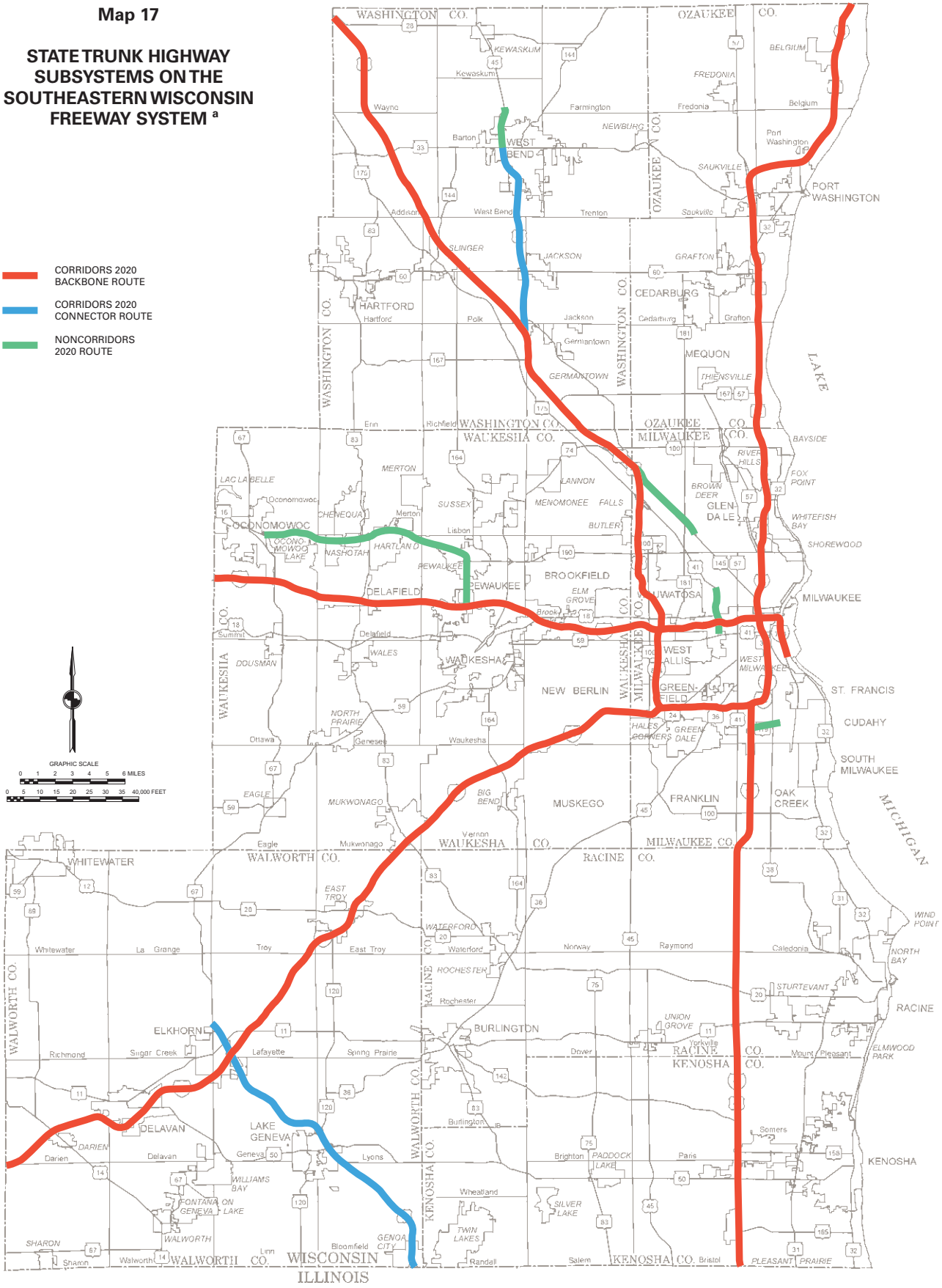
As shown on Map 17, 214 miles of the total 272 miles of the Southeastern Wisconsin freeway system, or 79 percent, are on the WisDOT Corridors 2020 Backbone Subsystem, with 31 miles, or 11 percent, on the WisDOT Corridors 2020 Connector Subsystem and the remaining 27 miles, or 10 percent, on the Other Principal Arterials subsystem.

There are three designations of State trunk highway routes on the freeway system: interstate highway routes, U.S. highway routes, and State trunk highway routes. Map 18 displays the routing provided on the freeway system of Southeastern Wisconsin. Interstate highway routes are designated by the U.S. Department of Transportation, Federal Highway Administration, and are intended to consist of routes of the highest importance to the Nation, which are built to uniform geometric and construction standards. Interstate highway routes are intended to connect, as directly as practicable, the principal metropolitan areas, cities, and industrial centers of the Nation, including routes into, through, and around urban areas; to serve the national defense; and to connect with routes of importance in Canada and Mexico. Primary interstate highway routes have a two-digit designation, including IH 94 and IH 43 in Southeastern Wisconsin. Interstate highway routes with a three digit designation and with the first digit being an even number—IH 894 in Southeastern Wisconsin—represent a bypass of a primary route—IH 94—as it enters the Milwaukee urban area. An interstate highway with a three-digit route with and an odd first digit—IH 794—indicates a spur of the primary interstate route—IH 94—leading into the urban area. U.S. highway routes are designated by the each State with approval by the American Association of State Highway and Transportation officials, and are intended to provide continuous highway routing of principal highway routes between states and across the United States. U.S. highway routes on the Southeastern Wisconsin freeway system include USH 41, USH 45, and USH 12. State trunk highway routes are designated by the Wisconsin Department of Transportation and are intended to provide continuous routing between the counties of Southeastern Wisconsin. State trunk highway routing on the Southeastern Wisconsin freeway system include STH 16, STH 145, STH 119 (Airport Spur Freeway), and STH 341 (Miller Park Way).

The Federal aid classification of the Southeastern Wisconsin freeway system is shown on Map 19. As arterial facilities, all of the freeways in Southeastern Wisconsin are eligible to receive U.S. Department of Transportation, Federal Highway Administration Surface Transportation Program funds. Most of the freeway system within Southeastern Wisconsin—255 miles, or 94 percent of the 272 mile system—is part of the National Highway System and is eligible to receive U.S. Department of Transportation, Federal Highway Administration National Highway System funds. The purpose of the National Highway System is to provide an interconnected system of higher level arterial routes which serve major population centers, international border crossings, ports, airports, public transportation facilities and other intermodal transportation facilities, and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. The National Highway System in Southeastern Wisconsin is designated by the Wisconsin Department of Transportation in coordination with the Regional Planning Commission acting in cooperation with the local units of government and with approval by the Federal Highway Administration. Approximately 4 percent of all streets and highways in the Nation may be designated for inclusion on the National Highway System. Approximately 64 percent, or 173 miles, of the freeway system of Southeastern Wisconsin is a designated part of the interstate highway system by the U.S. Department of Transportation, Federal Highway Administration and is eligible to receive U.S. Department of Transportation, Federal Highway Administration Interstate Highway Maintenance funds.

Map 17

STATE TRUNK HIGHWAY SUBSYSTEMS ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM [a]

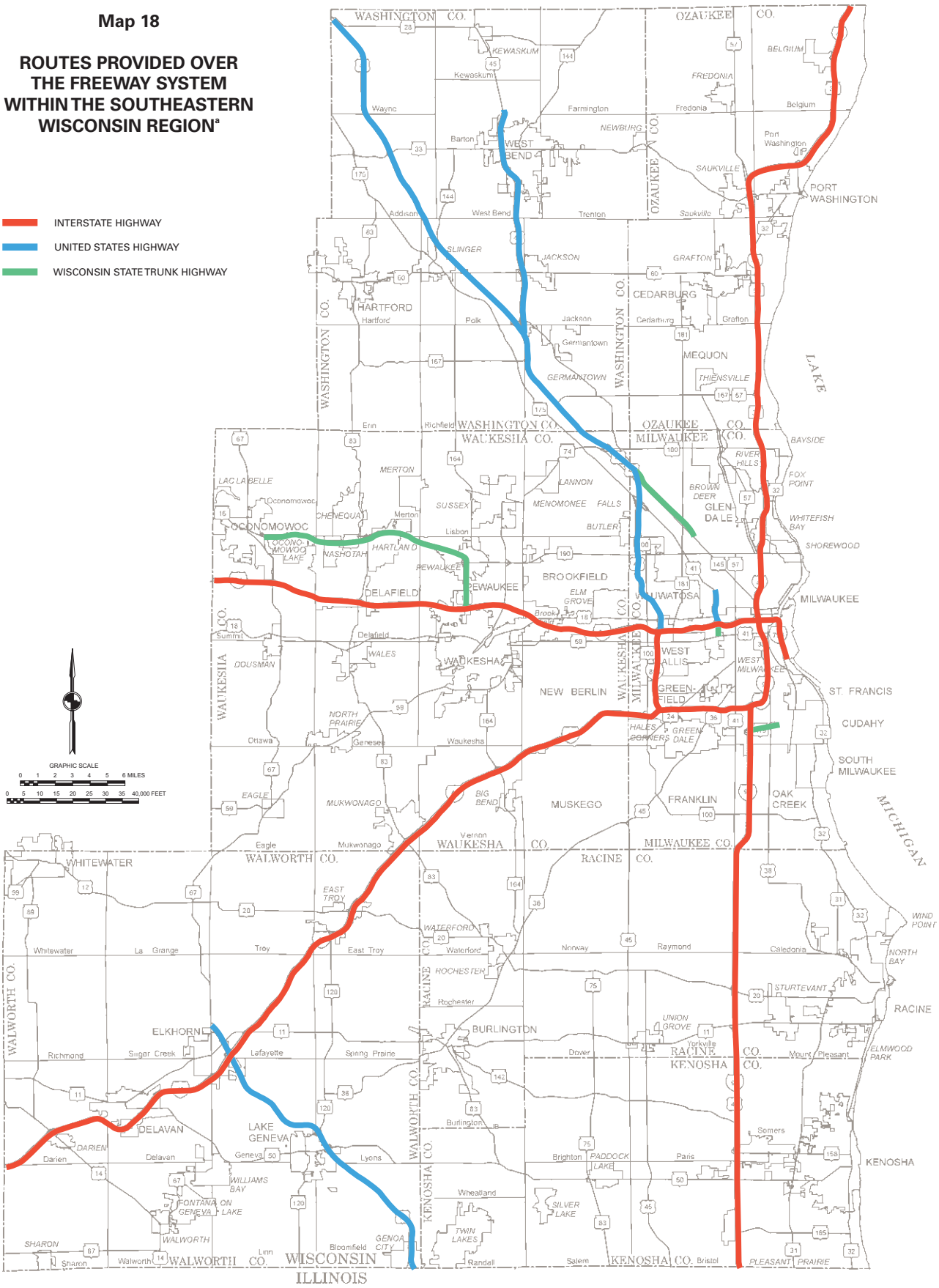


[a] Approximately 214 of the 272 miles or 79 percent of Southeastern Wisconsin Freeways are Corridors 2020 backbone routes, 31 miles or 11 percent are Corridors 2020 connector routes, and 27 miles or 10 percent are Noncorridors 2020 routes.

Source: Wisconsin Department of Transportation and SEWRPC.

Map 18

ROUTES PROVIDED OVER THE FREEWAY SYSTEM WITHIN THE SOUTHEASTERN WISCONSIN REGION[a]

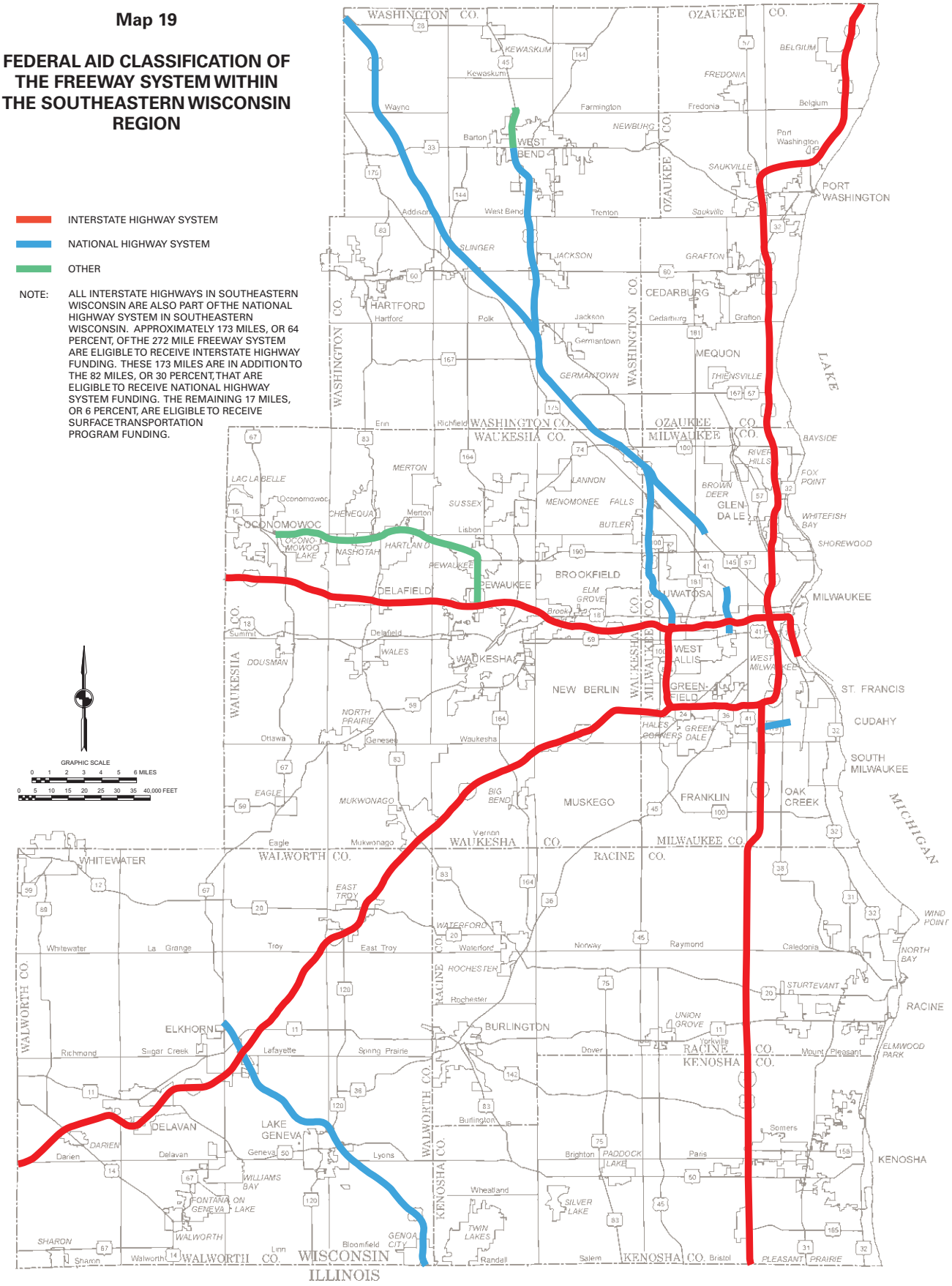


[a] *This map depicts the highest highway routing provided over each segment of freeway. There are segments of Interstate Highway which also carry United States Highway or State Trunk Highway routing and segments of United States Highway which also carry State Trunk Highway routing. Approximately 173 of the 272 miles or 64 percent of Southeastern Wisconsin Freeways are Interstate Highway Routes, 77 miles or 28 percent are United States Highway routes, and 22 miles or 8 percent are State Trunk Highway routes.*

Source: SEWRPC.

Map 19

FEDERAL AID CLASSIFICATION OF THE FREEWAY SYSTEM WITHIN THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

CHARACTERISTICS OF TRAVEL ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM

The locations of the origins and destinations of forecast year 2020 travel on selected segments of the freeway system of Southeastern Wisconsin are summarized in Table 15. These freeway segments are shown on Map 20. Year 2020 travel origins and destinations are shown, rather than current year or 1991 survey year, as the year 2020 travel is more typical of the travel which may be expected to be carried during the service life of the reconstructed freeway system. However, the origins and destinations of current travel on the freeway system are not likely to be significantly different from those forecast for the year 2020.

Travel on the freeway system may be characterized by whether travel is:

- "Local" – both ends of the trip over the freeway are located within the county within which the freeway is located.

- "Intercounty" – one end of the trip is located within the county within which the freeway is located and the other end is located outside the county, or

- "Through" – both ends of the trip are located outside the county within which the freeway is located.

The forecast volume of through traffic on each segment of the freeway system of Southeastern Wisconsin is shown on Map 21. The relative amount that such through traffic represents of total anticipated average weekday traffic on each segment of the freeway system is shown on Map 22. Nearly all segments of the freeway system as shown on Map 23 are anticipated to carry a significant volume of through traffic through their county—10,000 or more vehicles per weekday—and the amount of through traffic may be expected to represent a significant proportion of the total anticipated weekday traffic volume on each freeway segment—15 percent or more of total weekday traffic. The only exceptions are those segments of freeways which are stubs or spurs. There are five such stub or spur freeways within Milwaukee County, all of which may be expected to carry no traffic through Milwaukee County, that is, of all travel anticipated on these five stub or spur freeways, at least one end of each vehicle trip over these freeways may be expected to be located within Milwaukee County. These five stub or spur freeways include STH 145 (the Fond du Lac Freeway in northwestern Milwaukee County), USH 41 (the Stadium Freeway North), STH 341 (Miller Park Way), IH 794, and STH 119 (the Airport Spur Freeway)[2]. Also, IH 94 between the Marquette and Zoo Interchanges in Milwaukee County (because of the existence of a freeway bypass route), as well as the STH 16 Freeway in Waukesha County (because it is a relatively long stub freeway), may be expected to carry minimal amounts of through traffic, and such through traffic may be expected to represent small proportions of total average weekday traffic on those segments of freeway.

A number of major segments of the freeway system are anticipated to carry a significant volume of through traffic where both trip ends of the travel are located outside the Southeastern Wisconsin Region and are through trips not only to the county within which the freeway segment is located, but to the entire seven-county Southeastern Wisconsin Region. Those freeway segments which may be expected to carry between 7,500 and 20,000 of such long through vehicle trips on an average weekday include IH 94 in Racine and Kenosha Counties and in Milwaukee County between the Milwaukee-Racine County Line and the Marquette Interchange, IH 43 in Milwaukee and Ozaukee Counties north of the Marquette Interchange, IH 894 in Milwaukee County, USH 45 in Milwaukee County, and USH 41 in Washington and Waukesha Counties.

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[2] *The Airport Spur Freeway (STH 119) is a unique facility in that it provides direct access and egress to General Mitchell International Airport and long-distance commercial air travel combining the portion of the trip made by vehicle travel over the Airport Spur Freeway with the portion of the trip made by air travel would indicate that substantial through long-distance travel is made over the Airport Spur Freeway.*

Table 15

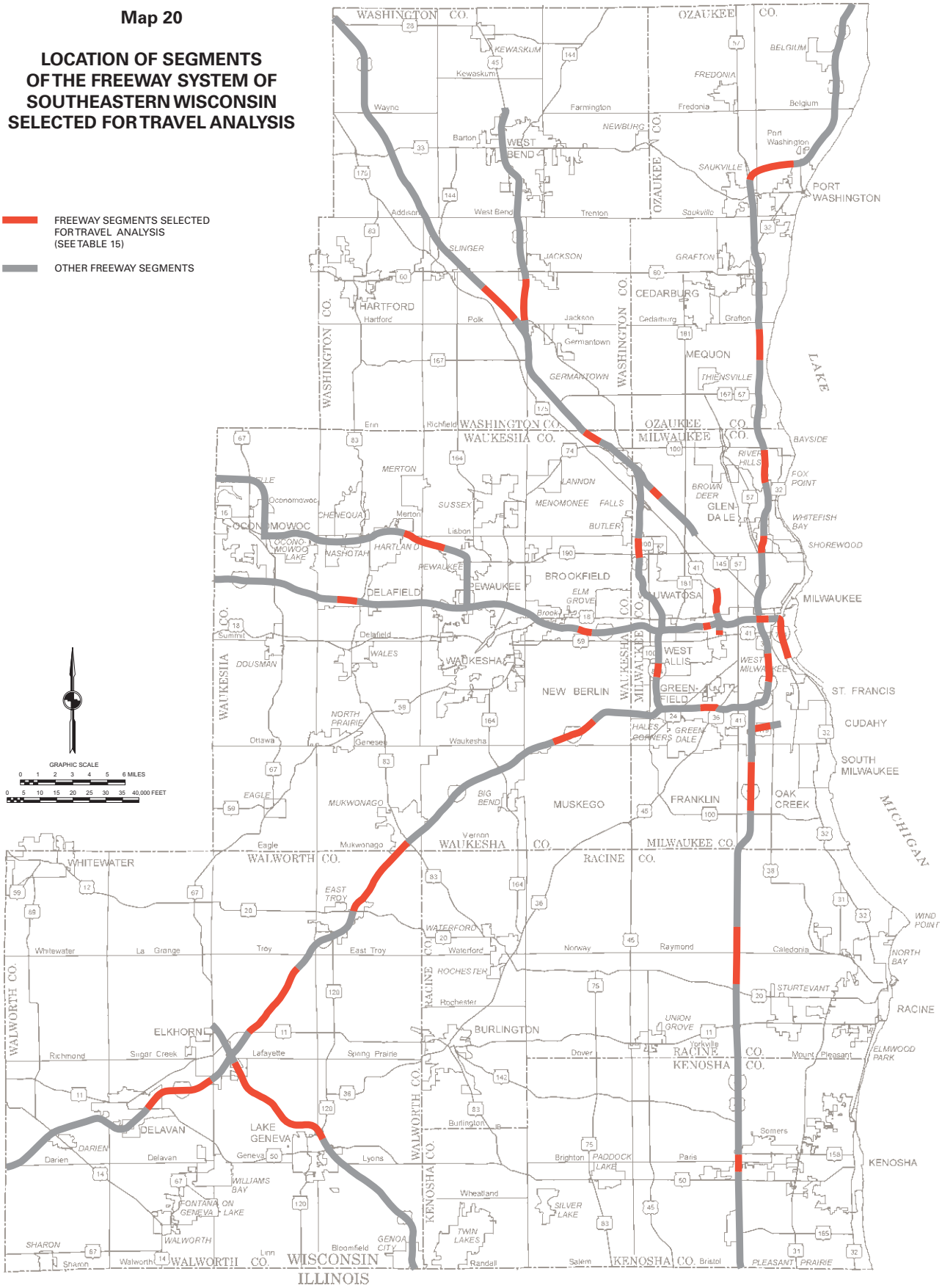
LOCATION OF THE ORIGINS AND DESTINATIONS OF FORECAST YEAR 2020 AVERAGE WEEKDAY VEHICLE TRAVEL ON SELECTED SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN

County within which Freeway Segment is Located	Selected Freeway Segments (see Map 20)	Type of Vehicle Travel on Freeway Segment in the Forecast Year 2020														Current Average Weekday Traffic Volumes
		Local		Intercounty (Only One Trip End Within County)				Through (Both Trip Ends Outside County)						Total Vehicle Trips on Freeway Segment		
		Both Trip Ends Within County		Other Trip End Within Region		Other Trip End Outside Region		Both Trip Ends Within Region		One Trip End Within Region and Other Outside Region		Both Trip Ends Outside Region				
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Kenosha	IH 94 from STH 50 to CTH K	5,300	6.3	13,700	16.3	6,300	7.5	- -	- -	38,900	46.1	20,000	23.8	84,200	100.0	71,900
Milwaukee	IH 43 from STH 100 to Good Hope Road	16,000	17.4	42,400	46.1	11,900	12.9	2,900	3.2	4,200	4.6	14,600	15.8	92,000	100.0	83,900
	IH 43 from 60th Street to STH 36	59,000	35.4	66,300	39.8	11,100	6.7	7,800	4.7	11,500	6.9	10,800	6.5	166,500	100.0	131,900
	IH 43 from Holt Avenue to Becher Street	86,200	54.8	39,900	25.3	12,700	8.1	1,500	1.0	3,500	2.2	13,600	8.6	157,400	100.0	135,200
	IH 43 from Atkinson Avenue to STH 190	64,600	45.2	39,900	27.9	13,600	9.5	3,400	2.4	4,900	3.4	16,600	11.6	143,000	100.0	124,500
	IH 94 from Hawley Road to Mitchell Boulevard	67,500	36.0	102,600	54.7	12,000	6.4	2,000	1.1	1,300	0.7	2,000	1.1	187,400	100.0	151,600
	IH 94 from STH 100 to Rawson Avenue	12,500	10.1	54,500	44.0	17,200	13.9	7,300	5.9	12,300	9.9	20,000	16.2	123,800	100.0	98,000
	IH 794 from 7th Street to 2nd Street	72,600	64.2	32,400	28.6	8,100	7.2	- -	- -	- -	- -	- -	- -	113,100	100.0	91,100
	IH 794 from Lincoln Memorial Drive to Carferry Drive	46,300	87.4	6,000	11.3	700	1.3	- -	- -	- -	- -	- -	- -	53,000	100.0	25,400
	IH 894 from Oklahoma Avenue to National Avenue	52,600	31.7	78,800	47.5	8,100	4.9	9,600	5.8	9,100	5.5	7,600	4.6	165,800	100.0	142,100
	USH 41 from Lloyd Street to State Street	47,700	76.4	13,600	21.8	1,100	1.8	- -	- -	- -	- -	- -	- -	62,400	100.0	51,600
	STH 341 from Mitchell Boulevard to National Avenue	34,100	72.6	11,900	25.3	1,000	2.1	- -	- -	- -	- -	- -	- -	47,000	100.0	40,000
	USH 45 from STH 190 to Hampton Avenue	41,300	23.6	95,200	54.5	11,100	6.4	13,600	7.8	6,200	3.5	7,300	4.2	174,700	100.0	137,400
	STH 119 from IH 94 to STH 38	24,100	57.4	14,200	33.8	3,700	8.8	- -	- -	- -	- -	- -	- -	42,000	100.0	29,800
	STH 145 from Mill Road to 107th Street	2,400	9.8	20,800	84.5	1,400	5.7	- -	- -	- -	- -	- -	- -	24,600	100.0	15,100
Ozaukee	IH 43 from STH 57 to CTH H	5,400	15.5	3,300	9.5	6,400	18.4	- -	- -	13,400	38.5	6,300	18.1	34,800	100.0	25,400
	IH 43 from CTH C to Highland Road	6,600	10.0	24,700	37.4	2,300	3.5	1,300	2.0	15,900	24.1	15,200	23.0	66,000	100.0	51,000
Racine	IH 94 from CTH C to CTH K	3,000	2.9	26,700	25.7	1,800	1.7	22,300	21.5	30,000	28.9	20,000	19.3	103,800	100.0	74,700
Walworth	IH 43 from STH 11 to CTH D	4,500	16.7	11,400	42.4	700	2.6	- -	- -	9,000	33.5	1,300	4.8	26,900	100.0	16,000
	IH 43 from STH 20 to STH 83		- -	19,800	63.2	600	1.9	1,300	4.2	8,000	25.6	1,600	5.1	31,300	100.0	18,000
	IH 43 from STH 50 to STH 67	7,500	27.4	5,600	20.4	3,900	14.2	- -	- -	8,600	31.4	1,800	6.6	27,400	100.0	17,400
	USH 12 from STH 120 to CTH N	7,400	34.6	4,400	20.7	5,000	23.5	- -	- -	1,400	6.6	3,100	14.6	21,300	100.0	12,200
Washington	USH 41 from STH 145 to STH 60	2,200	4.7	13,400	28.6	2,200	4.7	- -	- -	20,600	43.9	8,500	18.1	46,900	100.0	36,500
	USH 45 from STH 145 to STH 60	6,600	15.3	27,900	64.9	1,600	3.7	200	0.5	5,200	12.1	1,500	3.5	43,000	100.0	26,700
Waukesha	USH 41/45 from CTH Q to Pilgrim Road	200	0.2	18,000	16.7	2,800	2.6	59,000	54.6	19,400	17.9	8,700	8.0	108,100	100.0	74,200
	IH 43 from CTH Y to CTH O	3,500	4.9	43,900	61.8	1,300	1.8	12,100	17.1	8,400	11.9	1,800	2.5	71,000	100.0	46,300
	IH 94 from CTH C to STH 83	25,500	34.1	5,000	6.7	18,700	24.9	- -	- -	20,700	27.6	5,100	6.7	75,000	100.0	58,000
	IH 94 from Calhoun Road to Moorland Road	18,600	11.8	117,100	74.1	4,000	2.5	300	0.2	13,400	8.5	4,600	2.9	158,000	100.0	126,500
	STH 16 from CTH KE to CTH KF	30,300	59.4	17,200	33.7	2,400	4.7	200	0.4	900	1.8	- -	- -	51,000	100.0	39,800

Source: SEWRPC.

Map 20

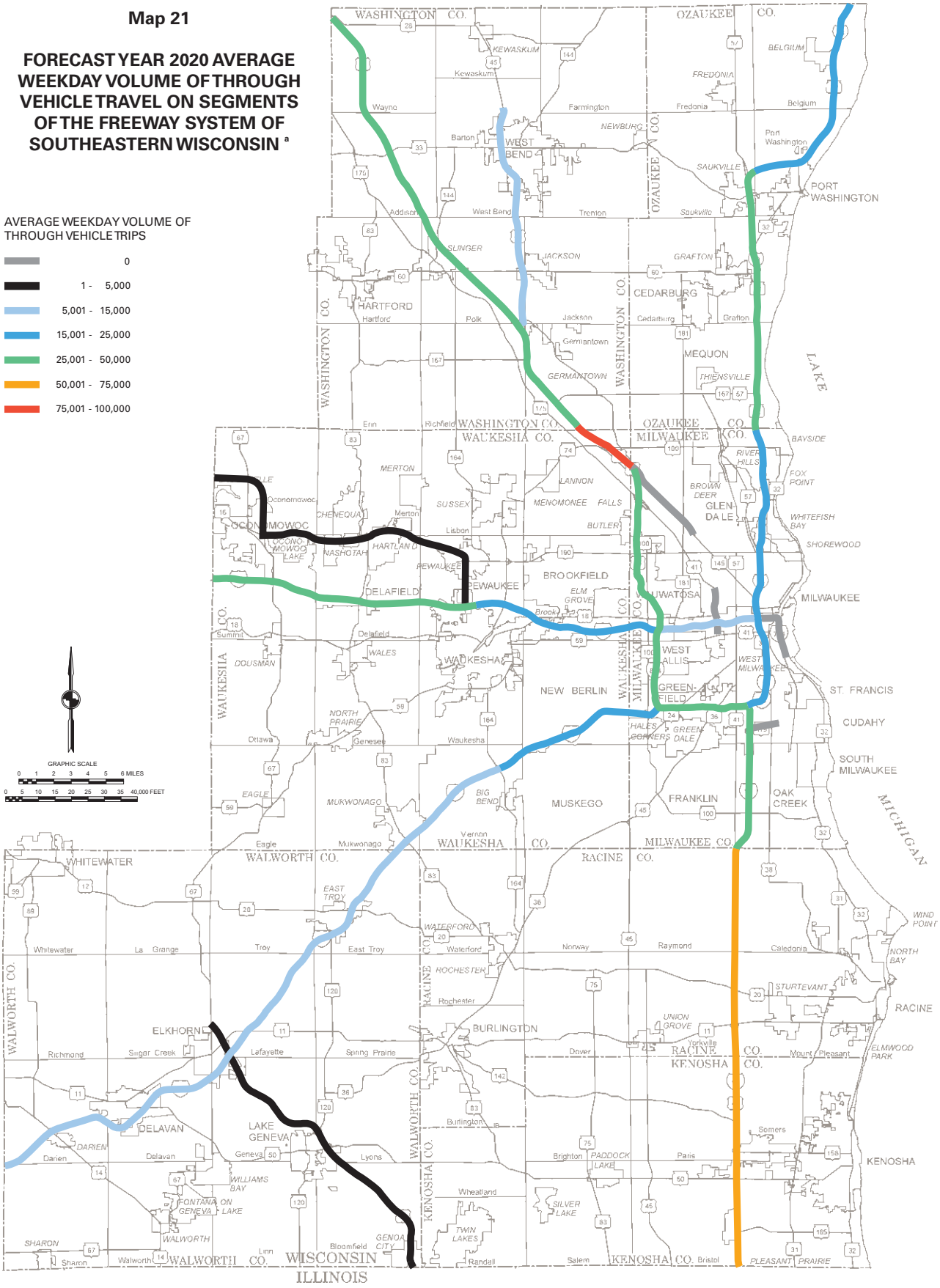
LOCATION OF SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN SELECTED FOR TRAVEL ANALYSIS



Source: SEWRPC.

Map 21

FORECAST YEAR 2020 AVERAGE WEEKDAY VOLUME OF THROUGH VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

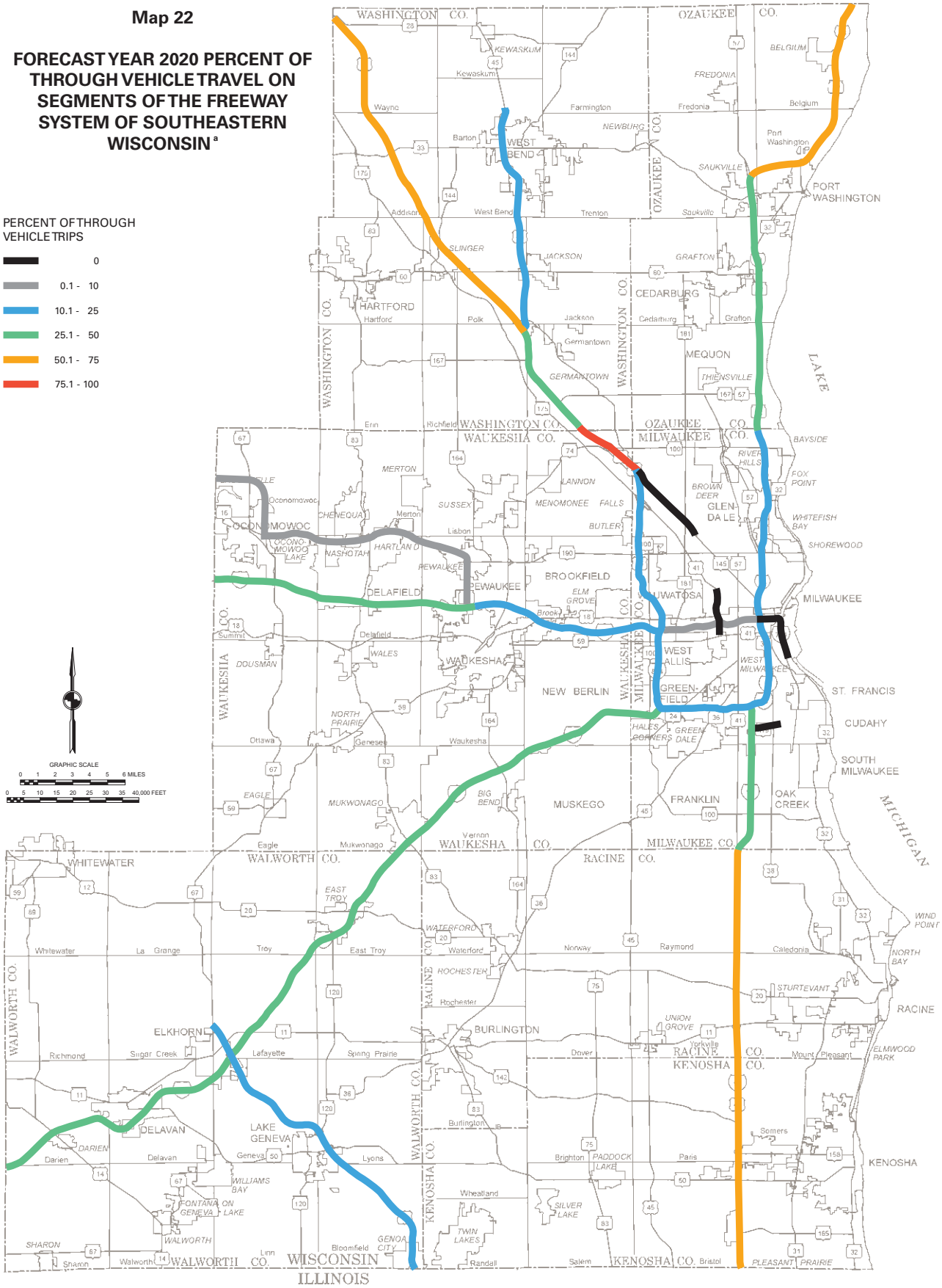


[a] *For this analysis, through vehicle travel is defined as travel with neither end of the vehicle trip located within the county within which the freeway segment is located.*

Source: SEWRPC.

Map 22

FORECAST YEAR 2020 PERCENT OF THROUGH VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

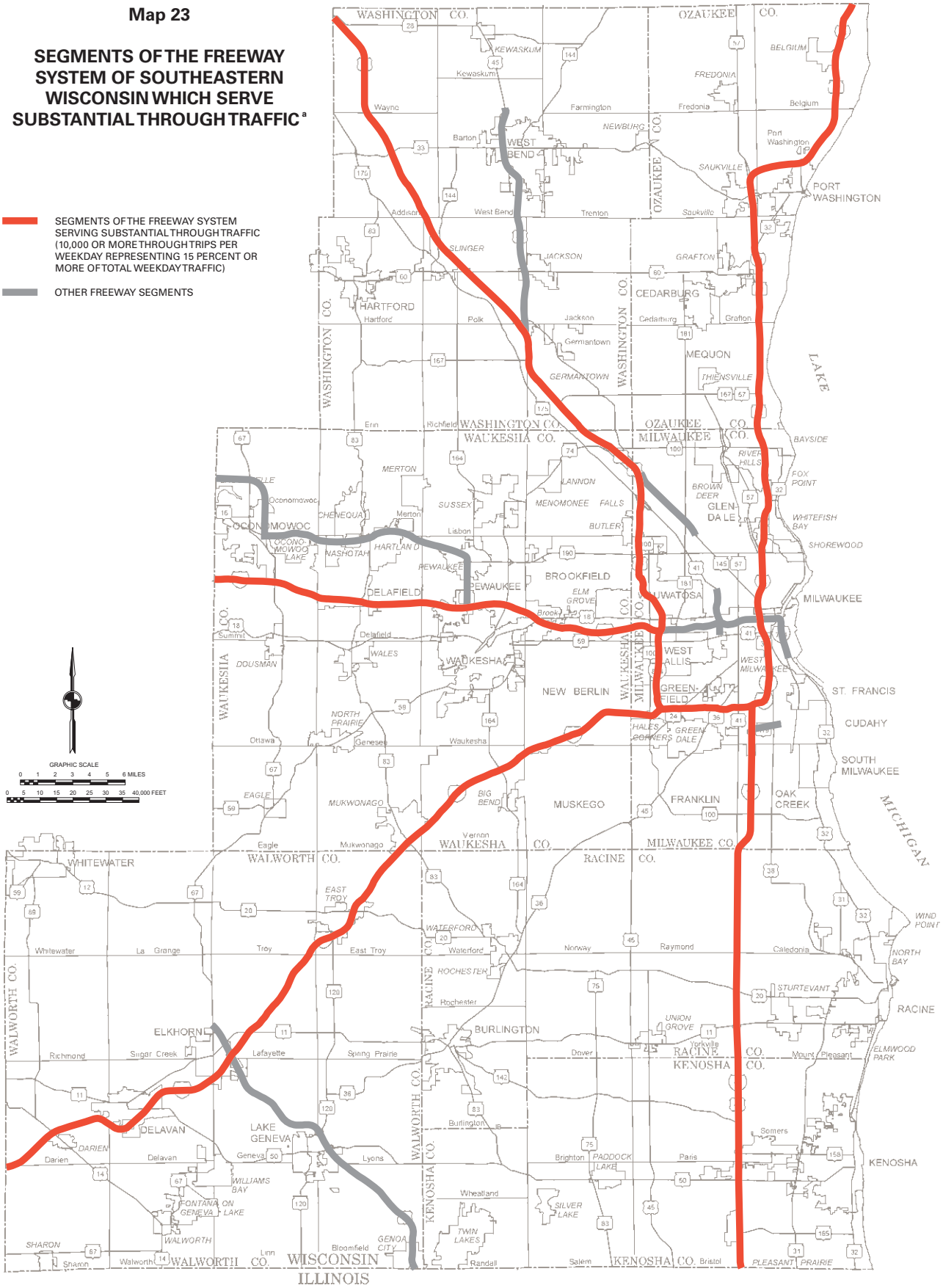


[a] *For this analysis, through vehicle travel is defined as travel with neither end of the vehicle trip located within the county within which the freeway segment is located.*

Source: SEWRPC.

Map 23

SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN WHICH SERVE SUBSTANTIAL THROUGH TRAFFIC[a]



[a] *For this analysis, through vehicle travel is defined as travel with neither end of the vehicle trip located within the county within which the freeway segment is located.*

Source: SEWRPC.

Maps 24 and 25 illustrate the anticipated amount and percent of total average weekday traffic which may be expected on each segment of freeway which would be intercounty traffic, or traffic with one trip end in the county within which the freeway segment is located and the other trip end located outside the county. Nearly every freeway segment within Southeastern Wisconsin may be anticipated to carry a significant volume of such intercounty traffic—between 20,000 and over 100,000 vehicles per weekday—and have a significant percent of total average weekday traffic which is such intercounty traffic—between 20 and 60 percent (see Map 26).

Lastly, as shown in Maps 27 and 28, all segments of the freeway system also may be expected to carry significant volumes of traffic and percentages of traffic which may be considered as local traffic, or traffic which has both ends of the trip within the county within which the freeway segment is located. This is true even for those segments of freeway which may be expected to carry significant volumes of traffic through the county in which they are located, and intercounty traffic between the county in which they are located and other counties within and outside Southeastern Wisconsin. For some segments of freeway, local traffic is the overwhelming majority of traffic on that segment of freeway, including stub or spur freeways such as USH 41 in Milwaukee County.

Map 29 summarizes the results of the analysis of the function of the freeway system with respect to the type and amount of travel carried by each freeway segment. The freeway system segments may be divided into three groups. One group consists of freeways which may be expected to serve substantial amounts of traffic traveling through the county within which they are located and, as well, through the Southeastern Wisconsin Region. A second group of freeways may be expected to serve more modest amounts of such through traffic. The third group of freeways consists of those segments which may be expected to serve no traffic traveling through the county in which they are located, as one end of all trips on these freeway segments may be expected to be located within the county within which the freeway segment is located.

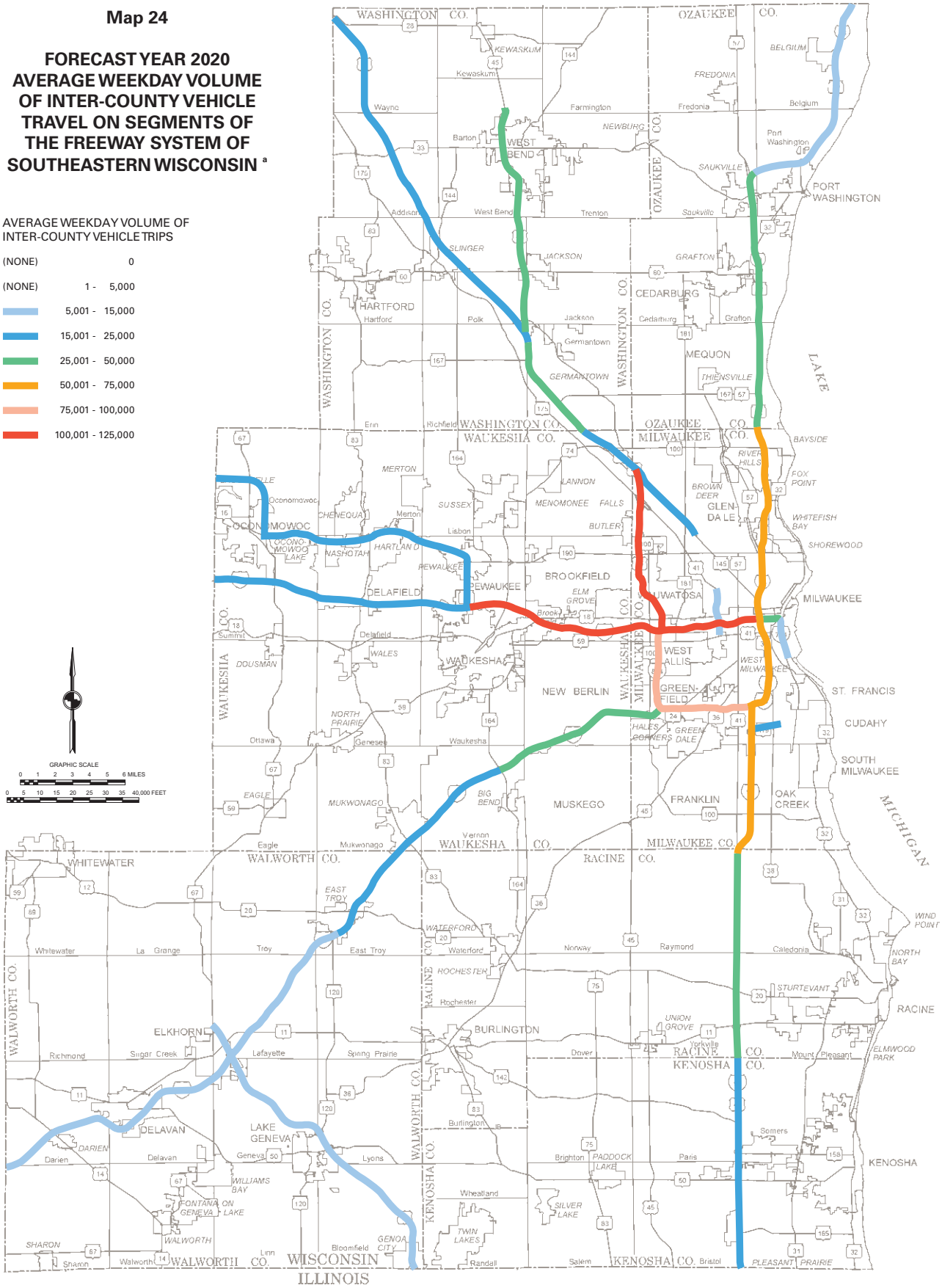
The first group of freeways are those segments of freeway which may be expected to serve substantial traffic traveling through the county within which they are located as well as through the Region. These freeways may be expected to carry between 10,000 to 70,000 vehicles trips per weekday in the year 2020 which are traveling through the county in which they are located, comprising 12 to 70 percent of the total traffic anticipated on these segments of freeway. Such freeways may also be expected to carry substantial amounts of intercounty traffic, that is, traffic with one trip end within the county within which the freeway segment is located and the other trip end located outside that county. These segments of freeway may also be expected to serve local traffic, or traffic with both trip ends within the county within which the freeway segment is located. This group of freeways includes all Wisconsin Department of Transportation “Corridors 2020 backbone routes” with two exceptions: IH 94 between the Zoo Interchange and the Marquette Interchange and IH 794. This group of freeways also includes all interstate highways within the Region, with the exception of those same two segments. It also includes the USH 41 and USH 45 freeways in Milwaukee and Waukesha Counties and the USH 41 freeway in Washington County.

The second group of freeways are those which may be expected to serve more modest amounts of through traffic. Four freeway segments are included in this grouping: IH 94 between the Marquette and the Zoo Interchange, USH 12 in Walworth County, STH 16 in Waukesha County, and USH 45 in Washington County. These freeway segments may be expected to serve from 1,000 to 7,000 vehicle trips per weekday in the year 2020 which are traveling through the county within which they are located, representing 2 to 20 percent of the total traffic on these freeway segments. These freeway segments also may be expected to serve substantial intercounty traffic, or traffic with one trip end within the county within which the freeway segment is located, and the other trip end located outside that county. These freeway segments may also be expected to serve substantial local traffic within their county.

The third group of freeways consists of those which may be expected to serve no traffic traveling through the county within which they are located, that is, at least one trip end, and for the most part both ends, of all trips using these freeway segments may be expected to be located within the county within which the freeway segment is located. These five segments, all located in Milwaukee County, include USH 41 (the Stadium North freeway),

Map 24

FORECAST YEAR 2020 AVERAGE WEEKDAY VOLUME OF INTER-COUNTY VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

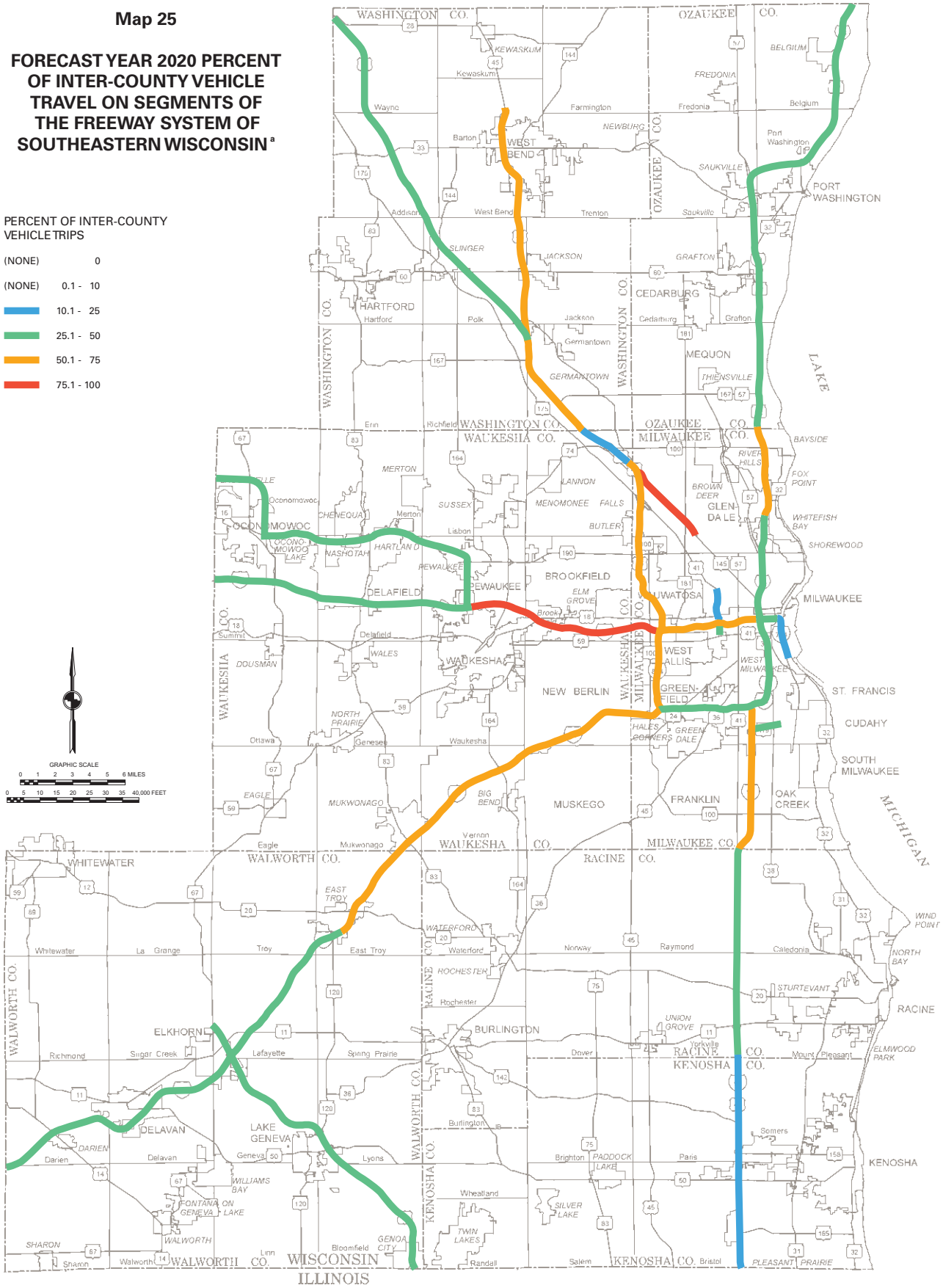


[a] *For this analysis, intercounty vehicle travel is defined as travel with one end of the vehicle trip located within the county within which the freeway segment is located and the other end of the vehicle trip located outside that county.*

Source: SEWRPC.

Map 25

FORECAST YEAR 2020 PERCENT OF INTER-COUNTY VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

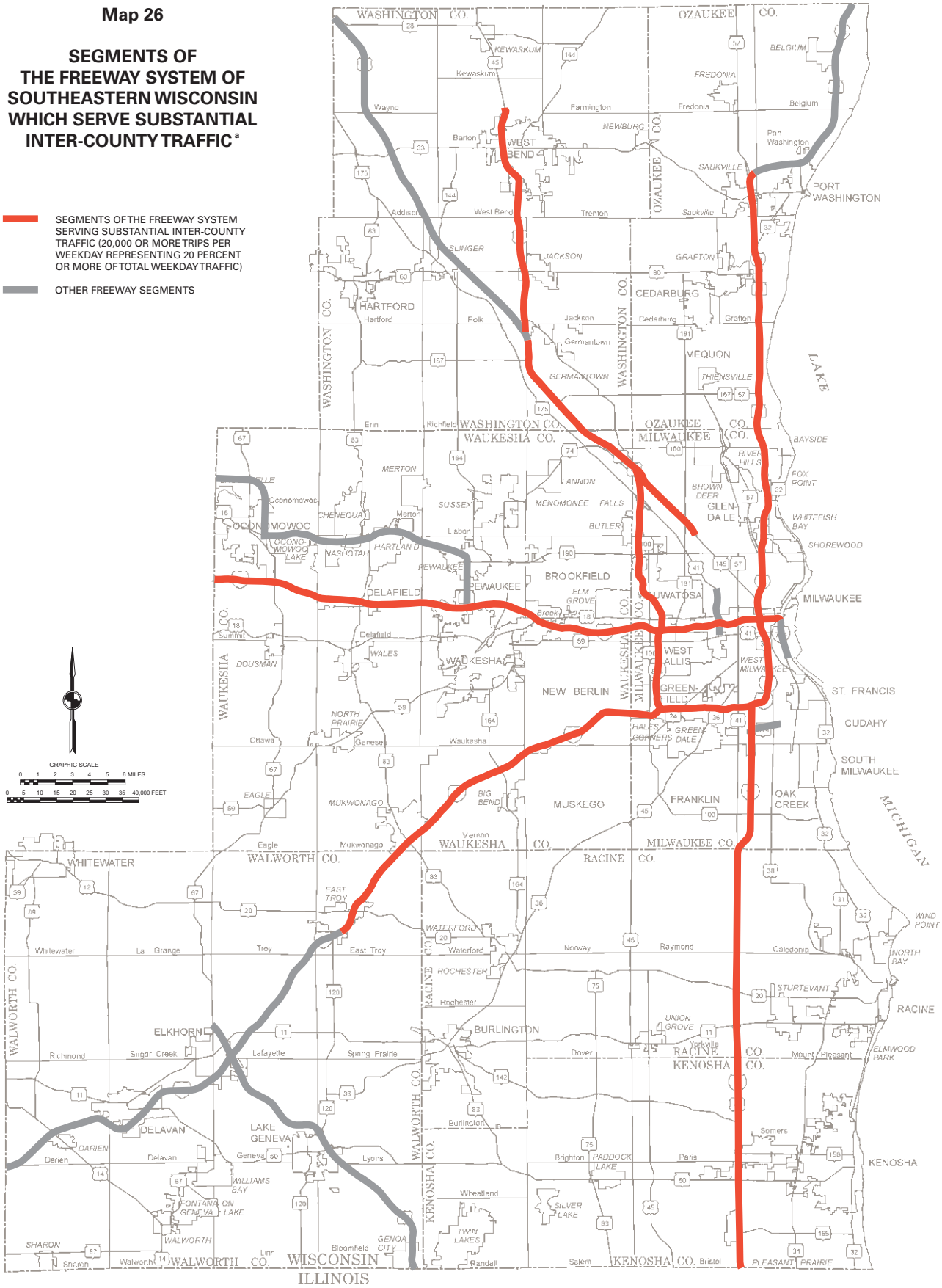


[a] *For this analysis, intercounty vehicle travel is defined as travel with one end of the vehicle trip located within the county within which the freeway segment is located and the other end of the vehicle trip located outside that county.*

Source: SEWRPC.

Map 26

SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN WHICH SERVE SUBSTANTIAL INTER-COUNTY TRAFFIC [a]

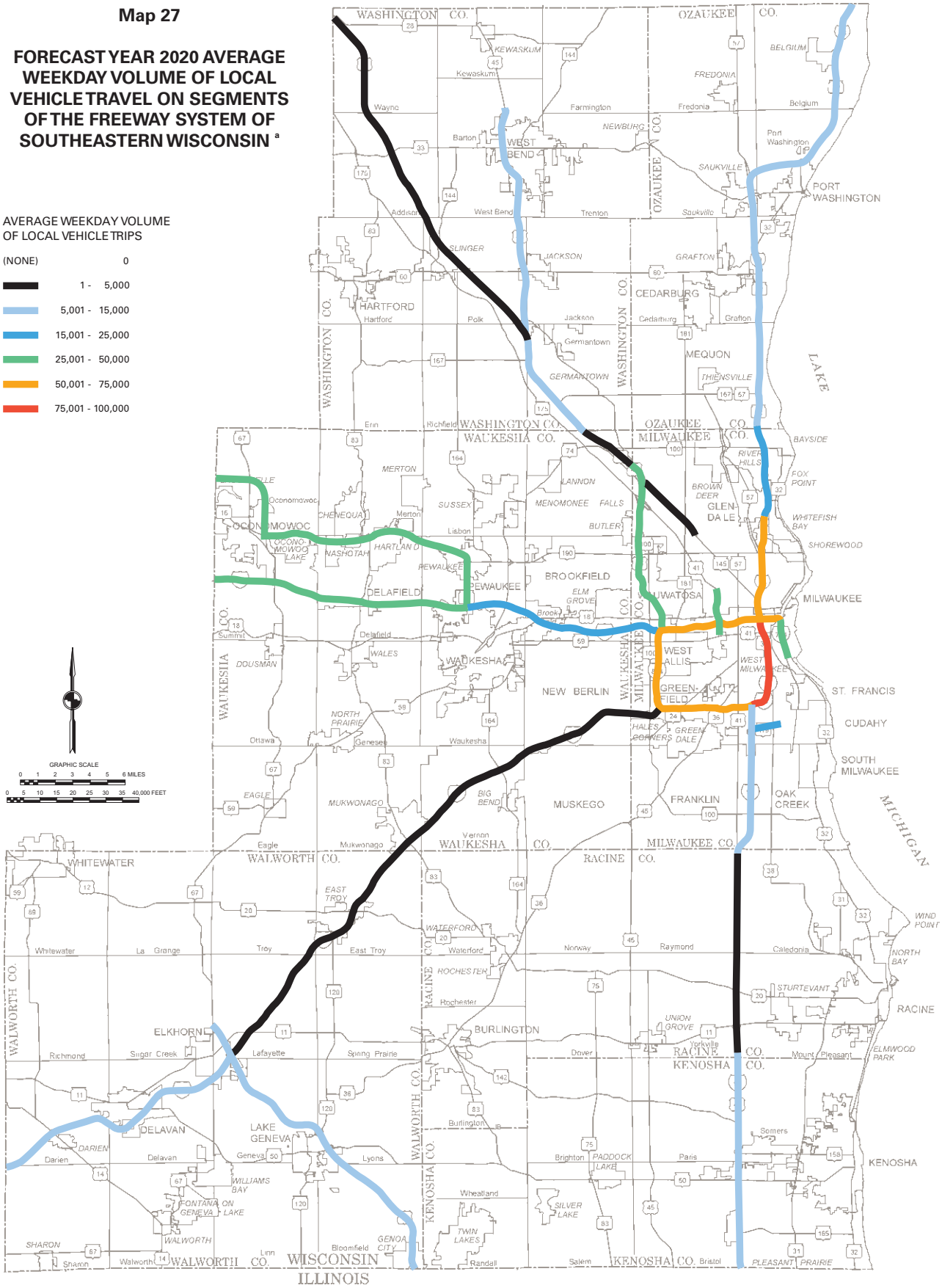


[a] *For this analysis, intercounty vehicle travel is defined as travel with one end of the vehicle trip located within the county within which the freeway segment is located and the other end of the vehicle trip located outside that county.*

Source: SEWRPC.

Map 27

FORECAST YEAR 2020 AVERAGE WEEKDAY VOLUME OF LOCAL VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

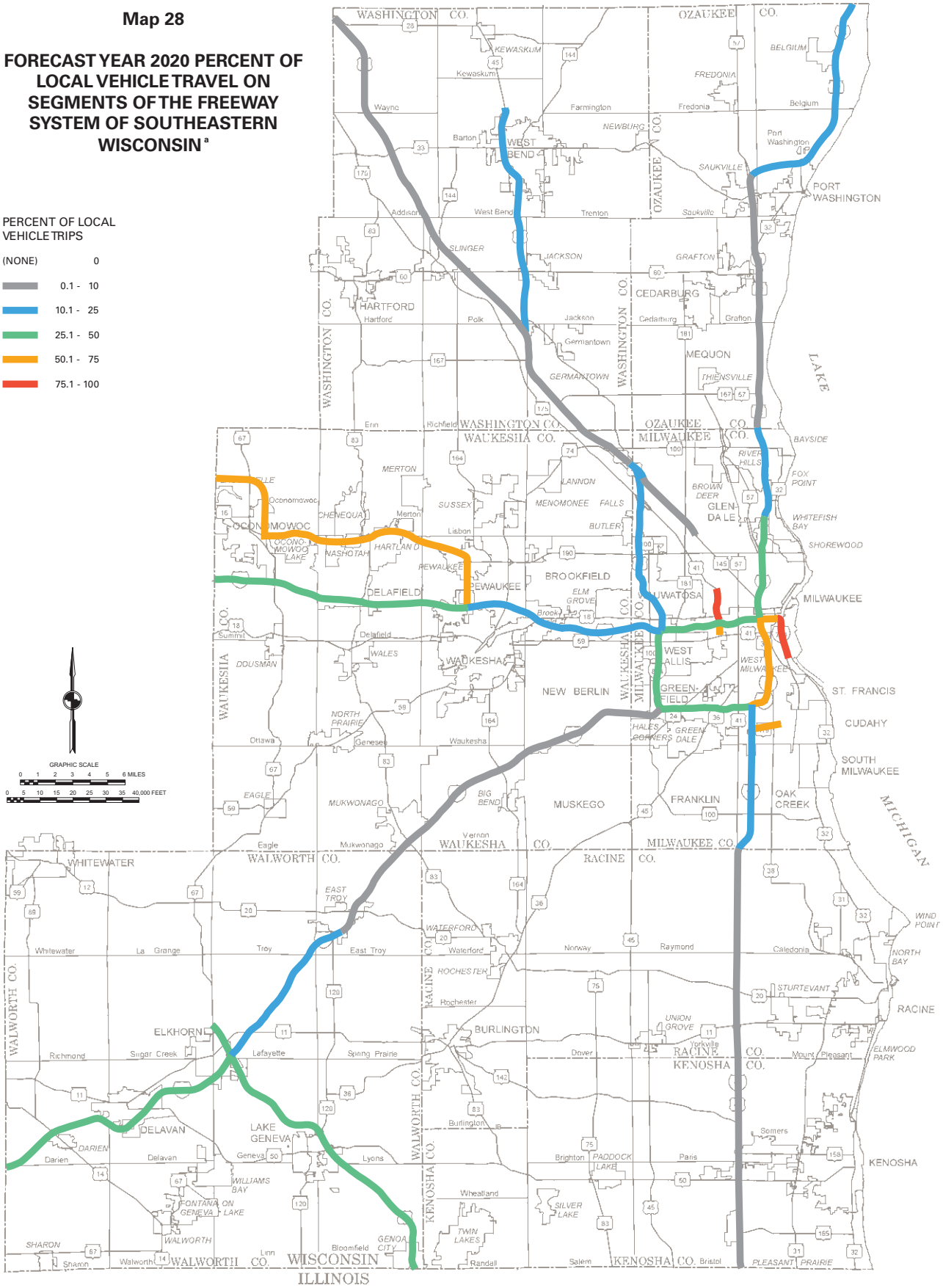


[a] *For this analysis, local vehicle travel is defined as travel with both ends of the vehicle trip located within the county within which the freeway segment is located.*

Source: SEWRPC.

Map 28

FORECAST YEAR 2020 PERCENT OF LOCAL VEHICLE TRAVEL ON SEGMENTS OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN[a]

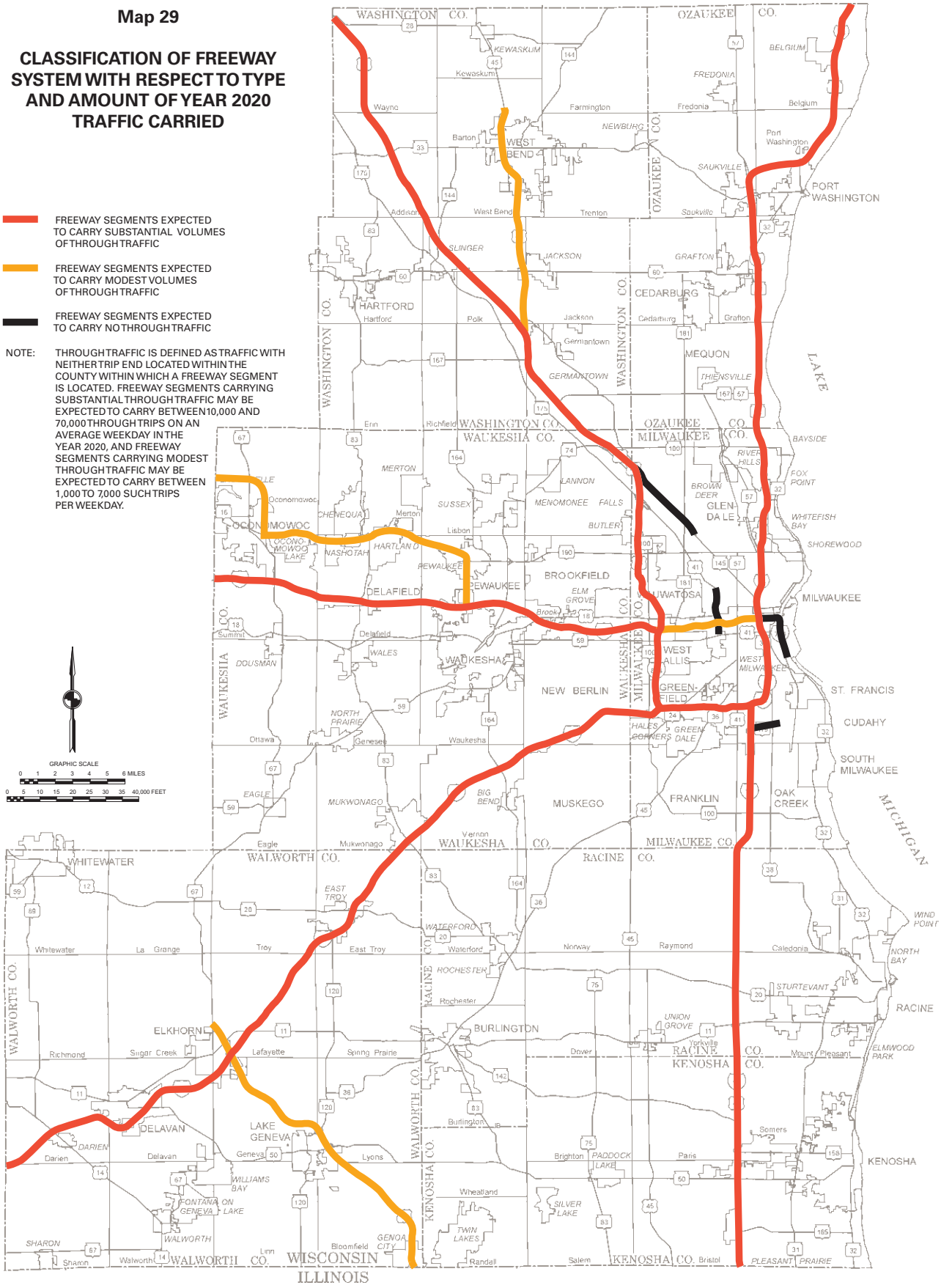


[a] *For this analysis, local vehicle travel is defined as travel with both ends of the vehicle trip located within the county within which the freeway segment is located.*

Source: SEWRPC.

Map 29

CLASSIFICATION OF FREEWAY SYSTEM WITH RESPECT TO TYPE AND AMOUNT OF YEAR 2020 TRAFFIC CARRIED



Source: SEWRPC.

STH 341 (Miller Park Way), STH 145 (the Fond du Lac Spur Freeway), IH 794, and STH 119 (the Airport Spur Freeway). Three of these freeway segments substantially serve local traffic; that is, 60 percent or more of the traffic on these freeway segments has both ends of their trips located within Milwaukee County—USH 41 (the Stadium North Freeway), STH 341 (Miller Park Way), and IH 794.

The foregoing information and analysis of the function of the freeway system as defined by the type and amount of travel carried on each segment of freeway represent one consideration as alternatives are structured for the reconstruction of the freeway system. Other information relative to physical design deficiencies, traffic safety problems, and existing and anticipated future traffic congestion attendant to each freeway segment represent other considerations to be taken into account at the time.

The amount of through vehicle traffic and intercounty vehicle traffic carried on the freeway system is apparent in Map 30 which displays the forecast year 2020 average trip length for average weekday traffic on the freeway system in Southeastern Wisconsin. The average trip length for person trips made within Southeastern Wisconsin on an average weekday is about 6.5 miles. The average trip length for trips using major segments of the freeway system may be expected to range from 20 to 80 miles, reflecting the use of the freeway system by vehicle trips traveling through the Region and between the Region and other parts of the State and the Nation, and, as well, by longer trips within the Region.

ACCESS TO INTERMODAL FACILITIES

The freeway system of Southeastern Wisconsin provides an important function in providing high speed and high capacity access to intermodal passenger and freight facilities within Southeastern Wisconsin (see Map 31). The intermodal facilities within the Region to which the freeway system provides access includes personal travel, or passenger, intermodal facilities including Milwaukee County's General Mitchell International Airport by direct freeway access, Amtrak passenger stations in the City of Milwaukee central business district, and in the Village of Sturtevant, a METRA passenger train station in the City of Kenosha, and intercity bus stations in the City of Milwaukee central business district. The freeway system also provides access to the essential general aviation airports in the Region, many of which serve business (corporate) aviation, and to the Port of Milwaukee, including its access to water-borne transportation and a rail-truck transfer facility. The freeway system also provides connections to rail-truck transfer facilities located outside the Southeastern Wisconsin Region.

ACCESS TO JOBS

The freeway system of Southeastern Wisconsin also provides important access to employers and jobs within Southeastern Wisconsin, as shown on Map 32. Maps 33 and 34 display the current directional split of freeway traffic during the morning and afternoon peak traffic hours, respectively. Nearly all of the traffic during the morning peak hour and much of the traffic during the afternoon peak traffic hour is travel by Southeastern Wisconsin residents going to work in the morning and from work in the afternoon. The influence of Milwaukee County being the dominant location of jobs within Southeastern Wisconsin is evident as the predominant flow of traffic on many freeways is toward Milwaukee County in the morning peak hour and away from Milwaukee County in the afternoon peak hour. However, many freeway segments are balanced or nearly balanced in terms of their peak hour traffic flow including IH 94 in Milwaukee County and eastern Waukesha County, USH 45 in Milwaukee County, and IH 894 in Milwaukee County, as well as IH 94 in Kenosha and Racine Counties.

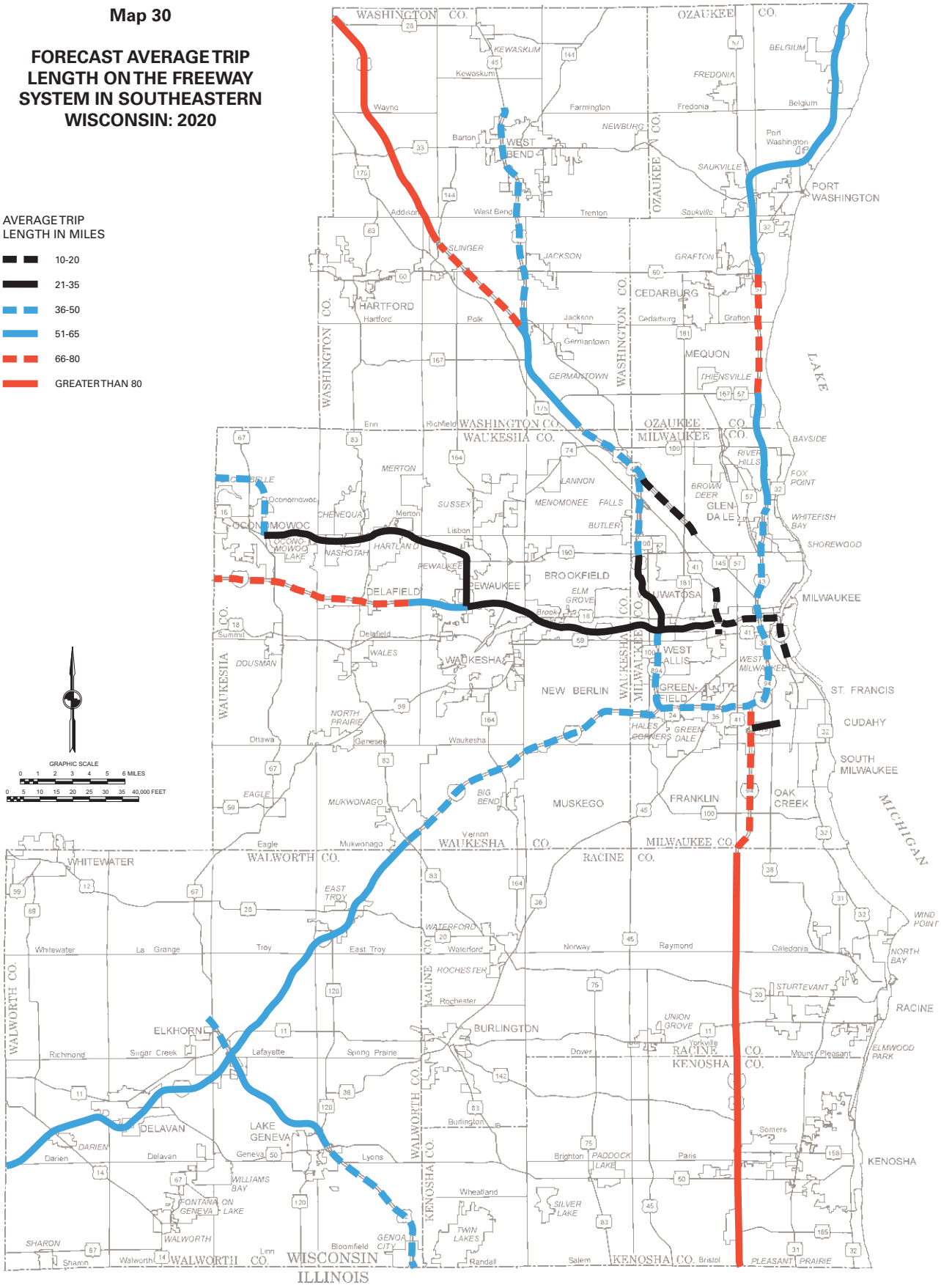
SUMMARY AND CONCLUSIONS

This chapter provides an analysis of the function of the freeway system and its component segments. A summary of the most important findings of this chapter is as follows:

- All 272 miles of existing freeways within Southeastern Wisconsin are under the jurisdiction of the State of Wisconsin. Consequently, the State of Wisconsin has responsibility for the design,

Map 30

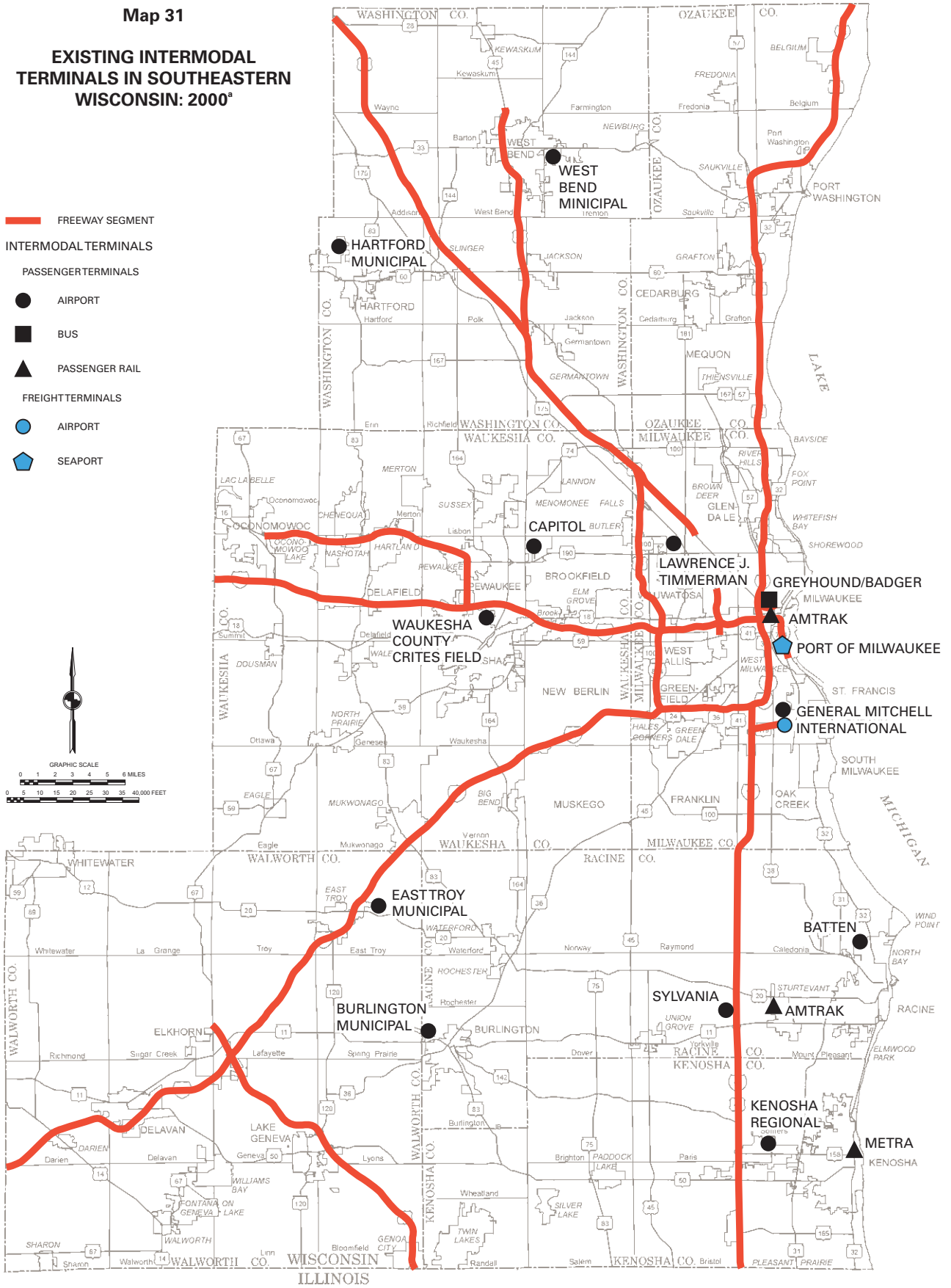
FORECAST AVERAGE TRIP LENGTH ON THE FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2020



Source: SEWRPC.

Map 31

EXISTING INTERMODAL TERMINALS IN SOUTHEASTERN WISCONSIN: 2000[a]

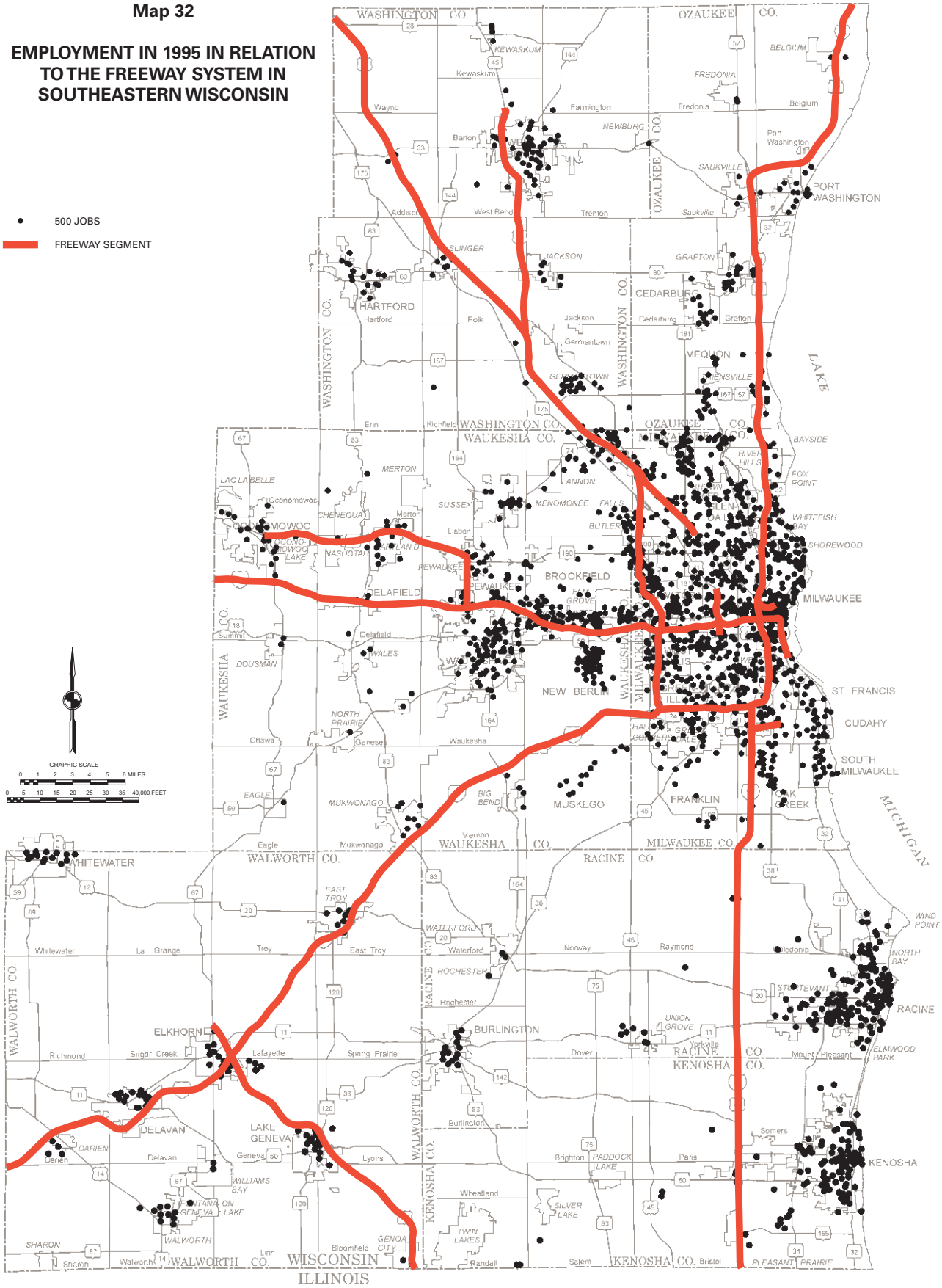


[a] *A preliminary engineering study of the implementation of high-speed intercity passenger rail service is currently being conducted by the Wisconsin Department of Transportation. This study is considering additional passenger stations along the Canadian Pacific Railway line in the communities of Oconomowoc and Brookfield.*

Source: SEWRPC.

Map 32

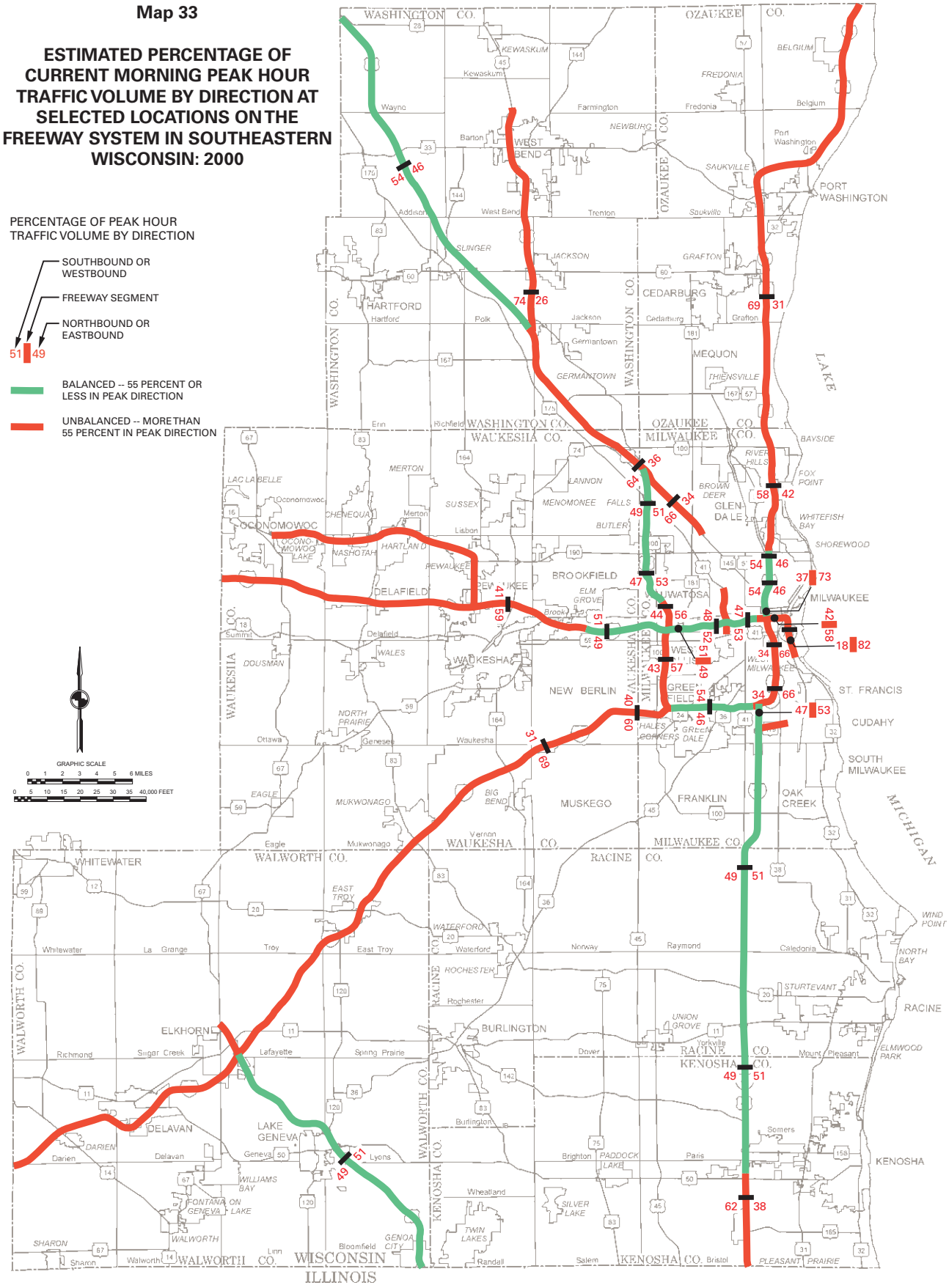
EMPLOYMENT IN 1995 IN RELATION TO THE FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN



Source: SEWRPC.

Map 33

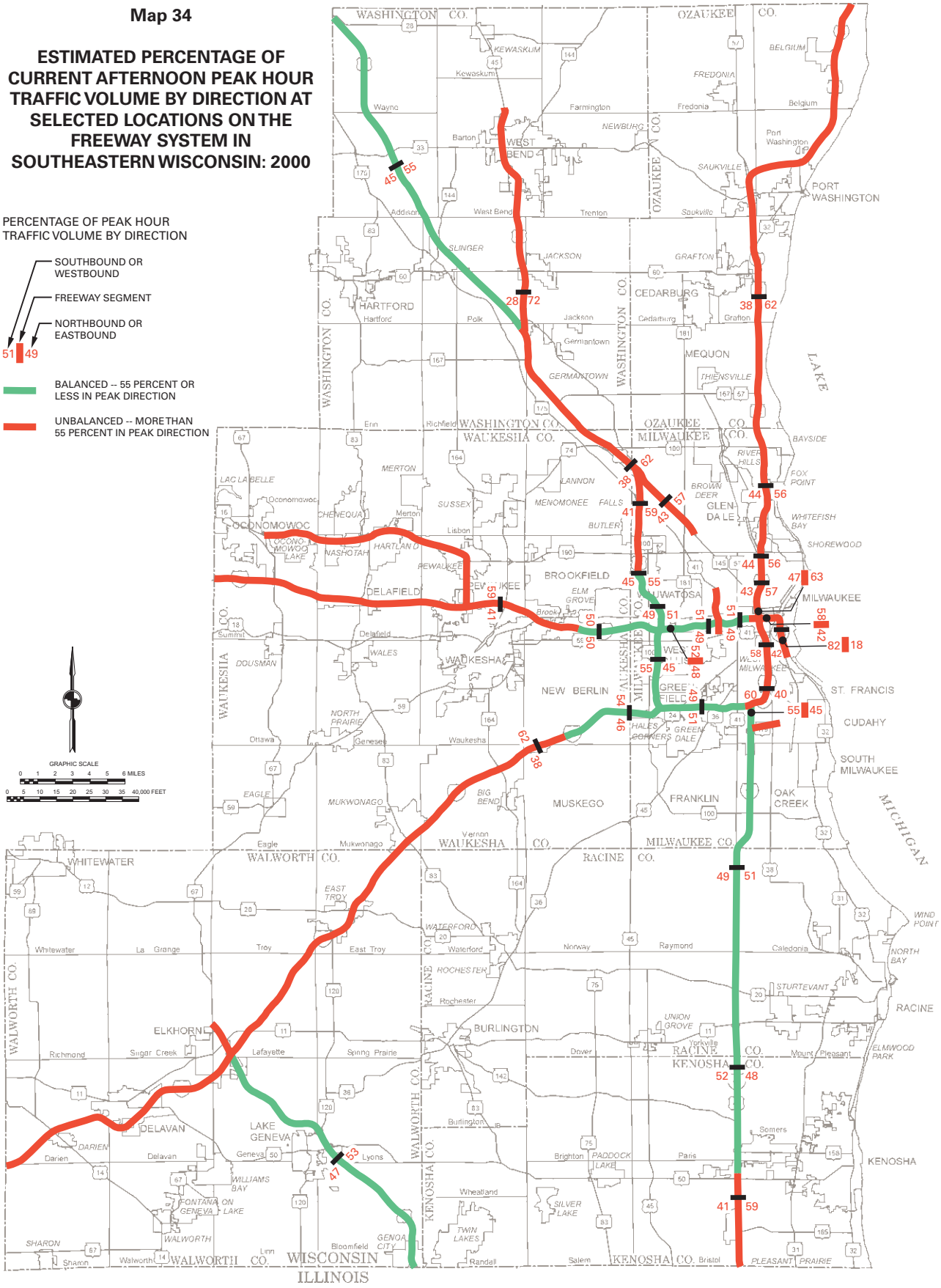
ESTIMATED PERCENTAGE OF CURRENT MORNING PEAK HOUR TRAFFIC VOLUME BY DIRECTION AT SELECTED LOCATIONS ON THE FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2000



Source: Wisconsin Department of Transportation and SEWRPC.

Map 34

ESTIMATED PERCENTAGE OF CURRENT AFTERNOON PEAK HOUR TRAFFIC VOLUME BY DIRECTION AT SELECTED LOCATIONS ON THE FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2000



Source: Wisconsin Department of Transportation and SEWRPC.

construction, maintenance, and operation of each segment of the regional freeway system. The purpose of highways under State jurisdiction is primarily to serve travel through a county and between that county and other counties in the State of Wisconsin, and as well, the rest of the Nation. About 90 percent of these freeways are on the State's Corridors 2020 system.

- Almost two-thirds of the freeway system are interstate highway routes, designated by the U.S. Department of Transportation, Federal Highway Administration as the routes of highest importance to the Nation. Nearly all segments of the freeway system are anticipated to carry a significant volume of through traffic through their county—10,000 or more vehicles per weekday—and the amount of through traffic may be expected to represent a significant percentage of the total anticipated weekday traffic volume on each freeway segment—15 percent or more of total weekday traffic. The exceptions on the freeway system are those segments of freeways which are stubs or spurs. There are five such stub or spur freeways within Milwaukee County, all of which may be expected to carry no traffic through Milwaukee County. Of all travel anticipated on these five stub or spur freeways, at least one end of each vehicle trip over these freeways may be expected to be located within Milwaukee County.
- A number of major segments of the freeway system are anticipated to carry a significant volume—7,500 to 20,000 vehicle trips per weekday—of through traffic where both trip ends of the travel are located outside the Southeastern Wisconsin Region and are through trips not only to the county within which the freeway segment is located, but to the entire seven county Southeastern Wisconsin Region. Those freeway segments include the routing of IH 94 and IH 43 running north-south through Kenosha Racine, Milwaukee, and Ozaukee Counties, and the routing of IH 94, IH 894, USH 45, and USH 41 running north-south through Kenosha, Racine, Milwaukee, Waukesha, and Washington Counties.
- Nearly every freeway segment within Southeastern Wisconsin may be anticipated to carry a significant volume of intercounty traffic—between 20,000 and over 100,000 vehicles per weekday—and have a significant percent of total average weekday traffic which is such intercounty traffic—between 20 and 60 percent. Intercounty traffic is traffic with one trip end within the county within which the freeway is located and the other trip end located outside the county.
- All segments of the freeway system, while they may be expected to carry significant volumes of traffic through the county in which they are located, and intercounty traffic between the county in which they are located and other counties within and outside Southeastern Wisconsin, also may be expected to carry significant volumes of traffic and proportions of traffic which may be considered as local traffic, or traffic which has both ends of the trip within the county within which the freeway segment is located. For some segments of freeway, such local traffic is the overwhelming majority of traffic on that segment of freeway, including stub or spur freeways such as IH 794 in Milwaukee County.
- The average trip length for trips using major segments of the freeway system may be expected to range from 20 to 80 miles, reflecting the use of the freeway system by vehicle trips traveling through the Region and between the Region and other parts of the State and the Nation, and as well by longer trips within the Region. The average trip length for all person trips made internal to the Region by residents of the Region on an average weekday within Southeastern Wisconsin is 6.5 miles.
- The freeway system of Southeastern Wisconsin also provides important access to employers and jobs within Southeastern Wisconsin. Nearly all of the traffic during the morning peak hour and much of the traffic during the afternoon peak traffic hour is travel by Southeastern Wisconsin residents going to work in the morning and from work in the afternoon. The predominant flow of traffic on many freeways is toward Milwaukee County in the morning peak hour and away from Milwaukee County in the afternoon peak hour. However, many freeway segments are balanced or nearly balanced in terms of their peak hour traffic flow, including IH 94 in Milwaukee County and eastern Waukesha County, USH 45 in Milwaukee County, and IH 894 in Milwaukee County, as well as IH 94 in Kenosha and Racine Counties.

Chapter IV

THE CONDITION OF THE FREEWAY SYSTEM AND NEED FOR RECONSTRUCTION

INTRODUCTION

This chapter provides an assessment of the existing condition of the freeway system and estimates the time frame during which each segment of that system will likely need to be reconstructed. To support this assessment, data on construction history and pavement and bridge condition was gathered for the 272 miles of pavement and 700 bridges on the freeway system in Southeastern Wisconsin.

FREEWAY SYSTEM CONSTRUCTION HISTORY

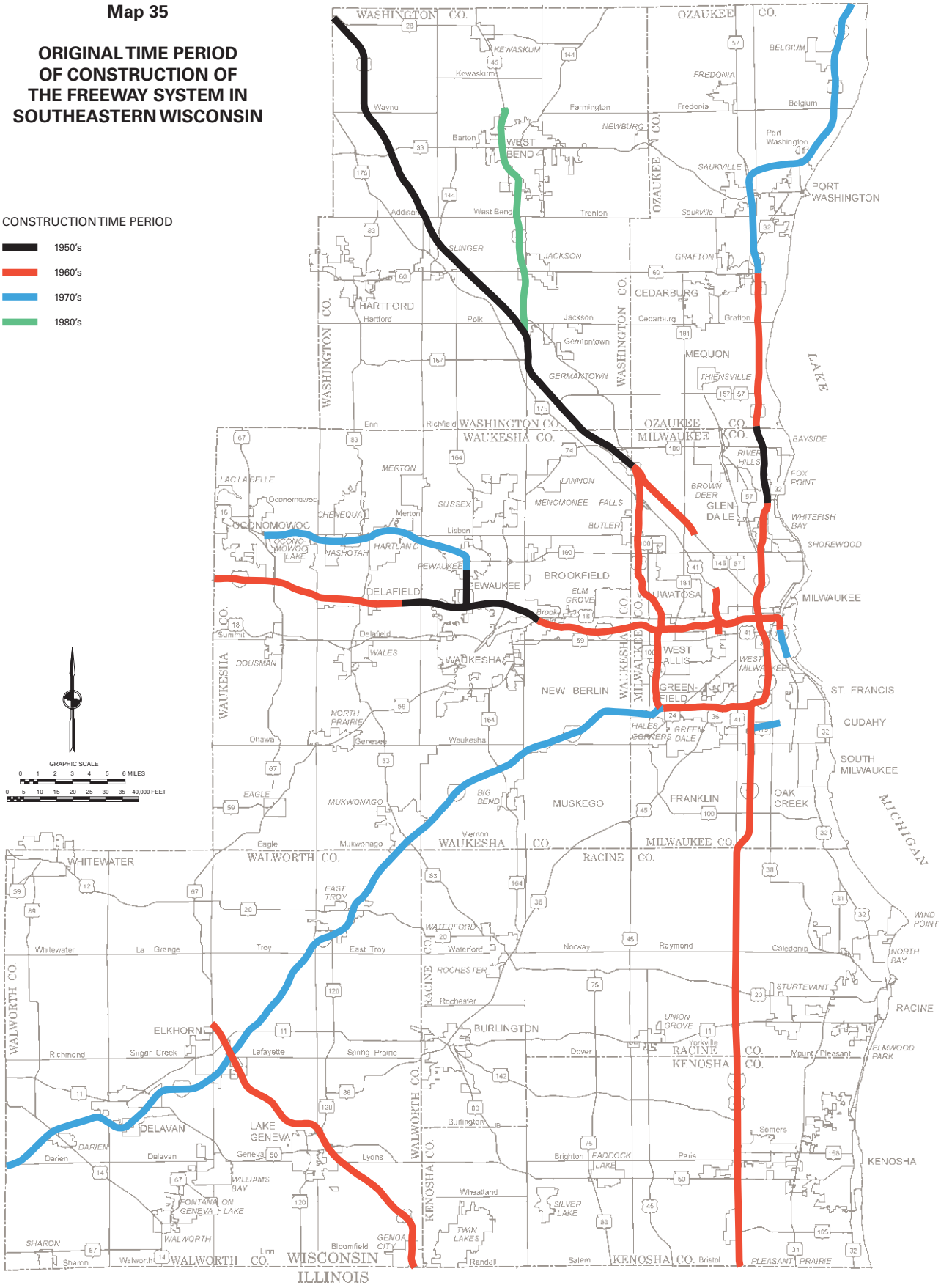
The construction of the regional freeway system began in 1952 (see Map 35). All of the freeway system was constructed originally with concrete pavement. The original concrete pavement was designed to serve for a 20- to 25-year period, and then require an initial resurfacing. A 20-year design life is typical for concrete pavement with an undrained base, and a 25-year design life is typical for a concrete pavement with a drained base. Drained bases were not utilized for concrete pavements until the mid-1980s. On average, based on historic construction data obtained from the Wisconsin Department of Transportation (WisDOT), the original pavement of the regional freeway system lasted about 19 years prior to requiring a first resurfacing. Factors contributing to the shorter than anticipated design life for the original freeway concrete pavement include greater than anticipated traffic, at least, in part due to the lack of completion of the original planned freeway system; greater than anticipated truck traffic volumes, weights, and axle loadings; and the effect of winter climate conditions, including studded snow tires.

The first resurfacing or rehabilitation of a freeway pavement typically involves base patching and spot improvement of the original concrete pavement, and resurfacing with a hot asphaltic pavement mix. As an alternative to resurfacing with a hot asphaltic pavement mix, the original concrete pavement, following base patching and spot improvement, could undergo diamond grinding to restore a smooth pavement and ride quality. Typically, resurfacing with a hot asphaltic pavement mix has been the strategy favored by WisDOT, usually with a two-layer asphaltic pavement overlay. A first resurfacing should last for 12 to 15 years.

The second resurfacing or rehabilitation typically includes milling off all or part of the first asphaltic overlay, and replacing it with a new two-layer asphaltic overlay. As part of the second rehabilitation, WisDOT will often recycle a great portion of the milled pavement. The second pavement resurfacing, also typically includes base patching as necessary. A second resurfacing should last for eight to 10 years. Because of the condition of the original concrete pavement, the base underlying that pavement, and the attendant stormwater drainage system,

Map 35

ORIGINAL TIME PERIOD OF CONSTRUCTION OF THE FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN

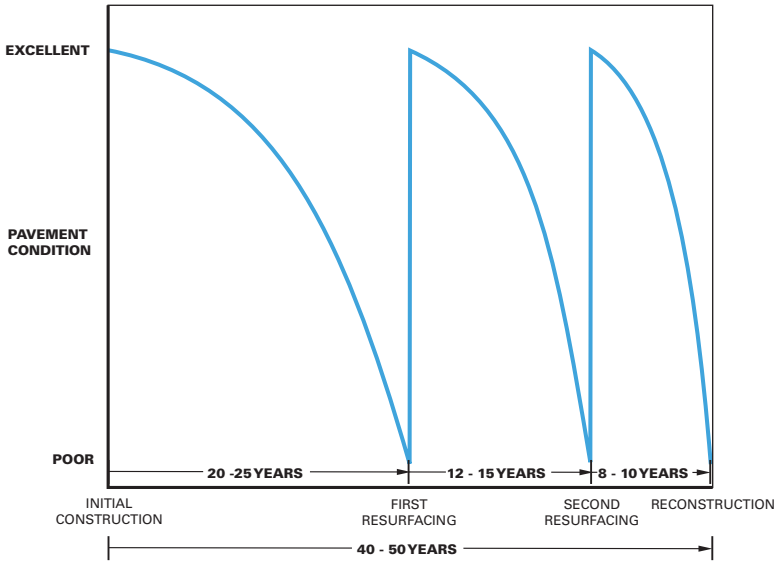


Source: Wisconsin Department of Transportation and HNTB.

a freeway pavement usually requires reconstruction following the second resurfacing. However, third resurfacings, or rehabilitations, have been completed in the past and are scheduled for the future, as the funding for reconstruction has not been available and pavement repair has been needed before preliminary and final engineering for reconstruction could be completed and funding secured. Third resurfacings of the original pavement generally are not considered cost-effective, typically expected to last from five to eight years. Owing to the continued deterioration of the underlying pavement, each subsequent resurfacing, or rehabilitation, does not last as long as the previous resurfacing or the original pavement. This pavement life cycle is illustrated in Figure 10.

Figure 10

TYPICAL FREEWAY PAVEMENT LIFE CYCLE



Source: Wisconsin Department of Transportation and SEWRPC.

ESTIMATION OF FREEWAY PAVEMENT AND BRIDGE LIFE EXPECTANCY

The life expectancy of the freeway system was determined by evaluating the existing condition and construction history of the pavement and bridges. Bridge data from WisDOT's annual inspection program and pavement data from WisDOT's biennial inspection program was used to rate the condition of individual freeway segments and project their life expectancy. The life expectancy of the system pavement was calculated in 0.10 mile segments. This information was then averaged for 35 individual freeway segments within the seven county Region. The life expectancies of the system bridges were also determined and then averaged for each of the 35 freeway segments to permit a comparison between the life expectancies of the freeway pavements and the freeway bridges.

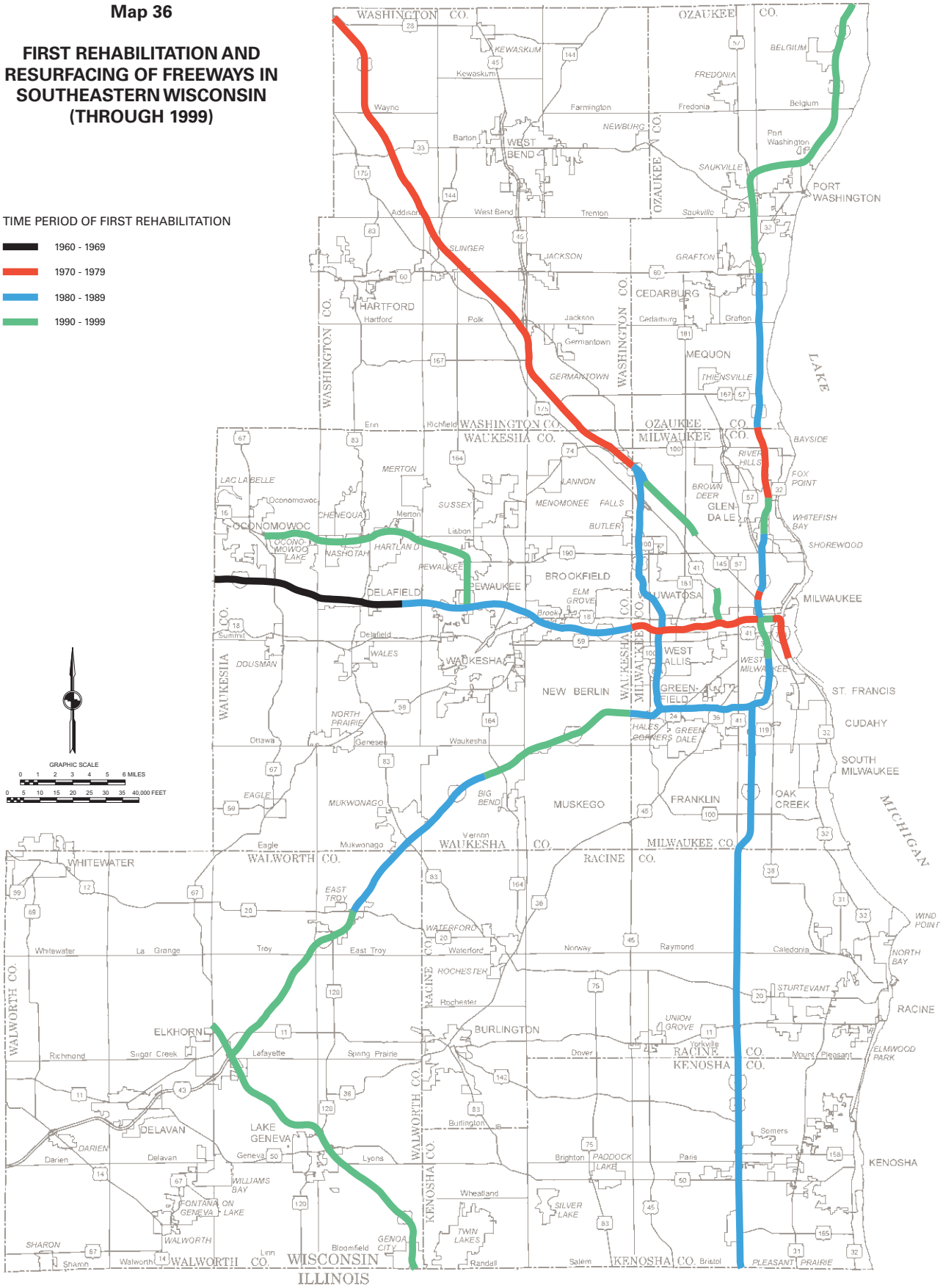
Pavement Life Expectancy Assessment

The determination of the life expectancy of the freeway pavement is based on a methodology developed, refined and applied by WisDOT. The methodology considers the original construction date and subsequent resurfacing records of each 0.10-mile freeway segment. The record of resurfacing, or rehabilitation, of the freeway system through 1999 is graphically illustrated on Maps 36 through 38. Pavement resurfacing, or rehabilitation, projects which have occurred since 1999, and are programmed to occur prior to 2003, are summarized in Table 16 and Map 39. In addition, six relatively minor pavement reconstruction projects totaling seven miles have been completed since 1994: the interchange of CTH G with IH 94; the interchange of STH 16 with IH 94; the interchange of IH 43 and Silver Spring Drive; the North Interchange of USH 45 with USH 41, STH 100, STH 145; a segment of USH 41 in the vicinity of CTH K; and STH 341 (Miller Park Way). Reconstruction was performed at these locations to provide reconfigured and improved interchanges and to correct substandard physical design. Pavement replacement was completed as part of these projects, consisting of removing and replacing the entire pavement structure, including the base underneath the pavement.

WisDOT uses both a Pavement Serviceability Index (PSI) and Pavement Distress Index (PDI) to measure pavement condition. PSI is a measure of pavement ride quality. PSI is determined by measuring the deflections, rutting, and roughness of the pavement by means of a profilograph. PSI is measured on a scale from 0 to 5, with 0 being a poor ride quality and 5 an excellent ride quality. PDI is a measure of pavement structural condition. PDI is determined through field inspection of the elements of pavement distress, which may indicate material or structural problems in addition to natural deterioration of pavement over time. PDI may range from 0 to 100, and is a weighted average of eleven elements of distress for asphalt pavements and twelve elements of distress for

Map 36

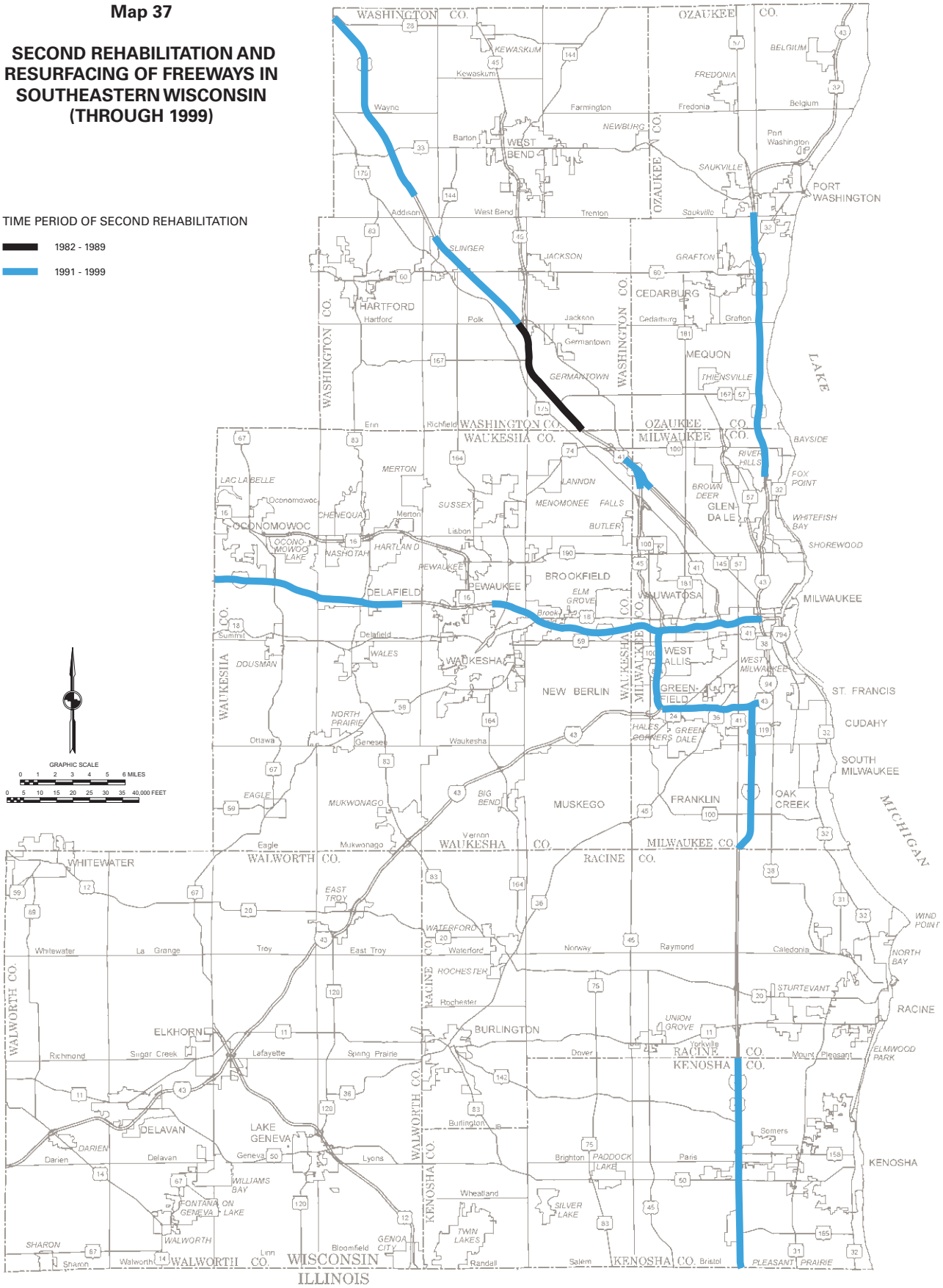
FIRST REHABILITATION AND RESURFACING OF FREEWAYS IN SOUTHEASTERN WISCONSIN (THROUGH 1999)



Source: Wisconsin Department of Transportation and HNTB.

Map 37

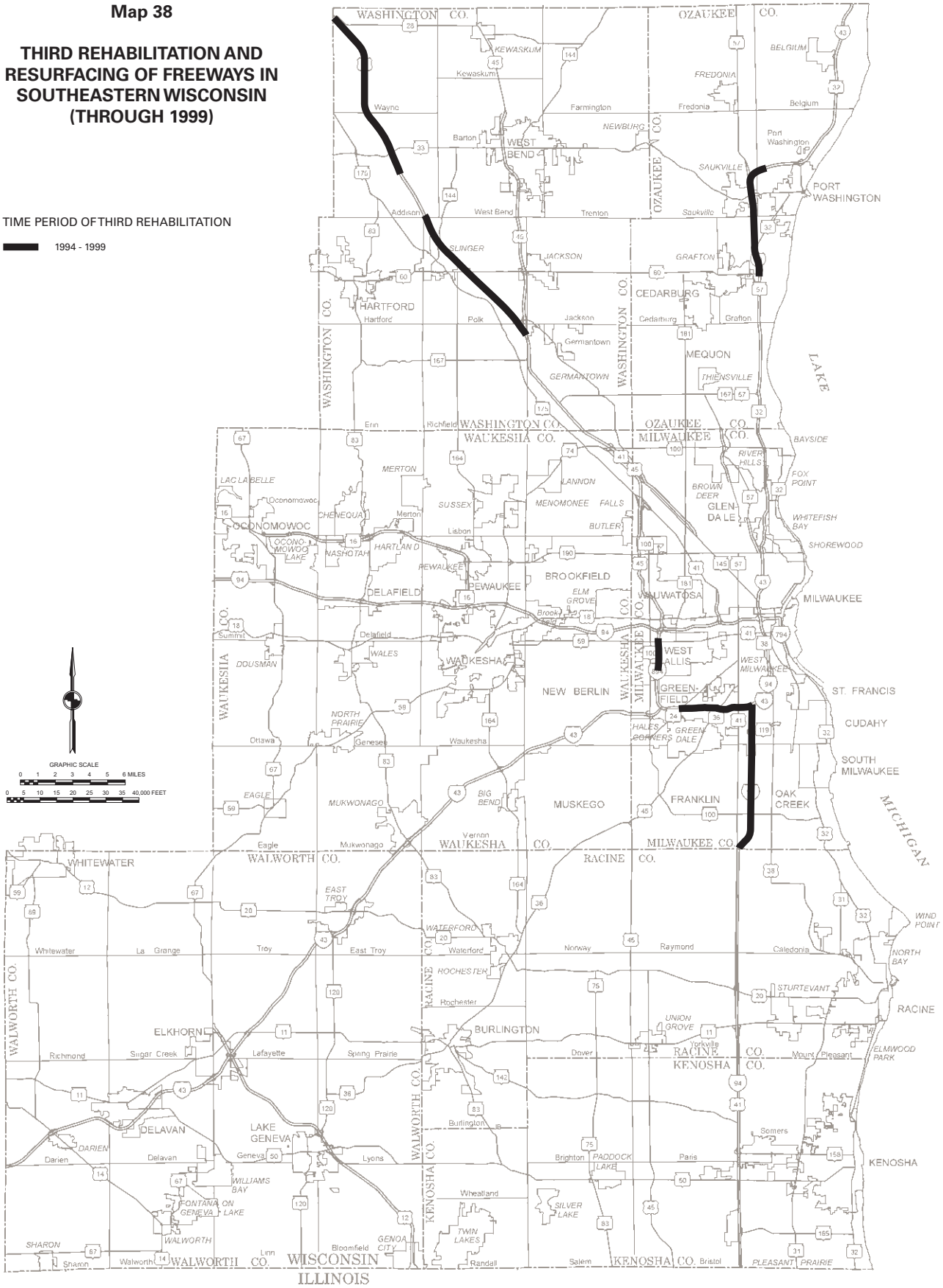
SECOND REHABILITATION AND RESURFACING OF FREEWAYS IN SOUTHEASTERN WISCONSIN (THROUGH 1999)



Source: Wisconsin Department of Transportation and HNTB.

Map 38

THIRD REHABILITATION AND RESURFACING OF FREEWAYS IN SOUTHEASTERN WISCONSIN (THROUGH 1999)



Source: Wisconsin Department of Transportation and HNTB.

Map 39

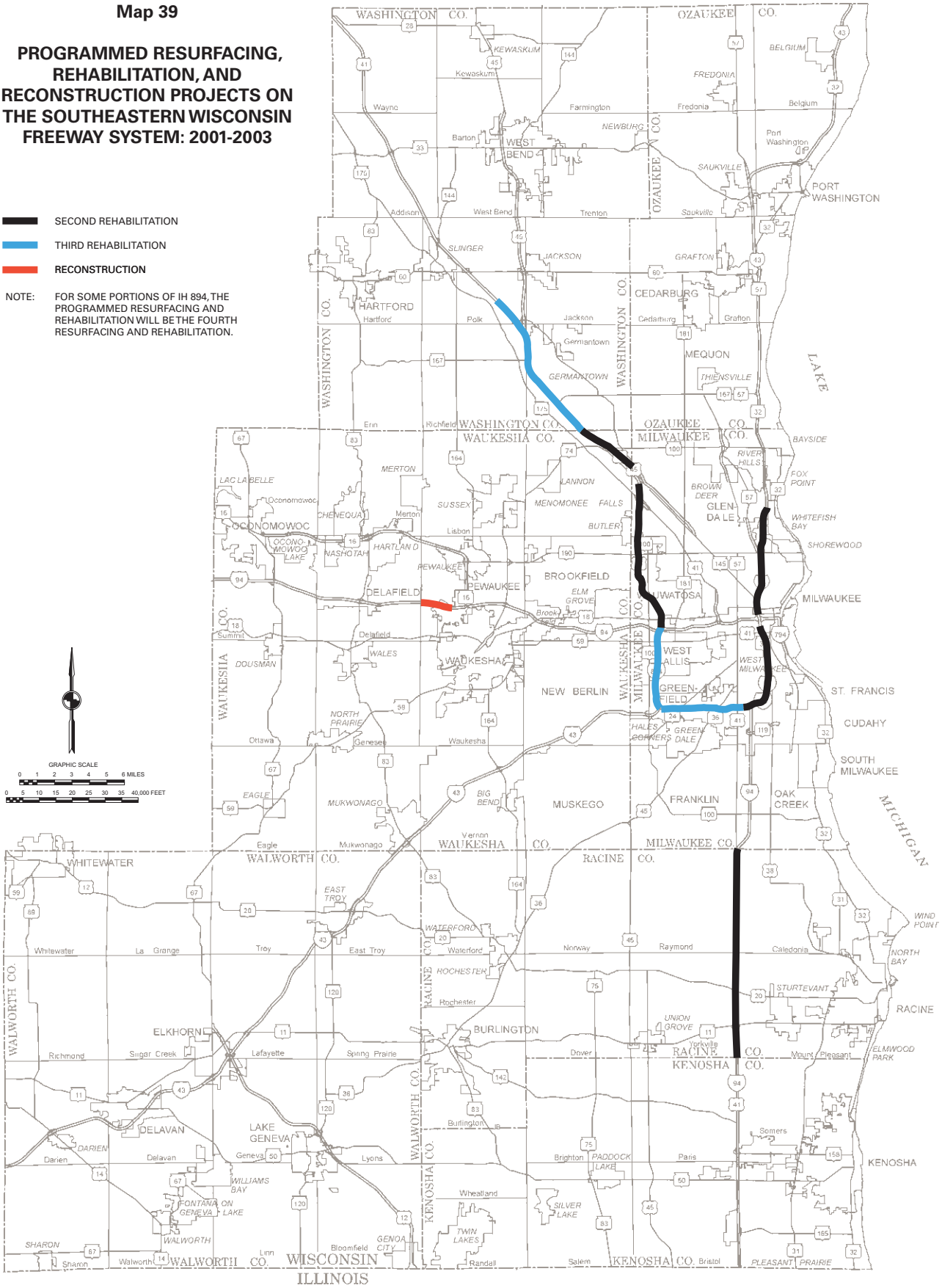
PROGRAMMED RESURFACING, REHABILITATION, AND RECONSTRUCTION PROJECTS ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM: 2001-2003

SECOND REHABILITATION

THIRD REHABILITATION

RECONSTRUCTION

NOTE: FOR SOME PORTIONS OF IH 894, THE PROGRAMMED RESURFACING AND REHABILITATION WILL BE THE FOURTH RESURFACING AND REHABILITATION.



Source: Wisconsin Department of Transportation and HNTB.

Table 16

PROGRAMMED RESURFACING AND REHABILITATION PROJECTS ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM: 2001 TO 2003

Construction Year	County	Freeway	Construction Type	Description
2001	Washington	USH 41/45	Rehabilitation #3	South of CTH Q to North of Pioneer Road, NB[a]
2001	Waukesha	USH 41/45	Rehabilitation #2	Milwaukee Co. line to CTH Q, NB[a]
2001	Milwaukee	USH 45	Rehabilitation #2	Capitol Drive to Good Hope Road, NB[a]
2001	Milwaukee	USH 45	Rehabilitation #2	Zoo Interchange to Capitol Drive, NB[a]
2001	Milwaukee	IH 894	Rehabilitation #3	Belton Overpass to Zoo Interchange, NB[a]
2001	Waukesha	IH 94	Reconstruction	CTH SS Interchange
2001	Waukesha	IH 94	Reconstruction	CTH SS to CTH G
2001	Racine	IH 94	Rehabilitation #2	North Racine Co. Line to South Racine Co. Line
2002	Milwaukee	IH 43	Rehabilitation #2	Marquette Interchange to Lexington Boulevard
2002	Milwaukee	IH 43	Rehabilitation #2	Mitchell Interchange to National Avenue
2003	Milwaukee	IH 894	Rehabilitation #3[b]	Belton Overpass to Mitchell Interchange

[a]Rehabilitation and resurfacing in the southbound lanes of these segments was competed in 2000.

[b]Some locations within this freeway segment have already been resurfaced a third time. For these locations, this is the fourth rehabilitation.

Source: Wisconsin Department of Transportation and HNTB.

concrete pavements. These elements of distress for each type of pavement are listed in Table 17. To calculate PDI, each element of pavement distress is identified in the field along with its severity. For example, longitudinal cracking in concrete pavement is assigned a severity based on the length and width of the crack.

The WisDOT pavement evaluation methodology permits a projection of pavement life expectancy, and the consequent need for resurfacing and reconstruction based on total expected cost over a 50-year design life of the pavement segment, including the life of the original pavement and subsequent resurfacings (rehabilitations). The pavement life expectancy projection considers pavement condition as measured by PDI and PSI; total and truck average daily traffic volume; construction history, including the original construction date; and the number and timing of subsequent resurfacings (rehabilitations).

Map 40 and Figure 11 present the results of the freeway system pavement life expectancy projections for the seven county Southeastern Wisconsin Region. Most of the freeway system in Southeastern Wisconsin is expected to reach the end of its design life within the next 20 years. There are exceptions at several locations where reconstruction projects have already been completed or where life expectancy extends to 2030. Of the approximately 272 miles comprising the system, 40 miles of pavement may be expected to require reconstruction between the years 2001 and 2005, 73 miles between 2006 and 2010, 59 miles between 2011 and 2015, and 37 miles between 2016 to 2020. The remaining 63 miles includes about seven miles which already have been reconstructed in recent years and 56 miles which would be expected to have a life expectancy between 2021 and 2030. Figure 12 illustrates the projected life expectancy for the freeway system pavements within each of the seven counties.

Bridge Life Expectancy Assessment

The projection for freeway bridge life expectancy was completed by estimating the original design life of each bridge, subtracting the age of the bridge, and subtracting additional years based on the evaluation of condition

ratings of each bridge. Data provided by WisDOT for each bridge included structure type, age, history of work performed on the structure, load ratings, and condition ratings of major structural elements. The estimation of life expectancy specifically considered structure age, condition ratings of major structural elements, and structural load carrying capacity as defined by the following:

- Age of the bridge – Original construction date.
- Substructure Condition Rating – Condition Rating of the piers and abutments.
- Superstructure Condition Rating – Condition Rating of the beams and girders.
- Inventory Rating – Safe loading of a bridge for an indefinite time period.

Table 17

WISCONSIN DEPARTMENT OF TRANSPORTATION PAVEMENT DISTRESS INDICATORS

Ashaltic Pavements	Concrete Pavements
Block Cracking	Slab Breakup
Alligator Cracking	Joint Crack Filling
Transverse Cracking	Distressed Joints/Cracks
Longitudinal Cracking	Patching
Flushing	Surface Distresses
Edge Raveling	Longitudinal Joint Distress
Surface Raveling	Transverse Faulting
Patching	Wide Cracks
Rutting	Punch Outs
Transverse Distortion	Diagonal Cracking
Longitudinal Distortion	Pavement Deterioration
- -	Delamination

Source: Wisconsin Department of Transportation.

The substructure and superstructure condition ratings were selected for consideration in the projection of bridge life expectancy because they most directly reflect the structural condition of the primary bridge elements, and directly relate to remaining bridge life. The condition rating of the bridge deck was not included in this evaluation since it is common practice to rehabilitate or replace bridge decks on an as-needed basis to extend the life of the bridge.

The structure age generally has the greatest influence on the remaining bridge life. The WisDOT Bridge Manual uses a life expectancy of 70 to 75 years for bridges designed with modern standards. For this study, a 60-year bridge life was used for three reasons. First, the majority of the bridges in the study area were constructed 30 to 40 years ago, prior to implementation of bridge design practices such as the use of epoxy coated reinforcing steel and structural steel analysis, which can account for fatigue cracking. Second, the bridges in Southeastern Wisconsin carry high traffic volumes in comparison to the rest of the State. Finally, the bridges have been exposed to severe climate changes and heavy salting applications.

The condition ratings are based on onsite inspections of each bridge structure conducted as part of the WisDOT annual bridge inspection program. The superstructure and substructure ratings are on a numerical scale from 0 to 9. The FHWA National Bridge Inspection Standards define the rating scale:

9 Excellent condition

8 Very good condition—no problems noted

7 Good condition—some minor problems

6 Satisfactory condition—structural elements show some minor deterioration

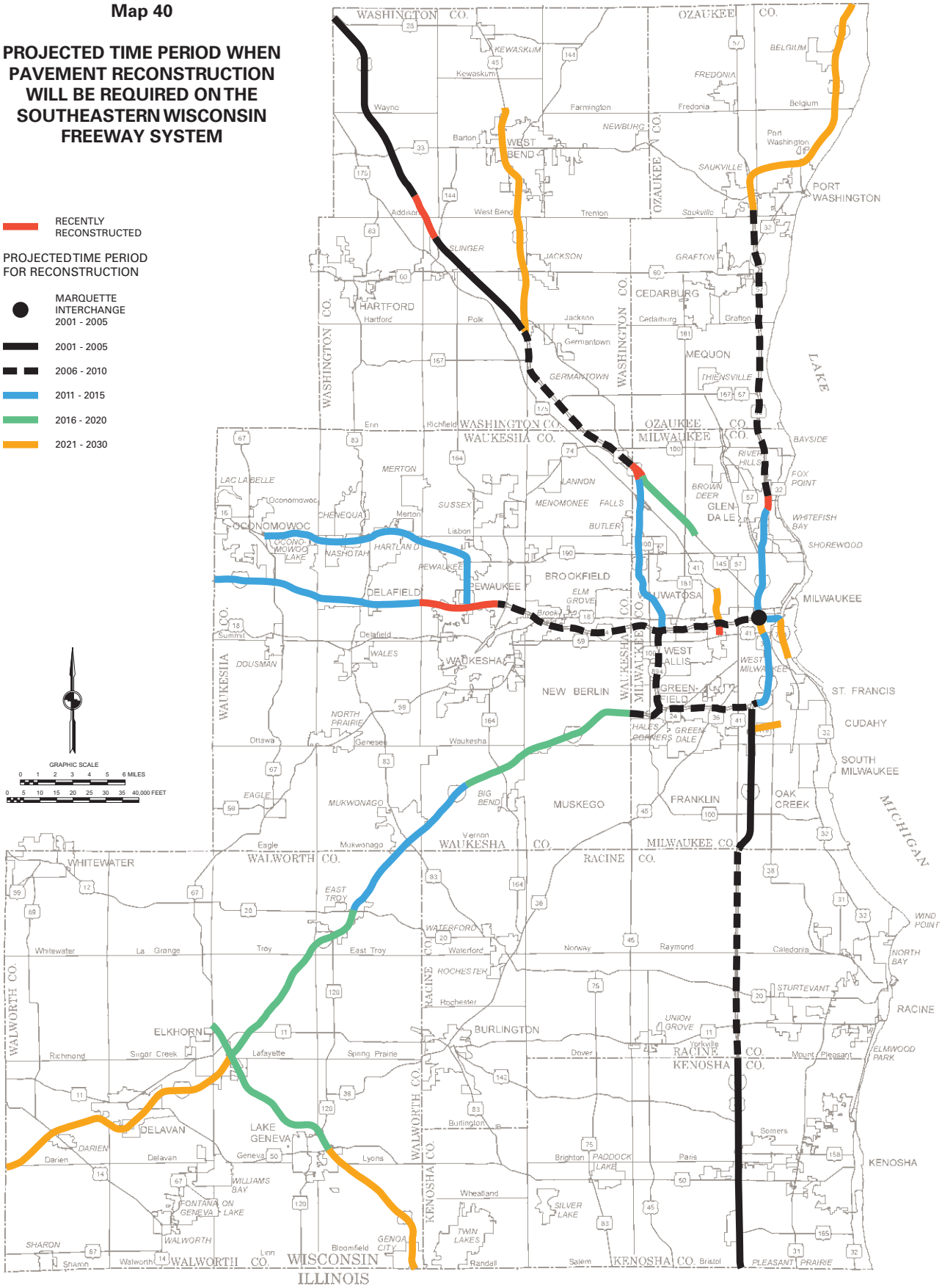
5 Fair condition—all primary structural elements are sound, but may have minor section loss, racking, spalling or scour

4 Poor condition—advanced section loss, deterioration, spalling or scour

3 Serious condition—loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.

Map 40

PROJECTED TIME PERIOD WHEN PAVEMENT RECONSTRUCTION WILL BE REQUIRED ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



Source: Wisconsin Department of Transportation and HNTB.

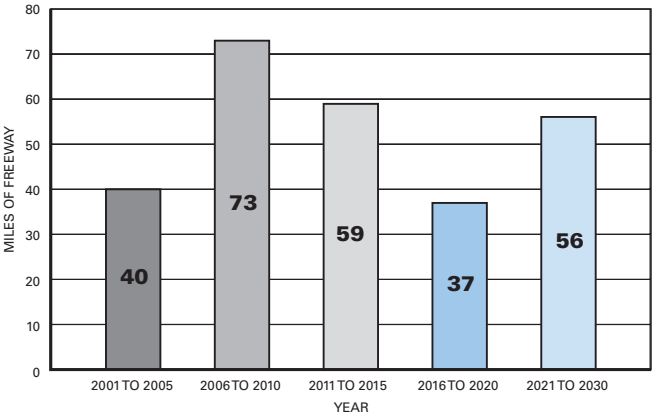
2 Critical condition—advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.

1 "Imminent" failure condition—major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.

0 Failed condition—out of service—beyond corrective action.

Figure 11

PROJECTED TIME PERIOD WHEN PAVEMENT RECONSTRUCTION WILL BE REQUIRED ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



[a]*Does not include seven miles of recently reconstructed freeway segments.*

Source: Wisconsin Department of Transportation and HNTB.

The condition of the superstructure and substructure were weighted equally with regards to their impact on remaining bridge life. The evaluation deducts years from the remaining life relative to the severity of the bridge condition, with the lower the rating the higher the deduction for remaining life. The deductions are cumulative in that years may be deducted for both poor superstructure ratings and poor substructure ratings. The deductions are also based on a two-tier scale, defined by the structure age. A bridge of 30 years or more in age received deductions from its life expectancy of 20, 10, and 0 years for superstructure, and related substructure ratings of 0 through 3, 4, and 5 through 9 respectively. A bridge of less than 30 years in age received deductions from its life expectancy of 25, 15 ,8, and 0 years for superstructure, and related substructure ratings of 0 through 3, 4, 5, and 6 through 9, respectively.

Inventory or Load Ratings were also factored into the evaluation to reflect the load carrying capacity of the structure. The bridge Inventory Rating is a measure of the bridge's degree of serviceability. The American Association of State Highway and Transportation Officials (AASHTO) defines Inventory Rating as the load that can safely utilize an existing structure for an indefinite period. A typical bridge is designed for a minimum Inventory Rating of HS20. For all bridges evaluated, deductions of 10, 5, and 0 years were used for ratings of less than HS16, HS16 to less than HS20, and HS20 and above, respectively. These reductions pertained to all bridges, regardless of age. Table 18 summarizes the rating scales and the corresponding deductions. Table 19 shows an example of a calculation of remaining life for a bridge based on this methodology.

IH 794 from the Marquette Interchange to Carferry Drive, including the Hoan Bridge, and the High Rise, or Menomonee Valley, Bridge (IH 94) south of the Marquette Interchange should be considered unique structures for this study due to their length. The life expectancies of these three structures will dictate their schedule for replacement, unlike other bridges where bridge replacement would likely occur along with roadway pavement replacement. The methodology described above for the minor structures was also used to estimate the remaining life of the major structures.

The unexpected failure of the northbound roadway approach structure to the Hoan Bridge in December of 2000 is an example of the uncertainty of estimating remaining bridge life. The evaluation of this segment of bridge indicated that the average remaining life for the Hoan Bridge and its approaches is 29 years. This is probably still a valid estimate for those roadway spans that are not composed of three girder systems. To date, it has not been determined if the superstructures for these approach structures will be rehabilitated or fully replaced. If they

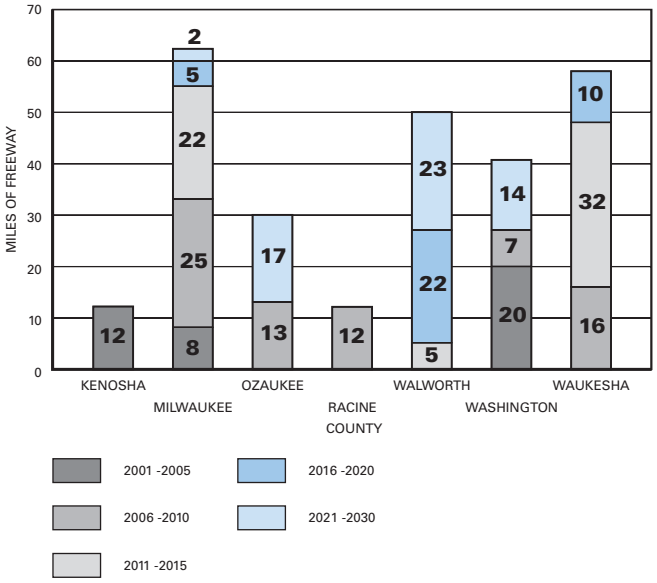
undergo rehabilitation, the three girder system approach structures should provide a life span of at least 29 years. If they undergo full superstructure replacement, the approach structures should provide a life span of at least that of the remaining life of the substructure.

The evaluation for the segment of IH 794, east of the Marquette Interchange to the Lakefront, indicated that the average remaining life for these bridge units is 14 years. Currently, a pre-design investigation is under way for the Marquette Interchange and this segment of IH 794. Two basic alternatives are under consideration. One is the "Full Reconfiguration/ Reconstruction of the Marquette Interchange." This requires removal and full replacement of the bridges carrying IH 794, to the lakefront. Another alternative is consideration for "Replace (Bridges) As Needed." This alternative will require full removal and replacement or rehabilitation of the freeway bridges as determined appropriate on a case by case basis. The rehabilitation would provide an additional 30 years of remaining life for these bridges, but would not accommodate any operational or capacity improvements for the Marquette Interchange or its approach structures.

The evaluation for the High Rise, or Menomonee Valley, bridge (IH 94) south of the Marquette Interchange, indicated that the average remaining life for these bridge units is 25 years.

Figure 12

PROJECTED TIME PERIOD WHEN PAVEMENT RECONSTRUCTION WILL BE REQUIRED ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM BY COUNTY[a]



[a]Does not include seven miles of recently constructed freeway segments.

Source: Wisconsin Department of Transportation and HNTB.

The bridge life expectancies prepared for this report are planning level estimates based on data provided by WisDOT and engineering experience and judgment. Although actual life expectancies for each bridge may vary from these estimates, the aggregate results are suitable for the planning level detail of this study. Most of the structures in this study have reached an age where normal rehabilitation, such as deck rehabilitation or replacement, are required. These major rehabilitation expenditures will be required to reach the complete bridge lives summarized in this report.

Map 41 illustrates the expected freeway system bridge life and replacement/reconstruction need for bridges within the seven county Southeastern Wisconsin Region. A comparison of projected bridge life expectancy as shown in Map 41 and projected pavement life expectancy as shown on Map 40 indicates that the remaining freeway bridge life is generally about 10 to 15 years greater than the remaining freeway pavement life. As a result, it may be expected that freeway bridges will be replaced during reconstruction of the freeway pavement.

SUMMARY AND CONCLUSIONS

This chapter illustrated the need for reconstruction of the pavement structures and bridges on the regional freeway system and the time frame in which such reconstruction needs to be completed. The life expectancies of the pavements and bridges were determined by evaluating data received from WisDOT. The pavements and bridges were evaluated using separate parameters. Each bridge was evaluated individually and averaged over a segment length to compare the bridge life expectancy to that of the pavement life expectancy within the freeway segment.

Table 18

BRIDGE RATING SCALE AND CORRESPONDING DEDUCTIONS

Superstructure and Substructure Rating				Inventory Rating	
Bridges 30 years or older		Bridges less than 30 years old			
Ratings	Deductions	Ratings	Deductions	Ratings	Deductions
0-3	20 years	0-3	25 years	< HS16	10 years
4	10 years	4	15 years	HS16 ≤ X < HS20	5 years
5-9	0 years	5	8 years	HS20 ≥	0 years
- -	- -	6-9	0 years	- -	- -

Source: Wisconsin Department of Transportation and HNTB.

Table 19

BRIDGE LIFE EXPECTANCY EXAMPLE CALCULATIONS[a]

Item	Ratings	Deductions	Years
Original life expectancy	- -	- -	60
Structure age	- -	(32 years)	- -
Inventory rating	HS18	(5 years)	- -
Superstructure rating	7	(0 years)	- -
Substructure rating	6	(0 years)	- -
Total years deducted	- -	(37 years)	- -
Life expectancy of bridge	- -	- -	23

[a]*Bridge B-67-134 (WisDOT bridge identification number) This is the IH 43 northbound bridge over Beloit Road in Waukesha County.*

Source: HNTB.

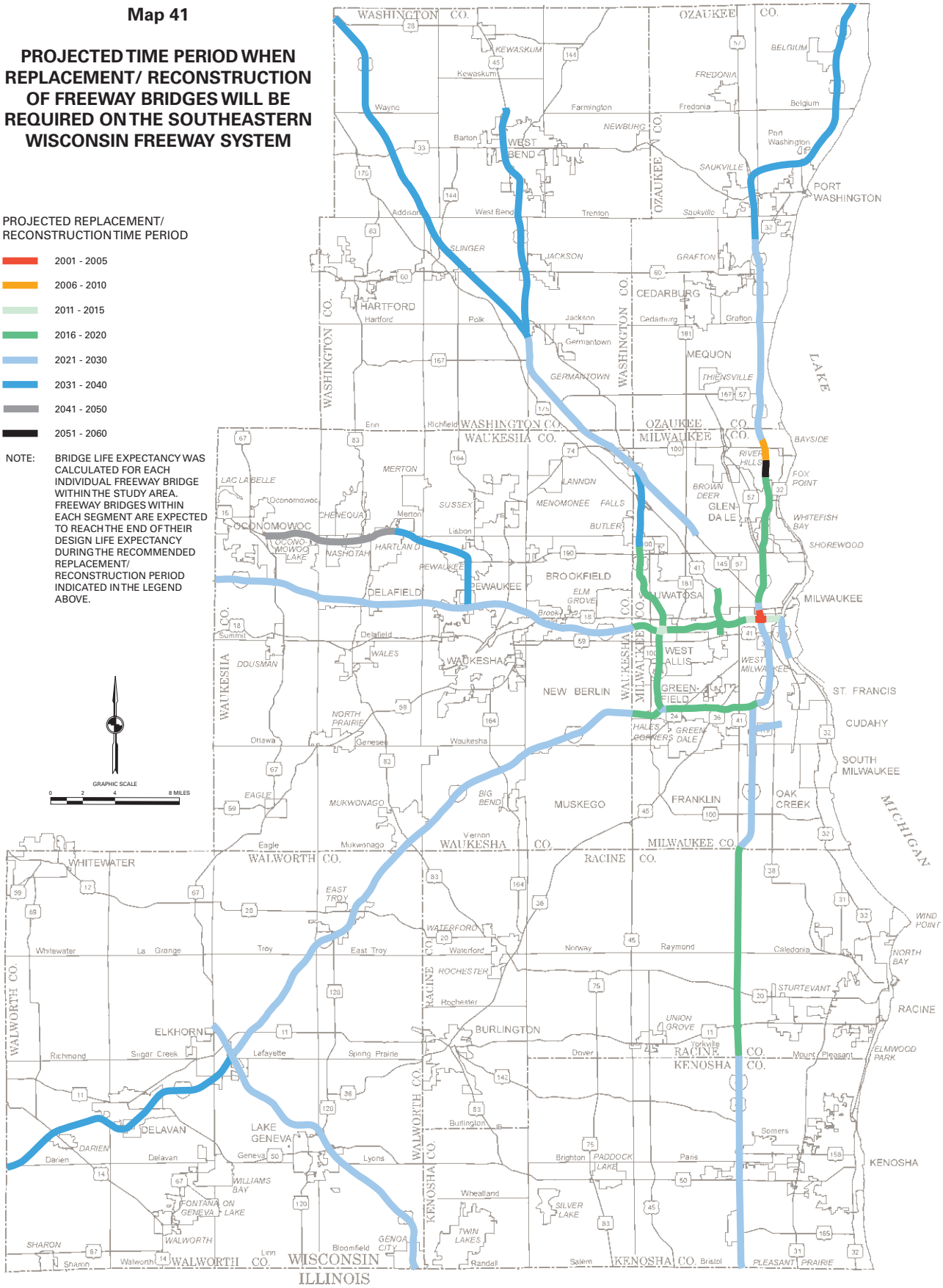
The pavement evaluation was based on the original construction date as well as all subsequent rehabilitations that were performed on the pavement. The methodology used to evaluate the remaining life expectancy of the pavement considered the construction and rehabilitation history, total and truck daily traffic volume, and PSI and PDI indicators used by WisDOT for all freeway segments within their database.

The bridge evaluation was based on an estimated service life, age of bridge, substructure and superstructure ratings, and inventory ratings that indicate the load bearing capacity of the bridge. This data was obtained from WisDOT. These factors were then used to determine the average remaining life expectancy of the bridges within the freeway segment

Based on the methodologies for the pavement and bridges, the life expectancy time frames were estimated for individual freeway segments for pavements and bridges. Most of the freeway system pavement was determined to require reconstruction in the time period 2005 to 2015, while the majority of bridges were estimated to need to be replaced between the years 2020 and 2030. As a result, it may be expected that the freeway bridges will be replaced during the reconstruction of the roadway pavement.

Map 41

PROJECTED TIME PERIOD WHEN REPLACEMENT/ RECONSTRUCTION OF FREEWAY BRIDGES WILL BE REQUIRED ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



Source: Wisconsin Department of Transportation and HNTB.

Chapter V

FREEWAY SYSTEM PROBLEMS AND DEFICIENCIES: PHYSICAL DESIGN, TRAFFIC SAFETY, AND TRAFFIC CONGESTION

INTRODUCTION

This chapter describes for each freeway segment and for the freeway system as a whole, the existing and potential future problems and deficiencies. The physical design deficiencies of each segment of the freeway system are determined by identifying those elements of the freeway system which do not currently meet accepted modern freeway design standards. Also, traffic safety problems on each segment of the freeway system are identified by reviewing the number and rate of traffic accidents during the years 1996 through 1998. The existing and potential future traffic congestion problems on the freeway system are identified, including that traffic congestion which may be expected to remain even upon implementation of other transportation system improvement and expansion as called for in the adopted regional transportation plan.

Some of the deficiencies of the current freeway system identified in this chapter exist due to the advancement in knowledge about freeway operations and design which has been achieved since the time of original freeway construction, and the evolution of modern freeway design criteria. Others may exist because the original planned freeway system, as shown on Map 42, was never completed.

FREEWAY SYSTEM PHYSICAL DESIGN DEFICIENCIES

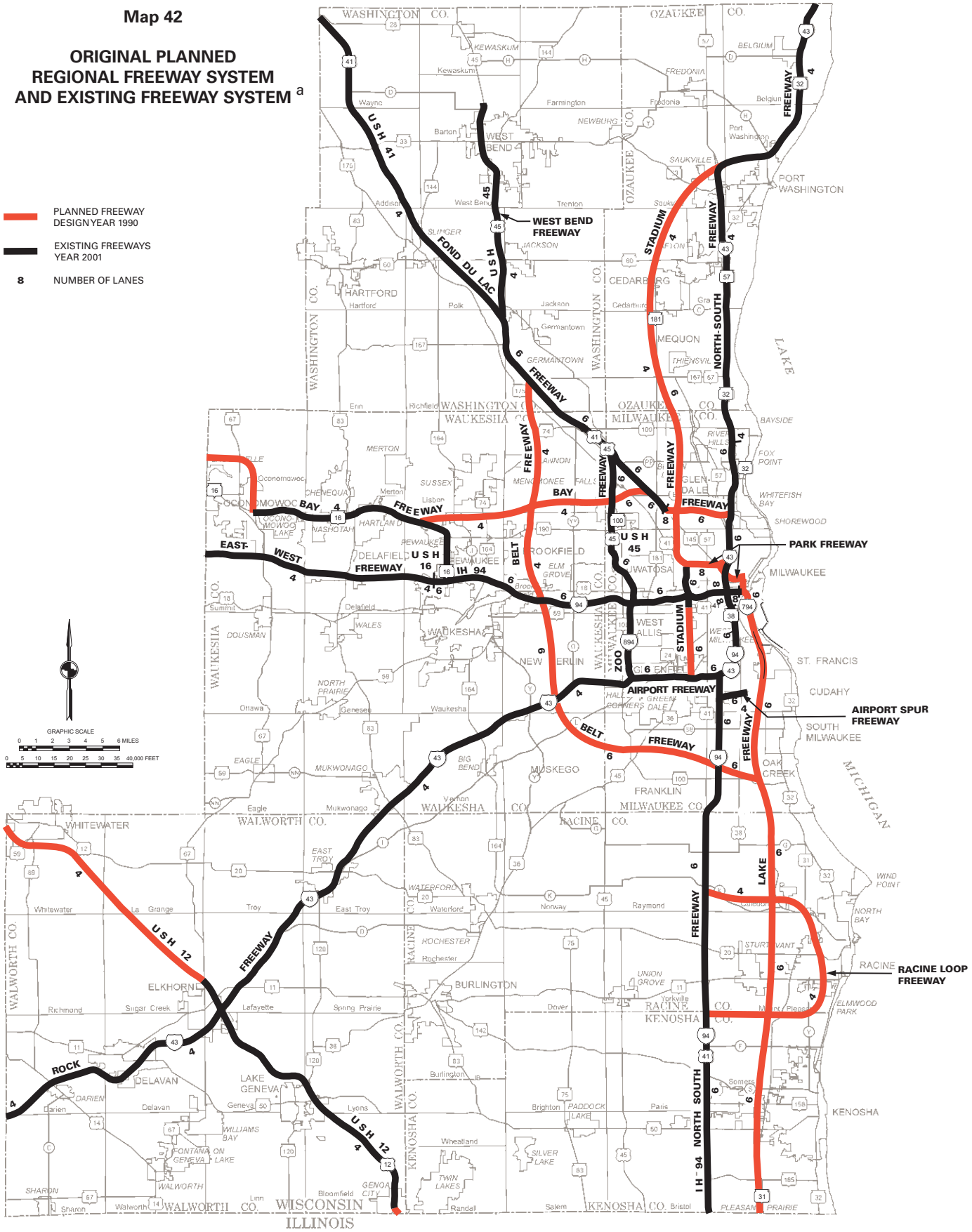
Freeway Design Standards

The extent to which the physical characteristics of each segment of the freeway system meets modern freeway design standards was determined by comparing the physical design characteristics of each freeway segment to modern freeway design standards. The primary sources for these design standards were the American Association of State Highway and Transportation Official's (AASHTO) report entitled "A Policy on Geometric Design Standards of Highways and Streets" and the Wisconsin Department of Transportation's (WisDOT) "Facilities Development Manual." The design standards are defined in Table 20 and include:

- Vertical Curvature Stopping Sight Distance
- Horizontal Curvature
- Vertical Alignment

Map 42

ORIGINAL PLANNED REGIONAL FREEWAY SYSTEM AND EXISTING FREEWAY SYSTEM [a]



[a] *The original planned freeway system is the recommended freeway system in the Southeastern Wisconsin Regional Planning Commission's design year 1990 land use and transportation plans which were completed in 1966.*

Source: SEWRPC.

Table 20

FREEWAY DESIGN STANDARDS AND GUIDELINES FOR THE SOUTHEASTERN WISCONSIN REGIONAL FREEWAY SYSTEM

Standard	Level	Design Speed of 70 Miles Per Hour[a]	Design Speed of 60 Miles per Hour[b]
Vertical Curvature Stopping Sight Distance – Provide adequate sight distance to observe an obstacle located on the freeway in a crest or sag curve and react and stop your vehicle in a safe and comfortable manner prior to reaching the obstacle.	Desirable	Crest-rate of vertical curvature of 540 or more. Sag-rate of vertical curvature of 220 or more.	Crest-rate of vertical curvature of 310 or more. Sag-rate of vertical curvature of 160 or more.
	Minimum	Crest-rate of vertical curvature of 290 or more. Sag-rate of vertical curvature of 150 or more.	Crest-rate of vertical curvature of 190 or more. Sag-rate of vertical curvature of 120 or more.
Horizontal Curvature – Avoid sharp curves so travel can be made safely at design speeds.	Desirable	No more than 2° 00′ of curvature	No more than 3° 00′ of curvature
	Minimum	No more than 2° 45′ of curvature	No more than 4° 15′ of curvature
Vertical Alignment (Grade) – Avoid steep grades to maximize sight distance, permit design speeds to be achieved by all types of vehicles, and minimize variations in vehicle speeds. Provide some grade to facilitate drainage.	Desirable/Minimum	No more than 2.5 percent and no less than 0.5 percent	No more than 3.0 percent and no less than 0.5 percent
Lane Width – Provide adequate width of travel lane to allow for safe and comfortable driving.	Desirable/Minimum	12 feet	12 feet
Shoulder Width – Provide adequate width to shelter a stopped vehicle.	Desirable	12 feet	12 feet
	Minimum	10 feet	10 feet
Lane Balance and Route Continuity – Lane balance would maintain the number of lanes provided over a freeway, and particularly the number of lanes provided through interchanges would be consistent with the number of lanes approaching the interchange. Route continuity would provide a directional path through an interchange which delineates the major route and minimizes the need for lane changes to follow the major route.	Desirable	Route continuity and lane balance achieved	Route continuity and lane balance achieved
	Minimum	Route continuity not achieved, but lane balance achieved	Route continuity not achieved, but lane balance achieved
Entrance/Exit Ramp Spacing – Provide adequate distance between freeway ramps measured from ramp nose to ramp nose to allow traffic to merge with, and diverge from, the freeway mainline without impeding adjacent freeway ramp traffic or freeway mainline traffic.	Desirable/Minimum	2400 feet or more	2400 feet or more
Vertical Clearance – Minimum height of bridges over the freeway measured from the pavement to the bottom of freeway overpasses.	Desirable/Minimum	16 feet[c]	16 feet[c]
Weave Segments – Stretches of freeway where two or more traffic streams must cross each other or change lanes between adjacent merge and diverge points.	Desirable	No left hand ramps or left lane drops, and desirable spacing of freeway system and service interchange ramp noses of 2800 feet and freeway service interchange ramp noses of 2400 feet.	No left hand ramps or left lane drops, and desirable spacing of freeway system and service interchange ramp noses of 2800 feet and freeway service interchange ramp noses of 2400 feet.
	Minimum	No left hand ramps or left lane drops, and minimum spacing of freeway system and service interchange ramp noses of 2000 feet and freeway service interchange ramp noses of 1600 feet.	No left hand ramps or left lane drops, and minimum spacing of freeway system and service interchange ramp noses of 2000 feet and freeway service interchange ramp noses of 1600 feet.
Guideline	**Level**	**Design Speed of 70 Miles Per Hour[a]**	**Design Speed of 60 Miles per Hour[b]**
Interchange Spacing – Provide adequate distance between adjacent interchanges to minimize the impact on freeway mainline operations of merging, diverging, and weaving movements attendant to freeway interchanges.	Desirable	5 miles[d]	2 miles[d]
	Minimum	2 miles[d]	1.0 mile[d]

[a] *Applied to freeway segments in all counties in the Region except Milwaukee County.*

[b] *Applied to all freeway segments in Milwaukee County.*

[c] *The minimum vertical clearance for signs and pedestrian bridges over a freeway is 17 feet.*

[d] *Interchange spacing can be reduced if auxiliary lanes are provided.*

Source: American Association of State Highway and Transportation Officials and Wisconsin Department of Transportation.

- Lane Width
- Shoulder Width
- Lane Balance and Route Continuity
- Entrance/Exit Ramp Spacing
- Vertical Clearance, and
- Weaving

The design standards of vertical curvature stopping sight distance, horizontal curvature, shoulder width, lane balance and route continuity, and weaving include both desirable standards and minimum standards. The design standards of vertical alignment, lane width, entrance/exit ramp spacing, and vertical clearance include only one standard which is both the desirable and minimum standard. Design standards are provided for both 70 miles per hour freeway design speed and 60 miles per hour freeway design speed. The existing freeway system in Milwaukee County was principally designed and constructed with a 60 miles per hour design speed; therefore, the design standards for a 60 miles per hour design speed were applied in Milwaukee County for the identification of freeway design deficiencies. The existing freeway system in the other six counties of the Southeastern Wisconsin Region was principally designed and constructed with a 70 miles per hour design speed; therefore, the design standards for a 70 miles per hour design speed were applied in these six counties. However, design standards related to lane width, shoulder width, lane balance and route continuity, vertical clearance, entrance/exit ramp spacing and weaving do not vary with design speed. Only the design standards of vertical curvature stopping sight distance, horizontal curvature, and vertical alignment vary with design speed.

In addition to these physical design standards, a design guideline for interchange spacing was defined. The design standards were applied to each freeway segment to determine design deficiencies. The interchange spacing design guideline was applied to each freeway segment to identify those segments of freeway with less than desirable or minimum interchange spacing which may be expected to affect freeway operations.

The identification of design deficiencies addresses the physical design problems on the freeway mainline including the connections of freeway interchange ramps with the mainline freeway. The design problems of individual freeway interchanges, including their connections with the surface arterial street system, have not been identified in this analysis. These design problems include the braiding of freeway on- and off-ramps with freeway frontage roads in Kenosha and Racine Counties. This particular design problem was addressed in a preliminary engineering study completed by the Wisconsin Department of Transportation in the late 1990s.

Freeway System Physical Design Deficiencies

Physical design deficiencies were identified for each segment of the freeway system by comparing the design characteristics of each freeway segment to the modern freeway design standards. Figures for each segment and system interchange of the freeway system depicting the extent to which each freeway segment and system interchange meets each design standard are provided in Appendix A.

Figure 13 summarizes the extent to which each freeway segment and system interchange meet or do not meet each design standard, and the attendant physical design deficiencies of each freeway segment with respect to each standard. The findings of this analysis of the physical existing design deficiencies of the freeway system, as further summarized on Map 43, indicates that:

- Many of the oldest freeway segments, predominantly in Milwaukee County, do not meet a number of modern design standards for much of their length.

- Many older freeway segments, in outlying counties, generally meet the modern design standards with the exception of one or two standards at isolated locations.

Figure 13

SUMMARY OF PHYSICAL DESIGN DEFICIENCIES OF THE FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN [a]

FREEWAY SEGMENT			APPROXIMATE EXTENT OF FREEWAY SEGMENT MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS								
REFERENCE NUMBER (SEE MAP A-1)	FACILITY/ FACILITIES	DESCRIPTION	VERTICAL CURVATURE	HORIZONTAL CURVATURE	VERTICAL ALIGNMENT (GRADE)	SHOULDER WIDTH	LANE BALANCE AND ROUTE CONTINUITY	ENTRANCE/ EXIT RAMP SPACING	VERTICAL CLEARANCE [b]	LANE WIDTH	WEAVE SEGMENT
1a	IH 94	WISCONSIN / ILLINOIS STATE LINE TO STH 158									
1b	IH 94	STH 158 TO STH 20									
1c	IH 94	STH 20 TO RACINE/MILWAUKEE COUNTY LINE									
2	IH 94	RACINE/MILWAUKEE COUNTY LINE TO MITCHELL INTERCHANGE									
3	IH 894/ IH 43	MITCHELL INTERCHANGE TO HALE INTERCHANGE									
4	IH 894/ USH 45	HALE INTERCHANGE TO ZOO INTERCHANGE									
5a	USH 45	ZOO INTERCHANGE TO STH 100									
5b	USH 45	STH 100 TO NORTH INTERCHANGE (WITH USH 41)									
6	USH 41/45	NORTH INTERCHANGE TO USH 41/45 INTERCHANGE									
7a	USH 41	USH 41/45 INTERCHANGE TO WASHINGTON CTH K									
7b	USH 41	WASHINGTON CTH K TO WASHINGTON/DODGE COUNTY LINE									
8	USH 45	USH 41/45 INTERCHANGE TO WASHINGTON CTH D									
9a	USH 12	STH 67 TO STH120									
9b	USH 12	STH 120 TO WISCONSIN/ ILLINOIS STATE LINE									
10a	IH 43	WALWORTH/ROCK COUNTY LINE TO STH 50									
10b	IH 43	STH 50 TO USH 12									
10c	IH 43	USH 12 TO STH 120									
10d	IH 43	STH 120 TO STH 83									

KEY: THE AMOUNT OF EACH COLOR IN A CELL REPRESENTS THE APPROXIMATE PROPORTION OF THE SEGMENT'S LENGTH CLASSIFIED AS MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS

MEETS DESIRABLE STANDARD

MEETS MINIMUM STANDARD

DOES NOT MEET EITHER STANDARD

NOT APPLICABLE TO SYSTEM INTERCHANGES

Figure 13 (continued)

FREEWAY SEGMENT			APPROXIMATE EXTENT OF FREEWAY SEGMENT MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS								
REFERENCE NUMBER (SEE MAP A-1)	FACILITY/ FACILITIES	DESCRIPTION	VERTICAL CURVATURE	HORIZONTAL CURVATURE	VERTICAL ALIGNMENT (GRADE)	SHOULDER WIDTH	LANE BALANCE AND ROUTE CONTINUITY	ENTRANCE/ EXIT RAMP SPACING	VERTICAL CLEARANCE[b]	LANE WIDTH	WEAVE SEGMENT
11a	IH 43	STH 83 TO WAUKESHA CTH Y									
11b	IH 43	WAUKESHA CTH Y TO HALE INTERCHANGE									
12	IH 43/94	MARQUETTE INTERCHANGE TO MITCHELL INTERCHANGE									
13	IH 43	MARQUETTE INTERCHANGE TO SILVER SPRING DRIVE									
14a	IH 43	SILVER SPRING DRIVE TO STH 167/57									
14b	IH 43	STH 167/57 TO STH 60/ OZAUKEE CTH Q									
15a	IH 43	STH 60/OZAUKEE CTH Q TO OZAUKEE CTH P									
15b	IH 43	OZAUKEE CTH P TO OZAUKEE/ SHEBOYGAN COUNTY LINE									
16a	IH 94	JEFFERSON/ WAUKESHA COUNTY LINE TO STH 83									
16b	IH 94	STH 83 TO STH 16									
17a	STH 16	STH 67 TO WAUKESHA CTH KE									
17b	STH 16	WAUKESHA CTH KE TO IH 94									
18a	IH 94	STH 16 TO WAUKESHA CTH Y									
18b	IH 94	WAUKESHA CTH Y TO ZOO INTERCHANGE									
19	IH 94	ZOO INTERCHANGE TO MARQUETTE INTERCHANGE									
20	USH 41/ STH 341	NATIONAL AVENUE TO LISBON AVENUE									
21	STH 145	NORTH INTERCHANGE (USH 41/45) TO 68TH STREET									
22	STH 119	IH 94 TO EASTERN TERMINUS (HOWELL AVENUE)									
23	IH 794	MARQUETTE INTERCHANGE TO CARFERRY DRIVE									

KEY: THE AMOUNT OF EACH COLOR IN A CELL REPRESENTS THE APPROXIMATE PROPORTION OF THE SEGMENT'S LENGTH CLASSIFIED AS MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS

MEETS DESIRABLE STANDARD

MEETS MINIMUM STANDARD

DOES NOT MEET EITHER STANDARD

NOT APPLICABLE TO SYSTEM INTERCHANGES

Figure 13 (continued)

INTERCHANGE			APPROXIMATE EXTENT OF FREEWAY SEGMENT MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS								
REFERENCE NUMBER (SEE MAP A-1)	FACILITY/ FACILITIES	DESCRIPTION	VERTICAL CURVATURE	HORIZONTAL CURVATURE	VERTICAL ALIGNMENT (GRADE)	SHOULDER WIDTH	LANE BALANCE AND ROUTE CONTINUITY	ENTRANCE/ EXIT RAMP SPACING	VERTICAL CLEARANCE[b]	LANE WIDTH	WEAVE SEGMENT
50	IH 94/ IH 894/ USH 45	ZOO INTERCHANGE									
51	IH 43/ IH 94/ IH 794	MARQUETTE INTERCHANGE[c]	MARQUETTE INTERCHANGE PART OF SEPARATE STUDY								
52	IH 43/ IH 894/ USH 45	HALE INTERCHANGE									
53	IH 43/ IH 94/ IH 894	MITCHELL INTERCHANGE									
54	USH 41/ USH 45/ STH 145	NORTH INTERCHANGE									
55	USH 41/ USH 45	USH 41 USH 45 INTERCHANGE									
56	IH 94/ STH 16	IH 94/ STH 16 INTERCHANGE									
57	IH 43/ USH 12	IH 43/ USH 12 INTERCHANGE									
58	IH 94/ STH 119	IH 94/STH 119 AIRPORT INTERCHANGE									
59	IH 94/ USH 41/ STH 341	STADIUM INTERCHANGE									

KEY: THE AMOUNT OF EACH COLOR IN A CELL REPRESENTS THE APPROXIMATE PROPORTION OF THE SEGMENT'S LENGTH CLASSIFIED AS MEETING OR NOT MEETING DESIRABLE AND MINIMUM STANDARDS

MEETS DESIRABLE STANDARD

MEETS MINIMUM STANDARD

DOES NOT MEET EITHER STANDARD

NOT APPLICABLE TO SYSTEM INTERCHANGES

[a]*Identification of design deficiencies based on criteria included in Table 20. The extent of the freeway segment meeting or not meeting the minimum or desirable standards is displayed on the figures included in Appendix A.*

[b]*The extent of each segment meeting or not meeting the minimum standards for vertical clearance applies only to the extent of structures present within each segment.*

[c]*Data for the Marquette interchange is not presented here because that system interchange is being considered by a separate study.*

Source: SEWRPC.

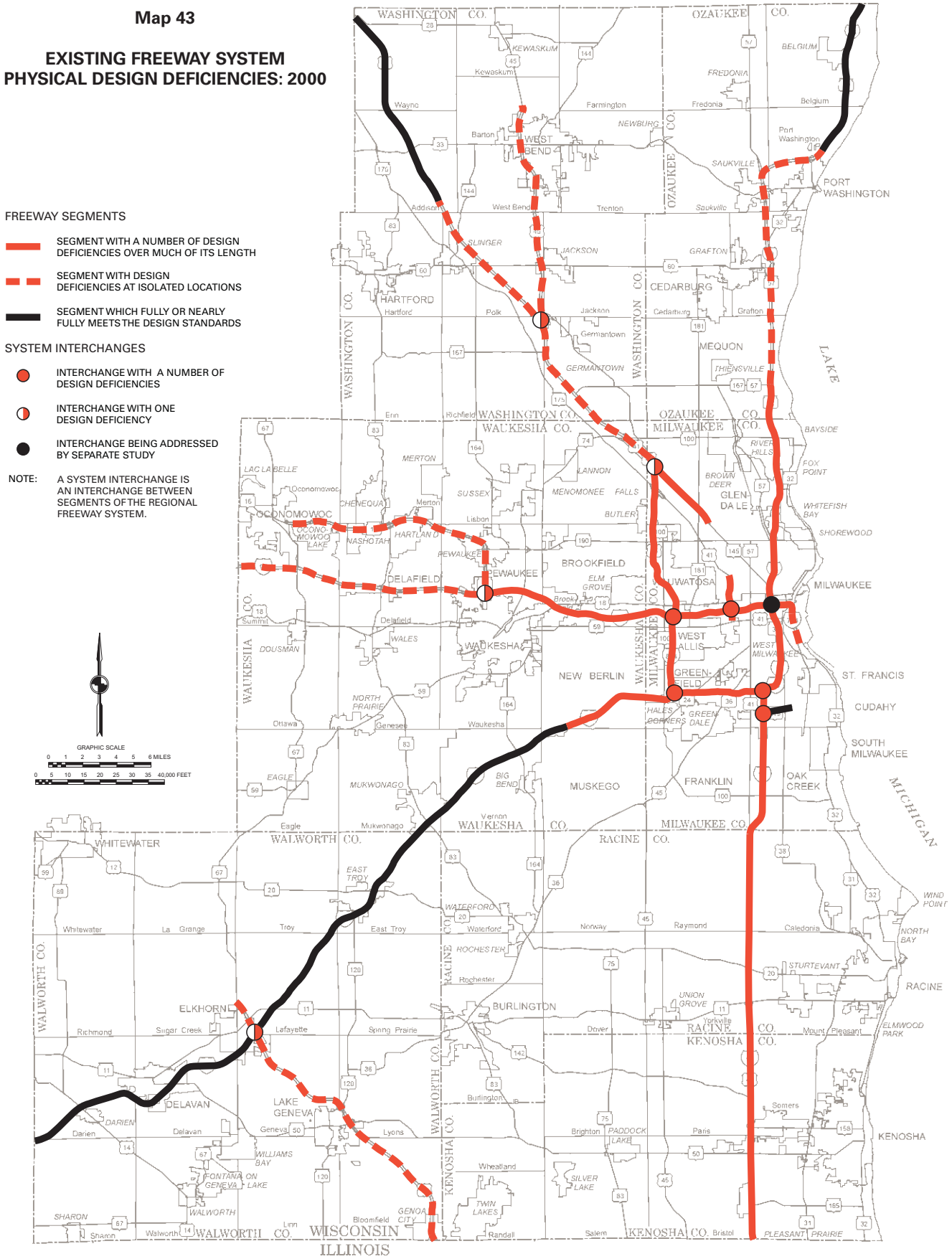
- A number of freeway segments at the far outlying portions of the Region fully meet all design standards.

TRAFFIC SAFETY PROBLEMS

The traffic safety problems of the existing freeway system were assessed by analyzing the traffic crash, or accident history of the freeway system over a recent three year period of 1996, 1997, and 1998. The traffic crash rate for each one-tenth mile segment of the 272 mile regional freeway system was estimated for the three year period. The estimated traffic crash rate, expressed as the number of crashes per 100 million vehicle-miles for each freeway segment, was compared to both the regional freeway system average crash rates and the average crash

Map 43

EXISTING FREEWAY SYSTEM PHYSICAL DESIGN DEFICIENCIES: 2000



Source: SEWRPC.

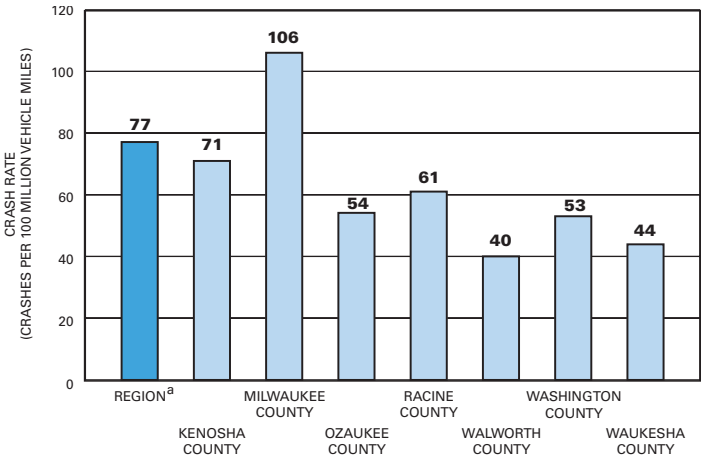
rate for freeways within the county within which the freeway segment was located. Those freeway segments with crash rates which exceeded the regional average crash rate, and/or which exceeded their county freeway average crash rate were considered to experience traffic safety problems which may warrant consideration during the review of freeway redesign alternatives.

The average freeway crash rates within Southeastern Wisconsin and within each of the seven counties of Southeastern Wisconsin are shown on Figure 14. Only the Milwaukee County freeway crash rate, 106 crashes per 100 million vehicle-miles, is greater than the Region average freeway crash rate of 77 crashes per 100 million vehicle-miles.

Map 44 displays those freeway segments within Southeastern Wisconsin with average traffic crash rates which exceed the regional average freeway crash rate. Within each county there are freeway segments which exceed the regional average crash rate.

Figure 14

FREEWAY CRASH RATES WITHIN THE SOUTHEASTERN WISCONSIN REGION: 1996-1998



[a]THE AVERAGE FREEWAY CRASH RATE FOR THE SIX COUNTIES OF THE SOUTHEASTERN WISCONSIN REGION OTHER THAN MILWAUKEE COUNTY IS 51 CRASHES PER 100 MILLION VEHICLE MILES.

Source: Wisconsin Department of Transportation.

Maps 45 through 51 display for each of the seven counties those freeway segments which exceed the average crash rate for freeways within each county.

Freeway segments with traffic crash problems may be considered to be those which exceed the regional freeway system average crash rate and/or their county freeway system average crash rate.

The traffic crash rates for the Southeastern Wisconsin freeway system may be compared to statewide highway crash rates. The traffic crash rates for federal interstate freeways located in urban areas in Wisconsin is an estimated 104 crashes per 100 million vehicle-miles, and for all other interstate freeways is 76 crashes per 100 million vehicle-miles.

Freeway traffic safety is related not only to the design of the existing freeway system, but also to freeway traffic congestion. The existing rear-end crash rates on the Region's congested freeway segments are currently five- to 15-times higher than those experienced on uncongested freeway segments. The highest rear-end crash rates are experienced on those freeway segments with the most extreme congestion.

Traffic Congestion Problems

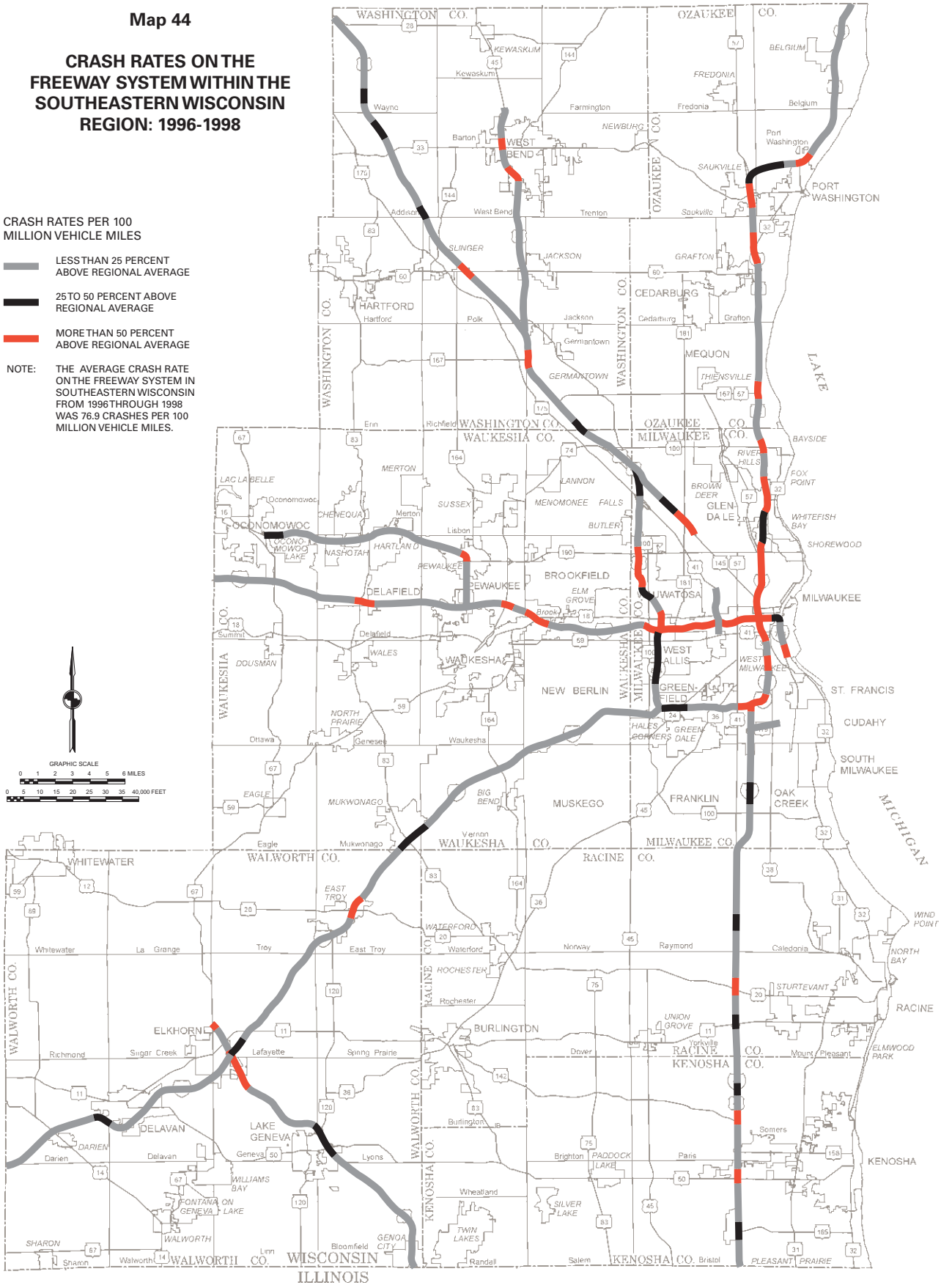
This section documents the existing traffic congestion on the freeway system of Southeastern Wisconsin. Historic levels of traffic congestion on the freeway system are presented for comparison to the existing level and to document the historic trend in the growth of freeway traffic congestion in Southeastern Wisconsin. Also, the estimated current and historic levels of freeway system traffic congestion are compared to forecast future year 2020 levels of freeway traffic congestion.

Freeway traffic congestion can be classified into three levels as follows:

- Extreme Traffic Congestion—Freeway speeds of 20 to 30 miles per hour or less. Breakdown of freeway traffic flow with stop-and-go, bumper-to-bumper traffic. No ability to maneuver or change lanes. Defined as level of service "F."

Map 44

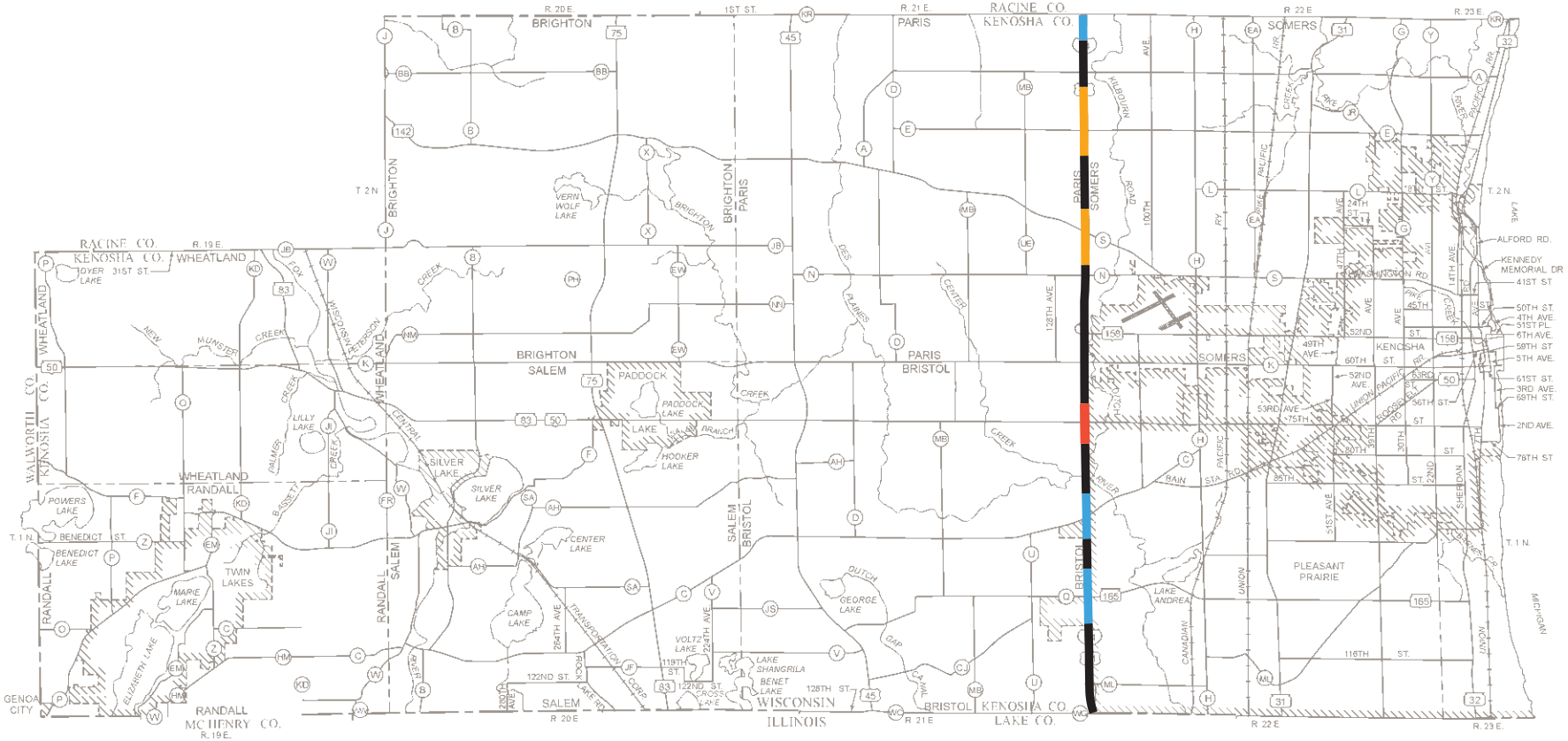
CRASH RATES ON THE FREEWAY SYSTEM WITHIN THE SOUTHEASTERN WISCONSIN REGION: 1996-1998



Source: Wisconsin Department of Transportation.

Map 45

CRASH RATES ON THE FREEWAY SYSTEM IN KENOSHA COUNTY: 1996-1998



PERCENT OF COUNTYWIDE FREEWAY AVERAGE CRASH RATE

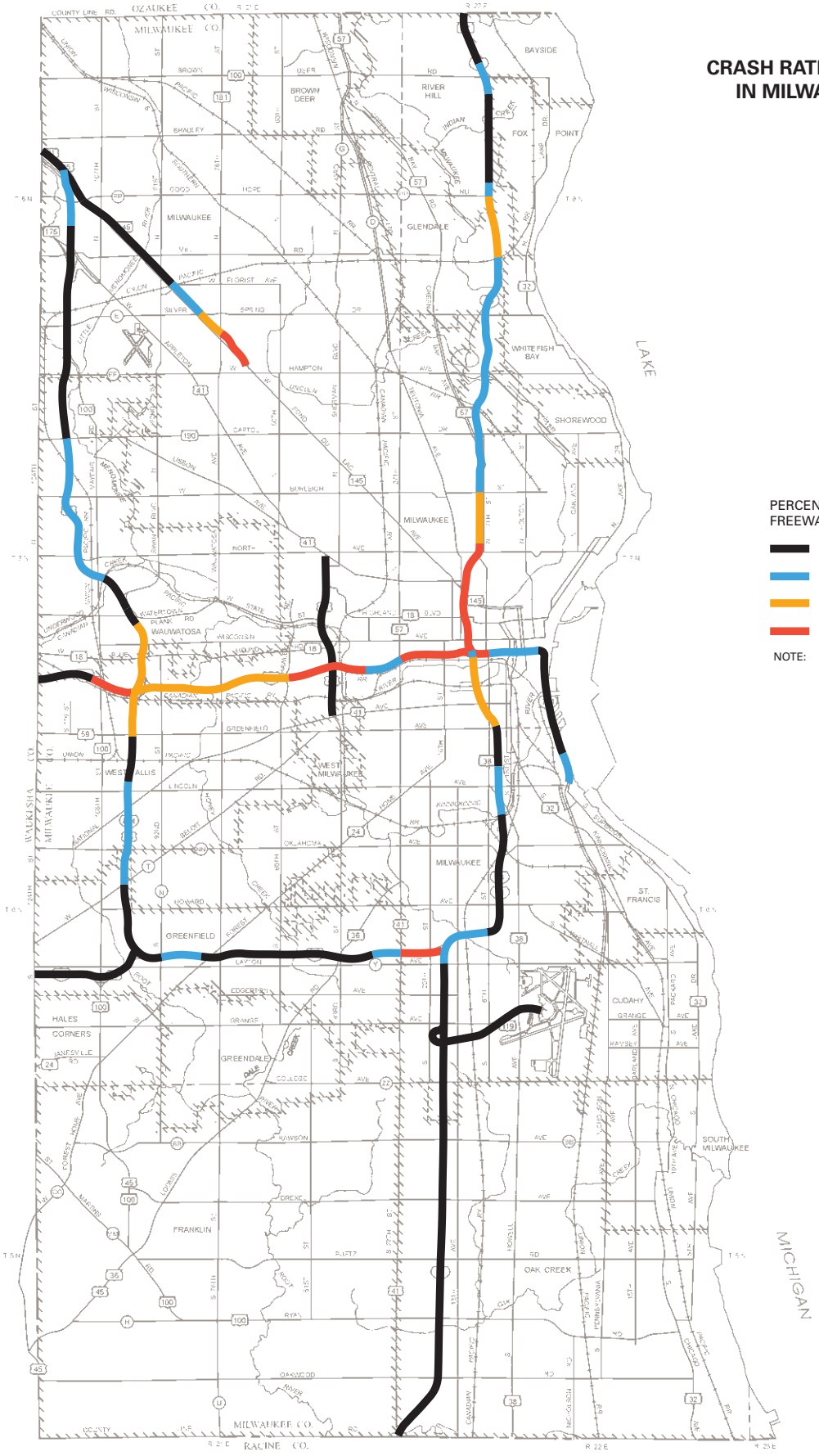
- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- MORE THAN 100 PERCENT ABOVE

NOTE: THE AVERAGE CRASH RATE ON THE FREEWAY SYSTEM IN KENOSHA COUNTY FROM 1996 THROUGH 1998 WAS 70.6 CRASHES PER 100 MILLION VEHICLE MILES.

Source: Wisconsin Department of Transportation.

Map 46

CRASH RATES ON THE FREEWAY SYSTEM IN MILWAUKEE COUNTY: 1996-1998



PERCENT OF COUNTYWIDE FREEWAY AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- MORE THAN 100 PERCENT ABOVE

NOTE: THE AVERAGE CRASH RATE ON THE FREEWAY SYSTEM IN MILWAUKEE COUNTY FROM 1996 THROUGH 1998 WAS 106.1 CRASHES PER 100 MILLION VEHICLE MILES.

GRAPHIC SCALE

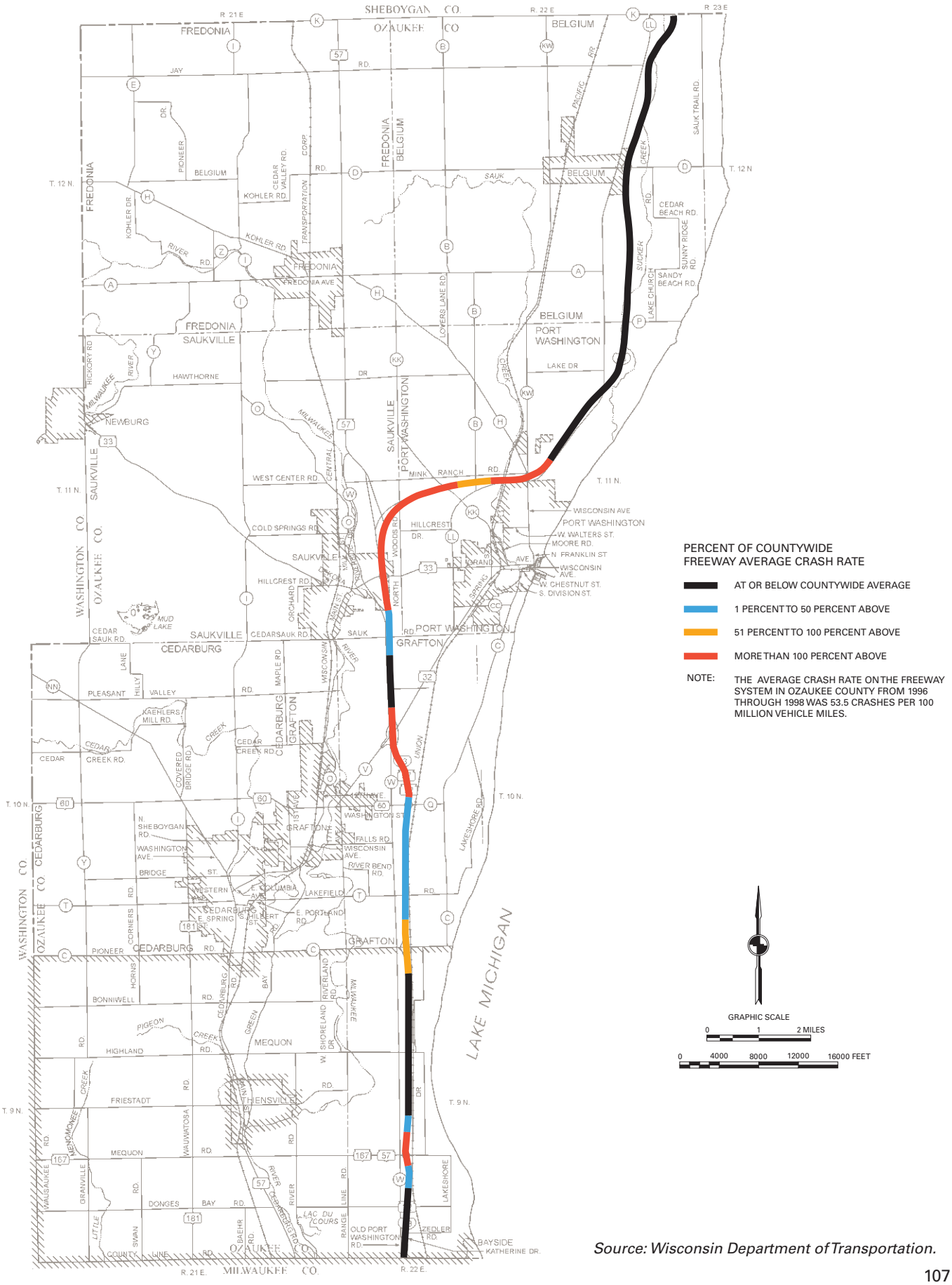
0 1 2 MILES

0 4000 8000 12000 16000 FEET

Source: Wisconsin Department of Transportation.

Map 47

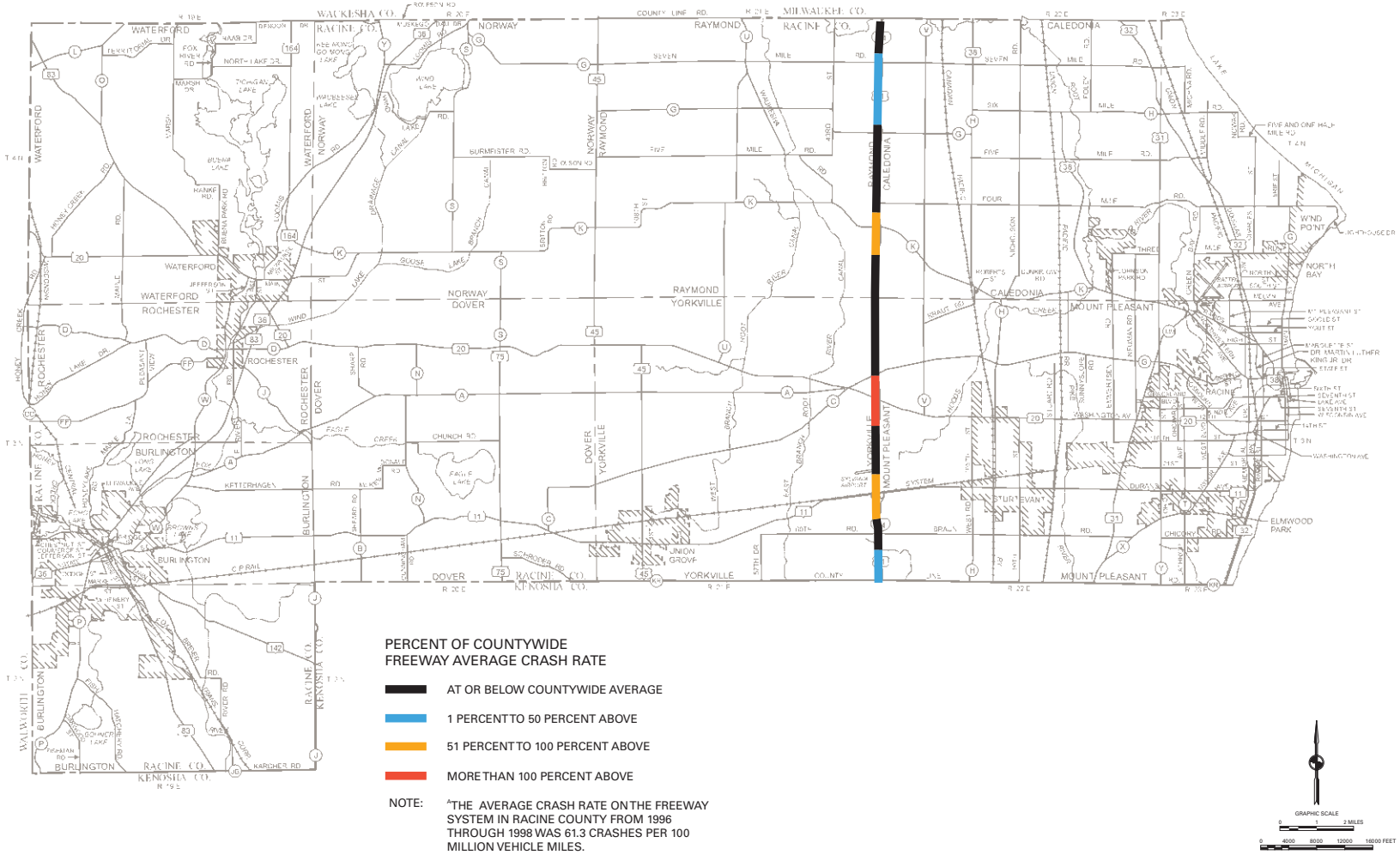
CRASH RATES ON THE FREEWAY SYSTEM IN OZAUKEE COUNTY: 1996-1998



Source: Wisconsin Department of Transportation.

Map 48

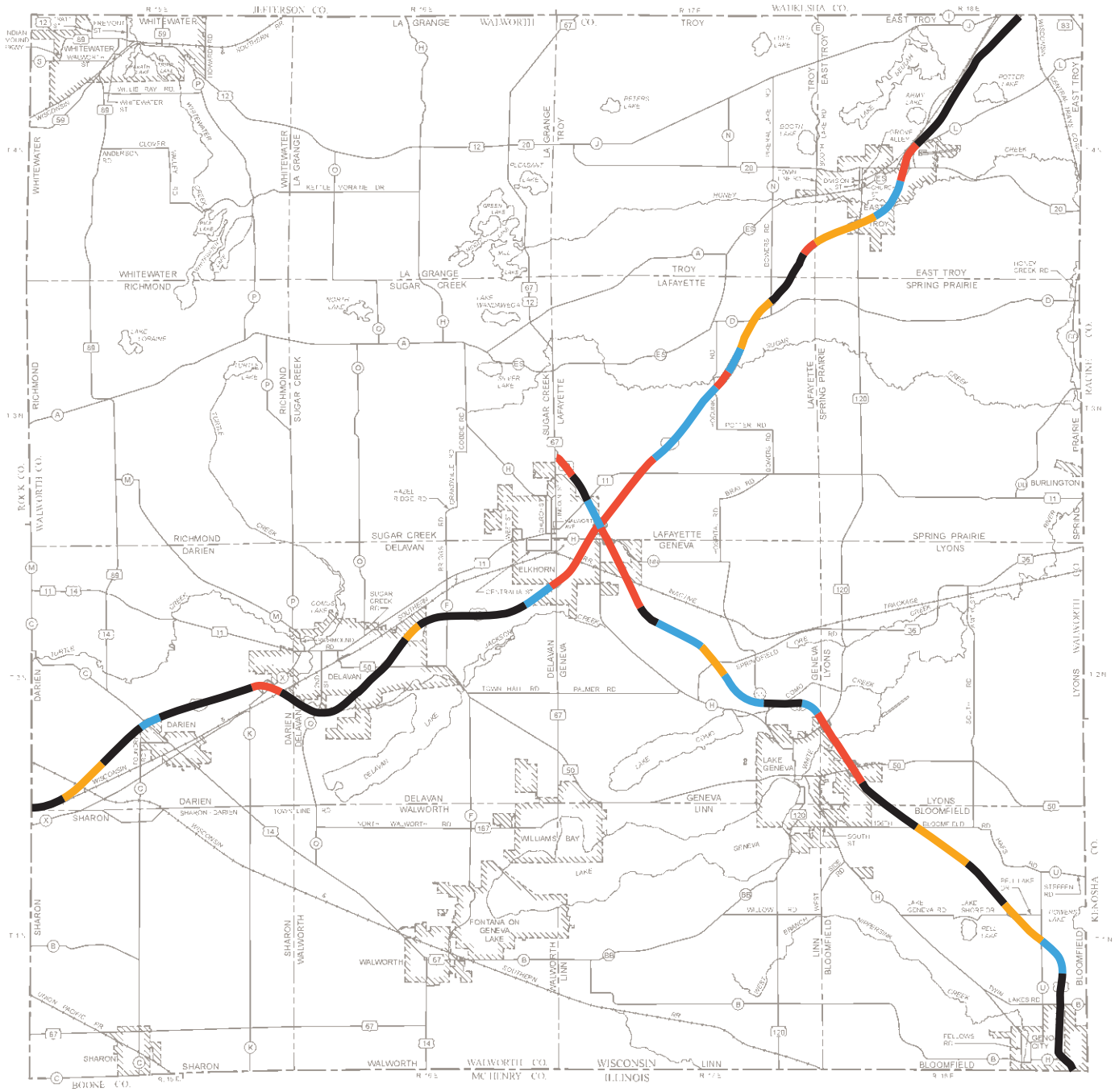
CRASH RATES ON THE FREEWAY SYSTEM IN RACINE COUNTY: 1996-1998



Source: Wisconsin Department of Transportation.

Map 49

CRASH RATES ON THE FREEWAY SYSTEM IN WALWORTH COUNTY: 1996-1998



PERCENT OF COUNTYWIDE FREEWAY AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- MORE THAN 100 PERCENT ABOVE

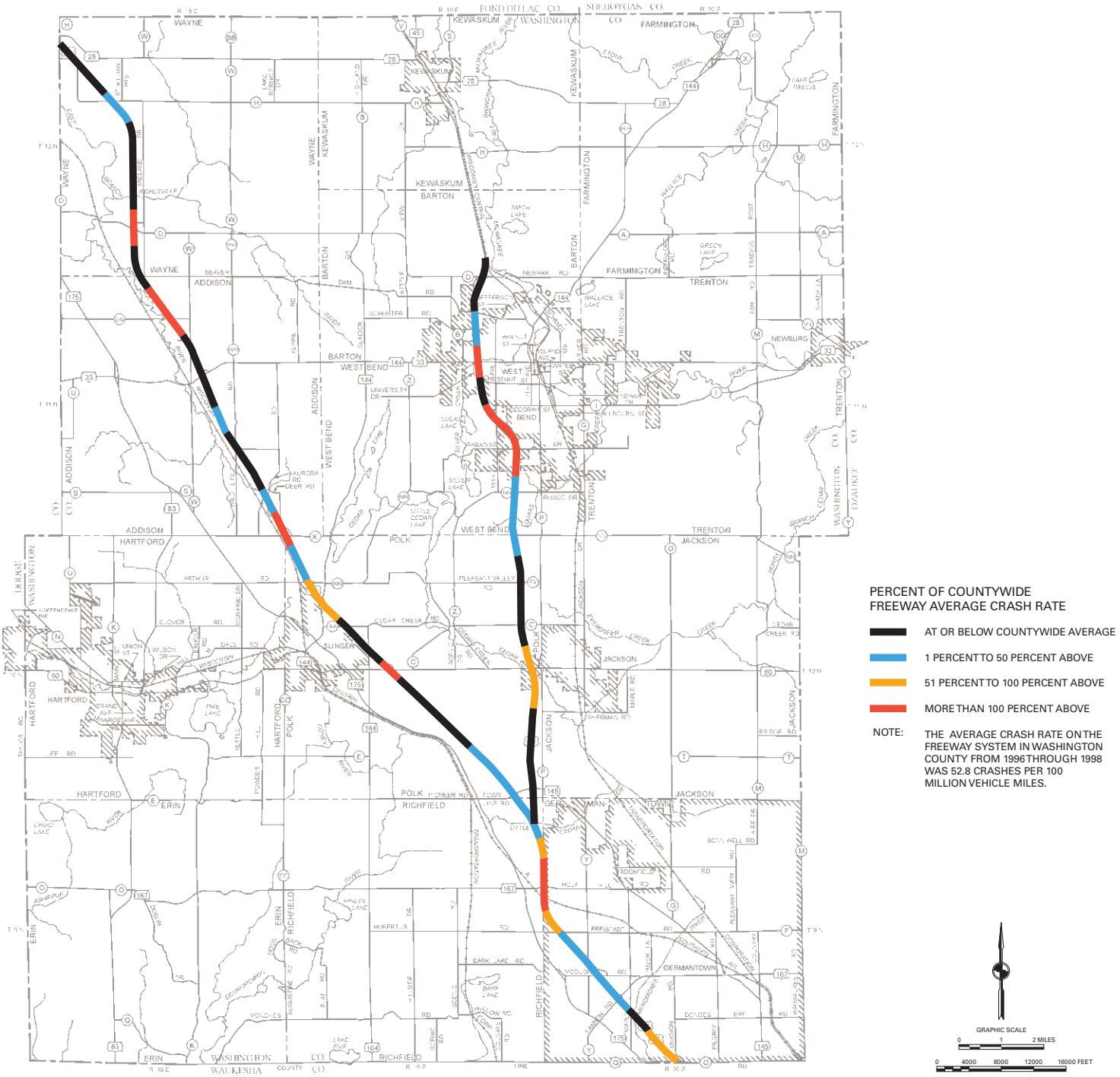
NOTE: THE AVERAGE CRASH RATE ON THE FREEWAY SYSTEM IN WALWORTH COUNTY FROM 1996 THROUGH 1998 WAS 40.3 CRASHES PER 100 MILLION VEHICLE MILES.

GRAPHIC SCALE
0 1 2 MILES
0 4000 8000 12000 16000 FEET

Source: Wisconsin Department of Transportation.

Map 50

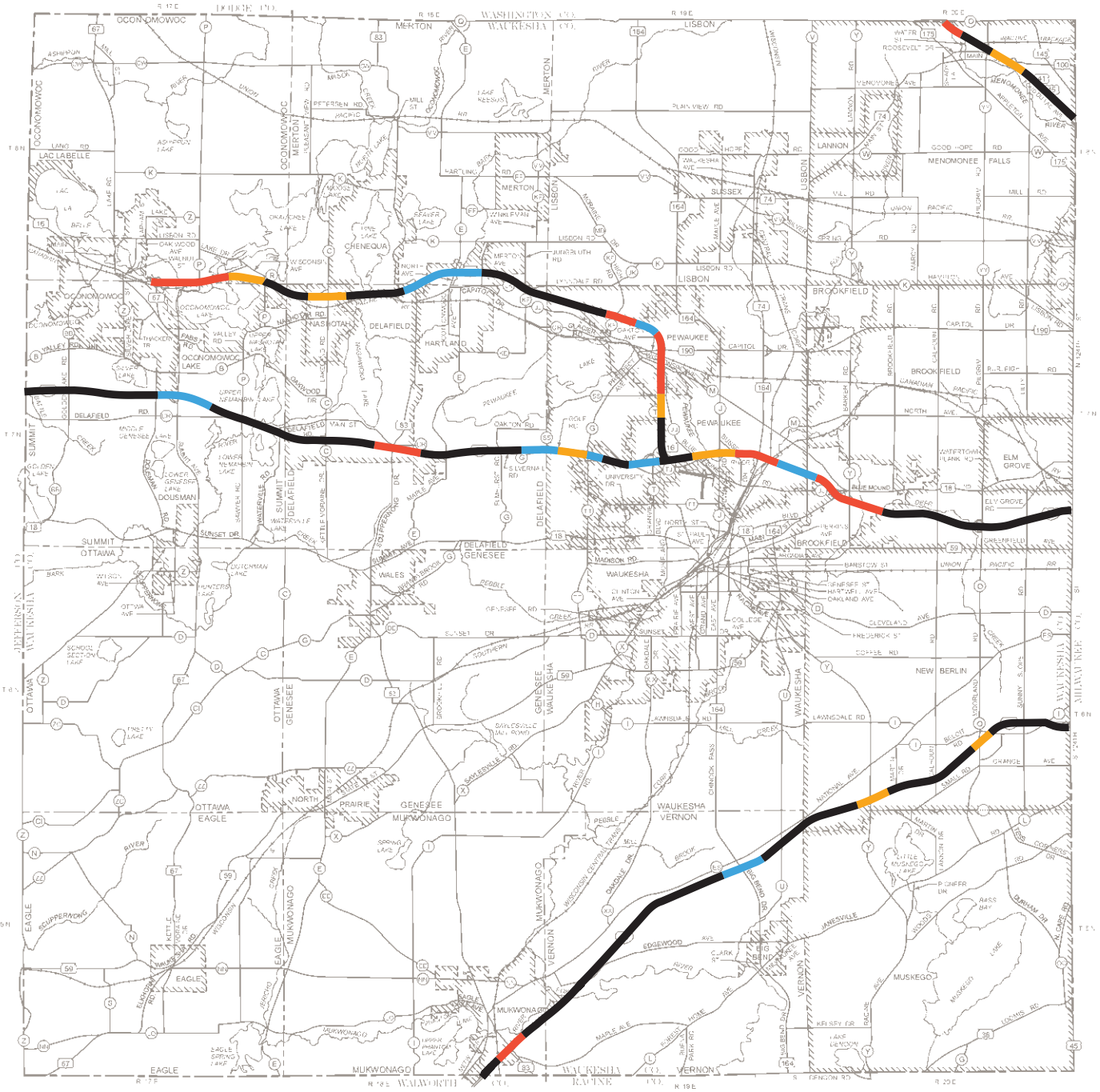
CRASH RATES ON THE FREEWAY SYSTEM IN WASHINGTON COUNTY: 1996-1998



Source: Wisconsin Department of Transportation.

Map 51

CRASH RATES ON THE FREEWAY SYSTEM IN WAUKESHA COUNTY: 1996-1998



PERCENT OF COUNTYWIDE
FREEWAY AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- MORE THAN 100 PERCENT ABOVE

NOTE: THE AVERAGE CRASH RATE ON THE FREEWAY SYSTEM IN WAUKESHA COUNTY FROM 1996 THROUGH 1998 WAS 43.7 CRASHES PER 100 MILLION VEHICLE MILES.

GRAPHIC SCALE
0 1 2 MILES
0 4000 8000 12000 16000 FEET

Source: Wisconsin Department of Transportation.

- Severe Traffic Congestion—Freeway speeds reduced about 5 to 15 mph below typical freeway free-flow speed. Extremely limited maneuverability. No gaps in traffic stream to accommodate lane changing or vehicles entering the freeway. Minor disruptions such as multiple vehicles entering the freeway or vehicles parked on the side of the freeway will result in a breakdown of freeway trafficflow with stop-and-go traffic. Defined as level of service "E."

- Moderate Traffic Congestion—Minor reduction in speeds of up to 5 mph. Freedom to maneuver or change lanes is substantially limited. Minor disruptions, such as multiple vehicles entering the freeway or vehicles parked on the side of the freeway, will result in a breakdown of freeway traffic flow and stop-and-go traffic. Defined as level of service "D."

Table 21 further describes these three levels of traffic congestion.

The estimated existing year 1999 level of freeway traffic congestion in Southeastern Wisconsin is displayed on Map 52 and summarized in Table 22. This existing level of freeway system traffic congestion was estimated by reviewing freeway hourly average traffic speeds, average traffic densities, and traffic volumes by segment of the freeway system for each hour of an average weekday in 1999.

- Approximately 27 miles of freeway, or 10 percent of the freeway system, experience extreme traffic congestion for approximately one hour in each direction on an average weekday, and an additional three hours of severe traffic congestion in each direction on an average weekday. These 27 miles of freeway also experience an additional four hours of moderate traffic congestion on an average weekday, representing for these 27 miles, a total of approximately eight hours of traffic congestion on an average weekday.

- Another 26 miles of freeway, or about nine percent of the system, experience approximately one hour in each direction of severe traffic congestion each weekday, and an additional two hours of moderate traffic congestion in each direction on an average weekday for a total of about three hours of traffic congestion on an average weekday.

- Another 12 miles of freeway, or about four percent of the total system, experience a total of approximately two hours of traffic congestion on an average weekday in each direction, all of which are moderate congestion. All of these currently congested freeways are located in Milwaukee and Waukesha Counties.

Map 53, Figure 15, and Table 23 compare the current level and location of freeway system traffic congestion within Southeastern Wisconsin to estimated historic traffic congestion in the years 1991, 1980, and 1972. Traffic congestion has significantly increased over the past 10 years as well as over the past 20 and 30 years. The increase in freeway traffic congestion each decade has particularly been substantial with respect to the mileage of freeways experiencing extreme and severe traffic congestion.

- The total mileage of freeways experiencing traffic congestion on an average weekday has increased from about nine miles in 1972, to 18 miles in 1980, to 46 miles in 1991, and to 65 miles in 1999.

- The total mileage of freeways experiencing extreme traffic congestion has increased from about 11 miles in 1991 to 27 miles in 1999. No freeway segments experienced extreme traffic congestion in 1972 or 1980.

- The total mileage of freeways experiencing severe traffic congestion increased from about two miles in 1972, to 14 miles in 1980, to 18 miles in 1991, and to 26 miles in 1999.

Table 21

DESCRIPTION OF LEVELS OF FREEWAY TRAFFIC OPERATION AND CONGESTION

Level of Traffic Congestion	Average Hourly Freeway Traffic Conditions			
	Level of Service	Average Freeway Speed	Operating Conditions	Impacts of Freeway Incidents
None	A and B	Freeway free flow speed	No restrictions on ability to maneuver and change lanes.	Minor disruptions such as multiple vehicles entering the freeway or vehicles on the side of the freeway do not disrupt traffic flow. Major disruptions such as an accident blocking a lane may not result in severe or extreme traffic congestion.
None	C	1 to 2 mph below freeway free flow speed	Some restrictions on ability to maneuver and change lanes.	Minor disruptions may result in severe traffic congestion.
Moderate	D	Up to 5 mph below freeway free flow speed	Substantial restrictions on ability to maneuver and change lanes.	Minor disruptions will result in extreme traffic congestion.
Severe	E	5 to 15 mph below freeway free flow speed	Extreme restrictions on ability to maneuver and change lanes. Operation at maximum capacity. No gaps in traffic stream to accommodate lane changing.	The most minor of disruptions will result in extreme traffic congestion.
Extreme	F	20 to 30 mph or less	No ability to maneuver or change lanes. Stop-and-go, bumper-to-bumper traffic.	Duration and extent of extreme traffic congestion will be extended.

Source: Transportation Research Board, National Academy of Sciences and National Academy of Engineering, and SEWRPC.

- The average number of hours on an average weekday that a congested freeway segment experienced traffic congestion in each direction was an estimated 2.8 hours in 1972, 3.5 hours in 1980, 3.5 hours in 1991, and 5.5 hours in 1999.

The forecast future year 2020 level of freeway system traffic congestion within Southeastern Wisconsin is presented on Map 54 and in Figure 16 and Table 24. The forecast increase in freeway system traffic congestion may be expected to be substantial in terms of extent, severity, and duration of freeway congestion:

- The total mileage of freeways experiencing congestion may be expected to increase from 65 miles of freeway, or 24 percent of the freeway system, in 1999 to 122 miles, or 44 percent of the freeway system, in 2020. By the year 2020, freeways in Kenosha, Racine, Ozaukee, and Washington counties may be expected to begin to experience traffic congestion on an average weekday.

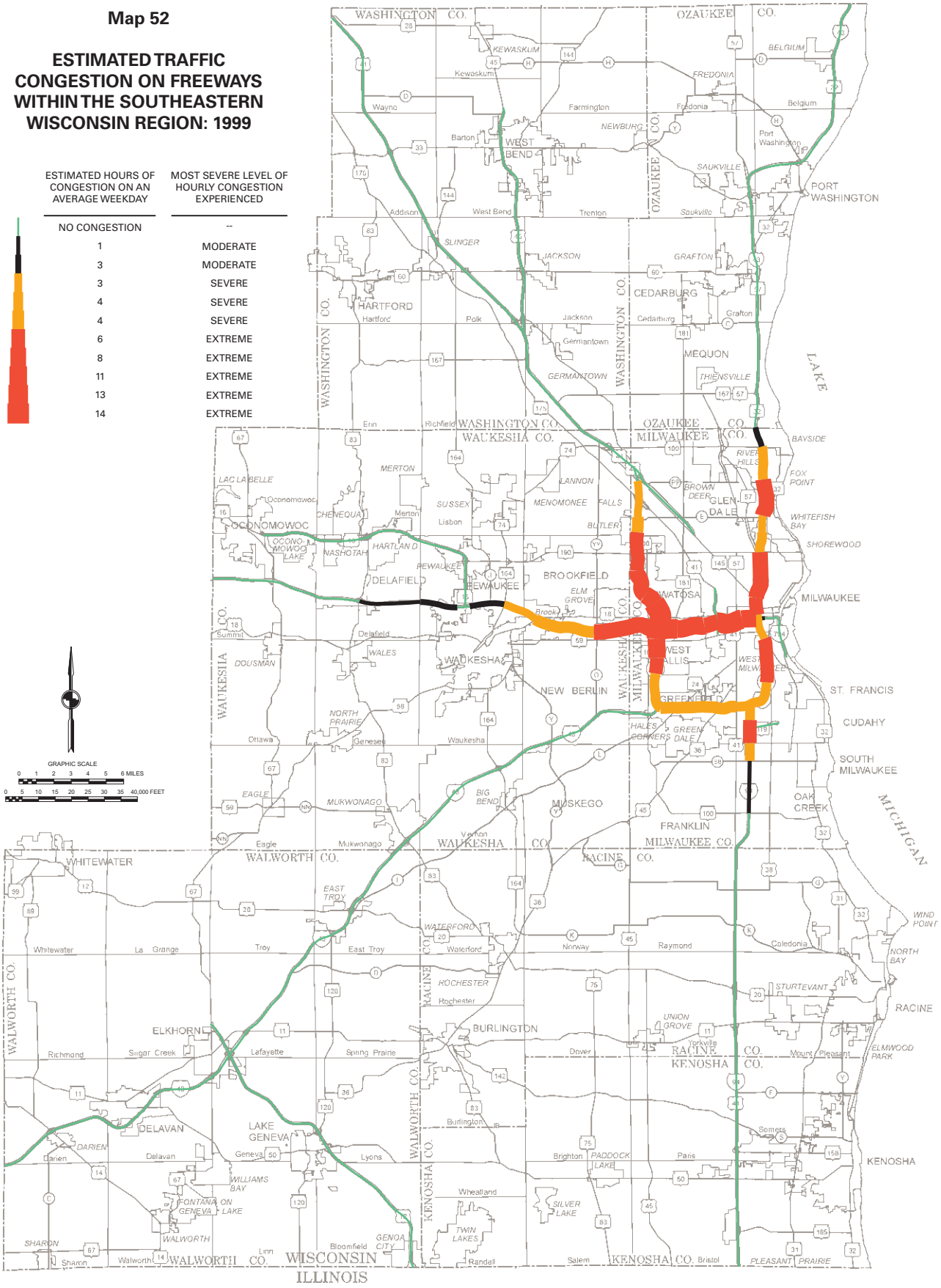
- The total mileage of freeways experiencing extreme traffic congestion may be expected to increase from 27 miles, or ten percent of the freeway system, in 1999 to 48 miles, or 18 percent of the freeway system, in 2020.

- The total mileage of freeways experiencing severe traffic congestion may be expected to increase from 26 miles in 1999 to 28 miles in the year 2020.

Map 52

ESTIMATED TRAFFIC CONGESTION ON FREEWAYS WITHIN THE SOUTHEASTERN WISCONSIN REGION: 1999

ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	MOST SEVERE LEVEL OF HOURLY CONGESTION EXPERIENCED
NO CONGESTION	--
1	MODERATE
3	MODERATE
3	SEVERE
4	SEVERE
4	SEVERE
6	EXTREME
8	EXTREME
11	EXTREME
13	EXTREME
14	EXTREME



Source: SEWRPC.

Table 22

ESTIMATED EXISTING SOUTHEASTERN WISCONSIN FREEWAY SYSTEM TRAFFIC CONGESTION ON AN AVERAGE WEEKDAY: 1999

Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
	Miles	Percent of Freeway System	Extreme Congestion (hours)	Severe Congestion (hours)	Moderate Congestion (hours)	Total Congestion (hours)
Extreme	26.6	9.7	1.3	3.2	4.3	8.8
Severe	26.1	9.6	- -	1.4	2.4	3.8
Moderate	12.0	4.4	- -	- -	1.8	1.8
Total Miles of Congested Freeway and Percent of Regional Freeway System–All Levels of Congestion–1999	64.7	23.7	- -	- -	- -	- -

Source: SEWRPC.

- The total mileage of freeways experiencing moderate traffic congestion may be expected to increase from 12 miles, or four percent of the freeway system, in 1999 to 46 miles, or 16 percent of the system, in the year 2020.

- The average number of hours that a congested freeway segment may be expected to experience traffic congestion may be expected to increase from 5.5 hours in 1999 to 6.1 hours in the year 2020.

The forecast year 2020 traffic congestion is based upon forecast year 2020 traffic volumes and transportation facilities and services which assume implementation of the year 2020 regional land use plan and regional transportation system plan, with the exception of certain freeway widening improvements (the widening of IH 43 from four to six lanes between Bender Road and Highland Road).

SUMMARY AND CONCLUSIONS

This chapter defines the problems and deficiencies of the existing freeway system with respect to physical design, traffic safety, and traffic congestion. A summary of the most important findings of this chapter is as follows:

Physical Design Deficiencies

- Many of the oldest freeway segments, predominantly in Milwaukee County, do not meet a number of modern design standards for much of their length, including with respect to shoulder width, entrance/exit ramp spacing, lane balance, vertical curvature, and vertical clearance.

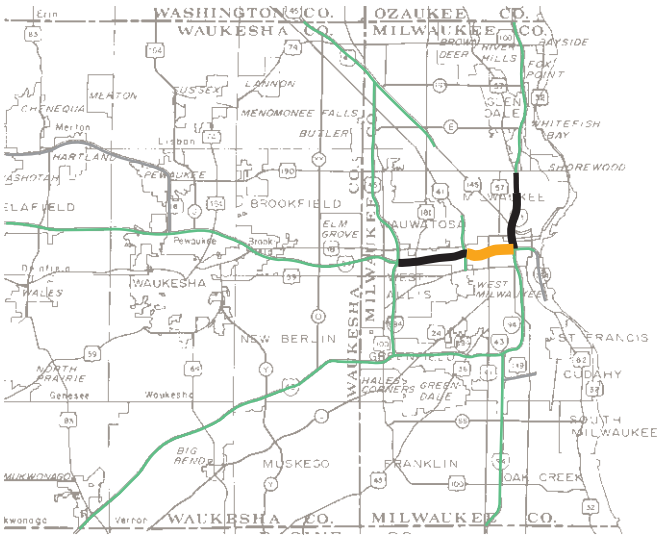
- Many older freeway segments in outlying counties generally meet the modern design standards with the exception of one or two standards at isolated locations, including with respect to vertical alignment, vertical curvature, vertical clearance, or shoulder width.

- A number of freeway segments at the far outlying portions of the Region fully meet all design standards.

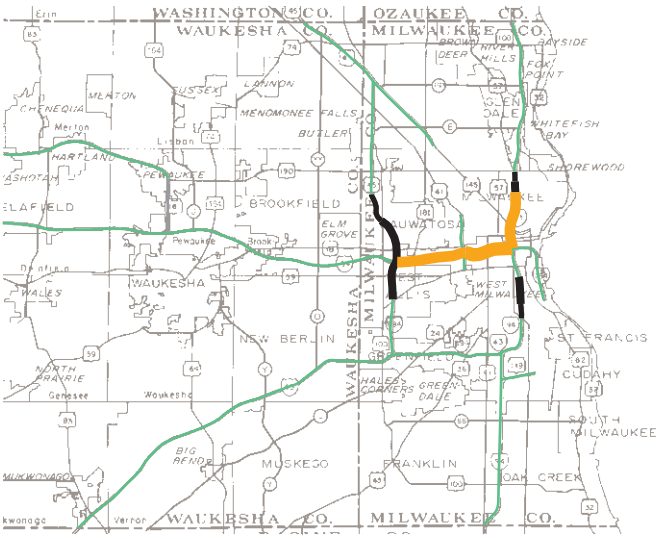
Map 53

COMPARISON OF ESTIMATED FREEWAY SYSTEM AVERAGE WEEKDAY TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN: 1972, 1980, 1991, AND 1999

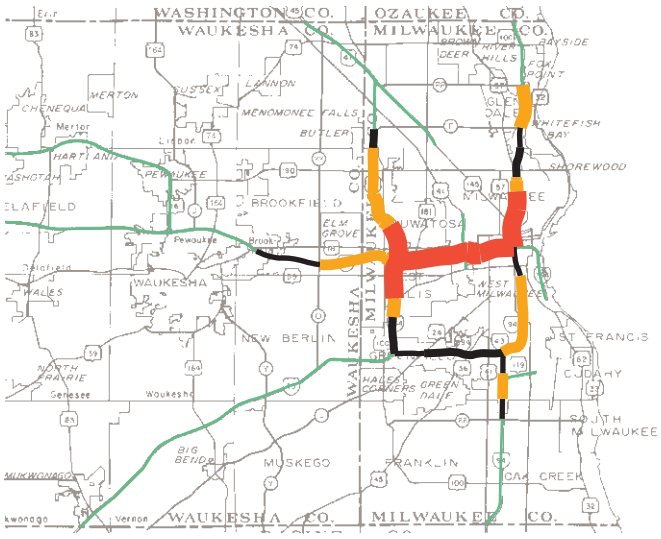
1972



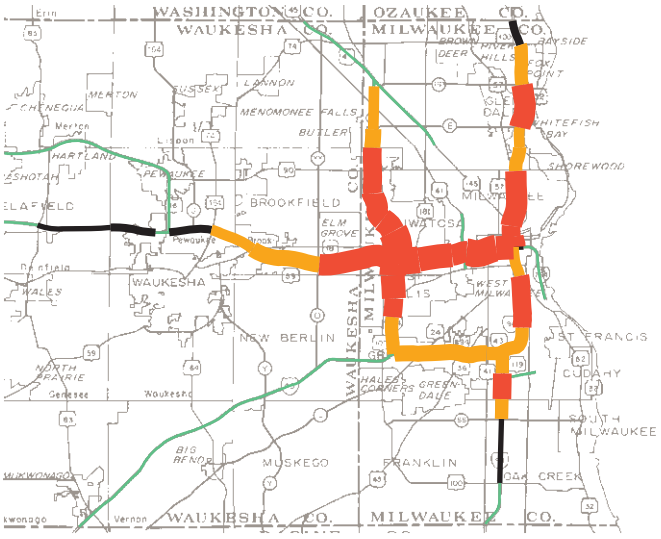
1980



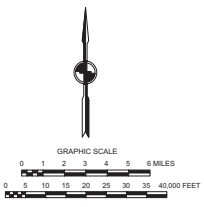
1991



1999



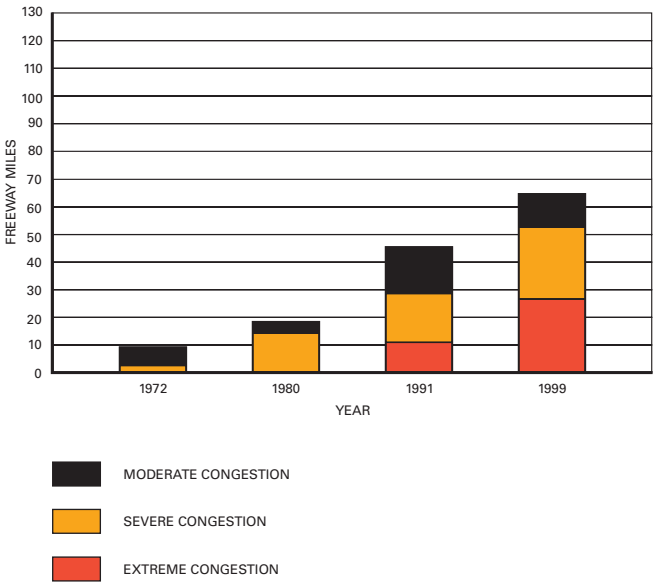
ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	MOST SEVERE LEVEL OF HOURLY CONGESTION EXPERIENCED
NOT CONSTRUCTED	--
NO CONGESTION	--
1	MODERATE
3	MODERATE
3	SEVERE
4	SEVERE
4	SEVERE
6	EXTREME
8	EXTREME
11	EXTREME
13	EXTREME
14	EXTREME



Source: SEWRPC.

Figure 15

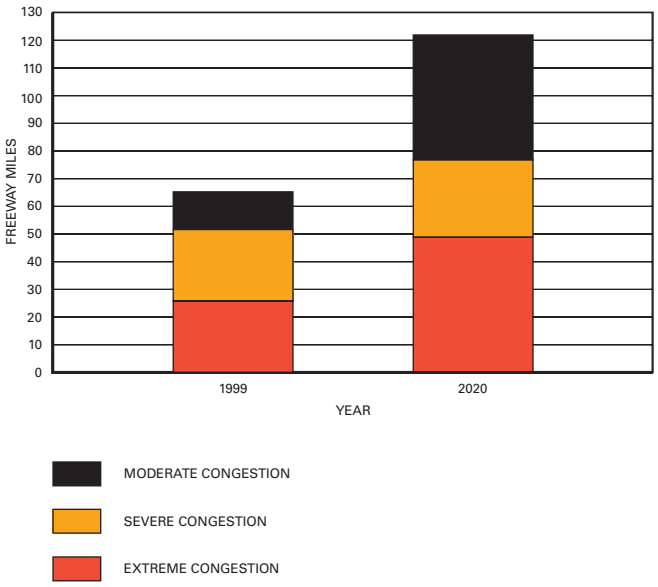
COMPARISON OF ESTIMATED FREEWAY SYSTEM AVERAGE WEEKDAY TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN REGION: 1972, 1980, 1991, AND 1999



Source: SEWRPC.

Figure 16

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION



Source: SEWRPC.

Traffic Safety

- Within each county, there are segments of freeway which should be considered to have traffic safety problems. These freeway segments have traffic crash rates which exceed the regional average crash rate, or exceed the crash rate for freeways within the county within which they are located.

Traffic Congestion

- Existing traffic congestion on the freeway system is substantial, with a total of 65 miles, or 24 percent, of the 272 mile freeway system experiencing congestion on an average weekday. An estimated 53 miles, or 19 percent of the freeway system, experiences extreme or severe traffic congestion for at least one hour each weekday.

- Freeway traffic congestion has increased particularly over the past 20 years, in extent, severity, and duration of congestion. The extent of the freeway system experiencing congestion has increased from 18 miles, or eight percent of the total freeway system in 1980, to 45 miles and 18 percent in 1991, and to 65 miles and 24 percent in 1999. The miles of freeway experiencing extreme or severe congestion has increased from 14 miles and 7 percent of the freeway system in 1980, to 29 miles and 11 percent in 1991, and to 53 miles and 19 percent in 1999. The average number of hours of congestion on an average weekday occurring on a congested freeway segment has increased from 3.5 hours in 1980 to 5.5 hours in 1999.

Table 23

ESTIMATED FREEWAY SYSTEM TRAFFIC CONGESTION ON AN AVERAGE WEEKDAY: HISTORIC 1972, 1980, AND 1991, AND EXISTING 1999

Year	Miles of Congested Freeway			Average Hours of Congestion on an Average Weekday			
	Highest Level of Hourly Congestion Experienced	Miles	Percent of Freeway System	Extreme Congestion (Hours)	Severe Congestion (Hours)	Moderate Congestion (Hours)	Total Congestion (Hours)
1999	Extreme	26.6	9.7	1.3	3.2	4.3	8.8
	Severe	26.1	9.6	- -	1.4	2.4	3.8
	Moderate	12.0	4.4	- -	- -	1.8	1.8
	Total	64.7	23.7	- -	- -	- -	- -
1991	Extreme	10.9	4.3	1.0	2.1	3.1	6.2
	Severe	17.7	7.1	- -	1.1	2.3	3.4
	Moderate	16.9	6.7	- -	- -	2.0	2.0
	Total	45.5	18.1	- -	- -	- -	- -
1980	Extreme	- -	0.0	- -	- -	- -	- -
	Severe	14.3	6.5	- -	1.2	2.4	3.6
	Moderate	4.0	1.8	- -	- -	3.0	3.0
	Total	18.3	8.3	- -	- -	- -	- -
1972	Extreme	- -	0.0	- -	- -	- -	- -
	Severe	2.5	1.5	- -	1.0	2.0	3.0
	Moderate	6.6	4.1	- -	- -	2.8	2.8
	Total	9.1	5.6	- -	- -	- -	- -

Source: SEWRPC.

Table 24

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN

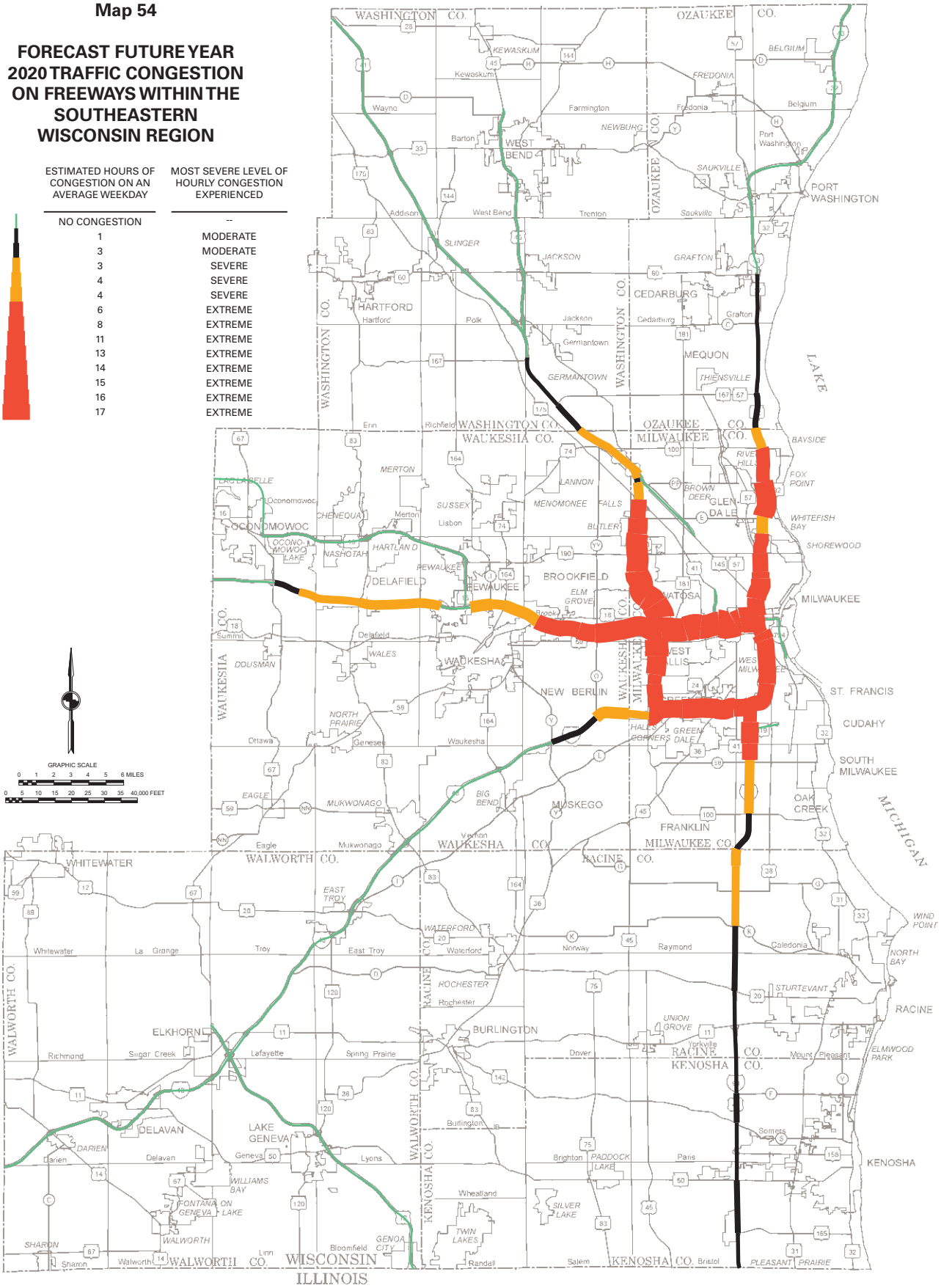
Year	Miles of Congested Freeway			Average Hours of Congestion on an Average Weekday			
	Highest Level of Hourly Congestion Experienced	Miles	Percent of Freeway System	Extreme Congestion (Hours)	Severe Congestion (Hours)	Moderate Congestion (Hours)	Total Congestion (Hours)
2020	Extreme	48.4	17.4	2.0	4.1	5.4	11.5
	Severe	28.4	10.2	- -	1.3	2.2	3.5
	Moderate	45.6	16.4	- -	- -	2.1	2.1
	Total	122.4	44.0	- -	- -	- -	- -
1999	Extreme	26.6	9.7	1.3	3.2	4.3	8.8
	Severe	26.1	9.6	- -	1.4	2.4	3.8
	Moderate	12.0	4.4	- -	- -	1.8	1.8
	Total	64.7	23.7	- -	- -	- -	- -

Source: SEWRPC.

Map 54

FORECAST FUTURE YEAR 2020 TRAFFIC CONGESTION ON FREEWAYS WITHIN THE SOUTHEASTERN WISCONSIN REGION

ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	MOST SEVERE LEVEL OF HOURLY CONGESTION EXPERIENCED
NO CONGESTION	--
1	MODERATE
3	MODERATE
3	SEVERE
4	SEVERE
4	SEVERE
6	EXTREME
8	EXTREME
11	EXTREME
13	EXTREME
14	EXTREME
15	EXTREME
16	EXTREME
17	EXTREME



Source: SEWRPC.

Chapter VI

DESIGN, EVALUATION, AND CONSIDERATION OF FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES

INTRODUCTION

This chapter describes alternatives for rebuilding the 270 mile[1] Southeastern Wisconsin freeway system segment-by-segment and for the system as a whole. The alternatives developed are intended to address the freeway design, safety, and congestion problems identified in the previous chapter of this report. The chapter begins with a definition of a proposed vision for a reconstructed regional freeway system, followed by segment-by-segment designs for the reconstruction of the freeway system. A freeway system reconstruction alternative which would include design and design-related safety improvements only is then presented and evaluated, followed by an alternative which would include additional freeway lanes as part of the reconstruction.

A VISION FOR THE RECONSTRUCTED REGIONAL FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN

In contemplating the reconstruction of the regional freeway system, a vision addressing the goals and objectives to be achieved by that system upon its reconstruction should include the following considerations:

- Traffic Safety
- Traffic Congestion and Travel Time
- Service to Existing and Future Businesses and Industries
- Service of Interstate Movement of People and Goods
- Disruption of Existing Land Uses
- Environmental Impacts
- Compatibility with Regional Land Use Plan

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[1] *Miller Park Way (STH 341)—which replaced the Stadium Freeway South—was not constructed to freeway design standards. In addition, the length of freeway segments in Walworth County reported in earlier chapters was based upon estimated mileages reported in freeway corridor studies. Subsequent engineering and design work refined the actual freeway alignment resulting in a modest reduction in the previously reported lengths. Together, these changes reduce the mileage of the existing freeway system from the 272 miles reported in earlier chapters to approximately 270 miles.*

- Aesthetics
- Cost
- Implementation of Other Elements of the Regional Transportation System Plan

Given these considerations, the proposed vision for a reconstructed regional freeway system of Southeastern Wisconsin, incorporating the goals and objectives proposed to be attained by that system upon its reconstruction, is as follows:

- Improve freeway system traffic safety by addressing crash and design problems in order to reduce the number and rate of freeway traffic crashes and related injuries and fatalities.
- Avoid a substantial increase in future freeway system traffic congestion, and achieve a reduction in existing traffic congestion, with respect to extent, severity, and duration. Reduce the attendant diversion of traffic to surface arterials.
- Provide the capacity and accessibility to serve existing and future businesses and industries.
- Provide the capacity and accessibility to serve the interstate movement of people and goods through Southeastern Wisconsin, including any movements that may be required for national defense purposes.
- Construct all improvements within the existing right-of-way, with land acquisition or taking of residences, businesses, or agricultural lands to be incidental and minimized. Minimize and mitigate noise impacts.
- Construct all improvements within the existing right-of-way, with any takings of wetlands or other environmentally significant lands to be incidental, minimized, and mitigated. Reduce vehicle air pollutant emissions and energy consumption, and improve stormwater management.
- Provide a more aesthetically pleasing freeway system through design, materials, and landscaping.
- Assure that the reconstructed freeway system is compatible with, and will promote the development of, a desirable regional land use pattern. Provide improvements in accessibility and higher accessibility in areas where development and redevelopment are recommended and lower accessibility where development is not recommended.
- Achieve the above objectives while minimizing cost, and at a modest increment in cost compared to an alternative of rebuilding the freeway system "as is."
- Continue to implement the transportation improvements recommended in the regional transportation plan, including surface arterial widenings and extensions, and public transit improvement and expansion, as well as implementing the recommendations of the regional land use plan.

A capsule version of this proposed vision for the reconstruction of the freeway system of Southeastern Wisconsin is:

- A safer and less congested freeway system, serving existing and future businesses and industries and the interstate movement of people and goods. Achieved largely within existing right-of-way with minimal disruption of existing land uses and environmental impacts and a high degree of aesthetics. Compatible with the future desirable regional land use pattern and recognizing the need to implement as well the public transit and surface arterial elements of the regional transportation plan. Minimize costs while meeting the other objectives.

Some of the elements, or goals and objectives, of the vision, are complementary; that is, achieving one objective may support the achievement of others. For example, improving freeway traffic safety and alleviating freeway traffic congestion will assist in serving existing and future businesses and industries and in serving the interstate movement of people and goods. However, some objectives may conflict, requiring resolution through compromise. For example, any potential new segment of freeway will entail right-of-way acquisition, and

addressing freeway traffic safety and traffic congestion on some existing freeway segments may result in the necessary acquisition of right-of-way. The resolution of these conflicting objectives will be considered during the design and evaluation of the alternatives for the reconstruction of the freeway system. In addition, it will be necessary to evaluate the reconstructed freeway system on a systemwide basis, assessing whether the proposed reconstructed freeway system is compatible with the regional land use plan, as well as whether it may be expected to result in a reduction of ozone related air pollutant emissions and energy consumption, and also consider its total cost.

Map 55 presents the potential level of redesign to be considered under the proposed vision for the Southeastern Wisconsin freeway system, as the reconstruction of that system is considered on a segment-by-segment basis. Much of the freeway system has only isolated design and safety problems along its length, and as a result, will only necessitate minor redesign to address those design and safety problems. A number of segments of freeway, however, experience multiple design and safety problems along much of their full length, and will warrant consideration of major redesign to implement the proposed vision of the freeway system. One stub segment of freeway, the Fond du Lac Freeway (STH 145) from the North interchange in northwestern Milwaukee County to N. 68th Street and W. Fond du Lac Avenue, will be considered in the study for redesign to less than freeway standards as this stub segment of freeway carries traffic volumes which could be carried on a surface arterial and it does not carry any traffic through Milwaukee County. The stub Stadium North Freeway (USH 41) may also be considered for redesign to less than freeway standards.

Map 56 shows the potential additional traffic lanes to be considered under the proposed vision for the Southeastern Wisconsin freeway system, as the reconstruction of that system is considered on a segment-by-segment basis. Those freeway segments for which additional traffic lanes will be considered are those segments of freeway which were forecast to experience extreme, severe, or moderate traffic congestion in the year 2020. These year 2020 forecast conditions assume implementation of the regional land use plan and, therefore, achievement of a more desirable regional land use pattern and also implementation of the regional transportation system plan, including substantial improvement and expansion of the public transit system in Southeastern Wisconsin and the implementation of 530 miles of planned surface arterial widenings and extensions of new arterial streets.

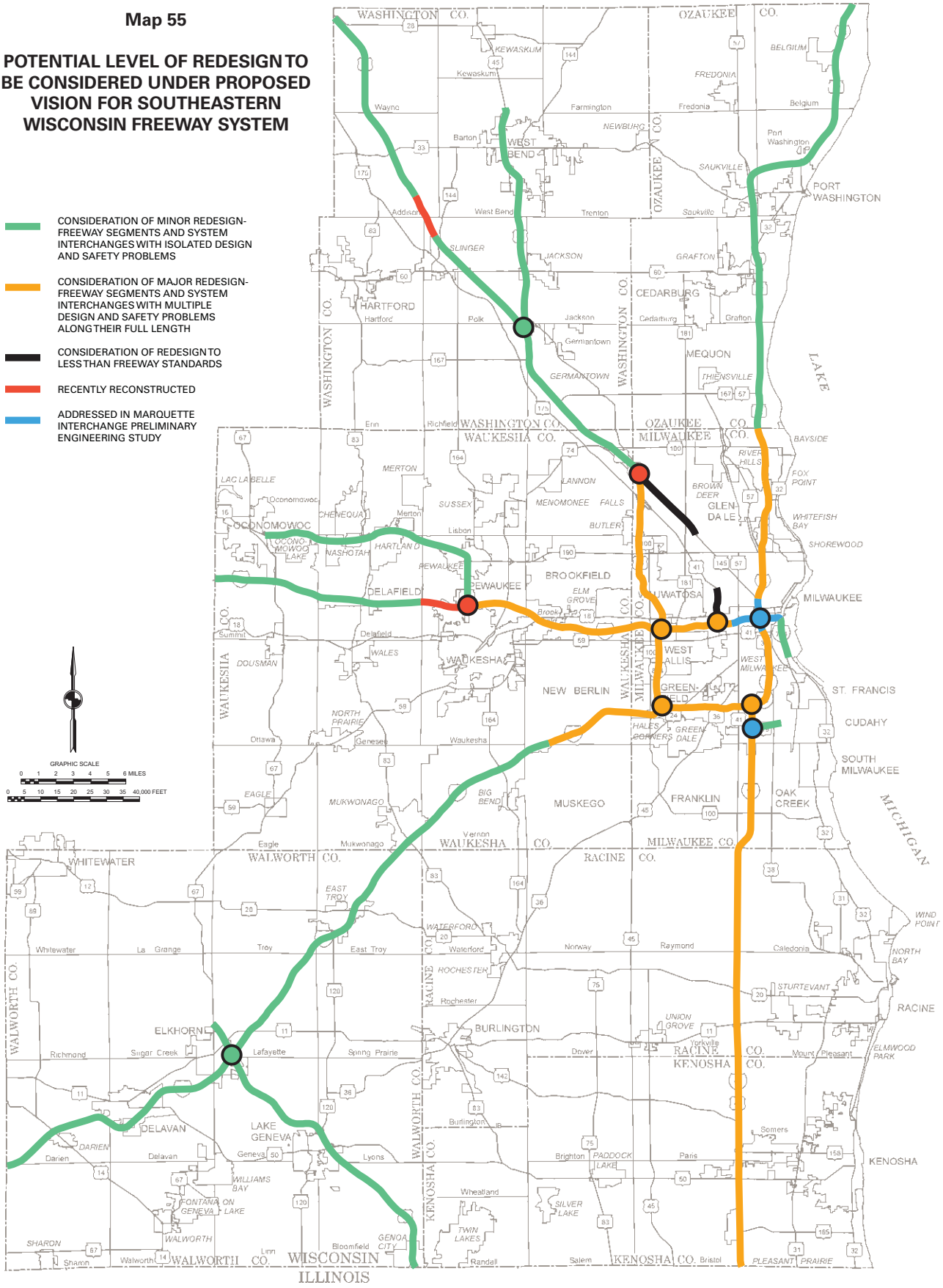
The following sections of this chapter document the implications, or broadly defined costs and benefits, of this proposed vision for the reconstruction of the Southeastern Wisconsin freeway system. Consideration of redesign and traffic capacity expansion consistent with the proposed vision will be undertaken for the Southeastern Wisconsin freeway system. A “base” alternative for comparison to the proposed vision will be fully examined and evaluated as well and will serve as a basis for comparison with respect to the benefits and costs of the proposed vision. This base alternative will not include any freeway capacity expansion, that is, any added freeway lanes. However, this base alternative would incorporate the minor and major redesign proposed for the freeway system to address design and design-related safety problems.

Other alternatives may also be expected to be considered as appropriate during the segment-by-segment evaluation of the freeway system. For example, with respect to the stub freeway stretch of the Fond du Lac Freeway (STH 145) between the North interchange and N. 68th Street and W. Fond du Lac Avenue and the Stadium Freeway North (USH 41), the alternative of reconstructing to less than freeway design standards will be compared to an alternative of reconstructing the freeway “as is.” This will permit comparison of reconstruction costs, and other implications, such as the increased accessibility which may be attendant to an alternative of reconstructing the freeway “as is.”

In addition, at the specific request of the City of Milwaukee, a special study will be conducted of a new segment of freeway connecting IH 43 and USH 45 in a corridor located three- to six-miles north or south of the Milwaukee County-Ozaukee County line. The study will first examine the traffic impacts of the potential new freeway—perhaps on different alignments within the corridor—on the existing freeway and surface arterial street system. This will include identifying those existing freeways and surface arterial streets which may be expected to experience reduced traffic volumes and congestion, as well as those which may be expected to experience increased traffic volumes and congestion. Following consideration by the Advisory Committee of the traffic

Map 55

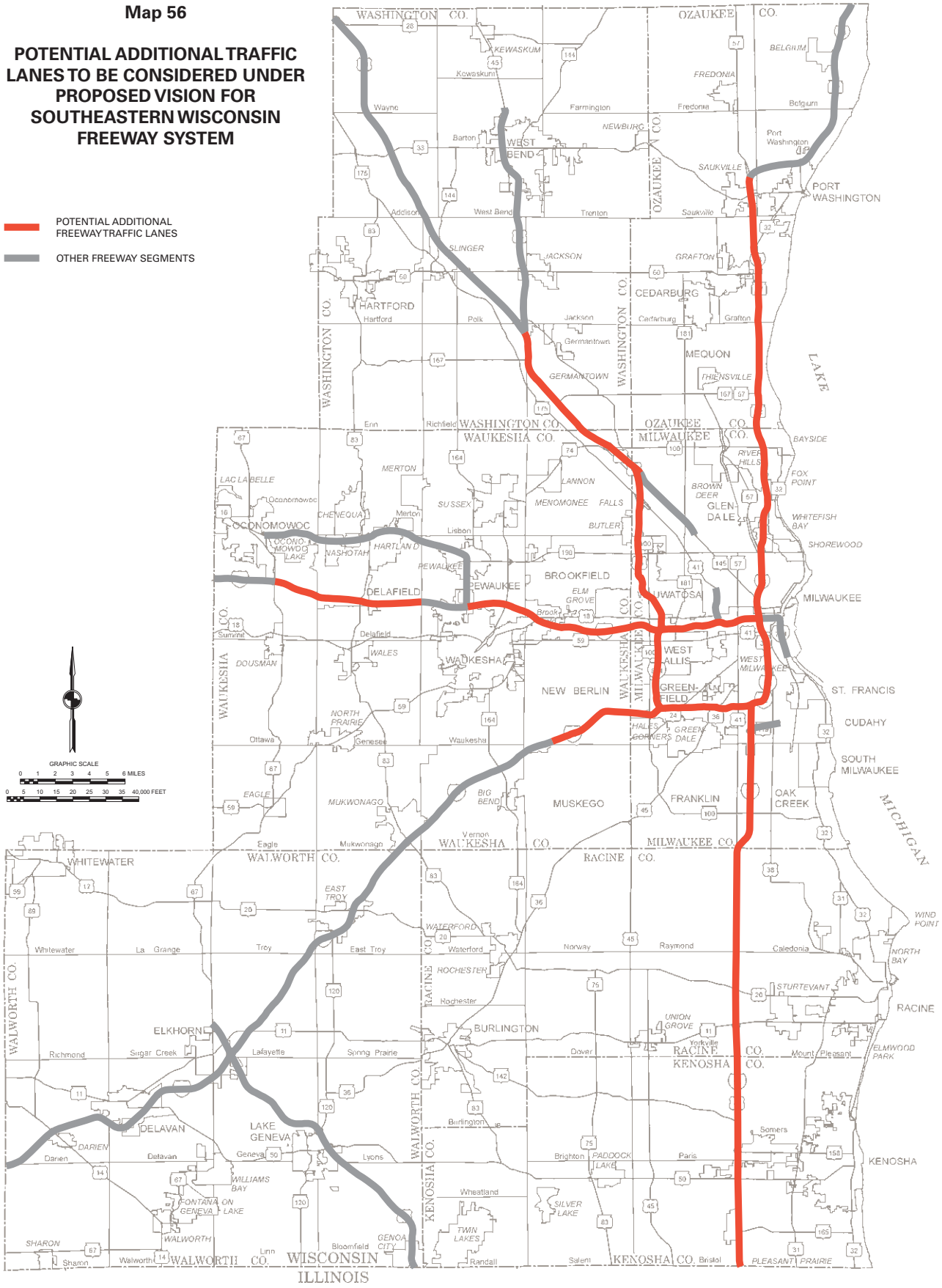
POTENTIAL LEVEL OF REDESIGN TO BE CONSIDERED UNDER PROPOSED VISION FOR SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



Source: SEWRPC.

Map 56

POTENTIAL ADDITIONAL TRAFFIC LANES TO BE CONSIDERED UNDER PROPOSED VISION FOR SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



Source: SEWRPC.

implications of the potential new freeway, the Committee may direct the staff to estimate other costs and benefits, including construction costs, right-of-way acquisition impacts, environmental impacts, and accessibility impacts.

CONCEPTUAL DESIGN FOR THE RECONSTRUCTION OF THE REGIONAL FREEWAY SYSTEM OF SOUTHEASTERN WISCONSIN

This section presents conceptual designs, on a segment-by-segment basis, for the reconstruction of the freeway system of Southeastern Wisconsin. The conceptual design for each segment has been developed to address the design deficiencies and traffic crash problems identified earlier in this study. The conceptual design also includes additional traffic lanes on those segments of the freeway system with existing or forecast future traffic congestion problems also previously identified in this study.

As stated earlier, two freeway system reconstruction alternatives will be developed for comparison and evaluation. Both alternatives will include the improvements necessary to properly address design and design-related safety deficiencies. One of the system alternatives will include the additional traffic lanes to address traffic congestion problems.

Map 57 identifies the division of the freeway system into segments for the purposes of the presentation of conceptual designs. Figures 17 through 39 present the proposed conceptual designs for each individual freeway segment.

The conceptual designs for the reconstruction of each segment of the freeway system include design and design-related safety improvements to address the design and design-related safety problems of the existing freeway system. Reconstruction with these design and design-related safety improvements would result in a freeway system that, upon reconstruction, would meet modern standards, with attendant improvement in freeway traffic safety and operations.

Design and design-related safety improvements noted on these conceptual design maps include the following:

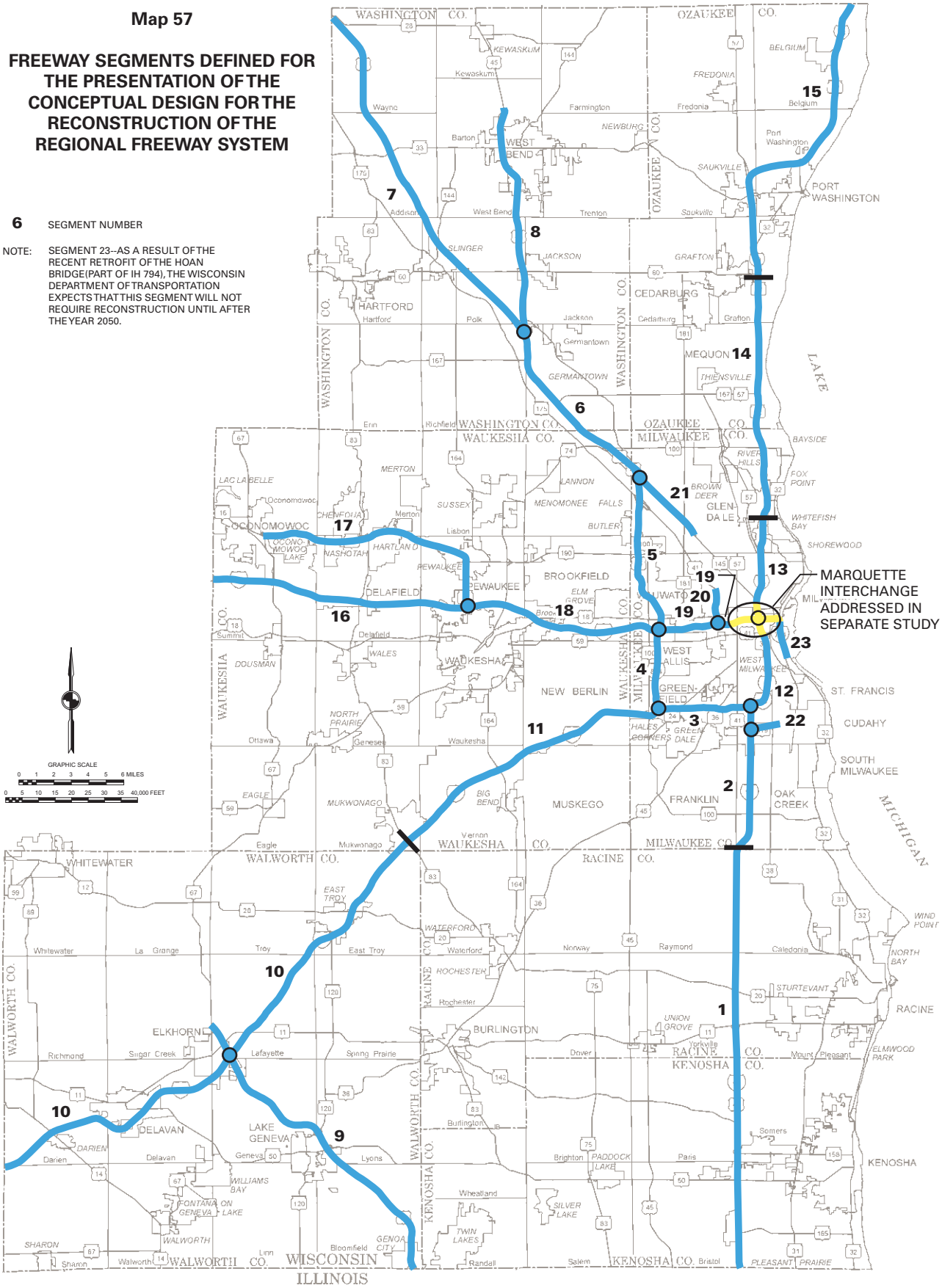
- Freeway-to-freeway system interchanges
    - Relocate left hand on- and off-ramps to right hand side of freeway
    - Minimize lane drops and provide route continuity
    - Improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds
    - Address closely spaced service interchanges with grade-separated or collector-distributor roadways
- Freeway system service interchanges
    - Lengthen and widen ramp tapers
    - Convert multi-point exits to single point exits
    - Separate ramps from frontage roads in Kenosha and Racine Counties
    - Provide selected auxiliary lanes to address closely spaced interchanges
- Freeway mainline
    - Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards
    - Provide full inside and outside shoulders

Map 57

FREEWAY SEGMENTS DEFINED FOR THE PRESENTATION OF THE CONCEPTUAL DESIGN FOR THE RECONSTRUCTION OF THE REGIONAL FREEWAY SYSTEM

6 SEGMENT NUMBER

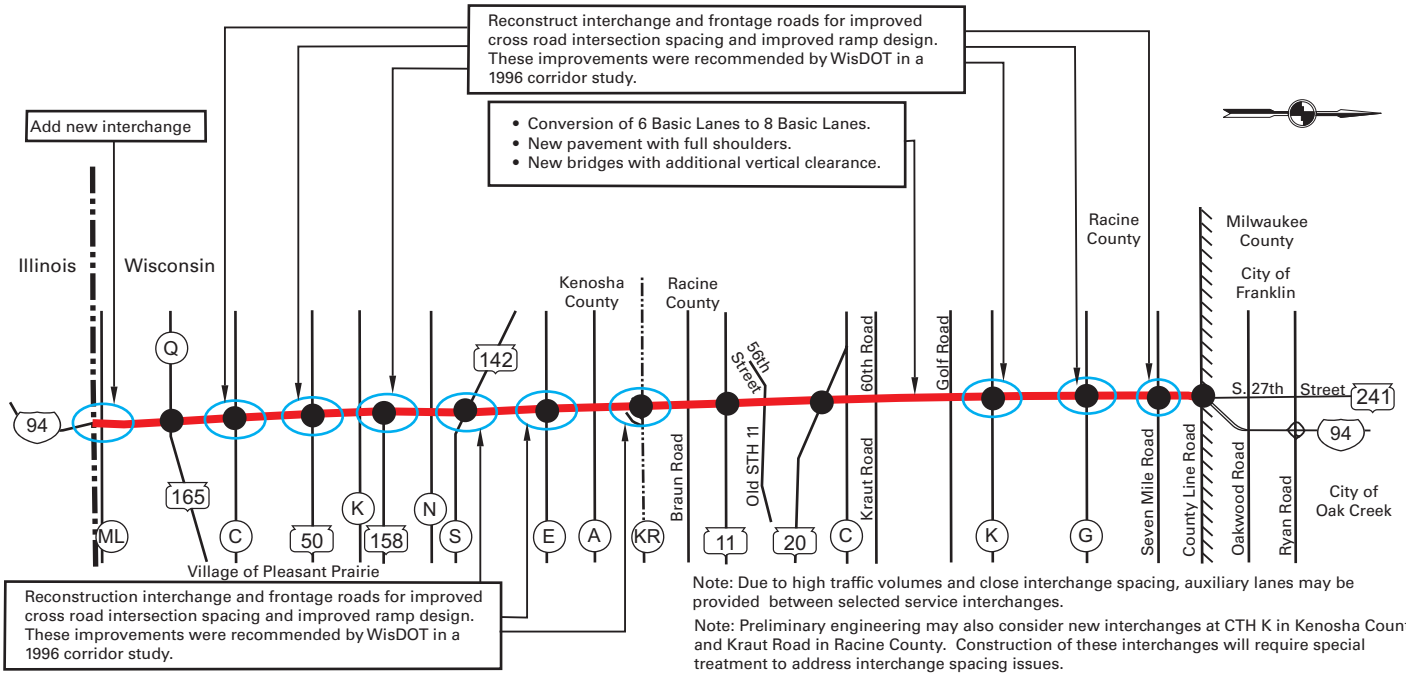
NOTE: SEGMENT 23--AS A RESULT OF THE RECENT RETROFIT OF THE HOAN BRIDGE (PART OF IH 794), THE WISCONSIN DEPARTMENT OF TRANSPORTATION EXPECTS THAT THIS SEGMENT WILL NOT REQUIRE RECONSTRUCTION UNTIL AFTER THE YEAR 2050.



Source: SEWRPC.

Figure 17

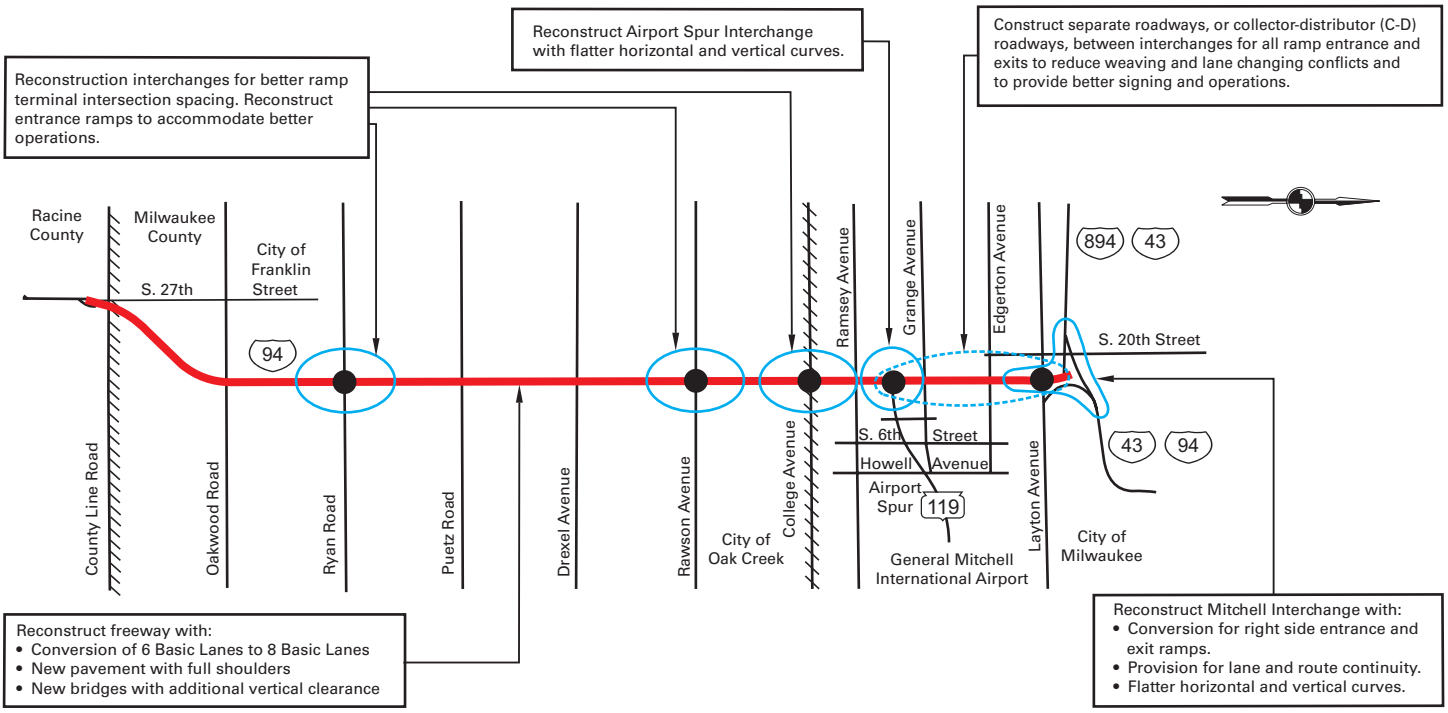
CONCEPTUAL DESIGN FOR SEGMENT NO. 1: IH 94 IN KENOSHA AND RACINE COUNTIES FROM WISCONSIN/ILLINOIS STATE LINE TO RACINE/MILWAUKEE COUNTY LINE



Source: HNTB and SEWRPC.

Figure 18

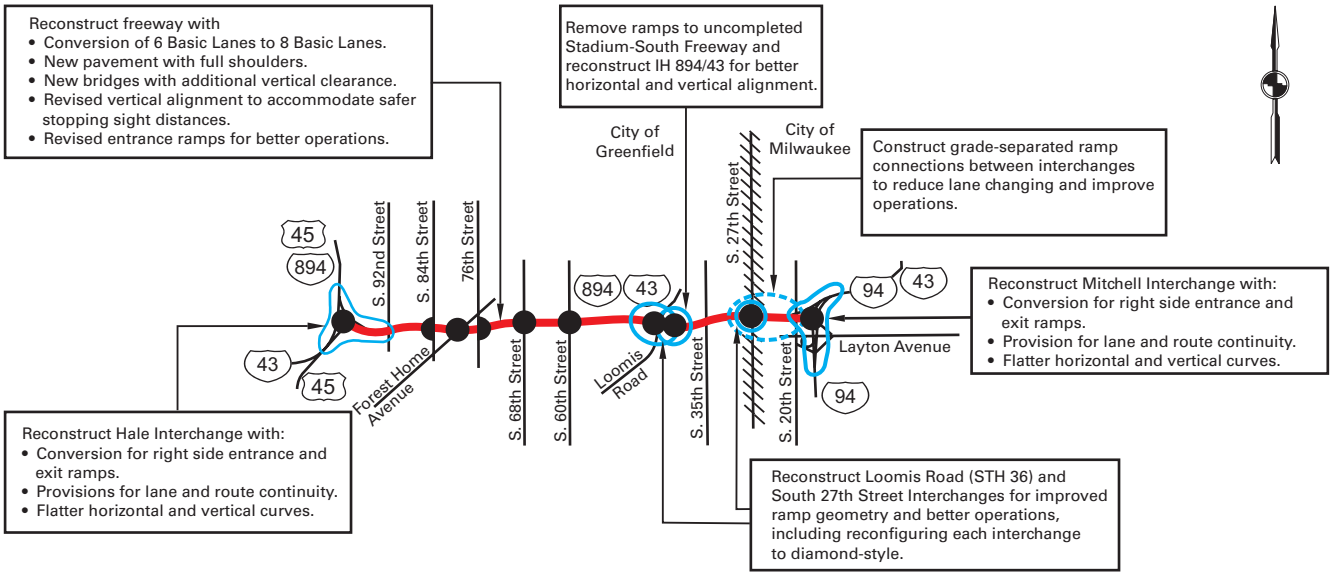
CONCEPTUAL DESIGN FOR SEGMENT NO. 2: IH 94 FROM RACINE/MILWAUKEE COUNTY LINE TO MITCHELL INTERCHANGE



Source: HNTB and SEWRPC.

Figure 19

CONCEPTUAL DESIGN FOR SEGMENT NO. 3: IH 894/IH 43 FROM MITCHELL INTERCHANGE TO HALE INTERCHANGE

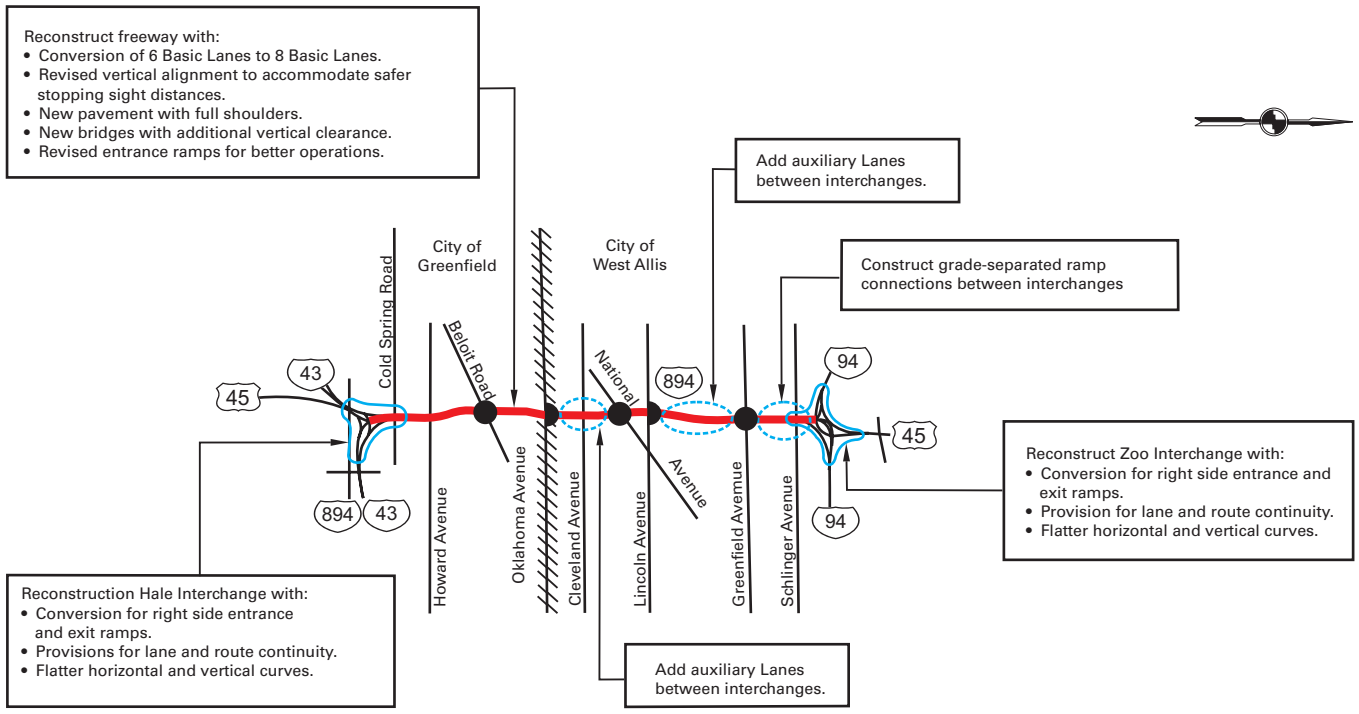


Note: Preliminary engineering may also consider half diamond interchanges at S.76th and S.84th Streets for potential consideration or conversion to full access interchanges. This may require collector-distributor (C-D) roadways.

Source: HNTB and SEWRPC.

Figure 20

CONCEPTUAL DESIGN FOR SEGMENT NO. 4: IH 894 FROM HALE INTERCHANGE TO ZOO INTERCHANGE

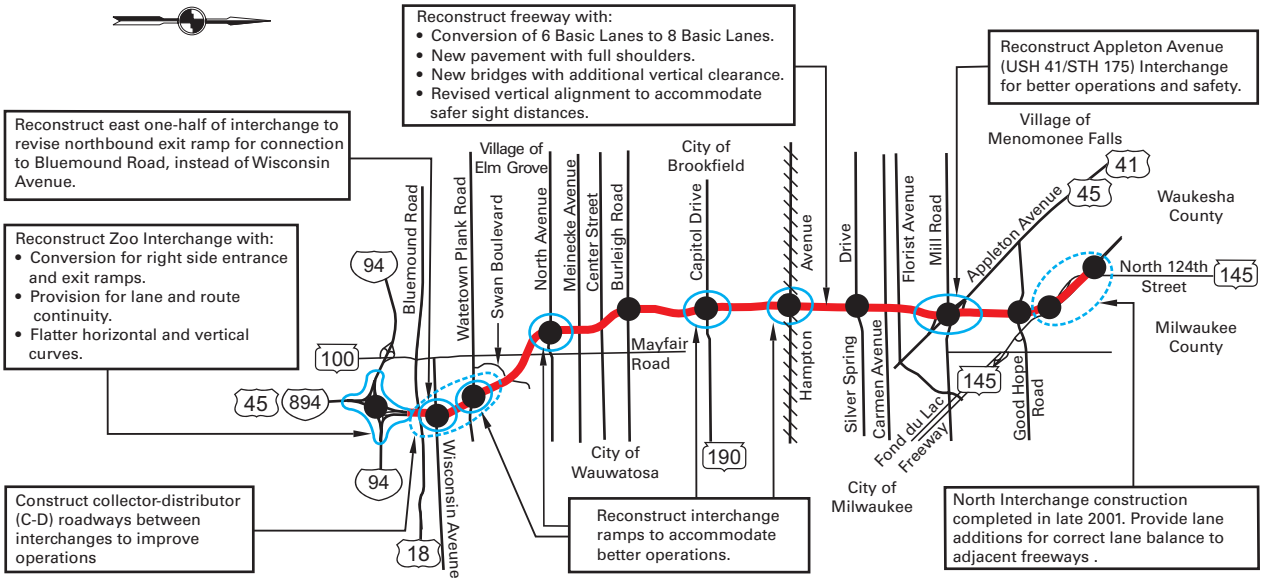


Note: Preliminary engineering may also investigate half diamond interchanges at Lincoln Avenue and Oklahoma Avenue for potential conversion to full access interchanges. These features will require special treatments to address close spacing with existing interchanges.

Source: HNTB and SEWRPC.

Figure 21

CONCEPTUAL DESIGN FOR SEGMENT NO. 5:
USH 45 FROM ZOO INTERCHANGE TO NORTH INTERCHANGE

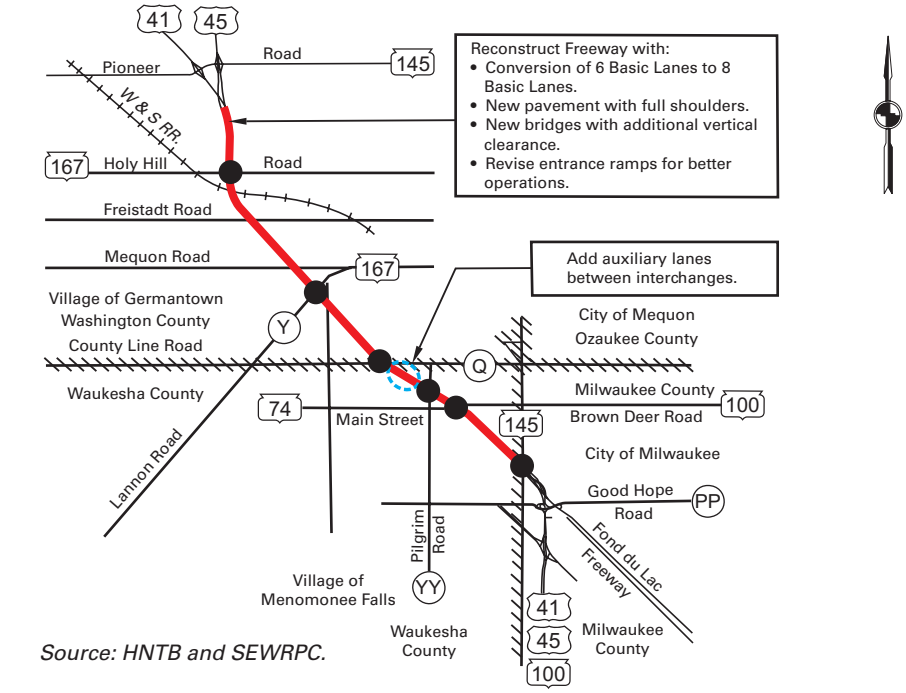


Note: Due to high traffic volumes and close interchange spacing, auxiliary lanes may be provided between selected service interchanges.

Source: HNTB and SEWRPC.

Figure 22

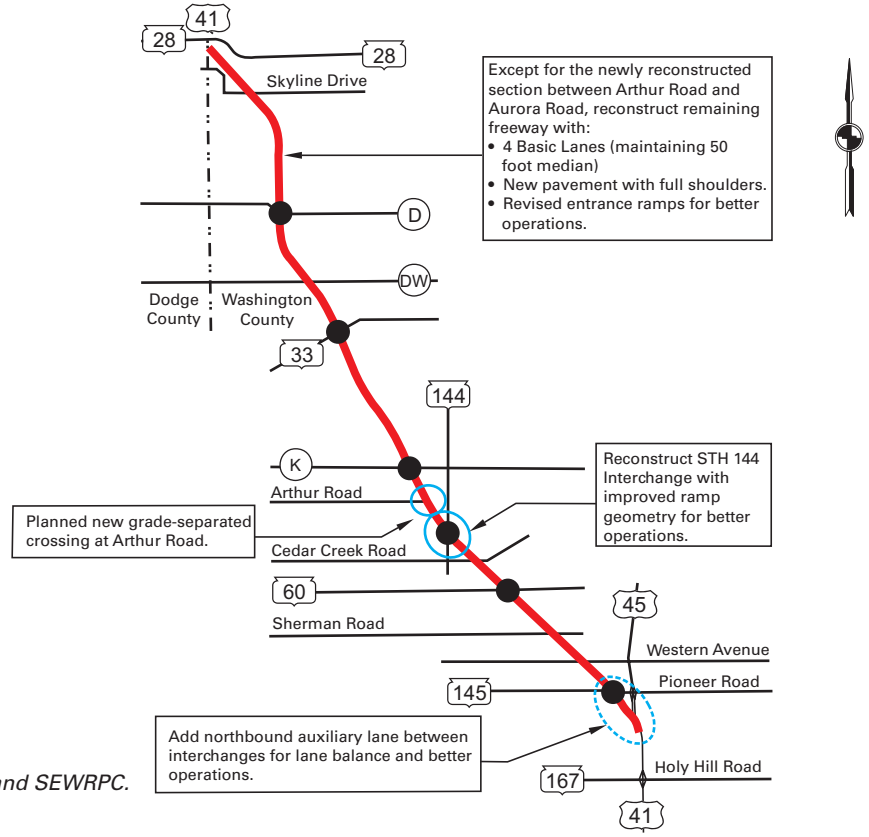
CONCEPTUAL DESIGN FOR SEGMENT NO. 6:
USH 41/45 FROM NORTH INTERCHANGE TO USH 41/45 INTERCHANGE



Source: HNTB and SEWRPC.

Figure 23

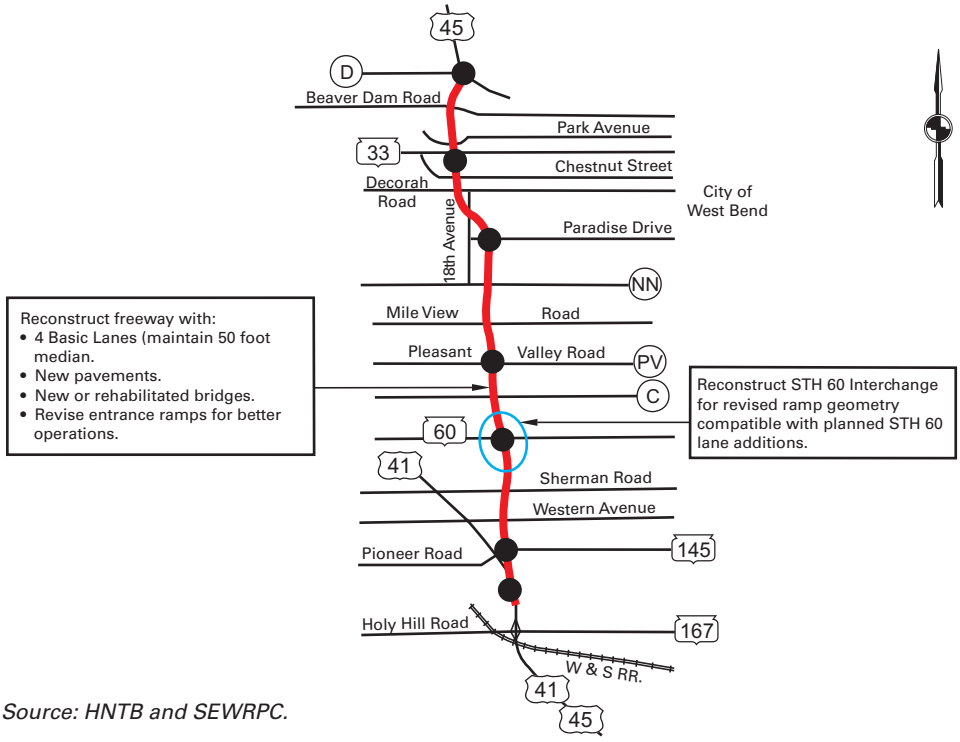
CONCEPTUAL DESIGN FOR SEGMENT NO. 7:
USH 41 FROM USH 41/45 INTERCHANGE TO WASHINGTON/DODGE COUNTY LINE



Source: HNTB and SEWRPC.

Figure 24

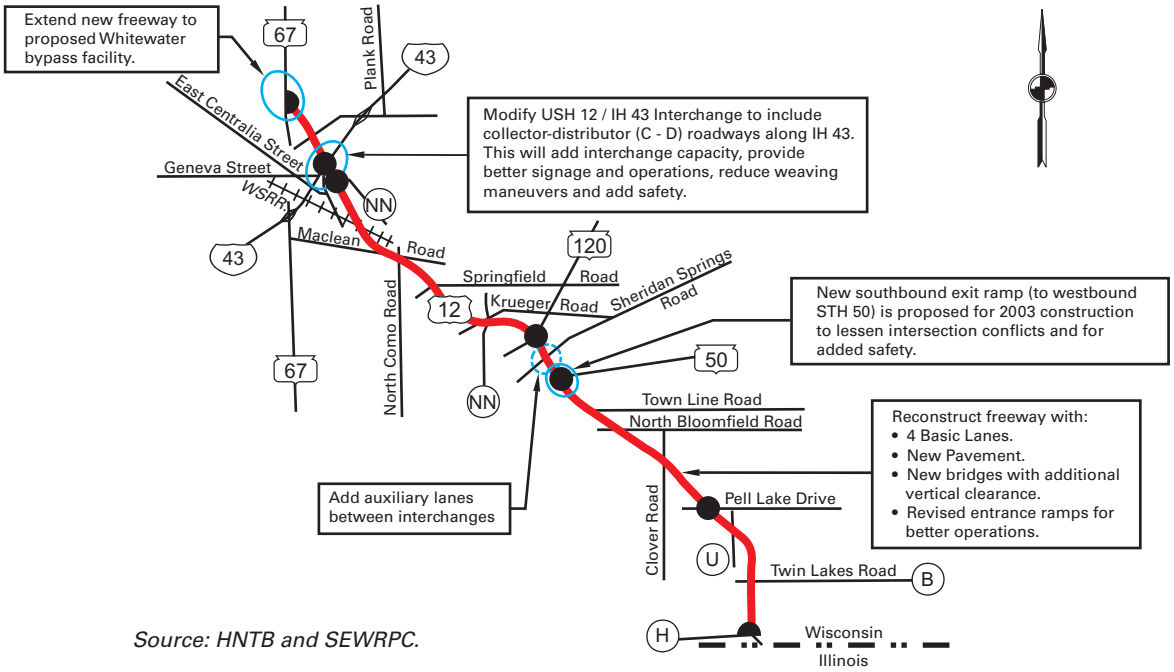
CONCEPTUAL DESIGN FOR SEGMENT NO. 8:
USH 45 FROM USH 41/45 INTERCHANGE TO WASHINGTON CTH D



Source: HNTB and SEWRPC.

Figure 25

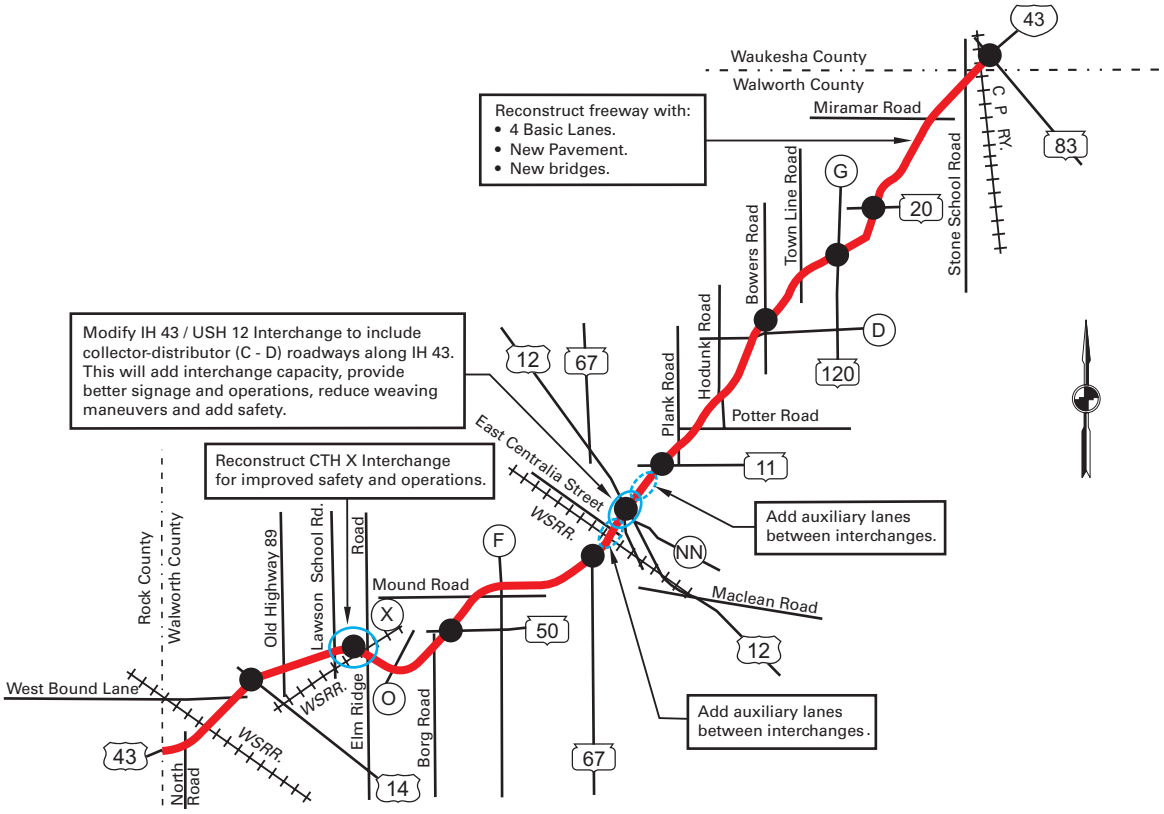
CONCEPTUAL DESIGN FOR SEGMENT NO. 9:
USH 12 IN WALWORTH COUNTY



Source: HNTB and SEWRPC.

Figure 26

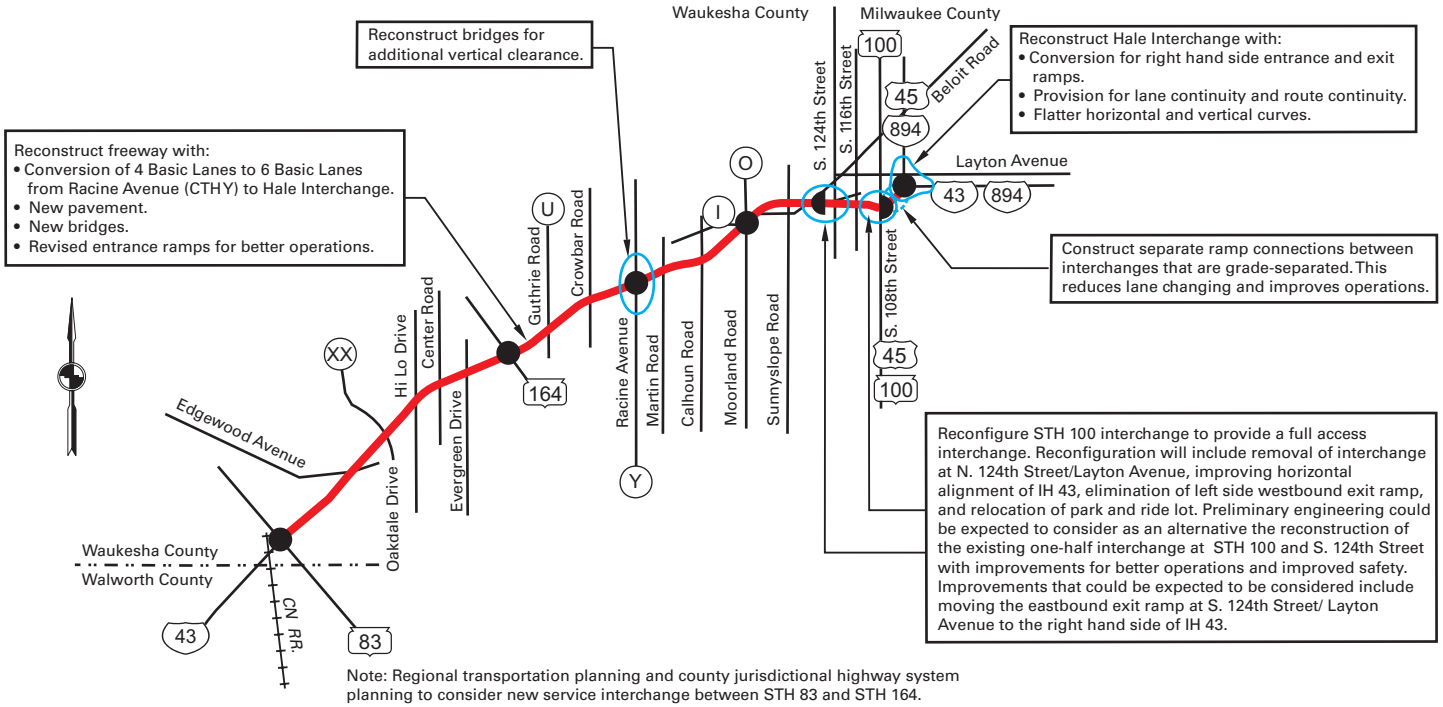
CONCEPTUAL DESIGN FOR SEGMENT NO. 10:
IH 43 FROM WALWORTH/ROCK COUNTY LINE TO STH 83



Source: HNTB and SEWRPC.

Figure 27

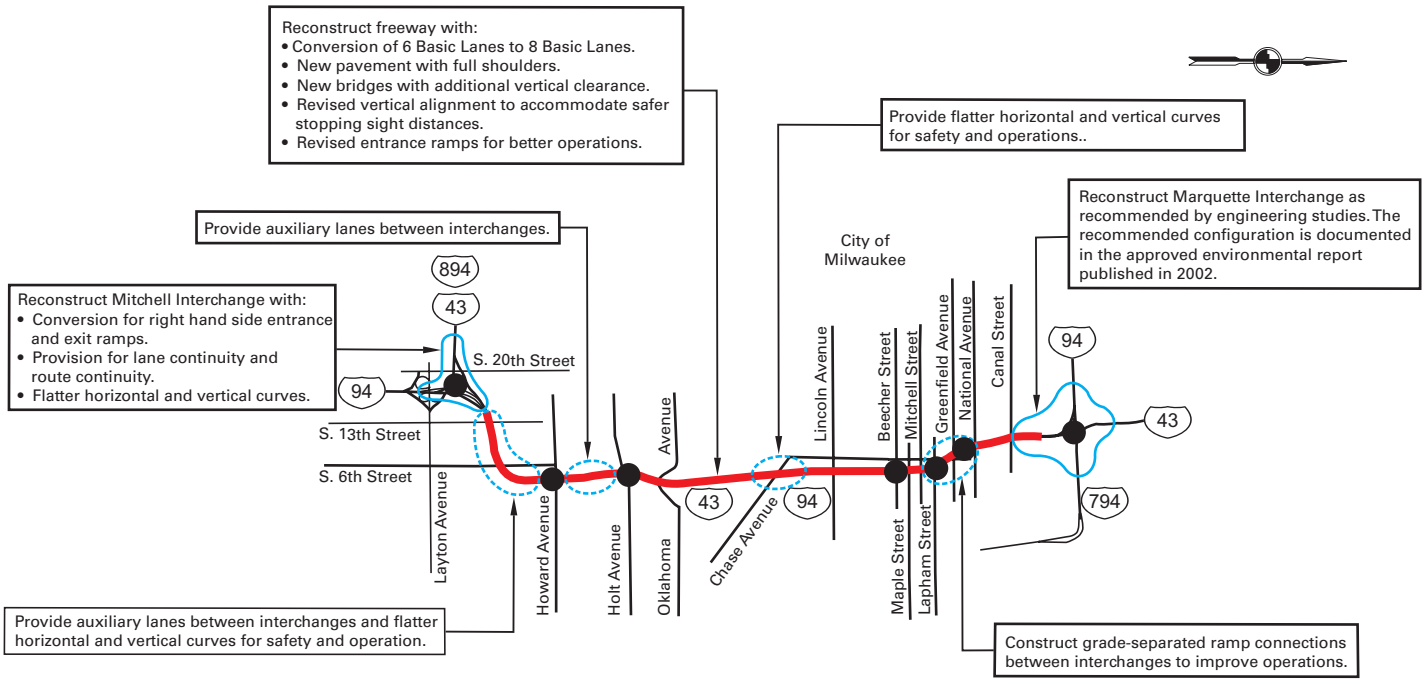
CONCEPTUAL DESIGN FOR SEGMENT NO. 11: IH 43 FROM STH 83 TO HALE INTERCHANGE



Source: HNTB and SEWRPC.

Figure 28

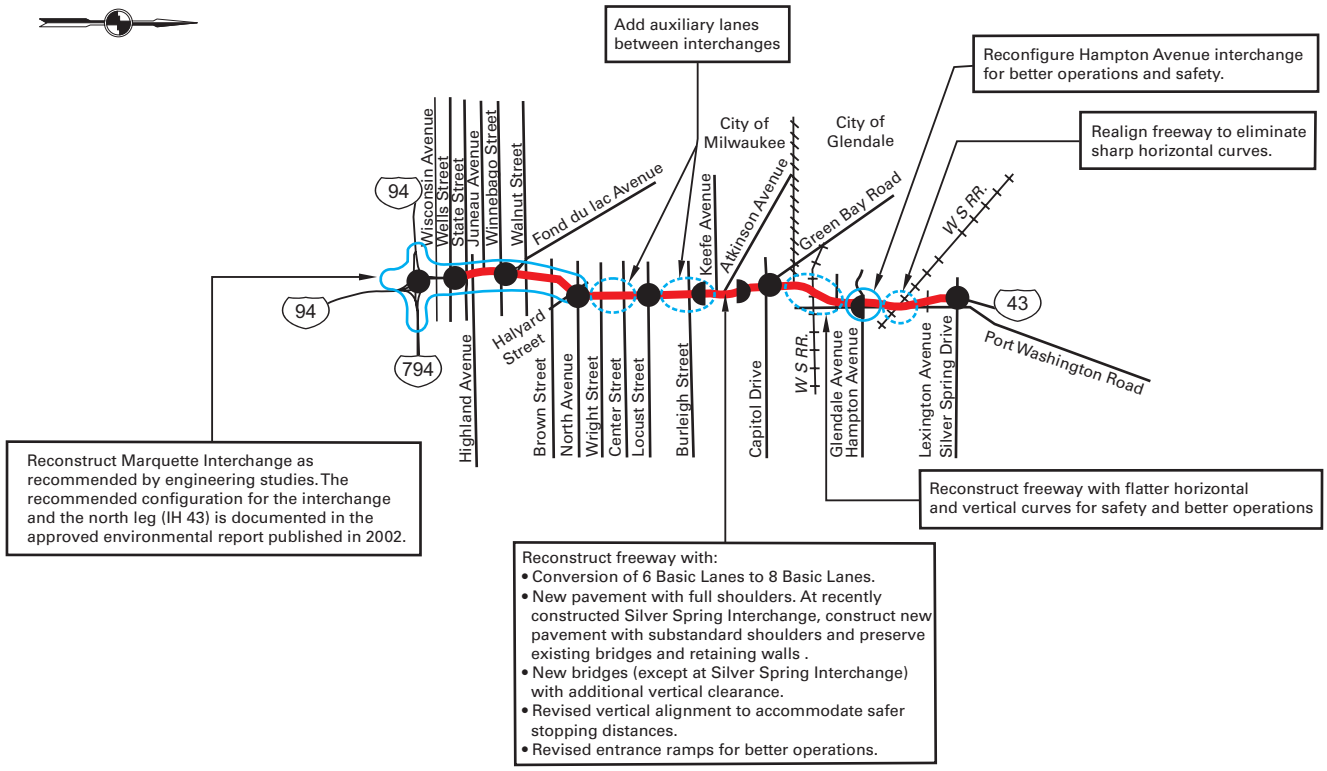
CONCEPTUAL DESIGN FOR SEGMENT NO. 12: IH 94/ 43 FROM MITCHELL INTERCHANGE TO MARQUETTE INTERCHANGE



Source: HNTB and SEWRPC.

Figure 29

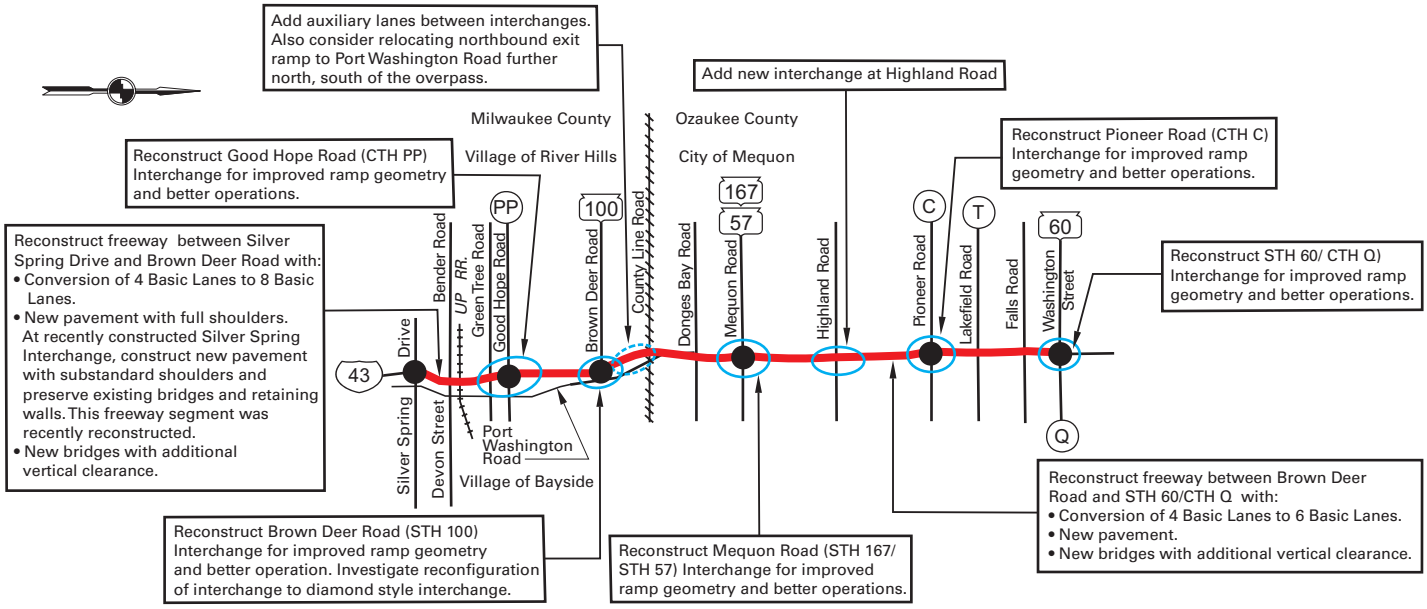
CONCEPTUAL DESIGN FOR SEGMENT NO. 13: IH 43 FROM MARQUETTE INTERCHANGE TO SILVER SPRING DRIVE



Source: HNTB and SEWRPC.

Figure 30

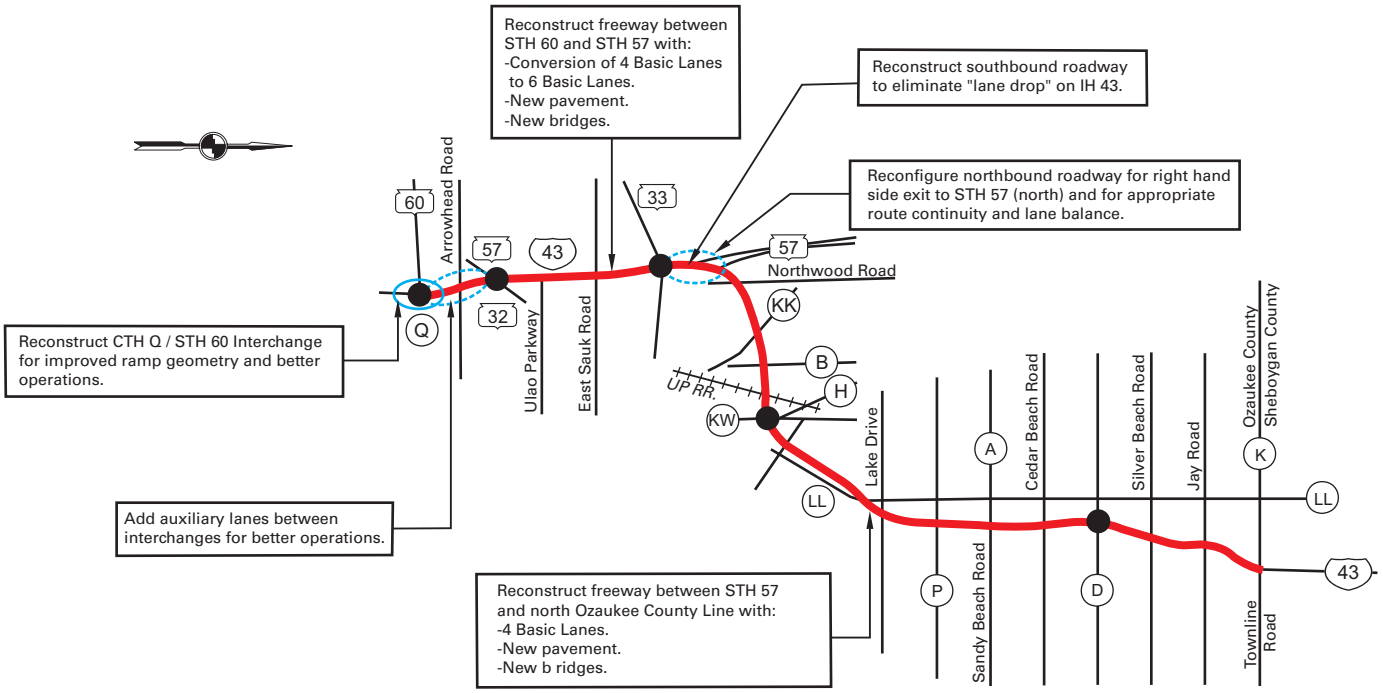
CONCEPTUAL DESIGN FOR SEGMENT NO. 14: IH 43 FROM SILVER SPRING DRIVE TO STH 60/CTH Q



Source: HNTB and SEWRPC.

Figure 31

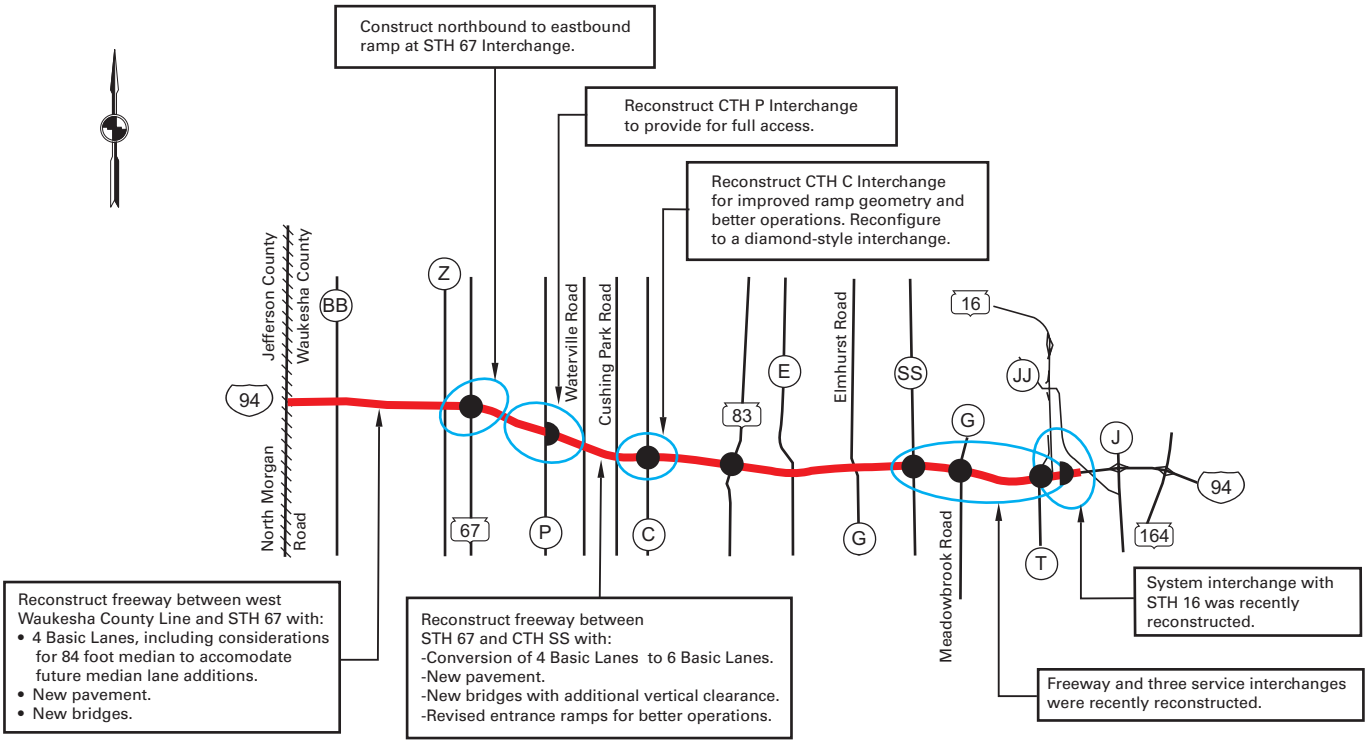
CONCEPTUAL DESIGN FOR SEGMENT NO. 15:
IH 43 FROM STH 60 TO OZAUKEE/SHEBOYGAN COUNTY LINE



Source: HNTB and SEWRPC.

Figure 32

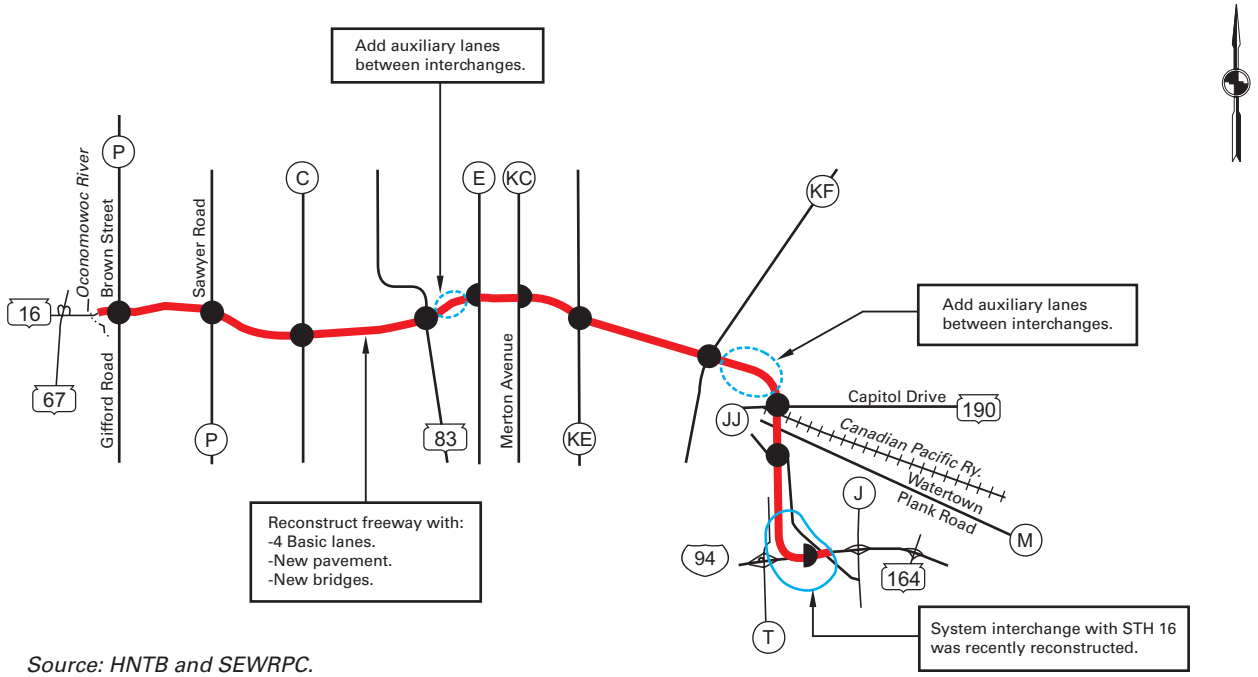
CONCEPTUAL DESIGN FOR SEGMENT NO. 16:
IH 94 FROM WAUKESHA/JEFFERSON COUNTY LINE TO IH 94/ STH 16 INTERCHANGE



Source: HNTB and SEWRPC.

Figure 33

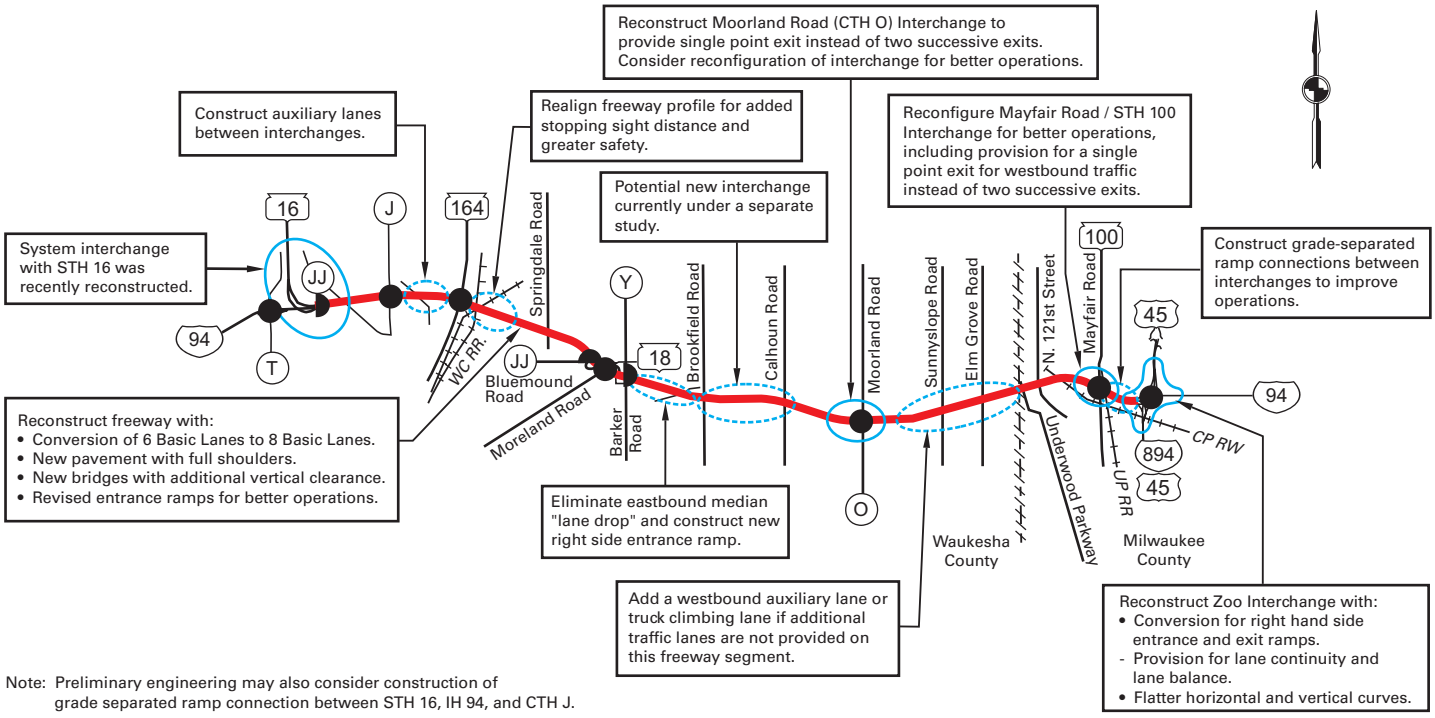
CONCEPTUAL DESIGN FOR SEGMENT NO. 17:
STH 16 FROM OCONOMOWOC RIVER TO IH 94/ STH 16 INTERCHANGE



Source: HNTB and SEWRPC.

Figure 34

CONCEPTUAL DESIGN FOR SEGMENT NO. 18:
IH 94 FROM IH 94/ STH 16 INTERCHANGE TO ZOO INTERCHANGE

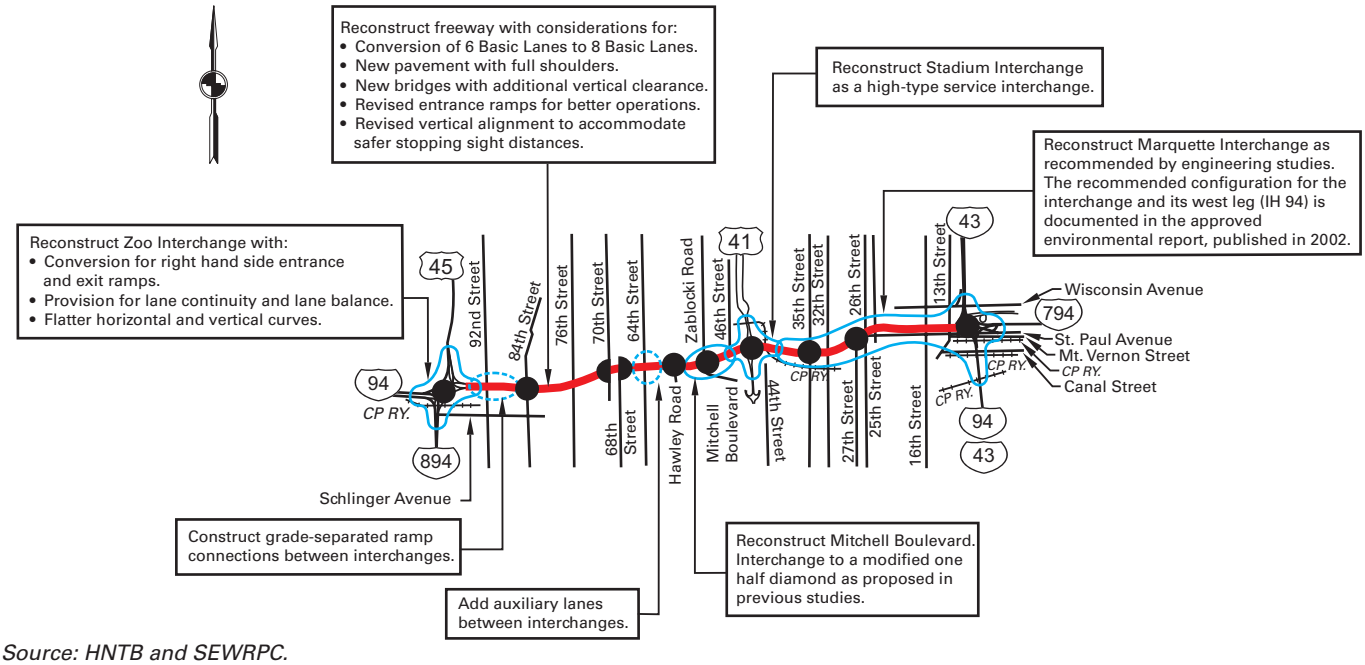


Note: Preliminary engineering may also consider construction of grade separated ramp connection between STH 16, IH 94, and CTH J.

Source: HNTB and SEWRPC.

Figure 35

CONCEPTUAL DESIGN FOR SEGMENT NO. 19: IH 94 FROM ZOO INTERCHANGE TO MARQUETTE INTERCHANGE



Source: HNTB and SEWRPC.

Figure 36

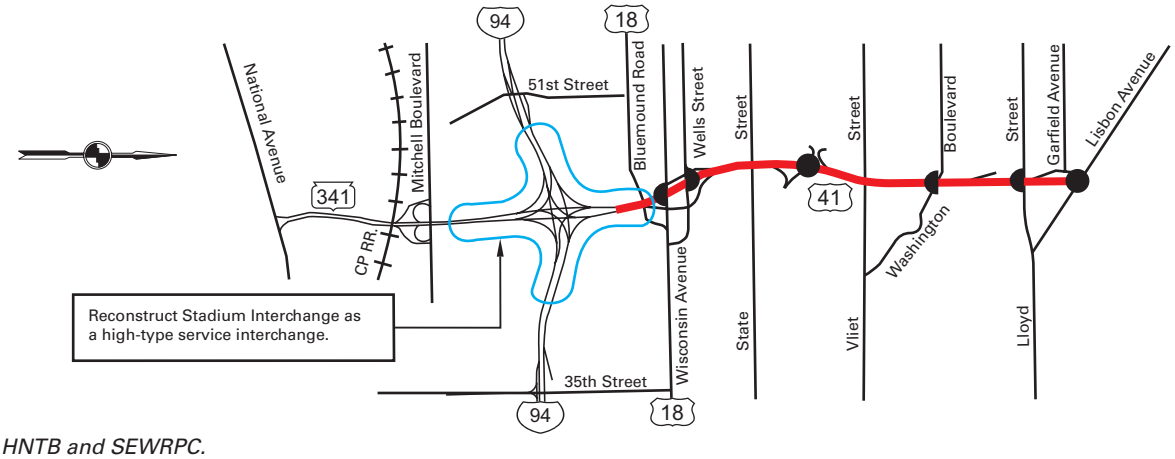
CONCEPTUAL DESIGN FOR SEGMENT NO. 20: USH 41 (STADIUM FREEWAY- NORTH) FROM STADIUM INTERCHANGE TO LISBON AVENUE

Proposed Conceptual Design:

• Reconstruct largely "as-is" with the maintenance of existing grade-separated service interchanges. Consideration to be given to reconstruction with an expressway/parkway design with a 45 miles-per-hour speed limit similar to Miller Park Way. Consideration may also be given to improvement of connection of northern terminus of freeway to surface arterial street system. Reconstruct Stadium Interchange as "high-type" service interchange. The interchange would allow free movements through the interchange on IH 94 and between USH 41 (Stadium Freeway-North) and STH 341 (Miller Park Way). Right turn movements, including eastbound to southbound, northbound to eastbound, westbound to northbound, and southbound to westbound, would also free movements on freeway-to-freeway ramps. All left turn movements, including eastbound to northbound, northbound to westbound, westbound to southbound, and southbound to eastbound, and the north/south through movements for motorist entering or exiting USH 41 at Wisconsin Avenue would be signalized at a single location on a separate level of the interchange. Preliminary engineering needed to confirm traffic movements through interchange.

• The complete reconfiguration of the Stadium Interchange addressing its design deficiencies including relocating all freeway ramps from the left hand to the right hand side of the freeway was also considered, but was rejected. Such reconfiguration would entail substantial right-of-way impacts, as well as substantially greated construction costs. A full freeway-to freeway interchange is not warranted to connect the relatively short segments of USH 41 and Miller Park Way with IH 94.

• The reconstruction of the USH 41 freeway as a surface arterial street was also considered and rejected. The work required to modify the elevation of the facility and provide at-grade intersection with Martin Drive, Vliet Street, Washington Boulevard, Vine Street, and Lloyd Street would entail construction cost greater than rebuilding USH 41 as a freeway or expressway/parkway. Also, the current and forecast traffic volumes on USH 41 can not be expected to be accommodated on a surface arterial street without substantial traffic congestion.



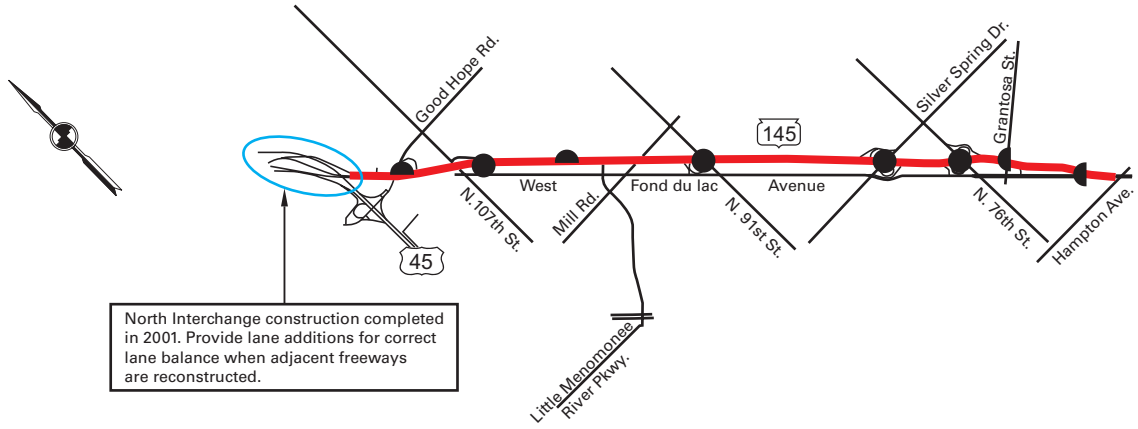
Source: HNTB and SEWRPC.

Figure 37

CONCEPTUAL DESIGN FOR SEGMENT NO. 21: STH 145 (FOND DU LAC FREEWAY) FROM HAMPTON AVENUE TO GOOD HOPE ROAD

Proposed Conceptual Design:

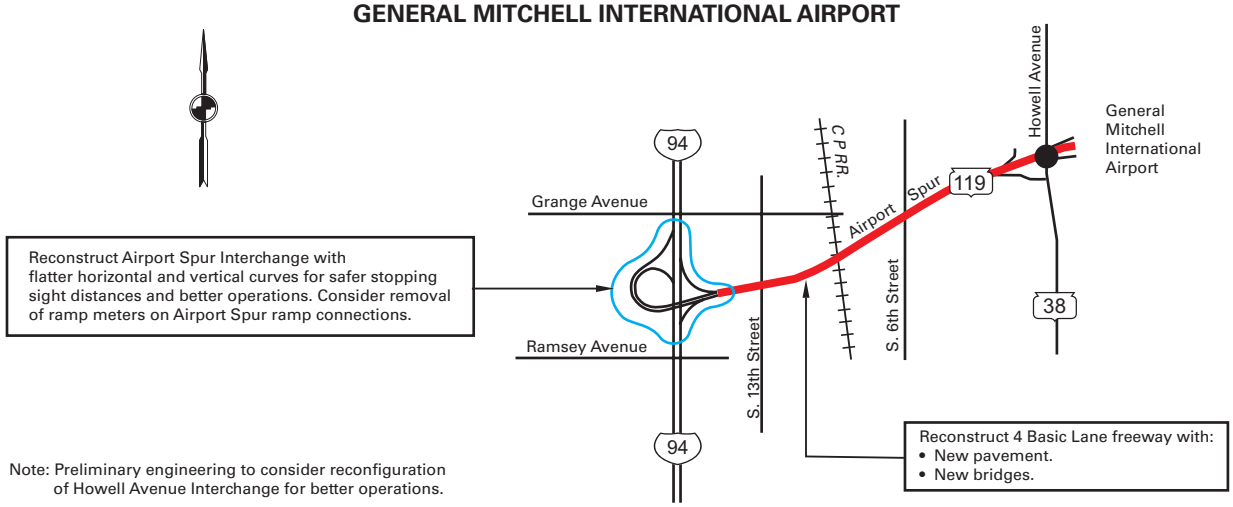
- Reconstruct as a freeway with conversion from six to four basic traffic lanes. This design would retain the existing high level of service provided by a freeway with sufficient capacity to accomodate current and forecast future traffic volumes. Conversion from six to four basic traffic lanes would provide space within the existing right-of-way to reconstruct freeway on- and off-ramps at service interchanges that would meet modern design standards and improve traffic safety on the freeway segment and connecting surface street system. Consideration may be given during preliminary engineering to reconstruct as an expressway/parkway similar to Miller Park Way.
  - Reconstruction of the segment as a freeway with its existing six traffic lanes was considered and rejected. Design and safety improvements attendant to freeway service interchange on- and -off-ramp reconstruction would have required additional right-of-way.
  - Replacement of the freeway segment with a surface arterial street was rejected because construction costs may be expected to exceed the costs associated with reconstruction as a freeway. In addition, a lower level of service and accessibility would be provided by a surface arterial, as compared to a freeway.
  - The removal of the freeway segment and improvement of W. Fond du Lac Avenue from N. 68th Street to N. 107th Street to a four to six lane divided surface arterial was rejected due to the need to acquire right-of-way along W. Fond du Lac Avenue and the expected costs necessary to restore the grade of the freeway right-of-way to be abandoned. The construction cost of this alternative may also be expected to exceed that of reconstruction as a freeway.



Source: HNTB and SEWRPC.

Figure 38

CONCEPTUAL DESIGN FOR SEGMENT NO. 22: STH 119 (AIRPORT SPUR FREEWAY) FROM IH 94 TO GENERAL MITCHELL INTERNATIONAL AIRPORT

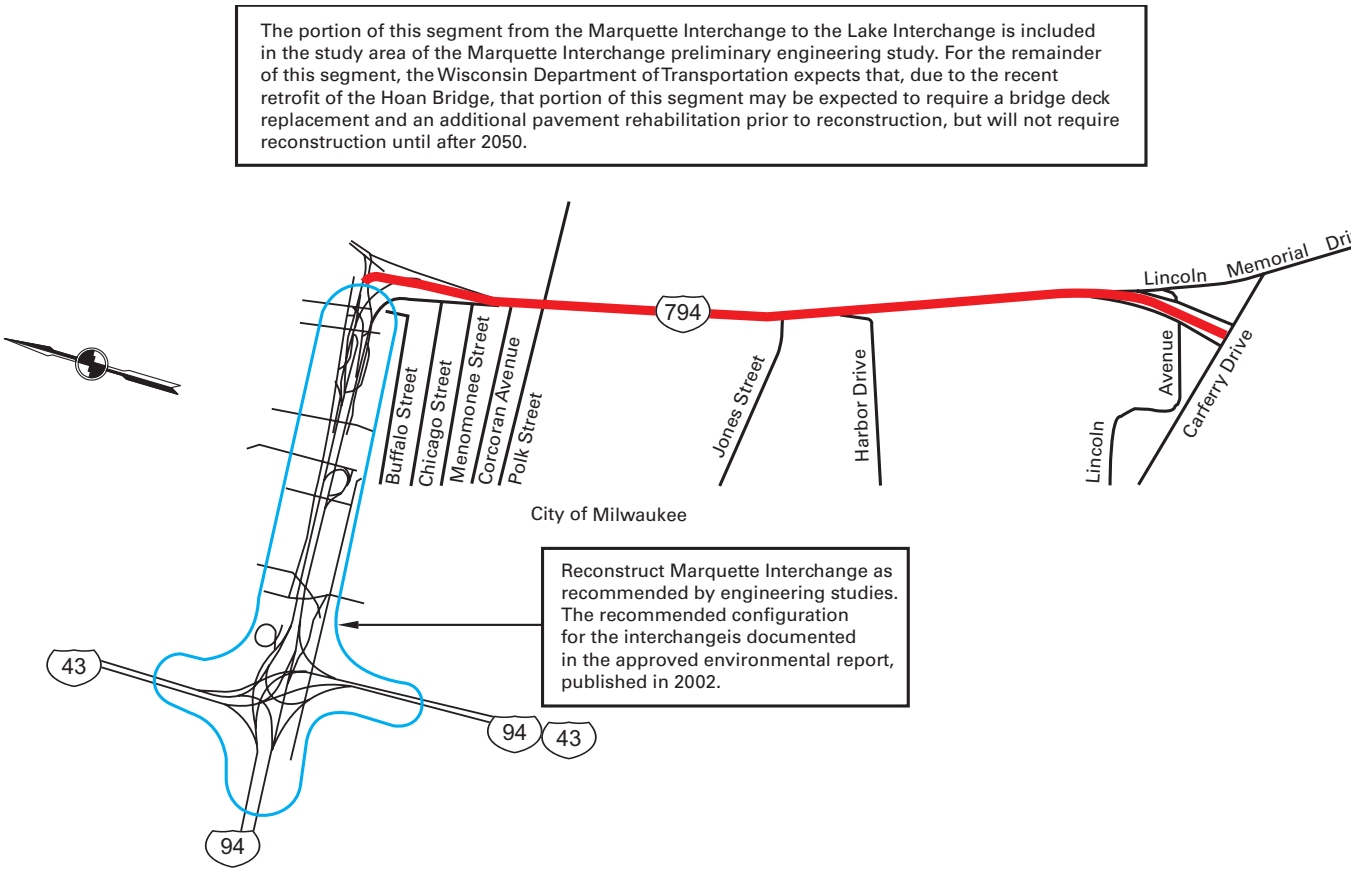


Note: Preliminary engineering to consider reconfiguration of Howell Avenue Interchange for better operations.

Source: HNTB and SEWRPC.

Figure 39

CONCEPTUAL DESIGN FOR SEGMENT NO 23:
IH 794 FROM LAKE INTERCHANGE TO CARFERRY DRIVE



Source: HNTB and SEWRPC.

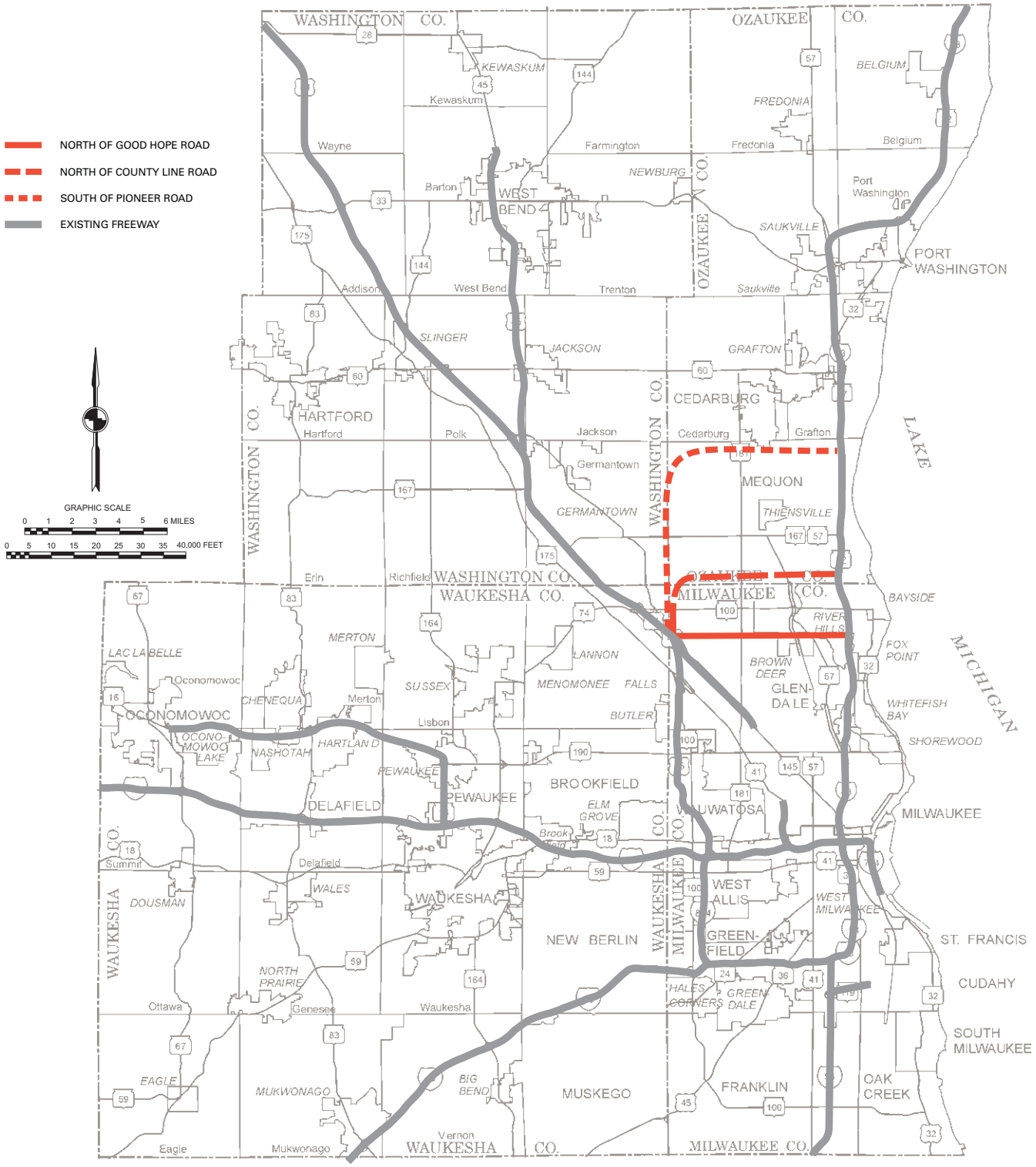
The conceptual designs also depict the additional traffic lanes on selected freeway segments to be considered under one freeway system reconstruction alternative. The segments for which additional lanes are proposed, previously displayed on Map 56, are those with existing or forecast traffic congestion problems previously identified in this study.

CONSIDERATION OF POSSIBLE NEW FREEWAY SEGMENT CONNECTING IH 43 AND USH 45 IN NORTHERN MILWAUKEE COUNTY/SOUTHERN OZAUKEE COUNTY

At the request of the City of Milwaukee, consideration was given to a new segment of freeway connecting IH 43 and USH 45 in a corridor located from three to six miles north or south of the Milwaukee County/Ozaukee County line. A traffic impact analysis was conducted of the potential new freeway with respect to the existing freeway system and the surface arterial street system. The intent of this analysis was to assess whether the proposed new freeway would have a significant impact on reducing traffic volumes and congestion or increasing traffic volumes and congestion on segments of the existing freeway system, and thereby, potentially affect the need for reconstruction and the need to consider design, safety, and capacity addition improvements on any segment of the existing freeway system.

Map 58

ALTERNATIVE CONCEPTUAL LOCATIONS OF POTENTIAL NEW FREEWAY CONNECTING IH 43 AND USH 45



Source: SEWRPC.

Because the corridor identified for consideration of this proposed new freeway was wide, three alternative conceptual locations for the freeway were identified for analysis of traffic impacts. As shown on Map 58, these three alternative alignments included one north of Good Hope Road, one north of County Line Road, and one south of Pioneer Road. The forecast year 2020 average weekday traffic on these three possible alternative freeway alignments is as follows:

- Good Hope Road Alternative—60,000 to 65,000 vehicles per average weekday
- County Line Road Alternative—25,000 to 35,000 vehicles per average weekday
- Pioneer Road Alternative—12,000 to 15,000 vehicles per average weekday

With respect to traffic impact on the surface arterial street system, each alternative may be expected to result in a significant reduction of traffic on parallel surface arterial streets, thereby reducing congestion on certain of those streets, and provide a higher level of service to traffic. Selected forecast reductions in year 2020 average weekday traffic on surface arterial streets under each possible freeway alternative are listed below:

- Good Hope Road Alternative
  - Good Hope Road—10,000 to 15,000 vehicles per average weekday
  - Brown Deer Road—2,000 to 10,000 vehicles per average weekday
  - Bradley Road—3,000 to 7,000 vehicles per average weekday
  - County Line Road—1,000 to 2,000 vehicles per average weekday
  - Silver Spring Road—2,000 to 4,000 vehicles per average weekday
  - Hampton Avenue—2,000 to 5,000 vehicles per average weekday
  - Capitol Drive—1,000 to 2,000 vehicles per average weekday
  - Mequon Road—2,000 to 4,000 vehicles per average weekday
  - Fond du Lac Avenue—3,000 to 10,000 vehicles per average weekday

- County Line Road Alternative
  - Mequon Road—6,000 to 9,000 vehicles per average weekday
  - Brown Deer Road—2,000 to 7,000 vehicles per average weekday
  - County Line Road—2,000 vehicles per average weekday
  - Good Hope Road—2,000 vehicles per average weekday
  - Bradley Road—1,000 vehicles per average weekday
  - Pioneer Road—1,000 vehicles per average weekday
  - STH 60—1,000 vehicles per average weekday
  - Hampton Avenue—1,000 vehicles per average weekday
  - Highland Road—1,000 vehicles per average weekday
  - Fond du Lac Avenue—1,000 to 2,000 vehicles per average weekday

- Pioneer Road Alternative
    - Pioneer Road—3,000 to 4,000 vehicles per average weekday
    - Mequon Road—2,000 to 4,000 vehicles per average weekday
    - STH 60—1,000 to 2,000 vehicles per average weekday
    - Brown Deer Road—1,000 vehicles per average weekday
    - Good Hope Road—1,000 vehicles per average weekday

With respect to the impact of the possible new freeway on the existing freeway system, the proposed new freeway may be expected to modify the routing of traffic, or traffic patterns, on the existing freeway system; however, the net impact on reducing or increasing freeway traffic volume may be expected to be negligible, as shown in Table 25.

Because the possible new freeway connecting IH 43 and USH 45 in northern Milwaukee County and southern Ozaukee County would have little impact on reducing or increasing freeway traffic volume on any segment of the existing freeway system, it would also have little impact on the traffic congestion on the existing freeway system and little impact on the need to address existing freeway system design, safety, and congestion problems. Accordingly, it is recommended that the possible new freeway not be included for further consideration under this study. This possible new freeway, and other possible new freeway segments, may be considered when regional land use and transportation plans are reevaluated and updated during the years 2003 through 2005.

EVALUATION OF FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES AND DETERMINATION OF ELEMENTS TO BE INCLUDED IN A PRELIMINARY RECOMMENDED PLAN

The remainder of this chapter consists of documentation of the process followed by the Advisory Committee in considering and evaluating alternatives for the reconstruction of the regional freeway system and, in so doing, in determining those elements to be included in a preliminary recommended plan to be set out for public review and comment. The process consisted of the following sequential steps:

1. Consideration of a freeway system reconstruction alternative that would address the identified design and design-related safety deficiencies. This alternative, which would not provide any additional traffic lanes, was compared against an alternative that would simply replace in-kind the existing freeway system. Following a presentation of the construction costs, right-of-way acquisition needs, traffic congestion impacts, traffic safety considerations, and air pollutant emissions and motor fuel consumption considerations associated with this basic alternative, the Advisory Committee gave formal consideration to this alternative taking into account both a Commission staff recommendation and a recommendation of the Technical Subcommittee.

2. Following a determination as to the extent to which the Advisory Committee supported addressing design and design-related safety deficiencies in the freeway reconstruction process, the Committee turned its attention to whether or not the reconstruction process should also provide additional traffic lanes along those freeway segments where congestion problems have developed and are expected to become more severe in future years. In considering this matter, the Advisory Committee first took into account the incremental construction cost, right-of-way impacts, congestion impacts, and other factors associated with the provision of additional traffic lanes along about 127 miles of existing freeways. The Advisory Committee was then given an opportunity to propose alternatives that would reduce the total number of miles of widened freeways. The results of the Advisory Committee's deliberations in this respect, including a Commission staff recommendation and a recommendation of the Technical Subcommittee, are set forth in sequential fashion below.

Table 25

PROJECTED CHANGE IN YEAR 2020 AVERAGE WEEKDAY TRAFFIC VOLUMES ATTENDANT TO POSSIBLE NEW FREEWAY CONNECTING IH 43 AND USH 45 IN NORTHERN MILWAUKEE COUNTY/SOUTHERN OZAUKEE COUNTY

Existing Freeways	Amount of Change in Year 2020 Average Weekday Traffic	Percent of Total Year 2020 Average Weekday Traffic
IH 94—Marquette to Zoo Interchange	-800 to –2,000	0.5 to 1 percent
IH 94—Marquette to Mitchell Interchange	-100 to –1,500	less than 1 percent
IH 894—Mitchell to Hale Interchange	-500 to –2,500	0.5 to 1.5 percent
IH 894—Hale to Zoo Interchange	+500 to +2,000	0.5 to 1 percent
USH 45—Zoo to Capitol Drive	+2,000 to +4,000	1 to 2.5 percent
IH 43—Marquette to Capitol Drive		
Pioneer Road and County Line Road Freeways	-500 to –1,500	0.5 to 1 percent
Good Hope Road Freeway	+2,000 to +5,000	1 to 3 percent

Source: SEWRPC.

3. The Advisory Committee's determinations as to the substantive content of a preliminary recommended regional freeway system reconstruction plan were then integrated and summarized in a preliminary plan description. That description is set forth in the following Chapter VII of this report entitled, "Recommended Freeway System Plan and Program."

Freeway System Reconstruction Alternative with Design and Design-Related Safety Improvements

The conceptual design of this reconstruction alternative was presented in a previous section of this chapter. This alternative proposes design and design-related safety improvements with respect to freeway-to-freeway system interchanges, freeway system service interchanges, and mainline freeway segments. Figures 17 through 39 outlined these proposed improvements. Freeway-to-freeway system interchanges would be reconfigured to relocate left hand freeway-to-freeway on-and off-ramps to the right hand side of the freeway, to minimize lane drops and provide route continuity, to improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds, and to provide grade-separated or collector-distributor roadways to connect service interchanges located too close to freeway-to-freeway system interchanges. Freeway service interchange improvements would include ramp terminal spacing and tapers to improve traffic operations and safety, and the separation of freeway on-and off- ramps from frontage roads in Kenosha and Racine Counties. Freeway mainline segment design and design-related safety improvements would include improved horizontal and vertical curvature, grades, and vertical clearance to meet standards, full inside and outside shoulders, and auxiliary lanes at selected locations to improve traffic operations and safety between closely spaced service interchanges. This freeway system reconstruction alternative does not include any widening of the freeway system to provide for additional traffic lanes.

Construction Costs

The estimated cost to reconstruct the regional freeway system under an alternative with design and design-related safety improvements is approximately $5.5 billion, about $2.1 billion or 64 percent higher than the approximately $3.4 billion under a replace-in-kind freeway reconstruction alternative. Most of the difference in cost, about $1.1 billion of the $2.1 billion difference, is related to the reconstruction of freeway-to-freeway system interchanges, particularly the Marquette Interchange, which alone represents about $600 million, or 30 percent of the increase in cost. The improvements to the Marquette Interchange included in this freeway reconstruction alternative are being considered currently by the Wisconsin Department of Transportation in preliminary engineering and environmental assessment. The design and design-related safety improvements of IH-94 in Kenosha and Racine Counties included in this freeway reconstruction alternative have already been considered in preliminary engineering and environmental assessment and represent about an additional $200 million, or 10 percent of the increase in cost. Also, the design and design-related safety improvements to the Zoo Interchange incorporated in this freeway reconstruction alternative were addressed in the East-West Corridor study and are conceptually identical to those proposed for the Marquette Interchange. The design and design-related safety improvements for

the Zoo Interchange represent about an additional $270 million, or 13 percent of the increase in freeway system reconstruction cost. Thus, although the estimated cost of reconstructing the freeway system with design and design-related safety improvements to better meet modern freeway design standards and address design-related freeway traffic safety problems represents an additional construction cost of $2.1 billion, over 50 percent of that incremental cost is attendant to segments of the freeway system which have already received preliminary engineering or other detailed study, and the attendant design and design-related improvements have been endorsed, or may be expected to be endorsed. The construction cost estimate includes all costs attendant to reconstruction, including construction costs and costs of intelligent transportation system infrastructure, utilities, right-of-way acquisition and relocation, traffic mitigation, contingencies, construction management, and design engineering. The estimated construction cost of reconstructing the freeway system with design and design-related safety improvements is presented in Table 26 and Figure 40.

The estimated construction cost per mile to reconstruct the regional freeway system under an alternative with design and design-related safety improvements is shown on Map 59.

Right-of-Way Acquisition Needs

The estimated right-of-way acquisition needs attendant to the reconstruction of the Southeastern Wisconsin freeway system with design and design-related safety improvements are presented in Table 27, and include the number of acres of land required and number of relocations required by type of use. Maps 60 through 66 display the estimated location of right-of-way acquisition needs for this freeway system reconstruction alternative. The estimated right-of-way impacts attendant to this reconstruction alternative include the need for acquisition of approximately 577 acres of land, and acquisition and relocation of 166 residences, 23 commercial/industrial buildings, and two governmental/institutional buildings. The estimated right-of-way acquisition for freeway reconstruction includes not only the right-of-way acquisition that may be necessary to reconstruct the freeway system, including any modernization, but also the lands that may be required for implementing stormwater management measures and relocating any electric power transmission towers.

The right-of-way acquisition needs attendant to rebuilding the freeway system with design and design-related safety improvements may be considered substantial. However, they represent a relatively modest 5 percent expansion of total freeway system right-of-way, and amount to an additional 0.03 percent of the Region to be dedicated for freeway purposes over the next 50 to 75 years. In addition, over 50 percent of the necessary land for right-of-way and necessary relocation of commercial/industrial buildings have already been approved, or are approaching approval through preliminary engineering—IH 94 in Kenosha and Racine Counties and the Marquette Interchange in Milwaukee County.

Some portions of the additional right-of-way required to reconstruct the regional freeway system with design and design-related safety improvements are designated as primary environmental corridors and wetlands (see Table 28). Reconstruction of the regional freeway system under an alternative with design and design-related safety improvements would require right-of-way expansion into 68 acres of primary environmental corridors, including 29 acres of wetlands, and another nine acres of wetlands located outside the primary environmental corridors. The required land would represent 0.02 percent of the Region's 297,200 acres of primary environmental corridors and 0.01 percent of the Region's 273,100 acres of wetlands. Over 65 percent of the right-of-way expansion into the Region's primary environmental corridors and wetlands would occur along IH 94 in Kenosha and Racine Counties, where the proposed design and design-related safety improvements and the attendant additional right-of-way have already been approved through preliminary engineering and environmental assessment.

In addition, with respect to the existing wetlands which would need to become part of the freeway right-of-way, not all of these wetlands would necessarily be "lost," but they may simply now be located within the expanded freeway right-of-way. Additionally, any wetland loss may be expected to be mitigated through standard State processes.

Table 26

ESTIMATED COST TO RECONSTRUCT THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS

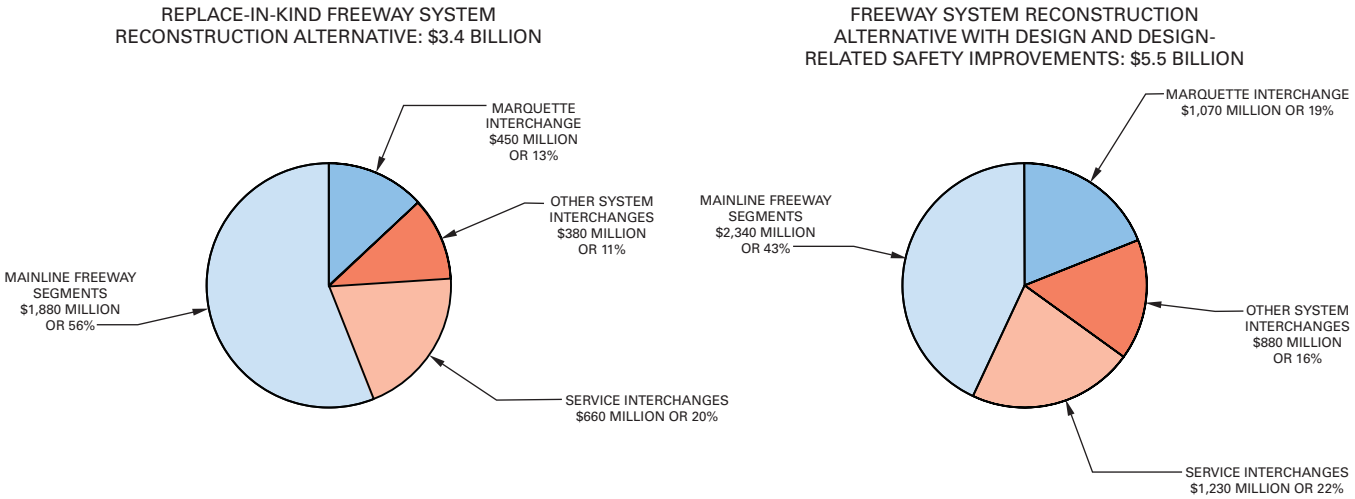
Freeway Segment				Estimated Cost of Freeway Reconstruction (in millions)[a]	
Type	Number	Description	Length (miles)	Replace-in-Kind Alternative	Alternative With Design and Design-Related Safety Improvements
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/ Racine County Line	24.0	$ 261	$ 467
	2	IH 94 from Milwaukee/Racine County Line to Mitchell Interchange	6.5	99	131
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	73	108
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	70	106
	5	USH 45 from Zoo Interchange to North Interchange	8.3	189	273
	6	USH 41/45 from North Interchange to USH 41/45	10.4	105	145
	7	USH 41 from USH 41/45 Interchange to Washington/Dodge County Line	22.2	72	101
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	80	98
	9	USH 12 from Illinois State Line to STH 67	19.2	105	133
	10	IH 43 from Walworth/Rock Co. Line to STH 83	29.5	169	196
	11	IH 43 from STH 83 to Hale Interchange	17.2	129	175
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	198	270
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	123	156
	14	IH 43 from Silver Spring Drive to STH 60/ Ozaukee CTH Q	13.8	107	188
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	89	112
	16	IH 94 from Waukesha / Jefferson County Line to STH 16	15.7	116	161
	17	STH 16 from STH 67 to IH 94	14.4	96	122
	18	IH 94 from STH 16 to Zoo Interchange	9.9	158	247
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	46	118
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	44	44
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	65	70
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	21	27
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	124	125
	Subtotal	- -	249.7	$2,539	$3,573
System Interchanges	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	$ 126	$ 398
	51	IH 43/94/794 (Marquette Interchange)	6.3	446	1,067
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	74	129
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchange)	3.8	113	205
	57	IH 43 & USH 12	1.0	16	23
	59	IH 94/USH 41/STH 241 (Stadium Interchange)	1.3	54	122
	Subtotal	- -	20.0	$ 829	$1,944
	Total	- -	269.7	$3,368	$5,517

[a]*Costs are reported in year 2000 dollars. Costs include all construction costs, intelligent transportation system (ITS) infrastructure, utilities, right-of-way, traffic mitigation, contingencies, construction management, and design engineering.*

Source: HNTB and SEWRPC.

Figure 40

COMPARISON OF ESTIMATED CONSTRUCTION COSTS OF REGIONAL FREEWAY SYSTEM RECONSTRUCTION IN-KIND AND WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Traffic Congestion

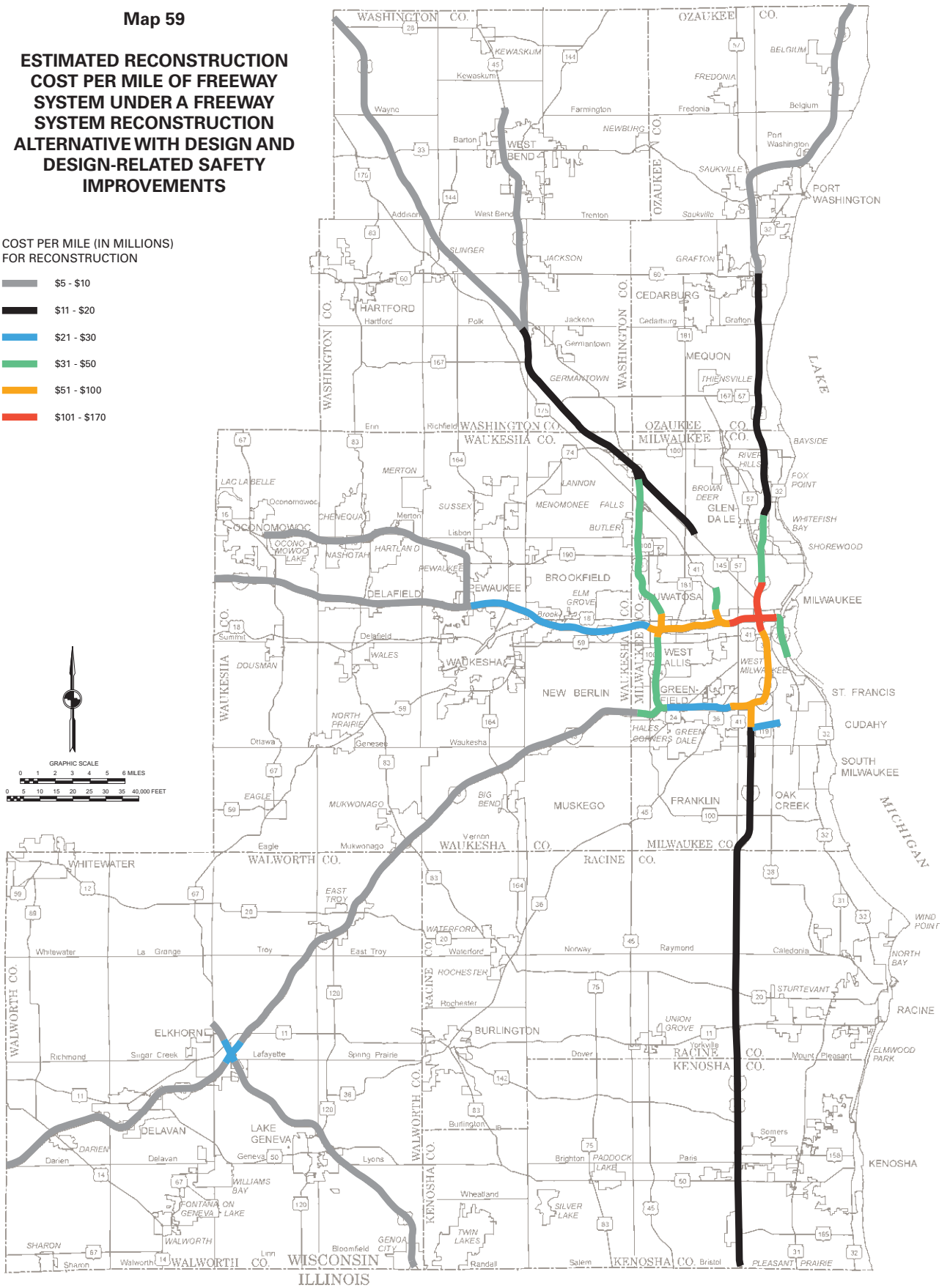
Existing and historic traffic freeway system congestion levels were previously presented as part of this study in Chapter V, "Freeway System Problems and Deficiencies: Physical Design, Traffic Safety, and Traffic Congestion." The estimated existing and forecast future year 2020 traffic congestion under a freeway system reconstruction alternative which includes design and design-related safety improvements are shown in Table 29 and on Figure 41 and Map 67. The forecast of future congestion levels assumed the full implementation of the regional land use and transportation plans, including development with "smart growth" practices at both regional and neighborhood levels; substantial expansion of public transit, including implementation of areawide light rail and commuter rail systems; planned improvements to the surface arterial street system, and transportation system management measures, including freeway system intelligent transportation systems measures.

A significant increase in freeway system traffic congestion by the year 2020 may be expected under a freeway system reconstruction alternative with only design and design-related safety improvements. Under such an alternative, the only expansion of freeway system traffic carrying capacity is located within major freeway-to-freeway system interchanges through the proposed minimization of lane drops and provision of route continuity, movement of on-and off-ramps from the left-hand to the right-hand side of the freeway, and provision of grade-separated or collector-distribution roadways to connect service interchanges located too close to freeway-to-freeway interchanges. Under this alternative of freeway system reconstruction with design and design-related safety improvements:

- The total mileage of freeways experiencing congestion may be expected to increase from 65 miles of freeway, or 24 percent of the freeway system, in the year 1999 to 122 miles, or 44 percent of the freeway system, in the year 2020.
- The total mileage of freeways experiencing extreme traffic congestion may be expected to increase from 27 miles, or ten percent of the freeway system, in the year 1999 to 42 miles, or 15 percent of the freeway system, in the year 2020.
- Some of the freeway segments that are currently the most congested would become much more congested by 2020 compared to 1999. As is presented in Table 30, the number of hours of traffic congestion on an average weekday for some freeway segments would increase from four to six hours

Map 59

ESTIMATED RECONSTRUCTION COST PER MILE OF FREEWAY SYSTEM UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Table 27

ESTIMATED RIGHT-OF-WAY REQUIREMENTS ATTENDANT WITH THE RECONSTRUCTION OF THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM[a]

Freeway Segment				Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements			
Type	Number	Description	Length (miles)	Acres	Residential Relocations[b]	Commercial/ Industrial Building Relocations	Governmental/ Institutional Building Relocations
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/Racine County Line	24.0	283.9	24	9	- -
	2	IH 94 from Milwaukee/Racine County Line to Mitchell Interchange	6.5	- -	- -	- -	- -
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	4.3	1	3	- -
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	3.4	3	- -	- -
	5	USH 45 from Zoo Interchange to North Interchange	8.3	12.4	6	- -	- -
	6	USH 41/45 from North Interchange to USH 41/45	10.4	14.6	- -	- -	- -
	7	USH 41 from USH 41/45 Interchange to Washington/ Dodge County Line	22.2	5.1	1	1	- -
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	- -	- -	- -	- -
	9	USH 12 from Illinois State Line to STH 67	19.2	- -	- -	- -	- -
	10	IH 43 from Walworth/Rock Co. Line to STH 83	29.5	- -	- -	- -	- -
	11	IH 43 from STH 83 to Hale Interchange	17.2	26.7	- -	- -	- -
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	3.6	43	3	- -
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	1.6	5	- -	- -
	14	IH 43 from Silver Spring Drive to STH 60/Ozaukee CTH Q	13.8	40.7	- -	- -	- -
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	- -	- -	- -	- -
	16	IH 94 from Waukesha / Jefferson County Line to STH 16	15.7	33.7	2	1	- -
	17	STH 16 from STH 67 to IH 94	14.4	0.4	- -	- -	- -
	18	IH 94 from STH 16 to Zoo Interchange	9.9	24.1	8	- -	- -
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	2.5	- -	- -	- -
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	- -	- -	- -	- -
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	- -	- -	- -	- -
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	- -	- -	- -	- -
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	- -	- -	- -	- -
	Subtotal	- -	249.7	456.9	93	17	- -
System Interchanges	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	52.9	19	1	2
	51	IH 43/94/794 (Marquette Interchange)	6.3	16.4	10	5	- -
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	12.5	- -	- -	- -
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchange)	3.8	26.0	44	- -	- -
	57	IH 43 & USH 12	1.0	5.9	- -	- -	- -
	59	IH 94/USH 41/STH 241 (Stadium Interchange)	1.3	6.9	- -	- -	- -
	Subtotal	- -	20.0	120.6	73	6	2
- -	Total	- -	269.7	577.5	166	23	2

[a]The estimated right-of-way acquisition for freeway reconstruction includes not only the right-of-way acquisition that may be necessary to reconstruct the freeway system, including any modernization, but also the lands that may be required for implementing stormwater management measures and relocating any electric power transmission towers.

[b]A residential relocation represents the acquisition a single-family dwelling, an individual apartment unit, or an individual condominium unit.

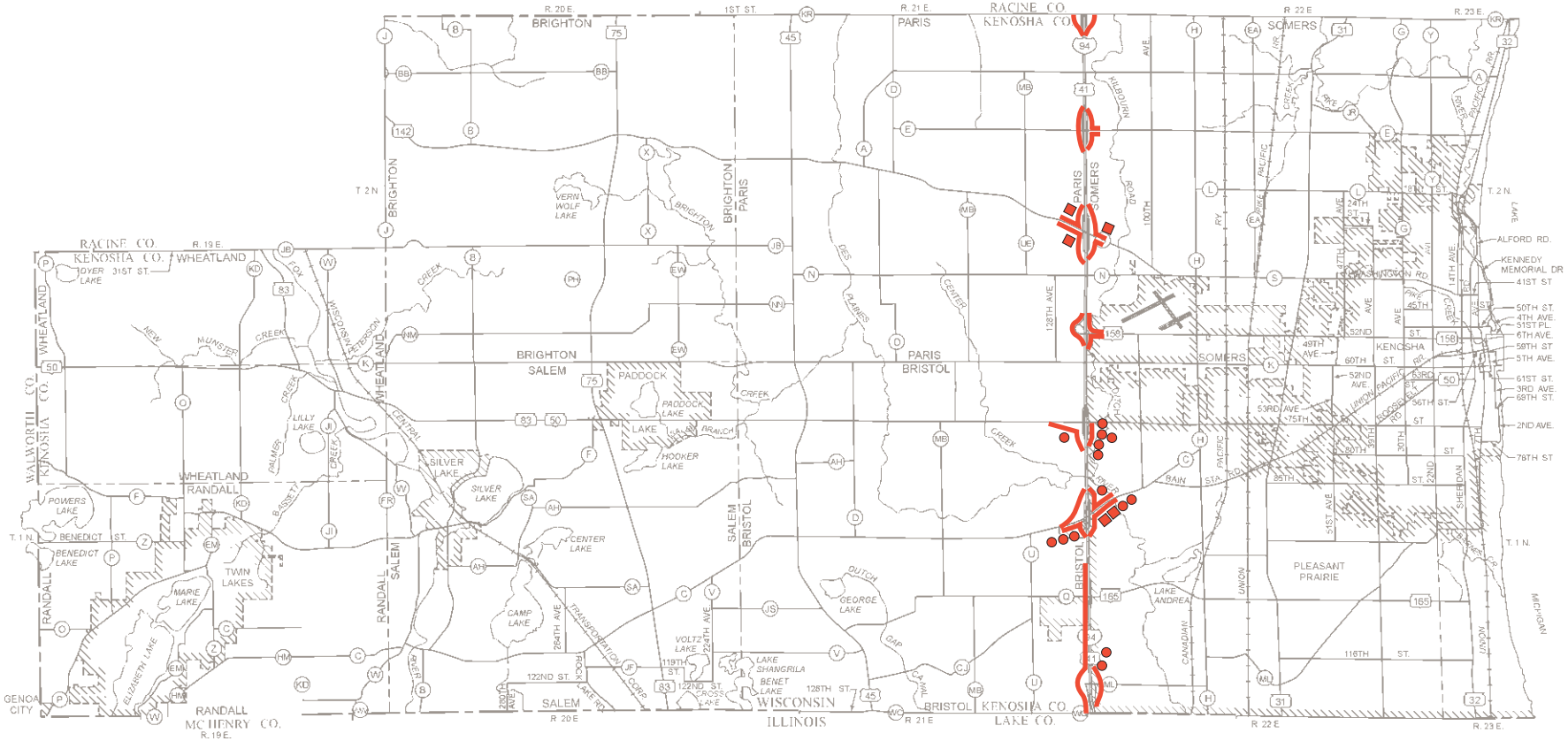
Source: HNTB .and SEWRPC.

of existing congestion to 11 to 14 hours of future congestion and from 11 hours of existing congestion to 16 hours of future congestion.

- Figure 42 displays the estimated freeway traffic congestion in miles-hours of congestion—the total hours of congestion experienced on each mile of the freeway system on an average weekday at moderate, severe, or extreme congestion levels for existing 1999 traffic volumes and for forecast year 2020 traffic volumes under a freeway reconstruction alternative with design and design-related

Map 60

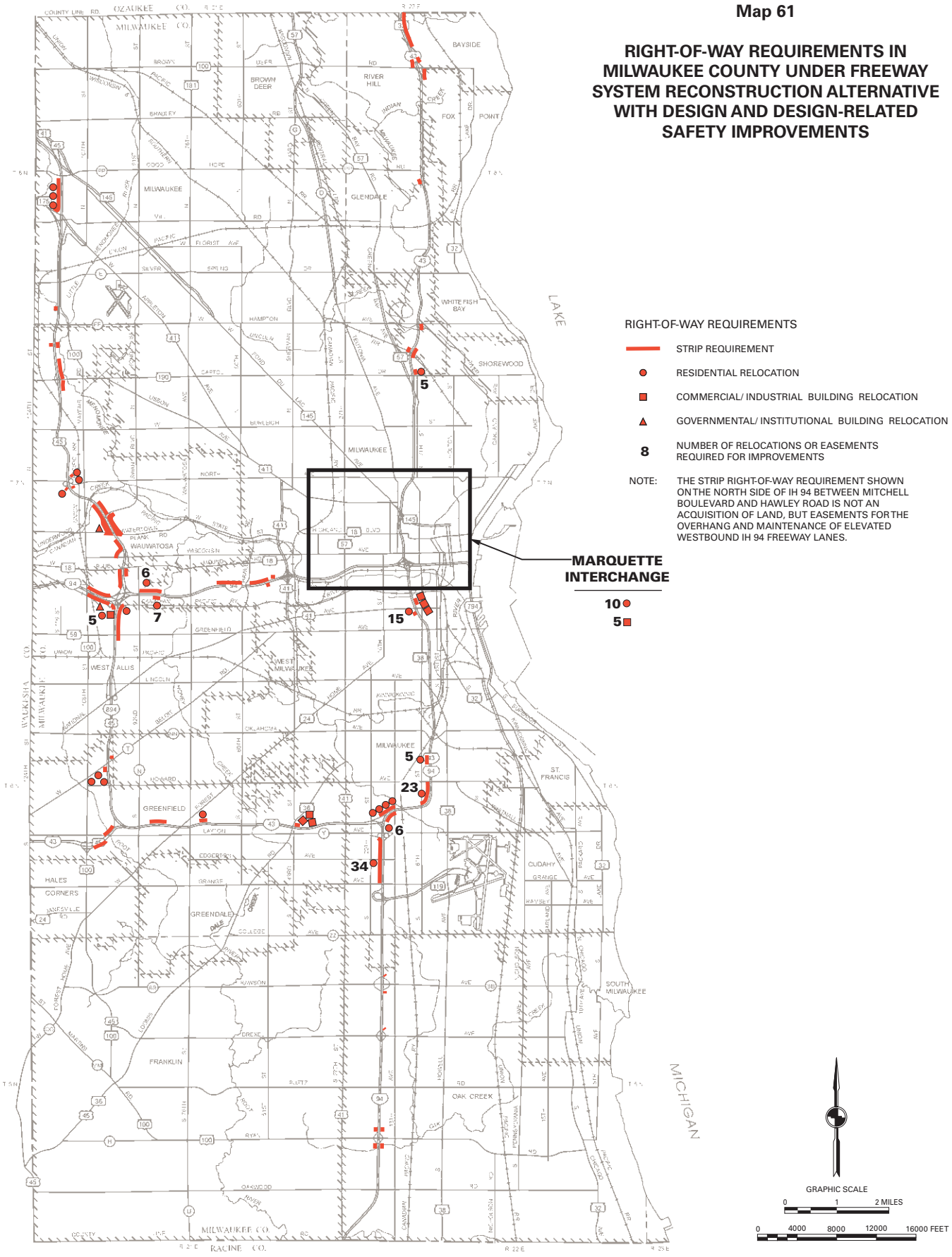
RIGHT-OF-WAY REQUIREMENTS IN KENOSHA COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Map 61

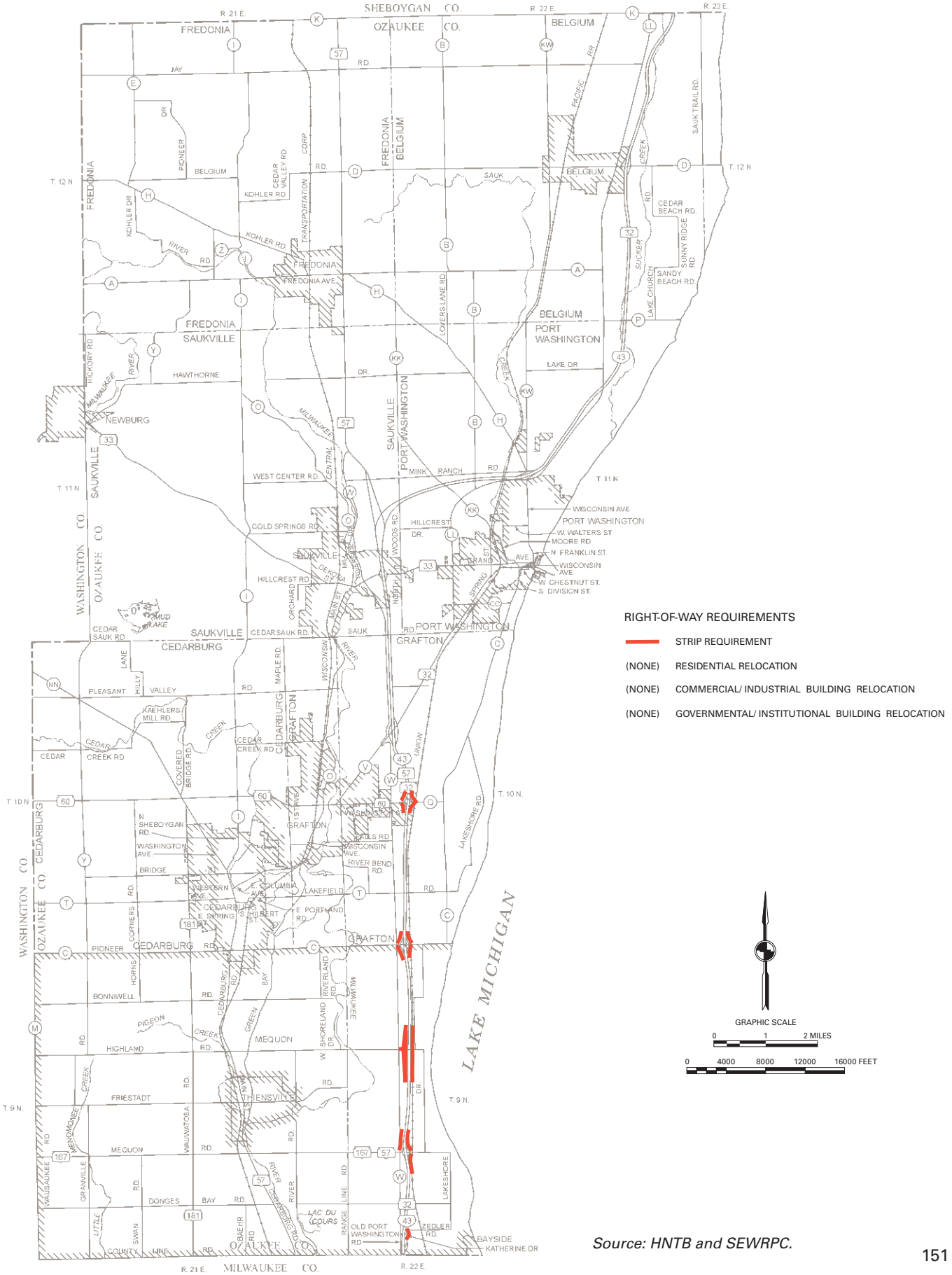
RIGHT-OF-WAY REQUIREMENTS IN MILWAUKEE COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Map 62

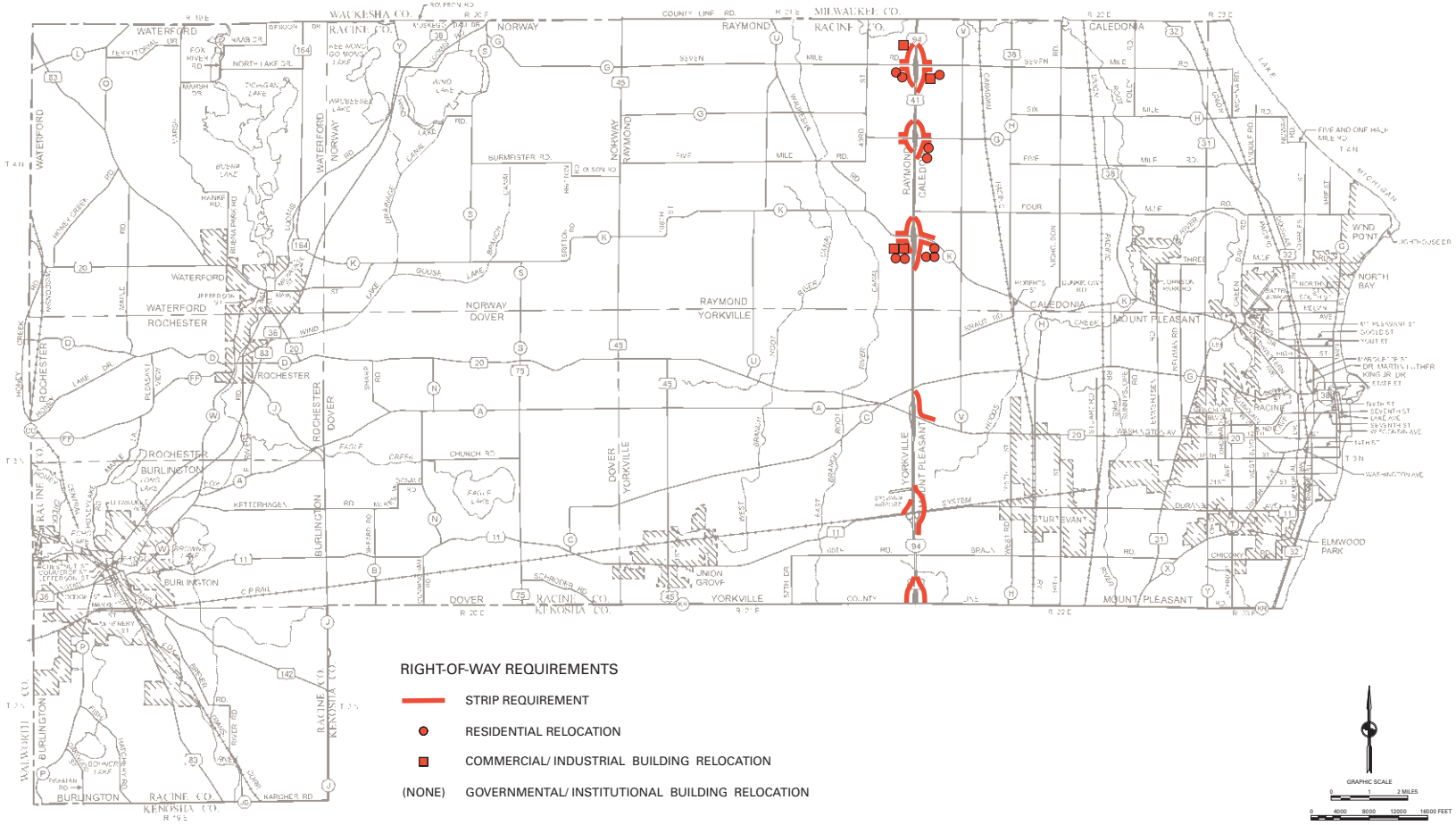
RIGHT-OF-WAY REQUIREMENTS IN OZAUKEE COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Map 63

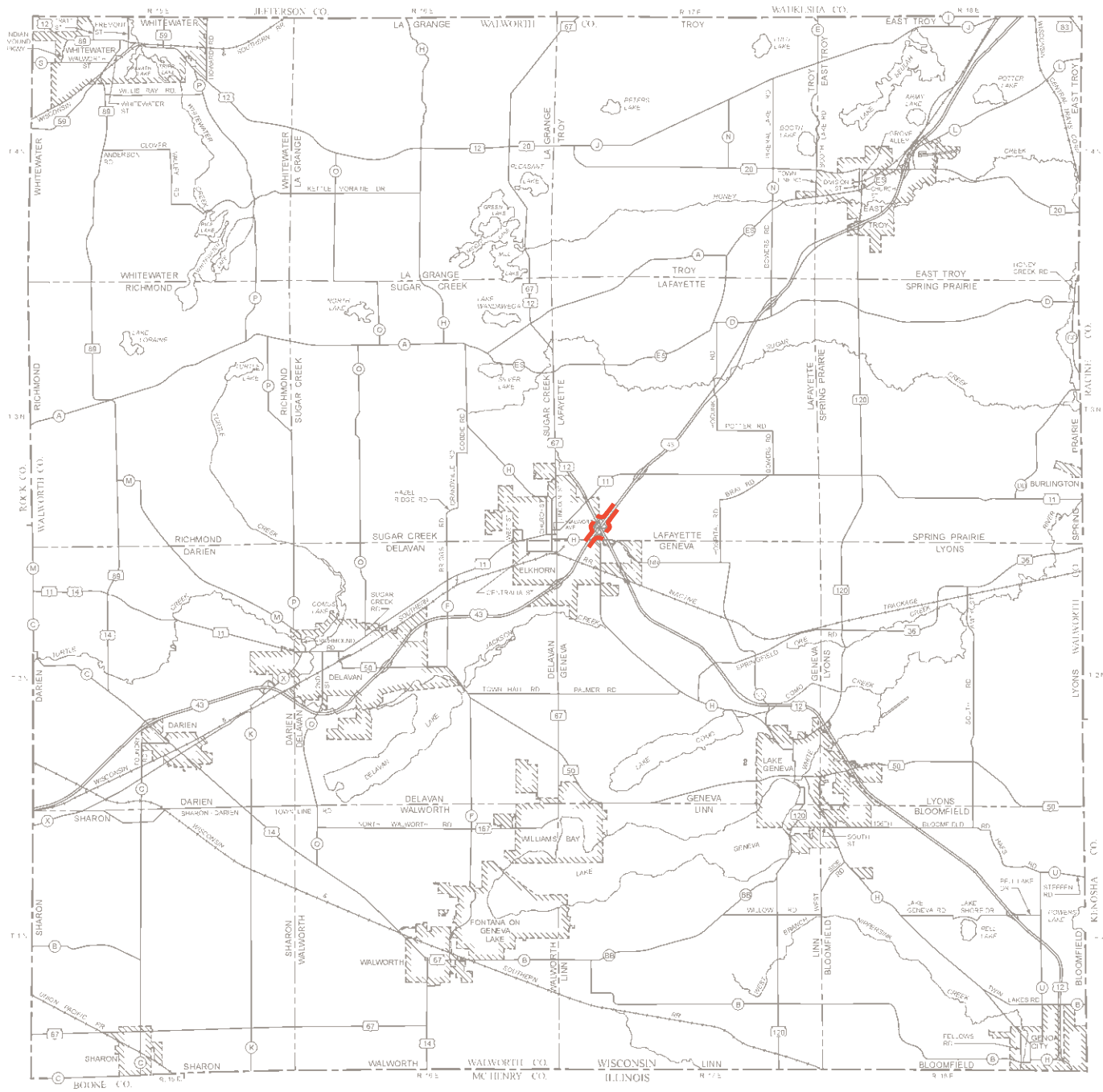
RIGHT-OF-WAY REQUIREMENTS IN RACINE COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Map 64

RIGHT-OF-WAY REQUIREMENTS IN WALWORTH COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



RIGHT-OF-WAY REQUIREMENTS

STRIP REQUIREMENT

(NONE) RESIDENTIAL RELOCATION

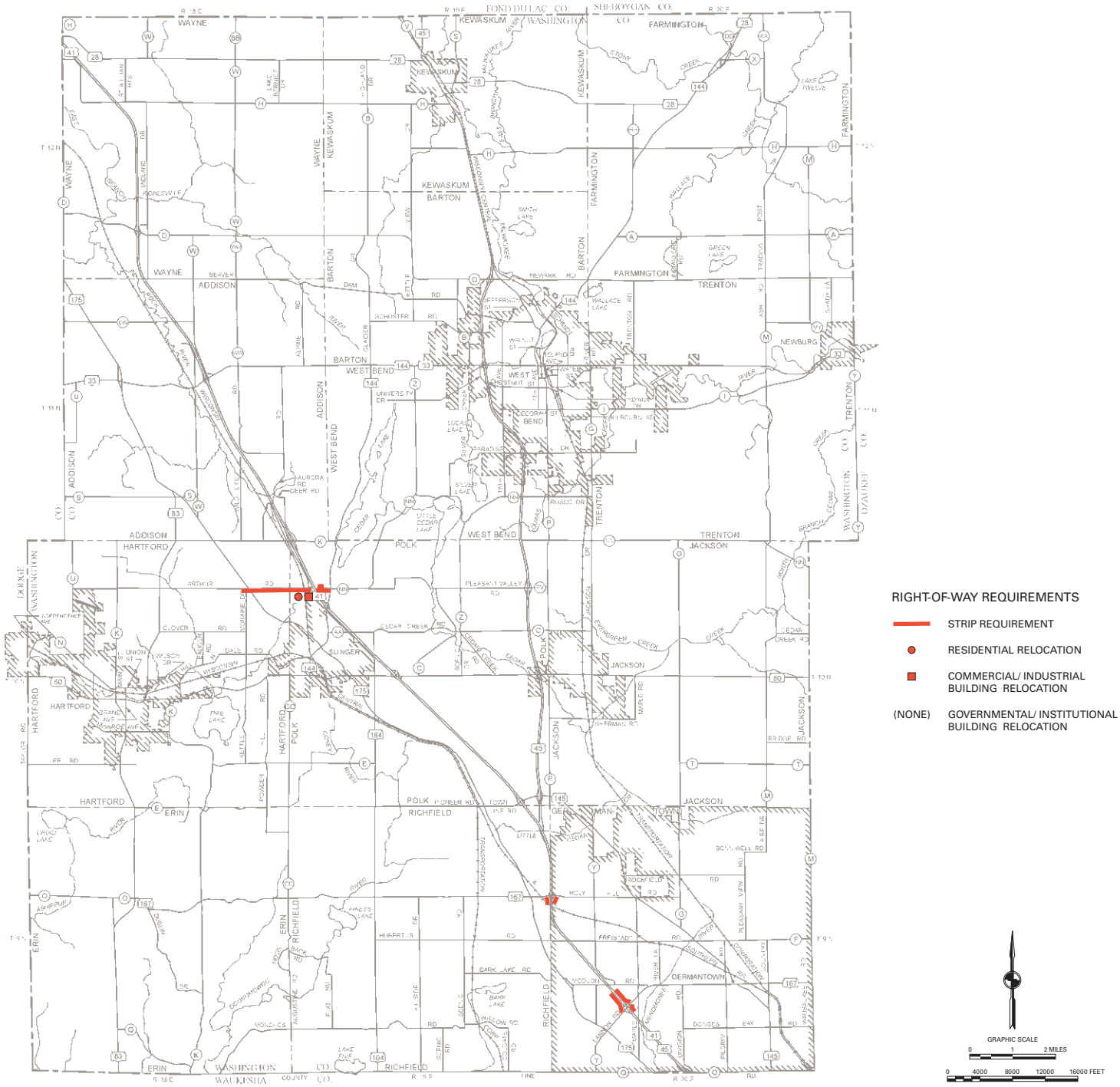
(NONE) COMMERCIAL/ INDUSTRIAL BUILDING RELOCATION

(NONE) GOVERNMENTAL/ INSTITUTIONAL BUILDING RELOCATION

Source: HNTB and SEWRPC.

Map 65

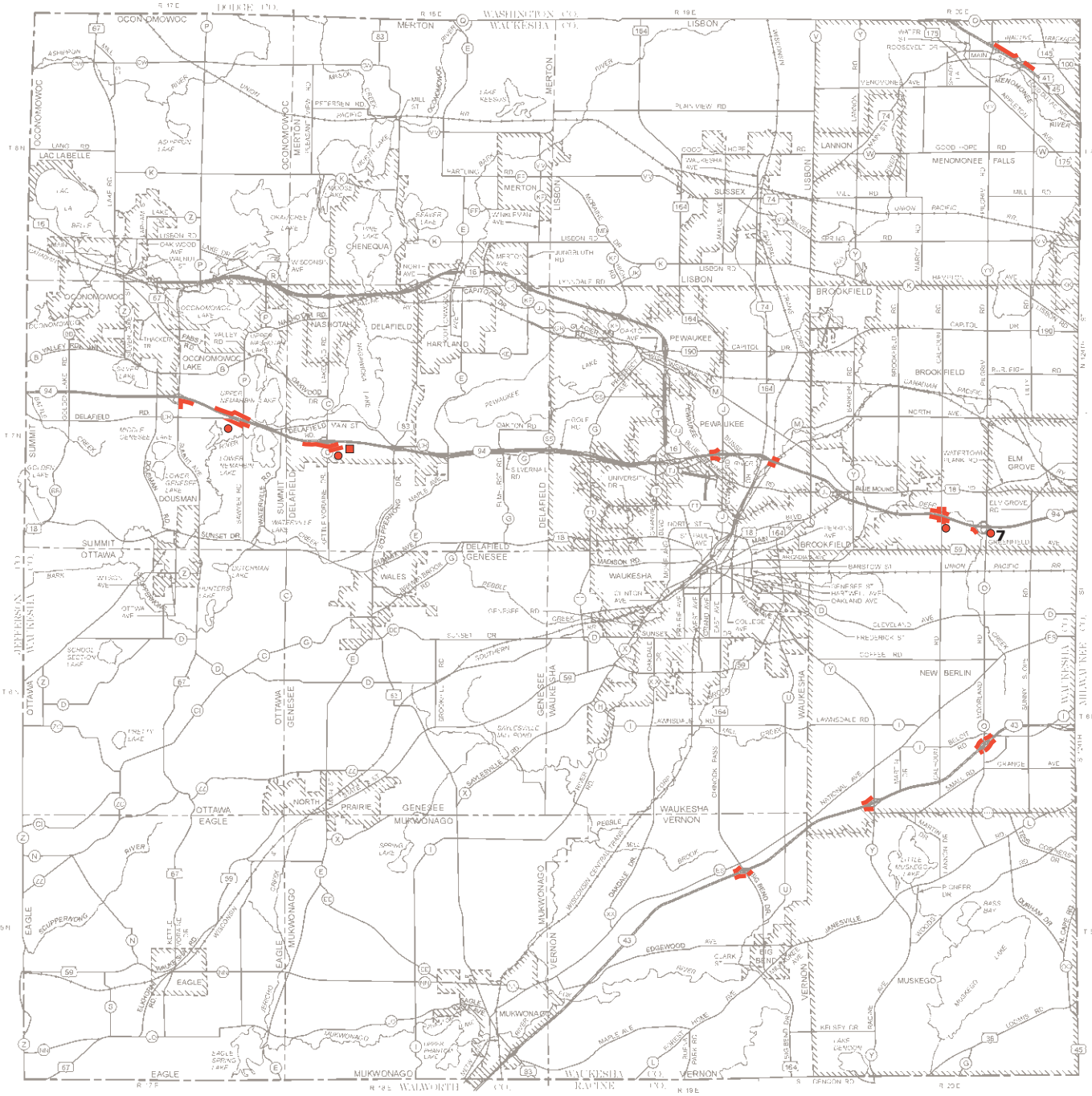
RIGHT-OF-WAY REQUIREMENTS IN WASHINGTON COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Source: HNTB and SEWRPC.

Map 66

RIGHT-OF-WAY REQUIREMENTS IN WAUKESHA COUNTY UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



RIGHT-OF-WAY REQUIREMENTS

- STRIP REQUIREMENT
- RESIDENTIAL RELOCATION
- COMMERCIAL/ INDUSTRIAL BUILDING RELOCATION
- (NONE) GOVERNMENTAL/ INSTITUTIONAL BUILDING RELOCATION

Source: HNTB and SEWRPC.

Table 28

ESTIMATED IMPACTS ON WETLANDS AND PRIMARY ENVIRONMENTAL CORRIDORS ASSOCIATED WITH THE RECONSTRUCTION OF THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS[a]

Freeway Segment				Acres Required under a Freeway Reconstruction Alternative With Design and Design-Related Safety Improvements	
Type	Number	Description	Length (miles)	Wetland	Primary Environmental Corridor
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/ Racine County Line	24.0	25.9	44.2
	2	IH 94 from Milwaukee/Racine County Line to Mitchell Interchange	6.5	- -	- -
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	- -	- -
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	- -	- -
	5	USH 45 from Zoo Interchange to North Interchange	8.3	- -	1.5
	6	USH 41/45 from North Interchange to USH 41/45	10.4	3.2	3.1
	7	USH 41 from USH 41/45 Interchange to Washington/ Dodge County Line	22.2	- -	- -
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	- -	- -
	9	USH 12 from Illinois State Line to STH 67	19.2	- -	- -
	10	IH 43 from Walworth/Rock Co. Line to STH 83	29.5	- -	- -
	11	IH 43 from STH 83 to Hale Interchange	17.2	0.2	1.0
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	- -	- -
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	- -	- -
	14	IH 43 from Silver Spring Drive to STH 60/Ozaukee CTH Q	13.8	- -	0.9
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	- -	- -
	16	IH 94 from Waukesha / Jefferson County Line to STH 16	15.7	2.6	2.0
	17	STH 16 from STH 67 to IH 94	14.4	- -	- -
	18	IH 94 from STH 16 to Zoo Interchange	9.9	0.3	2.8
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	- -	- -
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	- -	- -
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	- -	- -
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	- -	- -
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	- -	- -
	Subtotal	- -	249.7	32.2	55.5
System Interchanges	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	- -	0.7
	51	IH 43/94/794 (Marquette Interchange)	6.3	- -	- -
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	5.3	8.2
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchanges)	3.8	- -	- -
	57	IH 43 & USH 12	1.0	0.7	2.6
	59	IH 94/USH 41/STH 241 (Stadium Interchange)	1.3	- -	0.5
	Subtotal	- -	20.0	6.0	12.0
- -	Total	- -	269.7	38.2	67.5

[a]*The estimated total existing area within Southeastern Wisconsin of wetlands is 273,100 acres and of primary environmental corridors is 297,200 acres.*

Source: HNTB and SEWRPC.

Table 29

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION

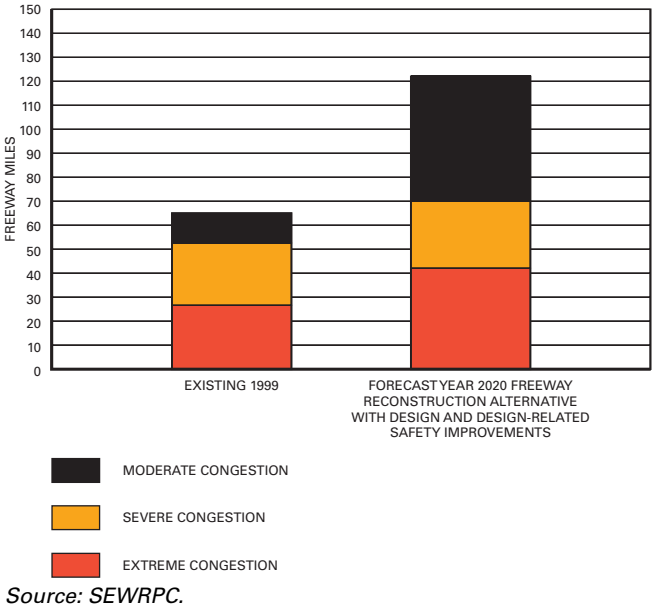
Year	Miles of Congested Freeway			Average Hours of Congestion on an Average Weekday			
	Highest Level of Hourly Congestion Experienced	Miles	Percent of Freeway System	Extreme Congestion (hours)	Severe Congestion (hours)	Moderate Congestion (hours)	Total Congestion (hours)
Forecast Year 2020 Freeway System Reconstruction Alternative with Design and Design-Related Safety Improvements	Extreme	41.9	15.1	1.9	4.0	5.2	11.1
	Severe	31.5	11.3	- -	1.2	2.3	3.5
	Moderate	49.1	17.7	- -	- -	2.1	2.1
	Total	122.5	44.1	- -	- -	- -	- -
Forecast Year 2020 Replace-in-Kind Freeway System Reconstruction Alternative	Extreme	48.4	17.4	2.0	4.1	5.4	11.5
	Severe	28.4	10.2	- -	1.3	2.2	3.5
	Moderate	45.6	16.4	- -	- -	2.1	2.1
	Total	122.4	44.0	- -	- -	- -	- -
Existing Year 1999	Extreme	26.6	9.7	1.3	3.2	4.3	8.8
	Severe	26.1	9.6	- -	1.4	2.4	3.8
	Moderate	12.0	4.4	- -	- -	1.8	1.8
	Total	64.7	23.7	- -	- -	- -	- -

Source: SEWRPC.

safety improvements only. As may be seen in Figure 42, the mile-hours of freeway traffic congestion estimated in the forecast year 2020 under an alternative with design and design-related safety improvements only would be about twice the mile-hours of freeway traffic congestion estimated under existing 1999 conditions.

Figure 41

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION



Source: SEWRPC.

Traffic Safety

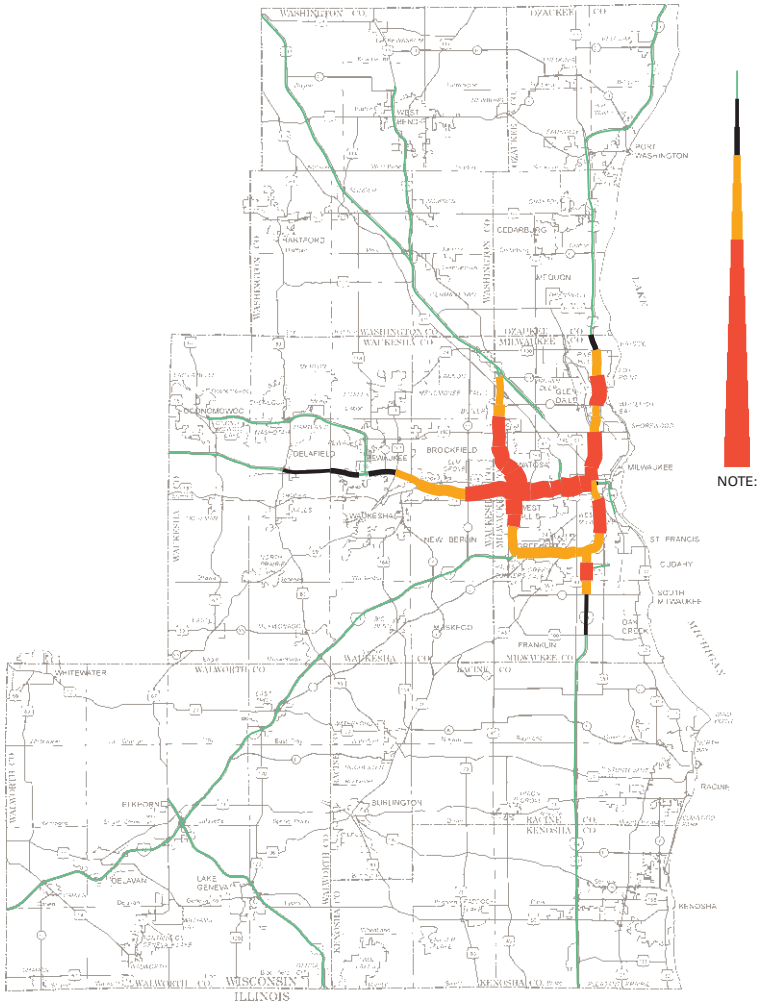
Significant improvement in freeway traffic safety may be expected under a freeway system reconstruction alternative which includes design and design-related safety improvements. In particular, the improvement of freeway-to-freeway system interchanges with minimization of lane drops and provision of route continuity, movement of on- and off-ramps from the left- to right-hand side of the freeway, and addressing closely spaced service interchanges with grade-separated or collector-distributor roadways should reduce within the freeway-to-freeway interchanges side-swipe and rear-end accidents. Similarly, improvements in freeway traffic safety may be expected from the improvements proposed for service interchanges including improved ramp terminal spacing and tapers and separation of freeway ramps from Kenosha and Racine County frontage roads, and from the improvements proposed for the mainline freeway including provision of full inside and outside shoulders, provision of improved

Map 67

TRAFFIC CONGESTION ON FREEWAYS WITHIN THE SOUTHEASTERN WISCONSIN REGION: EXISTING 1999 AND FORECAST FUTURE YEAR 2020 UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS

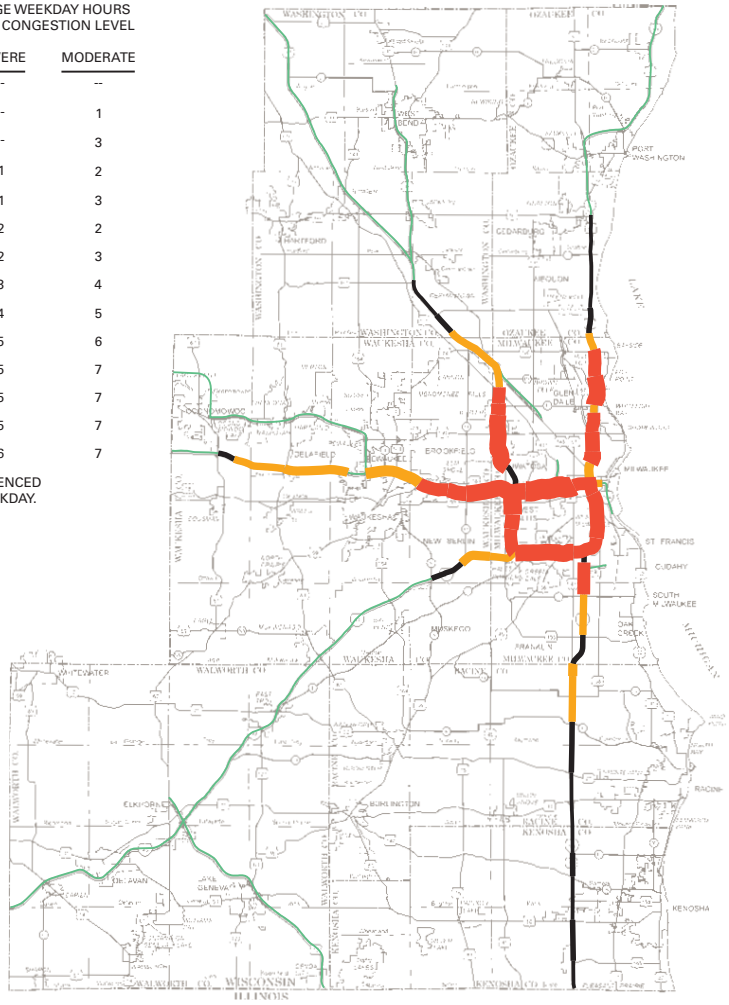
EXISTING 1999

FORECAST YEAR 2020 FREEWAY RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION EXPERIENCED	ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL		
		EXTREME	SEVERE	MODERATE
--	NO CONGESTION	--	--	--
MODERATE	1	--	--	1
MODERATE	3	--	--	3
SEVERE	3	--	1	2
SEVERE	4	--	1	3
SEVERE	4	--	2	2
EXTREME	6	1	2	3
EXTREME	8	1	3	4
EXTREME	11	2	4	5
EXTREME	13	2	5	6
EXTREME	14	2	5	7
EXTREME	15	3	5	7
EXTREME	16	4	5	7
EXTREME	17	4	6	7

NOTE: COLOR REPRESENTS MOST SEVERE LEVEL OF CONGESTION EXPERIENCED FOR AT LEAST ONE HOUR IN EACH DIRECTION ON AN AVERAGE WEEKDAY.



Source: SEWRPC.

Table 30

ESTIMATED LEVELS OF CONGESTION ON SELECTED FREEWAY SEGMENTS: EXISTING 1999 AND FORECAST 2020 UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS

Segment	Year	Weekday Hours of Congestion In Each Direction				Direction	Estimated Level of Congestion by Hour of Weekday																		
		Total	Extreme	Severe	Moderate		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
IH 43/94 from Mitchell Interchange to Marquette Interchange	1999 Existing	4	- -	2	2	Northbound																					
						Southbound																					
	2020 Design and Design-Related Safety Improvements	11	2	4	5	Northbound																					
						Southbound																					
USH 45 from North Interchange to Zoo Interchange	1999 Existing	6	1	2	3	Southbound																					
						Northbound																					
	2020 Design and Design-Related Safety Improvements	14	2	5	7	Southbound																					
						Northbound																					
IH 94 from Zoo Interchange to Marquette Interchange	1999 Existing	11	2	4	5	Eastbound																					
						Westbound																					
	2020 Design and Design-Related Safety Improvements	16	4	5	7	Eastbound																					
						Westbound																					

Level of Congestion

Extreme Severe Moderate

Source: SEWRPC.

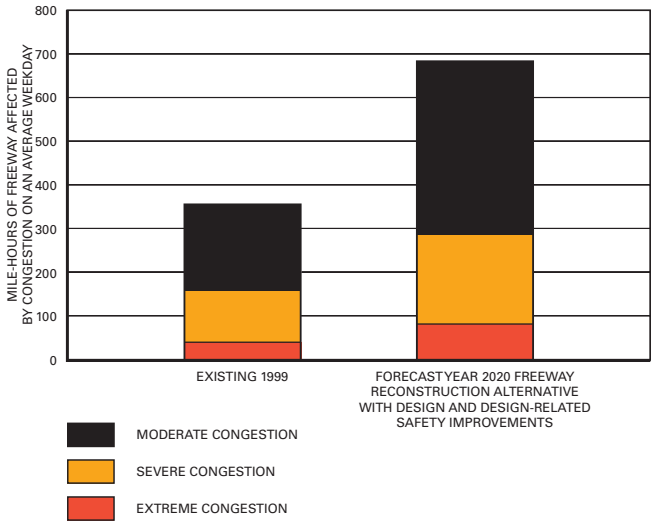
decision and stopping sight distance, and provision of auxiliary lanes to address closely spaced service interchanges.

Air Pollutant Emissions and Motor Fuel Consumption

The forecast levels of air pollutant emissions and motor fuel consumption in the year 2020 for the seven county Southeastern Wisconsin Region under a freeway system reconstruction alternative with design and design-related safety improvements are shown in Table 31. Volatile organic compounds (VOC) and nitrogen oxides (NO_X) are the principal precursors to ozone, and carbon dioxide is a green-house gas. Figure 43 shows historic, current, and forecast future VOC and NO_X ozone-related transportation system emissions for the six county severe ozone nonattainment area within Southeastern Wisconsin. Emissions from the transportation system have substantially declined, and are projected to continue to decline, even with increasing traffic volume, principally due to new motor vehicle standards for air pollutant emissions. In addition, the forecast levels of VOC and NO_X emissions under a freeway reconstruction alternative with design and design-related safety improvements are within the State

Figure 42

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION: MILE-HOURS OF CONGESTION[a]



[a] *The mile-hours of congestion shown represent the total hours of congestion experienced on each mile of the freeway system on an average weekday at moderate, severe, or extreme congestion levels.*

Source: SEWRPC.

Table 31

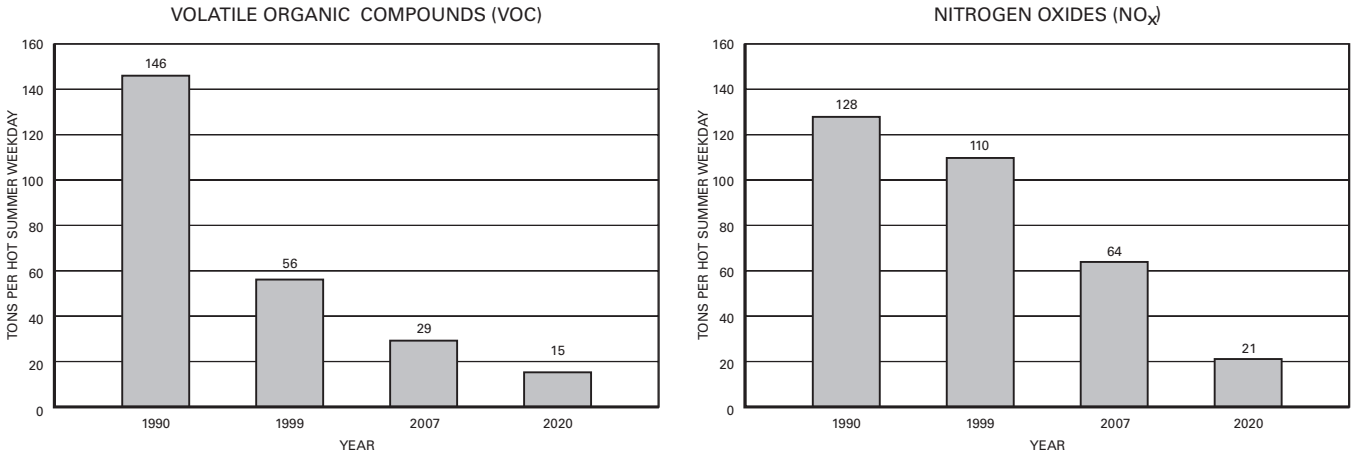
FORECAST FUTURE SOUTHEASTERN WISCONSIN REGION TRANSPORTATION SYSTEM YEAR 2020 AIR POLLUTANT EMISSIONS AND FUEL CONSUMPTION UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS

Year 2020 Forecast Air Pollutant Emissions (tons per hot summer weekday)				
Volatile Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Carbon Dioxide	Year 2020 Forecast Fuel Consumption (gallons per average weekday)
20.5	25.8	217.3	19,326.6	1,933,000

Source: SEWRPC.

Figure 43

SOUTHEASTERN WISCONSIN SIX-COUNTY SEVERE OZONE NONATTAINMENT AREA TRANSPORTATION SYSTEM OZONE-RELATED AIR POLLUTANT EMISSIONS



Source: SEWRPC.

transportation emission budgets, which together with other forecast emissions, provide for planned attainment of ozone air quality standards.

Recommendations with Respect to Inclusion of Design and Design-Related Safety Improvements in a Preliminary Recommended Plan for Southeastern Wisconsin Freeway System Reconstruction

The Commission staff recommends to the Technical Subcommittee and the Advisory Committee that the preliminary recommended plan for freeway system reconstruction within Southeastern Wisconsin include the design and design-related safety improvements incorporated in the foregoing freeway reconstruction alternative. The design and design-related safety improvements will result in a freeway system which meets modern design standards, and in an attendant improvement in freeway traffic operations and safety. In addition, compared to an alternative of replacing the freeway system-in-kind, a reduction in freeway traffic congestion may be expected within the major freeway-to-freeway system interchanges. The recommended freeway reconstruction alternative represents a significant increase in construction costs. However, two major freeway segments—the Marquette Interchange in Milwaukee County and IH 94 in Kenosha and Racine Counties—represent nearly 40 percent of this cost increment, and preliminary engineering for these projects has resulted in the endorsement of design and design-related safety improvements. Additional right-of-way is also required for the design and design-related safety improvements. However, the necessary right-of-way represents a relatively modest expansion of freeway right-of-way. Again over 50 percent of the right-of-way impacts are associated with projects where preliminary

engineering and environmental studies have been concluded or are nearing conclusion, and where consensus on making design and safety improvements has been reached.

The inclusion of these design and design-related safety improvements in the regional plan for freeway system reconstruction would mean that such improvements would be considered in detail during segment-by-segment preliminary engineering and environmental assessment studies to be carried out by the Wisconsin Department of Transportation. It may be expected that many options will be evaluated during the preliminary engineering phase of the work. Ultimately, that preliminary engineering and attendant environmental studies will determine the specific configuration of the design and design-related safety improvements to be incorporated in the reconstruction of the freeway system.

Technical Subcommittee Action

The Technical Subcommittee acted to recommend to the Advisory Committee that the preliminary recommended plan for freeway system reconstruction within Southeastern Wisconsin include systemwide design and design-related safety improvements, so that the freeway system upon its reconstruction would meet modern standards, with attendant improvement in freeway traffic safety and operations. Such improvements would be considered in detail during segment-by-segment preliminary engineering and environmental assessment studies to be carried out by the Wisconsin Department of Transportation. During those studies, options to address design and traffic safety problems would be developed and evaluated, including precise definition of costs and impacts. Ultimately, those studies will determine the specific configuration of the improvements to be incorporated in the reconstruction of the freeway system.

In taking action, the Technical Subcommittee reiterated that the freeway system design and design-related safety improvements recommended to be incorporated in the regional plan for freeway system reconstruction would consist of:

- The reconfiguration of freeway-to-freeway system interchanges to relocate left hand freeway-to freeway on- and off-ramps to the right hand side of the freeway, to minimize lane drops and provide route continuity, to improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds, and to provide grade-separated or collector-distributor roadways to connect service interchanges located too close to freeway-to-freeway system interchanges;

- The improvement of freeway service interchanges with surface arterial streets and highways including improvement of ramp terminal spacing and tapers to address traffic operations and safety, and the separation of freeway on- and off-ramps from frontage roads in Kenosha and Racine Counties; and

- The improvement of the freeway mainline, including the improvement of horizontal and vertical curvature, grades, and vertical clearance to meet design standards, full inside and outside shoulders, and auxiliary lanes at selected locations to improve traffic operations and safety between closely spaced service interchanges.

The Technical Subcommittee also took note that such preliminary engineering and environmental studies have already been completed for IH 94 in Kenosha and Racine Counties, and are nearing completion for the Marquette Interchange in Milwaukee County. These studies either have recommended, or may be expected to recommend, design and design-related safety improvements so that these freeway segments, when reconstructed, will meet modern design standards and provide for improved traffic safety.

Finally, the Technical Subcommittee noted that the design and design-related safety improvements incorporated in the preliminary engineering of these two major freeway segments—the Marquette Interchange in Milwaukee County and IH 94 in Kenosha and Racine Counties—represent nearly 40 percent of the total construction cost and about 50 percent of the possible right-of-way acquisition needs associated with the total systemwide

implementation of design and design-related improvements in the reconstruction of the regional freeway system within Southeastern Wisconsin.

Advisory Committee Action

The Advisory Committee acted to include the systemwide design and design-related safety improvements in the preliminary recommended plan for freeway system reconstruction within Southeastern Wisconsin, as was recommended by Commission staff and the Technical Subcommittee. The systemwide improvements include the reconfiguration of freeway system-to-system interchanges and enhancements to freeway service interchanges and the freeway mainline. Freeway system reconstruction with such improvements would result in a freeway system, which, upon reconstruction, would meet modern standards, with attendant improvement in freeway traffic safety and operations.

The improvements recommended to be included in the preliminary plan for freeway system reconstruction within Southeastern Wisconsin would be considered in detail during segment-by-segment preliminary engineering and environmental assessment studies to be carried out by the Wisconsin Department of Transportation. During those studies, options to address design and traffic safety problems would be developed and evaluated, including precise definition of costs and impacts. Ultimately, those studies will determine the specific configuration of the improvements to be incorporated in the reconstruction of the freeway system.

Freeway System Reconstruction Alternative with Design and Design-Related Safety Improvements and Additional Lanes

This alternative for the reconstruction of the regional freeway system includes the systemwide implementation of design and design-related safety improvements, and the expansion of the traffic-carrying capacity of the freeway system through the widening of the freeway system to carry additional lanes. As shown on Map 68, additional lanes are proposed under this alternative for approximately 127 miles, or 47 percent, of the regional freeway system, and include each segment of freeway experiencing existing and/or forecast future traffic congestion by the year 2020. The 127 miles of freeway proposed for widening under this alternative include 92 miles of existing six-lane freeway proposed for widening to eight lanes, 32 miles of existing four-lane freeway proposed for widening to six lanes, and three miles of existing four-lane freeway proposed for widening to eight lanes (IH 43 between Bender Road and Brown Deer Road).

Construction Costs

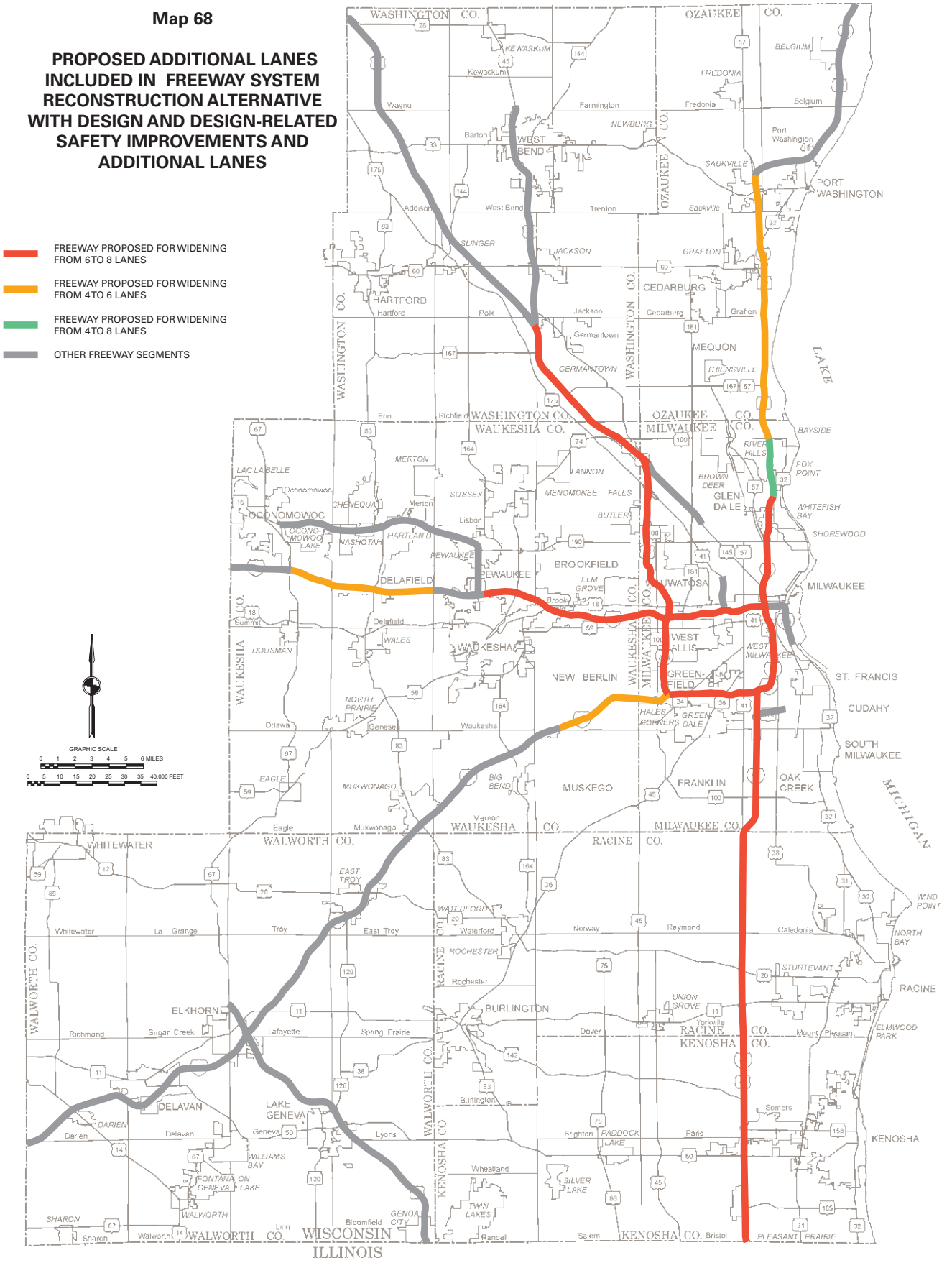
The cost estimate for the reconstruction of this regional freeway system under this alternative with design and design-related safety improvements and additional lanes is approximately $6.2 billion, or about $700 million, or 13 percent, higher than the cost estimate of $5.5 billion system under an alternative with design and design-related safety improvements only. Thus, the incremental cost for widening the segments of freeway as proposed is about $700 million. The construction cost estimate includes all costs attendant to reconstruction, including construction costs and costs of intelligent transportation system infrastructure, utilities, right-of-way acquisition and relocation, traffic mitigation, contingencies, construction management, and design engineering. The estimated cost of reconstructing the freeway system with design and design-related safety improvements and additional lanes is presented, and compared to cost estimates to reconstruct the regional freeway system under an alternative with design and design-related safety improvements only, in Table 32 and Figure 44. The construction cost includes costs associated with implementation of noise barriers and retaining walls at selected locations along the regional freeway system. Appendix B includes additional information regarding these features.

Annual Operations and Maintenance Costs

The annual operations and maintenance costs of the existing freeway system within the Southeastern Wisconsin Region are estimated to be $14 million. Included in this total are the costs of roadway pavement maintenance, winter maintenance, bridge maintenance, roadside maintenance, roadside facility and vegetation maintenance, traffic maintenance, and maintenance supervision. Approximately $9.2 million of the annual costs are related to the roadway and traffic maintenance, with the remaining approximately $4.8 million related to the maintenance of the roadside and facilities within the freeway system right-of-way. Those costs associated with roadway, winter, and traffic maintenance could be expected to increase under an alternative with additional lanes. Reconstruction

Map 68

PROPOSED ADDITIONAL LANES INCLUDED IN FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS AND ADDITIONAL LANES



Source: SEWRPC.

Table 32

ESTIMATED COST TO RECONSTRUCT THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM

Freeway Segment				Estimated Cost by Freeway Reconstruction Alternative (in millions)[a]		
Type	Number	Description	Length (miles)	Design and Design-Related Safety Improvements	Design and Design-Related Safety Improvements and Additional Lanes	Incremental Cost of Additional Lanes
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/ Racine County Line	24.0	$ 467	$ 548	$ 81
	2	IH 94 from Milwaukee/Racine County Line to Mitchell Interchange	6.5	131	159	28
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	108	128	20
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	106	132	26
	5	USH 45 from Zoo Interchange to North Interchange	8.3	273	333	60
	6	USH 41/45 from North Interchange to USH 41/45	10.4	145	198	53
	7	USH 41 from USH 41/45 Interchange to Washington/ Dodge County Line	22.2	101	101	- -
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	98	98	- -
	9	USH 12 from Illinois State Line to STH 67	19.2	133	133	- -
	10	IH 43 from Walworth/Rock Co. Line to STH 83	29.5	196	196	- -
	11	IH 43 from STH 83 to Hale Interchange	17.2	175	201	26
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	270	302	32
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	156	195	39
	14	IH 43 from Silver Spring Drive to STH 60 / Ozaukee CTH Q	13.8	188	267	79
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	112	113	1
	16	IH 94 from Waukesha/Jefferson County Line to STH 16	15.7	161	189	28
	17	STH 16 from STH 67 to IH 94	14.4	122	122	- -
	18	IH 94 from STH 16 to Zoo Interchange	9.9	247	305	58
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	118	134	16
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	44	44	- -
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	70	70	- -
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	27	27	- -
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	125	125	- -
	Subtotal		249.7	$3,573	$4,120	$547
System Interchanges	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	$ 398	$ 412	$ 14
	51	IH 43/94/794 (Marquette Interchange)	6.3	1,067	1,222	155
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	129	132	3
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchange)	3.8	205	208	3
	57	IH 43 & USH 12	1.0	23	23	- -
	59	IH 94/USH 41/STH 341 (Stadium Interchange)	1.3	122	129	7
	Subtotal		20.0	$1,944	$2,126	$182
	Total		269.7	$5,517	$6,246	$729

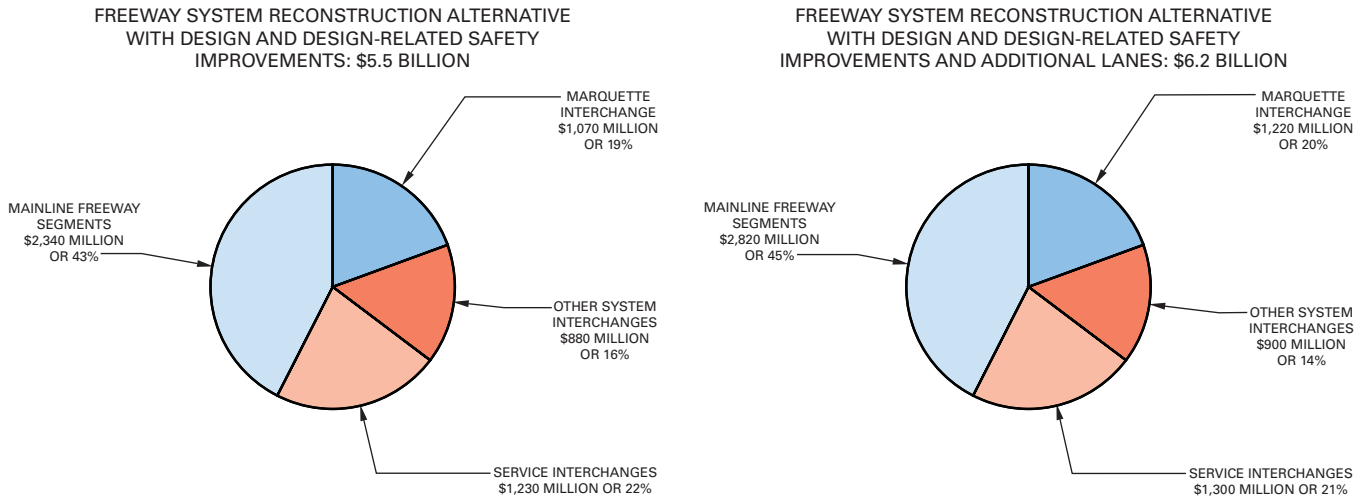
[a] *Costs are reported in year 2000 dollars. Costs include all construction costs, intelligent transportation system (ITS) infrastructure, utilities, right-of-way, traffic mitigation, contingencies, construction management, and design engineering.*

Source: HNTB and SEWRPC.

of the regional freeway system under an alternative with design and design-related safety improvements and additional lanes would result in a 20 percent increase in the number of freeway lane-miles. The expected annual freeway operations and maintenance costs within Southeastern Wisconsin would be approximately $15.8 million, an increase of about $1.8 million per year, or 13 percent, compared to current costs.

Figure 44

COMPARISON OF ESTIMATED CONSTRUCTION COSTS OF REGIONAL FREEWAY SYSTEM RECONSTRUCTION



Source: HNTB and SEWRPC.

Right-of-Way Acquisition Needs

The estimated incremental right-of-way acquisition needs attendant to the reconstruction of the Southeastern Wisconsin freeway system with additional lanes are presented in Table 33 and include the number of acres of land required and number of relocations required by type of use. Maps 69 through 71 display the estimated location of the incremental right-of-way acquisition needs for this freeway system reconstruction alternative. The estimated right-of-way acquisition for freeway reconstruction includes not only the right-of-way acquisition that may be necessary to reconstruct the freeway system, including any modernization and additional lanes, but also the lands that may be required for implementing stormwater management measures and relocating any electric power transmission towers.

The incremental right-of-way acquisition needs attendant to rebuilding the freeway system with additional lanes is an estimated 81 acres, 50 residences, eight commercial/ industrial buildings, and one governmental/institutional building. This may be compared to the right-of-way needs of rebuilding the freeway system with design and design-related safety improvements only of 577 acres of land, 166 residences, 23 commercial/industrial buildings, and two governmental/ institutional buildings. The additional right-of-way represents a relatively modest increase in right-of-way dedicated to freeway purposes in the Region, an increase of less than 1 percent of the total amount of land dedicated to freeway right-of-way and less than an additional 0.01 percent of the Region's total land area to be dedicated to freeway purposes.

About 53 miles or 41 percent of the 127 miles of freeway proposed for widening are located within Milwaukee County. With respect to the incremental right-of-way acquisition needs attendant to additional freeway lanes, 69 of the 81 acres, 46 of the 50 residences, and all of the eight commercial/industrial buildings and the one governmental/institutional building are located within Milwaukee County. This additional right-of-way required represents an increase of less than two percent in right-of-way dedicated for freeway purposes within Milwaukee County, and less than an additional 0.05 percent of Milwaukee County's total land area to be dedicated for freeway purposes. Most of the additional right-of-way requirements under this alternative with additional lanes are associated with a few segments of the freeway system, including the Marquette Interchange, IH 94 between the Zoo Interchange and the Stadium Interchange, and IH 43 between Silver Spring Drive and Brown Deer Road. The additional right-of-way requirements associated with these three segments of the freeway system, which represent 13 miles or 10 percent of the freeway system proposed for widening, represent over 60 percent of the additional land required, over 80 percent of the residential relocations, and all of the incremental commercial/ industrial and governmental/institutional building relocations.

Table 33

ESTIMATED RIGHT-OF-WAY REQUIREMENTS ASSOCIATED WITH THE RECONSTRUCTION OF THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM[a]

Freeway Segment				Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements				Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements and Additional Lanes				Incremental Right-of-Way Requirements of Additional Lanes			
Type	Number	Description	Length (Miles)	Acres	Residential Relocations[b]	Commercial/ Industrial Building Relocations	Governmental/ Institutional Building Relocations	Acres	Residential Relocations[b]	Commercial/ Industrial Building Relocations	Governmental/ Institutional Building Relocations	Acres	Residential Relocations[b]	Commercial/ Industrial Building Relocations	Governmental/ Institutional Building Relocations
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/ Racine County Line	24.0	283.9	24	9	- -	290.4	24	9	- -	6.5	- -	- -	- -
	2	IH 94 from Milwaukee/ Racine County Line to Mitchell Interchange	6.5	- -	- -	- -	- -	4.6	- -	- -	- -	4.6	- -	- -	- -
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	4.3	1	3	- -	4.3	1	3	- -	- -	- -	- -	- -
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	3.4	3	- -	- -	4.7	3	- -	- -	1.3	- -	- -	- -
	5	USH 45 from Zoo Interchange to North Interchange	8.3	12.4	6	- -	- -	15.4	7	- -	- -	3.0	1	- -	- -
	6	USH 41/45 from North Interchange to USH 41/45	10.4	14.6	- -	- -	- -	16.4	1	- -	- -	1.8	1	- -	- -
	7	USH 41 from USH 41/45 Interchange to Washington/Dodge County Line	22.2	5.1	1	1	- -	5.1	1	1	- -	- -	- -	- -	- -
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	9	USH 12 from Illinois State Line to STH 67	19.2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	10	IH 43 from Walworth/ Rock County Line to STH 83	29.5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11	IH 43 from STH 83 to Hale Interchange	17.2	26.7	- -	- -	- -	29.3	4	- -	- -	2.6	4	- -	- -
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	3.6	43	3	- -	4.8	43	3	- -	1.2	- -	- -	- -
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	1.6	5	- -	- -	6.9	5	- -	- -	5.3	- -	- -	- -
	14	IH 43 from Silver Spring Drive to STH 60/Ozaukee CTH Q	13.8	40.7	- -	- -	- -	65.7	20	3	- -	25.0	20	3	- -
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	16	IH 94 from Waukesha/ Jefferson County Line to STH 16	15.7	33.7	2	1	- -	33.7	2	1	- -	- -	- -	- -	- -
	17	STH 16 from STH 67 to IH 94	14.4	0.4	- -	- -	- -	0.4	- -	- -	- -	- -	- -	- -	- -
	18	IH 94 from STH 16 to Zoo Interchange	9.9	24.1	8	- -	- -	28.8	11	- -	- -	4.7	3	- -	- -
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	2.5	- -	- -	- -	7.4	18	- -	- -	4.9	18	- -	- -
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Subtotal	- -	249.7	456.9	93	17	- -	517.8	140	20	- -	60.9	47	3	- -
System Inter-changes	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	52.9	19	1	2	52.9	19	1	2	- -	- -	- -	- -
	51	IH 43/94/794 (Marquette Interchange)	6.3	16.4	10	5	- -	36.6	13	10	1	20.2	3	5	1
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	12.5	- -	- -	- -	12.5	- -	- -	- -	- -	- -	- -	- -
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchange)	3.8	26.0	44	- -	- -	26.0	44	- -	- -	- -	- -	- -	- -
	57	IH 43 & USH 12	1.0	5.9	- -	- -	- -	5.9	- -	- -	- -	- -	- -	- -	- -
	59	IH 94/USH 41/STH 341 (Stadium Interchange)	1.3	6.9	- -	- -	- -	6.9	- -	- -	- -	- -	- -	- -	- -
	Subtotal	- -	20.0	120.6	73	6	2	140.8	76	11	3	20.2	3	5	1
- -	Total	- -	269.7	577.5	166	23	2	658.6	216	31	3	81.1	50	8	1

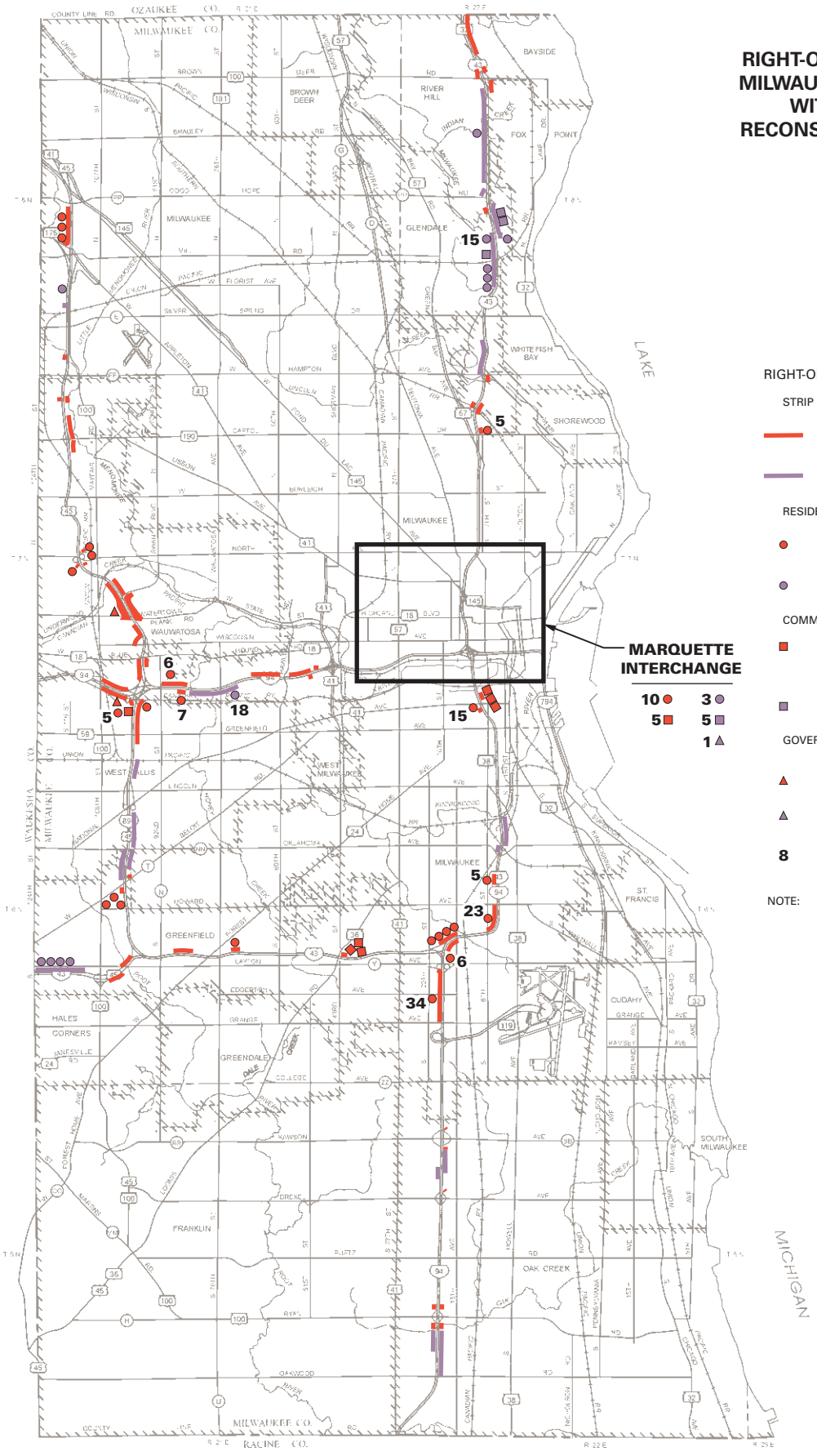
[a] *The estimated right-of-way acquisition for freeway reconstruction includes not only the right-of-way acquisition that may be necessary to reconstruct the freeway system, including any modernization and additional lanes, but also the lands that may be required for implementing stormwater management measures and relocating any electric power transmission towers.*

[b] *A residential relocation represents the acquisition a single-family dwelling, an individual apartment unit, or an individual condominium unit.*

Source: HNTB and SEWRPC.

Map 69

RIGHT-OF-WAY REQUIREMENTS IN MILWAUKEE COUNTY ASSOCIATED WITH FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES



RIGHT-OF-WAY REQUIREMENTS

STRIP REQUIREMENT

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

RESIDENTIAL RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

COMMERCIAL/INDUSTRIAL BUILDING RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-REALTED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

GOVERNMENTAL/INSTITUTIONAL BUILDING RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-REALTED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

8 NUMBER OF RELOCATIONS OR EASEMENTS REQUIRED FOR IMPROVEMENTS

NOTE: THE STRIP RIGHT-OF-WAY REQUIREMENT SHOWN ON THE NORTH SIDE OF IH 94 BETWEEN MITCHELL BOULEVARD AND HAWLEY ROAD IS NOT AN ACQUISITION OF LAND, BUT EASEMENTS FOR THE OVERHANG AND MAINTENANCE OF ELEVATED WESTBOUND IH 94 FREEWAY LANES.

GRAPHIC SCALE

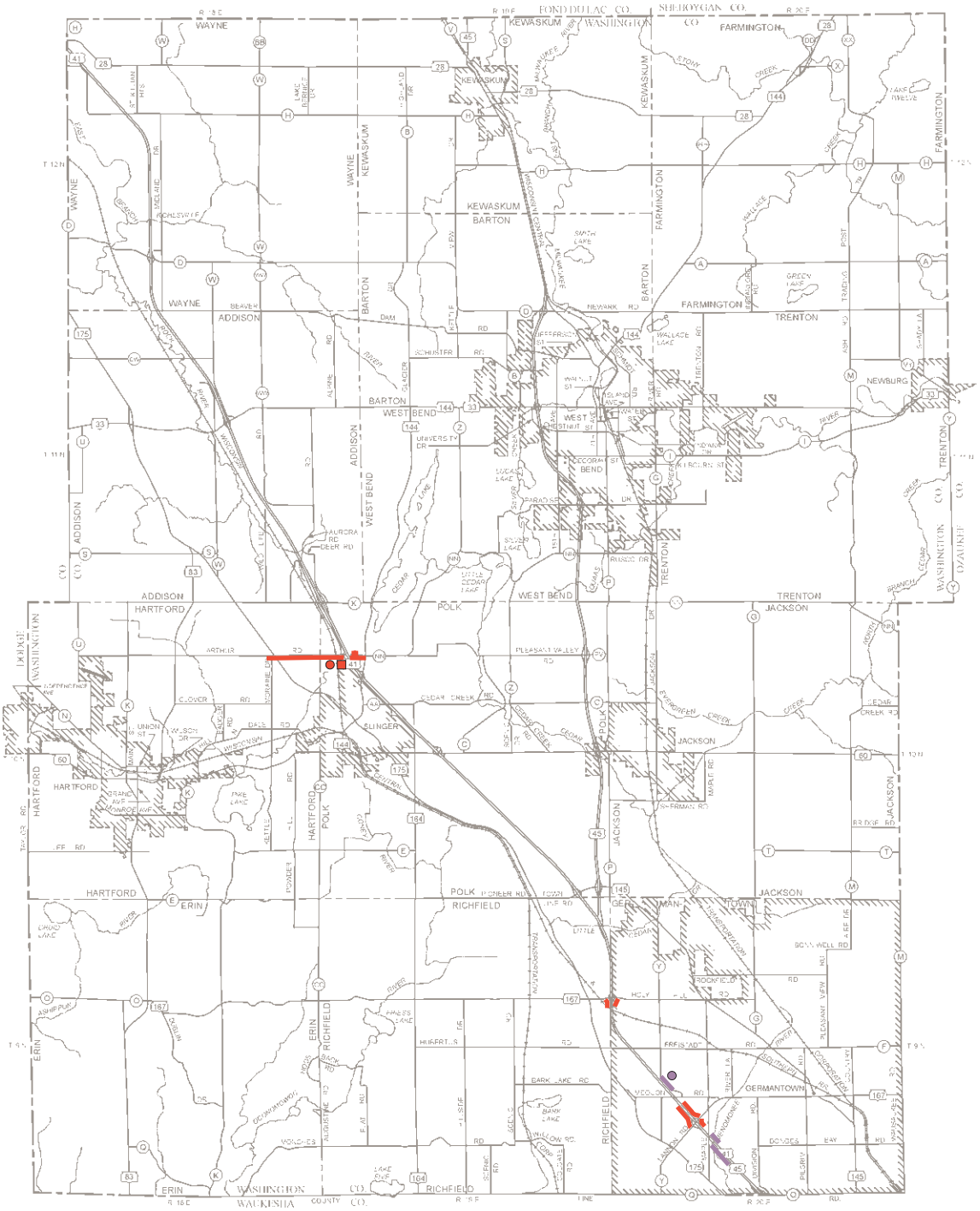
0 1 2 MILES

0 4000 8000 12000 16000 FEET

Source: HNTB and SEWRPC.

Map 70

RIGHT-OF-WAY REQUIREMENTS IN WASHINGTON COUNTY ASSOCIATED WITH FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES



RIGHT-OF-WAY REQUIREMENTS

STRIP REQUIREMENT

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

RESIDENTIAL RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

COMMERCIAL/INDUSTRIAL BUILDING RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-REALTED SAFETY IMPROVEMENTS ONLY

(NONE) ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

GOVERNMENTAL/INSTITUTIONAL BUILDING RELOCATION

(NONE) REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-REALTED SAFETY IMPROVEMENTS ONLY

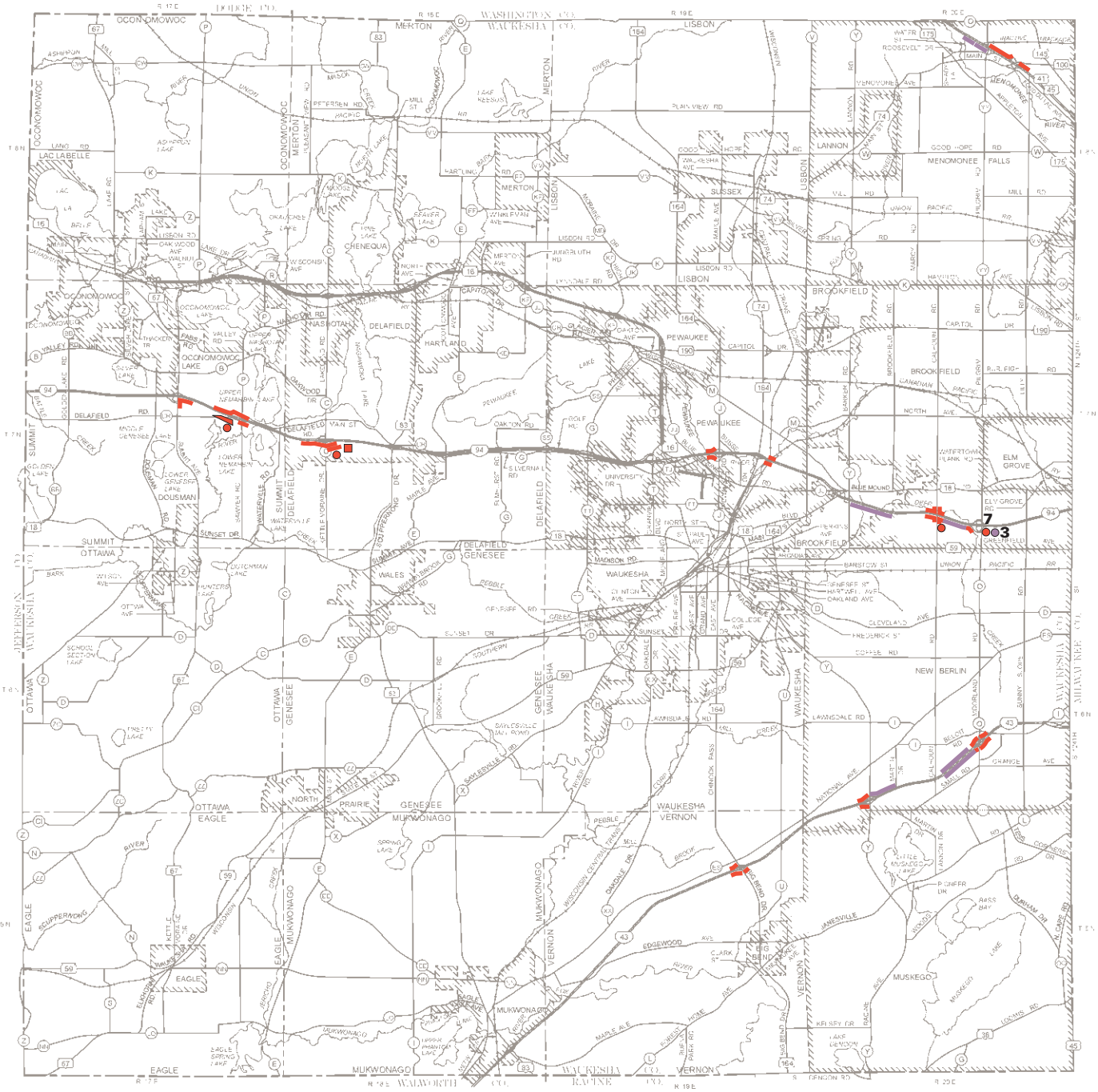
(NONE) ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

GRAPHIC SCALE
0 1 2 MILES
0 4000 8000 12000 16000 FEET

Source: HNTB and SEWRPC.

Map 71

RIGHT-OF-WAY REQUIREMENTS IN WAUKESHA COUNTY ASSOCIATED WITH FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES



RIGHT-OF-WAY REQUIREMENTS

STRIP REQUIREMENT

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

COMMERCIAL/INDUSTRIAL BUILDING RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND
- (NONE) ADDITIONAL REQUIREMENT UNDER

RESIDENTIAL RELOCATION

- REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS ONLY
- ADDITIONAL REQUIREMENT UNDER ALTERNATIVE WITH ADDITIONAL LANES

GOVERNMENTAL/INSTITUTIONAL BUILDING RELOCATION

- (NONE) REQUIRED UNDER ALTERNATIVE WITH DESIGN AND DESIGN-REALTED SAFETY IMPROVEMENTS ONLY
- (NONE) ADDITIONAL REQUIREMENT UNDER

GRAPHIC SCALE

0 1 2 MILES

0 4000 8000 12000 16000 FEET

Source: HNTB and SEWRPC.

Table 34

ESTIMATED PROPERTY TAX BASE REDUCTIONS DUE TO DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS AND PROPOSED ADDITIONAL LANES ON 127 MILES OF FREEWAY[a,b]

County	Property Tax Base Reduction due to Design and Design-Related Safety Improvements	Property Tax Base Reduction due to Additional Lanes on 127 Miles of Freeways	Total Property Tax Base Reduction
Kenosha	$18,800,000	$ 600,000	$ 19,400,000
Milwaukee	87,000,000[c,d]	53,500,000[c,d]	140,500,000[c,d]
Ozaukee	4,300,000	- -	4,300,000
Racine	17,600,000	- -	17,600,000
Walworth	800,000	- -	800,000
Washington	1,600,000	800,000	2,400,000
Waukesha	13,200,000	1,600,000	14,800,000
Total	$143,300,000[e]	$56,500,000[e]	$199,800,000[e]

[a]The estimates of property tax base impact are conservatively high, as they include acquisition administration and relocation costs.

[b]The estimated value of land and buildings required does not include the estimated costs associated with the acquisition of three buildings—a Milwaukee County Sheriff's building and a Milwaukee County Zoo building with an estimated total value $1.0 million required due to design and design-related safety improvements and the Milwaukee County Courthouse Annex with an estimated value of $15.7 million required to due to the widening of 127 miles of freeway. These estimated costs were not included because the buildings are not part of the equalized property value. The total estimated value of land and buildings required under the preliminary plan with these excluded buildings would be $216.5 million, rather than the total of $199.8 million included in the table.

[c]The property tax base reduction in Milwaukee County and the Region include impacts associated with the reconstruction of the Marquette Interchange. The property tax base reduction associated with the reconstruction of the Marquette Interchange is as follows: $55 million due to design and design-related safety improvements and an additional $32.3 million due to the widening of 127 miles of freeway, for a total of $87.3 million. The estimated value of the Milwaukee County Courthouse Annex–$15.7 million–is not included in the total due to the widening of 127 miles of freeway because the building is not part of the equalized property value. The total estimated value of land and buildings associated with the Marquette Interchange required with this excluded building would be $103.0 million, rather than the total of $87.3 million previously stated.

[d]The year 2001 total equalized property value of Milwaukee County was $40.8 billion dollars. The following are the estimated amounts of reduction in the total tax base: 0.21 percent to rebuild with design and design-related safety improvements only and 0.13 percent to widen 127 miles of freeways, for a total an estimated 0.34 percent total reduction in the Milwaukee County tax base over a 30-year period.

[e]The year 2001 total equalized property value of Southeastern Wisconsin was $112.5 billion dollars. The following are the estimated amounts of reduction in the total tax base: 0.13 percent to rebuild with design and design-related safety improvements only and 0.05 percent to widen 127 miles of freeways, for a total an estimated 0.18 percent total reduction in the Milwaukee County tax base over a 30-year period.

Source: Wisconsin Department of Transportation, HNTB, and SEWRPC.

The expected impact on the property tax base regionwide—including the acquisition of property currently subject to property taxes—due to the reconstruction of the regional freeway system, is expected to be minimal. Table 34 presents the expected property tax base reductions in each county of Region due to design and design-related safety improvements and additional lanes. While the total property tax base impact is an estimated $200 million for the entire Region, with $140 million of that impact within Milwaukee County, the following may be noted:

- More than 60 percent in Milwaukee County—and over 70 percent region-wide—of the estimated property tax impact is associated with the modernization of the freeway system, not the proposed additional lanes.
- The estimated cost of right-of-way acquisition is conservatively high, as it includes acquisition, administration, and relocation costs, thereby overstating the actual reduction in the property tax base.

- Nearly half of the estimated property tax base impact—$90 million of the total $200 million—has already been approved through preliminary engineering studies for the Marquette Interchange and IH 94 in Kenosha and Racine Counties.

- The conservatively high estimated property tax base reduction for Milwaukee County under the preliminary plan of a total 0.34 percent reduction would represent an annual reduction of about 0.01 percent over the 30 or more years required to rebuild the freeway system. By comparison, the Milwaukee County tax base has been growing at about 1.5 percent annually from new construction and at about 4.0 percent annually from base appreciation.

- The estimated total impact on the property tax base may be reduced by new construction of replacement residential and commercial buildings at other sites within the City or Milwaukee or the remainder of Milwaukee County. For example, Aldrich Chemical, whose property within the Marquette Interchange is being acquired for the interchange reconstruction, has announced its intention to build a new facility in the City of Milwaukee.

The estimates of property tax base impacts developed for the freeway reconstruction study are systems planning level estimates. During subsequent preliminary engineering and environmental impact studies for each segment of the freeway system, the Wisconsin Department of Transportation will identify specific right-of-way impacts and seek to minimize any impacts.

Some portions of the additional right-of-way required to reconstruct the regional freeway system with additional lanes are designated as primary environmental corridors and wetlands (see Table 35). Reconstruction of the regional freeway system with additional lanes would require the acquisition of an estimated seven acres of primary environmental corridor including four acres of wetlands and another one acre of isolated wetlands. This represents the potential conversion of 0.002 percent of the Region's primary environmental corridors and 0.001 percent of the Region's wetlands to freeway right-of-way. In comparison, reconstruction of the freeway system with design and design-related safety improvements only is estimated to require right-of-way expansion into 68 acres of primary environmental corridors, including 29 acres of wetlands, and another nine acres of wetlands located outside the primary environmental corridors, or about 10 times the amount of impact of additional lanes.

With respect to the existing wetlands which would need to become part of the freeway right-of-way, not all of these wetlands would necessarily be "lost," but they may simply now be located within the expanded freeway right-of-way. Additionally, any wetland loss may be expected to be mitigated through standard State processes.

Design of IH 94 between Mitchell Boulevard and Hawley Road

The reconstruction of IH 94 between Mitchell Boulevard and Hawley Road (where Wood National Cemetery and other cemeteries are located adjacent to the freeway) can be accomplished without relocating or disturbing any graves. With or without additional lanes, the elevation of the west bound lanes of IH 94 between Mitchell Boulevard and Hawley Road to overlap the eastbound lanes and the cemeteries to the north by up to 15 to 25 feet will be required if grave disturbance is to be avoided and modern design standards are to be met (including safety shoulders). As part of the freeway reconstruction, Zablocki Drive (Cemetery Access Road) would be routed under the freeway with Mitchell Boulevard, and its bridge over IH 94 removed. Map 72 displays the location of the westbound lanes of IH 94 that would be elevated. Two perspectives were developed that display how that freeway segment appears today and how it would appear following reconstruction with the proposed elevated westbound lanes of IH 94. Those perspectives are display on Figure 45. As may be seen in Figure 45, the elevated westbound lanes would be about as high as the current Zablocki Drive (Cemetery Access Road) Bridge.

The Wisconsin Department of Transportation will consider all reasonable alternatives for the reconstruction of this freeway segment during subsequent, more detailed preliminary engineering and environmental impact studies prior to reconstruction.

Table 35

ESTIMATED IMPACTS ON WETLANDS AND PRIMARY ENVIRONMENTAL CORRIDORS ASSOCIATED WITH THE RECONSTRUCTION OF THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM[a]

Freeway Segment				Acres Required by Freeway Reconstruction Alternative					
				Design and Design-Related Safety Improvements		Design and Design-Related Safety Improvements and Additional Lanes		Incremental Acres Required for Additional Lanes	
Type	Number	Description	Length (miles)	Wetland	Primary Environmental Corridor	Wetland	Primary Environmental Corridor	Wetland	Primary Environmental Corridor
Mainline Segments	1	IH 94 from the Illinois State Line to Milwaukee/Racine County Line	24.0	25.9	44.2	25.9	44.2	- -	- -
	2	IH 94 from Milwaukee/Racine County Line to Mitchell Interchange	6.5	- -	- -	- -	- -	- -	- -
	3	IH 43/894 from Mitchell Interchange to Hale Interchange	3.6	- -	- -	- -	- -	- -	- -
	4	IH 894/USH 45 from Hale Interchange to Zoo Interchange	2.5	- -	- -	- -	- -	- -	- -
	5	USH 45 from Zoo Interchange to North Interchange	8.3	- -	1.5	0.4	1.5	0.4	- -
	6	USH 41/45 from North Interchange to USH 41/45	10.4	3.2	3.1	5.4	5.3	2.2	2.2
	7	USH 41 from USH 41/45 Interchange to Washington/Dodge County Line	22.2	- -	- -	- -	- -	- -	- -
	8	USH 45 from USH 41/45 Interchange to Washington CTH D	13.9	- -	- -	- -	- -	- -	- -
	9	USH 12 from Illinois State Line to STH 67	19.2	- -	- -	- -	- -	- -	- -
	10	IH 43 from Walworth/Rock Co. Line to STH 83	29.5	- -	- -	- -	- -	- -	- -
	11	IH 43 from STH 83 to Hale Interchange	17.2	0.2	1.0	0.8	2.1	0.6	1.
	12	IH 43/94 from Mitchell Interchange to Marquette Interchange	4.2	- -	- -	- -	- -	- -	- -
	13	IH 43 from Marquette Interchange to Silver Spring Drive	4.8	- -	- -	- -	- -	- -	- -
	14	IH 43 from Silver Spring Drive to STH 60/ Ozaukee CTH Q	13.8	- -	0.9	0.3	0.9	0.3	- -
	15	IH 43 from STH 60 to North Ozaukee County Line	17.3	- -	- -	- -	- -	- -	- -
	16	IH 94 from Waukesha/ Jefferson County Line to STH 16	15.7	2.6	2.0	2.6	2.0	- -	- -
	17	STH 16 from STH 67 to IH 94	14.4	- -	- -	- -	- -	- -	- -
	18	IH 94 from STH 16 to Zoo Interchange	9.9	0.3	2.8	2.2	6.3	1.9	3.5
	19	IH 94 from Zoo Interchange to Stadium Interchange	2.2	- -	- -	- -	- -	- -	- -
	20	USH 41 from Stadium Interchange to Lisbon Avenue	1.4	- -	- -	- -	- -	- -	- -
	21	STH 145 from Hampton Avenue to Good Hope Avenue	4.2	- -	- -	- -	- -	- -	- -
	22	STH 119 from IH 94 to General Mitchell International Airport	1.2	- -	- -	- -	- -	- -	- -
	23	IH 794 from Lake Interchange to Carferry Drive	3.3	- -	- -	- -	- -	- -	- -
	Subtotal	- -	249.7	32.2	55.5	37.6	62.3	5.4	6.8
System Interchanges	50	IH 94/894 & USH 45 (Zoo Interchange)	5.0	- -	0.7	- -	0.7	- -	- -
	51	IH 43/94/794 (Marquette Interchange)	6.3	- -	- -	- -	- -	- -	- -
	52	IH 43/894 & USH 45 (Hale Interchange)	2.6	5.3	8.2	5.3	8.2	- -	- -
	53/58	IH 43/94/894 & STH 119 (Mitchell & Airport Interchanges)	3.8	- -	- -	- -	- -	- -	- -
	57	IH 43 & USH 12	1.0	0.7	2.6	0.7	2.6	- -	- -
	59	IH 94/USH 41/STH 341 (Stadium Interchange)	1.3	- -	0.5	- -	0.5	- -	- -
	Subtotal	- -	20.0	6.0	12.0	6.0	12.0	- -	- -
	Total	- -	269.7	38.2	67.5[b]	43.6	74.3	5.4	6.8[c]

[a] *The estimated total existing area within Southeastern Wisconsin of wetlands is 273,100 acres and of primary environmental corridors is 297,200 acres.*

[b] *Approximately 29 of the about 38 acres of wetland impacted are located within the 68 acres of primary environmental corridor to be acquired.*

[c] *Approximately four of the about five acres of wetland impacted are located within the 7 acres of primary environmental corridor to be acquired.*

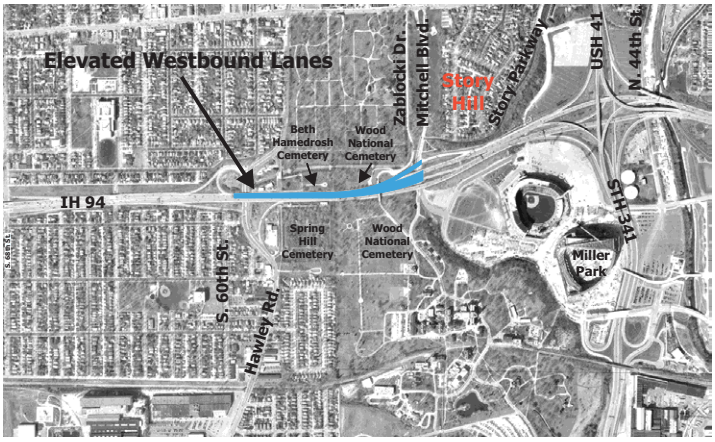
Source: HNTB and SEWRPC.

Traffic Congestion

A significant increase in freeway system traffic congestion may be expected by the year 2020 if the regional freeway system is reconstructed only with design and design-related safety improvements. In contrast, providing additional lanes may be expected to result in a significant reduction in otherwise anticipated future traffic congestion levels, as well as a modest reduction from current traffic congestion levels.

Map 72

FREEWAY REDESIGN CONFIGURATION OF IH 94 BETWEEN MITCHELL BOULEVARD AND HAWLEY ROAD



NOTE: No land required or graves disturbed in any cemetery.

Source: HNTB and SEWRPC.

The estimated forecast year 2020 traffic congestion under a freeway system reconstruction alternative which includes additional lanes is shown in Table 36, Figure 46, and Map 73, and is compared to existing levels of congestion and to alternatives which would not provide additional lanes. All forecasts of future congestion levels assume the full implementation of regional land use and transportation plans—including development with "smart growth" practices at both regional and neighborhood levels, substantial expansion of public transit, planned improvements to the surface arterial street system, and transportation system management measures, including freeway system intelligent transportation systems management.

The traffic congestion reduction benefits attendant to reconstruction of the regional freeway system with additional lanes are substantial, and are as follows:

- Reduction in Future Year 2020 Freeway System Congestion. The total mileage of freeways experiencing traffic congestion in the year 2020 may be expected to be reduced from 122 miles of freeways, or 44 percent of the freeway system, to 58 miles, or 21 percent of the free-way system, in the year 2020. This represents a 52 percent decrease in projected future year 2020 freeway system traffic congestion.

- Reduction in Future Year 2020 Freeway System Extreme and Severe Congestion. The total mileage of freeways experiencing extreme or severe traffic congestion in the year 2020 may be expected to be reduced from 73 miles, or 26 percent of the freeway system, to 43 miles, or 16 percent of the freeway system. This represents a 41 percent decrease in miles of freeway which may be expected to experience extreme or severe traffic congestion.

- Reduction in Severity of Congestion on Freeway Segments which Remain Congested Even With Additional Lanes. Some freeway segments may be expected to experience extreme or severe traffic congestion even if widened to carry additional lanes, as shown on Map 73. However, these freeway segments may be expected to experience less traffic congestion measured in terms of hours and severity of traffic congestion under an alternative with additional lanes. The congestion reduction benefits for three such freeway segments are shown on Table 37.

- Reduction in Future Year 2020 Mile-Hours of Congestion. Figure 47 displays the estimated freeway traffic congestion in miles-hours of congestion—the total hours of congestion experienced on each mile of the freeway system on an average weekday at moderate, severe, or extreme congestion levels for existing 1999 traffic volumes and forecast year 2020 traffic volumes under freeway reconstruction alternatives. As may be seen in Figure 47, the mile-hours of freeway traffic congestion estimated in

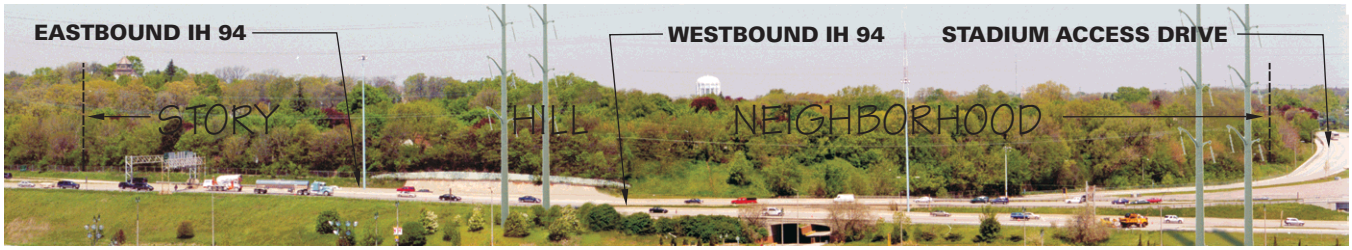
Figure 45

FREEWAY REDESIGN CONFIGURATION OF IH 94 BETWEEN MITCHELL BOULEVARD AND HAWLEY ROAD

PERSPECTIVE: LOOKING NORTH FROM MILLER PARK-EAST

EXISTING DESIGN - EAST

PROPOSED DESIGN - EAST

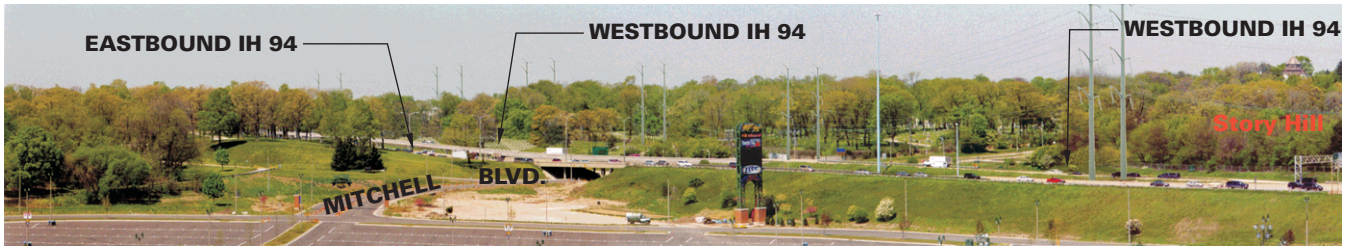


NOTE: IH 94 Freeway would be rebuilt to same elevation adjacent to the Story Hill neighborhood.

PERSPECTIVE: LOOKING NORTH FROM MILLER PARK-WEST

EXISTING DESIGN - WEST

PROPOSED DESIGN - WEST



NOTE: Westbound IH 94 lanes would only begin to increase in elevation west of Mitchell Boulevard.

Source: HNTB and SEWRPC.

the forecast year 2020 under an alternative with design and design-related safety improvements only would be more than twice the number of mile-hours of freeway traffic congestion estimated under existing 1999 conditions. In comparison, the mile-hours of freeway traffic congestion estimated in the forecast year 2020 under an alternative with design and design-related safety improvements and additional lanes would be slightly less than the mile-hours of freeway traffic congestion estimated under existing 1999 conditions.

Table 36

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION

Year	Miles of Congested Freeway			Average Hours of Congestion on an Average Weekday			
	Highest Level of Hourly Congestion Experienced	Miles	Percent of Freeway System	Extreme Congestion (hours)	Severe Congestion (hours)	Moderate Congestion (hours)	Total Congestion (hours)
Forecast Year 2020 Freeway System Reconstruction Alternative with Design and Design-Related Safety Improvements and Additional Lanes	Extreme	26.0	9.4	1.4	3.3	4.2	8.9
	Severe	17.2	6.2	- -	1.6	2.3	3.9
	Moderate	14.8	5.3	- -	- -	2.1	2.1
	Total	58.0	20.9	- -	- -	- -	- -
Forecast Year 2020 Freeway System Reconstruction Alternative with Design and Design-Related Safety Improvements	Extreme	41.9	15.1	1.9	4.0	5.2	11.1
	Severe	31.5	11.3	- -	1.2	2.3	3.5
	Moderate	49.1	17.7	- -	- -	2.1	2.1
	Total	122.5	44.1	- -	- -	- -	- -
Existing Year 1999	Extreme	26.6	9.7	1.3	3.2	4.3	8.8
	Severe	26.1	9.6	- -	1.4	2.4	3.8
	Moderate	12.0	4.4	- -	- -	1.8	1.8
	Total	64.7	23.7	- -	- -	- -	- -

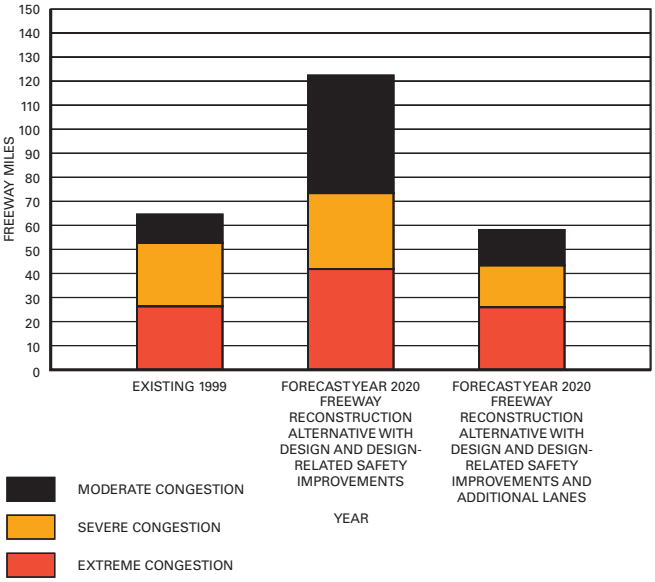
Source: SEWRPC.

- Reduction in Freeway System Travel Time and Travel Delay. The provision of additional traffic carrying capacity on the freeway system through widening may be expected to permit avoiding increases in regional freeway system peak hour travel times as shown in Table 38. Without additional lanes, peak hour travel times in the year 2020 may be expected to range from 15 to 40 percent greater than existing freeway system current peak hour travel times. With additional lanes, peak hour travel times in the year 2020 may be expected to be about the same as existing freeway system current peak hour travel times. The selected locations on the regional freeway system used in the analysis of existing and forecast freeway system travel times are displayed on Map 74.

  The total traffic delay on the freeway system on an average weekday may also be expected to be significantly greater if the freeway system is rebuilt without additional lanes. The total hours of delay on the freeway system on an average weekday in 1999 was an estimated 11,500 vehicle hours. Even if the

Figure 46

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION[a]



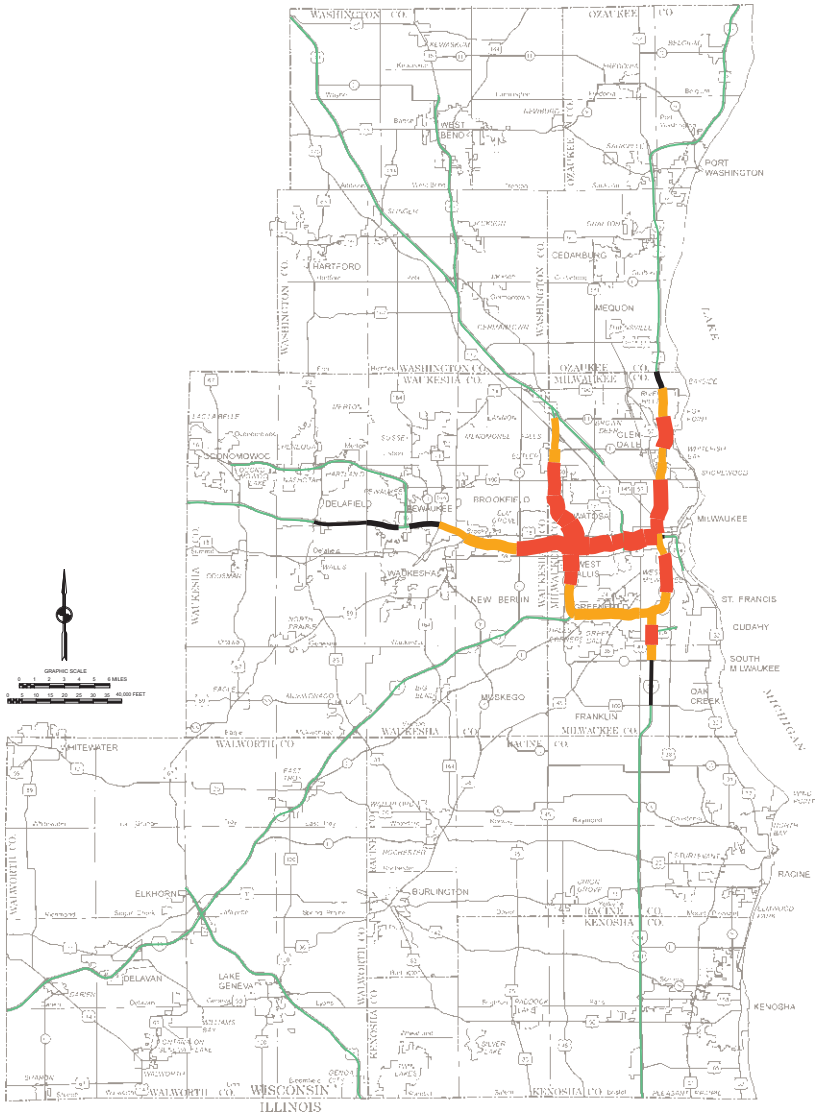
[a]*All forecasts of future congestion assume full implementation of regional land use and transportation plans—including development with "smart growth" practices at both regional and neighborhood levels, substantial expansion of public transit, planned improvements to the surface arterial street systems management measures, including freeway system intelligent transportation systems management measures.*

Source: SEWRPC.

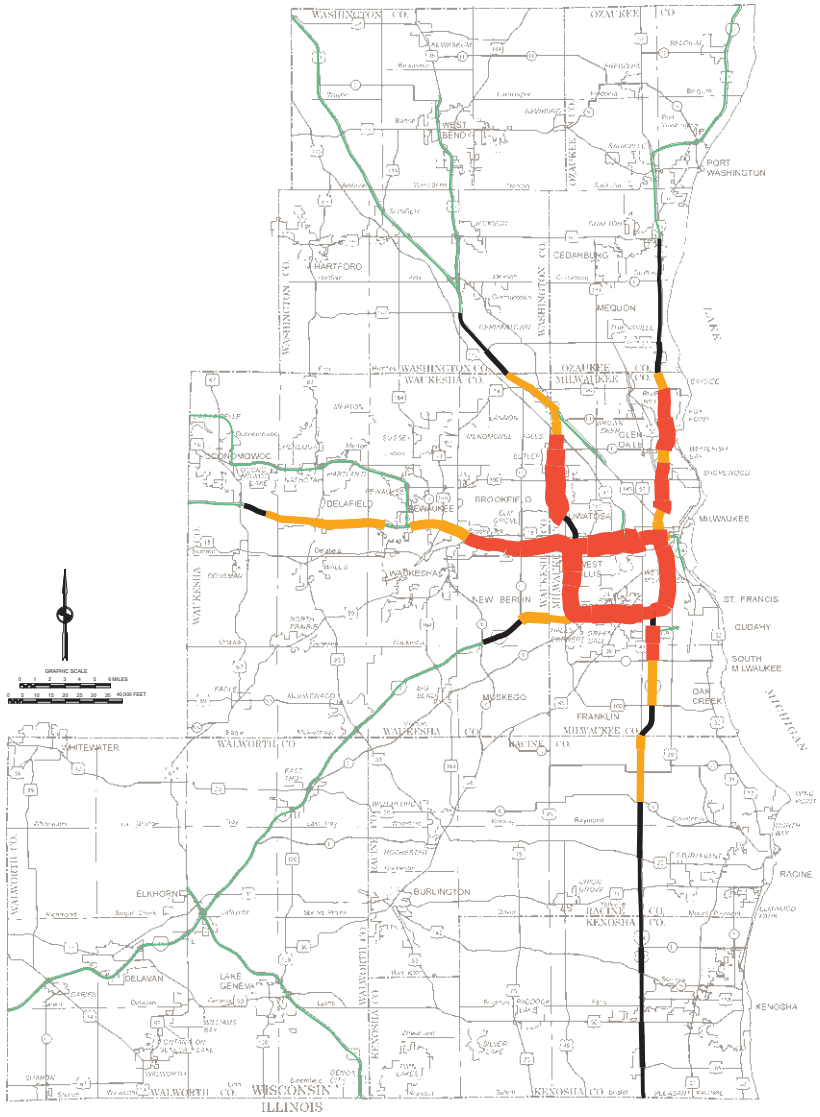
Map 73

ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION AND FORECAST FUTURE YEAR 2020 TRAFFIC CONGESTION ON FREEWAYS WITHIN THE SOUTHEASTERN WISCONSIN REGION [a]

EXISTING 1999

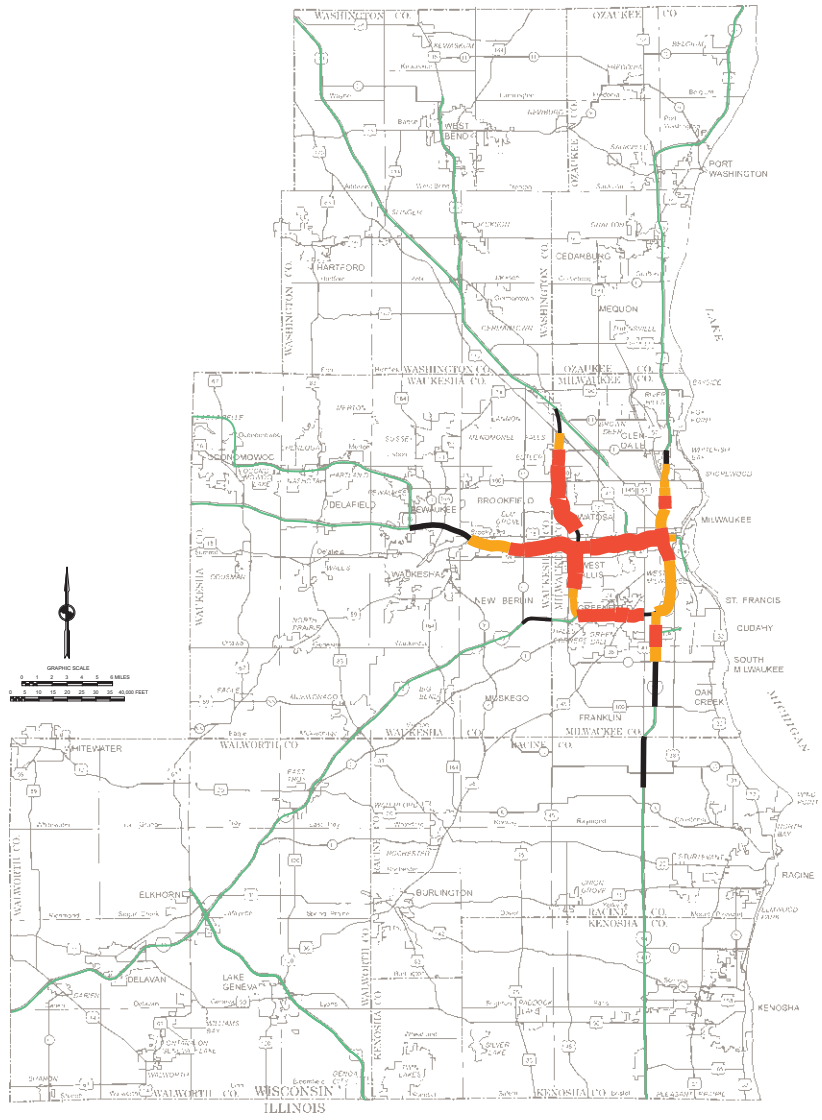


FORECAST YEAR 2020 FREEWAY RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS



Map 73 (continued)

FORECAST 2020 UNDER FREEWAY RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS AND ADDITIONAL TRAFFIC LANES



MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION EXPERIENCED	ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL		
		EXTREME	SEVERE	MODERATE
--	NO CONGESTION	--	--	--
MODERATE	1	--	--	1
MODERATE	3	--	--	3
SEVERE	3	--	1	2
SEVERE	4	--	1	3
SEVERE	4	--	2	2
EXTREME	6	1	2	3
EXTREME	8	1	3	4
EXTREME	11	2	4	5
EXTREME	13	2	5	6
EXTREME	14	2	5	7
EXTREME	15	3	5	7
EXTREME	16	4	5	7
EXTREME	17	4	6	7

Source: SEWRPC.

[a] *All forecasts of future congestion assume full implementation of regional land use and transportation plans- including development with "smart growth" practices at both regional and neighborhood levels, substantial expansion of public transit, planned improvements to the surface arterial street system, and transportation systems management measures, including freeway system intelligent transportation systems management measures.*

regional freeway system is rebuilt with additional lanes, the amount of delay is expected to increase by about 18 percent to 13,600 hours in the year 2020 on an average weekday, with this increase largely due to a greater number of vehicles using the freeway system at similar levels of congestion as in 1999. However, if the freeway system is not built with additional lanes, the amount of delay on an average weekday is expected to increase by about 130 percent to 26,200 hours in the year 2020, which is 12,600 hours or about 90 percent more hours of delay expected on an average weekday in the year 2020 than if the freeway system is built with additional lanes, and more than double the hours of delay on an average weekday currently experienced on the freeway system.

- Increased Reliability of Freeway Travel. The reduction of average weekday traffic congestion levels on the regional freeway system through provision of additional lanes should as well increase the reliability of travel on the freeway system particularly during peak travel periods. The reliability of freeway travel may be measured by the variation in travel time from day-to-day, and the number of minutes that the worst weekday peak hour trip may be expected to exceed the average weekday peak hour trip travel time. Variations in weekday traffic volumes, weather conditions, traffic incidents, and individual poor driving behavior can all contribute to the variation of freeway travel time and reliability. Incident management measures and systems can reduce the impact of incidents on freeway travel time reliability. However, as the average weekday traffic congestion level on the freeway system increases, the potential increases for greater variation in peak hour traffic congestion delay and travel times, and for the occurrence of occasional significantly longer than average trip travel times.

- Reduction in Future Increase of Traffic on Surface Arterial Streets. The provision of additional traffic-carrying capacity on the regional freeway system through widening to provide additional lanes may be expected to reduce the future increase of traffic on the surface arterial street system. The expected reduction in surface arterial street traffic volume may be expected to total 1,400,000 vehicle-miles on an average weekday, or about 5 percent of total anticipated year 2020 surface arterial street traffic volume within the Southeastern Wisconsin Region. Some of the surface arterial streets which may be expected to experience the most significant potential reductions in average weekday traffic volumes are as follows:

    - Bluemound Road/Wisconsin Avenue—3,000 to 7,000 vehicles per weekday
    - Greenfield Avenue—2,000 to 4,000 vehicles per weekday
    - National Avenue—1,000 to 3,000 vehicles per weekday
    - North Avenue—1,000 to 3,000 vehicles per weekday
    - Silver Spring Drive—1,000 to 3,000 vehicles per weekday
    - STH 100—3,000 to 9,000 vehicles per weekday
    - 60th Street/Hawley Road—1,000 to 3,000 vehicles per weekday.

Traffic Safety

The significant reduction in freeway traffic congestion attendant to reconstructing the freeway system with additional lanes may be expected to contribute to a significant improvement in freeway traffic safety through a reduction in rear-end accidents. The existing rear-end crash rates on the Region's congested freeway segments are currently five to 15 times higher than that experienced on uncongested freeway segments. The highest rear-end crash rates are experienced on those freeway segments with the most extreme congestion. As stated earlier, under a freeway reconstruction alternative with additional lanes, the extent of the regional freeway system affected by traffic congestion in the year 2020 may be expected to approximate 58 miles, or 21 percent of the freeway system, as compared to 122 miles, or 44 percent of the freeway system, under reconstruction alternatives which do not include additional lanes. The extent of the regional freeway system affected by extreme or severe congestion under a freeway system reconstruction alternative with additional lanes is 43 miles, or 16 percent of the freeway

Table 37

ESTIMATED LEVELS OF CONGESTION ON SELECTED FREEWAY SEGMENTS WITHIN THE SOUTHEASTERN WISCONSIN REGION: ESTIMATED EXISTING YEAR 1999 AND FORECAST YEAR 2020

Segment	Year	Weekday Hours of Congestion In Each Direction				Direction	Estimated Level of Congestion by Hour of Weekday																		
		Total	Extreme	Severe	Moderate		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
IH 43/94 from Mitchell Interchange to Marquette Interchange	1999 Existing	4	- -	2	2	Northbound																					
						Southbound																					
	2020 Design and Safety Improvements Only	11	2	4	5	Northbound																					
						Southbound																					
	2020 Design, Safety, and Capacity Improvements	4	- -	2	2	Northbound																					
						Southbound																					
USH 45 from North Interchange to Zoo Interchange	1999 Existing	6	1	2	3	Southbound																					
						Northbound																					
	2020 Design and Safety Improvements Only	14	2	5	7	Southbound																					
						Northbound																					
	2020 Design, Safety, and Capacity Improvements	8	1	3	4	Southbound																					
						Northbound																					
IH 94 from Zoo Interchange to Marquette Interchange	1999 Existing	11	2	4	5	Eastbound																					
						Westbound																					
	2020 Design and Safety Improvements Only	16	4	5	7	Eastbound																					
						Westbound																					
	2020 Design, Safety, and Capacity Improvements	13	2	5	6	Eastbound																					
						Westbound																					

Level of Congestion

Extreme Severe Moderate

Source: SEWRPC.

system, as compared to 73 miles, or 27 percent of the freeway system, under freeway system reconstruction alternatives which do not include additional lanes. By significantly reducing freeway traffic congestion, reconstruction of the regional freeway system with additional lanes may therefore be expected to result in significantly fewer rear-end crashes on the freeway system.

Air Pollutant Emissions and Motor Fuel Consumption

Whether the regional freeway system is rebuilt with or without additional lanes may be expected to have negligible impact on the level of transportation system ozone-related and other air pollutant emissions and air quality, and also vehicle motor fuel consumption. This is because the same level of total regional vehicle-miles of traffic may be expected whether or not the freeways are widened. What will vary is the amount of traffic which may be expected to travel under congested traffic conditions, and to travel on the freeway system as opposed to surface arterial streets. This will have a small, almost negligible impact on transportation air pollutant emissions and motor fuel consumption. The forecast levels of air pollutant emissions and motor fuel consumption in the year 2020 for the seven county Southeastern Wisconsin Region under freeway system reconstruction alternatives with and without additional lanes are shown in Table 39. Volatile organic compounds (VOC) and nitrogen oxides (NO_X) are the principal precursors to ozone, and carbon dioxide is a greenhouse gas.

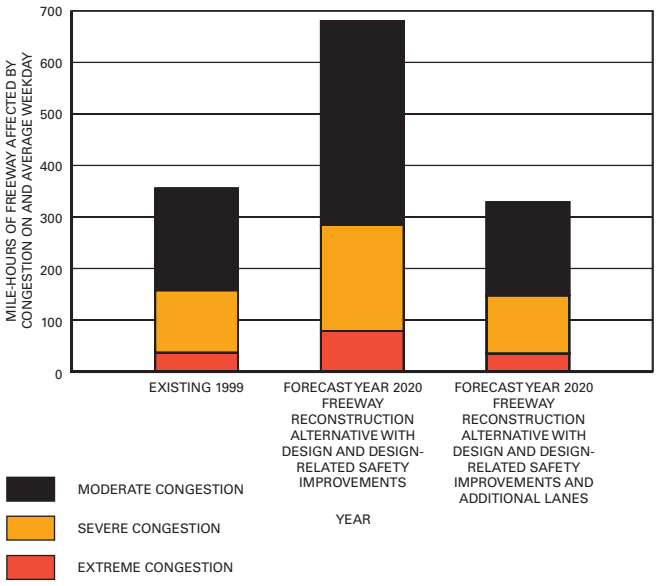
Historic, current, and forecast future VOC and NO_X ozone-related transportation system emissions for the six county severe ozone non-attainment area within Southeastern Wisconsin were previously shown on Figure 43. Emissions from the transportation system have substantially declined, and are projected to continue to decline, even with increasing traffic volume, principally due to new motor vehicle standards for air pollutant emissions. In addition, the forecast levels of VOC and NO_X emissions under a freeway reconstruction alternative with additional lanes are within the State transportation emission budgets, which together with forecast emissions from other sources—point, industrial, and area—provide for planned attainment of ozone air quality standards.

Freeway Stormwater Runoff

The reconstruction of the regional freeway system with or without additional lanes may be expected to result in improved conditions with respect to freeway stormwater runoff compared to the existing situation. This may be expected because substantial advances in stormwater management have been made since the freeway system was originally designed and constructed, and the Wisconsin Department of Transportation now requires that stormwater management issues be properly addressed. In fact, recent reconstruction efforts including the North Interchange and Miller Park Way in Milwaukee County have included the implementation of measures to improve freeway stormwater runoff conditions.

Figure 47

COMPARISON OF ESTIMATED EXISTING YEAR 1999 FREEWAY SYSTEM TRAFFIC CONGESTION WITHIN SOUTHEASTERN WISCONSIN TO FORECAST FUTURE YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION: MILE-HOURS OF CONGESTION [a,b]



[a]The mile-hours of congestion shown represent the total hours of congestion experienced on each mile of the freeway system on an average weekday at moderate, severe, or extreme congestion levels.

[b]All forecasts of future congestion assume full implementation of regional land use and transportation plans—including development with "smart growth" practices at both regional and neighborhood levels, substantial expansion of public transit, planned improvements to the surface arterial street systems management measures, including freeway system intelligent transportation systems management measures.

Source: SEWRPC.

Land Use Impacts

In considering whether reconstructing the freeway system with additional lanes may be expected to cause more urban sprawl and land use decentralization, it is first important to consider that transportation may not be a principal, or even a significant, cause of urban decentralization. Studies of urban decentralization in the United States and other countries and opinion surveys indicate that a variety of other factors which have nothing to do with transportation have contributed to decentralization, including: rising affluence, preferences for single family homes and larger lots, cost of living, schools, environmental amenities, pace of life, perceived and/or actual crime and safety, societal changes, industrial restructuring, and information technology. Indeed, transportation probably receives attention primarily because, of the above factors, it is one of the few subject to some control by local government.

In addition, the potential effect of transportation on decentralization is not clear-cut, but rather is complex. Those concerned about decentralization often argue that policies which significantly reduce or eliminate congestion likely contribute to decisions by residents to locate further out on the periphery. They also perceive that increased traffic congestion will result in a reduction in decentralization, and a strengthening of the central city. However, it may also be argued that policies which promote tolerance of significant increases in congestion may contribute to an acceleration of the decentralization of businesses and residents, as well as declines in regional economic growth.

Table 38

ESTIMATED FREEWAY TRAVEL TIME BETWEEN SELECTED LOCATIONS ON THE SOUTHEASTERN WISCONSIN REGIONAL FREEWAY SYSTEM: ESTIMATED EXISTING 1999 AND FORECAST YEAR 2020

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]		
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements and Additional Lanes
IH 794 AT JACKSON STREET	ZOO INTERCHANGE	8	15	20	16
	IH 94 AT BARKER ROAD	15	25	34	27
	STH 119 AT HOWELL AVENUE	10	13	16	13
	IH 94 AT CTH KR	26	29	37	30
	USH 41/45 AT LANNON ROAD	24	36	49	37
	IH 43 AT MEQUON ROAD	15	21	24	18
	IH 43 AT CTH Y	19	23	31	24
	IH 43 AT NORTH AVENUE	3	4	4	4
	USH 41 AT LISBON AVENUE	7	11	13	11
ZOO INTERCHANGE	IH 794 AT JACKSON STREET	8	15	20	16
	IH 94 AT BARKER ROAD	7	10	14	11
	STH 119 AT HOWELL AVENUE	13	18	24	19
	IH 94 AT CTH KR	29	35	44	36
	USH 41/45 AT LANNON ROAD	16	21	29	21
	IH 43 AT MEQUON ROAD	21	34	43	31
	IH 43 AT CTH Y	11	14	18	14
	IH 43 AT NORTH AVENUE	9	17	23	17
	USH 41 AT LISBON AVENUE	7	11	13	11
IH 94 AT BARKER ROAD	IH 794 AT JACKSON STREET	15	25	34	27

Table 38 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]		
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements and Additional Lanes
IH 94 AT BARKER ROAD (continued)	ZOO INTERCHANGE	7	10	14	11
	STH 119 AT HOWELL AVENUE	20	28	38	30
	IH 94 AT CTH KR	36	45	58	47
	IH 43 AT MEQUON ROAD	28	44	57	42
	IH 43 AT NORTH AVENUE	16	27	37	28
	USH 41 AT LISBON AVENUE	14	21	27	22
STH 119 AT HOWELL AVENUE	IH 794 AT JACKSON STREET	10	13	16	13
	ZOO INTERCHANGE	13	18	24	19
	IH 94 AT BARKER ROAD	20	28	38	30
	IH 94 AT CTH KR	19	20	23	20
	USH 41/45 AT LANNON ROAD	29	39	53	40
	IH 43 AT MEQUON ROAD	23	32	38	29
	IH 43 AT CTH Y	15	17	22	17
	IH 43 AT NORTH AVENUE	11	15	18	15
	USH 41 AT LISBON AVENUE	16	22	28	22
IH 94 AT CTH KR	IH 794 AT JACKSON STREET	26	29	37	30
	ZOO INTERCHANGE	29	35	44	36
	IH 94 AT BARKER ROAD	36	45	58	47
	STH 119 AT HOWELL AVENUE	19	20	23	20
	USH 41/45 AT LANNON ROAD	45	56	73	57

Table 38 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]		
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements and Additional Lanes
IH 94 AT CTH KR (continued)	IH 43 AT MEQUON ROAD	39	49	58	46
	IH 43 AT NORTH AVENUE	27	32	38	32
	USH 41 AT LISBON AVENUE	32	39	48	39
USH 41/45 AT LANNON ROAD	IH 794 AT JACKSON STREET	24	36	49	37
	ZOO INTERCHANGE	16	21	29	21
	STH 119 AT HOWELL AVENUE	29	39	53	40
	IH 94 AT CTH KR	45	56	73	57
	IH 43 AT CTH Y	27	35	47	35
IH 43 AT MEQUON ROAD	IH 794 AT JACKSON STREET	15	21	24	18
	ZOO INTERCHANGE	21	34	43	31
	IH 94 AT BARKER ROAD	28	44	57	42
	STH 119 AT HOWELL AVENUE	23	32	38	29
	IH 94 AT CTH KR	39	49	58	46
	IH 43 AT CTH Y	32	43	53	40
	IH 43 AT NORTH AVENUE	12	17	20	14
IH 43 AT CTH Y	IH 794 AT JACKSON STREET	19	23	31	24
	ZOO INTERCHANGE	11	14	18	14
	STH 119 AT HOWELL AVENUE	15	17	22	17
	USH 41/45 AT LANNON ROAD	27	35	47	35
	IH 43 AT MEQUON ROAD	32	43	53	40
	IH 43 AT NORTH AVENUE	20	26	33	26
	USH 41/45 AT LISBON AVENUE	18	25	31	25

Table 38 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]		
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements and Additional Lanes
IH 43 AT NORTH AVENUE	IH 794 AT JACKSON STREET	3	4	4	4
	ZOO INTERCHANGE	9	17	23	17
	IH 94 AT BARKER ROAD	16	27	37	28
	STH 119 AT HOWELL AVENUE	11	15	18	15
	IH 94 AT CTH KR	27	32	38	32
	IH 43 AT MEQUON ROAD	12	17	20	14
	IH 43 AT CTH Y	20	26	33	26
USH 41 AT LISBON AVENUE	IH 794 AT JACKSON STREET	7	11	13	11
	ZOO INTERCHANGE	7	11	13	11
	IH 94 AT BARKER ROAD	14	21	27	22
	STH 119 AT HOWELL AVENUE	16	22	28	22
	IH 94 AT CTH KR	32	39	48	39
	IH 43 AT CTH Y	18	25	31	25

[a] *Free flow travel time is the average travel time on a freeway segment when freeway travel and speed are not affected by traffic volume or congestion.*

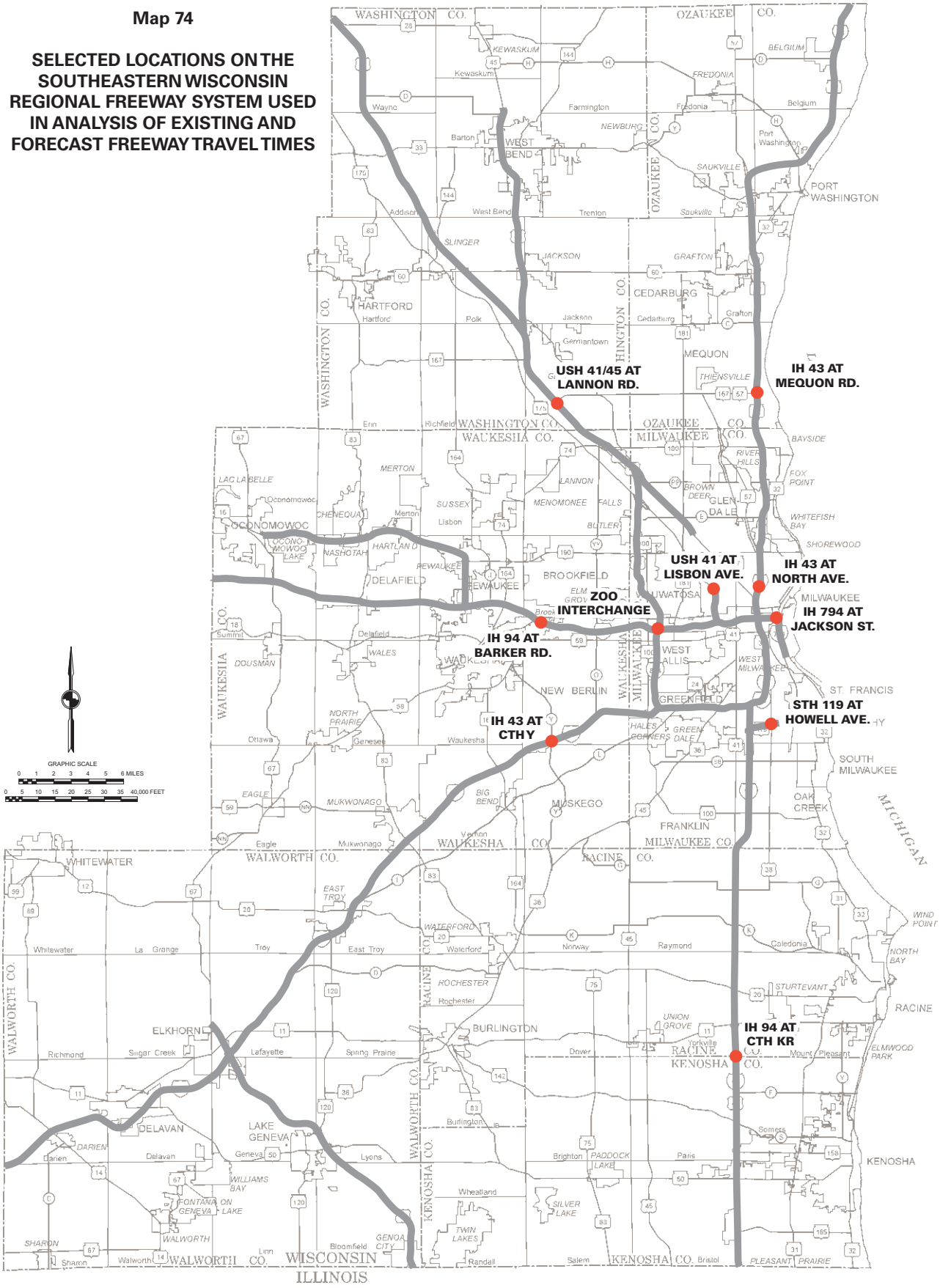
[b] *Peak hour travel times are travel times during the peak hours of freeway traffic volume and congestion, which are typically 7:00 to 8:00 a.m. and 4:30 to 5:30 p.m. The estimated and forecast peak hour travel times displayed in this table are typically afternoon peak hour travel times for the travel westbound on IH 94, northbound on USH 45 (north of the Zoo Interchange), northbound on IH 43 (north of the Marquette Interchange), southbound on IH 43 (south of the Marquette Interchange) and southbound and westbound on IH 894; and, are typically morning peak hour travel times for travel eastbound on IH 94, southbound on USH 45 (north of the Zoo Interchange), southbound on IH 43 (north of the Marquette Interchange), northbound on IH 43 (south of the Marquette Interchange), and northbound and eastbound on IH 894.*

Source: SEWRPC.

It may be reasonable to conclude that the reconstruction of the freeway system with additional lanes may not be expected to be a significant cause of, or contributor to, urban decentralization or centralization in Southeastern Wisconsin. This is because, while rebuilding the freeway system with additional lanes may be expected to permit avoiding a significant future increase in freeway system traffic congestion, the resultant level of future freeway system traffic congestion will only be moderately less than the existing level of freeway system traffic congestion. And, as noted above, transportation is not considered a principal, or even a significant, cause of urban decentralization or centralization. The potential impacts on land use decentralization of the alternative of rebuilding the freeway system without additional lanes are less clear-cut. Some would argue that it may reduce decentralization, while others would argue that it may increase decentralization. In any case, the impact may be insignificant as transportation is considered neither a principal nor significant cause of urban decentralization.

Map 74

SELECTED LOCATIONS ON THE SOUTHEASTERN WISCONSIN REGIONAL FREEWAY SYSTEM USED IN ANALYSIS OF EXISTING AND FORECAST FREEWAY TRAVEL TIMES



Source: SEWRPC.

Table 39

FORECAST FUTURE YEAR 2020 SOUTHEASTERN WISCONSIN REGION TRANSPORTATION SYSTEM AIR POLLUTANT EMISSIONS AND FUEL CONSUMPTION[a,b]

Freeway Reconstruction Alternative	Year 2020 Forecast Air Pollutant Emissions (tons per hot summer weekday)				Year 2020 Forecast Fuel Consumption (gallons per average weekday)
	Volatile Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Carbon Dioxide	
Design and Design-Related Safety Improvements	20.5	25.8	217.3	19,326.6	1,933,000
Design and Design-Related Safety Improvements and Additional Lanes	20.5	26.8	217.3	19,218.5	1,922,000

[a]*Whether the regional freeway system is rebuilt with or without additional lanes may be expected to have negligible impact on the level of transportation system ozone-related and other air pollutant emissions and air quality, and also vehicle motor fuel consumption. This is because the same level of total regional vehicle-miles of traffic may be expected whether or not the freeways are widened. What will vary is the amount of traffic which may be expected to travel under congested traffic conditions, and to travel on the freeway system as opposed to surface arterial streets. With the exception of nitrogen oxide emissions, air pollutant emissions and motor fuel consumption are projected to be reduced under an alternative with additional lanes due to forecast reduced traffic congestion and increased traffic speeds. Nitrogen oxide emissions are projected to increase under that alternative as such emissions generally increase with increasing traffic speeds.*

[b]*Includes all vehicle transportation emissions and fuel consumption from the seven county Region street and highway system traffic: freeways, surface arterial streets, and collector and land access streets.*

Source: SEWRPC.

Induced Travel

One of the contentions of opponents of highway capacity expansion projects is that adding highway traffic-carrying capacity is futile, because the attendant reduction in traffic congestion and travel time will only induce additional travel, and thereby eliminate any anticipated congestion reduction benefits.

Daily travel is influenced by the time and cost attendant to travel. For example, commuters will typically search for, and take, the route with the least travel time. And, the cost of travel is certainly a factor in the choice of mode—automobile or public transit. However, travel is a derived demand. Travel is not made for the purposes of travel alone, but rather for the purpose of work, school, medical and dental appointments, other personal business, shopping, and social and recreational activities.

Theoretically, there are a number of ways travel could change as a result of changes in the time and cost of travel—for example, in response to adding lanes on a freeway system and thereby reducing freeway traffic congestion and travel time:

- Changes in the route of travel;
- Changes in the time of travel;
- Changes in the choice of mode of travel (automobile or public transit);
- Changes in travel origin and destination, and attendant distance of travel; and,
- Changes in the amount of travel-making, that is, the generation of new and additional trips.

The Commission travel forecasting and simulation models directly incorporate the effect that changes in travel time and cost may be expected to have on travel route, travel time period, choice of travel mode, and travel

destination. The Commission's travel models, as is standard practice for travel models in metropolitan areas, do not account for changes in the amount of trip-making with travel cost and time. This is because analyses of trip-making have indicated that the characteristics of the trip-maker—income, vehicle ownership, household size, participation in the labor force, and stage in family life cycle—are the most significant influences on the amount of travel, while travel time and cost have relatively very little influence. Moreover, trips made during periods of traffic congestion are generally for work and school purposes, and would need to be made regardless of the level of traffic congestion. In addition, nobody may be expected to make additional trips to or from work or school on a typical weekday if traffic congestion was significantly reduced. The number of trips to and from work and school made by individuals, and as well as to and from medical and dental appointments and other personal business purposes, may not reasonably be expected to vary with the level of traffic congestion or travel cost. Trips for social and recreational purposes and shopping are typically made during mid-day and evening off-peak travel periods of weekdays or weekends when traffic congestion is not present, or if present, is not severe.

It may be instructive to consider the time period within Southeastern Wisconsin from 1972 to 1991. Nearly all freeways which are part of the existing freeway system were completed by 1972, and were opened to traffic in the mid- to late-1960s and early 1970s. The construction of the freeway system not only alleviated nearly all existing traffic congestion within Southeastern Wisconsin, but also significantly reduced both peak period and off-peak period travel times due to the relatively higher travel speeds of freeway travel compared to surface arterial street travel. In the early 1990s the Commission staff prepared estimates based upon areawide annual traffic counting programs of the growth in highway traffic over the time period of 1972 to 1991, and comprehensively considered the potential factors influencing that traffic growth utilizing the 1970 and 1990 U.S. Censuses, employment estimates, land use inventories, and travel surveys of over 15,000 Southeastern Wisconsin households in 1972 and 1991. The analyses indicated that highway traffic increased by about 65 percent over that period, and about one-half (49%) of the traffic growth (a 32 percent increase in traffic from 1972 to 1991) can be directly attributed to the increase in households of about 26 percent and employment of 36 percent in the Region over the period 1972 to 1991. Another 23 percent of the traffic growth increase, or about a 15 percent increase in traffic from 1972 to 1991, can be attributed to a decline in ridesharing, or automobile occupancy, for work trips (from 1.17 persons per vehicle in 1972 to 1.06 in 1991), and for all trips (from 1.42 persons per vehicle in 1972 to 1.26 in 1991). This reduction in ridesharing and vehicle occupancy was not due to the significant reductions in traffic congestion or travel time, but rather due to changes in lifestyle, income, and vehicle ownership. Another 2 percent of the traffic growth increase, or about a one percent increase in traffic from 1972 to 1991, can be attributed to a decline in transit use. The remaining 26 percent of the increase in traffic within Southeastern Wisconsin between 1972 and 1991, or about a 17 percent increase in traffic between 1972 and 1991, may be attributed to an increase in vehicle trip length between 1972 and 1991. Part of this increase may be a result of the significant reduction in travel time and congestion as a result of the completion of the freeway system largely by 1972, but also contributing could be the decline over that time period in the out-of-pocket cost of operating an automobile ($0.029 per mile in 1972 and 1.7 cents per mile in 1991—both in 1972 constant dollars), and as well changing lifestyles, including two worker households, and increases in household income.

As previously noted, reconstruction of the regional freeway system with additional lanes may only be expected to result in levels of freeway traffic congestion in the year 2020 which are marginally less than current levels of traffic congestion. Therefore, it would be unreasonable to expect any increase in induced traffic—either from longer trips, new induced trips, or trips shifting from public transit to automobile. The analysis does indicate, however, that providing more freeway capacity may be expected to shift traffic from surface arterials to freeways—with increases of 10,000 to 25,000 vehicles per weekday on segments of freeway and decreases of 1,000 to 8,000 vehicles per weekday on selected surface arterial streets.

Impacts on Minority and Low Income Populations

The impacts of reconstructing the regional freeway system with additional lanes on minority and low income populations have been evaluated and are documented in Appendix C to the study report.

In summary, the analysis indicated no significant disproportionate adverse impacts:

- Minority and low income populations are not significantly disproportionately represented in areas in proximity to proposed widened freeways.
- While some segments of the freeway system, including those proposed to be widened, are located adjacent to minority and low income populations, the vast majority of the freeway system and freeway segments proposed to be widened are not adjacent to minority populations. Also the vast majority of census blocks having above average concentrations of minority populations are not located adjacent to, or in proximity to, the freeway system or freeway segments proposed to be widened.
- The residences and businesses which are estimated to need to be acquired, particularly those required for additional lanes, are generally not disproportionately located in areas with above county or regional averages of minority or low income populations.

With respect to the potential benefits of improved accessibility under a regional freeway system with additional lanes as compared to an alternative of rebuilding the freeway system as it exists today, analyses indicate that the freeway system with additional lanes would reduce peak hour highway travel times throughout the Region similarly in areas of above regional average and below regional average concentrations of minority populations, and the preliminary plan would provide similar percentage increases in the number of jobs accessible within 10, 20, and 30 minutes of peak hour highway travel time in areas of above regional average and below regional average concentrations of minority concentrations.

Consideration of Options with Respect to Rebuilding the Freeway System with Additional Lanes
Prior to considering a recommendation with respect to including the widening of the freeway system with additional lanes in the preliminary plan for freeway system reconstruction, the Study Advisory Committee requested that two options with respect to widening the freeway system be considered. These options are shown on Map 75 and would eliminate the proposed widening of selected freeway segments:

- Option 1—No added lanes on IH 94 between the Zoo and Marquette Interchanges (121 miles of freeway widening remain under this alternative)
- Option 2—No added lanes on three freeway segments
  - IH 94 between the Zoo and Marquette Interchanges
  - IH 43 between the Mitchell and Marquette Interchanges
  - IH 43 between the Marquette Interchange and Bender Road (108 miles of freeway widening remain under this alternative—IH 43 widening between Bender and Brown Deer Roads to be widened to six lanes rather than eight lanes)

Table 40 compares the costs, impacts, and benefits of the initial alternative of widening 127 miles of freeway with these two options, which would remove some of the freeway widenings. The principal differences between these three alternatives of adding lanes to the freeway system are with respect to construction cost, right-of-way acquisition, and traffic congestion. Negligible differences may be expected with respect to impacts on air pollutant emissions, motor fuel consumption, impacts on primary environmental corridors and wetlands, induced travel, and effects on urban decentralization or centralization.

With respect to construction costs, the differences between the three widening options are modest.

Freeway System Reconstruction Alternatives with Additional Lanes	Total Construction Cost with Design and Safety Improvements and Additional Lanes	Incremental Cost of Additional Lanes	Savings by Elimination of Widening
All 127 miles of widening	$6.25 billion	$730 million	- -
No additional lanes on IH 94 between Marquette and Zoo Interchanges (121 miles of widening)	$6.16 billion	$640 million	$90 million
No additional lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell Interchange and Bender Road (108 miles of widening remain-widening of IH 43 reduced from eight to six lanes between Bender and Brown Deer Roads)	$5.99 billion	$470 million	$260 million

The option which proposes to eliminate the widening of segments of IH 43 and IH 94 would retain 85 percent of the proposed systemwide freeway widening (108 of the 127 freeway miles) with additional lanes, while reducing the incremental cost of the additional lanes by more than 35 percent ($470 million as compared to $730 million).

With respect to right-of-way acquisition, the impacts of rebuilding the freeway system with additional lanes may be expected to be significantly reduced if the widening of segments of IH 94 and IH 43 are eliminated.

Freeway System Reconstruction Alternatives with Additional Lanes	Incremental Right-of-Way Acquisition Needs Attendant to Additional Lanes			
	Acres	Residences	Commercial/ Industrial Buildings	Governmental/ Institutional Buildings
All 127 miles of widening	81	50	8	1
No additional lanes on IH 94 between Marquette and Zoo Interchanges (121 miles of widening)[a]	59	32	3	1
No additional lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell Interchange and Bender Road (108 miles of widening remain-widening of IH 43 reduced from eight to six lanes between Bender and Brown Deer Roads)[b]	35	14	- -	- -

[a]*Compared to the alternative proposing the full widening of 127 miles of freeway, the 18 residences not necessary to be acquired under this alternative are located south of IH 94 between N. 70th and N. 76th Streets and the five commercial buildings not required to be acquired are located south of IH 94 between N. 26th and N. 13th Streets*

[b]*Compared to the alternative proposing the full widening of 127 miles of freeway, the residences and other buildings not required to be acquired include 36 residences, including 18 residences south of IH 94 between N. 70th and N. 76th Streets, three residences west of IH 43 and north of W. North Avenue and 15 residences west of IH 43 between Bender and Brown Deer Roads; three commercial buildings along IH 43 between Bender and Green Tree Roads; and one governmental building—the Milwaukee County Courthouse Annex.*

The total right-of-way acquisition needs attendant to the full 127 miles of proposed freeway system widening are relatively modest, on a regional basis, representing less than a 1 percent expansion of freeway system right-of-way in the Region and less than an additional 0.01 percent of the Region to be dedicated to freeway system right-of-way. The right-of-way acquisition needs attendant to additional lanes within Milwaukee County represents a 2 percent expansion of freeway right-of-way within Milwaukee County, and an additional 0.05 percent of Milwaukee County land area to be dedicated to freeway purposes.

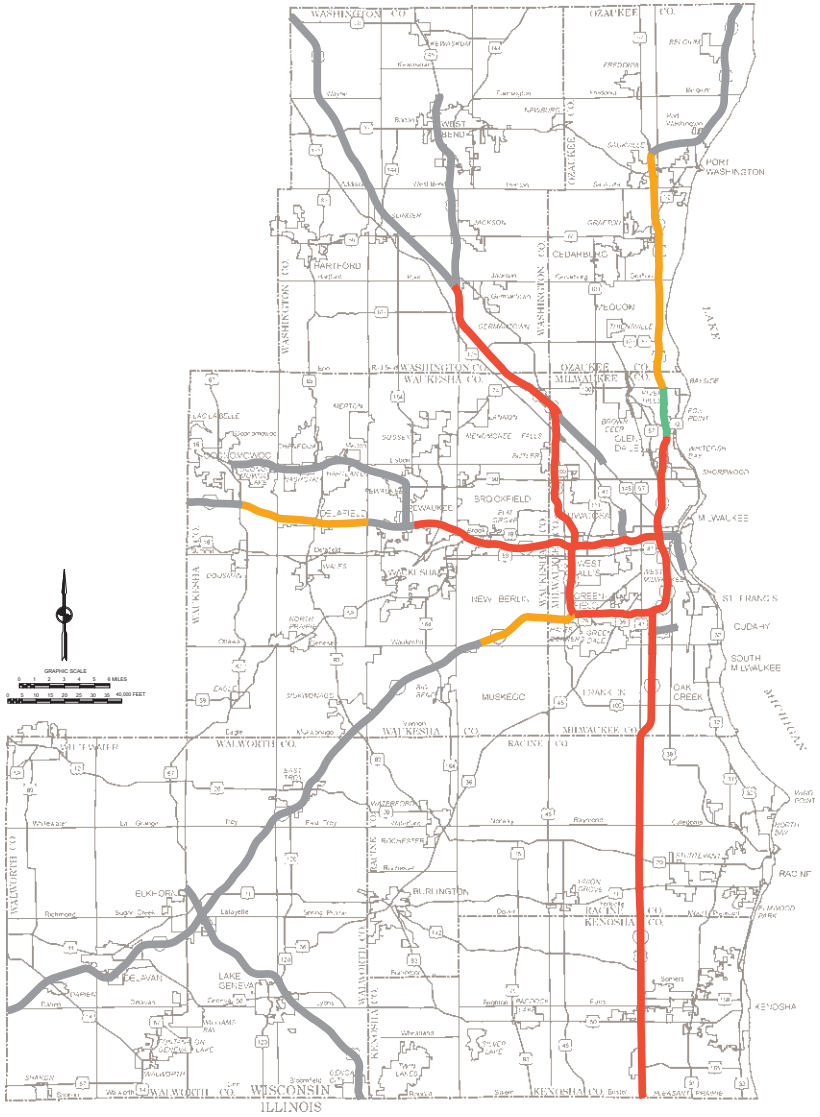
The widening IH 94 to eight lanes between Mitchell Boulevard and Hawley Road—where Wood National Cemetery and other cemeteries are located adjacent to the freeway—will not require the acquisition of any new right-of-way nor the relocation or disturbance of any graves. In fact, the land dedicated to freeways and streets within Wood National Cemetery is likely to decrease, as the proposed design for this freeway segment includes the construction of a structure to elevate the westbound IH 94 freeway lanes. The elevated westbound lanes would overlap both the eastbound lanes and the adjacent cemeteries to the north by up to 25 feet. Construction of the proposed structure would require the acquisition of air rights and permanent easements for maintenance of the portion of the structure overhanging the cemeteries. This freeway redesign would be considered whether additional lanes are provided on IH 94, or it is rebuilt with design and design-related safety improvements only.

With respect to traffic congestion, not widening these segments of IH 94 and IH 43 may be expected principally to result in more severe traffic congestion on the segments of freeway not widened or reduced in widening: IH 94 between the Marquette and Zoo Interchanges, and IH 43 Between the Mitchell Interchange and Brown Deer Road. No more than 1,000 to 5,000 vehicles per weekday in the year 2020 may be expected to be diverted to other segments of the freeway system, including IH 894 and USH 45, representing less than a 1 to 3 percent increase in average weekday traffic on other segments of the freeway system. As a result, no substantial increase may be expected with respect to the areal extent of freeways experiencing traffic congestion, and no increase may be expected in the severity of traffic congestion experienced on the remainder of the freeway system by not widening

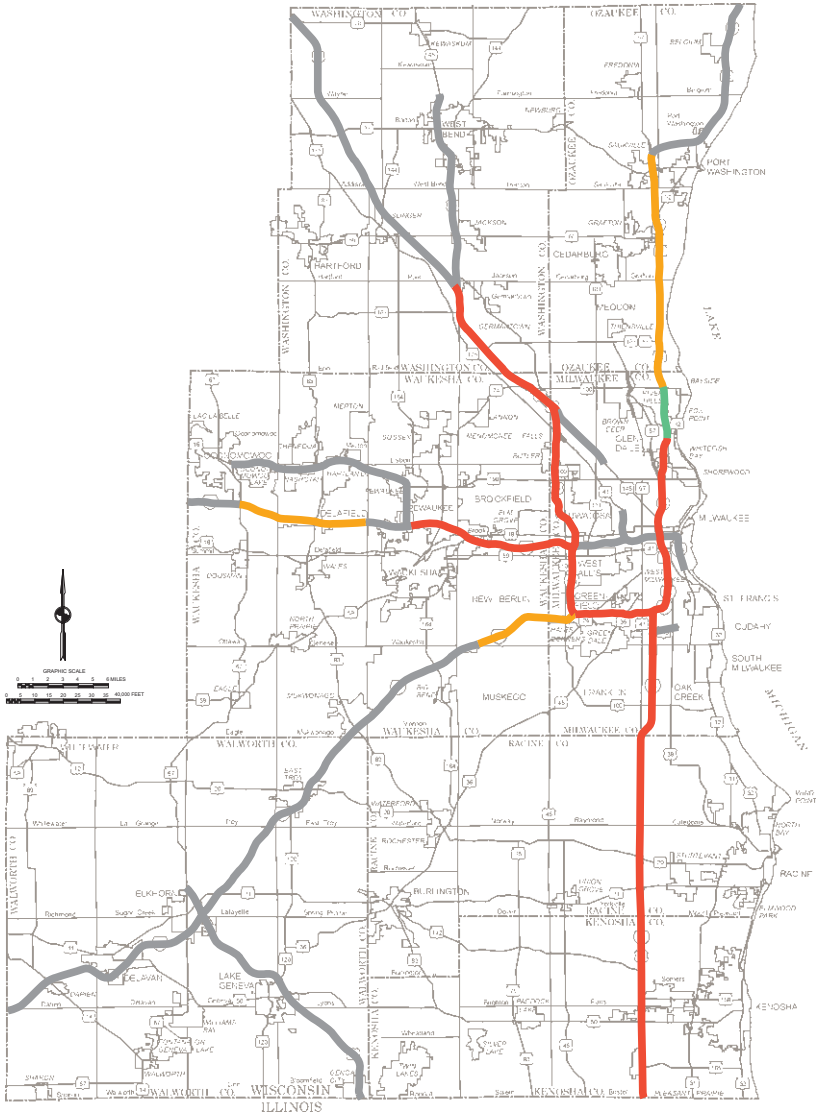
Map 75

FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES WITH OPTIONS FOR THE PROVISION OF ADDITIONAL LANES

FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 127 MILES OF WIDENING

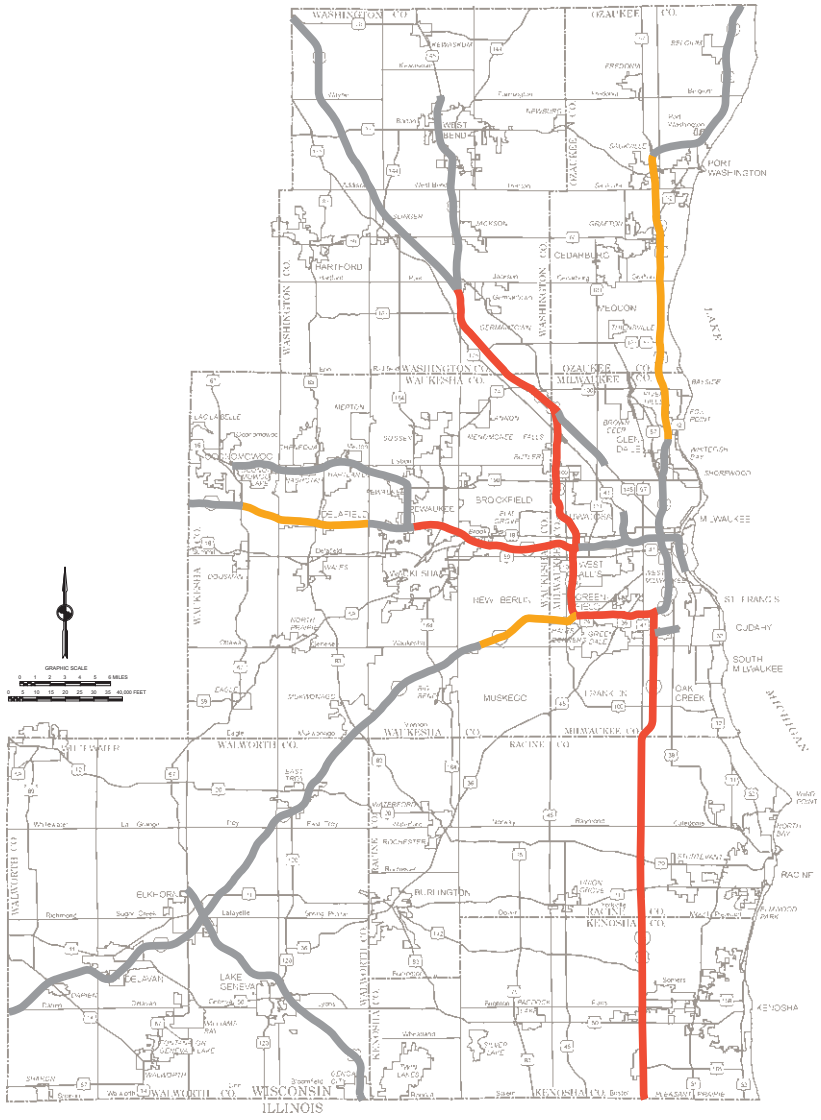


FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 121 MILES OF WIDENING (NO WIDENING OF IH 94 BETWEEN THE MARQUETTE AND ZOO INTERCHANGES)



Map 75 (continued)

FORECAST 2020 FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 108 MILES OF WIDENING (NO WIDENING OF IH 94 BETWEEN THE MARQUETTE AND ZOO INTERCHANGES AND ON IH 43 BETWEEN THE MITCHELL INTERCHANGE AND SILVER SPRING DRIVE AND REDUCED WIDENING OF IH 43 BETWEEN BENDER AND BROWN DEER ROADS TO 6 RATHER THAN 8 LANES)



FREEWAY PROPOSED FOR WIDENING FROM 6 TO 8 LANES

FREEWAY PROPOSED FOR WIDENING FROM 4 TO 6 LANES

FREEWAY PROPOSED FOR WIDENING FROM 4 TO 8 LANES

OTHER FREEWAY SEGMENTS

Source: SEWRPC.

Table 40

COMPARISON OF FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES WITH DIFFERENT EXTENTS OF WIDENING TO PROVIDE ADDITIONAL LANES

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway— No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and Brown Deer Roads from Eight to Six Lanes
• Construction Cost (year 2000 dollars)	$6.25 billion (Incremental cost of $730 million for additional lanes)	$6.16 billion (Incremental cost of $640 million for additional lanes)	$5.99 billion (Incremental cost of $470 million for additional lanes)
• Incremental Right-of-Way Acquisition Attendant to Additional Lanes	81 acres 50 residences 8 commercial/industrial buildings 1 governmental/institutional building	59 acres[a] 32 residences 3 commercial/industrial buildings 1 governmental/institutional building	35 acres[b] 14 residences No commercial/industrial buildings No governmental/institutional buildings
	Right-of-way acquisition under each alternative represents on a regional level less than a 1 percent expansion of freeway right-of-way, and less than an additional 0.01 percent of Region dedicated to freeways. Right-of-way expansion within Milwaukee County represents a 2 percent expansion of freeway right-of-way, and less than an additional 0.05 percent of Milwaukee County dedicated to freeways.		
	The widening IH 94 to eight lanes between Mitchell Boulevard and Hawley Road—where Wood National Cemetery and other cemeteries are located adjacent to the freeway—will not require the acquisition of any new right-of-way nor the relocation or disturbance of any graves. In fact, the land dedicated to freeways and streets within Wood National Cemetery is likely to decrease, as the proposed design for this freeway segment includes the construction of a structure to elevate the westbound IH 94 freeway lanes. The elevated westbound lanes would overlap both the eastbound lanes and the adjacent cemeteries to the north by up to 25 feet. Construction of the proposed structure would require the acquisition of air rights and permanent easements for maintenance of the portion of the structure overhanging the cemeteries. This freeway redesign would be considered whether additional lanes are provided on IH 94, or it is rebuilt with design and design-related safety improvements only.		
• Impacts on Primary Environmental Corridors	No difference between alternatives. Each requires seven acres of primary environmental corridor, including four acres of wetland. Also, another additional one acre of isolated wetland outside primary environmental corridor. Represents less than 0.002 percent of Region's primary environmental corridor and 0.001 percent of wetlands.		
• Traffic Congestion			
• Miles of freeway affected by congestion in year 2020 on an average weekday (See Map 6-22)	Extreme Congestion[c] Severe Congestion[d] Moderate Congestion[e] Total Miles	26 miles 17 miles 15 miles 58 miles	26 miles 17 miles 15 miles 58 miles	32 miles 14 miles 16 miles 62 miles

• More severe average weekday year 2020 traffic congestion on freeway segments with proposed elimination of widening	- -	IH 94 between Marquette and Zoo Interchanges Hours of Congestion					IH 94 between Marquette and Zoo Interchanges Hours of Congestion				
			Total	Extreme	Severe	Moderate		Total	Extreme	Severe	Moderate
		With No Added Lanes	16	4	5	7	With No Added Lanes	16	4	5	7
		With Added Lanes	13	2	5	6	With Added Lanes	13	2	5	6

Table 40 (continued)

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway— No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and_Brown Deer Roads from Eight to Six Lanes
• Traffic Congestion (continued) • More severe average weekday year 2020 traffic congestion on freeway segments with proposed elimination of widening (continued)	- -	- -	IH 43 between Mitchell and Marquette Interchanges Hours of Congestion

	Total	Extreme	Severe	Moderate
With No Added Lanes	11	2	4	5
With Added Lanes	4	--	2	2

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway— No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and_Brown Deer Roads from Eight to Six Lanes
	- -	- -	IH 43 between Marquette Interchange and Bender Road Hours of Congestion

	Total	Extreme	Severe	Moderate
With No Added Lanes	6	1	2	3
With Added Lanes	4	- -	1	3

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway— No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and_Brown Deer Roads from Eight to Six Lanes
	- -	- -	IH 43 between Bender and Brown Deer Roads Hours of Congestion

	Total	Extreme	Severe	Moderate
Widening to Six Lanes[f]	3	- -	- -	3
Widening to Eight Lanes	- -	- -	- -	- -

Table 40 (continued)

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway— No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and_Brown Deer Roads from Eight to Six Lanes
• Traffic Congestion (continued) • Additional traffic on surface streets[9]	- -	• Wisconsin Avenue—3,000 to 4,500 vehicles per weekday • Greenfield Avenue—1,000 to 3,000 vehicles per weekday • St. Paul Avenue—1,000 to 3,000 vehicles per weekday • Lisbon Avenue—1,000 to 3,000 vehicles per weekday • 27th Street—1,000 to 3,000 vehicles per weekday	• Wisconsin Avenue—3,000 to 4,500 vehicles per weekday • Greenfield Avenue—1,000 to 3,000 vehicles per weekday • St. Paul Avenue—1,000 to 3,000 vehicles per weekday • Lisbon Avenue—1,000 to 3,000 vehicles per weekday • 27th Street—1,000 to 3,000 vehicles per weekday • Fond du Lac Avenue—1,000 to 3,000 vehicles per weekday • Capitol Drive—1,000 to 3,000 vehicles per weekday • National Avenue—1,000 to 3,000 vehicles per weekday • Forest Home Avenue—1,000 to 3,000 vehicles per weekday • Howell Avenue—1,000 to 3,000 vehicles per weekday • Lincoln Memorial Drive—1,000 to 3,000 vehicles per weekday • Port Washington Road—1,000 to 3,000 vehicles per weekday • 43rd Street—1,000 to 3,000 vehicles per weekday
• Traffic Congestion (continued) • Longer average weekday year 2020 peak hour freeway travel times with proposed elimination of widening	Peak Hour Travel Time (minutes)	Peak Hour Travel Time (minutes)	Peak Hour Travel Time (minutes)
	IH 94 – between Marquette and Zoo Interchanges: 14	IH 94 – between Marquette and Zoo Interchanges: 19	IH 94 – between Marquette and Zoo Interchanges: 19
	IH 43 – between Mitchell and Marquette Interchanges: 9	IH 43 – between Mitchell and Marquette Interchanges: 9	IH 43 – between Mitchell and Marquette Interchanges: 12
	IH 43 – between Marquette Interchange and Brown Deer Road: 13	IH 43 – between Marquette Interchange and Brown Deer Road: 13	IH 43 – between Marquette Interchange and Brown Deer Road: 17

Table 40 (continued)

	Additional Lanes on 127 Miles of Freeway	Additional Lanes on 121 Miles of Freeway- No Additional Lanes on IH 94 between Marquette and Zoo Interchanges	Additional Lanes on 108 Miles of Freeway—No Additional Lanes on IH 94 between Marquette and Zoo Interchanges and on IH 43 between Mitchell and Silver Spring Interchanges and Reduced Widening on IH 43 between Bender and Brown Deer Roads from Eight to Six Lanes
• Traffic Safety	Significant improvement in freeway traffic safety expected due to expected reduction in rear-end accidents. Rear-end accident rates are five to 15 times higher on congested freeways, as compared to uncongested freeways. The most extremely congested freeways experience the highest rear-end crash rates. With additional lanes, the extent of freeways experiencing congestion on an average weekday will be reduced by 52 percent, and the extent of freeways experiencing extreme or severe congestion on an average weekday will be reduced by 41 percent.	Significant improvement in freeway traffic safety expected due to expected reduction in rear-end accidents with the exception of the segment of IH 94 proposed to not be widened under this alternative. Rear-end accident rates are five to 15 times higher on congested freeways, as compared to uncongested freeways. The most extremely congested freeways experience the highest rear-end crash rates. Under this alternative the extent of freeways experiencing congestion on an average weekday will be reduced by 52 percent, and the extent of freeways experiencing extreme or severe congestion on an average weekday will be reduced by 41 percent. However, the segment of IH 94 between the Marquette and Zoo Interchanges may be expected to experience more extreme traffic congestion, and increased rear-end accidents under this alternative.	Significant improvement in freeway traffic safety expected due to expected reduction in rear-end accidents with the exception of the segment of IH 94 and IH 43 proposed to not be widened under this alternative. Rear-end accident rates are five to 15 times higher on congested freeways, as compared to uncongested freeways. The most extremely congested freeways experience the highest rear-end crash rates. Under this alternative, the extent of freeways experiencing congestion on an average weekday will be reduced by 49 percent, and the extent of freeways experiencing extreme or severe congestion on an average weekday will be reduced by 37 percent. However, the segment of IH 94 and IH 43 proposed not to be widened under this alternative may be expected to experience more extreme traffic congestion, and increased rear-end accidents.
• Air Pollutant Emissions and Motor Fuel Consumption and Impacts on Air Quality	Almost no difference between alternatives. Negligible impact of additional lanes on level of air pollutant emissions, motor fuel consumption, and air quality. Similar levels of regional vehicle traffic expected with or without additional lanes. Transportation generated ozone-related air pollutant emissions have been declining, and are projected to continue to decline by the year 2020 by more than 60 percent, even with increasing traffic, due to tighter standards for new motor vehicles.		
• Land Use Impacts	Almost no difference between alternatives. No impact on land use decentralization or centralization expected, as future year 2020 traffic congestion with additional lanes will only be modestly less than current traffic congestion, and transportation is one of many possible causes, and is not considered a principal or significant cause of land use decentralization.		
• Induced Travel	No difference between alternatives. No additional travel is expected to be induced by additional freeway lanes, as future year traffic congestion with additional lanes may be expected to be only modestly less than current levels of traffic congestion.		

[a]*Compared to the alternative proposing the full widening of 127 miles of freeway, the 18 residences not necessary to be acquired under this alternative are located south of IH 94 between N. 70th and N. 76th Streets and the five commercial buildings not required to be acquired are located south of IH 94 between N. 26th and N. 13th Streets.*

[b]*Compared to the alternative proposing the full widening of 127 miles of freeway, the residences and other buildings not required to be acquired include 36 residences, including 18 residences south of IH 94 between N. 70th and N. 76th Streets, three residences west of IH 43 and north of W. North Avenue, and 15 residences west of IH 43 between Bender and Brown Deer Roads; three commercial buildings along IH 43 between Bender and Green Tree Roads; and, one governmental building—the Milwaukee County Courthouse Annex.*

[c]*Extreme traffic congestion is characterized by stop-and go bumper-to-bumper traffic operating at speeds of 20 to 30 miles per hour or less.*

[d]*Severe congestion is characterized by traffic operating at speeds of 5 to 15 miles per hour below free-flow speed and no gaps in traffic for lane changing.*

[e]*Moderate traffic congestion is characterized by traffic operating at speeds of 1 to 5 miles per hour below free-flow speed and substantial restrictions on ability to change lanes.*

[f]*The segment of IH 43 between Bender and Good Hope Roads may be expected to experience one hour of severe congestion on an average weekday in 2020 if this freeway segment is widened to six rather than eight lanes.*

[g]*The forecast additional traffic on surface streets would be expected during periods of extreme and severe congestion on the freeway system.*

Source: SEWRPC.

these segments of IH 94 and IH 43. The estimated forecast year 2020 traffic congestion under each freeway system reconstruction alternative without additional lanes is shown on Map 76.

The anticipated consequences of not widening these segments of IH 94 and IH 43 are principally greater traffic congestion on these freeway segments, including more hours of congestion on an average weekday, and more severe and extreme traffic congestion.

Under the option which would remove the widening of IH 94 between the Marquette and Zoo Interchanges, this segment of IH 94 may be expected to experience on an average weekday in the year 2020 three more hours of congestion of which two of the additional hours may be expected to be extreme congestion compared to the alternative which would widen this segment of IH 94.

Under the option which would remove the widenings of IH 94 between the Marquette and Zoo Interchanges and of IH 43 between the Mitchell Interchange and Bender Road, this segment of IH 94 may be expected to experience on an average weekday in the year 2020 three more hours of congestion on an average weekday of which two hours may be expected to be extreme congestion. The segment of IH 43 between the Mitchell and Marquette Interchanges may be expected to experience seven more hours of congestion on an average weekday in the year 2020, including two additional hours of extreme congestion and two additional hours of severe congestion. Also, the segment of IH 43 between the Marquette Interchange and Bender Road may be expected to experience two more hours of congestion on an average weekday in the year 2020, including one additional hour each of extreme and severe congestion. The segment of IH 43 between Bender and Brown Deer Roads, if widened to only six lanes, would be expected to operate on an average weekday in the year 2020 with severe congestion between Bender Road and Good Hope Road and with moderate congestion between Good Hope Road and Brown Deer Road. If widened to eight lanes, this segment of IH 43 may be expected to operate without congestion. The estimated year 2020 peak hour travel times under alternatives with additional lanes are presented in Table 41. attendant property tax base and neighborhood impacts associated with widening; the congestion avoidance and travel time savings benefits associated with providing additional freeway capacity where heavy volumes warrant such capacity; funding availability; and the need to ensure that as the regional freeway reconstruction program moves ahead over the next two-to-three decades, adequate funds are made available also for public transit and nonfreeway arterial highway purposes.

Technical Subcommittee Action

On January 29, 2002, the Technical Subcommittee met to consider the matter of widening of freeways and the foregoing staff recommendation that the preliminary recommended freeway reconstruction plan propose widening along 127 miles of the regional freeway system. Subcommittee discussion focused on a number of matters, including the additional costs associated with freeway widening; the additional right-of-way acquisition needs and attendant property tax base and neighborhood impacts associated with widening; the congestion avoidance and travel time savings benefits associated with providing additional freeway capacity where heavy volumes warrant such capacity; funding availability; and the need to ensure that as the regional freeway reconstruction program moves ahead over the next two-to-three decades, adequate funds are made available also for public transit and nonfreeway arterial highway purposes. The deliberations and votes of the Subcommittee led to the following positions and attendant recommendations to the Advisory Committee, with the representatives of two State agencies—the Wisconsin Department of Natural Resources and the Wisconsin Department of Transportation—abstaining from any positions at the time of the meeting:

1. All members of the Technical Subcommittee voting at the meeting supported widening 108 miles of the 127 miles of freeways proposed for widening, excepting only IH 94 between the Marquette and Zoo Interchanges and IH 43 between the Mitchell Interchange and Silver Spring Drive, with the latter exception coupled with support for widening IH 43 between Bender and Brown Deer Roads to six rather than eight lanes.

2. All but three of the Technical Subcommittee members voting at the meeting supported the widening of the additional 19 miles of freeways along IH 94 between the Marquette and Zoo Interchanges and along IH 43 between the Mitchell Interchange and Silver Spring Drive. The three Subcommittee members withholding their support for these widenings represented the City and County of Milwaukee. Those representatives cited a number of concerns relative to the widening of those particular 19 miles of freeways, including right-of-way acquisition needs, property tax base impacts, neighborhood impacts, construction costs, and funding availability.

Advisory Committee Action

After considering and comparing the costs, benefits, and impacts of the freeway system reconstruction alternatives, the Advisory Committee acted on March 21, 2002, to incorporate into a preliminary plan for the reconstruction of the Southeastern Wisconsin freeway system additional lanes on all 127 miles of freeway as proposed.

The Advisory Committee preliminary recommendation with respect to additional lanes was not unanimous, and was not made without discussion and expression of concerns and opposition. City of Milwaukee Mayor John O. Norquist registered his opposition to any freeway widening. The Wisconsin Department of Natural Resources (WisDNR) through a position paper noted that the WisDNR may support widening only about 50 miles of freeway—the freeway segments which currently, or are forecast by the year 2020 to, experience extreme traffic congestion: IH 94 between the Marquette Interchange and Barker Road, IH 43 between the Marquette Interchange and Brown Deer Road, IH 894 between the Mitchell and Zoo Interchanges, USH 45 between the Zoo Interchange and Mill Road, IH 94 between the Marquette Interchange and Rawson Avenue, and IH 43 between the Hale Interchange and STH 100. Interim Milwaukee County Executive Janine Geske abstained from the Advisory Committee vote regarding additional lanes, noting that her position was an interim, and not a policymaking, position. In addition, while approving the inclusion of the proposed widening of IH 94 between the Zoo and Marquette Interchanges in the preliminary plan for the purpose of public discussion—Milwaukee County Board Chairman Karen Ordinans, City of Wauwatosa Mayor Theresa Estness, and Milwaukee Metropolitan Association of Commerce President Tim Sheehy expressed substantial concerns.

Public Reaction to the Preliminary Recommended Plan

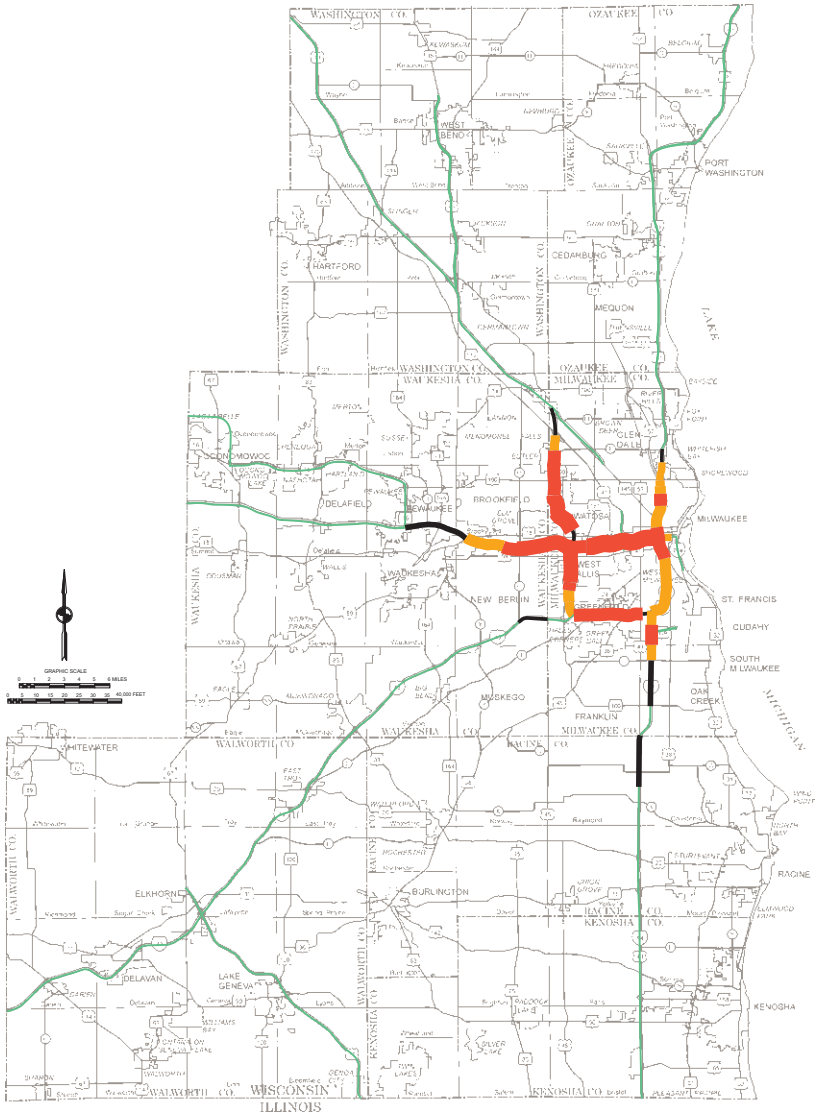
Comments and other feedback on the preliminary recommended plan and alternatives thereto were solicited through public informational meetings and hearings and other public participation techniques. Formal review and comment on the preliminary plan was solicited from each of the seven counties comprising the Region. Information regarding the study, and particularly the preliminary plan and alternatives considered, was also transmitted to the local municipalities for their review and potential action, and to State legislators for their review and comment. Presentations were made to, and comment obtained from, business, community, and other groups.

The following is a summary of the actions taken by government bodies with respect to the preliminary plan, and the comments received on the preliminary recommended regional freeway system reconstruction plan, its

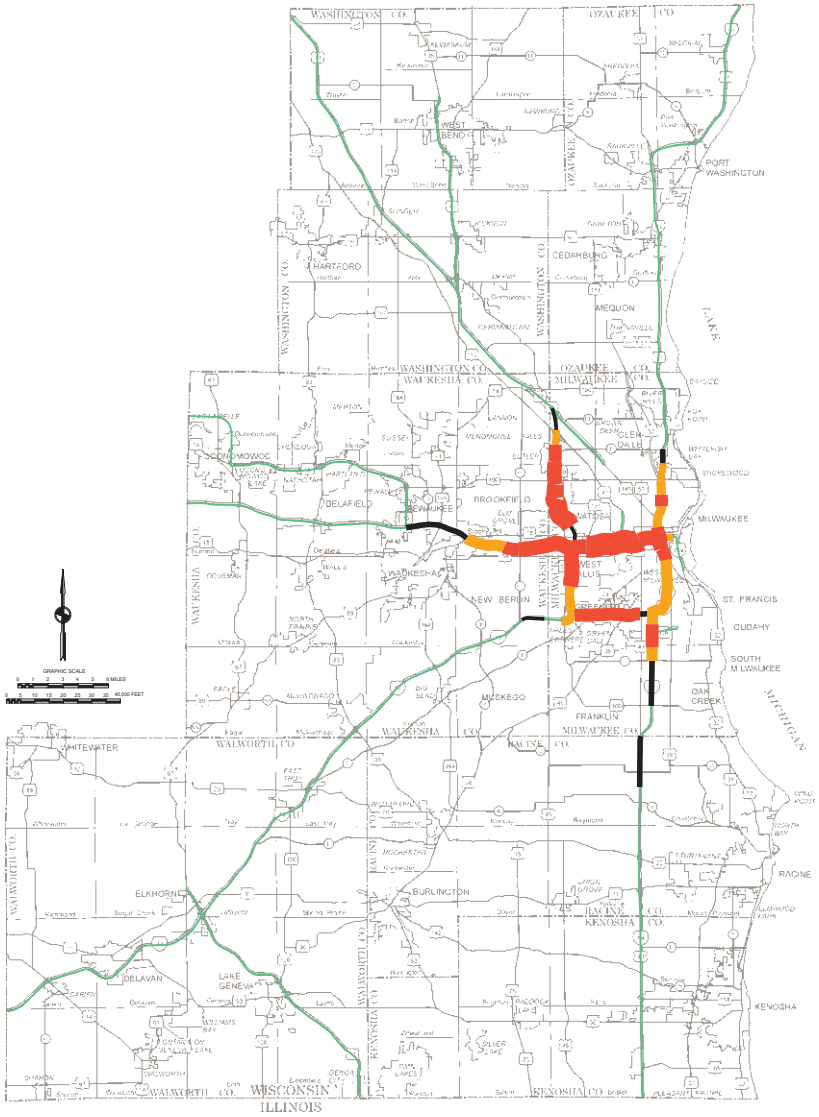
Map 76

ESTIMATED YEAR 2020 FREEWAY SYSTEM TRAFFIC CONGESTION UNDER THE FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES WITH ADDITIONAL LANES [a]

FORECAST 2020 UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 127 MILES OF WIDENING

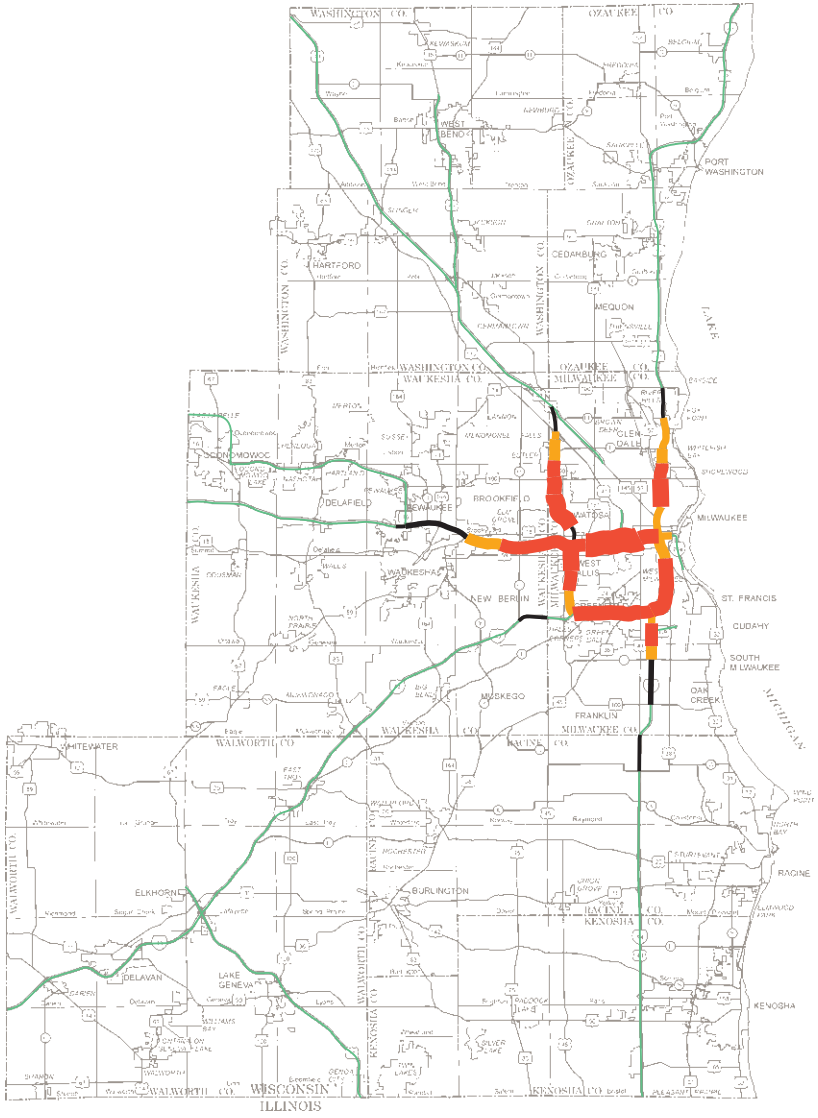


FORECAST 2020 UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 121 MILES OF WIDENING (NO WIDENING OF IH 94 BETWEEN THE MARQUETTE AND ZOO INTERCHANGES)



Map 76 (continued)

FORECAST 2020 FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH 108 MILES OF WIDENING (NO WIDENING OF IH 94 BETWEEN THE MARQUETTE AND ZOO INTERCHANGES AND ON IH 43 BETWEEN THE MITCHELL INTERCHANGE AND SILVER SPRING DRIVE AND REDUCED WIDENING OF IH 43 BETWEEN BENDER AND BROWN DEER ROADS TO 6 RATHER THAN 8 LANES)



MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION EXPERIENCED	ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL		
		EXTREME	SEVERE	MODERATE
--	NO CONGESTION	--	--	--
MODERATE	1	--	--	1
MODERATE	3	--	--	3
SEVERE	3	--	1	2
SEVERE	4	--	1	3
SEVERE	4	--	2	2
EXTREME	6	1	2	3
EXTREME	8	1	3	4
EXTREME	11	2	4	5
EXTREME	13	2	5	6
EXTREME	14	2	5	7
EXTREME	15	3	5	7
EXTREME	16	4	5	7
EXTREME	17	4	6	7

[a] *All forecasts of future congestion assume full implementation of regional land use and transportation plans- including development with "smart growth" practices at both regional and neighborhood levels, substantial expansion of public transit, planned improvements to the surface arterial street system, and transportation systems management measures, including freeway system intelligent transportation systems management measures.*

Table 41

ESTIMATED FREEWAY TRAVEL TIME BETWEEN SELECTED LOCATIONS ON THE SOUTHEASTERN WISCONSIN REGIONAL FREEWAY SYSTEM: ESTIMATED EXISTING 1999 AND FORECAST YEAR 2020 INCLUDING SUPPLEMENTAL ALTERNATIVES WITH ADDITIONAL LANES

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]				
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 127 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 121 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 108 Miles
IH 794 AT JACKSON STREET	ZOO INTERCHANGE	8	15	20	16	21	21
	IH 94 AT BARKER ROAD	15	25	34	27	32	32
	STH 119 AT HOWELL AVENUE	10	13	16	13	13	16
	IH 94 AT CTH KR	26	29	37	30	31	33
	USH 41/45 AT LANNON ROAD	24	36	49	37	43	43
	IH 43 AT MEQUON ROAD	15	21	24	18	18	21
	IH 43 AT CTH Y	19	23	31	24	25	27
	IH 43 AT NORTH AVENUE	3	4	4	4	4	4
	USH 41 AT LISBON AVENUE	7	11	13	11	13	13
ZOO INTERCHANGE	IH 794 AT JACKSON STREET	8	15	20	16	21	21
	IH 94 AT BARKER ROAD	7	10	14	11	11	11
	STH 119 AT HOWELL AVENUE	13	18	24	19	20	20
	IH 94 AT CTH KR	29	35	44	36	37	37
	USH 41/45 AT LANNON ROAD	16	21	29	21	22	22
	IH 43 AT MEQUON ROAD	21	34	43	31	36	40
	IH 43 AT CTH Y	11	14	18	14	14	14
	IH 43 AT NORTH AVENUE	9	17	23	17	23	23
	USH 41 AT LISBON AVENUE	7	11	13	11	14	14

Table 41 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]				
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 127 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 121 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 108 Miles
IH 94 AT BARKER ROAD	IH 794 AT JACKSON STREET	15	25	34	27	32	32
	ZOO INTERCHANGE	7	10	14	11	11	11
	STH 119 AT HOWELL AVENUE	20	28	38	30	30	31
	IH 94 AT CTH KR	36	45	58	47	47	48
	IH 43 AT MEQUON ROAD	28	44	57	42	47	50
	IH 43 AT NORTH AVENUE	16	27	37	28	34	34
	USH 41 AT LISBON AVENUE	14	21	27	22	25	25
STH 119 AT HOWELL AVENUE	IH 794 AT JACKSON STREET	10	13	16	13	13	16
	ZOO INTERCHANGE	13	18	24	19	20	20
	IH 94 AT BARKER ROAD	20	28	38	30	30	31
	IH 94 AT CTH KR	19	20	23	20	20	20
	USH 41/45 AT LANNON ROAD	29	39	53	40	41	41
	IH 43 AT MEQUON ROAD	23	32	38	29	29	35
	IH 43 AT CTH Y	15	17	22	17	18	18
	IH 43 AT NORTH AVENUE	11	15	18	15	15	18
	USH 41 AT LISBON AVENUE	16	22	28	22	24	27
IH 94 AT CTH KR	IH 794 AT JACKSON STREET	26	29	37	30	31	33
	ZOO INTERCHANGE	29	35	44	36	37	37
	IH 94 AT BARKER ROAD	36	45	58	47	47	48

Table 41 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]				
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 127 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 121 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 108 Miles
IH 94 AT CTH KR (continued)	STH 119 AT HOWELL AVENUE	19	20	23	20	20	20
IH 94 AT CTH KR (continued)	USH 41/45 AT LANNON ROAD	45	56	73	57	58	58
	IH 43 AT MEQUON ROAD	39	49	58	46	46	52
	IH 43 AT NORTH AVENUE	27	32	38	32	32	35
	USH 41 AT LISBON AVENUE	32	39	48	39	41	44
USH 41/45 AT LANNON ROAD	IH 794 AT JACKSON STREET	24	36	49	37	43	43
	ZOO INTERCHANGE	16	21	29	21	22	22
	STH 119 AT HOWELL AVENUE	29	39	53	40	41	41
	IH 94 AT CTH KR	45	56	73	57	58	58
	IH 43 AT CTH Y	27	35	47	35	36	36
IH 43 AT MEQUON ROAD	IH 794 AT JACKSON STREET	15	21	24	18	18	21
	ZOO INTERCHANGE	21	34	43	31	36	40
	IH 94 AT BARKER ROAD	28	44	57	42	47	50
	STH 119 AT HOWELL AVENUE	23	32	38	29	29	35
	IH 94 AT CTH KR	39	49	58	46	46	52
	IH 43 AT CTH Y	32	43	53	40	40	46
	IH 43 AT NORTH AVENUE	12	17	20	14	14	17
IH 43 AT CTH Y	IH 794 AT JACKSON STREET	19	23	31	24	25	27
	ZOO INTERCHANGE	11	14	18	14	14	14
	STH 119 AT HOWELL AVENUE	15	17	22	17	18	18
	USH 41/45 AT LANNON ROAD	27	35	47	35	36	36

Table 41 (continued)

From	To	Estimated Free Flow Travel Time (minutes)[a]	Peak Hour Travel Times (minutes)[b]				
			Estimated Existing 1999	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 127 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 121 Miles	Forecast Year 2020 under the Freeway Reconstruction Alternative with Design and Safety Improvements with Additional Capacity on 108 Miles
IH 43 AT CTH Y (continued)	IH 43 AT MEQUON ROAD	32	43	53	40	40	46
	IH 43 AT NORTH AVENUE	20	26	33	26	26	29
	USH 41/45 AT LISBON AVENUE	18	25	31	25	29	29
IH 43 AT NORTH AVENUE	IH 794 AT JACKSON STREET	3	4	4	4	4	4
	ZOO INTERCHANGE	9	17	23	17	23	23
	IH 94 AT BARKER ROAD	16	27	37	28	34	34
	STH 119 AT HOWELL AVENUE	11	15	18	15	15	18
	IH 94 AT CTH KR	27	32	38	32	32	35
	IH 43 AT MEQUON ROAD	12	17	20	14	14	17
	IH 43 AT CTH Y	20	26	33	26	26	29
USH 41 AT LISBON AVENUE	IH 794 AT JACKSON STREET	7	11	13	11	13	13
	ZOO INTERCHANGE	7	11	13	11	14	14
	IH 94 AT BARKER ROAD	14	21	27	22	25	25
	STH 119 AT HOWELL AVENUE	16	22	28	22	24	27
	IH 94 AT CTH KR	32	39	48	39	41	44
	IH 43 AT CTH Y	18	25	31	25	29	29

[a]Freeflow travel time is the average travel time on a freeway segment when freeway travel and speed are not affected by traffic volume or congestion.

[b]Peak hour travel times are travel times during the peak hours of freeway traffic volume and congestion, which are typically 7:00 to 8:00 a.m. and 4:30 to 5:30 p.m. The estimated and forecast peak hour travel times displayed in this table are typically afternoon peak hour travel times for the travel westbound on IH 94, northbound on USH 45 (north of the Zoo Interchange), northbound on IH 43 (north of the Marquette Interchange), southbound on IH 43 (south of the Marquette Interchange) and southbound and westbound on IH 894; and, are typically morning peak hour travel times for travel eastbound on IH 94, southbound on USH 45 (north of the Zoo Interchange), southbound on IH 43 (north of the Marquette Interchange), northbound on IH 43 (south of the Marquette Interchange), and northbound and eastbound on IH 894.

Source: SEWRPC.

alternatives, and the study. Two separate documents, one entitled, *Record of Public Comments: Regional Freeway System Reconstruction Study for Southeastern Wisconsin Volume Two—September 1, 2001—August 31, 2002,* and the other entitled, *Record of Public Comments: Regional Freeway System Reconstruction Study for Southeastern Wisconsin : Volume Three-September 1, 2002—March 12, 2003,* documented the formal action taken by counties and municipalities, oral comments made at the public informational meetings and hearings, and written comments received by letter, electronic mail, fax, and on comment forms available on the study web site and at the public informational meetings and hearings. The results of a survey of the attitudes of Region residents relative to freeway congestion and reconstruction matters are published separately as SEWRPC Memorandum Report No. 153, entitled *Results of Survey of Attitudes of Southeastern Wisconsin Residents Regarding Freeway Traffic Congestion and Freeway System Reconstruction: 2002*.

County Board Actions

Six of the seven County Boards within the Region acted to approve the preliminary recommended regional freeway system reconstruction plan in its entirety:

- Kenosha County: Through County Board Resolution 46 dated September 17, 2002, by voice vote, the County Board of Supervisors acted to fully support the preliminary recommended plan.
- Ozaukee County: Through County Board Resolution 02-19 dated August 7, 2002, by a vote of 24 ayes to 3 nays, the County Board of Supervisors acted to fully support the preliminary recommended plan.
- Racine County: Through County Board Resolution 2002-65 dated August 13, 2002, by voice vote, the County Board of Supervisors acted to fully support the preliminary recommended plan.
- Walworth County: Through County Board Resolution 39-08/02 dated August 13, 2002, by voice vote, the County Board of Supervisors acted to fully support the preliminary recommended plan, and further requested that the plan recommendations for Walworth County be reviewed five years prior to the reconstruction of freeways within Walworth County.
- Washington County: Through County Board Resolution 2002-12 dated June 18, 2002, by a vote of 27 ayes to 1 nay, the County Board of Supervisors acted to generally support the preliminary recommended regional freeway system reconstruction plan.
- Waukesha County: Through County Board Resolution 157-3 dated July 23, 2002, by a vote of 29 ayes to 3 nays, the County Board of Supervisors acted to fully support the preliminary recommended regional freeway system reconstruction plan.

The Milwaukee County Board of Supervisors through County Board Resolution 02-275, February 20, 2003, took the following actions with respect to the preliminary recommended plan:

- Endorsed rebuilding the freeway system to modern design standards by a vote of 17 ayes to 8 nays.
- Endorsed rebuilding with additional lanes on 108 miles of freeway, including the widening of IH 43 from Bender Road to Brown Deer Road to not more than six lanes, by a vote of 13 ayes to 12 nays.
- Opposed the rebuilding with additional lanes on 19 miles of freeway within the City of Milwaukee and the City of Glendale, including the widening to eight lanes of IH 43 from the Mitchell Interchange to Silver Spring Drive and of IH 94 from the Marquette Interchange to the Zoo Interchange, on a vote of 15 ayes and 10 nays.
- Provided the following additional recommendations to be addressed by the Wisconsin Department of Transportation as part of the preliminary engineering and implementation of freeway system reconstruction:

- Preliminary engineering should examine a range of alternatives which would provide for varying degrees of addressing the physical design deficiencies on the freeway system. Wisconsin Department of Transportation preliminary engineering should address for each alternative the direct and indirect costs of each freeway reconstruction alternative.

- Wisconsin Department of Transportation preliminary engineering should prepare a noise mitigation plan for each segment of freeway which undergoes preliminary engineering. Noise barriers identified as necessary in preliminary engineering should not be implemented without the prior consent of the affected municipality.

- Wisconsin Department of Transportation preliminary engineering should include the preparation of a community mitigation plan to deal with the negative impacts of freeway reconstruction within each community, including residential and business acquisition, noise impacts, and other concerns.

- As part of the reconstruction of each freeway segment, a traffic mitigation plan should be developed to address the traffic diversion which will occur during reconstruction. The implementation of that plan should be fully funded by Federal and State funds with no local share, including public transit and local road elements of that mitigation plan.

- Disadvantaged business enterprise goals should be established for the freeway reconstruction program similar to those used in the construction of Miller Park (25 percent Disadvantaged Business Enterprise and 5 percent Women Business Enterprise), and these goals should be met through businesses and workers from Milwaukee County and Southeastern Wisconsin.

- Milwaukee County should be provided with full reimbursement for the cost of Milwaukee County Sheriff freeway patrol.

- All counties in the seven-county Region should adopt "Smart Growth" comprehensive plans.

  The Milwaukee County Executive vetoed the County Board Resolution expressing his support for the entire preliminary plan coupled with a request that the Wisconsin Department of Transportation design engineers find ways to limit impacts of freeway capacity expansion on surrounding neighborhoods. The County Board failed to override the veto on a vote of 16 to 9.

Local Municipality Actions

Five municipalities within Southeastern Wisconsin took action on the preliminary recommended regional freeway system reconstruction plan:

- City of Brookfield: Through City of Brookfield Common Council Resolution 6923 dated June 18, 2002, the Common Council acted to fully support the preliminary recommended plan.

- City of Glendale: Through City of Glendale Common Council Resolution dated June 24, 2002, the Common Council acted to oppose the proposed widening of IH 43 to accommodate eight traffic lanes within the City of Glendale.

- City of Milwaukee: Through City of Milwaukee Common Council Resolution 011729 dated April 23, 2002, the Common Council acted to endorse most of the preliminary recommended plan, including rebuilding to meet modern design standards and additional lanes on 108 miles of the freeway system. The Common Council opposed the widening to eight lanes of 19 miles of freeway, consisting of IH 94 between the Zoo and Marquette Interchanges and IH 43 between the Mitchell Interchange and Silver Spring Drive. Additionally, the Common Council indicated a lack of support for rebuilding the freeway system to meet modern design standards where there would be substantial negative impacts on adjacent properties within the City of Milwaukee, specifically identifying as one such situation the proposed elevation of the westbound lanes of IH 94 between Mitchell Boulevard and Hawley Road.

- City of Racine: Through City of Racine Common Council Resolution 4822 dated September 3, 2002, the Common Council acted to fully support the preliminary recommended plan.
- Village of Hales Corners: Through Village of Hales Corners Board of Trustees Resolution 02-39 dated August 12, 2002, the Village Board indicated its concern with respect to the potential redesign and reconstruction of the interchange of IH 43 with STH 100 and its continuing opposition to the potential widening of STH 100 in the Village from six to eight lanes.

State Legislative Action

A special session of the Wisconsin State Legislature was convened in January 2002. The State Legislature approved a budget bill and forwarded the bill to Governor Scott McCallum. The budget bill included a provision that stated, "The department shall design the reconstruction of IH 94 in Milwaukee and Waukesha Counties, other than the Marquette interchange, to allow for expansion of capacity for vehicular traffic on IH 94 in these counties to meet the projected vehicular traffic capacity needs, as determined by the department, for 25 years following the completion of such reconstruction." Governor Scott McCallum signed the bill into law as 2001 Wisconsin Act 109 on July 26, 2002. This action by the State Legislature and Governor may be considered to support the recommendation in the preliminary plan to rebuild IH 94 in Milwaukee and Waukesha Counties to modern design standards and to a widened eight lanes.

Public Hearing Oral Statements and Written Correspondence

During the time period of September 1, 2001, through August 31, 2002, a total of 310 persons provided comments on the preliminary plan either orally at the public hearings or in writing via letter, electronic mail, fax, study website, or comment form available at the public hearings. Most of these 310 persons provided their comments, 263, or 85 percent, during the formal public comment period on the preliminary plan.

A number of the 310 persons who provided their comments on the preliminary plan provided multiple comments.

- Nineteen persons provided oral comments at the hearing and provided written comments as well. Six of these 19 persons provided multiple written comments.
- Fourteen persons who provided only written comments provided multiple written comments.

The comments of the 310 persons providing oral and written statements on the preliminary plan and study may be divided into four categories: comments in support of the preliminary plan, comments in support of subalternatives to the preliminary plan, or portions of the preliminary plan; comments in opposition to the preliminary plan; and comments about the preliminary plan, but stating neither support for, nor opposition to, the preliminary plan.

Forty-six (46) persons expressed support for, and endorsement of, the preliminary plan. Nineteen (19) of the 46 persons expressing support noted that the preliminary plan was developed within the context of the Regional Planning Commission's comprehensive regional transportation plan, which also recommends substantial expansion of public transit, and improved and expanded transportation systems and demand management measures. Several of these 46 persons supporting the preliminary plan suggested additions to, or modifications of, the preliminary plan. Eleven (11) persons suggested adding to the plan a freeway connecting the Fond Du Lac Freeway (STH 145) to USH 41 and/or IH 43. Nine (9) persons suggested adding to the plan a northern freeway connection between IH 43 and USH 45. Four (4) persons suggested adding to the plan a new circumferential freeway to serve the metropolitan area. Three (3) persons suggested that the freeway system should be rebuilt with more additional lanes than recommended in the preliminary plan. Two (2) persons suggested depressing and tunneling the eastbound or westbound lanes of IH 94 between Mitchell Boulevard and Hawley Road rather than elevating the westbound lanes of IH 94. Two (2) persons suggested the additional lanes in the preliminary plan could be provided as reversible flow express lanes. One (1) person suggested that high occupancy vehicle (HOV) lanes should also be part of the preliminary plan. One (1) person suggested the preliminary plan should recommend providing sufficiently wide freeway medians for potential light-rail transit. One (1) person suggested

adding to the preliminary plan the completion of the USH 12 freeway between the Cities of Elkhorn and Whitewater.

Twenty-three (23) persons expressed support for, and endorsement of, a subalternative to the preliminary recommended plan. Four (4) persons supported the subalternative which included 108 miles of additional lanes—no widening of IH 94 between the Marquette and Zoo Interchanges, no widening of IH 43 between the Mitchell Interchange and Bender Road, and widening of IH 43 between Bender and Brown Deer Roads to six rather than eight lanes. Nineteen (19) persons supported the alternative which would rebuild the freeway system to modern design standards, but not provide any additional lanes.

Nineteen (19) persons did not express support for, or opposition to, the preliminary plan and its subalternatives, but did offer related comments. Four (4) persons expressed opposition to any consideration of a service interchange on IH 94 at Calhoun Road in the City of Brookfield. One (1) person stated that during freeway system reconstruction, opportunities should be provided for disadvantaged business enterprises (DBE) to significantly participate, and for minorities to be a significant part of the labor force, and in particular, within Racine and Kenosha Counties. One (1) person suggested a new freeway should be constructed between IH 43 and USH 45. One (1) person suggested connecting the Fond Du Lac Freeway (STH 145) to IH 43 and/or USH 41. One (1) person suggested providing a new circumferential freeway around the Milwaukee area, and three (3) persons suggested completing the USH 12 freeway between the Cities of Elkhorn and Whitewater. Two (2) persons encouraged that the properties necessary to be acquired for freeway reconstruction be identified, and notified, as soon as possible. One (1) person suggested that the freeway system be reconstructed in a more aesthetically pleasing manner. One (1) person proposed that mitigating noise impacts be required as part of reconstruction. One (1) person noted the cost of freeway system reconstruction and questioned how it would be funded. Four (4) persons made comments about freeway and related improvements, including one (1) stating opposition to freeway ramp meters, one (1) noting the need for a southbound IH 43 off-ramp to State Street, one (1) noting the need to locate all IH 43 on- and off-ramps related to STH 100 directly on STH 100, and one (1) noting the need for improved signal timing and coordination on Bluemound Road in Milwaukee and Waukesha Counties.

Two hundred twenty-two (222) persons expressed specific opposition to the preliminary plan. One hundred forty-six (146) persons expressed concern that the preliminary plan only addressed freeways and did not include consideration of the potential effects of improved public transit, and did not recommend improved or expanded public transit. Seventy-five (75) persons expressed concern about the total construction cost of the preliminary plan, and two (2) persons suggested that the freeway system should be converted to a system of tollways to pay for freeway system reconstruction. Sixty-six (66) persons expressed concerns that the preliminary plan would lead to increased levels of air pollution. Sixty-three (63) persons expressed concern that the preliminary plan would contribute to urban sprawl, and eleven (11) persons stated that the plan did not promote "smart growth" land use principles. Thirty-three (33) persons expressed concern that the preliminary plan would benefit only those living in suburban counties. Thirty-three (33) persons expressed concern with respect to the impacts on wetlands and primary environmental corridors. Thirty (30) persons expressed concern that the preliminary plan would induce additional travel and traffic. Thirty (30) persons expressed concern that the preliminary plan would lead to increased levels of noise. Twenty-four (24) persons expressed concern that the preliminary plan would diminish the quality of life within Southeastern Wisconsin. Twenty-three (23) persons expressed opposition to the proposed elevation of the westbound lanes of IH 94 between Mitchell Boulevard and Hawley Road. Twenty-one (21) persons expressed concern that the preliminary plan would lead to a substantial loss in the property tax base. Eleven (11) persons expressed concern that the preliminary plan would promote further use of nonrenewable resources such as crude oil. Six (6) persons suggested supporting methods advocated by a Florida-based traffic engineer—Walter Kulash—including improving public transit and surface arterial streets and accepting increased levels of traffic congestion. Five (5) persons expressed concern that there was no opportunity for public input in the study prior to the proposal of the preliminary plan. Five (5) persons expressed concern about the environmental justice impacts of the preliminary plan, that is, that the plan would have disproportionate impacts on minority and low income populations. Four (4) persons expressed concern that the preliminary plan would lower property values in Milwaukee County. Four (4) persons suggested replacing the freeways with boulevards.

One (1) person opposed to the preliminary plan suggested instead providing a new northern freeway connecting IH 43 and USH 45.

Also, the Commission received a total of 1,483 postcards pre-printed by the Sierra Club stating opposition to highway expansion within Southeastern Wisconsin due to construction cost and air quality impacts, and suggesting instead the improvement of public transit. The Sierra Club also placed a full page advertisement with respect to the preliminary plan on the entire back page of an issue of the *Shepherd Express* newspaper, and 91 forms which were part of the advertisement and stated opposition to the preliminary plan were received by the Commission. Of the total 1,574 statements of opposition, about 90 percent were from residents of Southeastern Wisconsin, and about 14 percent were duplicates, with multiple postcards or both postcards and newspaper advertisement form being returned by the same person.

Outreach and Briefing to Groups

The Commission staff also presented briefings on the preliminary plan and study to groups upon request, and conducted outreach on the preliminary plan and study to minority groups, with the assistance of Creative Marketing Resources, Inc., a Disadvantaged Business Enterprise (DBE) firm. Comments were received in particular from the Story Hill Neighborhood Association at their annual meeting stating opposition to the potential elevation of the westbound IH 94 lanes between the Mitchell Boulevard and Hawley Road interchanges, which may be attendant to the widening of IH 94 and rebuilding IH 94 to modern design standards. Comments received from the minority community leaders, businesses, elected officials, and media expressed particularly the need for minority-owned businesses to participate significantly in the freeway reconstruction effort, as well as for minorities to be a significant part of the reconstruction labor force. Comments were received at meetings held at Esperanza Unida and United Community Center stating opposition to the widening to eight lanes of IH 94 between the Marquette and Zoo Interchanges. Comments were received at a meeting held in Whitefish Bay stating opposition to the widening of IH 43 north of Bender Road in Milwaukee County, particularly to eight lanes.

Survey of Southeastern Wisconsin Resident Attitudes on Freeway Congestion and Reconstruction

The results of a survey of over 15,000 randomly selected households within Southeastern Wisconsin indicates that within the Southeastern Wisconsin Region, including within both the County and City of Milwaukee, and, as well, within each of the other six counties of the Region, there is:

- substantial concern over existing and future freeway system traffic congestion,
- strong support for a modern and efficient freeway system,
- strong support for the reconstruction of the freeway system to modern design standards, and
- strong support for the reconstruction of the freeway system with additional lanes, including eight lanes on IH 94 and IH 43 within Milwaukee County.

More specifically, the results of the survey may be summarized as follows:

- More than 82 percent of Southeastern Wisconsin residents (including 83 percent of Milwaukee County residents and 81 percent of City of Milwaukee residents) believe freeway traffic congestion is a severe and growing problem during morning and afternoon peak traffic periods. Nearly one-half of these respondents also believe that freeway traffic congestion is a growing problem during other times of the day as well.
- More than 72 percent of Southeastern Wisconsin residents (including 72 percent of Milwaukee County residents and 71 percent of City of Milwaukee residents) consider a forecast doubling of freeway traffic congestion in Southeastern Wisconsin to be unacceptable. This doubling of freeway traffic congestion is projected even if public transit is significantly expanded, "smart growth" in land

use occurs, and surface streets are improved and expanded, but the freeway system is rebuilt without additional lanes.

- More than 89 percent of Southeastern Wisconsin residents (including 88 percent of Milwaukee County residents and 86 percent of City of Milwaukee residents) agree that a modern and efficient freeway system is essential to the economic future of Southeastern Wisconsin.
- More than 87 percent of Southeastern Wisconsin residents (including 87 percent of Milwaukee County residents and 86 percent of City of Milwaukee residents) agree that the freeway system in Southeastern Wisconsin should be reconstructed to meet modern design standards, including relocating left-hand on- and off-ramps to the right-hand side of the freeway, eliminating lane drops at major interchanges, improving driver sight lines and freeway curves, and providing full inside and outside shoulders.
- More than 75 percent of Southeastern Wisconsin residents (including 78 percent of Milwaukee County residents and 76 percent of City of Milwaukee residents) agree that additional lanes should be added to the freeway system in their county as part of the reconstruction of the Southeastern Wisconsin freeway system.
- More than 76 percent of Southeastern Wisconsin residents (including 74 percent of Milwaukee County residents and 72 percent of City of Milwaukee residents) agree that additional lanes should be provided on IH 94 between the Zoo and Marquette Interchanges and IH 43 between the Mitchell Interchange and Brown Deer Road in Milwaukee County, widening these freeways to eight lanes as part of the reconstruction of the freeway system.

The survey was conducted during the months of July and August 2002 by the Southeastern Wisconsin Regional Planning Commission from a mailing list of all resident households within the Southeastern Wisconsin Region which is typically used for direct mail purposes. A sample of 55,000 households was randomly selected to receive the survey. The survey was a mail-out/mail-back survey with a postage paid return envelope. Over 27 percent of the surveys mailed out were returned with completed responses. The response rate among the counties ranged from 23 to 34 percent, with the Milwaukee County resident response rate approximating 25 percent. This response rate is considered excellent for a mail-out/mail-back survey. The substantial response to the survey means that the survey findings for the Region, with over 15,000 responses, are accurate to +/- 1 percent at a 99 percent level of confidence. For Milwaukee County, with over 7,000 responses, the findings are accurate to +/- 1.5 percent at a 99 percent level of confidence. For the City of Milwaukee, with over 3,000 responses, the findings are accurate to +/- 2 percent at a 99 percent level of confidence.

Commission Staff Responses to Public Comment Regarding the Preliminary Freeway System Reconstruction Plan

Comments made in opposition to the preliminary recommended freeway system reconstruction plan generally cited reasons for that opposition. Listed below are reasons typically cited for opposition and Commission staff response thereto:

Comment: <u>The reconstruction of the regional freeway system under the preliminary recommended plan will lead to increased levels of air pollution.</u>

Response: The implications of the preliminary plan and alternatives for freeway system reconstruction on air pollutant emissions were specifically addressed as part of this study. The reconstruction of the regional freeway system under the preliminary recommended plan—including the proposed additional lanes—may be expected to have little impact on the level of transportation system ozone-related and other air pollutant emissions generated within Southeastern Wisconsin.

Whether the regional freeway system is rebuilt with or without additional lanes may be expected to have negligible impact on the level of transportation system ozone-related and other air pollutant

emissions and air quality. This is because the same level of total regional vehicle-miles of traffic may be expected whether or not the freeways are widened. What will vary is the amount of traffic that may be expected to travel under congested traffic conditions, and the amount of travel on the freeway system as opposed to surface arterial streets. These differences may be expected to have a small, almost negligible impact on transportation air pollutant emissions. The forecast levels of transportation system air pollutant emissions in the year 2020 for the seven county Southeastern Wisconsin Region under the preliminary plan and a freeway system reconstruction alternative without additional lanes are shown in Table 42. With the exception of nitrogen oxide emissions, air pollutant emissions and motor fuel consumption are projected to be the same or reduced under the preliminary plan due to forecast reduced traffic congestion and increased traffic speeds. Nitrogen oxide emissions are projected to increase under the preliminary plan as such emissions generally increase with increasing traffic speeds.

Historic, current, and forecast future volatile organic compounds (VOC) and nitrogen oxides (NO_X) ozone-related transportation system emissions for the six county severe ozone non-attainment area within Southeastern Wisconsin are shown on Figure 48. Emissions from the transportation system have substantially declined, and are projected to continue to decline, even with increasing traffic volume, principally due to new motor vehicle standards for air pollutant emissions. In addition, the forecast levels of VOC and NO_X emissions under a freeway reconstruction alternative with additional lanes are within the State transportation emission budgets, which together with forecast emissions from other sources—point, industrial, and area—provide for planned attainment of ozone air quality standards.

Comment: <u>The analysis of air quality impacts of the proposed freeway capacity expansion is overly optimistic about the ability to control vehicle emissions.</u>

Response: The Commission is responsible under the direction of the U.S. Department of Transportation, the Wisconsin Department of Transportation, the U.S. Environmental Protection Agency, and the Wisconsin Department of Natural Resources for preparing transportation system ozone-related emission forecasts. The most recent forecasts prepared by the Commission have been reviewed and approved by the four agencies noted above and are shown in Figure 48. It is important to note that these forecasts assume no further advancements in technology beyond what is already mandated by the U.S. Congress.

Moreover, the trend in emission projections has been that the projected levels of future emissions have significantly declined over recent years due to new Federal laws and requirements for vehicles and fuels. Current forecasts of emission levels for the year 2020 are significantly less than forecast year 2020 emission levels prepared only six years ago, in 1997. Current volatile organic compound emission forecasts for the six county severe ozone nonattainment area for the year 2020 in Southeastern Wisconsin are 44 percent of those forecast for that year in 1997, and as well, current nitrogen oxides emission forecasts for the six-county severe ozone nonattainment area for the year 2020 in Southeastern Wisconsin are 22 percent of those forecast in 1997 for that year.

Moreover, regardless of whether the freeway system is reconstructed with or without additional lanes, it will have a negligible impact on the level of transportation system ozone-related and other air pollutant emissions and air quality. This is because there will largely be similar levels of total regional vehicle traffic with or without additional freeway lanes, just vehicles operating under more or less congestion and more or less congestion on freeways as compared to surface arterial streets.

Table 42

FORECAST FUTURE YEAR 2020 SOUTHEASTERN WISCONSIN REGION TRANSPORTATION SYSTEM AIR POLLUTANT EMISSIONS AND FUEL CONSUMPTION[a]

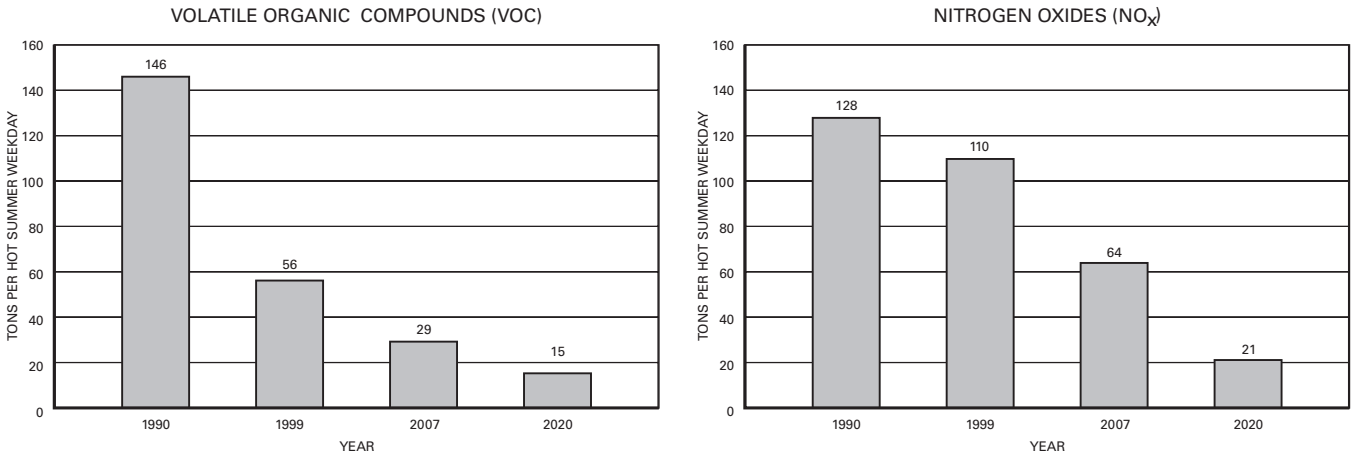
Freeway Reconstruction Alternative	Year 2020 Forecast Air Pollutant Emissions (tons per hot summer weekday)				Year 2020 Forecast Fuel Consumption (gallons per average weekday)
	Volatile Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Carbon Dioxide	
Design and Design-Related Safety Improvements	20.5	25.8	217.3	19,326.6	1,933,000
Preliminary Plan Design and Design-Related Safety Improvements and Additional Lanes	20.5	26.8	217.3	19,218.5	1,922,000

[a]*Includes all vehicle transportation emissions and fuel consumption from the seven county Region street and highway system traffic: freeways, surface arterial streets, and collector and land access streets.*

Source: SEWRPC.

Figure 48

SOUTHEASTERN WISCONSIN SIX-COUNTY SEVERE OZONE NONATTAINMENT AREA TRANSPORTATION SYSTEM OZONE-RELATED AIR POLLUTANT EMISSIONS



Source: SEWRPC.

Comment: Reconstruction of the freeway system with additional lanes will impact wetlands and primary environmental corridors.

Response: Some portions of the rights-of-way required to reconstruct the regional freeway system under the preliminary plan are designated as primary environmental corridors and wetlands, but most of those acquisitions are due to the proposed design and design-related safety improvements—not the proposed additional lanes. Reconstruction of the regional freeway system with additional lanes would require the acquisition of an estimated seven acres of primary environmental corridor, including four acres of wetlands, and another one acre of isolated wetlands. This represents the potential conversion of 0.002 percent of the primary environmental corridors and 0.001 percent of the wetlands in the Region to freeway right-of-way. Reconstruction of the freeway system with design and design-related safety improvements only is estimated to require right-of-way expansion into 68 acres of primary environmental corridors, including 29 acres of wetlands, and another nine

acres of wetlands located outside the primary environmental corridors. This represents the potential conversion of 0.02 percent of the primary environmental corridors and 0.014 percent of the wetlands in the Region to freeway right-of-way for design and design-related safety improvements.

Moreover, nearly 60 percent of the affected wetlands and primary environmental corridor lands under the preliminary plan—for design and design-related safety improvement and additional lanes—are located along IH 94 in Kenosha and Racine County and are attendant to unbraiding IH 94 freeway on- and off-ramps from frontage roads—a design improvement which has already undergone preliminary engineering and received design and environmental approval.

With respect to the existing wetlands which would need to become part of the freeway right-of-way, not all of these wetlands would necessarily be "lost," but they may simply now be located within the expanded freeway right-of-way. Additionally, any wetland loss will need to be mitigated, or replaced, through standard State processes.

Comment: Reconstruction of the regional freeway system under the preliminary recommended plan will not benefit Milwaukee County, and will only benefit outlying counties.

Response: More than 50 percent of the daily traffic on the freeway system in Milwaukee County is made by the residents of Milwaukee County. Another 40 percent of the daily freeway traffic in Milwaukee County is traffic to and from Milwaukee County businesses and industries. The residents and businesses of Milwaukee County would benefit from the preliminary plan as a result of reduced travel times, reduced congestion-related safety problems, and increased travel time reliability compared to an alternative without the proposed additional freeway capacity.

Peak hour freeway traffic on most Milwaukee County freeways is balanced with about 50 percent of traffic in each direction. For example, on IH 94 between the Marquette and Zoo Interchanges, during the morning peak traffic hour, about one-half of the total traffic is eastbound and an equal amount of traffic is westbound.

Comment: Insufficient information has been presented regarding the causes of freeway crashes and how capacity expansion or design-related safety improvements would specifically address the causes of safety problems.

Response: There are numerous design deficiencies on the freeway system that clearly contribute to crashes at numerous locations on the regional freeway system. Some of the design deficiencies include the following:

- Left-hand on- and off-ramps—these ramps force motorists to change lanes when the ramp is not on the right as expected and forces weaving patterns between on- and off-ramps located on opposite sides of the freeway.
- Multiple merge/diverge points—this results in speed differentials between through vehicles and vehicles exiting or entering the freeway, and weaving patterns between entering and exiting vehicles at locations with successive on- and off-ramps, particularly when successive on- and off-ramps are closely spaced as in the Marquette Interchange
- Excess differential between freeway mainline and system-to-system ramp design speeds—the existing ramp designs require motorists to rapidly change from "high" mainline speed to "low" ramp speed back to "high" mainline speed in a short distance.
- Lane drops—lane drops force motorists to merge from one lane to the adjacent lane, as the total number of lanes is reduced by one. This is problematic at system interchanges throughout the Region where the left lane of the freeway mainline on the freeway leg approaching an

interchange does not continue through the interchange, but rather becomes a ramp leading to another freeway leg.

- Multi-point exits—motorists intending to exit the freeway begin to decelerate on the freeway mainline in anticipation of diverging from the freeway mainline, creating a speed differential with the mainline through vehicles. Following motorists do not know which of the closely spaced exit ramps the lead vehicle will use.

- Intertwined freeway ramps and frontage roads in Kenosha and Racine Counties—the intertwining or braiding of freeway ramps with the frontage roads creates conflicts between vehicles traveling at different speeds. Ideally, roadways should intersect at 90 degrees, but not less than 60 degrees to ameliorate this problem. The angle of intersection between the ramps and the frontage roads is substantially less than 60 degrees, making it very difficult for motorists to look back over their shoulder for oncoming, conflicting traffic. This problem has been documented in the preliminary engineering studies done in this corridor.

Additionally, the U.S. Department of Transportation recognizes the safety problems and deficiencies of the freeway system in Southeastern Wisconsin and will require the Wisconsin Department of Transportation to consider rebuilding the freeway system to meet current design standards in preliminary engineering. Only following in-depth preliminary engineering could the U.S. Department of Transportation consider granting an exception to modern design standards.

Also, crash data analysis completed under the study indicates that traffic congestion signify-cantly contributes to crashes on freeways in Southeastern Wisconsin. Rear-end crash rates on congested freeway segments are five to 15 times higher than those experienced on uncongested freeway segments. In fact, up to 70 percent of all crashes on the most extremely congested freeway segments in Southeastern Wisconsin, which are predominantly in Milwaukee County, are rear-end crashes. Reconstruction of the regional freeway system with additional lanes under the preliminary plan would allow the Region to avoid experiencing a near doubling of congestion by the year 2020, and may be expected to result in significantly fewer rear-end crashes on the freeway system.

Comment: There was not an opportunity for public input at the beginning of the study process, and that public input was not sought until a preliminary plan had been recommended.

Response: Extensive public involvement efforts were conducted throughout the study. The public involvement efforts included:

- Public meetings and hearings (19 total)

- A study Web site

- Study newsletter (five issues)

- A Study Advisory Committee

- Briefings to interested municipalities and groups

A total of 19 public meeting and hearings were held in 2001 and 2002, with meetings held in each of the seven counties of the Region. The meetings were announced in the study newsletter, on the study Web site, in news releases, and in paid newspaper display ads. The 11 meetings held in May and June of 2002 were indeed held to obtain comment on the preliminary recommended plan and its alternatives, and the results of the evaluation of their costs and benefits.

However, an initial series of eight public meetings was held in July and August of 2001, nearly one year earlier, and early in the conduct of the study. At these initial eight public meetings, information was provided and input sought, on the following topics:

- Function of the freeway system
- Condition of the freeway system
- Freeway system design, safety, and congestion problems and deficiencies
- Alternatives considered to reduce freeway traffic volume and congestion including land use, public transit, and surface arterial improvements
- Alternatives which may be considered for freeway reconstruction including rebuild as-is, with modern design standards, and with additional lanes

Prior to this initial series of eight public meetings, no analysis had been conducted on these potential freeway reconstruction alternatives. Indeed, the purpose of these meetings was to obtain public input early in the study on freeway reconstruction alternatives before they were considered or evaluated.

The study Web site (www.sewrpc.org/freewaystudy) was established at the beginning of the study. The Web site provides:

- An opportunity to provide comments electronically and to request future issues of the study newsletter
- General information regarding the study such as the purpose and scope of the study and the study Advisory Committee membership
- All materials from the study:
    - Summary information
    - Draft report chapters
    - Each issue of the study newsletter
    - Agendas and minutes of study Advisory Committee meetings
    - Presentations provided at study Advisory Committee meetings
    - Announcements of public meetings and hearings
- Regional Planning Commission staff contact information

Five issues of a study newsletter were developed and distributed throughout the study, in March 2001, May 2001, June 2001, July 2001, and April 2002. The newsletters provided information regarding the study as it has progressed, including the following topics:

- Scope of the study
- Need for freeway reconstruction
- Freeway design, safety, and congestion problems
- Announcement of initial series of public meetings
- Announcement of second series of public meetings and hearings

The newsletters were distributed widely beginning in March 2001 through April 2002 using a variety of methods:

- Mailed to about 2,000 interested persons
- Mailed to State Senators and Representatives of Southeastern Wisconsin
- Mailed to all County Supervisors, City Alderman, Village Trustees, and Town Supervisors in the Region
- Mailed to a comprehensive list of media contacts throughout Southeastern Wisconsin
- Published on the study Web site
- Distributed at public meetings and hearings

The Regional Planning Commission established an Advisory Committee to guide the freeway reconstruction study with the following membership:

- Seven Counties—Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties
    - County Executives, County Board Chairs, and Milwaukee County Board of Transportation, Public Works, and Transit Committee Chair
- Municipalities—Mayor and Common Council President of Milwaukee; Mayors of Oak Creek, Wauwatosa, and Brookfield
- Business—MMAC and West Bend Chamber of Commerce
- Labor—Teamsters Union
- Wisconsin Department of Natural Resources
- Wisconsin Department of Transportation
- Federal Highway Administration
- Transportation Development Association

The Commission went through an extensive public outreach effort and solicited public input from the beginning of the study, including which alternatives should be considered.

Comment: Specific right-of-way impacts and potential noise and visual impacts due to freeway system reconstruction need to be determined as soon as possible.

Response: Estimates of right-of-way impacts associated with freeway system reconstruction have been prepared under several reconstruction alternatives as part of this study. Following the completion of this regional study, the Wisconsin Department of Transportation will conduct preliminary engineering and environmental studies for each segment of the regional freeway system prior to each segment's reconstruction, and will include an estimation of right-of-way, noise, and visual impacts of options for freeway system reconstruction, and the final determination of how each freeway segment will ultimately be reconstructed. The mitigation of possible impacts, such as right-of-way and noise impacts, will also be addressed during the subsequent preliminary engineering and environmental studies.

Comment: The proposed additional lanes should be implemented as high-occupancy vehicle (HOV) lanes or reversible flow express lanes rather than basic traffic lanes as proposed under the preliminary freeway system reconstruction plan.

Response: HOV lanes were not proposed for inclusion in the preliminary plan for several reasons. HOV lanes were previously considered under the Milwaukee IH 94 East-West corridor study for the segment of IH 94 in Milwaukee and Waukesha Counties in the mid- to late-1990s and received very little to no support when proposed at that time. Additionally, the implementation of HOV lanes would require significant additional right-of-way, and significantly increase freeway system reconstruction cost compared to adding regular freeway lanes.

Reversible flow express lanes—additional lanes that are located between lanes in opposing directions of travel and operated in different directions during morning and afternoon peak periods—were not considered because, as was documented in Chapter III of this study report, the most congested segments of the regional freeway system have relatively balanced amounts of traffic in each direction in the peak periods. Additionally, like HOV lanes discussed above, additional right-of-way acquisition and costs would be associated with reversible flow express lanes.

Comment: The regional freeway system should be reconstructed with sufficiently wider freeway medians to allow for future implementation of rail transit in those medians.

Response: The proposed design of the freeway system does not include the provision of medians to accommodate possible future use for rail transit for several reasons. During the conduct of the Milwaukee East-West Corridor study, it was determined that the preferable location for light rail transit facilities proposed at that time was not in the medians of freeways, which are poorly accessible by transit users. Additionally, freeway reconstruction to potentially accommodate possible future transit use in this manner could be expected to result in increased construction costs and right-of-way acquisition impacts.

Comment: Rebuilding the freeway system with additional lanes will cause more urban sprawl and land use decentralization and not promote "smart growth" land use principles.

Response: Little or no effect on land use is anticipated due to the proposed widening of 127 miles of the Region's freeways. This is anticipated because there are numerous other factors that much more significantly contribute to decentralization, the potential effect of transportation on decentralization is complex, and little change from existing freeway traffic congestion levels is expected under the preliminary plan.

Regarding factors that contribute to decentralization, studies of urban decentralization and opinion surveys have found other factors unrelated to transportation have more significantly contributed to decentralization:

- Rising affluence
- Preferences for single family homes and larger lots
- Cost of living
- Schools
- Environmental amenities
- Pace of life

- Perceived and/or actual crime and safety
- Societal changes
- Industrial restructuring
- Information technology

Transportation probably receives attention primarily because it is one of the few factors subject to some control by government.

The potential effect of transportation on decentralization is complex, and while it has been argued that reduced congestion will contribute to decentralization, it should also be considered that increased congestion may contribute to decentralization. Those concerned about decentralization often argue that policies which significantly reduce or eliminate congestion likely contribute to decisions by residents to locate further out on the periphery. They also perceive that increased traffic congestion will result in a reduction in decentralization, and a strengthening of the central city. It should also be considered that policies which promote tolerance of significant increases in congestion may contribute to an acceleration of the decentralization of businesses and residents, as well as declines in regional and local economic growth, threatening the resurgence currently being experienced in some central city areas.

Regardless of the potential effect of transportation on decentralization, there is only a modest improvement in freeway traffic congestion levels forecast for the year 2020 compared to 1999 levels to possibly affect land use. The proposed additional lanes may be expected to prevent a near doubling of freeway traffic congestion, but may be expected to provide little change—a minor reduction—from existing levels of congestion.

Regarding "smart growth" land use principles, the regional freeway system reconstruction study is being conducted within the context of the regional land use and transportation plans, with the regional land use plan recommending "smart" land use growth at the regional and neighborhood levels. Following the completion of the freeway study, the study recommendations will be added to the recommendations of the regional transportation plan which recommends substantial expansion of public transit, actions to improve transportation system efficiency, and surface arterial street improvements. However, the recommendations of the regional transportation plan will not replace, or diminish the need to implement, the existing recommendations of the regional land use and transportation plans, and the Commission will continue to pursue the implementation of all of the plans' recommendations.

Comment: The freeway study does not represent part of a comprehensive transportation planning effort that the Regional Planning Commission is responsible for conducting.

Response: The regional freeway system reconstruction study is being conducted within the context of the entire transportation system and existing regional land use and transportation plans. The adopted regional land use and transportation plans recommend "smart" land use growth at regional and neighborhood levels and curtailing urban sprawl, significant expansion of public transit, efforts to improve transportation system efficiency, and surface arterial street and highway system improvement. Within the context of those regional plans, studies are conducted that serve to refine those plans and add to the recommendations of those plans. The regional freeway system reconstruction study is one such study—the final recommendations of the regional freeway study will be an amendment to the regional transportation plan. The study of the Milwaukee-Racine-Kenosha corridor considering rapid transit commuter rail and the Milwaukee Downtown Connector study considering express transit light rail and bus guideway technology are examples of other

studies underway which will produce recommendations that may be amendments to the regional transportation plan. Upon completion of those studies, the local units of government concerned, and in particular the potential transit operator involved, the Wisconsin Department of Transportation, and the Regional Planning Commission would have to affirm each study's findings, and the regional transportation system plan would then be amended to include each study's recommendations.

The freeway reconstruction study has been structured to consider freeway widening as a measure of last resort, by identifying the freeway traffic volumes and congestion that may be expected even if regional land use and transportation plans are fully implemented, and even if complete light rail and commuter rail systems are implemented. The scope of the study is appropriate because not only have other factors been considered—like implementing substantial transit expansion and "smart" growth principles—they have already been recommended, and the study assumes their implementation.

Comment: The preliminary plan only addressed freeways and did not include consideration of the potential effects of improved public transit, and did not recommend improved or expanded public transit.

Response: As was discussed in the response to the previous comment regarding the freeway reconstruction study as part of the Commission's comprehensive planning efforts, a substantial increase in transit service—about 70 percent in terms of revenue transit vehicle-miles of service—is recommended in the regional transportation plan and assumed to be implemented under the freeway reconstruction study. Map 77 displays the planned rapid, express, and local service. The regional transportation plan recommends that rapid and express transit service initially be provided with buses, but that consideration be given through the conduct of detailed corridor transit alternatives analysis studies to upgrading bus service to commuter rail for rapid transit service and light rail for express transit service (see Map 78). Through these detailed corridor transit alternatives analysis studies, decisions would be made by the concerned local governments and transit operators whether to provide rapid transit service through buses on existing freeways or through commuter rail, and whether to provide express transit service through buses on surface arterials or through light rail. Such studies are currently underway in the Milwaukee-Racine-Kenosha corridor considering rapid transit commuter rail, and the Milwaukee Downtown Connector study considering express transit light rail and bus guideway technology.

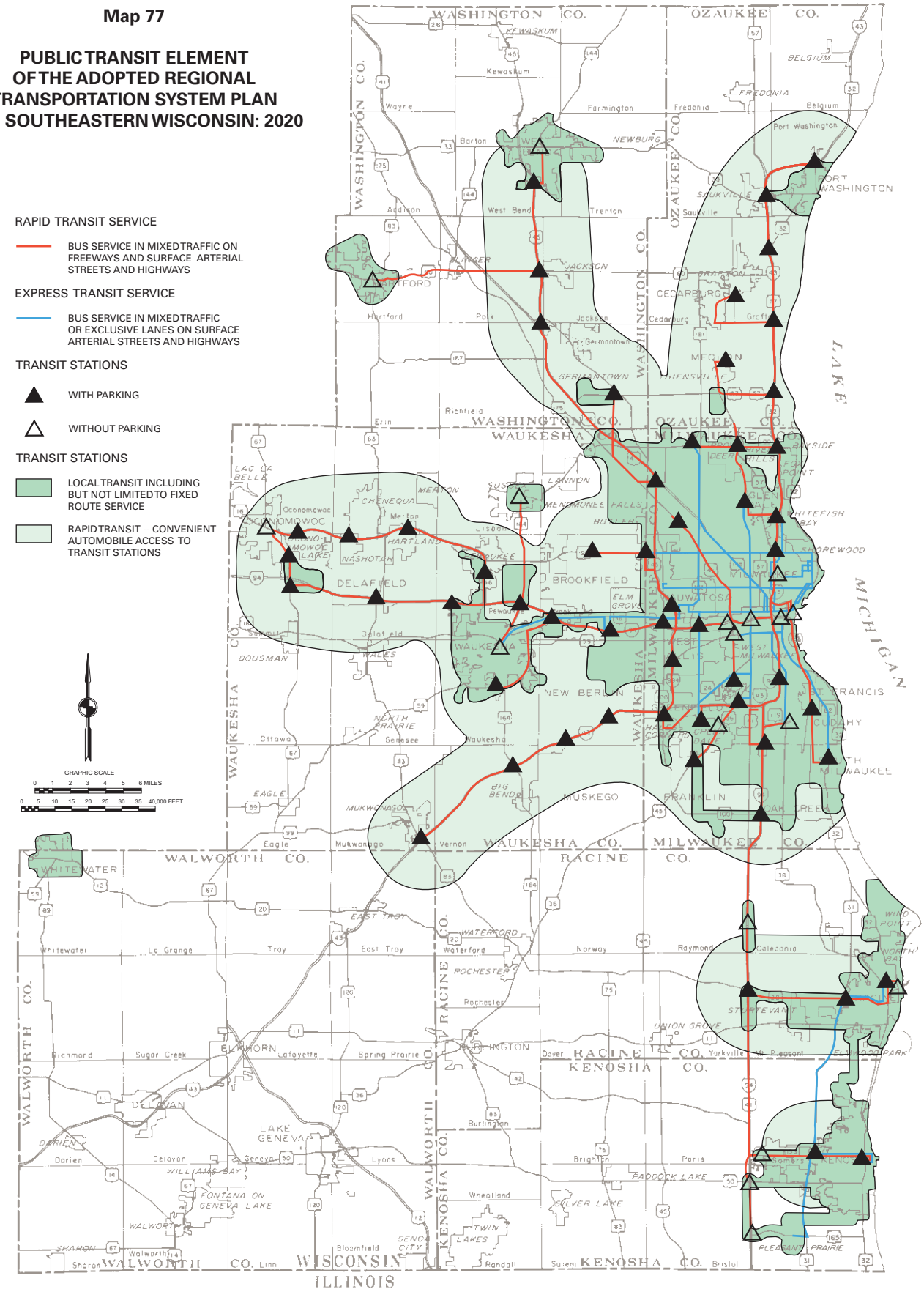
During the conduct of the freeway reconstruction study—including the development of freeway traffic congestion forecasts—the planned substantial increase in transit service was assumed to be implemented. Additionally, the potential impact of the implementation of light rail and commuter rail service in all corridors identified for further consideration in the regional transportation plan was forecast. The implementation of those additional transit services may not be expected to have a significant impact on the forecast levels of future freeway traffic congestion.

Comment: Reconstruction of the freeway system under the preliminary plan would induce additional travel and traffic.

Response: With respect to the concern that adding freeway lanes will simply induce additional travel and thereby offset the benefits of the proposed additional freeway capacity, the expected levels of congestion in the year 2020 are only modestly less than current levels of congestion. Therefore, adding freeway lanes cannot reasonably be expected to induce more travel over the existing situation. Moreover, review of historic traffic growth in Southeastern Wisconsin, including the period during which the freeway system was first constructed and which significantly reduced both peak and off-peak period travel times, indicates that nearly 90 percent of historic traffic growth was a result of factors such as economic and household growth and changing population lifestyles, and not travel which was induced.

Map 77

PUBLIC TRANSIT ELEMENT OF THE ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2020

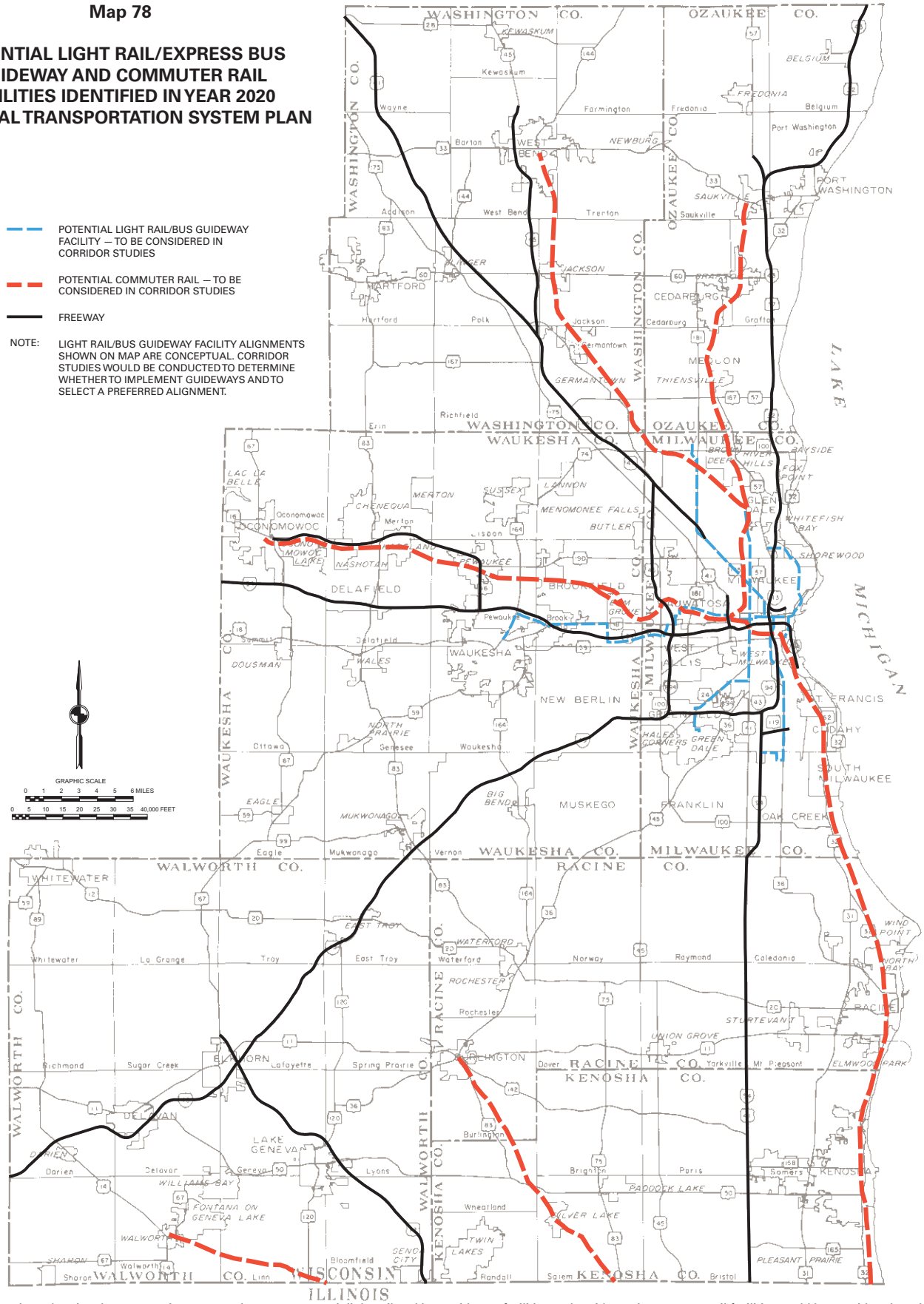


Under the regional transportation system plan, rapid transit commuter rail facilities and express transit light rail facilities would be considered as alternatives to motor-bus transit service over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed transit planning alternatives analysis studies for each of the corridors identified under the plan. The potential corridors for commuter rail and light rail facilities are shown on Map 78. The implementation of these fixed-guideway transit facilities would depend upon the outcome of the corridor studies. Upon completion of each study, the local units of government concerned--particularly, the potential transit operator involved--the Wisconsin Department of Transportation, and the Regional Planning Commission would have to affirm the study findings and, if necessary, amend the regional transportation system plan.

Source: SEWRPC

Map 78

POTENTIAL LIGHT RAIL/EXPRESS BUS GUIDEWAY AND COMMUTER RAIL FACILITIES IDENTIFIED IN YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN



Under the adopted regional transportation system plan express transit light-rail and bus guideway facilities and rapid transit commuter rail facilities could be considered as alternatives to motor-bus transit service in mixed traffic over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed planning transit alternatives analysis studies for each of the identified corridors. The addition of these potential fixed guideway transit facilities to the regional plan, and the ultimate implementation of these fixed guideway transit facilities, depends upon the outcome of the corridor studies. Upon completion of a study, the local units of government concerned -- specifically, the transit operator concerned -- the Wisconsin Department of Transportation and the Regional Planning Commission would have to affirm the study findings, determine to pursue guideway implementation, and, as necessary, amend the regional transportation system plan.

Source: SEWRPC

Comment: New freeway segments should be constructed in addition to reconstructing the existing segments of the regional freeway system.

Response: During the conduct of the regional freeway system reconstruction study, Advisory Committee members had the opportunity to propose new freeway segments for consideration. The only such segment requested to be considered—the request was made by the City of Milwaukee—was a potential new segment of freeway connecting IH 43 and USH 45 in a corridor located from three-to-six miles north or south of the Milwaukee County/Ozaukee County line. The results of the analyses conducted—documented in detail earlier in Chapter VI of this study report—were that the proposed new freeway segment would have little impact on reducing or increasing freeway traffic volume on any segment of the existing freeway system, and it would also have little impact on the traffic congestion on the existing freeway system and little impact on the need to address existing freeway system design, safety, and congestion problems. Accordingly, the possible new freeway was not included for further consideration under this study. That possible new freeway, and other possible new freeway segments, may be considered when regional land use and transportation plans are reevaluated and updated during the years 2004 and 2005.

Regarding the completion of the USH 12 freeway between the Cities of Elkhorn and Whitewater, the adopted regional transportation plan already recommends the implementation of that new freeway. The implementation was envisioned to occur in several stages, with the initial stage being construction of the Whitewater bypass as a two-lane facility. Subset stages may include: 1) construction of the initial two lanes between Elkhorn and Whitewater; 2) provision of a four-lane expressway through the construction of two additional lanes with at-grade intersections at cross streets; and 3) up-grade to a four-lane freeway by eliminating the at-grade intersections and construction of grade-separated interchanges. The Walworth County Board of Supervisors has requested the Wisconsin Department of Transportation to conduct the preliminary engineering and environmental impact assessment studies for the completion of the USH 12 freeway in Walworth County.

Comment: Opposition was particularly expressed with respect to the proposed reconstruction of IH 94 between Mitchell Boulevard and Hawley Road with elevated westbound lanes. Suggestions were made that this segment of IH 94 should instead be placed in a tunnel.

Response: The stretch of IH 94 between Mitchell Boulevard and Hawley Road has a very narrow right-of-way and is adjacent to Wood National Cemetery and other cemeteries. With or without additional lanes, the elevation of the westbound lanes of IH 94 between Mitchell Boulevard and Hawley Road to overlap the eastbound lanes and the cemeteries to the north by up to 15 to 25 feet will be required if grave disturbance is to be avoided and modern design standards are to be met, including provision of safety shoulders.

Each segment of the regional freeway system will be the subject of preliminary engineering and environmental studies following the completion of the regional freeway system reconstruction study and prior to the reconstruction of each freeway segment. Subsequent studies of this segment of IH 94 will look in great depth and detail at the benefits, costs, and impacts of a wide range of alternatives for reconstruction, including alternatives that would not include the elevation of the westbound lanes of IH 94. Potential impacts on adjacent properties that will be considered will include right-of-way, visual, and noise impacts.

Comment: The reconstruction of the regional freeway system under the preliminary plan—estimated to cost $6.25 billion in year 2000 dollars—is too expensive owing to the proposed additional freeway lanes, and the necessary funding is not available.

Response: The cost to reconstruct the regional freeway system does indeed represent a substantial investment in the Region's transportation infrastructure, but the following facts should be considered:

- The regional freeway system is a vital element of the regional transportation system, representing only 3 percent of all surface arterial street and highway mileage, but carrying about one-third of all vehicle travel on an average weekday.
- The regional freeway system is nearing the end of its service life and needs to be reconstructed. As the original base pavements continue to deteriorate, it is no longer cost effective to resurface those pavements.
- The estimated cost to simply replace the existing freeway system as-is over the next approximately 30 years, without providing design and design-related safety improvements or additional lanes on selected freeway segments, is $3.37 billion. While the estimated cost to replace the existing freeway system as-is is substantial, that level of expenditure would not address the obsolete design of the Region's freeways or the increasing freeway traffic congestion. The incremental cost to provide design and design-related safety improvements to meet modern design standards is $2.15 billion, and the incremental cost to provide additional lanes on 127 miles of the regional freeway system is $730 million. The total estimated reconstruction cost is $6.25 billion, with about 12 percent of the total attributable to the proposed additional lanes which would provide a 33 to 50 percent expansion of freeway capacity.

Regarding the funding needed for freeway system reconstruction, the reconstruction of the freeway system will be the responsibility of the State of Wisconsin and the Wisconsin Department of Transportation, and the freeway system will be reconstructed entirely with Federal and State funds. The purpose of the freeway reconstruction study is to define what is needed for Milwaukee County and Southeastern Wisconsin freeway system, but it will be up to the State Legislature and Governor, and the Wisconsin Department of Transportation (WisDOT), to determine how, and on what schedule, to fund the reconstruction.

The funding needed for implementation of the preliminary freeway system reconstruction plan will be about $200 million per year. Portions of the funding required will come from the approximately $50 million annually spent now on freeway resurfacing and $50 million annually already set aside by State Legislature. With respect to the remaining required funding, the State currently spends about $1.1 billion annually on State highways. The Governor and Legislature have the responsibility to prioritize spending needs statewide, including the needs for the reconstruction of the regional freeway system.

Comment: The conversion of existing freeways to tollways—like those that exist in the Chicago area - should be considered to provide funding for freeway system reconstruction.

Response: The conversion of existing freeways to tollways was not considered under the regional freeway system reconstruction study. The design of freeways in Southeastern Wisconsin—with closely spaced interchanges on many freeway segments—is not conducive to the implementation of toll-collection infrastructure. Additionally, the conversion of only Southeastern Wisconsin freeways to tollways—not on other highways in the State - would not be an equitable method of funding the reconstruction. While numerous significant State highways have been reconstructed throughout the State, none of those highways have been converted to tollways. The Southeastern Wisconsin

regional freeway system, which serves the entire State should be treated in the same manner as other State highways throughout the State. If the State and the Wisconsin Department of Transportation were to consider the conversion to tollways in Southeastern Wisconsin, then the conversion of highways to tollways should be considered statewide.

Comment: The travel demand forecasting models employed by the Commission for the freeway study are not state of the art, and employ mid-1970s technology.

Response: The travel demand models employed by the Commission represent the third generation of such models, with the models having been fully reevaluated, refined, recalibrated, and revalidated in 1993. The models at that time were, and continue to be, at the State of the practice of metropolitan planning organizations throughout the country. In fact, the Commission's models are more advanced in some respects to other comparable models.

Six of the seven counties in Southeastern Wisconsin are designated as severe ozone nonattainment areas, and the Commission's travel demand models must meet a higher level of requirements and are the subject of review by the U.S. Department of Transportation. The U.S. Department of Transportation last reviewed the Commission's travel demand models and modeling process in 1997, and concluded that the Commission's travel demand forecasting process substantially meets Federal requirements for travel demand modeling and air pollutant emission analysis.

Comment: The congestion analysis conducted by the Commission is inconsistent with the latest version of the Highway Capacity Manual (HCM) published by the Transportation Research Board (TRB). Additionally, the use of the terms severe, extreme, and moderate to describe traffic congestion make traffic operating conditions appear far worse than they really are.

Response: The freeway traffic congestion analysis performed by the Commission was based upon actual observed operating conditions of subsections of the freeways system on an hour by hour basis. Using actual freeway traffic data, and observed conditions, Commission staff was able to determine on an hour by hour basis the level of congestion on subsections of the freeway system. This methodology was then applied to forecast traffic volumes to determine future year levels of congestion, again on an hour by hour basis. The HCM was used to support the findings of the Commission, but in the traffic engineering profession, there is a preference to use actual data and observed conditions in a local setting, rather than arbitrarily accepting values published in a manual that are the product of research based upon geometric and traffic characteristics that may or may not be similar to local conditions. Where there may not be time to collect, observe, and analyze local data, one would accept the values published in a manual. When time does permit for this data collection, observation, and analysis, the results will produce a more meaningful result for the local conditions.

The concept of level of service (LOS), as defined in the HCM, is little understood outside of the traffic engineering profession and has proven difficult to explain to the public. Accordingly, the Commission initiated use of the terms moderate, severe, and extreme to describe traffic operating conditions and congestion rather than continuing to use the technical LOS D, E, and F jargon utilized in the HCM and by the traffic engineering profession. These terms are intended to convey a sense of freeway traffic operating conditions represented by each LOS in readily understood language. The definition of moderate, severe, and extreme congestion for freeway operation are as follows:

- Moderate—Speed reductions of up to 5 mph below the normal free flow speed and substantial restrictions on the ability to maneuver and change lanes. Minor incidents—a vehicle parked on the shoulder, or a vehicle making a poor lane change or merge—will result in extreme traffic congestion.

- Severe—The freeway is operating 5 to 15 mph below the normal free flow speed and there are extreme restrictions on the ability to maneuver and change lanes. Operation is at the maximum capacity of the facility. There are no gaps in the traffic stream to accommodate lane changing and the most minor incident will result in extreme traffic congestion.

- Extreme—The freeway is operating at a speed of 20 to 30 mph or less and there is no ability to maneuver or change lanes. It is stop-and-go, bumper-to-bumper traffic and an incident will extend the duration and extent of extreme traffic congestion.

Use of these terms by the Commission first occurred during preparation of the year 2010 regional transportation plan in 1994 as documented in SEWRPC *Planning Report No. 41, A Regional Transportation System Plan for Southeastern Wisconsin: 2010.* These terms were again used during the preparation of the 2020 regional transportation plan in 1997 as documented in SEWRPC *Planning Report No. 46, A Regional Transportation Plan for Southeastern Wisconsin 2020.* Preparation of both regional transportation plans was guided by Advisory Committees. Advisory Committee membership included county and municipal Directors of Public Works, City Engineers and members of academia. Review of Advisory Committee minutes show approval—with no objections—to the Commission's use of moderate, severe, and extreme when describing the quality of traffic operation conditions on the Region's arterial street and highway system, including the freeway system.

Additionally, the Regional Freeway Reconstruction Study is guided by an Advisory Committee and a Technical Subcommittee. The Technical Subcommittee membership includes county and municipal Directors of Public Works, engineers, and County Highway Commissioners, all of whom may be expected to have an understanding of the concept of LOS as set forth in the HCM. The Advisory Committee membership includes elected and appointed local officials and representatives of the business and labor communities, whom may not be expected to understand the concept of LOS as set forth in the HCM. The Technical Subcommittee unanimously approved Chapter V of the Regional Freeway Reconstruction Study for Advisory Committee consideration, including the terms moderate, severe, and extreme congestion on May 9, 2001. The Advisory Committee reviewed and unanimously approved Chapter V on May 17, 2001.

Comment: <u>The regional freeway system should be reconstructed with the proposed design and design-related safety improvements, but no additional lanes should be provided.</u>

Response: An alternative that would have provided for the reconstruction of the regional freeway system with design and design-related safety improvements only—no additional lanes—was prepared as part of the regional freeway system reconstruction study. The proposed additional lanes on 127 miles of the freeway system were included in the preliminary plan for several reasons:

- The reconstruction of the freeway system with design and design-related safety improvements would not address the expected near doubling of freeway traffic congestion by the year 2020. With the proposed additional lanes, the Region is expected to be able to avoid the near doubling of freeway traffic congestion, and experience a modest decease in freeway traffic congestion in the year 2020 compared to 1999 levels. The decreased congestion compared to an alternative without the proposed additional lanes would result in reduced freeway travel times and a smaller amount of total travel delay.

- The additional lanes are also expected to improve traffic safety on the freeway system, as certain types of crashes, such as rear-end collisions, are five to 15 times more likely to occur on congested freeways.

- Expansion of freeway traffic carrying capacity with additional lanes may also be expected to reduce the future traffic that would otherwise be carried on surface arterial streets.

- While additional estimated costs and right-of-way impacts are expected to be associated with the proposed additional lanes, they are significantly less than those associated with the design and design-related safety improvements only. The estimated cost to reconstruct the regional freeway system under the preliminary plan—with additional lanes—is about $6.2 billion, about a $700 million, or 13 percent increase over the alternative with design and design-related safety improvements (year 2000 dollars) and the additional lanes would provide about a 33 to 50 percent expansion in freeway system traffic carrying capacity. The estimated cost of the design improvements is $2.15 billion. Right-of-way impacts attendant to the additional lanes are also expected to be significantly less than those associated with design and design-related safety improvements. The land, residential relocations, and commercial/industrial relocations associated with the design and design-related safety improvements are more than three times that associated with the additional lanes.

Comment: Only 108 of the 127 miles of freeways proposed to be widened should be widened—all proposed freeway segments except IH 94 between the Marquette and Zoo Interchanges and IH 43 between the Mitchell and Marquette Interchanges and between the Marquette Interchange and Bender Road and with reduced widening on IH 43 between Bender and Brown Deer Roads.

Response: Not rebuilding IH 94 with additional lanes may be expected to result in more hours of congestion and extreme congestion—and longer travel times—on this key segment of the regional freeway system which serves heavy daily traffic movements in both directions during peak hours between Milwaukee and Waukesha Counties, and increased diversion of traffic to surface streets. Not widening IH 43 between the Mitchell Interchange and Bender Road, together with more limited widening of IH 43 between Bender Road and Brown Deer Road, may be expected also to result in more hours of congestion and more extreme congestion on this segment of the regional freeway system which serves major north-south traffic movements through the Region, and increased diversion of traffic to surface streets.

Comment: The impacts of the preliminary recommended freeway system reconstruction plan on minority and low income populations in Southeastern Wisconsin need to be evaluated.

Response: The impacts of the preliminary recommended freeway system reconstruction plan on minority and low income populations have been evaluated, are documented in Appendix C to the study report.

In summary, the analysis indicated no significant disproportionate adverse impacts:

- Minority and low income populations are not significantly disproportionately represented in areas in proximity to proposed widened freeways.
- While some segments of the freeway system, including those proposed to be widened, are located adjacent to minority and low income populations, the vast majority of the freeway system and freeway segments proposed to be widened are not adjacent to minority populations. Also the vast majority of census blocks having above average concentrations of minority populations are not located adjacent to, or in proximity to, the freeway system or freeway segments proposed to be widened under the preliminary plan.
- The residences and businesses which are estimated to need to be acquired under this preliminary plan, particularly those required for additional lanes, are generally not disproportionately located in areas with above county or regional averages of minority or low income populations.

With respect to the potential benefits of improved accessibility under the preliminary plan as compared to an alternative of rebuilding the freeway system as it exists today, analyses indicate that

the preliminary plan for freeway system reconstruction would reduce peak hour highway travel times throughout the Region similarly in areas of above regional average and below regional average concentrations of minority populations, and the preliminary plan would provide similar percentage increases in the number of jobs accessible within 10, 20, and 30 minutes of peak hour highway travel time in areas of above regional average and below regional average concentrations of minority concentrations.

Comment: Reconstruction of the regional freeway system under the preliminary plan would lead to a substantial loss in the property tax base.

Response: While right-of-way impacts—including the acquisition of property currently subject to property taxes—are expected due to the reconstruction of the regional freeway system under the preliminary plan, the impact to the property tax base is expected to be minimal.

The property tax base impact under the preliminary plan is an estimated $200 million for the entire Region, with $140 million of that impact within Milwaukee County.

- More than 60 percent in Milwaukee County—and over 70 percent regionwide—of the estimated property tax impact is associated with the modernization of the freeway system, not the proposed additional lanes.
- The estimates of property tax base impact are conservatively high, as they include acquisition administration and relocation costs.
- Nearly half of the estimated property tax base impact—$90 million of the total $200 million—has already been approved through preliminary engineering studies for the Marquette Interchange and IH 94 in Kenosha and Racine Counties.
- The conservatively high estimated property tax base reduction for Milwaukee County under the preliminary plan of a total 0.34 percent reduction would represent an annual reduction of about 0.01 percent over the 30 or more years required to rebuild the freeway system. By comparison, the Milwaukee County tax base has been growing at about 1.5 percent annually from new construction and at about 4.0 percent annually from base appreciation.
- The property tax base impact may not represent an actual loss in tax base. For example, Aldrich Chemical, which will be acquired as part of the Marquette Interchange, has announced that it will build a new plant in the City of Milwaukee.

The estimates of property tax base impacts developed for the freeway reconstruction study are systems planning level estimates. During subsequent preliminary engineering studies for each segment of the freeway system, the Wisconsin Department of Transportation will identify specific right-of-way impacts and seek to minimize any impacts.

Comment: During freeway system reconstruction, opportunities should be provided for disadvantaged business enterprises (DBE) to significantly participate in the construction, and for minorities to be a significant part of the reconstruction labor force.

Response: There should be significant participation of disadvantaged business enterprise (DBE) firms and significant participation of minorities in the reconstruction labor force, particularly local minority businesses and local minority labor force.

For decades, WisDOT has had plans, programs, and goals for DBE participation. However, with the reconstruction of the Marquette Interchange and subsequent reconstruction of the entire freeway system, WisDOT has recognized the significant increase in roadway construction, and the business

and labor force opportunities which will occur in Southeastern Wisconsin over the next 30 years. WisDOT established a Marquette Interchange DBE Advisory Committee with a diverse membership. The DBE Advisory Committee considered how to achieve the significant participation of minorities in the reconstruction of the Marquette Interchange, and ultimately the reconstruction of the entire regional freeway system. When considering how to achieve significant participation, WisDOT and the DBE Advisory Committee began identifying the barriers to significant minority business and labor force participation, determining the barriers that need to be overcome, identifying actions to address and remove the barriers, considering how goals for increased participation should be established, and discussed how participation should be monitored and enforced.

The final recommended plan of the freeway reconstruction study will include recommendations—drawing on the work and recommendations of the DBE Advisory Committee for the Marquette Interchange—encouraging the Wisconsin Department of Transportation to continue its efforts to ensure significant minority participation in the reconstruction of the entire regional freeway system.

Comment: Freeways should be replaced with boulevards.

Response: Regarding the suggestion that freeways are not necessary, and that a grid pattern of arterial streets is all that is needed, and is the most efficient method of carrying all traffic, we need only look back to the extreme congestion that existed on the grid of surface arterial streets in the Milwaukee area prior to the construction of freeways. Indeed, it was the need to resolve that traffic congestion that prompted the construction of the freeway system that exists today. Upon the completion of the freeway system, not only was traffic congestion on the surface arterial streets alleviated, but also very limited congestion was present on the newly constructed freeway system. This continued for a period of 10 to 20 years until continued household and economic growth and changing lifestyles resulted in higher traffic volumes and increasing congestion on the freeway system.

Comment: The methods advocated by a Florida-based traffic engineer—Walter Kulash—including instead improving public transit and surface arterial streets and accepting increased levels of traffic congestion should be encouraged.

Response: As was indicated in response to other comments, the significant expansion of public transit and improvement of the surface arterial street and highway system were previously recommended in the regional transportation plan and assumed to be implemented for the freeway reconstruction study. Even with the assumed implementation of recommended transportation system improvements, there would be a near doubling in freeway traffic congestion by the year 2020 compared to 1999 levels.

Freeway traffic congestion increased dramatically between 1972 and 1999, and is forecast to nearly double by the year 2020 without the proposed additional lanes. The acceptance of continually increasing freeway traffic congestion by rejecting the proposed additional lanes would have many results, including the following:

- Daily travel delay would more than double from 11,500 hours in 1999 to 26,200 in the year 2020.
- Freeway system travel time reliability would continue to decline.
- Freeway traffic safety problems would not be addressed—rear-end crash rates are already five to 15 times higher on congested freeway segments than on uncongested freeway segments.
- Additional traffic would be diverted to surface arterial streets from the freeway system, with adverse neighborhood impacts.
- Capacity for economic growth would not be provided.

Also, the results of a survey conducted by the Commission for the freeway reconstruction study clearly indicated substantial concern among Region residents over existing and future freeway traffic congestion. More than 82 percent of Southeastern Wisconsin residents consider traffic congestion to be a severe and growing problem during morning and afternoon peak periods, and more than 72 percent of resident consider the forecast doubling of freeway traffic congestion to be unacceptable.

Comment: The reconstruction of the regional freeway system with additional lanes will negatively affect stormwater runoff, resulting in more stormwater runoff and a decrease in the quality of stormwater runoff.

Response: The reconstruction of the regional freeway system, even with design improvements and additional lanes, may be expected to result in improved conditions with respect to freeway stormwater runoff compared to the existing situation.

Improved conditions may be expected because substantial advances in stormwater management have been made since the freeway system was originally designed and constructed. WisDOT now requires that stormwater management issues be properly addressed, taking advantage of the advances in stormwater management. There are recent examples of WisDOT reconstruction efforts—including the North Interchange and Miller Park Way in Milwaukee County—that have included the implementation of measures to improve freeway stormwater runoff conditions.

The final recommended plan of the freeway reconstruction study will include recommendations encouraging the WisDOT to continue to implement its stormwater management practices and to seek improvement of those practices as it considers stormwater management controls during detailed studies for each freeway segment and implements measures to improve the quality of stormwater runoff and decrease stormwater runoff rates.

Chapter VII

RECOMMENDED FREEWAY SYSTEM PLAN AND PROGRAM

INTRODUCTION

This chapter sets forth the final recommended plan and program for the reconstruction of the freeway system within the seven-county Southeastern Wisconsin Region. Included are sections that: a) draw findings and conclusions with respect to the consensus seeking process identified in the study design for reaching a conclusion to the study; b) set forth a series of ancillary recommendations to the Wisconsin Department of Transportation (WisDOT) as the Department approaches the freeway reconstruction program in the coming years; c) set forth a potential schedule for undertaking the freeway reconstruction program; d) set forth a SEWRPC staff recommendation as to the content of a final recommended plan; and e) report on the final actions taken by the Advisory Committee.

FINDINGS AND CONCLUSIONS: CONSENSUS SEEKING PROCESS

The regional freeway reconstruction study was guided by a study design document reviewed by the Advisory Committee upon initiation of the study.[1] Importantly, that study design outlined a process for identifying a "regional consensus" on the desirable scope of a freeway system reconstruction plan and program. While the process sought broad public and elected official participation in reviewing the study findings and in commenting on a preliminary plan, the study design explicitly indicated that the desired regional consensus would be based on the extent to which the seven county boards of supervisors in the Region could come to agreement on a particular set of recommendations that would comprise a freeway reconstruction plan.

The actions of the seven county boards of supervisors on the preliminary recommendations put forth by the Advisory Committee are documented in the preceding chapter of this report. The following findings may be drawn from that documentation:

1. With respect to that portion of the preliminary plan that calls for rebuilding the entire freeway system to modern design standards as reconstruction projects are undertaken over the next three decades, thereby addressing many serious existing design and design-related safety problems, the actions of the seven county boards of supervisors and the four county executives in the Region indicate unanimous support for the plan while recognizing the need for WisDOT to minimize adverse impacts

[1] *See* "Scope of Work: A Regional Freeway System Reconstruction Study for Southeastern Wisconsin," *SEWRPC, December 2000.*

upon those individual landowners, building occupants, and neighborhoods most directly affected by the reconstruction process.

2. With respect to that portion of the preliminary plan that calls for adding lane capacity along 108 miles of the 127 miles of freeway proposed in the preliminary plan for capacity expansion—with the exception of 19 miles of freeway that extend along IH 43 from the Mitchell Interchange to Silver Spring Drive and along IH 94 from the Marquette Interchange to the Zoo Interchange, the actions of the seven county boards of supervisors and the four county executives in the Region indicate unanimous support for the plan, again recognizing the need for WisDOT to minimize adverse impacts.

3. With respect to that portion of the preliminary plan that calls for adding lane capacity along the remaining 19 miles of freeway in central Milwaukee County proposed in the preliminary plan for capacity expansion, the actions of the seven county boards of supervisors and the four county executives in the Region indicate widespread—but not unanimous—support for the plan, with all parties concerned except the Milwaukee County Board of Supervisors supporting this aspect of the preliminary plan. Again, those supporting this aspect of the plan recognized the need for WisDOT to minimize adverse impacts.

From the foregoing findings, it may be concluded that the desired regional consensus, as that term was defined in the study design document, should include those portions of the preliminary recommended plan that call for rebuilding the entire freeway system to modern design standards and for adding lane capacity along 108 miles of the 127 miles of freeway proposed in the preliminary plan for capacity expansion. It may be further concluded that the legislative and executive branches of Milwaukee County government disagree on that portion of the preliminary plan calling for added lane capacity along 19 miles of freeway in central Milwaukee County.

ANCILLARY RECOMMENDATIONS TO WISCONSIN DEPARTMENT OF TRANSPORTATION

Whichever recommendations the Advisory Committee may choose to include in a final recommended freeway reconstruction plan for Southeastern Wisconsin, there are a number of ancillary recommendations to be made to the WisDOT as that Department undertakes freeway reconstruction projects over the next several decades. These ancillary recommendations are set forth in the following sections and deal with the conduct of preliminary engineering and environmental studies, noise barriers, stormwater management, the participation of minority-owned businesses and the minority labor force in the reconstruction program, local government cost-sharing, and freeway system law enforcement patrols in Milwaukee County.

Preliminary Engineering and Environmental Impact Assessment Studies

Every freeway segment will require preliminary engineering and environmental impact assessment studies conducted by the WisDOT. These will again consider freeway reconstruction alternatives, including rebuilding the freeway system as is, reconstructing the freeway system to provide varying degrees of meeting modern design standards, and reconstructing the freeway system with and without additional lanes. During preliminary engineering and environmental impact assessment studies, the WisDOT works with local communities in an effort to obtain their understanding, and support, of the proposed reconstruction of the freeway system. As well, during the preliminary engineering and environmental impact assessment of each freeway segment, the WisDOT will solicit input from the county in which the freeway segment is located, the municipality in which the freeway segment is located, the communities and neighborhoods adjacent to the freeway segment, and the general public. Final decisions with respect to freeway reconstruction and whether or not additional lanes will be provided are made only at the conclusion of preliminary engineering. As an integral part of the preliminary engineering and environmental impact assessment studies, it is recommended that the WisDOT should:

- "Fast-track" preliminary engineering and environmental impact assessment studies on those freeway segments where potential residential and commercial property acquisitions may be required, as

identified during the conduct of this systems level planning effort. These areas face uncertainty as to the number, location, and impact of potential property acquisitions. Definitively identifying the number and location of required properties will end the uncertainty within these communities and neighborhoods. The WisDOT should work to complete preliminary engineering and environmental impact assessment studies for these freeway segments, and in particular, the Zoo, Mitchell, and Airport Interchanges, IH 43 between the Mitchell and Marquette Interchanges, and IH 43 between the Marquette Interchange and Brown Deer Road, as soon as funding is made available, preferably within five years of the adoption of the recommended plan.

- Consider and compare the costs and benefits of a number of freeway segment reconstruction alternatives, including rebuilding the freeway segment as is; a range of alternatives which will provide varying degrees of, and options for, meeting modern design standards, including an evaluation of the costs and impacts of meeting modern design standards, particularly for those locations where right-of-way acquisition impacts are significant; and alternatives with and without additional lanes.

- Consider and compare all direct and indirect costs associated with each alternative considered for the reconstruction of each freeway segment. These direct and indirect costs related to each freeway segment include, but are not limited to, costs associated with construction, operation and maintenance, congestion, delay, reliability, traffic mitigation, safety, right-of-way requirements, stormwater management, wetlands, primary environmental corridor, natural areas, air quality, noise, historical sites, and archaeological sites.

- Work with each community adjacent to each freeway segment in an effort to develop a mitigation plan to address all identified and perceived negative impacts of the existing freeway system and of its potential reconstruction, including residential and commercial property acquisition, traffic noise levels, landscaping, aesthetics, and the need for additional or alternative surface street or pedestrian/bicycle crossings of the freeway. This plan, prepared by the WisDOT, should try to address and minimize these community impacts and concerns through community sensitive design.

- Develop a traffic mitigation plan for each freeway segment to address the diversion of travel to public transit and traffic to alternate routes during the actual reconstruction of each freeway segment. Freeway on- and off-ramp closures and mainline freeway capacity reductions during the actual reconstruction of each freeway segment will result in travel and traffic diversion. The WisDOT should work with the local transit system operators and the local units of government to recommend traffic mitigation strategies, including improvements in transit service and arterial street and highway improvements, traffic engineering, traffic signal timing and coordination, intersection improvements, curb-lane parking restrictions, and other measures. The implementation of the recommended traffic mitigation plan for the reconstruction of each freeway segment should be funded entirely with Federal and State funds, with no local cost share.

- Develop, implement, and fund an advance acquisition program whereby properties needed for freeway reconstruction can be authorized for purchase following the completion of preliminary engineering and environmental impact assessment studies. This program under Federal and State law should ensure that the prices paid for properties purchased are based upon fair market replacement value, holding property owners harmless against market loss owing to the reconstruction effort. The program should allow WisDOT to acquire properties well in advance of construction needs following preliminary engineering in those cases where willing sellers make themselves available for that purpose. In addition, the program should be structured so as to require that the firm retained by WisDOT to acquire properties and relocate individuals and businesses is separate from and has no connection with the firm that has been retained by WisDOT to undertake the preliminary engineering and environmental studies and/or to manage/supervise the reconstruction activities.

Noise Barriers

The Wisconsin Department of Transportation (WisDOT) will identify the need, feasibility, and location of potential noise barriers as an integral part of the preliminary engineering and environmental impact assessment studies for the reconstruction of each freeway segment. Need and feasibility are defined in TRANS 405 of the Wisconsin Administrative Code. Need is established based upon existing and projected future noise levels, and noise level standards. Feasibility is defined as a maximum cost of a potential noise barrier not exceeding $30,000 (1988 dollars) per abutting residence. During preliminary engineering, the WisDOT works with local communities in an effort to obtain their understanding, and support, of proposed reconstruction of the freeway system, and the WisDOT as part of that effort, will also work to obtain local community understanding, and support of, needed and feasible noise barriers. Noise barriers identified as needed and feasible during the preliminary engineering and environmental impact assessment studies for the reconstruction of each freeway segment and which are supported through resolution by the affected local unit of government, will be built as an integral part of the reconstruction of each freeway segment—entirely with Federal and State funds, without any local cost share.

It is recommended that noise barriers identified as needed, but not feasible due to their cost per abutting residence, on freeway segments in urban areas recommended in preliminary engineering for reconstruction with additional lanes and/or major redesign, should be constructed also as an integral part of the freeway segment reconstruction, and also entirely with Federal and State funds, without any local cost share. This change will require amending Trans 405 of the Wisconsin Administrative Code, which the WisDOT should actively pursue.

During freeway system reconstruction, the WisDOT should also work to provide a more uniform, durable, and aesthetically pleasing design of noise barriers in Southeastern Wisconsin. As part of this effort, the WisDOT should attempt to soften the appearance of noise barriers through landscaping, particularly on the side of the barrier facing residences.

Stormwater Management

During the reconstruction of the freeway system in Southeastern Wisconsin, the Wisconsin Department of Transportation (WisDOT) should identify and implement stormwater management controls that improve the quality and provide for no increase—and desirably a reduction—in the peak discharge rate of stormwater runoff from the freeway system. The consideration of stormwater management controls and identification of controls to be implemented on each freeway segment should be done as an integral part of the preliminary engineering and environmental impact assessment studies for each freeway segment. The stormwater management controls should accomplish the following:

- Improve the quality of stormwater runoff from each freeway segment. This would be accomplished by implementing the requirements of TRANS 401 of the Wisconsin Administrative Code. Under these administrative code requirements, total suspended solids in stormwater runoff would be reduced by a minimum of 40 percent.

- Provide for no increase, and desirably provide for reduction, in the post-freeway reconstruction stormwater peak discharge rates from the existing freeway stormwater peak discharge rates, during rainfall events with recurrence intervals ranging from two through 100 years.

- Prevent any increases in the regional flood flows and stages and in stream bank erosion rates by managing the volume, timing, and peak discharge rate of runoff from freeway facilities during rainfall events with recurrence intervals ranging from two through 100 years.

The first of the three goals addresses the quality of the stormwater runoff from the freeway system and is consistent with the stormwater discharge requirements in TRANS 401 of the Wisconsin Administrative Code. The next two goals may go beyond the administrative code requirements and address stormwater runoff rate of discharge, and potential flooding along receiving streams and overloading of existing stormwater and combined

sanitary sewer systems. Accomplishing the second and third goals will require WisDOT to work with other agencies in the identification and implementation of stormwater management controls. A cooperative agreement between WisDOT and the Wisconsin Department of Natural Resources requires the two agencies work together to identify stormwater management controls during preliminary engineering and environmental impact assessment studies. Similarly, during preliminary engineering and environmental impact assessment studies, WisDOT should include other agencies which are impacted by stormwater runoff from freeway segments, like the Milwaukee Metropolitan Sewerage District, in the identification of stormwater management controls for freeway segments. Any costs directly related to the control of stormwater from the freeway system should be funded with Federal and State funds.

Participation of Minority-Owned Businesses and Minority Workers

During the reconstruction of the regional freeway system—and during engineering and environmental studies to be conducted prior to actual reconstruction—the Wisconsin Department of Transportation (WisDOT) should ensure the significant participation of disadvantaged business enterprise (DBE) firms and the significant participation of minorities in the reconstruction labor force, particularly local minority businesses and local minority labor force. Significant participation could mean setting and achieving goals as set and achieved for projects such as Miller Park construction (25 percent DBE and 5 percent women business enterprise—WBE), to setting and achieving goals for minority business and minority labor force participation which would be equal to minority population composition—about 25 percent for the Southeastern Wisconsin Region.

For several decades, WisDOT has had plans, programs, and goals for DBE participation. However, with the reconstruction of the Marquette Interchange and subsequent reconstruction of the entire freeway system, WisDOT has recognized the significant increase in roadway construction, and the business and labor force opportunities which will occur in Southeastern Wisconsin over the next 30 years. WisDOT established a Marquette Interchange DBE Advisory Committee which was charged with the task of considering how to achieve the significant participation of minorities in the reconstruction of the Marquette Interchange, and ultimately the reconstruction of the entire regional freeway system. Members of the DBE Advisory Committee and participants in DBE Advisory Committee meetings included representatives of the following:

- State Legislature
- Milwaukee County Board of Supervisors
- City of Milwaukee Common Council
- Minority-owned businesses
- Nonminority transportation consulting firms
- Employment and employment training agencies
- Labor unions
- Wisconsin Association of Consulting Engineers
- Wisconsin Transportation Builders Association
- National Association of Minority Contractors
- Private Industry Council of Milwaukee County
- WisDOT
- Federal Highway Administration (FHWA)
- Southeastern Wisconsin Regional Planning Commission (SEWRPC)

WisDOT and the DBE Advisory Committee began their work by identifying the barriers to significant minority business and labor force participation, determining the barriers that need to be overcome, identifying actions to

address and remove the barriers, considering how goals for increased participation should be established, and discussing how participation should be monitored and enforced.

Drawing from the experience and recommendations of the DBE Advisory Committee for the Marquette Interchange, it is recommended that WisDOT accomplish the following with respect to establishing and achieving goals for minority participation:

- A DBE oversight committee should be formed with diverse representation—similar to the membership of the Marquette Interchange DBE Advisory Committee—for each freeway reconstruction project to assist WisDOT in overseeing the participation of minority businesses and labor force.
- Aggressive goals for the participation of minority businesses and labor force should be established by WisDOT for each freeway reconstruction project with the assistance of the DBE oversight committee.
- Overall goals for business and labor participation will need to be established for each freeway reconstruction project. The overall goals should include not only mandated elements, but also additional voluntary or discretionary goal elements for minority business and labor participation. The current mandated goal for minority labor participation in Milwaukee County is 8.0 percent. The current mandated goal for DBE participation statewide is 7.2 percent. The overall goals for freeway reconstruction projects that include voluntary or discretionary goals in addition to mandated goals could range from the goals set and achieved for the Miller Park stadium construction (25 percent DBE and 5 percent WBE) to goals reflecting minority population composition—about 25 percent for the Southeastern Wisconsin Region.

It is recommended that WisDOT encourage and employ unique methods of removing barriers to participation, encouraging the growth of the minority workforce, supporting the building of capacity of minority-owned firms, setting goals for participation, and monitoring and enforcing those goals. The implementation of the following recommended actions were considered by WisDOT and the DBE Advisory Committee to be essential to achieving significant minority business and labor participation:

- The number of existing minority and women-owned firms and capacity of those firms to perform the work needed should be determined. Also, the available minority and women labor force should be assessed.
- Firms and workers that may potentially participate in the reconstruction process should be educated regarding the magnitude of work needed and the capabilities that will be required to perform the work needed. Information should also be provided to other stakeholders such as schools and labor unions.
- WisDOT should partner with schools and community-based organizations to inform potential workers of the long-term opportunities and to develop training programs to assist those potential workers in gaining the skills required to take advantage of those opportunities.
- Majority-owned firms should participate in training and technical assistance programs targeted at developing the capacity of DBE firms to participate in freeway reconstruction projects.
- Mechanisms to provide information on available minority workers should be implemented and labor unions and contractors should be encouraged to collaborate to place minority workers.
- Mentoring programs should be established and apprenticeships should be encouraged and monitored.
- The achievement of minority participation should be monitored during each reconstruction project.
- The development of on-going, long-term business relationships—joint ventures, mentoring, and others—between majority and minority owned firms should be encouraged.
- Because the reconstruction of the regional freeway system will take place over a period of decades and through numerous contracts, WisDOT will have knowledge of how freeway reconstruction

contractors have performed regarding minority participation. As the reconstruction of the freeway system proceeds, WisDOT should use past performance of contractors with respect to minority participation as a consideration when awarding future contracts.

Local Government Cost Share

All costs attendant to the freeway reconstruction should be funded entirely with Federal and State funds. The only exceptions should be those mandated by the Wisconsin State Statutes and the Wisconsin Administrative Code as follows:

- Chapter 84 of the Wisconsin State Statutes requires local municipalities to pay 10 percent of any necessary municipal infrastructure relocation costs to accommodate roadway reconstruction, when municipal infrastructure is located in WisDOT right-of-way. With respect to freeway reconstruction, the municipal infrastructure affected may include infrastructure attached to local street bridges over the freeway system. When municipal infrastructure is located outside the existing WisDOT right-of-way, and roadway reconstruction would require infrastructure relocation, WisDOT is entirely responsible for the municipal infrastructure relocation costs.

- Chapter 84 of the Wisconsin State Statutes requires that the entire cost of necessary local road grade separations, relocations, alterations, and extensions be part of the freeway reconstruction and funded by WisDOT entirely with Federal and State funds. However, should a county or local municipality request that a local road or bridge be rebuilt with additional width—for traffic lanes, medians or sidewalks—the additional cost attendant to the additional requested width is the responsibility of the county or local municipality.

- Chapters 66 and 84 of the Wisconsin State Statutes and TRANS 220 of the Wisconsin Administrative Code require public utilities to pay for relocation costs of public utility infrastructure to accommodate roadway improvements when the utility infrastructure is located in WisDOT right-of-way by permit. When utility infrastructure is located outside the existing WisDOT right-of-way, and freeway reconstruction would require utility infrastructure relocation, WisDOT is entirely responsible for the utility infrastructure relocation costs.

Freeway Law Enforcement Patrols

While the Wisconsin Department of Transportation (WisDOT) has the primary responsibility to design, construct, maintain, and operate the freeway system, the Wisconsin State Patrol has primary responsibility for law enforcement on the freeway system statewide. Assistance is provided by county and local law enforcement agencies. The only exception is in Milwaukee County where, by State statute, the Milwaukee County Sheriff Department has primary responsibility for law enforcement on the freeway system within Milwaukee County.

WisDOT should work to fully fund Milwaukee County Sheriff's Department freeway patrol and incident management activities with Federal and State funds. Currently, the cost of freeway patrol done by the Milwaukee County Sheriff's Department is funded through four sources: 1) a portion of the costs incurred for patrolling the freeway system is recoverable under State general transportation aids ($2.0 million); 2) a portion of fines collected for violations is retained by the issuing agency ($2.7 million); 3) levy on the local property tax ($0.7 million); and 4) payment from the State to help defray the costs of operating the freeway patrol in return for assuming the primary responsibility for patrolling the county's freeway system ($1.0 million).

In addition, during preliminary engineering and freeway system reconstruction, and following reconstruction of the freeway system, the WisDOT should strengthen existing interagency cooperation with the Sheriff's Departments throughout the Region. During freeway reconstruction, the WisDOT should provide the necessary additional Federal and State funding for directed enforcement patrols in and near the construction zones as part of traffic mitigation:

- Involve the appropriate Sheriff's Department(s) during preliminary engineering in the design of freeway traffic control measures including lane and ramp closures, and incident management strategies to be employed during each freeway reconstruction project.
- Fund all directed enforcement patrol and incident management activities attendant to the freeway reconstruction projects entirely with State and Federal funds during freeway reconstruction.

POTENTIAL PROGRAM, SCHEDULE, AND FUNDING REQUIREMENTS FOR THE RECONSTRUCTION OF THE REGIONAL FREEWAY SYSTEM

Map 79 presents a potential schedule, or program, for the reconstruction of the freeway system over the next several decades. The potential schedule is based upon the factors discussed below. It may be expected that the actual schedule for reconstruction followed by the Wisconsin Department of Transportation will vary from this schedule for any number of reasons, including, for example, freeway segment pavements and bridges which last longer or fail earlier than expected, and delays which result from preliminary engineering and environmental impact studies, right-of-way acquisition, or final engineering and design. The factors considered in preparing the potential freeway reconstruction time schedule are as follows:

- The remaining useful life of freeway system pavements and freeway pavement resurfacing history—The potential time schedule attempts to provide for the reconstruction of freeway segments after the end of the expected service life of their second resurfacing. However, given the number of freeway segments which will require such reconstruction between the years 2010 to 2020, a third resurfacing may be expected to be necessary for some freeway segments. Reconstruction is proposed at, or before, the end of the useful life of all freeway bridges.
- Maintaining a level amount of annual reconstruction funding—The potential schedule provides for relatively equal annual levels of reconstruction funding from the initiation of reconstruction through the year 2030. Again, because a number of freeway segments may be expected to require reconstruction between the years 2010 and 2020, some third resurfacings or maintenance of some freeway segments may be necessary.
- Grouping of freeway segments for reconstruction purposes—Some freeway segments may be logical to be reconstructed concurrently. Reasons for such grouping may relate to the logical inclusion of a freeway system interchange with an adjacent mainline freeway segment and the inclusion of a complementary freeway stub or spur segment with a connecting mainline freeway segment.
- Previously completed detailed studies—Following the completion of the Regional Freeway System Reconstruction Study, additional studies will need to be initiated and completed for each segment of the regional freeway system prior to reconstruction. The Wisconsin Department of Transportation has already completed the required preliminary engineering study for one freeway segment—IH 94 in Kenosha and Racine Counties. Much of the information presented in the freeway reconstruction study was derived directly from that previously completed study, such as cost estimates and right-of-way impacts. The completion of that more detailed study means that the Wisconsin Department of Transportation would have a "head start" on the reconstruction of that freeway segment compared to other freeway segments.
- Traffic operations during reconstruction—The reconstruction of each freeway segment will affect the motorists that normally travel on that freeway segment. Whenever possible, the reconstruction of freeway facilities that may be used as an alternate route while another freeway facility is under reconstruction—mainline segments and/or freeway-to-freeway system interchanges—should be avoided.

Regarding the funding needed for freeway system reconstruction, the reconstruction of the freeway system will be the responsibility of the State of Wisconsin and the Wisconsin Department of Transportation, and the freeway system will be reconstructed entirely with Federal and State funds. The purpose of the freeway reconstruction

study is to define what is needed for Milwaukee County and the Southeastern Wisconsin freeway system, but it will be up to the State Legislature and Governor, and WisDOT, to determine how, and on what schedule, to fund the reconstruction.

The funding needed for implementation of the final recommended freeway system reconstruction plan will be about $200 million per year. Portions of the funding required will come from the approximately $50 million annually spent now on freeway resurfacing and $50 million annually already set aside by the State Legislature.

With respect to the remaining required funding, the State currently spends about $850 million annually on State highways. The Governor and Legislature have the responsibility to prioritize spending needs statewide, including the needs for the reconstruction of the regional freeway system. Moreover, comparison of the total costs of implementing the regional transportation plan—including its public transit and arterial street and highway elements, and the potential reconstruction of the freeway system within Southeastern Wisconsin—to estimated revenues which may be expected to be available indicates only a modest gap of about 10 percent, or $50 million annually, between estimated total regional transportation plan costs of $550 million annually and estimated available annual revenues of $500 million annually.

COMMISSION STAFF RECOMMENDATIONS

Commission staff provided recommendations with respect to the final recommended plan to the Advisory Committee for its consideration at its final meeting on April 2, 2003. The Commission staff's recommendations were based on the following premises:

1. The Wisconsin Department of Transportation (WisDOT) has jurisdictional authority over all freeways in the seven-county Southeastern Wisconsin Region. All decisions relative to the reconstruction and/or capacity expansion of existing freeways will be made by the Secretary of the Wisconsin Department of Transportation, subject to the oversight of the Wisconsin Legislature and the Governor.

2. The Regional Freeway Reconstruction Study was requested by the Secretary of the Wisconsin Department of Transportation with full knowledge that the State of Wisconsin is about to embark upon an anticipated three-decade long process of reconstructing the 270 mile regional freeway system in Southeastern Wisconsin and for the express purpose of identifying a "regional consensus" on the desirable scope of a freeway system reconstruction plan and program. In the discussions with the WisDOT Secretary attendant to the initiation of the study, and as documented in the Southeastern Wisconsin Regional Planning Commission (SEWRPC) staff memorandum entitled "Scope of Work: A Regional Freeway System Reconstruction Study for Southeastern Wisconsin," it was intended that the regional consensus be based upon widespread agreement on the plan and program and, in particular, endorsement of the plan and program by the seven county boards of supervisors in the Region. The plan review process was, accordingly, explicitly structured to identify the extent to which each of the seven county boards of supervisors could come to agreement on a particular plan and program.

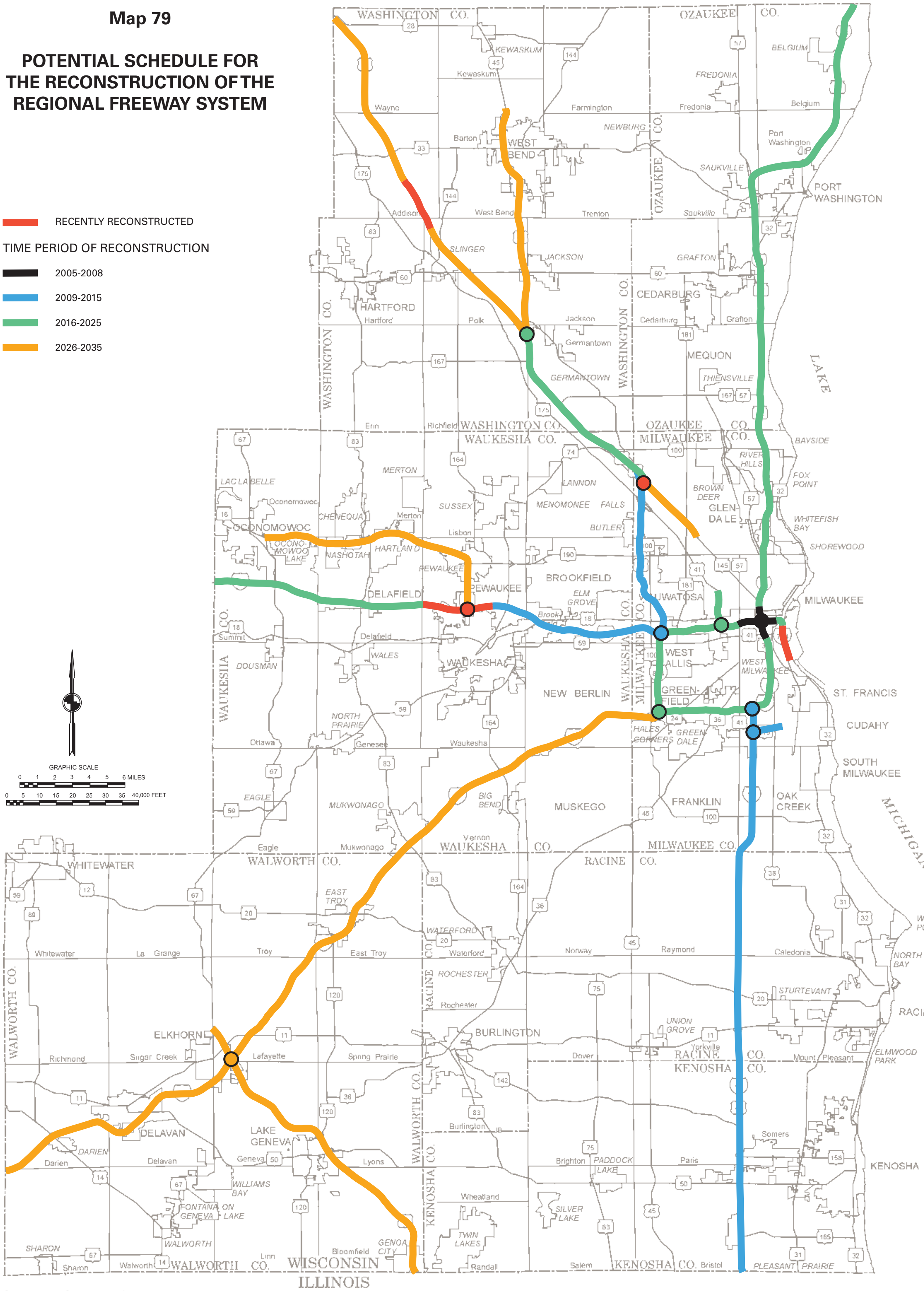
3. The Commission staff and Advisory Committee put forth a preliminary system plan recommendation that had the following key recommendations:

    a. Rebuilding the entire regional freeway system to modern design standards and, in so doing, thereby addressing the design and design-related safety deficiencies of the existing system. This rebuilding process would involve reconfiguration of freeway-to-freeway system interchanges, improvement of freeway system service interchanges, and improvement of freeway mainline sections.

    b. Providing additional lanes on 127 miles of the regional freeway system, in most cases providing two additional lanes in the capacity expansion process.

Map 79

POTENTIAL SCHEDULE FOR THE RECONSTRUCTION OF THE REGIONAL FREEWAY SYSTEM



Source: SEWRPC.

4. The Advisory Committee's preliminary plan recommendations of the Commission staff and Advisory Committee were subjected to a widespread, rigorous, and lengthy public involvement and participation process. That process included public informational meetings and public hearings, outreach and briefings to groups, a public opinion survey, formal consideration of the preliminary recommendations by local municipalities, and—most importantly given the consensus-seeking process selected for the study—formal consideration of the preliminary plan recommendations by the seven county boards of supervisors in the Region.

5. With respect to six of the seven counties in the Region—Kenosha, Ozaukee, Racine, Walworth, Washington, and Waukesha—the county boards of supervisors fully endorsed the preliminary system plan recommendations put forth by the Advisory Committee. In those cases where counties have county executives—Kenosha, Racine, and Waukesha—the county executives supported the actions taken by their county boards of supervisors.

6. With respect to Milwaukee County, no official position on the preliminary plan recommendations was forthcoming since the legislative and executive branches of county government could not reach agreement. The Milwaukee County Board of Supervisors supported those aspects of the preliminary plan recommendation dealing with the reconstruction of the freeway system to modern design standards and with providing additional freeway lane capacity on 108 of the 127 miles of freeway proposed for such capacity expansion. The County Executive vetoed the County Board's resolution and the County Board did not override that veto. In his veto message, the County Executive supported the entire preliminary plan recommendation put forth by the Advisory Committee while calling upon the WisDOT design engineers to make every effort to minimize impacts upon abutting neighborhoods in those cases where freeway capacity expansion is being proposed. While no formal position of Milwaukee County on this matter is available, the actions of the Milwaukee County Board of Supervisors and the Milwaukee County Executive may be interpreted to indicate agreement on the preliminary plan recommendations in all respects save one: the proposed capacity additions attendant to the 19 miles of freeway that extend along IH 43 from the Mitchell Interchange to Silver Spring Drive, and along IH 94 from the Marquette Interchange to the Zoo Interchange.

Given the findings and conclusions of the consensus-seeking process outlined earlier, the Commission staff recommended the following to the Advisory Committee with respect to the final recommended plan:

1. The actions taken by the duly elected legislative and executive officials in the seven counties of Southeastern Wisconsin evidence widespread agreement on the great majority of the substantive proposals for freeway reconstruction included in the preliminary system plan put forth by the Advisory Committee.

2. The adopted regional transportation system plan for Southeastern Wisconsin should be amended to include the following with respect to the 270-mile regional freeway system:

    a. Rebuild the entire freeway system to modern design standards on a segment-by-segment basis as those freeways wear out and need to be reconstructed. This includes the following types of design and design-related safety improvements:

        - Reconfigure Freeway-to-Freeway System Interchanges

            - Relocate left hand on- and off-ramps to right hand side of freeway

            - Minimize lane drops and provide route continuity

            - Improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds

- Address closely spaced service interchanges with grade-separated or collector-distributor roadways

- Improve Freeway System Service Interchanges
  - Lengthen and widen ramp tapers
  - Convert multi-point exits to single point exits
  - Separate ramps from frontage roads in Kenosha and Racine Counties
  - Provide selected auxiliary lanes to address closely spaced interchanges
- Improve Freeway Mainline
  - Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards
  - Provide full inside and outside shoulders

b. Provide additional lane capacity on the following segments of the regional freeway system as those segments are rebuilt over time, such segments totaling 108 miles of freeway (see Map 80):

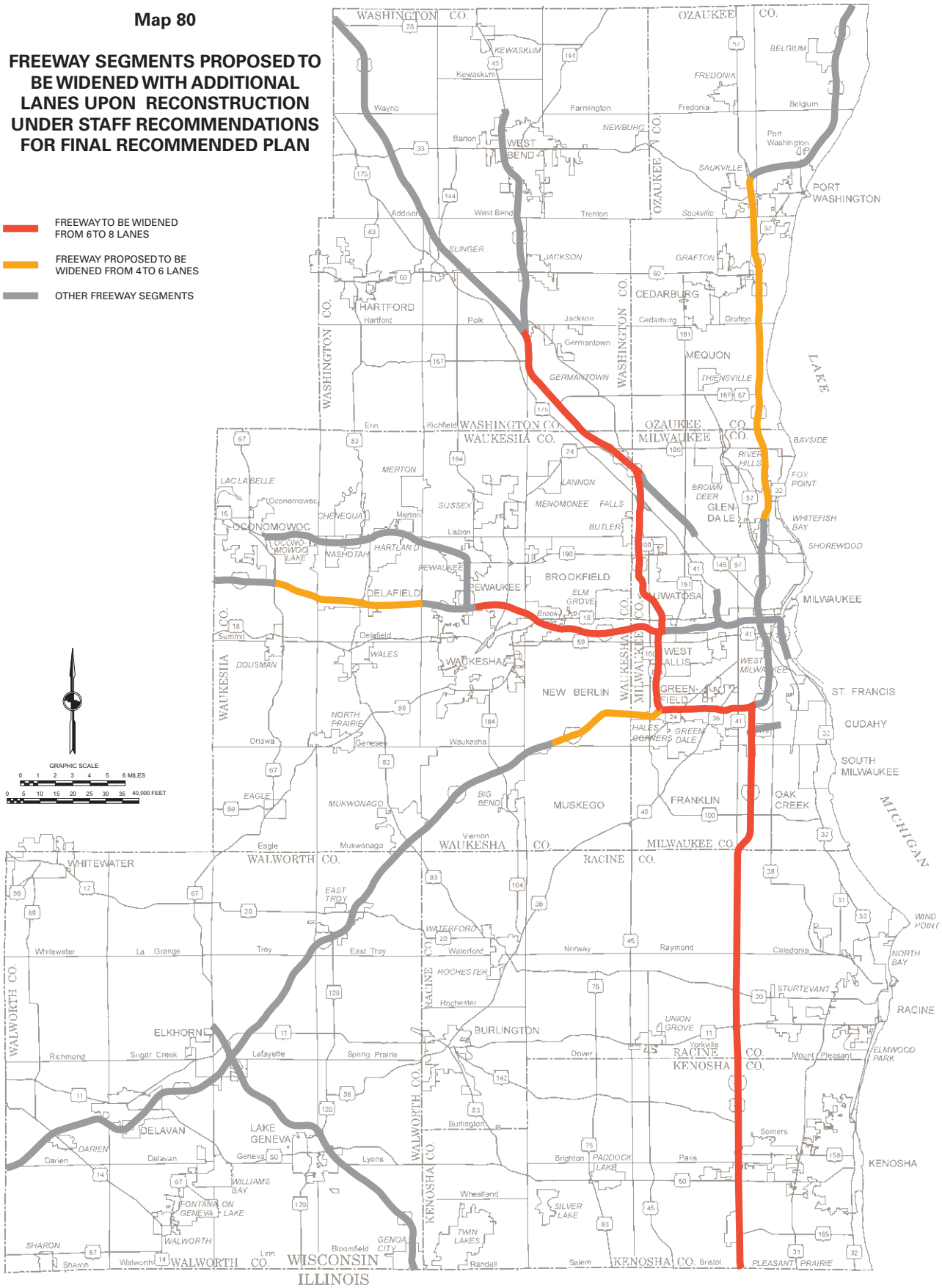
- IH 94 in Kenosha, Racine, and Milwaukee Counties from the Wisconsin-Illinois State line to the Mitchell Interchange (from the present six to eight lanes)
- IH 94 in Milwaukee and Waukesha Counties from the Zoo Interchange to STH 16 (from the present six to eight lanes)
- IH 94 in Waukesha County from CTH SS to STH 67 (from the present four to six lanes)
- IH 894 in Milwaukee County from the Mitchell Interchange to the Zoo Interchange (from the present six to eight lanes)
- USH 45 in Milwaukee, Waukesha, and Washington Counties from the Zoo Interchange to the Richfield Interchange where USH 41 and USH 45 divide in Washington County (from the present six to eight lanes)
- IH 43 in Milwaukee and Waukesha Counties from Racine Avenue to the Hale Interchange (from the present four to six lanes)
- IH 43 in Milwaukee and Ozaukee Counties from Silver Spring Drive to the Saukville Interchange where STH 57 and IH 43 divide in Ozaukee County (from the present four to six lanes)

3. That as the WisDOT undertakes freeway system reconstruction projects over the next several decades, the Department should give careful and favorable consideration to the ancillary recommendations set forth earlier in this chapter attendant to the conduct of preliminary engineering and environmental studies, noise barriers, stormwater management, the participation of minority-owned business and the minority labor force in the reconstruction program, local government cost-share, and freeway system law enforcement patrols in Milwaukee County.

4. In recognition of the clear difference of opinion evidenced by the actions of the legislative and executive branches of Milwaukee County government, the unresolved freeway capacity issues should be revisited at an appropriate time prior to reconstruction in an attempt to reconcile the need for additional capacity in Milwaukee County with the need to maintain sensitivity to neighborhood concerns.

Map 80

FREEWAY SEGMENTS PROPOSED TO BE WIDENED WITH ADDITIONAL LANES UPON RECONSTRUCTION UNDER STAFF RECOMMENDATIONS FOR FINAL RECOMMENDED PLAN



Source: SEWRPC.

ACTION BY ADVISORY COMMITTEE

The Advisory Committee held a final meeting on April 2, 2003. After careful debate and consideration, including consideration of the foregoing Commission staff recommendations, the Southeastern Wisconsin Regional Freeway System Advisory Committee made the following recommendations to its creating body, the Southeastern Wisconsin Regional Planning Commission, on a vote of 15 members in favor, 8 opposed, 1 abstention, and one member absent:

1. The actions taken by the duly elected legislative and executive officials in the seven counties of Southeastern Wisconsin evidence widespread agreement on the great majority of the substantive proposals for freeway reconstruction included in the preliminary system plan put forth by the Advisory Committee.

2. The Advisory Committee recommends that the Commission amend the adopted regional transportation system plan for Southeastern Wisconsin to include the following with respect to the 270-mile regional freeway system:

    a. Rebuild the entire freeway system to modern design standards on a segment-by-segment basis as those freeways wear out and need to be reconstructed. This includes the following types of design and design-related safety improvements:

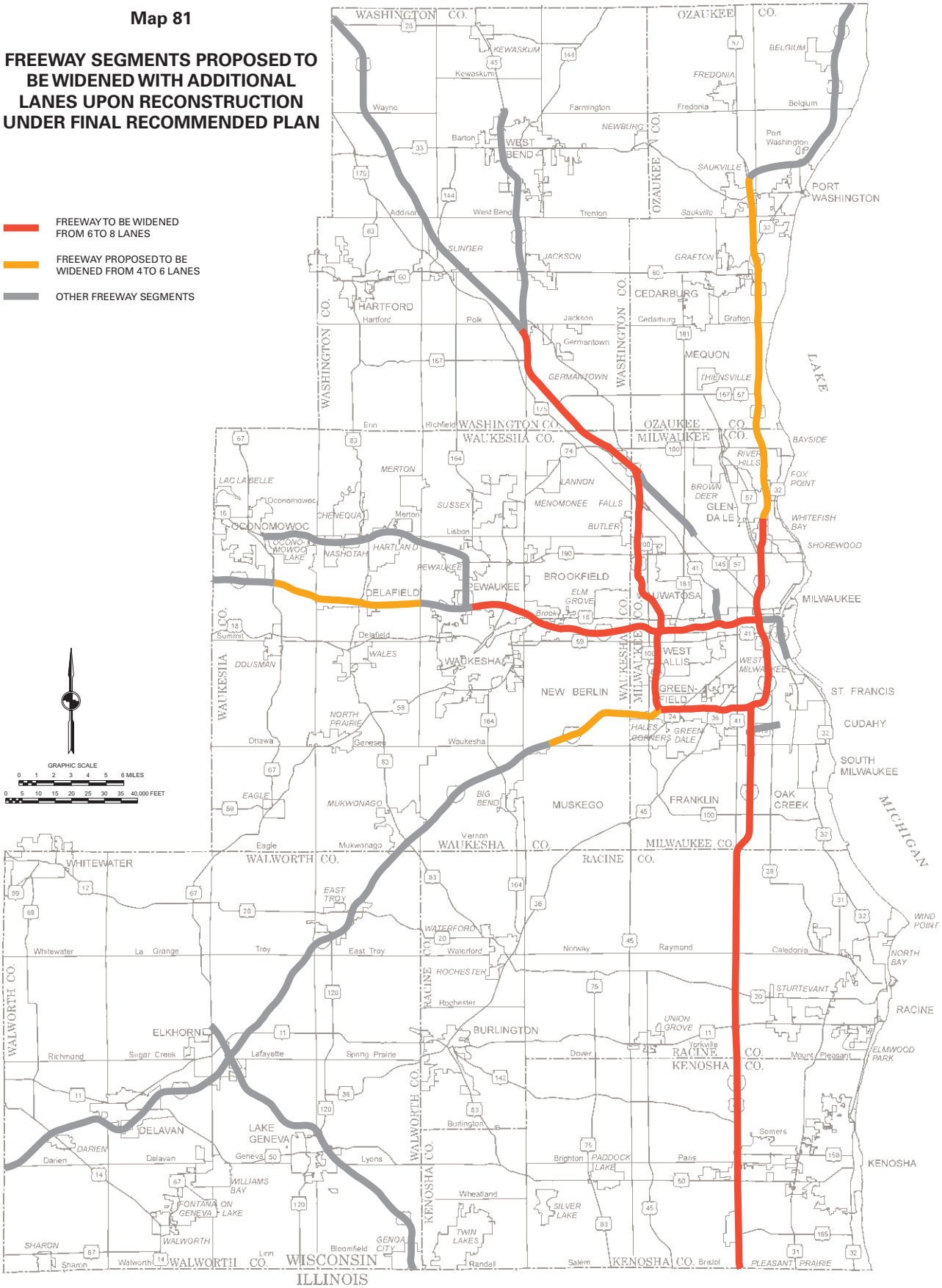
        - Reconfigure Freeway-to-Freeway System Interchanges
            - Relocate left hand on- and off-ramps to right hand side of freeway
            - Minimize lane drops and provide route continuity
            - Improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds
            - Address closely spaced service interchanges with grade-separated or collector-distributor roadways
        - Improve Freeway System Service Interchanges
            - Lengthen and widen ramp tapers
            - Convert multi-point exits to single point exits
            - Separate ramps from frontage roads in Kenosha and Racine Counties
            - Provide selected auxiliary lanes to address closely spaced interchanges
        - Improve Freeway Mainline
            - Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards
            - Provide full inside and outside shoulders

    b. Provide additional lane capacity on the following segments of the regional freeway system as those segments are rebuilt over time, such segments totaling 127 miles of freeway (see Map 81):

        - IH 94 in Kenosha, Racine, and Milwaukee Counties from the Wisconsin-Illinois State line to the Mitchell Interchange (from the present six to eight lanes)

Map 81

FREEWAY SEGMENTS PROPOSED TO BE WIDENED WITH ADDITIONAL LANES UPON RECONSTRUCTION UNDER FINAL RECOMMENDED PLAN



Source: SEWRPC.

- IH 43 in Milwaukee County from the Mitchell Interchange to Silver Spring Drive (from the present six to eight lanes)
- IH 94 in Milwaukee County from the Marquette Interchange to the Zoo Interchange (from the present six to eight lanes)
- IH 94 in Milwaukee and Waukesha Counties from the Zoo Interchange to STH 16 (from the present six to eight lanes)
- IH 94 in Waukesha County from CTH SS to STH 67 (from the present four to six lanes)
- IH 894 in Milwaukee County from the Mitchell Interchange to the Zoo Interchange (from the present six to eight lanes)
- USH 45 in Milwaukee, Waukesha, and Washington Counties from the Zoo Interchange to the Richfield Interchange where USH 41 and USH 45 divide in Washington County (from the present six to eight lanes)
- IH 43 in Milwaukee and Waukesha Counties from Racine Avenue to the Hale Interchange (from the present four to six lanes)
- IH 43 in Milwaukee and Ozaukee Counties from Silver Spring Drive to the Saukville Interchange where STH 57 and IH 43 divide in Ozaukee County (from the present four to six lanes)[2]

3. That as the WisDOT undertakes freeway system reconstruction projects over the next several decades, the Commission recommends to the Department that it give careful and favorable consideration to the ancillary recommendations set forth earlier in this chapter attendant to the conduct of preliminary engineering and environmental studies, noise barriers, stormwater management, the participation of minority-owned business and the minority labor force in the reconstruction program, local government cost-share, and freeway system law enforcement patrols in Milwaukee County. In addition, the WisDOT is requested to maintain sensitivity to the neighborhoods surrounding the freeway system as part of the design to expand the capacity of the system.

4. When the WisDOT prepares for the reconstruction of the freeway system on a segment-by-segment basis through preliminary engineering and environmental impact assessment studies, it is recommended that the WisDOT also develop financing plans. The financing plans should identify the expected funding requirements and the expected funding sources for each freeway reconstruction project, with such plans to be submitted to the Governor and State Legislature for their consideration along with other required project documentation including preliminary engineering and environmental impact assessment studies.

[2] *Appendix D compares the final recommended plan to the preliminary plan in terms of estimated construction cost, right-of-way acquisition, and forecast freeway system traffic congestion.*

APPENDICES

Appendix A

PHYSICAL DESIGN STANDARD ASSESSMENT OF THE REGIONAL FREEWAY SYSTEM

Map A-1

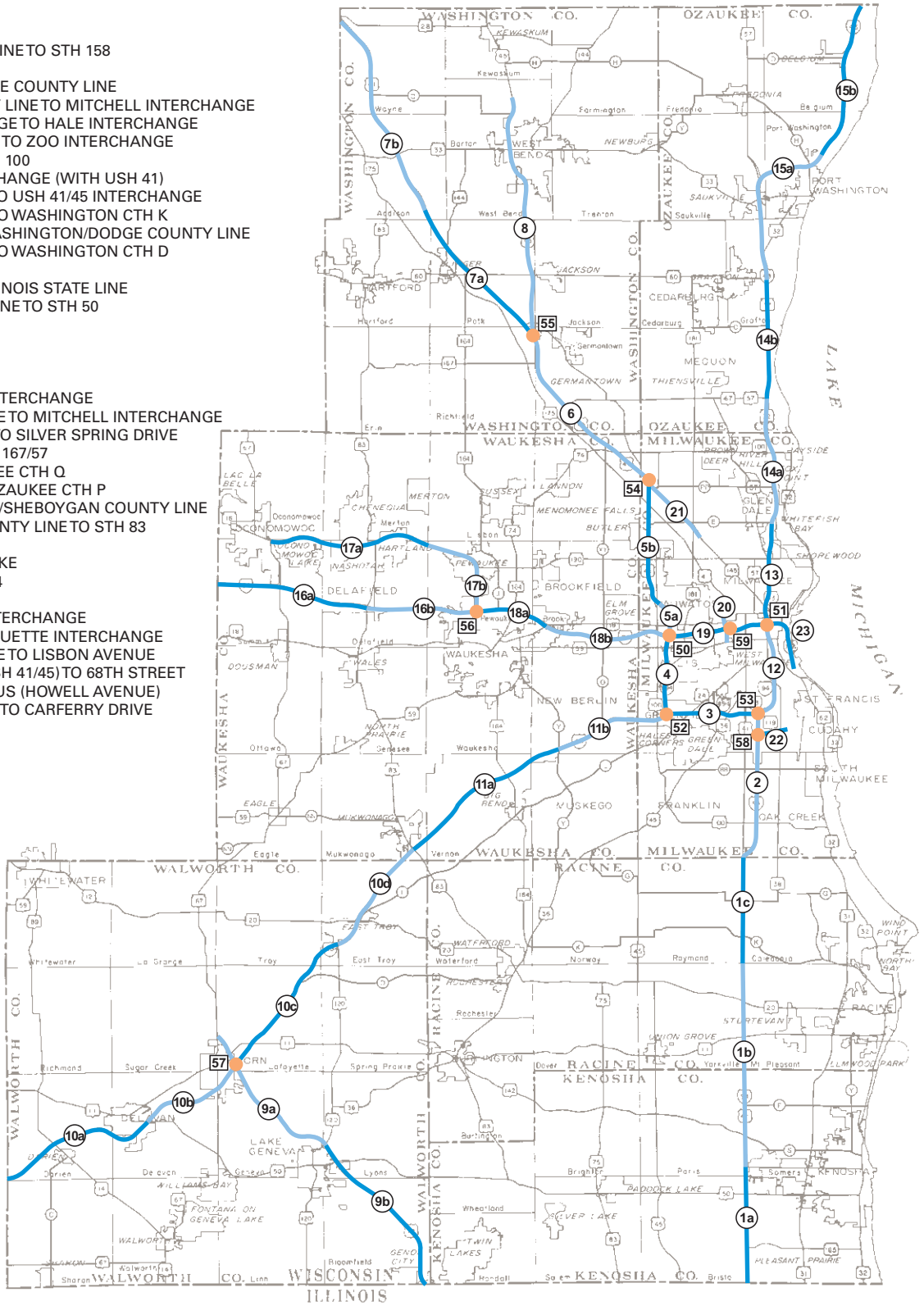
FREEWAY SEGMENTS AND SYSTEM INTERCHANGE REFERENCE NUMBERS

⑥ FREEWAY SEGMENTS

1a IH 94: WISCONSIN/ILLINOIS STATE LINE TO STH 158
1b IH 94: STH 158 TO STH 20
1c IH 94: STH 20 TO RACINE/MILWAUKEE COUNTY LINE
2 IH 94: RACINE/MILWAUKEE COUNTY LINE TO MITCHELL INTERCHANGE
3 IH 894/IH 43: MITCHELL INTERCHANGE TO HALE INTERCHANGE
4 IH 894/USH 45: HALE INTERCHANGE TO ZOO INTERCHANGE
5a USH 45: ZOO INTERCHANGE TO STH 100
5b USH 45: STH 100 TO NORTH INTERCHANGE (WITH USH 41)
6 USH 41/45: NORTH INTERCHANGE TO USH 41/45 INTERCHANGE
7a USH 41: USH 41/45 INTERCHANGE TO WASHINGTON CTH K
7b USH 41: WASHINGTON CTH K TO WASHINGTON/DODGE COUNTY LINE
8 USH 45: USH 41/45 INTERCHANGE TO WASHINGTON CTH D
9a USH 12: STH 67 TO STH 120
9b USH 12: STH 120 TO WISCONSIN/ILLINOIS STATE LINE
10a IH 43: WALWORTH/ROCK COUNTY LINE TO STH 50
10b IH 43: STH 50 TO USH 12
10c IH 43: USH 12 TO STH 120
10d IH 43: STH 120 TO STH 83
11a IH 43: STH 83 TO WAUKESHA CTH Y
11b IH 43: WAUKESHA CTH Y TO HALE INTERCHANGE
12 IH 43/94: MARQUETTE INTERCHANGE TO MITCHELL INTERCHANGE
13 IH 43: MARQUETTE INTERCHANGE TO SILVER SPRING DRIVE
14a IH 43: SILVER SPRING DRIVE TO STH 167/57
14b IH 43: STH 167/57 TO STH 60/OZAUKEE CTH Q
15a IH 43: STH 60/OZAUKEE CTH Q TO OZAUKEE CTH P
15b IH 43: OZAUKEE CTH P TO OZAUKEE/SHEBOYGAN COUNTY LINE
16a IH 94: JEFFERSON/WAUKESHA COUNTY LINE TO STH 83
16b IH 94: STH 83 TO STH 16
17a STH 16: STH 67 TO WAUKESHA CTH KE
17b STH 16: WAUKESHA CTH KE TO IH 94
18a IH 94: STH 16 TO WAUKESHA CTH Y
18b IH 94: WAUKESHA CTH Y TO ZOO INTERCHANGE
19 IH 94: ZOO INTERCHANGE TO MARQUETTE INTERCHANGE
20 USH 41/STH 341: NATIONAL AVENUE TO LISBON AVENUE
21 STH 145: NORTH INTERCHANGE (USH 41/45) TO 68TH STREET
22 STH 119: IH 94 TO EASTERN TERMINUS (HOWELL AVENUE)
23 IH 794: MARQUETTE INTERCHANGE TO CARFERRY DRIVE

51 SYSTEM INTERCHANGES

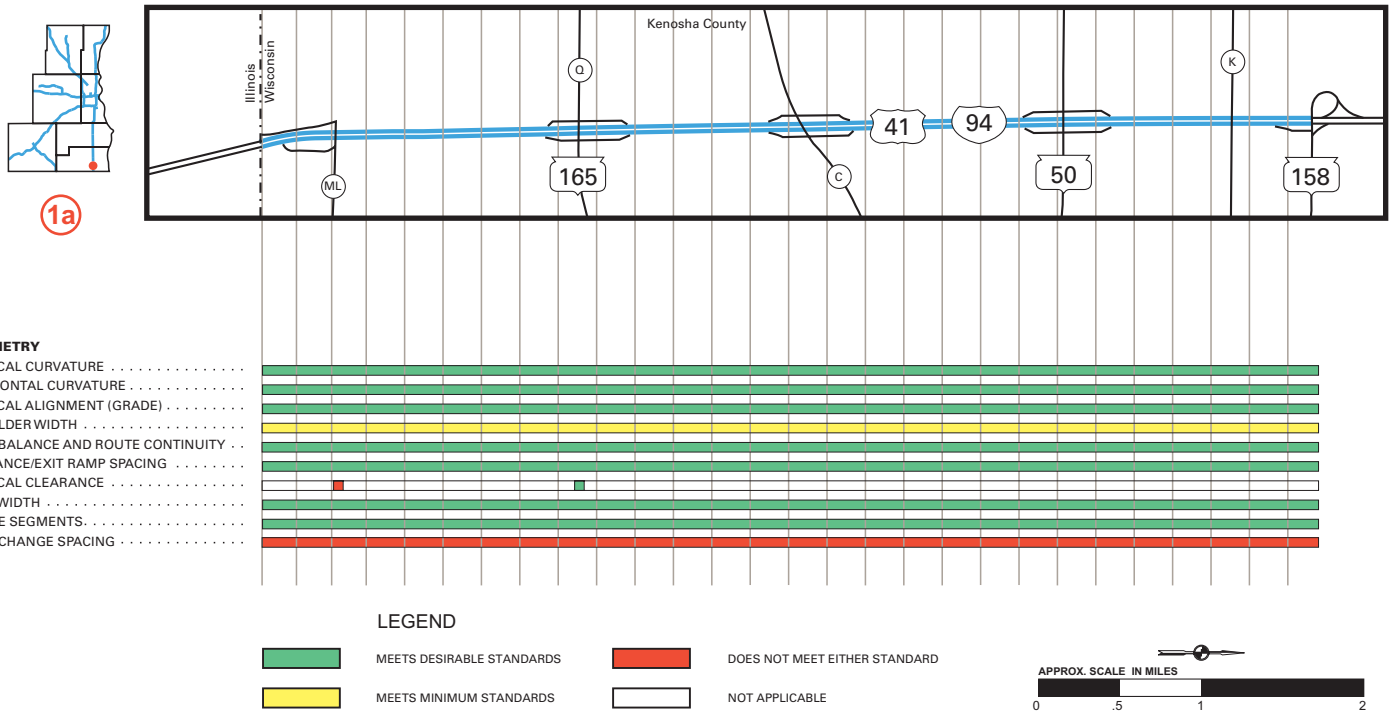
50 ZOO INTERCHANGE
51 MARQUETTE INTERCHANGE
52 HALE INTERCHANGE
53 MITCHELL INTERCHANGE
54 NORTH INTERCHANGE
55 USH 41/USH 45 INTERCHANGE
56 IH 94/STH 16 INTERCHANGE
57 IH 43/USH 12 INTERCHANGE
58 IH 94/STH 119: AIRPORT INTERCHANGE
59 IH 94/USH 41/STH 341: STADIUM INTERCHANGE



Source: HNTB.

Figure A-1

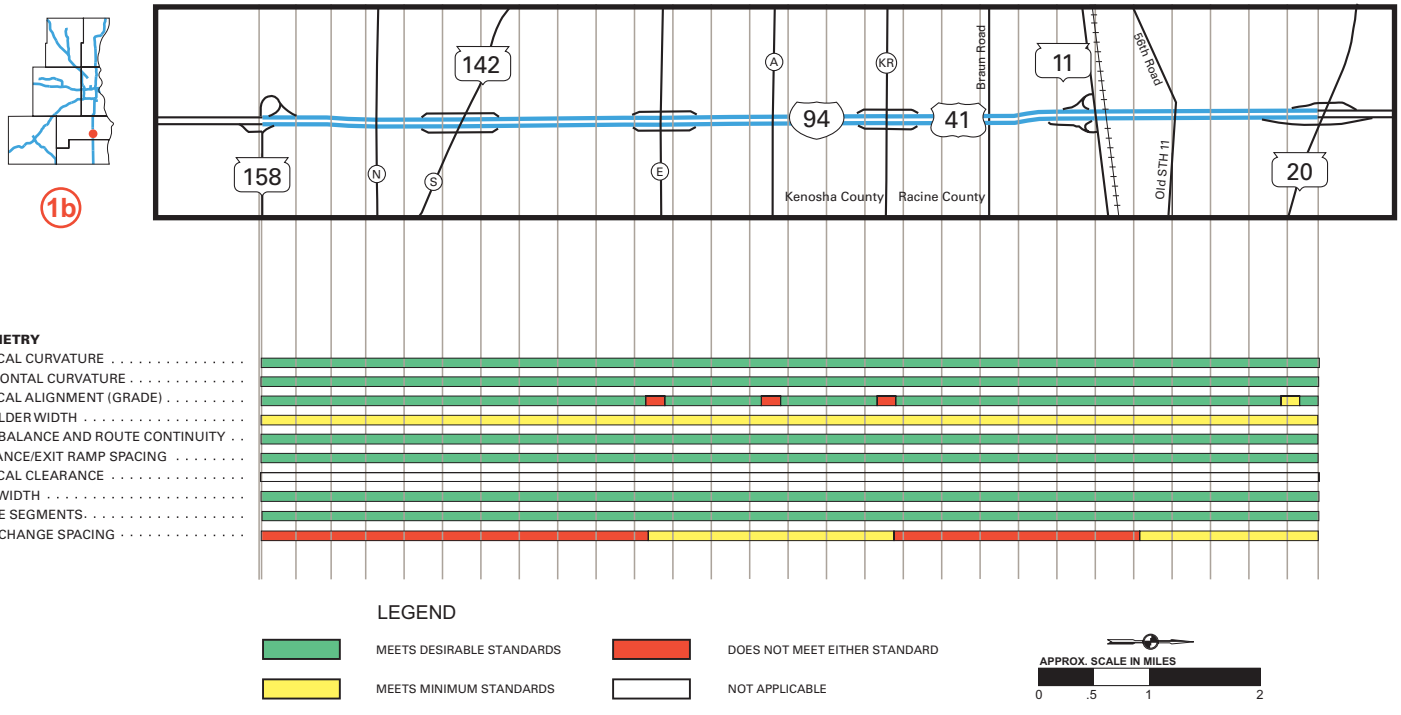
SEGMENT 1a--IH 94: WISCONSIN/ILLINOIS STATE LINE TO STH 158



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-2

SEGMENT 1b--IH 94: STH 158 TO STH 20



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-3

SEGMENT 1c--IH 94: STH 20 TO RACINE/MILWAUKEE COUNTY LINE

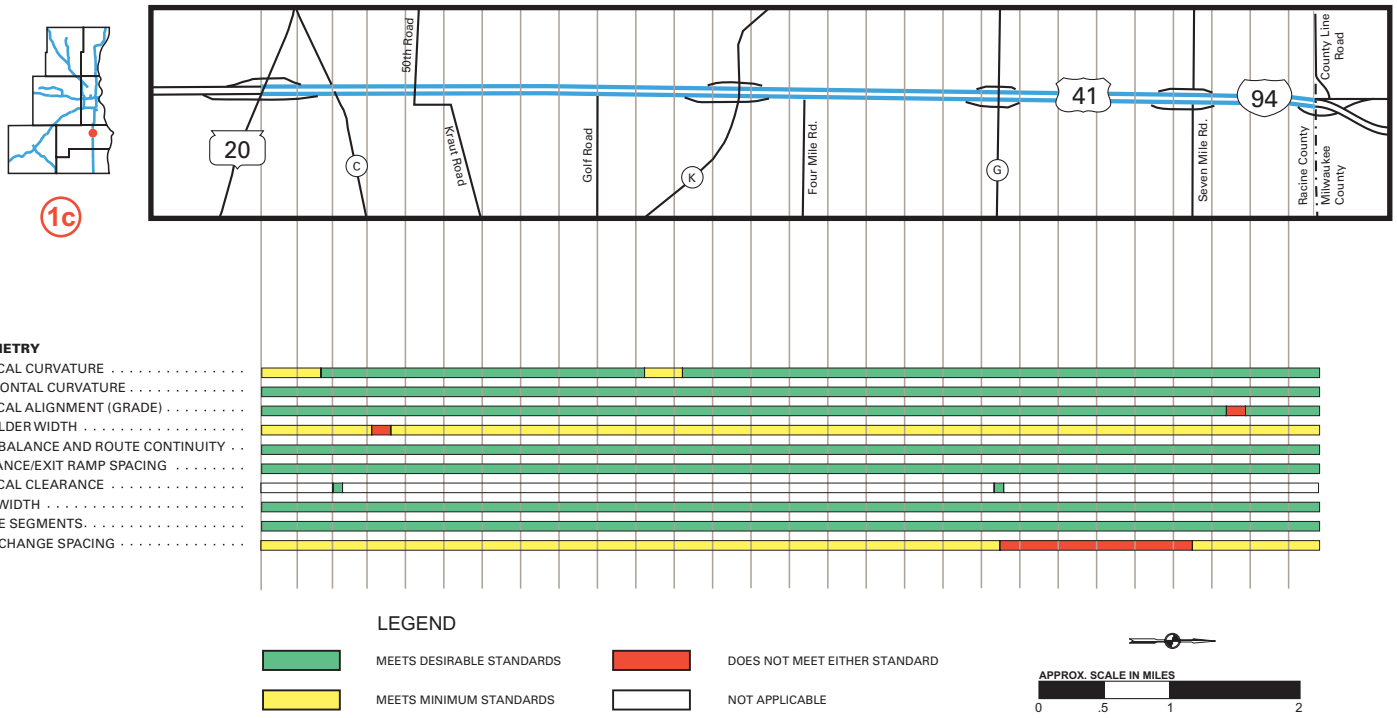
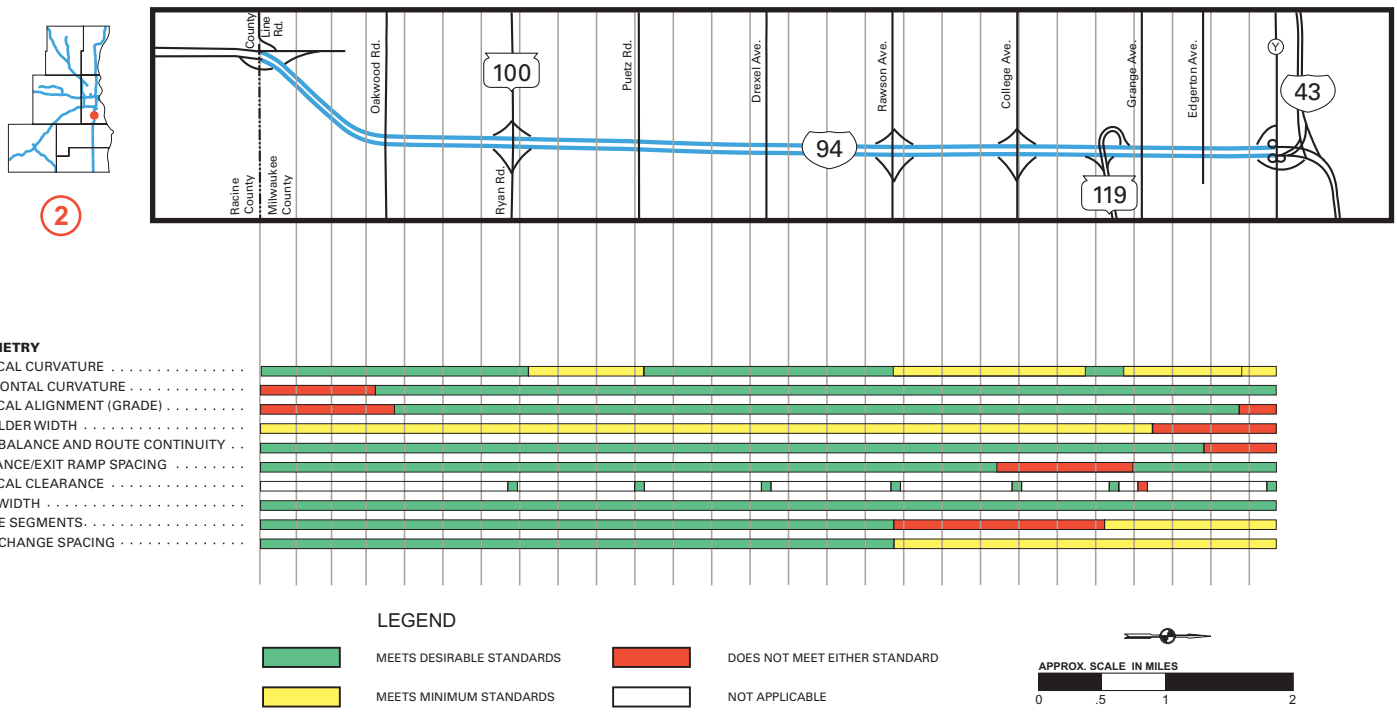


Figure A-4

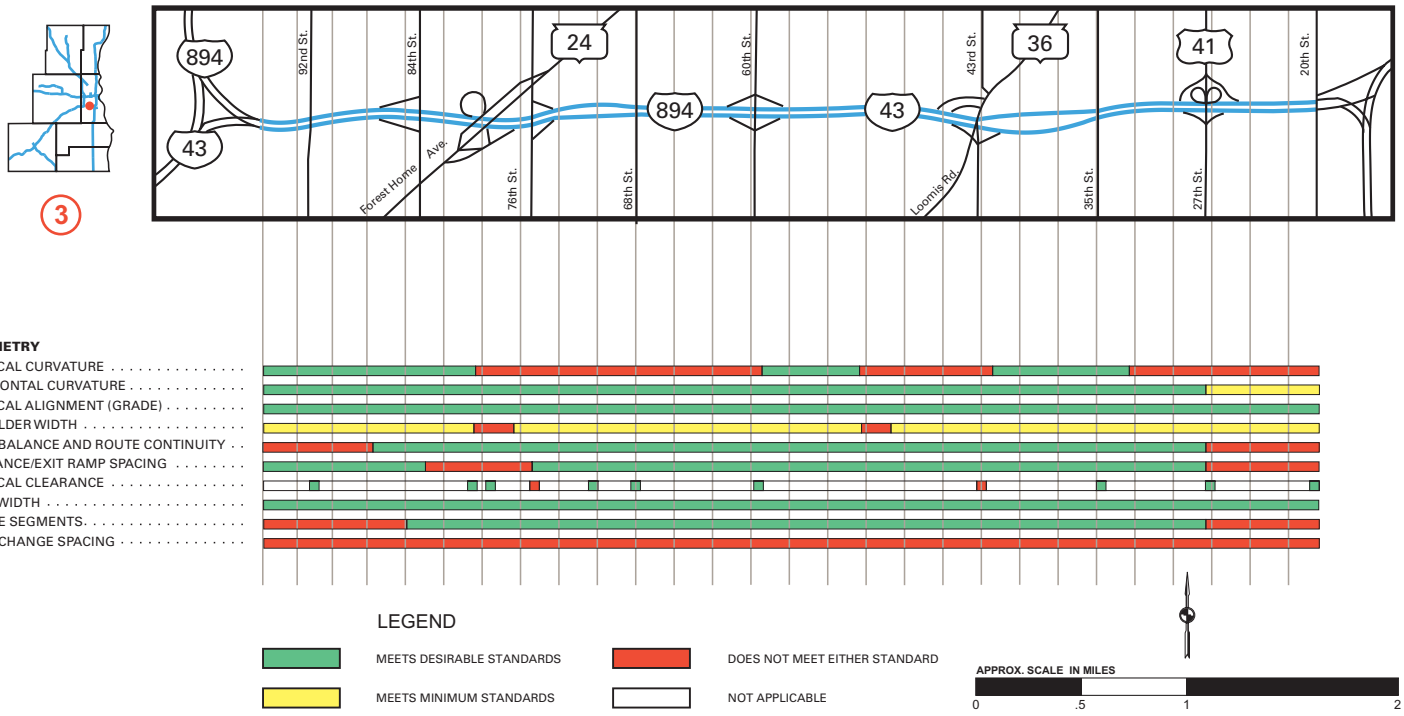
SEGMENT 2--IH 94: RACINE/MILWAUKEE COUNTY LINE TO MITCHELL INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-5

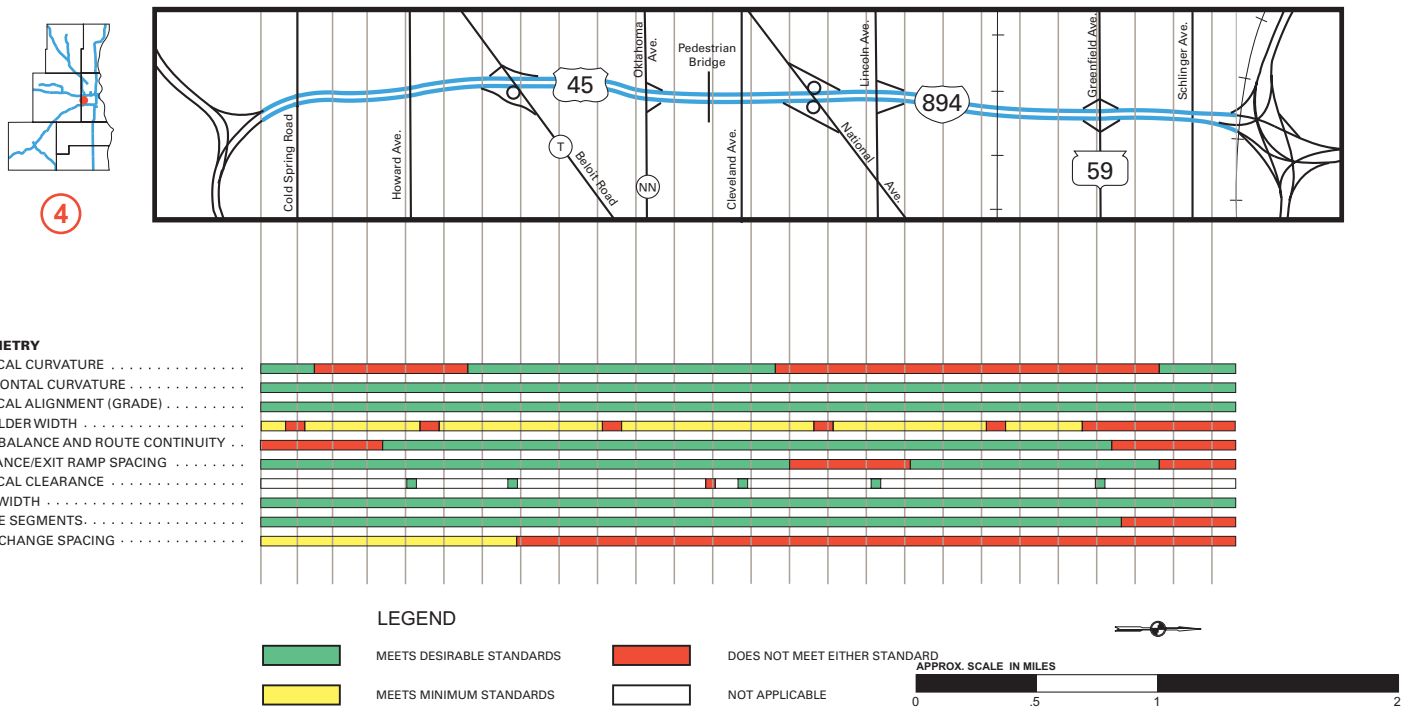
SEGMENT 3--IH 894/IH 43: MITCHELL INTERCHANGE TO HALE INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-6

SEGMENT 4--IH 894/USH 45: HALE INTERCHANGE TO ZOO INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

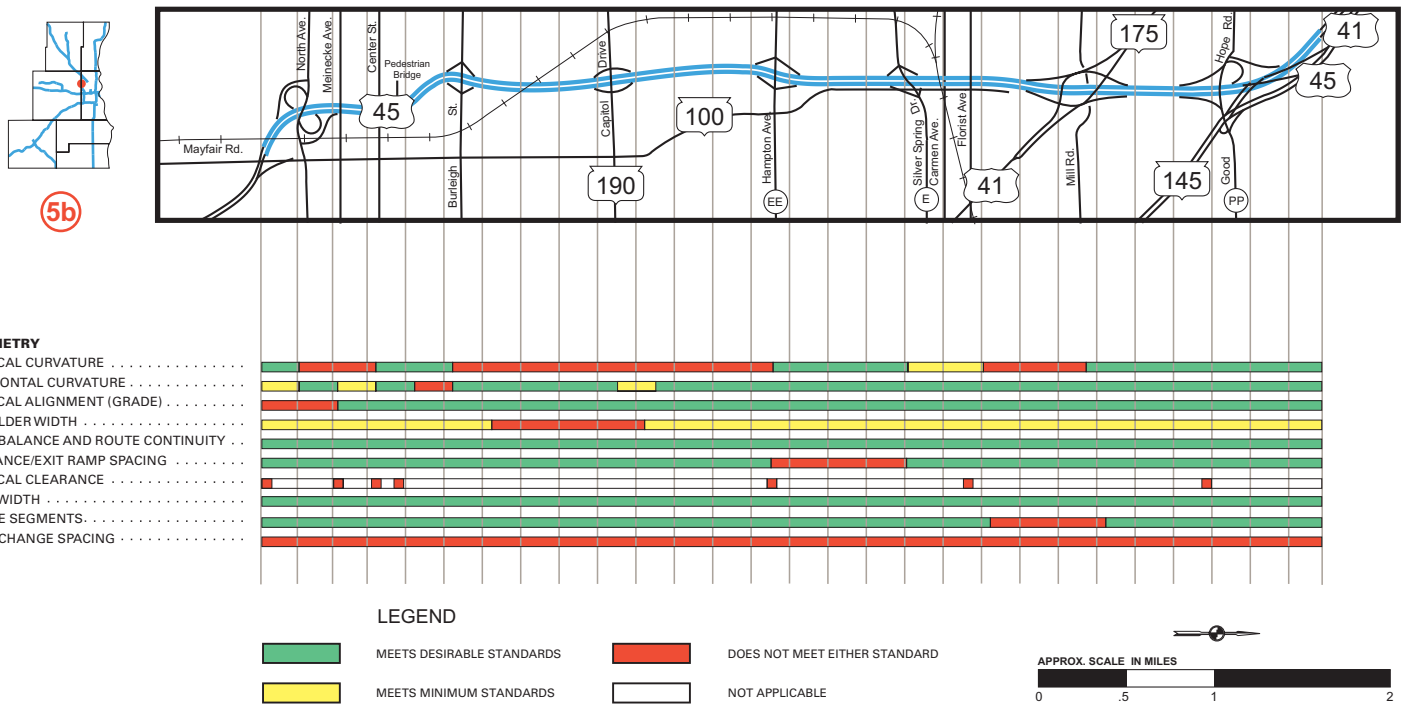
Figure A-7

SEGMENT 5a--IH 45: ZOO INTERCHANGE TO STH 100

Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-8

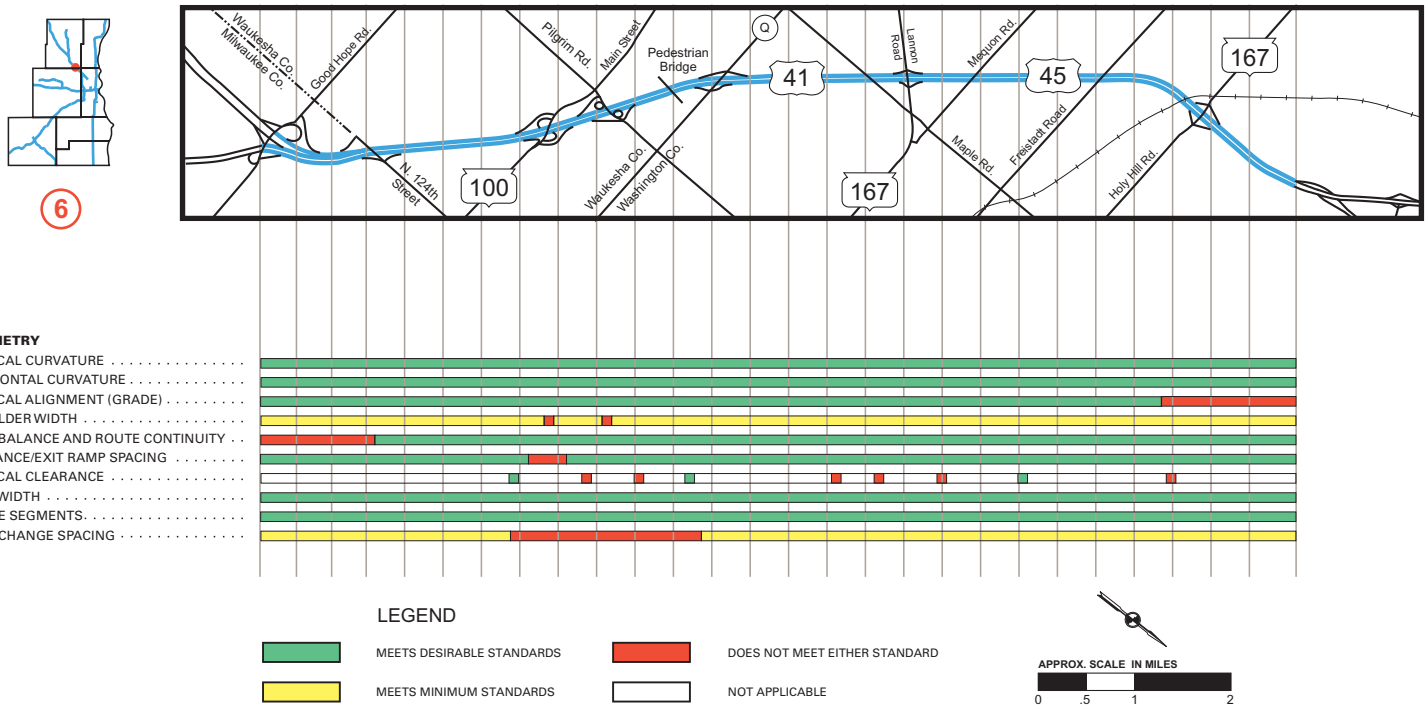
SEGMENT 5b--USH 45: STH 100 TO NORTH INTERCHANGE (WITH USH 41)



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-9

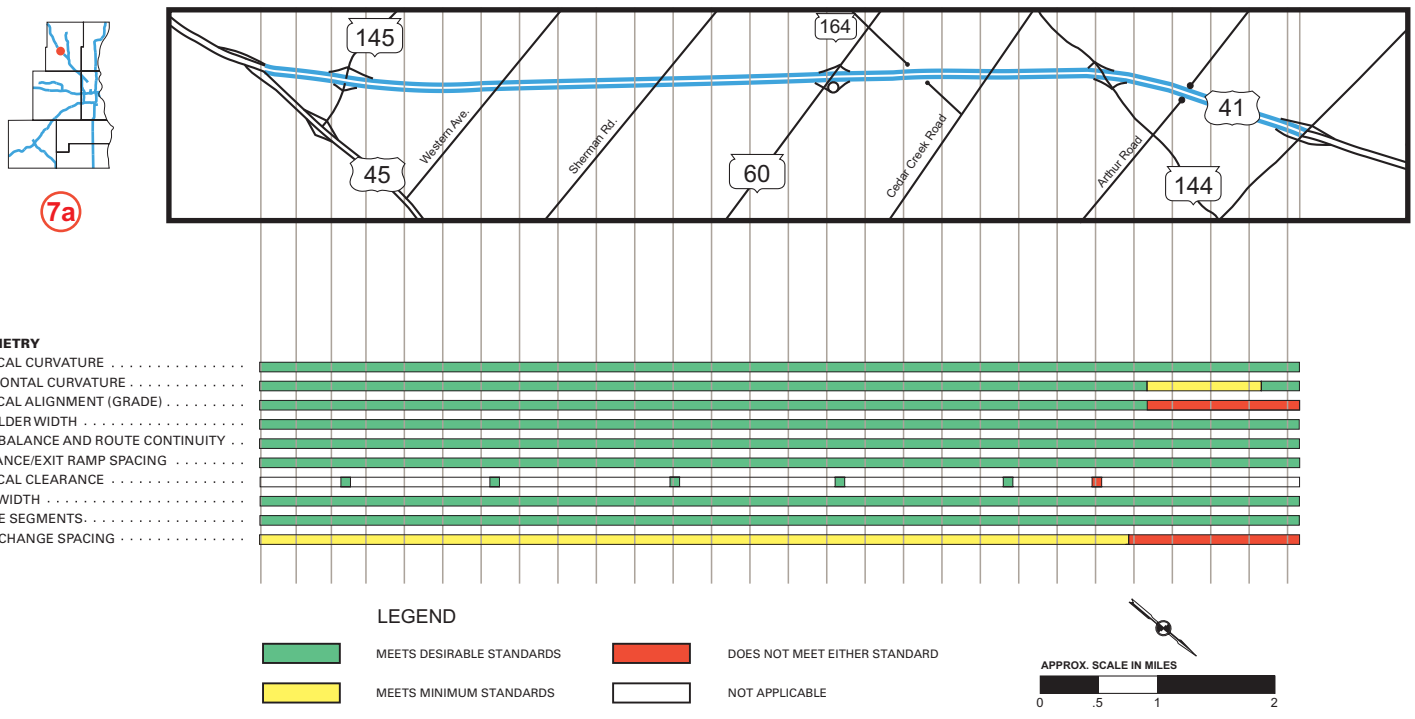
SEGMENT 6--USH 41/45: NORTH INTERCHANGE TO USH 41/45 INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-10

SEGMENT 7a--USH 41: USH 41/45 INTERCHANGE TO WASHINGTON CTH K



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

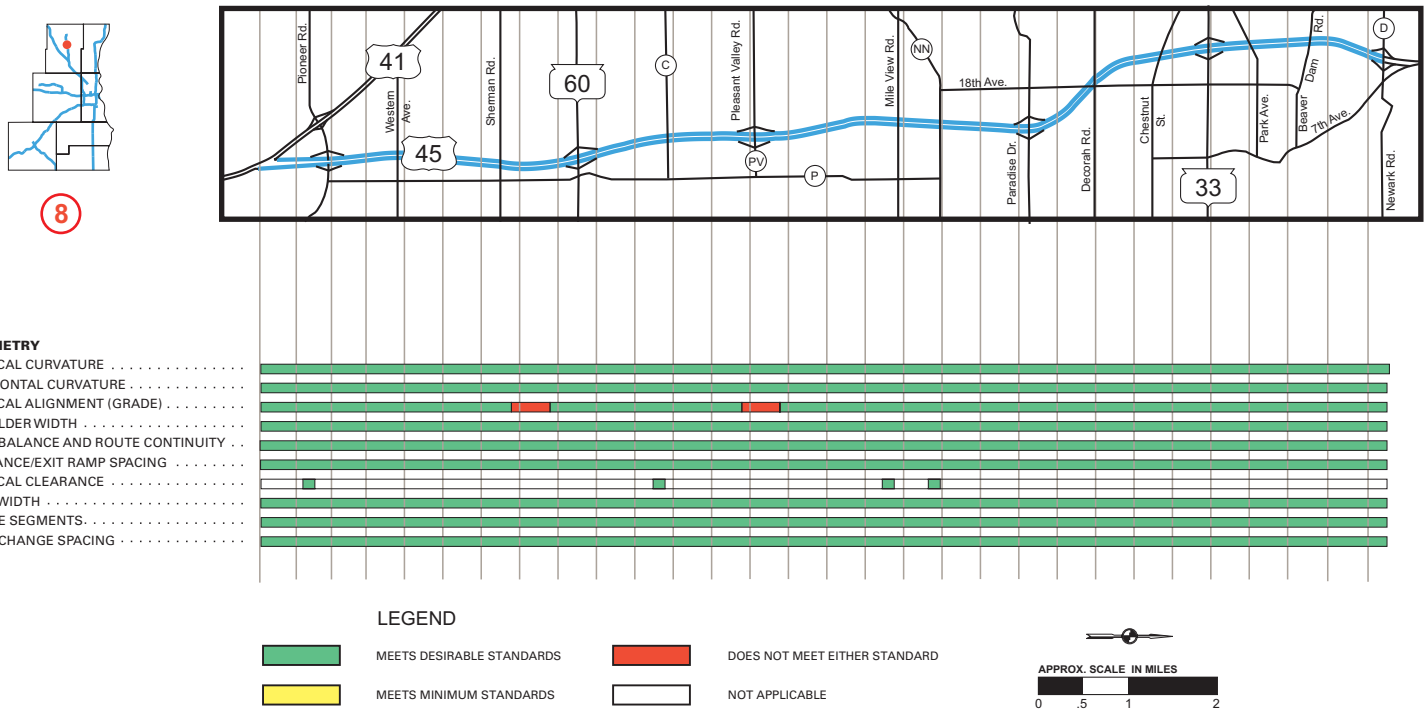
Figure A-11

SEGMENT 7b--USH 41: WASHINGTON CTH K TO WASHINGTON/DODGE COUNTY LINE

Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-12

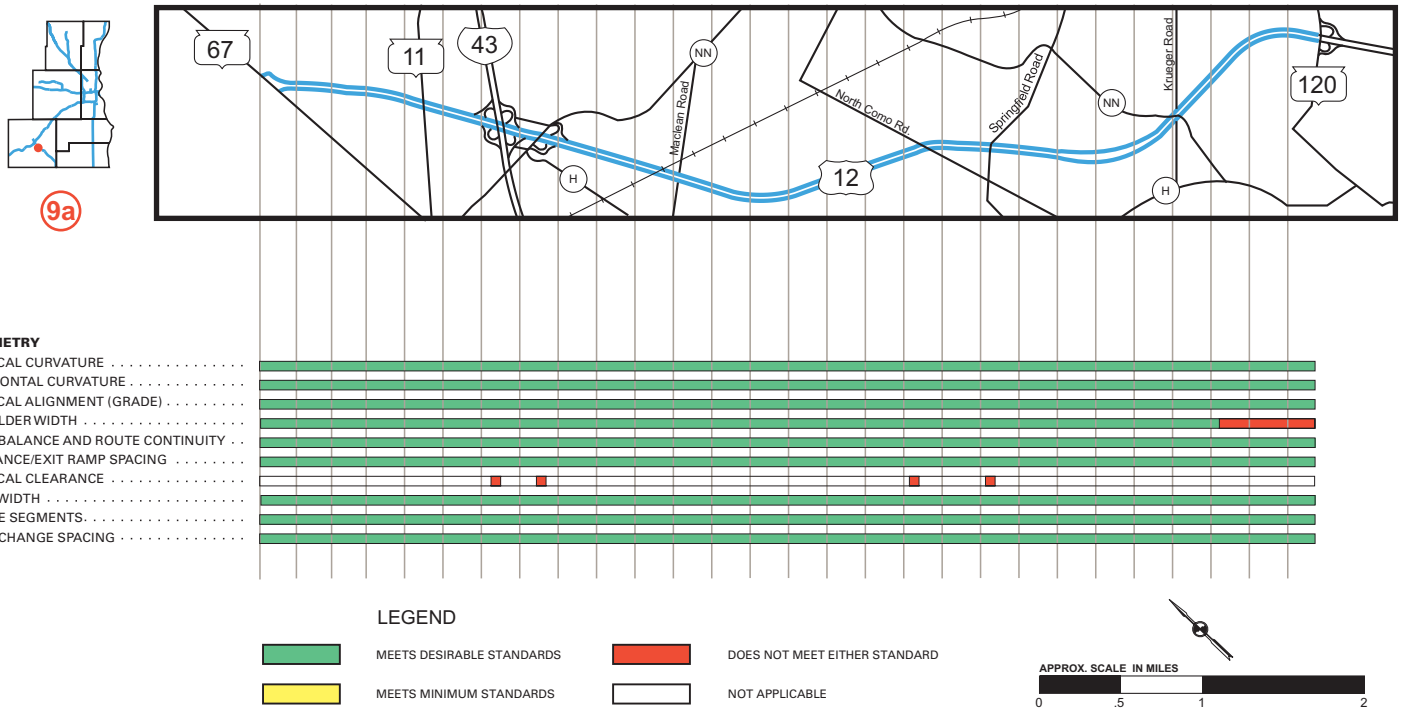
SEGMENT 8--USH 45: USH 41/45 INTERCHANGE TO WASHINGTON CTH D



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-13

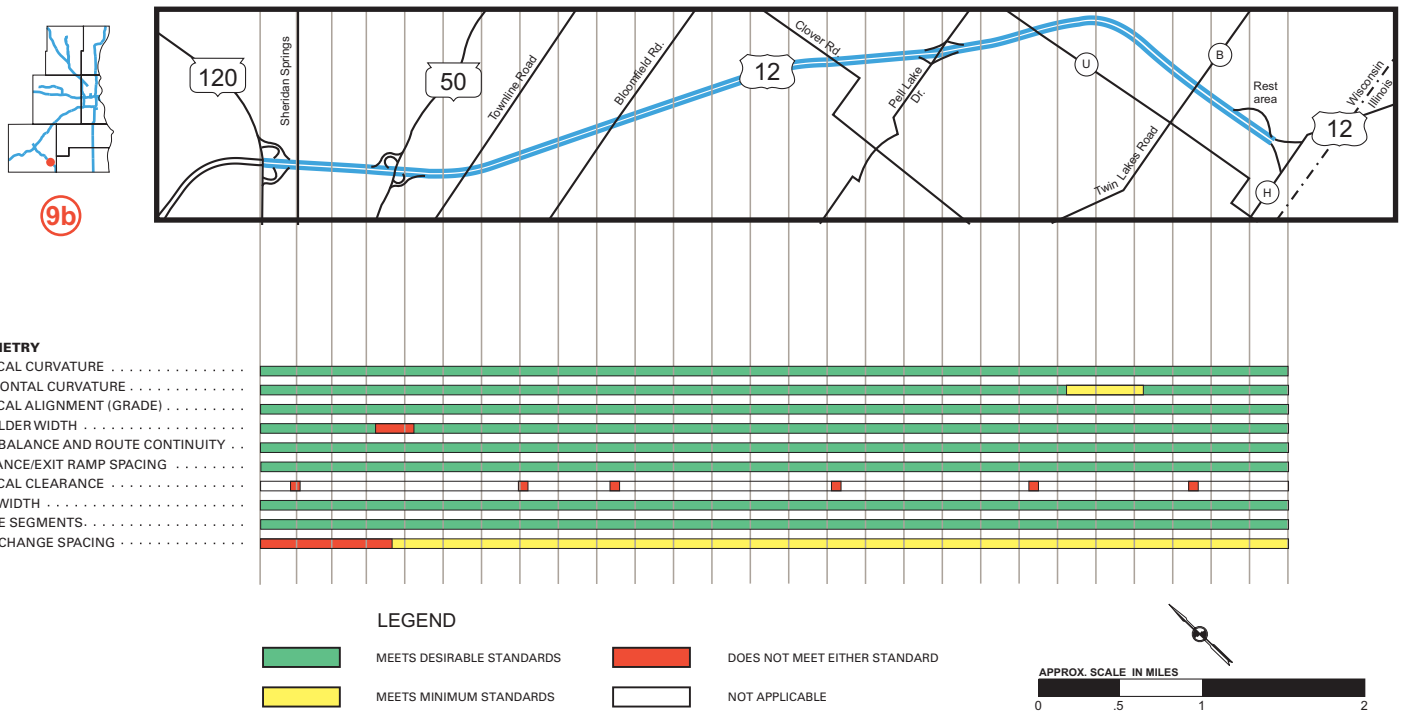
SEGMENT 9a--USH 12: STH 67 TO STH 120



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-14

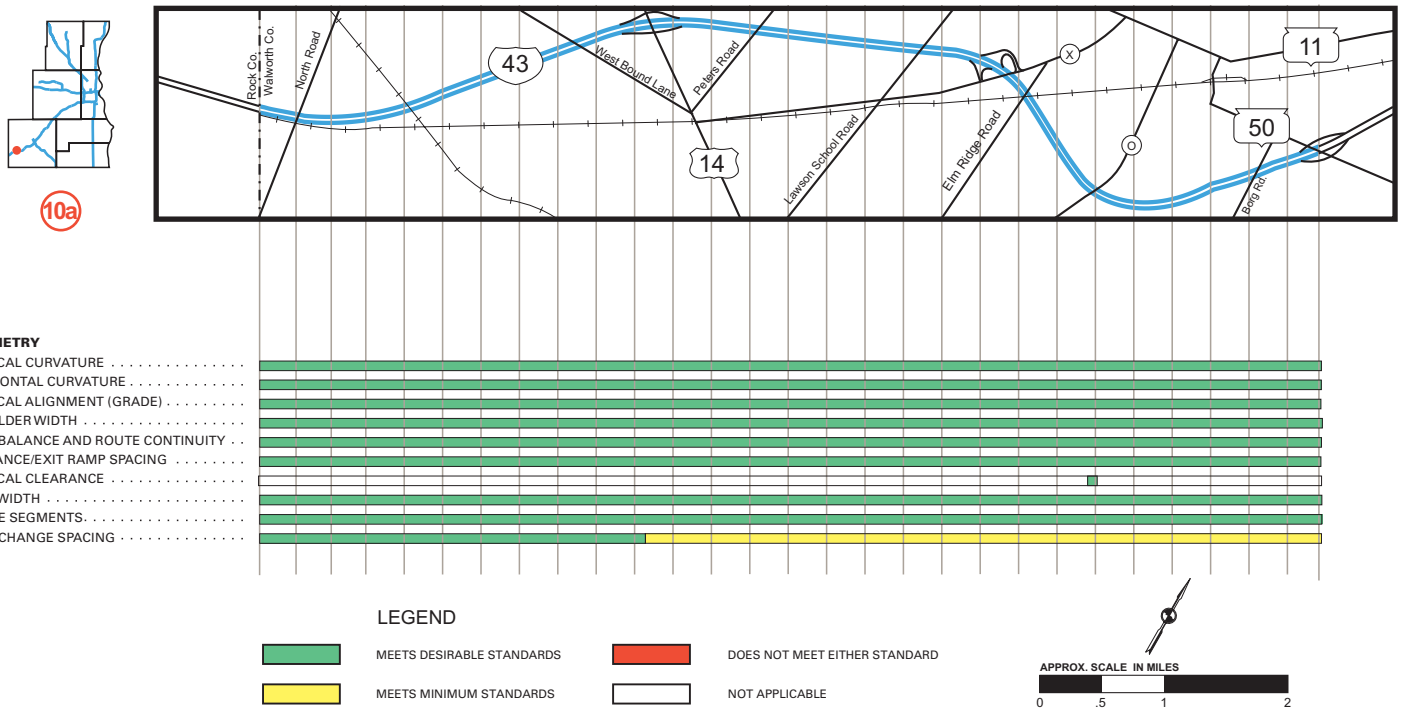
SEGMENT 9b--USH 12: STH 120 TO WISCONSIN/ILLINOIS STATE LINE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-15

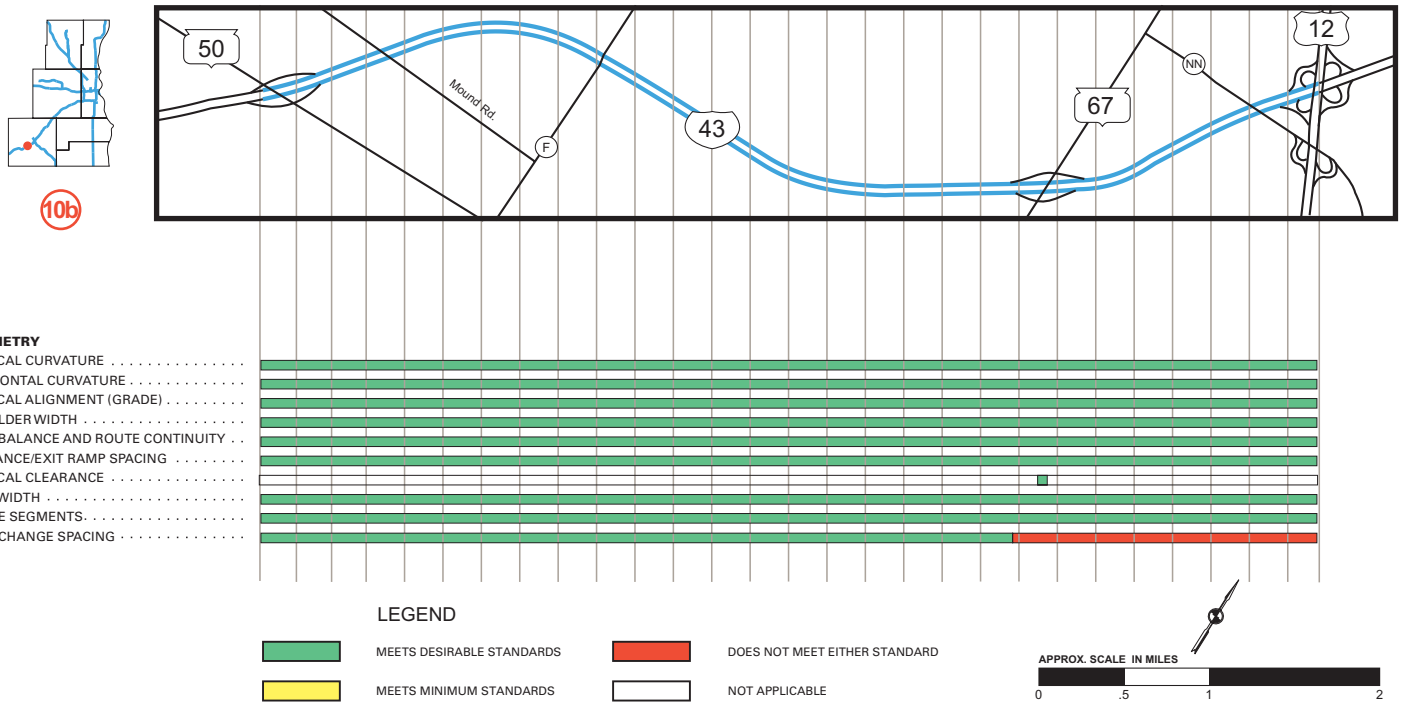
SEGMENT 10a--IH 43; WALWORTH/ROCK COUNTY LINE TO STH 50



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-16

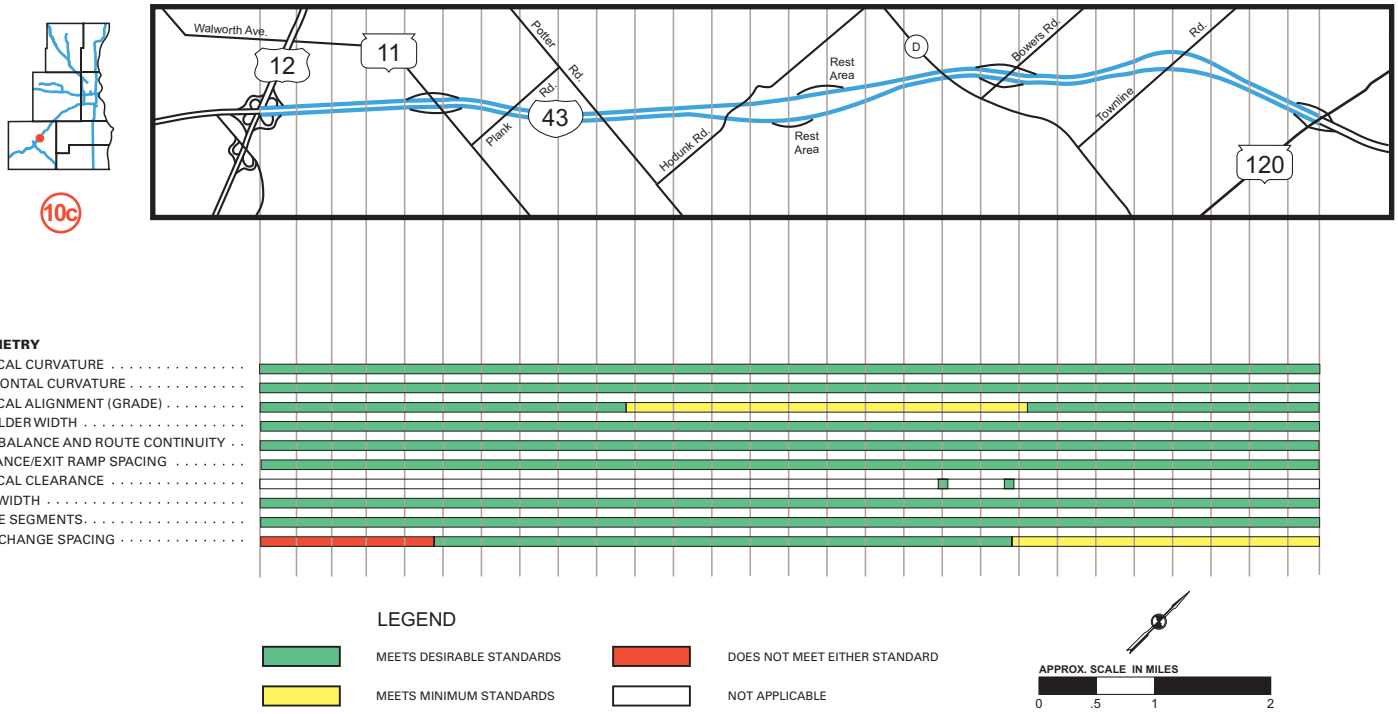
SEGMENT 10b--IH 43: STH 50 TO USH 12



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-17

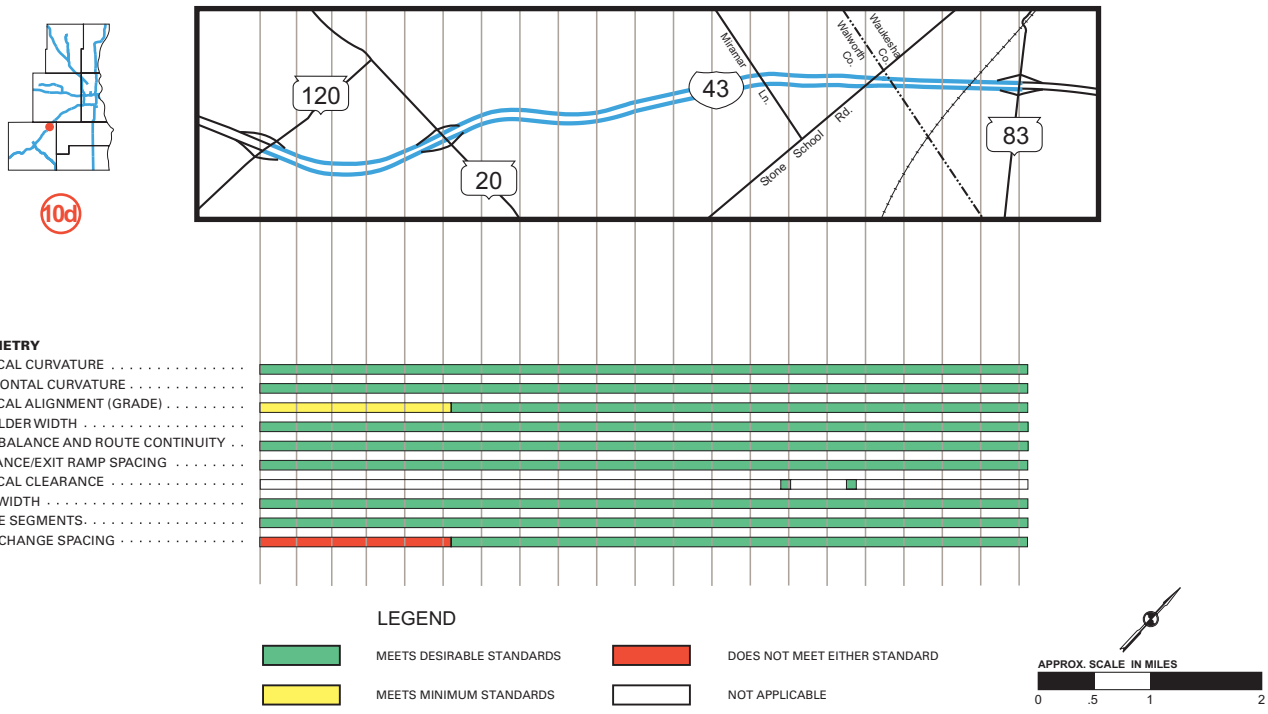
SEGMENT 10c--IH 43: USH 12 TO STH 120



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-18

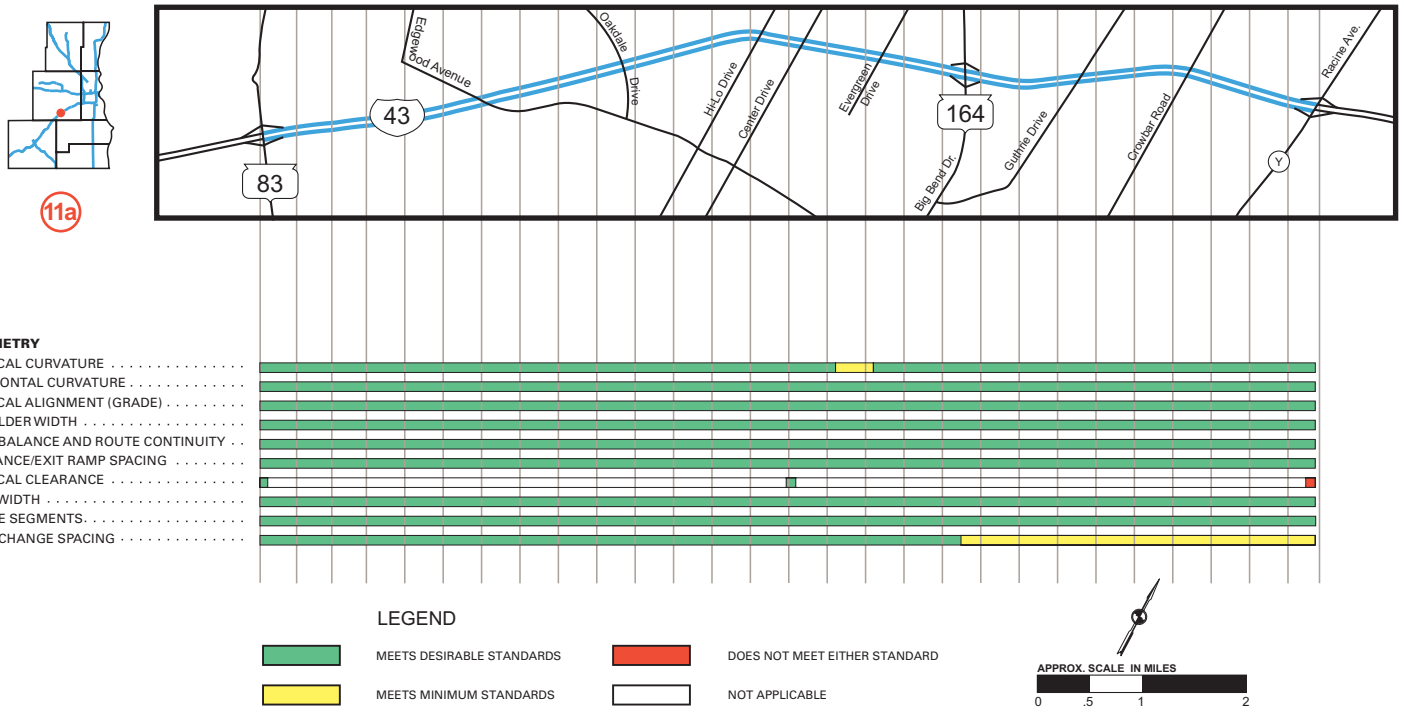
SEGMENT 10d--IH 43: STH 120 TO STH 83



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-19

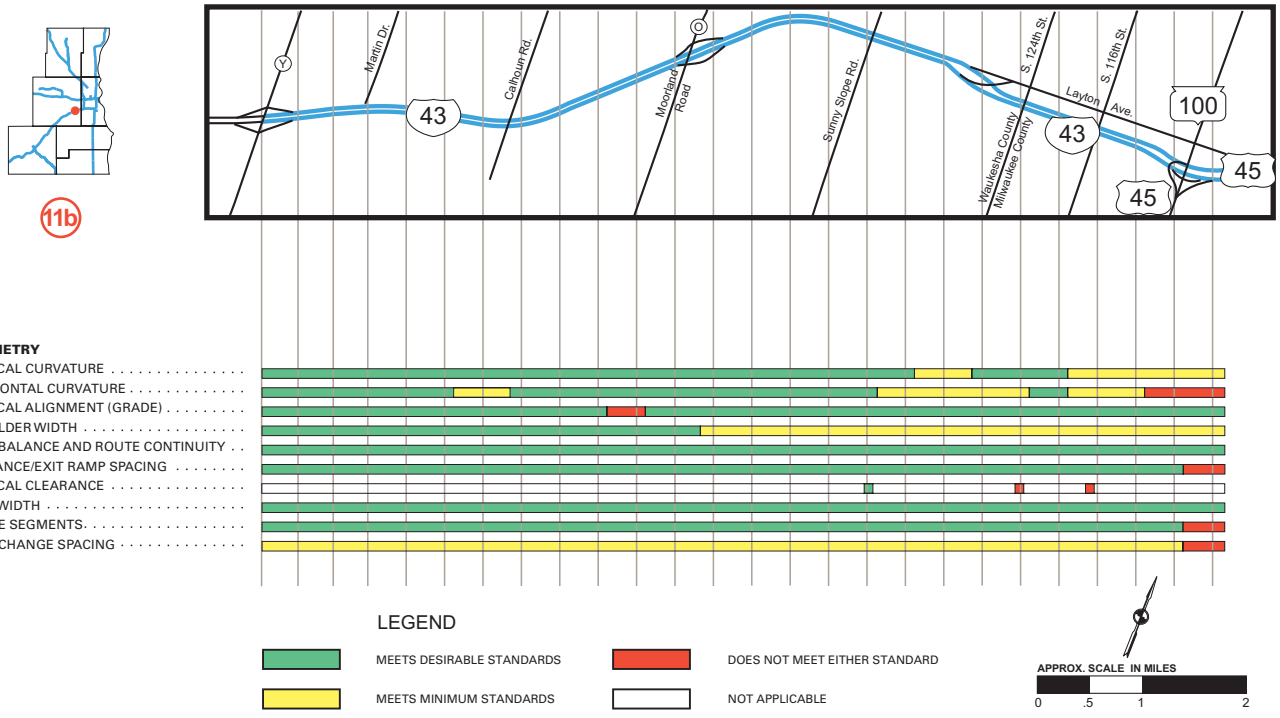
SEGMENT 11a--IH 43: STH 83 TO WAUKESHA CTH Y



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-20

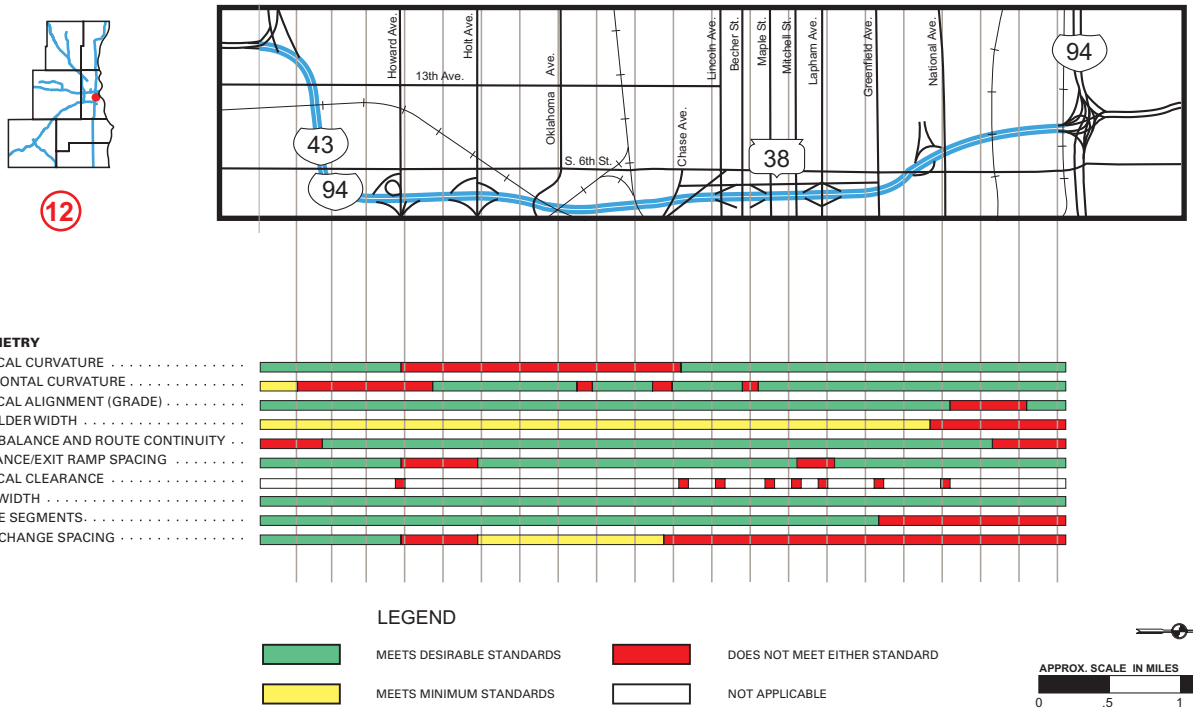
SEGMENT 11b--IH 43: WAUKESHA CTH Y TO HALE INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-21

SEGMENT 12--IH 43/94: MARQUETTE INTERCHANGE TO MITCHELL INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

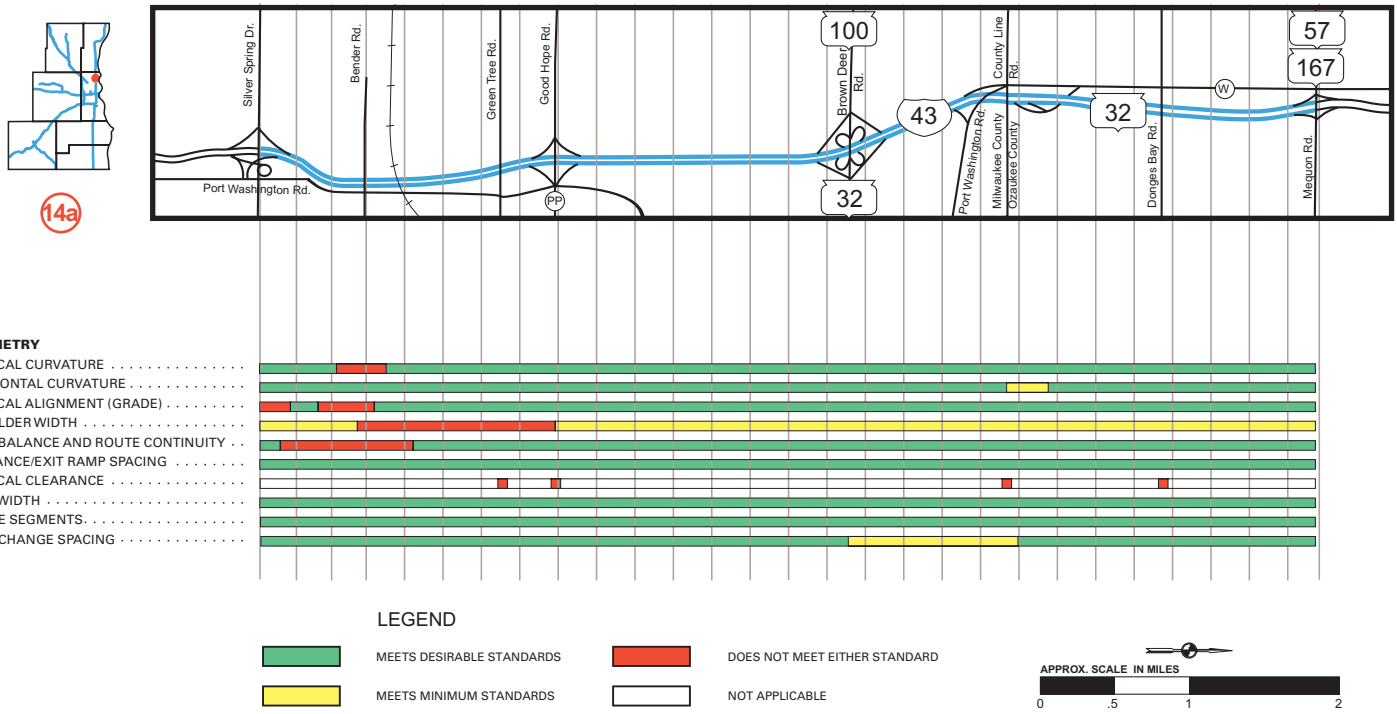
Figure A-22

SEGMENT 13--IH 43: MARQUETTE INTERCHANGE TO SILVER SPRING DRIVE

Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-23

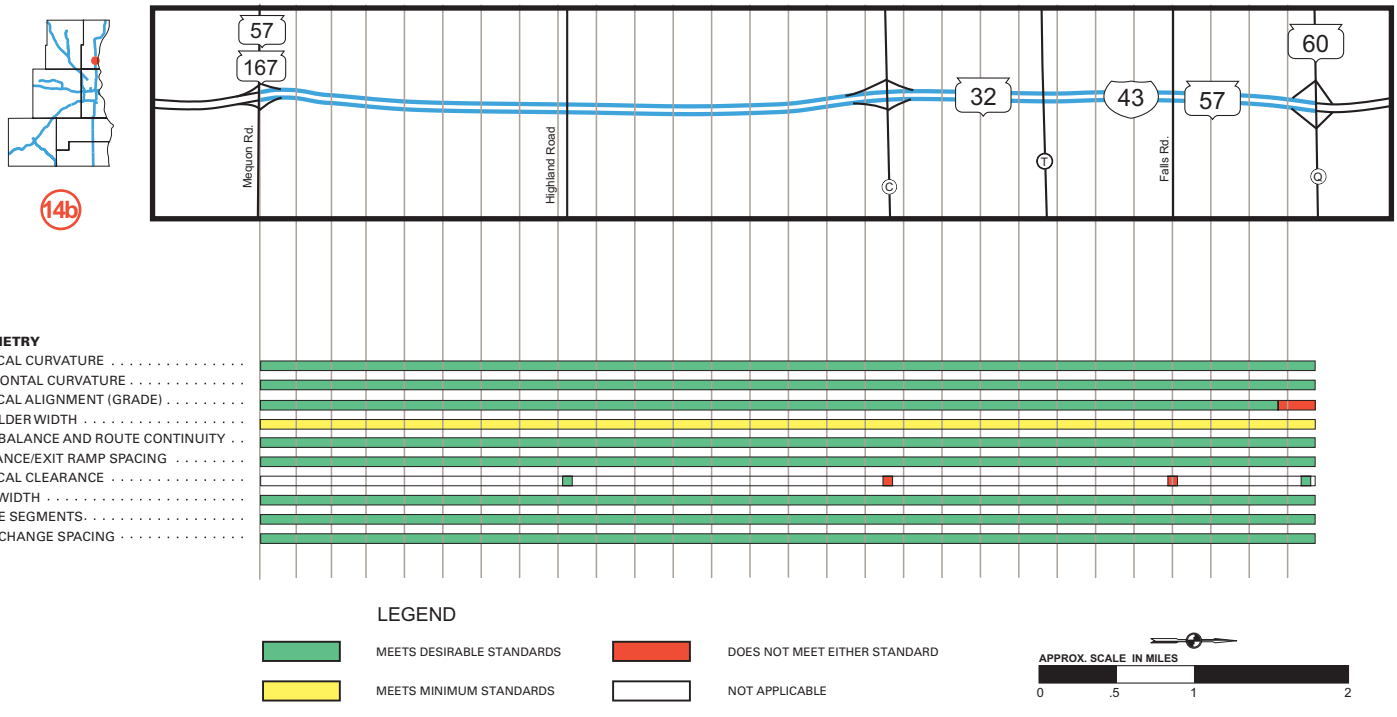
SEGMENT 14a--IH 43; SILVER SPRING DRIVE TO STH 167/57



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-24

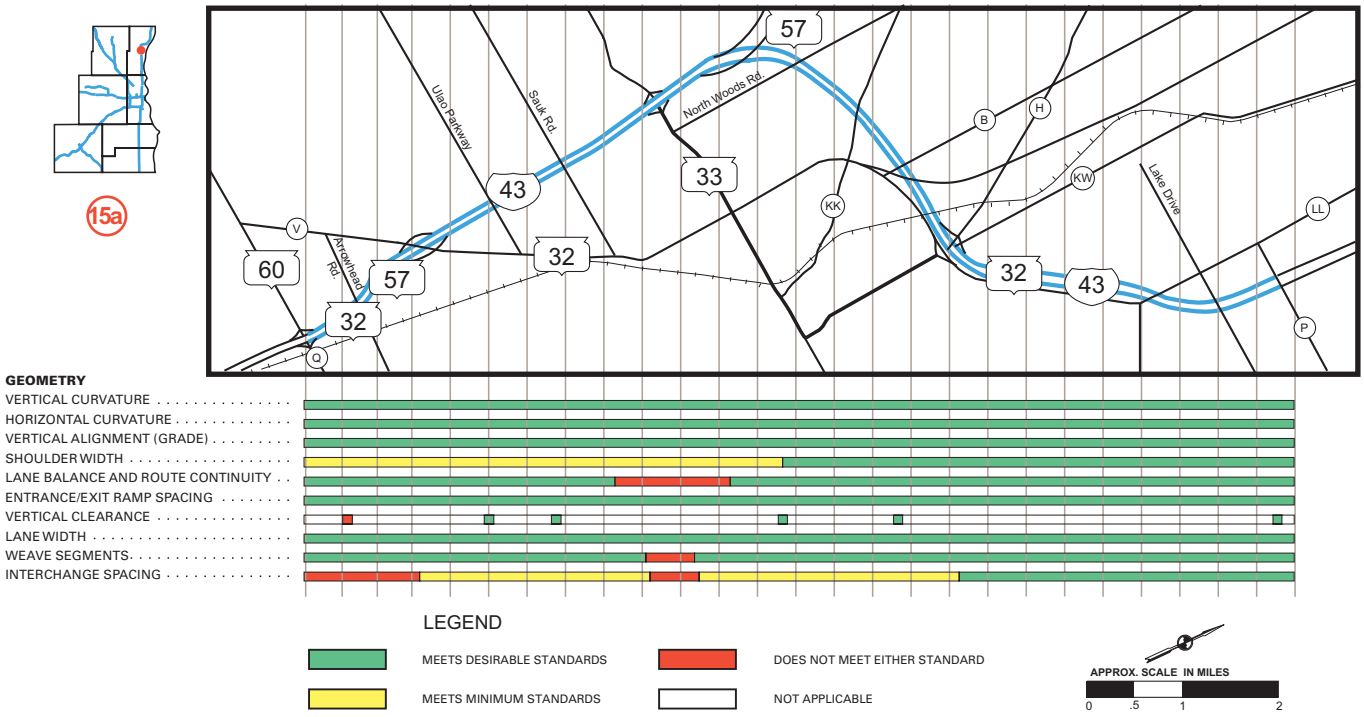
SEGMENT 14b--IH 43: STH 167/57 TO STH 60/OZAUKEE CTH Q



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-25

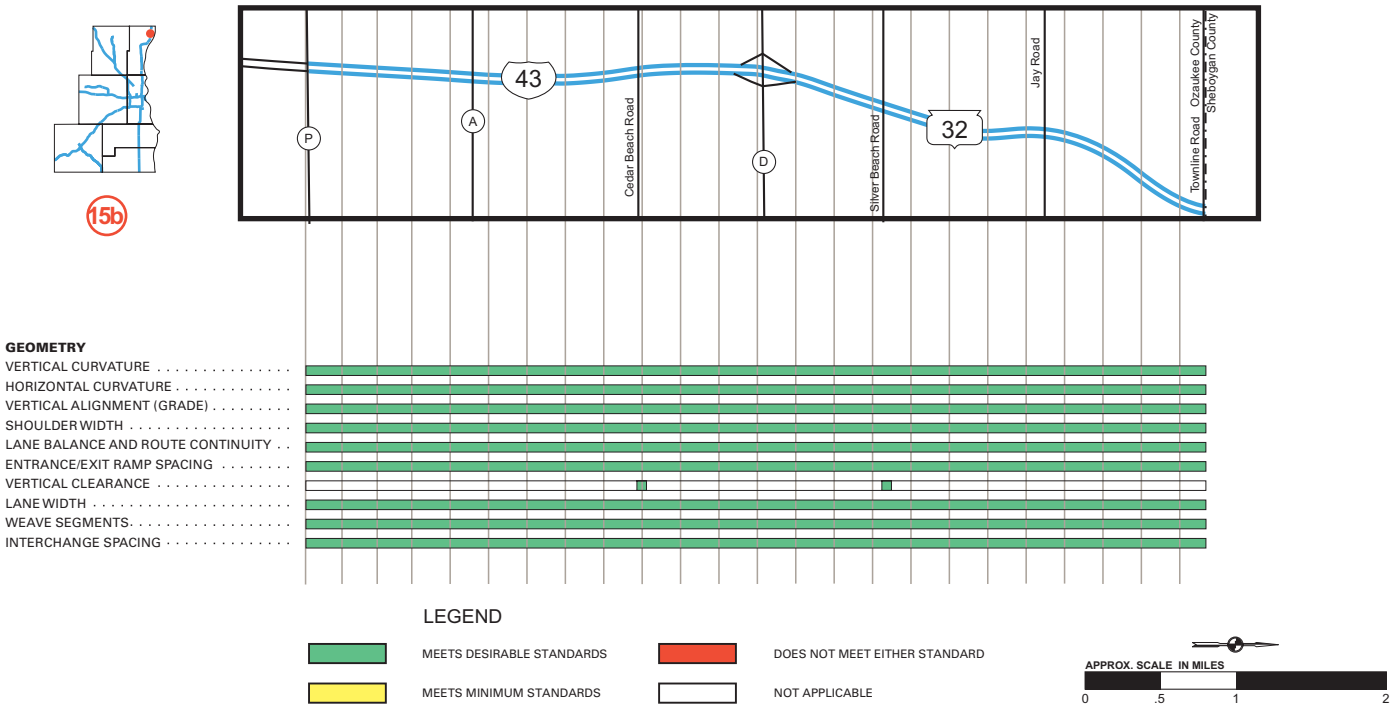
SEGMENT 15a--IH 43: STH 60/OZAUKEE CTH Q TO OZAUKEE CTH P



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-26

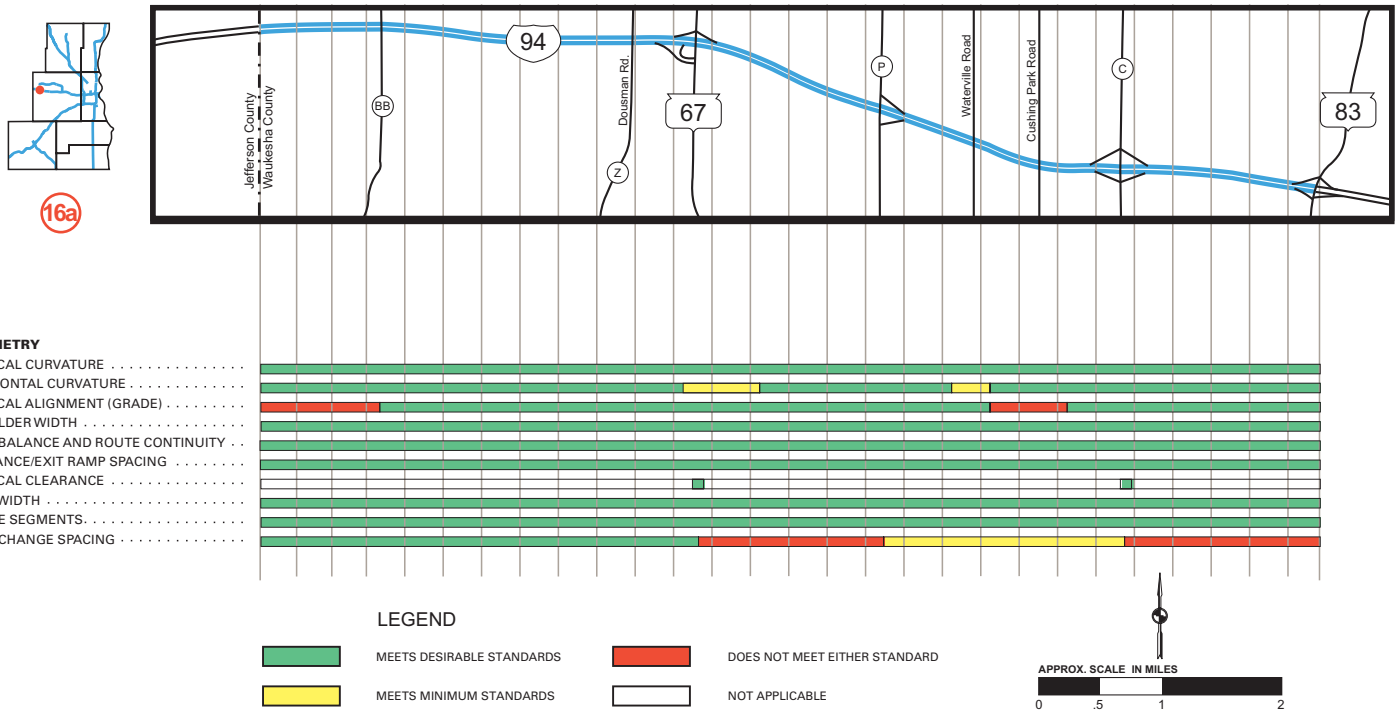
SEGMENT 15b--IH 43: OZAUKEE CTH P TO OZAUKEE/SHEBOYGAN COUNTY LINE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-27

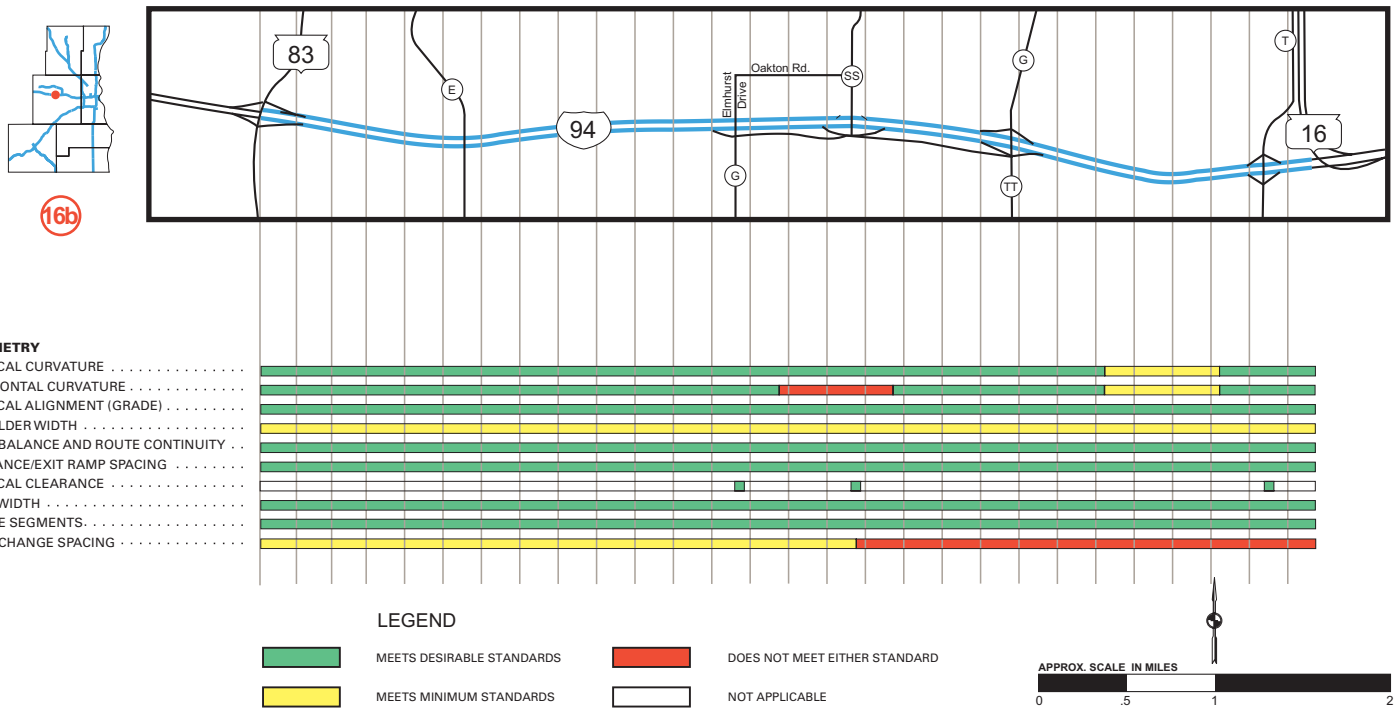
SEGMENT 16a--IH 94: JEFFERSON/WAUKESHA COUNTY LINE TO STH 83



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-28

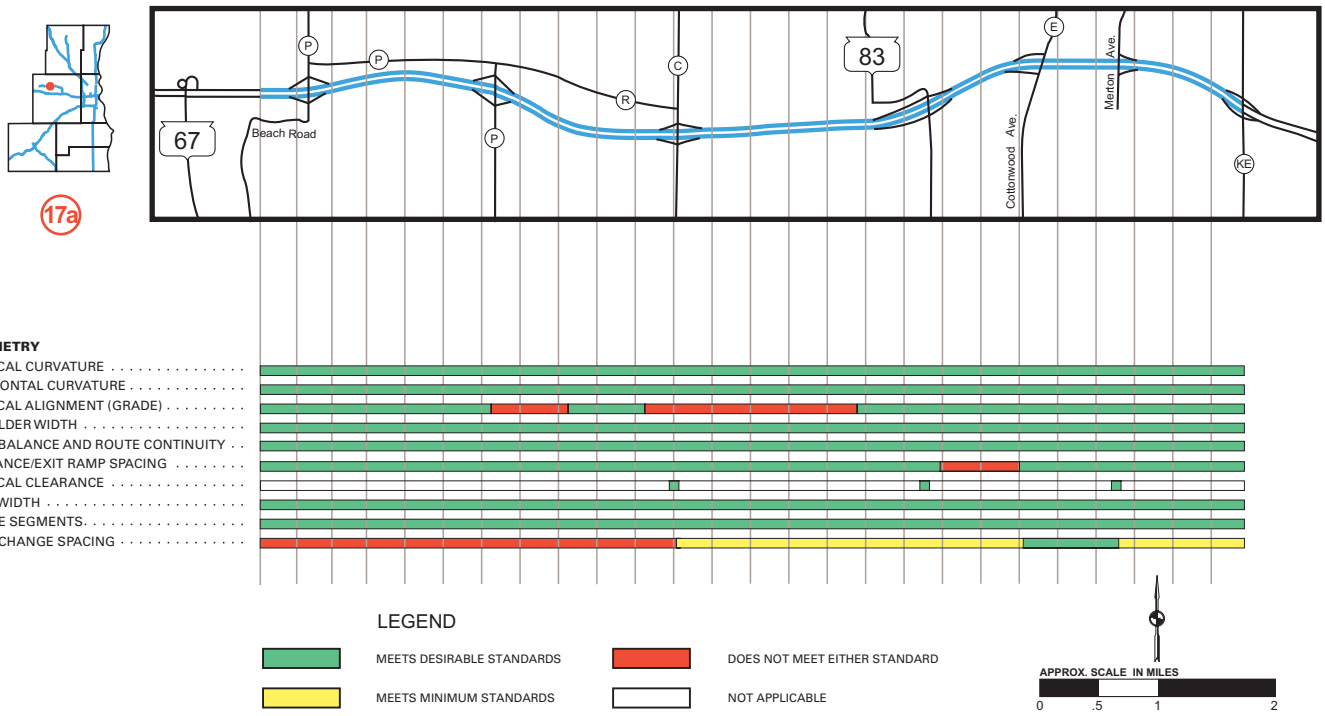
SEGMENT 16b--IH 94: STH 83 TO STH 16



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-29

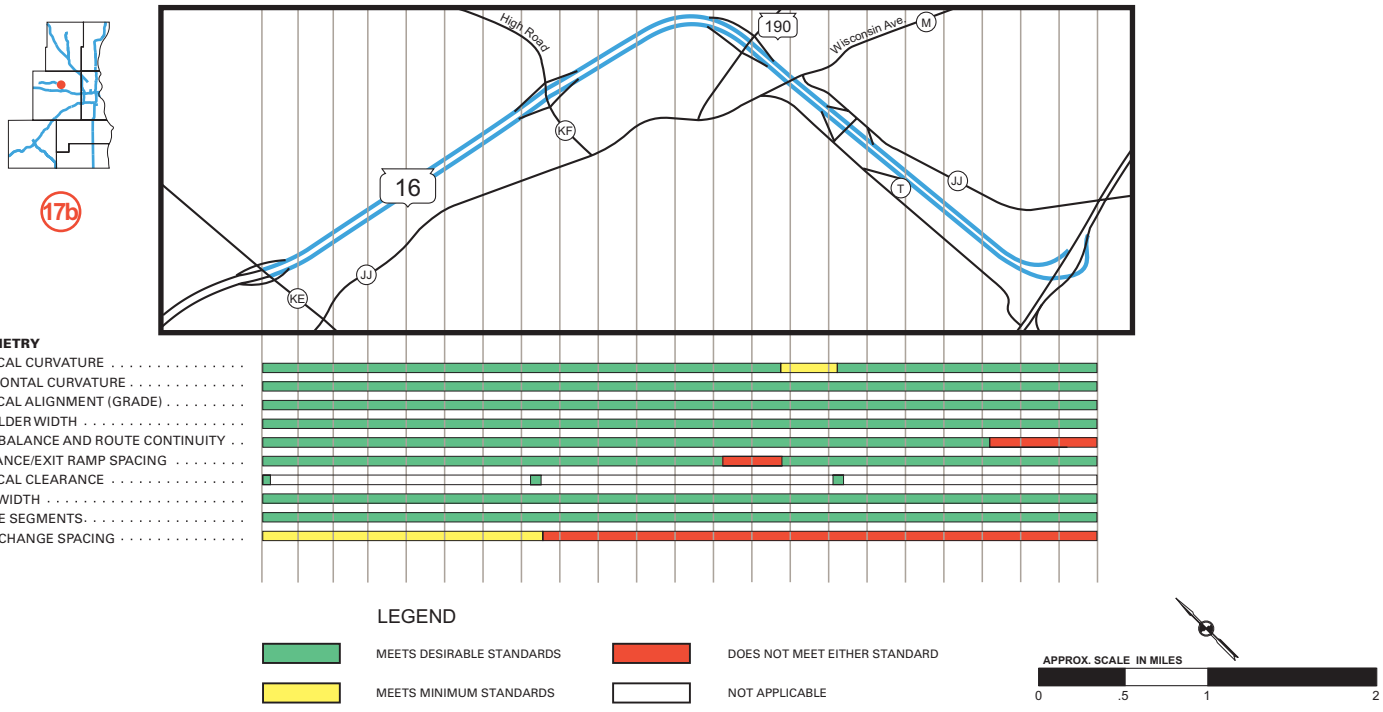
SEGMENT 17a--STH 16: STH 67 TO WAUKESHA CTH KE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-30

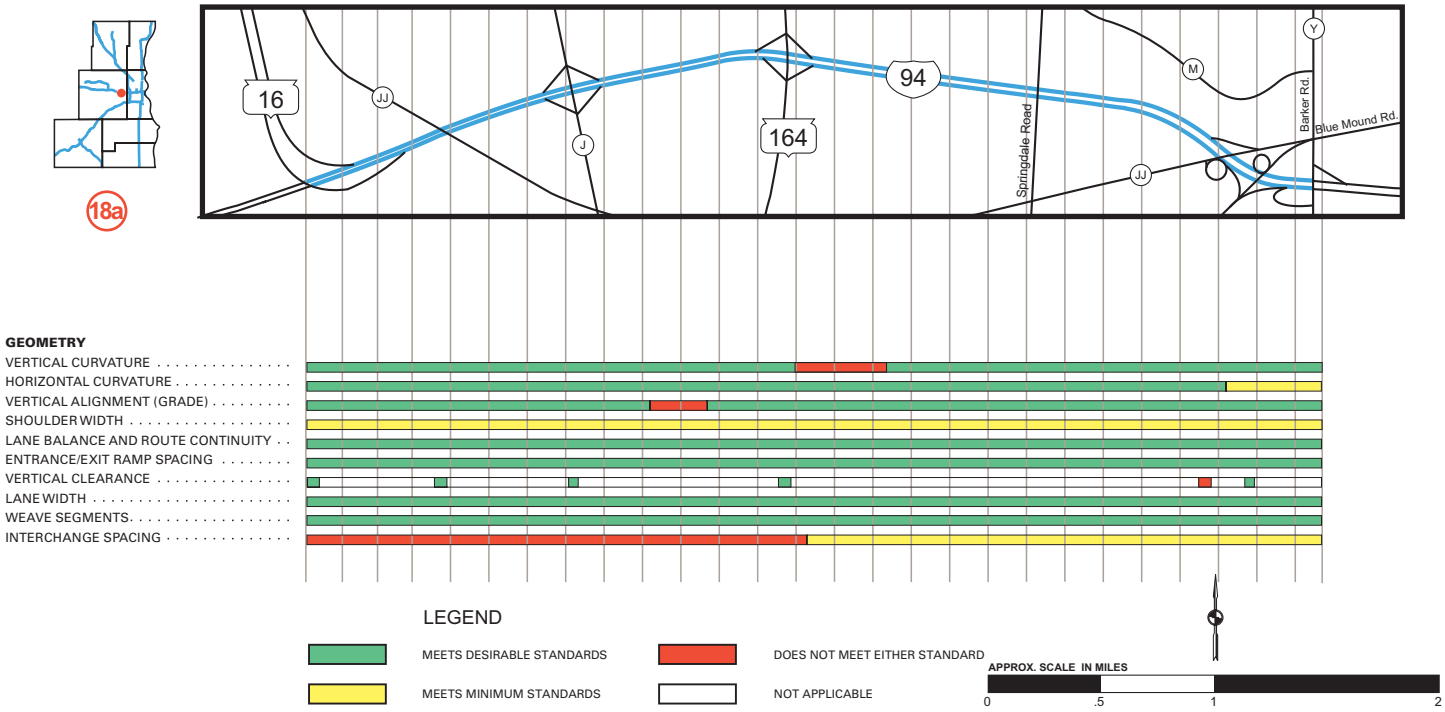
SEGMENT 17b--STH 16: WAUKESHA CTH KE TO IH 94



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-31

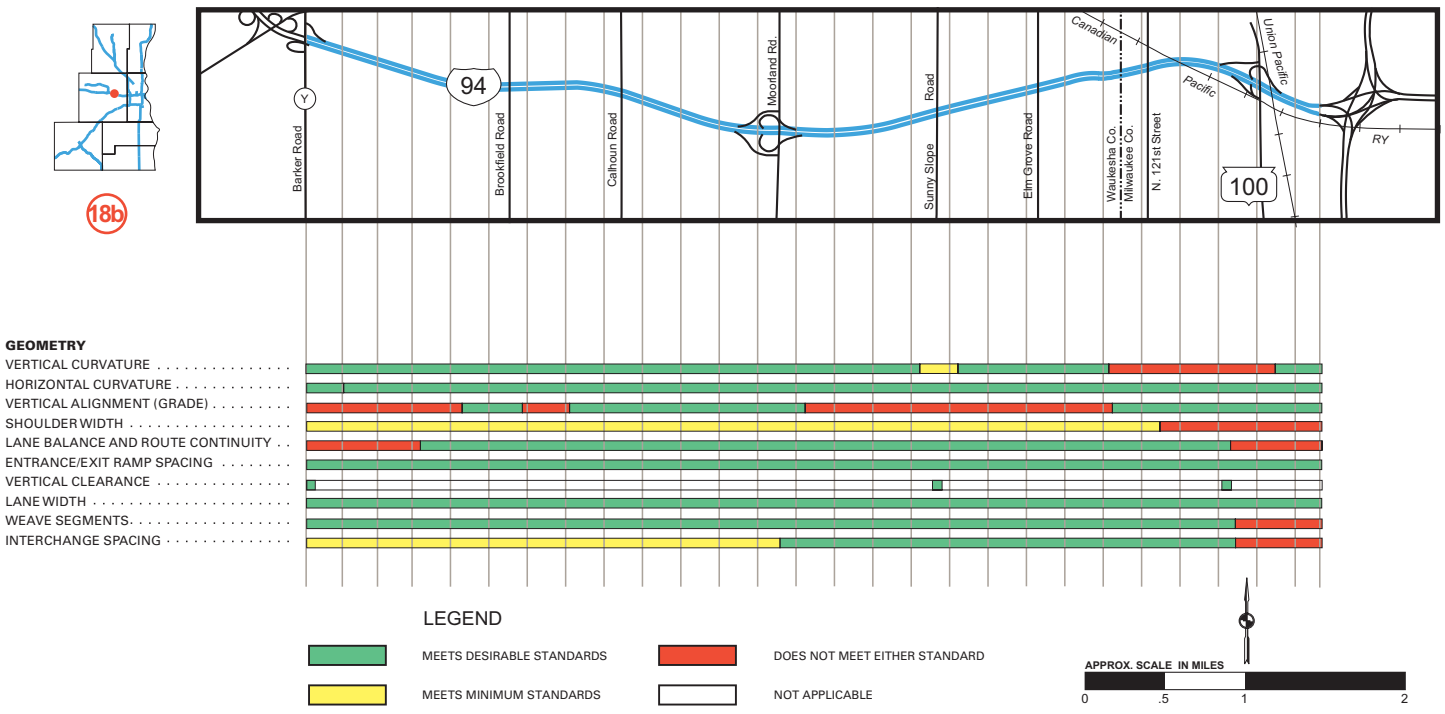
SEGMENT 18a--IH 94: STH 16 TO WAUKESHA CTH Y



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-32

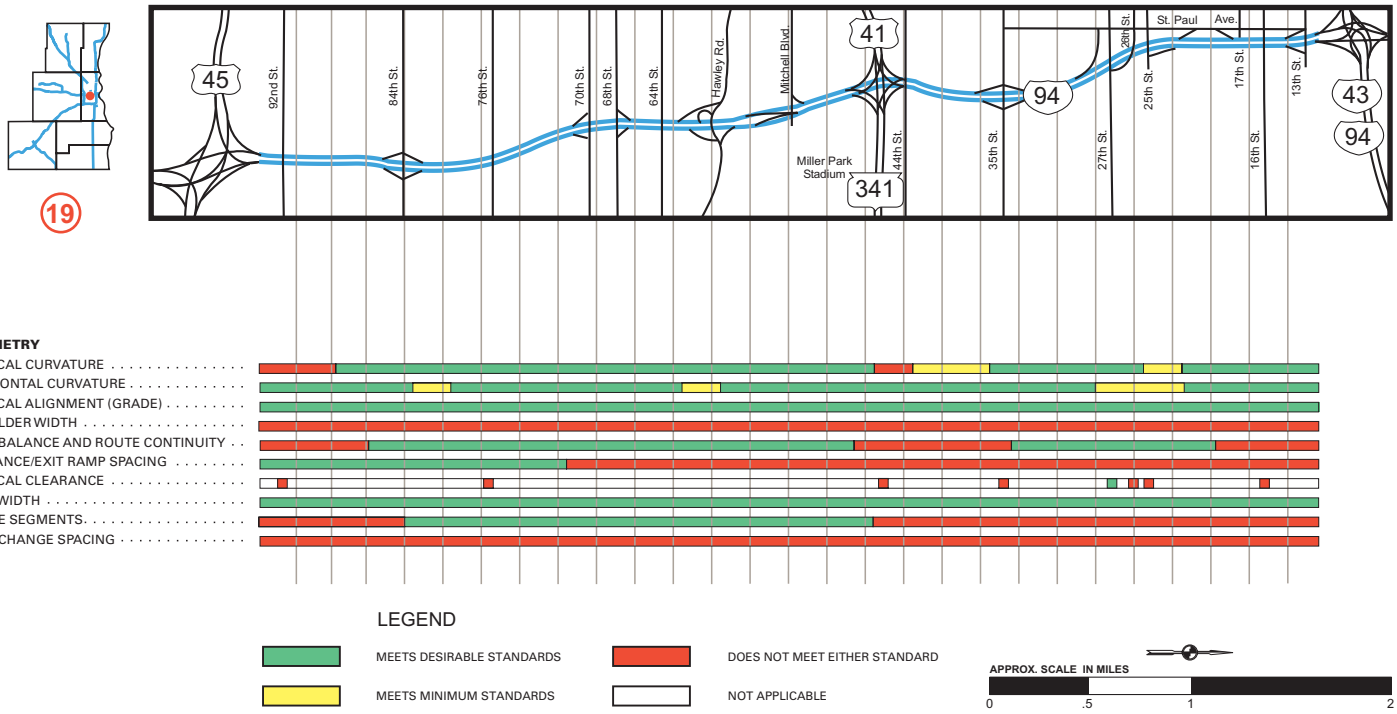
SEGMENT 18b--IH 94: WAUKESHA CTH Y TO ZOO INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-33

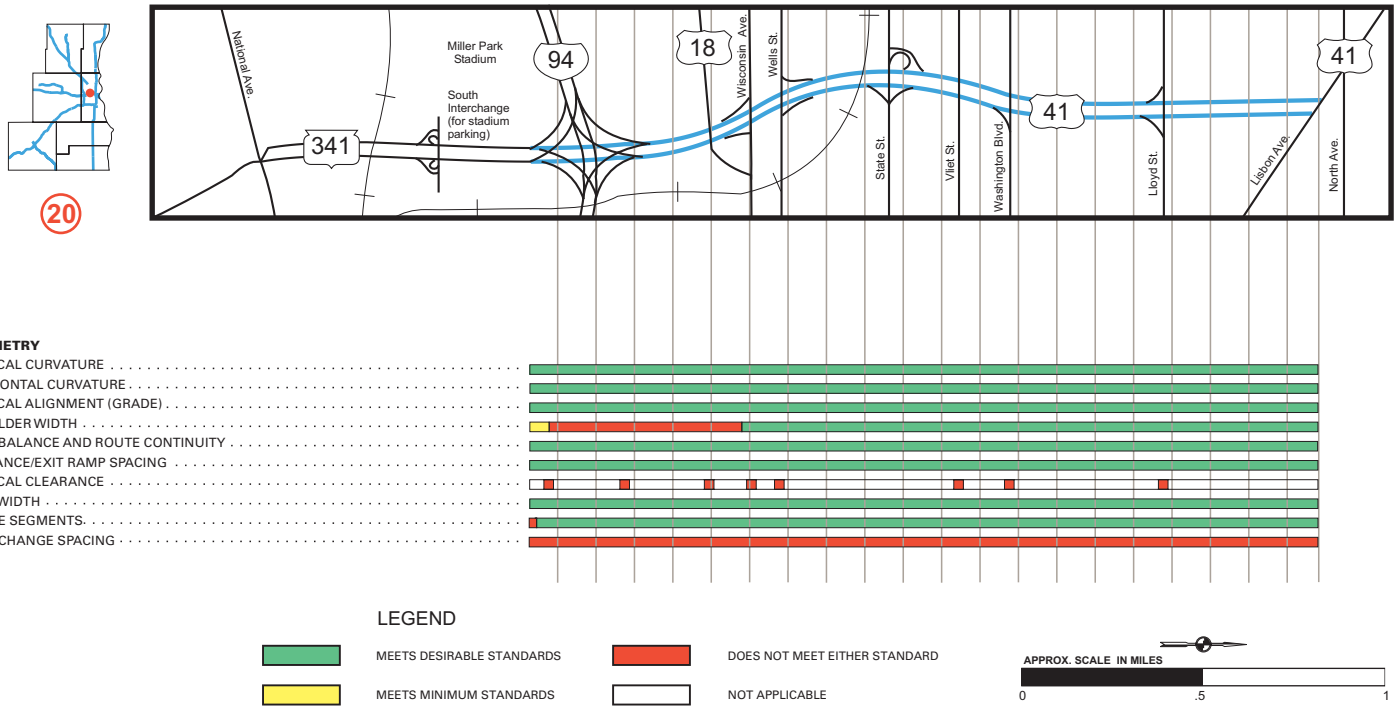
SEGMENT 19--IH 94: ZOO INTERCHANGE TO MARQUETTE INTERCHANGE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-34

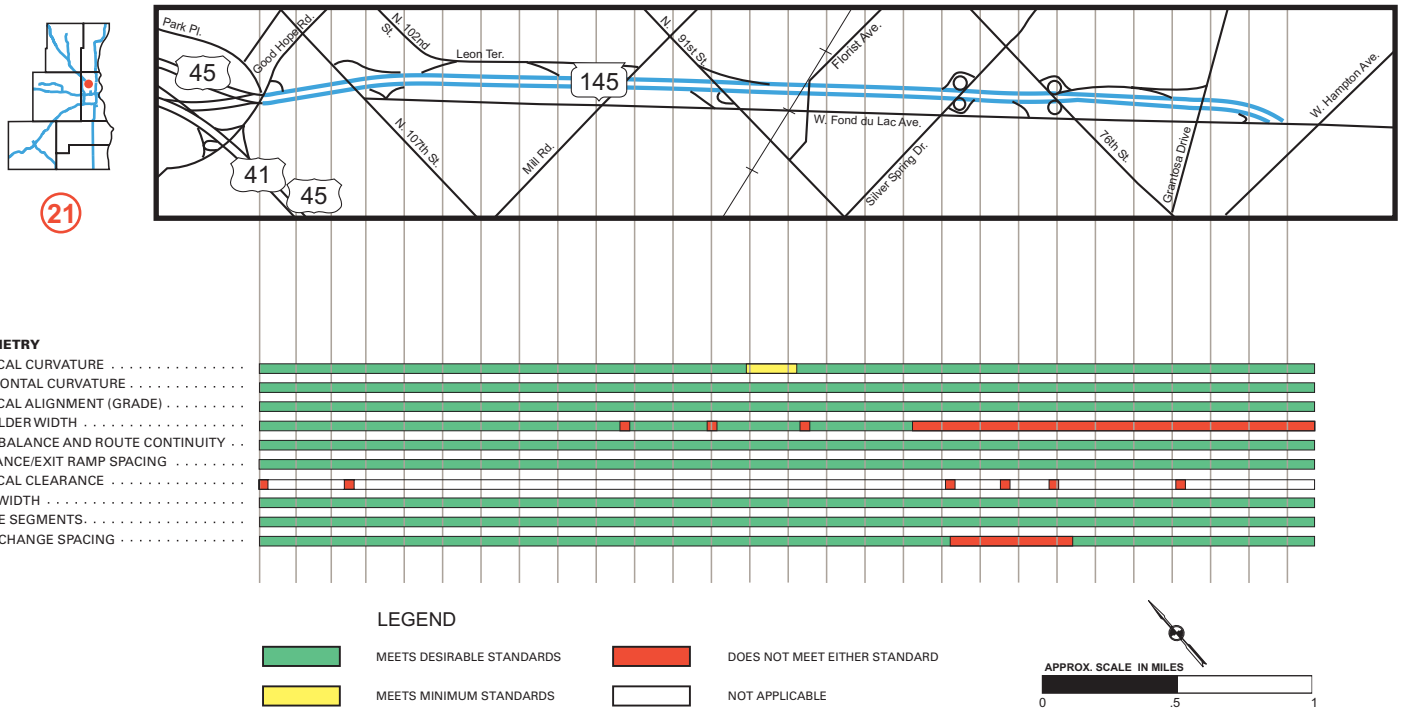
SEGMENT 20--USH 41: STADIUM INTERCHANGE TO LISBON AVENUE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-35

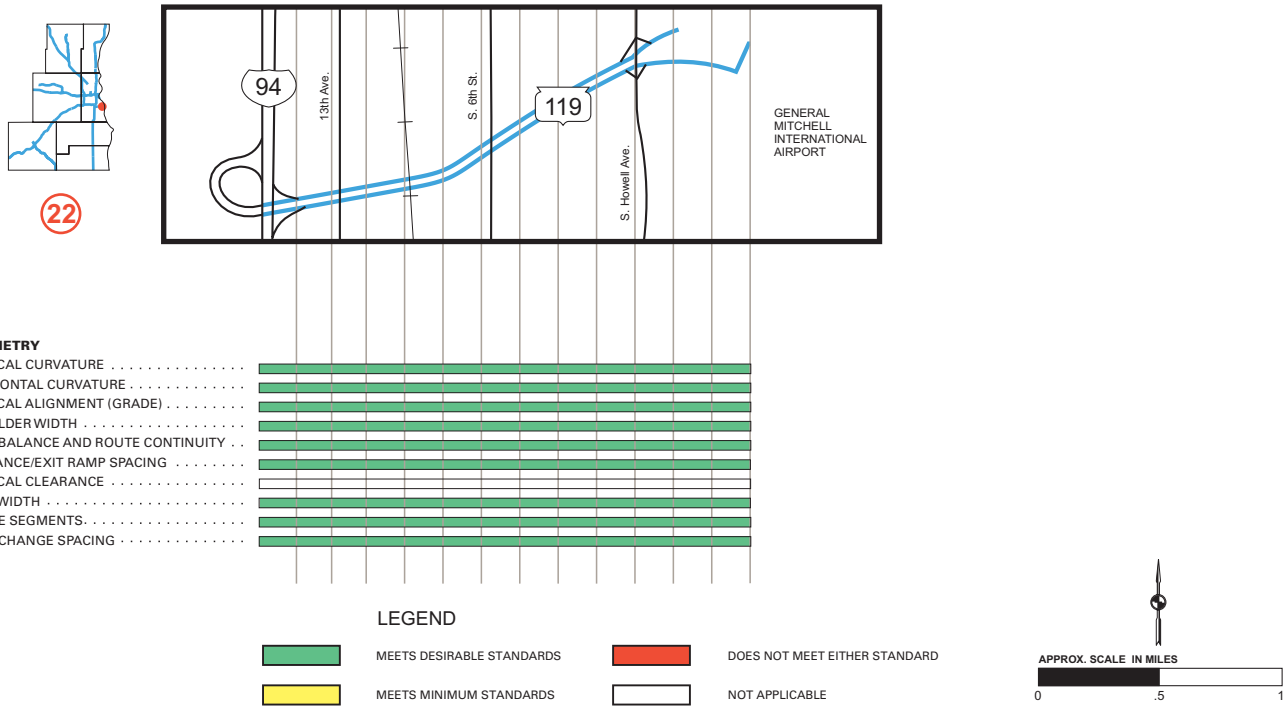
SEGMENT 21--STH 145: NORTH INTERCHANGE (USH 41/45) TO 68TH STREET



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-36

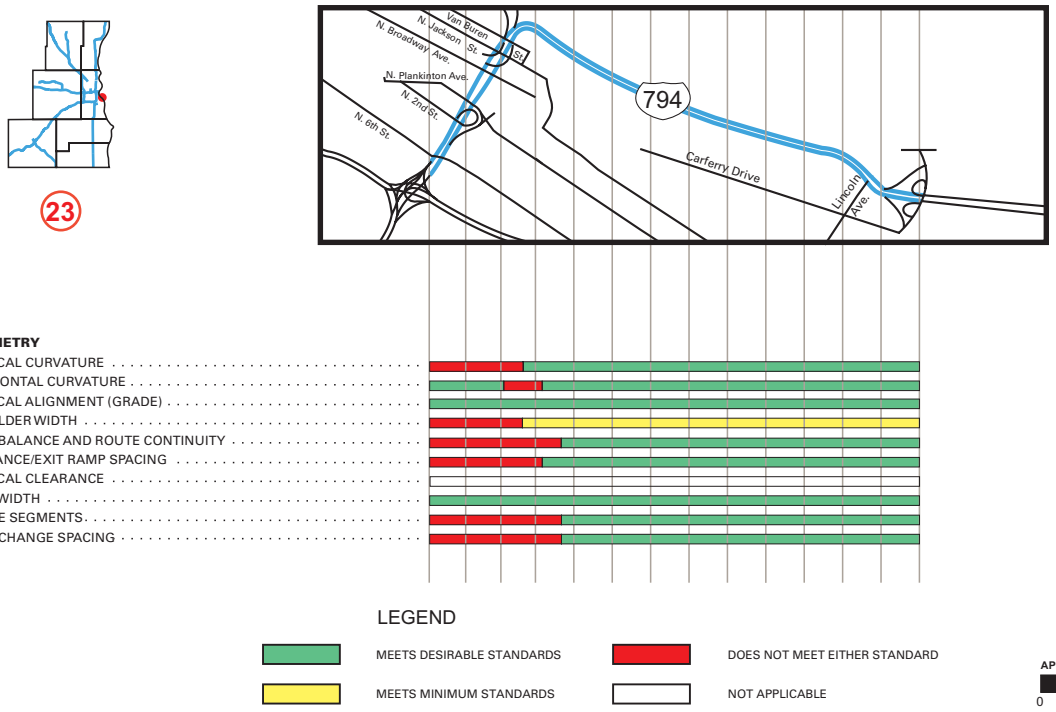
SEGMENT 22--STH 119: IH 94 TO EASTERN TERMINUS (HOWELL AVENUE)



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-37

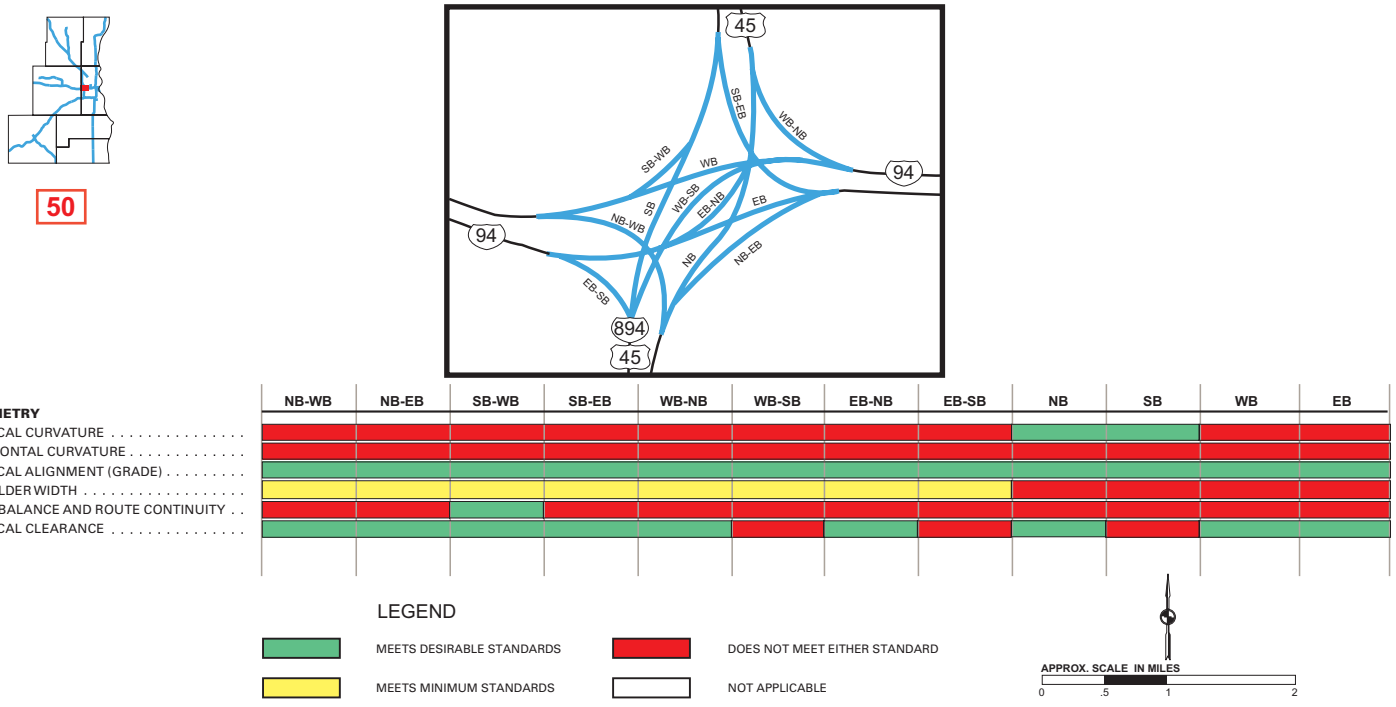
SEGMENT 23--IH 794: MARQUETTE INTERCHANGE TO CARFERRY DRIVE



Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-38

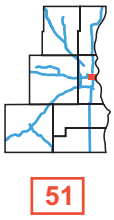
INTERCHANGE 50--IH 94/894 AND USH 45: ZOO INTERCHANGE

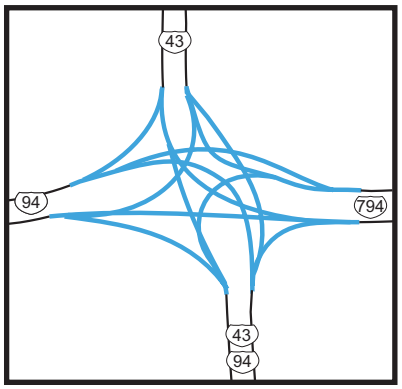


Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-39

INTERCHANGE 51--IH 94 AND IH 43 AND IH 794: MARQUETTE INTERCHANGE





THE MARQUETTE INTERCHANGE IS PART OF A SEPARATE STUDY

LEGEND

MEETS DESIRABLE STANDARDS

MEETS MINIMUM STANDARDS

DOES NOT MEET EITHER STANDARD

NOT APPLICABLE

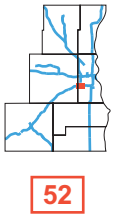
APPROX. SCALE IN MILES

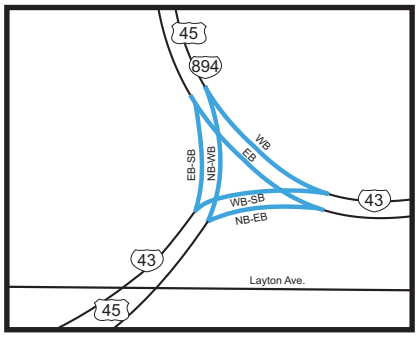
0 .5 1 2

Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-40

INTERCHANGE 52--IH 43/894 AND USH 45: HALE INTERCHANGE





GEOMETRY	NB-EB	SB-EB	WB-NB	WB-SB	WB	EB
VERTICAL CURVATURE						
HORIZONTAL CURVATURE						
VERTICAL ALIGNMENT (GRADE)						
SHOULDER WIDTH						
LANE BALANCE AND ROUTE CONTINUITY						
VERTICAL CLEARANCE						

LEGEND

MEETS DESIRABLE STANDARDS

MEETS MINIMUM STANDARDS

DOES NOT MEET EITHER STANDARD

NOT APPLICABLE

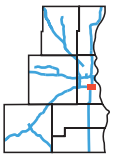
APPROX. SCALE IN MILES

0 .5 1 2

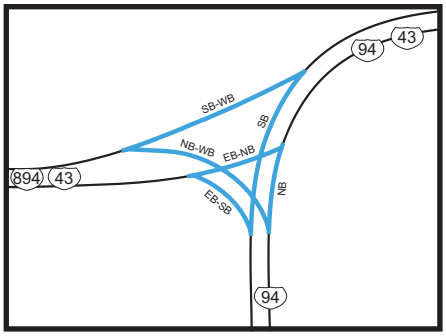
Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-41

INTERCHANGE 53--IH 43/94/894: MITCHELL INTERCHANGE



53



GEOMETRY	NB-WB	EB-SB	EB-NB	SB-WB	NB	SB
VERTICAL CURVATURE						
HORIZONTAL CURVATURE						
VERTICAL ALIGNMENT (GRADE)						
SHOULDER WIDTH						
LANE BALANCE AND ROUTE CONTINUITY						
VERTICAL CLEARANCE						

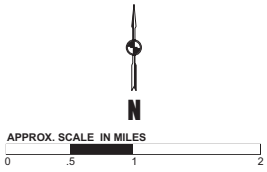
LEGEND

MEETS DESIRABLE STANDARDS

DOES NOT MEET EITHER STANDARD

MEETS MINIMUM STANDARDS

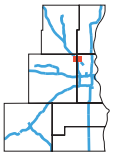
NOT APPLICABLE



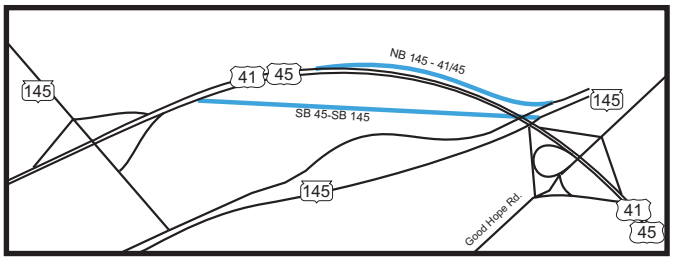
Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-42

INTERCHANGE 54--IH 41/45 AND STH 145: NORTH INTERCHANGE



54



GEOMETRY	NB 145-NB 41/45	SB 41/45 SB 145
VERTICAL CURVATURE		
HORIZONTAL CURVATURE		
VERTICAL ALIGNMENT (GRADE)		
SHOULDER WIDTH		
LANE BALANCE AND ROUTE CONTINUITY		
VERTICAL CLEARANCE		

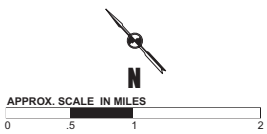
LEGEND

MEETS DESIRABLE STANDARDS

DOES NOT MEET EITHER STANDARD

MEETS MINIMUM STANDARDS

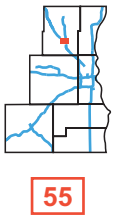
NOT APPLICABLE

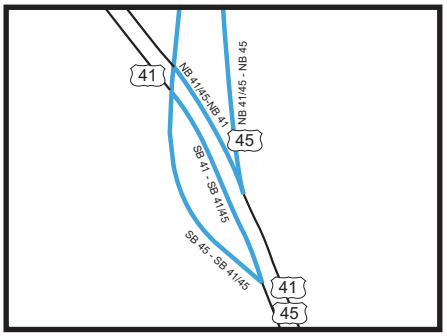


Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-43

INTERCHANGE 55--USH 41/USH 45 INTERCHANGE

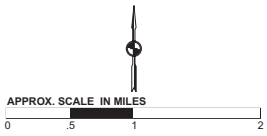




GEOMETRY	NB 41/45 - NB 45	SB 45 - SB 41/45	NB 41/45 - NB 41	SB 41 - SB 41/45
VERTICAL CURVATURE				
HORIZONTAL CURVATURE				
VERTICAL ALIGNMENT (GRADE)				
SHOULDER WIDTH				
LANE BALANCE AND ROUTE CONTINUITY				
VERTICAL CLEARANCE				

LEGEND

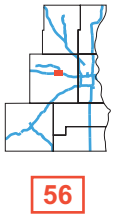
- MEETS DESIRABLE STANDARDS
- MEETS MINIMUM STANDARDS
- DOES NOT MEET EITHER STANDARD
- NOT APPLICABLE

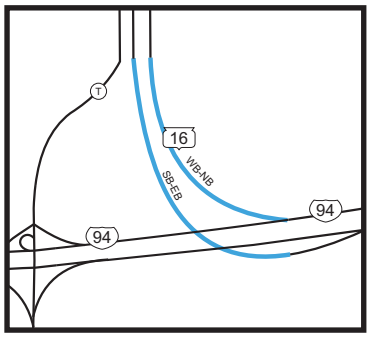


Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-44

INTERCHANGE 56--IH 94/STH 16 INTERCHANGE

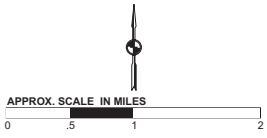




GEOMETRY	WB-NB	SB-EB
VERTICAL CURVATURE		
HORIZONTAL CURVATURE		
VERTICAL ALIGNMENT (GRADE)		
SHOULDER WIDTH		
LANE BALANCE AND ROUTE CONTINUITY		
VERTICAL CLEARANCE		

LEGEND

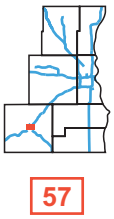
- MEETS DESIRABLE STANDARDS
- MEETS MINIMUM STANDARDS
- DOES NOT MEET EITHER STANDARD
- NOT APPLICABLE

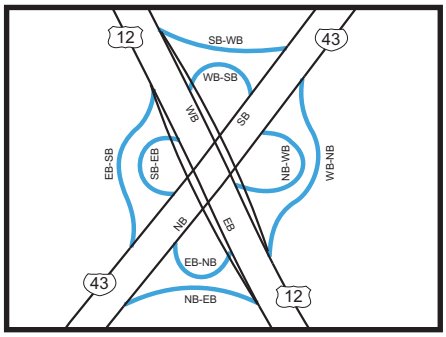


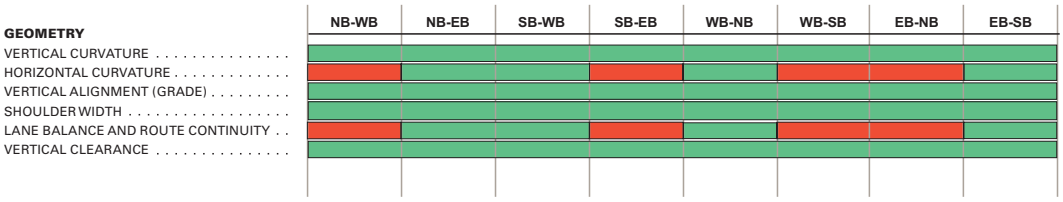
Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

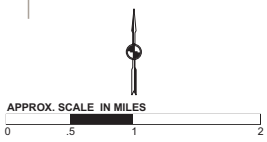
Figure A-45

INTERCHANGE 57--IH 43/USH 12 INTERCHANGE





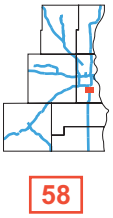


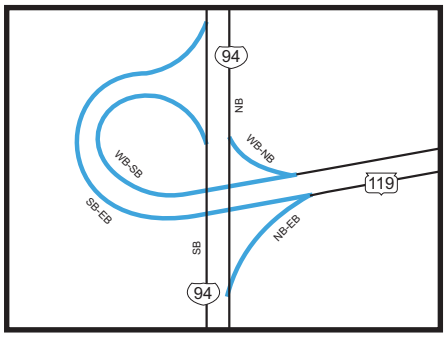


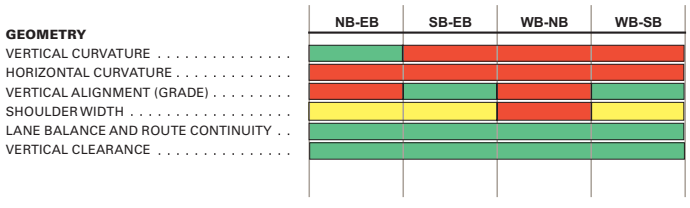
Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

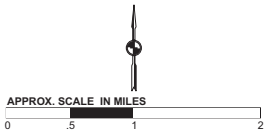
Figure A-46

INTERCHANGE 58--IH 94 AND STH 119 INTERCHANGE: AIRPORT INTERCHANGE





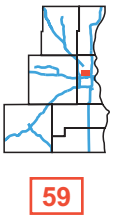


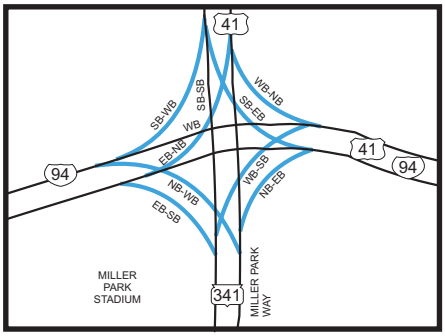


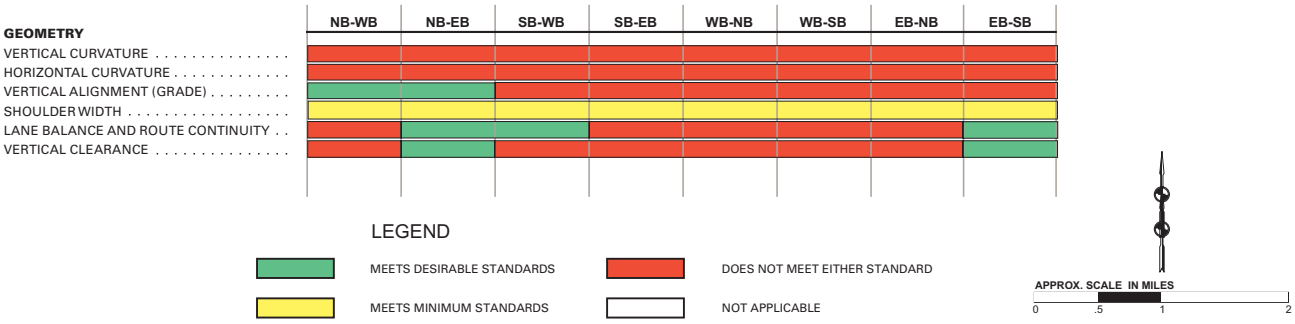
Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Figure A-47

INTERCHANGE 59--IH 94/USH 41/STH 341: STADIUM INTERCHANGE







Source: HNTB, Wisconsin Department of Transportation, and SEWRPC.

Appendix B

POTENTIAL NOISE BARRIERS AND RETAINING WALLS UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES

Noise barriers and retaining walls are part of the existing freeway system, and have been included in the freeway system reconstruction alternatives considered as part of this study. This appendix provides information regarding the potential location of noise barriers and retaining walls, and the portion of the total estimated cost to reconstruct the Southeastern Wisconsin regional freeway system associated with noise barriers and retaining walls. The specific locations, extent, and costs of noise barriers and retaining walls to be included in the reconstructed Southeastern Wisconsin regional freeway system will be determined during segment-by-segment preliminary engineering and environmental studies.

Noise Barriers

Noise barriers have been included in the reconstructed regional freeway system under an alternative with design and design-related safety improvements and under an alternative with design and design-related safety improvements and additional lanes. The locations of potential noise barriers that were incorporated in these alternatives are displayed on Map B-1. The location of the additional noise barriers were based upon a previously completed study conducted by the Wisconsin Department of Transportation entitled *Wisconsin Noise Barrier Study*. This study identified the locations where additional noise barriers may be warranted based upon consideration of existing and projected noise levels and adjacent land uses. The location of the additional noise barriers displayed on Map B-1 indicates those areas for which noise levels may be expected to exceed State statutory defined levels. The specific location and extent of noise barriers to be ultimately included in a reconstructed Southeastern Wisconsin regional freeway system will be determined during segment-by-segment preliminary engineering and environmental studies.

No additional noise impact areas are expected to be established under a freeway system reconstruction alternative with design and design-related safety improvements or under an alternative with design and design-related safety improvements and additional lanes. The expected increases in noise levels—three decibels or less—when considered with existing noise levels, would not result in any additional areas experiencing noise levels that exceed the State noise criteria.

The cost associated with the construction of noise barriers is about 2 percent of the total estimated construction cost to reconstruct the Southeastern Wisconsin regional freeway system under an alternative with design and design-related safety improvements and under an alternative with design and design-related safety improvements and additional lanes.

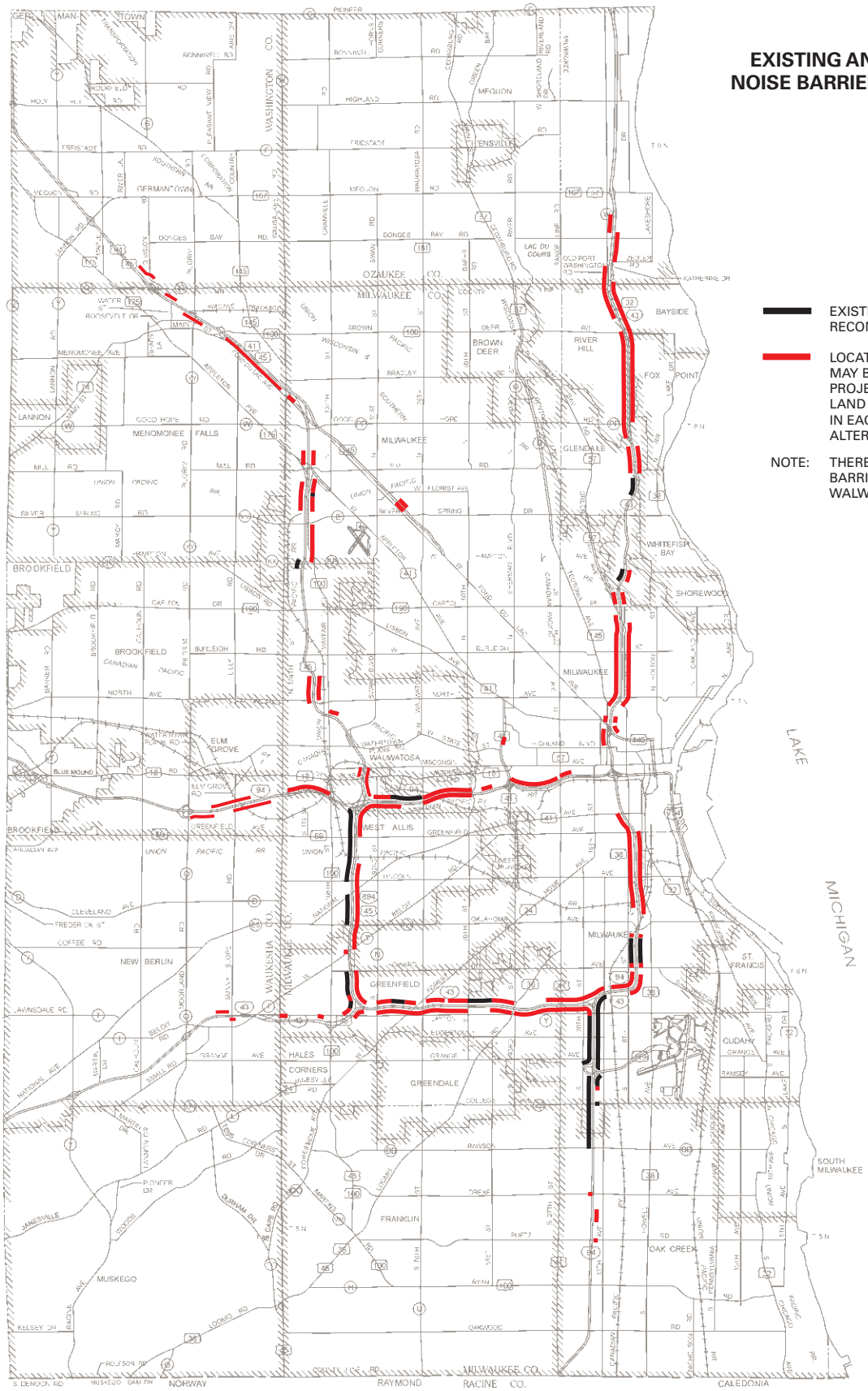
Retaining Walls

Retaining walls have been included in the design of some segments of a reconstructed regional freeway system with design and design-related safety improvements and with design and design-related safety improvements and additional lanes. While the use of retaining walls, in some cases, may obviate the need to acquire additional right-of-way, the existence of retaining walls may have an impact on the appearance of the freeway. The locations of potential retaining walls that would be incorporated into a reconstructed regional freeway system under a freeway system reconstruction alternative with design and design-related safety improvements and under a freeway system reconstruction alternative with design and design-related safety improvements and additional lanes is displayed on Map B-2.

The cost associated with the construction of retaining walls is about 2 percent of the total estimated construction cost to reconstruct Southeastern Wisconsin regional freeway system under an alternative with design and design-related safety improvements and about 3 percent of the total estimated construction cost to reconstruct Southeastern Wisconsin regional freeway under an alternative with design and design-related safety improvements and additional lanes.

Map B-1

EXISTING AND POTENTIAL FREEWAY SYSTEM NOISE BARRIERS IN SOUTHEASTERN WISCONSIN



EXISTING NOISE BARRIER TO BE INCLUDED IN RECONSTRUCTED FREEWAY SYSTEM.

LOCATION WHERE ADDITIONAL NOISE BARRIER MAY BE WARRANTED BASED UPON EXISTING AND PROJECTED FUTURE NOISE LEVELS AND ADJACENT LAND USES. ALL NOISE BARRIERS ARE INCLUDED IN EACH FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE.

NOTE: THERE ARE NO EXISTING OR POTENTIAL NOISE BARRIERS LOCATED IN KENOSHA, RACINE, OR WALWORTH COUNTIES.

GRAPHIC SCALE

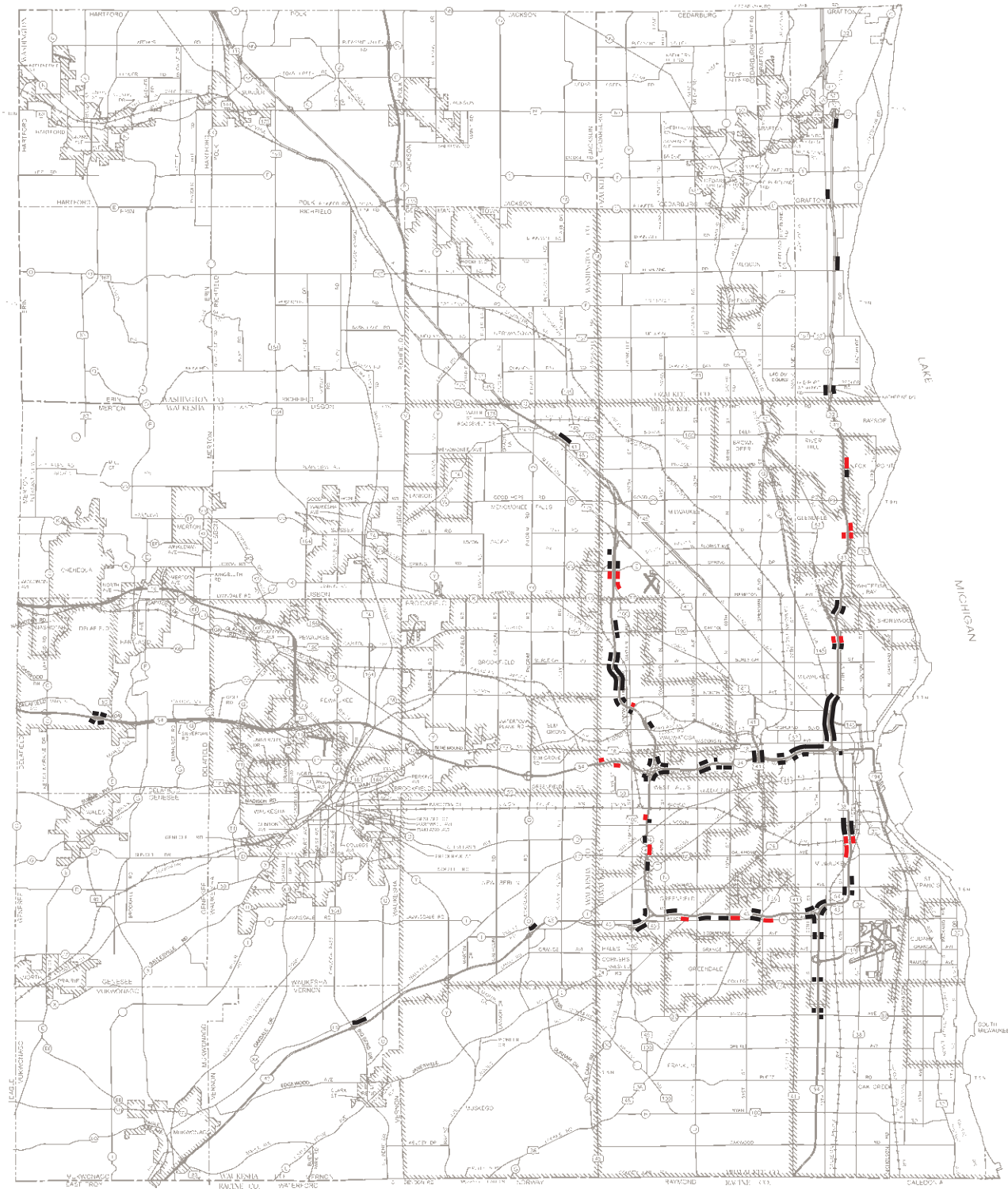
0 1 2 3 4 5 6 MILES

0 5 10 15 20 25 30 35 40,000 FEET

Source: HNTB and SEWRPC.

Map B-2

POTENTIAL RETAINING WALLS IN SOUTHEASTERN WISCONSIN UNDER FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVES



POTENTIAL RETAINING WALL UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH DESIGN AND DESIGN-RELATED SAFETY IMPROVEMENTS

ADDITIONAL POTENTIAL RETAINING WALL UNDER A FREEWAY SYSTEM RECONSTRUCTION ALTERNATIVE WITH ADDITIONAL LANES

NOTE: THERE ARE NO POTENTIAL RETAINING WALLS LOCATED IN KENOSHA, RACINE, WALWORTH, OR WASHINGTON COUNTIES.

GRAPHIC SCALE
0 1 2 3 4 5 6 MILES
0 5 10 15 20 25 30 35 40,000 FEET

Source: HNTB and SEWRPC.

Appendix C

EVALUATION OF THE IMPACTS OF THE PRELIMINARY RECOMMENDED FREEWAY SYSTEM RECONSTRUCTION PLAN ON MINORITY AND LOW INCOME POPULATIONS IN SOUTHEASTERN WISCONSIN

INTRODUCTION

An evaluation was completed of the estimated beneficial and adverse impacts of the preliminary freeway system reconstruction plan on minority and low income populations within Southeastern Wisconsin. Estimates of the magnitude and location of the minority and low income populations are taken from data available in the decennial U.S. census of population. The Commission's definition of the magnitude and location of minority populations is based upon the recent year 2000 census and is shown in Maps C-1 through C-5 and in Tables C-1 and C-2. The magnitude and location of the low income population within southeastern Wisconsin is based upon the year 2000 census and is shown on Map C-6 and summarized in Table C-3. The low income population was defined as families with income below Federally-defined poverty levels.

Adverse Impacts

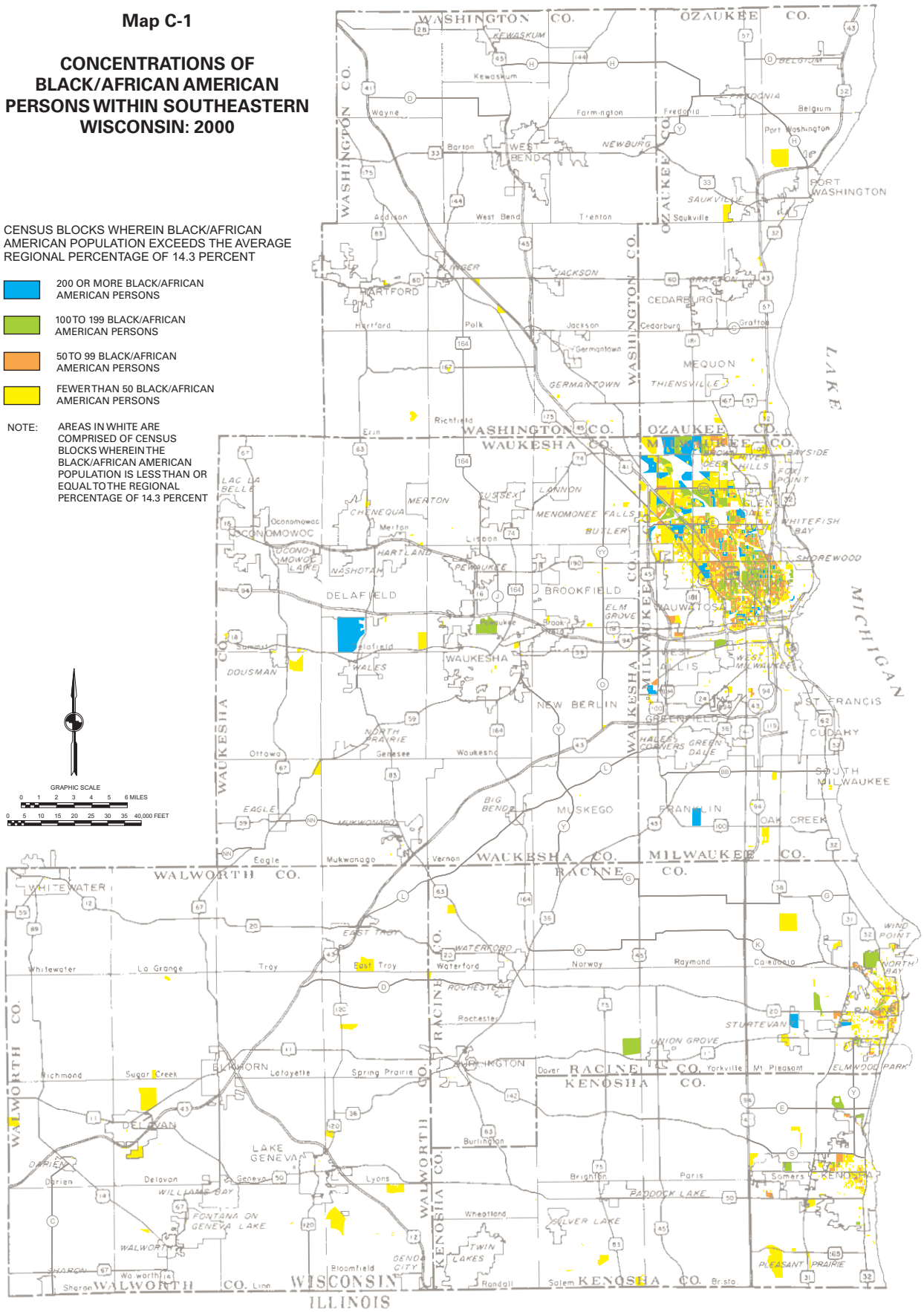
The evaluation of the preliminary freeway system reconstruction plan included analysis of its potential adverse impacts, specifically with respect to minority and low income populations. The locations of concentrations of minority and low income populations within the Region were compared to the locations of freeway segments proposed to be widened under the preliminary recommended freeway system reconstruction plan. Also, the location and amount of estimated right-of-way acquisition under the preliminary plan within areas with above average concentrations of minority and low income populations was determined.

Residing in proximity to a freeway proposed to be widened may be perceived as having potential adverse affects. To evaluate whether the Region's minority and low income populations are disproportionately represented in areas in proximity to proposed widened freeways, the proportion of each county's and the Region's total population that is a member of a minority population or is low income was compared to the proportion of each county's and the Region's population that resides in areas located in proximity to the freeways proposed to be widened under the preliminary freeway system reconstruction plan. For this analysis, the Region was divided into census blocks. Those census blocks, as shown on Map C-7, located within one-half to three-fourths of a mile adjacent to the freeway system, or bisected by a freeway segment, were considered as located in proximity to the freeway system. For analysis of the low income population, census block data is not available, so census block group data was used.

The results of this analysis, as presented in Table C-4, indicate that within each county the percentage of the total population located in proximity to the freeways proposed to be widened under the preliminary plan that is of a minority population—Black/African American, American Indian or Alaskan Native, Asian or Pacific Islander, Other Minority, or Hispanic—or of low income is generally similar (equal or only a few percent lower or higher) to the percentage of the total population of each county which is of a minority or low income population. On a regional level, the percentage of the total population located in proximity to proposed widened freeways that is of a minority population is a few percent higher—between 0.2 and 3.8 percent higher—than the percentage of the total population in the seven-county Region that is of a minority population. Thus, this analysis indicates there is not a significant over-representation of minority or low income populations in areas located in proximity to the freeways proposed to be widened under the preliminary plan within each county, or the Region as a whole, and therefore, no indication based on this analysis of any disproportionate adverse impact attendant to the proposed addition of freeway lanes under the preliminary plan.

Map C-1

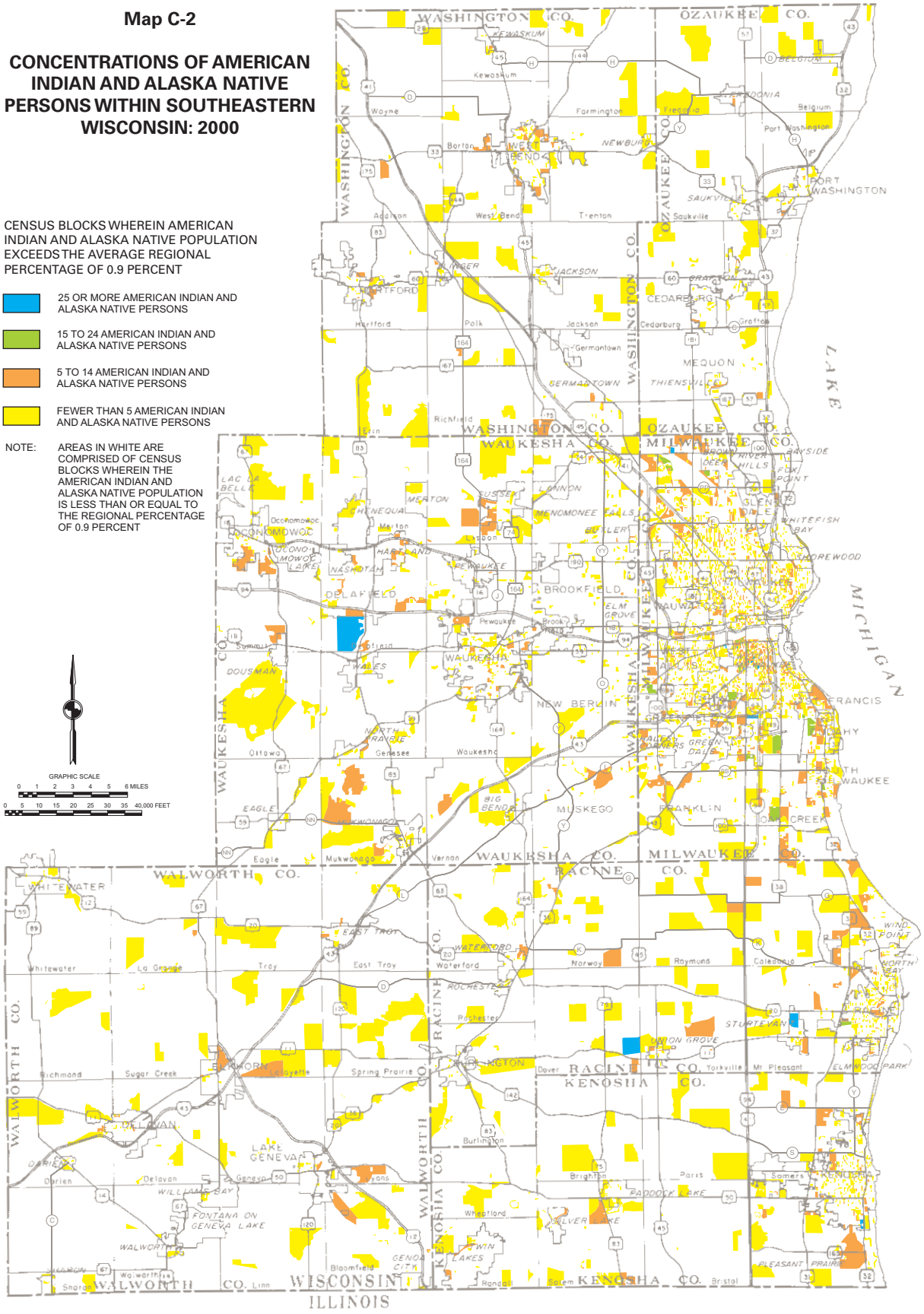
CONCENTRATIONS OF BLACK/AFRICAN AMERICAN PERSONS WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Map C-2

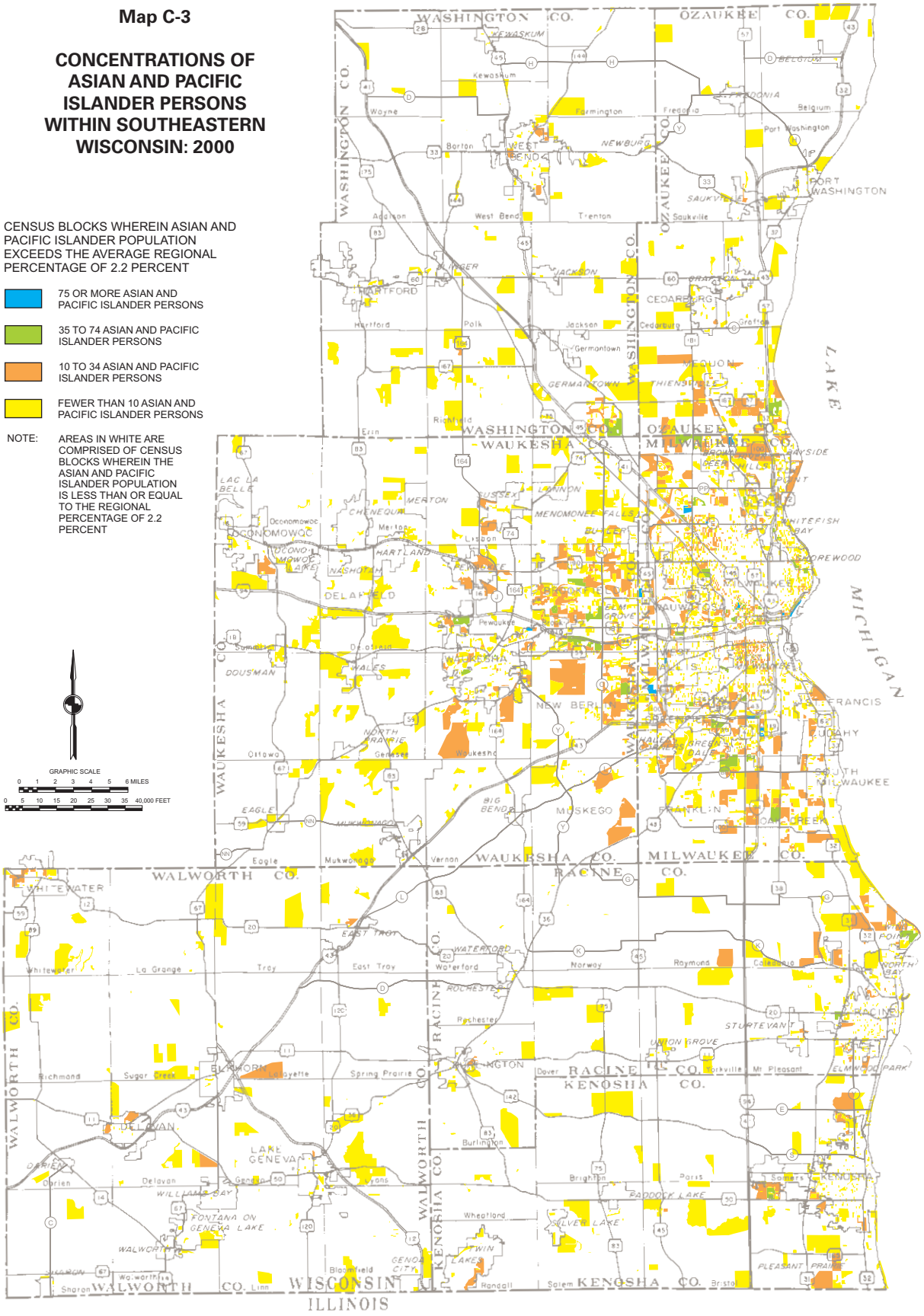
CONCENTRATIONS OF AMERICAN INDIAN AND ALASKA NATIVE PERSONS WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Map C-3

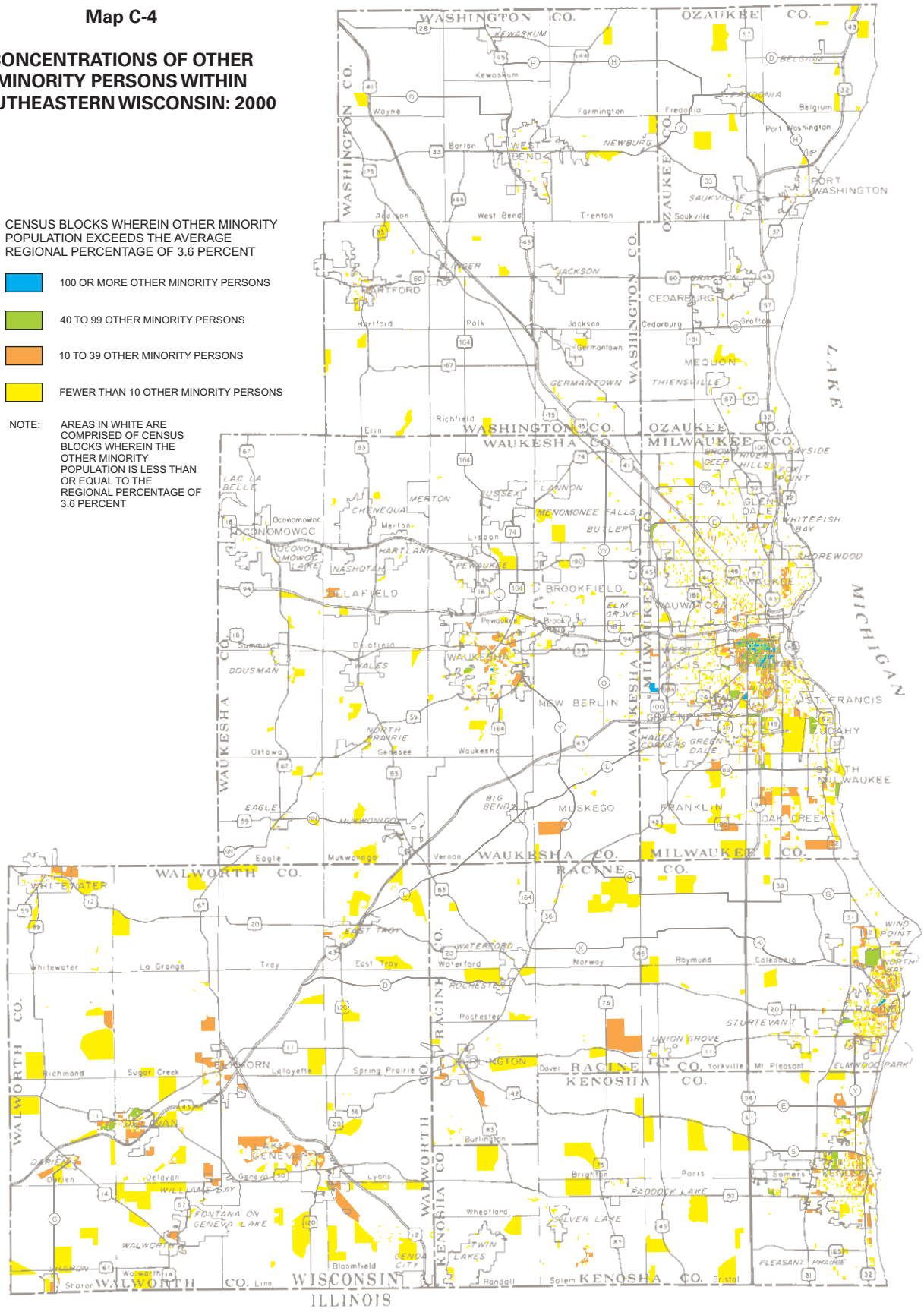
CONCENTRATIONS OF ASIAN AND PACIFIC ISLANDER PERSONS WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Map C-4

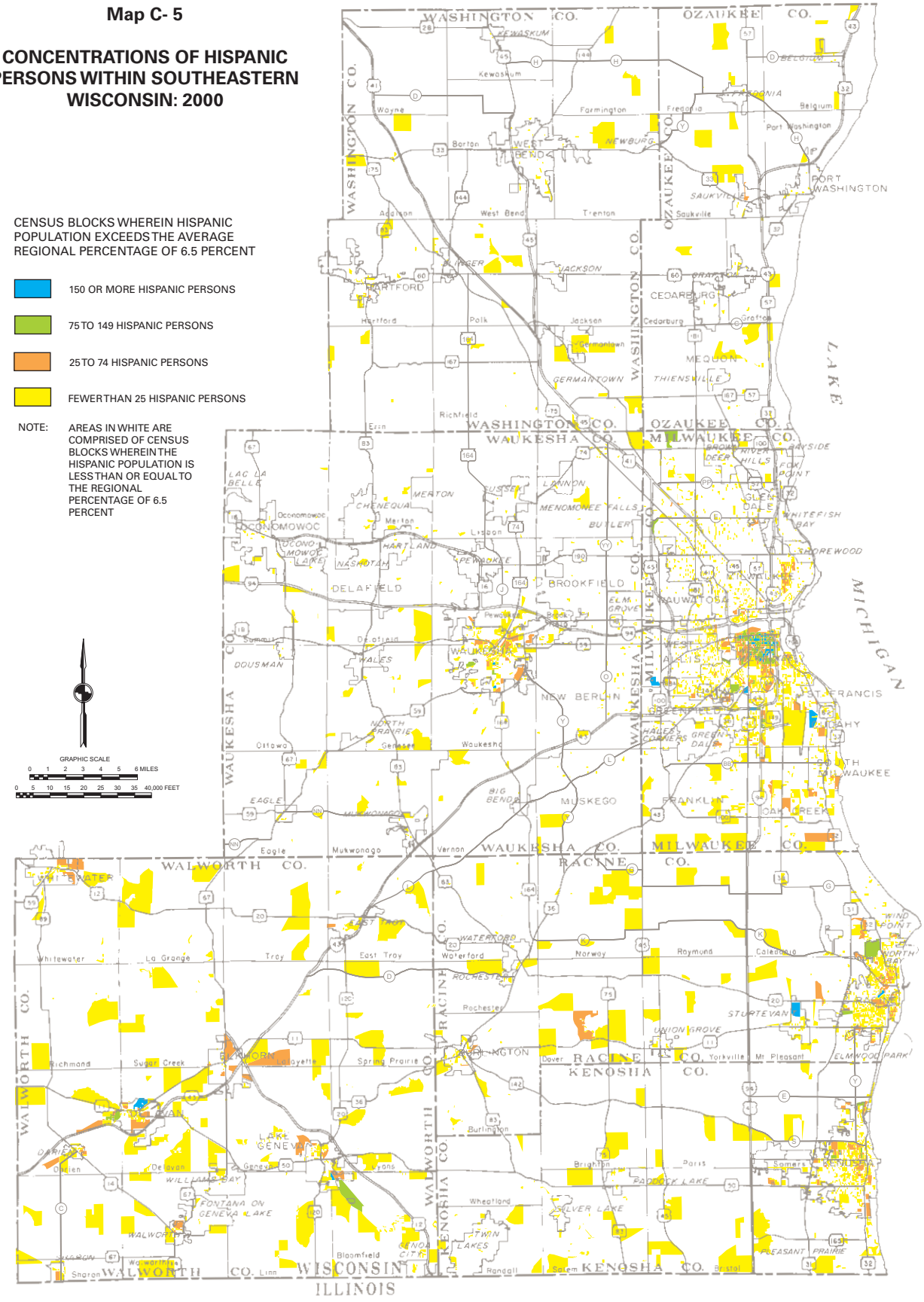
CONCENTRATIONS OF OTHER MINORITY PERSONS WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Map C- 5

CONCENTRATIONS OF HISPANIC PERSONS WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Table C-1

POPULATION BY RACE IN THE REGION BY COUNTY: 2000

County	White		Nonwhite								Total Population
			Black/African American		American Indian and Alaska Native		Asian and Pacific Islander		Other Race		
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	
Kenosha	134,737	90.1	8,629	5.8	1,314	0.9	1,930	1.3	5,990	4.0	149,577
Milwaukee	633,446	67.4	240,113	25.5	11,907	1.3	28,930	3.1	48,227	5.1	940,164
Ozaukee	80,186	97.4	917	1.1	335	0.4	1,131	1.4	382	0.5	82,317
Racine	159,582	84.5	21,100	11.2	1,448	0.8	1,885	1.0	8,168	4.3	188,831
Walworth	89,584	95.5	983	1.0	495	0.5	859	0.9	2,946	3.1	93,759
Washington	115,491	98.3	641	0.5	587	0.5	938	0.8	659	0.6	117,493
Waukesha	348,496	96.6	3,480	1.0	1,733	0.5	6,497	1.8	4,013	1.1	360,767
Region	1,561,522	80.8	275,863	14.3	17,819	0.9	42,170	2.2	70,385	3.6	1,932,908

NOTE: As part of the 2000 Federal census, individuals could be reported as being of more than one race. The figures on this table indicate the number of persons reported as being of a given race (as indicated by the column heading), including those who were reported as that race exclusively and those who were reported as that race and one or more other races. Accordingly, the population figures by race sum to more than the total population for each area.

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

Table C-2

HISPANIC POPULATION IN THE REGION BY COUNTY: 2000

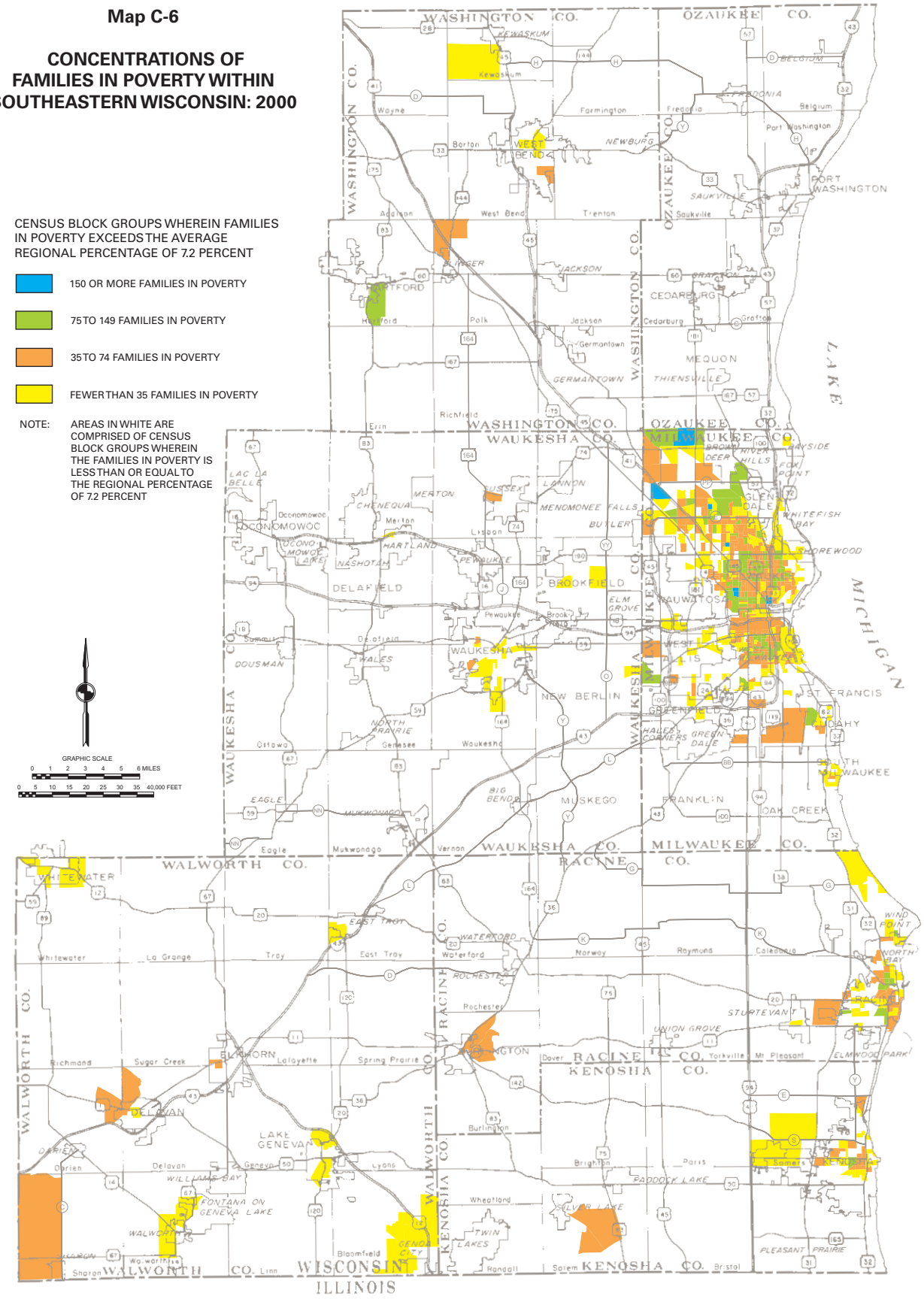
County	Total Population	Hispanic Population	
		Number	Percent of Total Population
Kenosha	149,577	10,757	7.2
Milwaukee	940,164	82,406	8.8
Ozaukee	82,317	1,073	1.3
Racine	188,831	14,990	7.9
Walworth	93,759	6,136	6.5
Washington	117,493	1,529	1.3
Waukesha	360,767	9,503	2.6
Region	1,932,908	126,394	6.5

NOTE: Persons of Hispanic origin may be of any race.

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

Map C-6

CONCENTRATIONS OF FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN: 2000



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

Table C-3

FAMILIES WITH INCOME BELOW THE POVERTY LEVEL IN THE REGION BY COUNTY: 2000

County	Total Families	Families With Income Below the Poverty Level	
		Number	Percent of Total Families
Kenosha	38,671	2,094	5.4
Milwaukee	226,685	26,454	11.7
Ozaukee	23,153	391	1.7
Racine	50,052	2,908	5.8
Walworth	23,388	1,078	4.6
Washington	32,953	867	2.6
Waukesha	101,008	1,674	1.7
Region	495,910	35,466	7.2

NOTE: The U.S. Census Bureau of the Census uses a set of money income thresholds that vary by family size and composition to determine poverty status. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered to be below poverty. Poverty is not defined for people in military barracks, institutional group quarters, or for unrelated individuals under age 15, such as foster children.

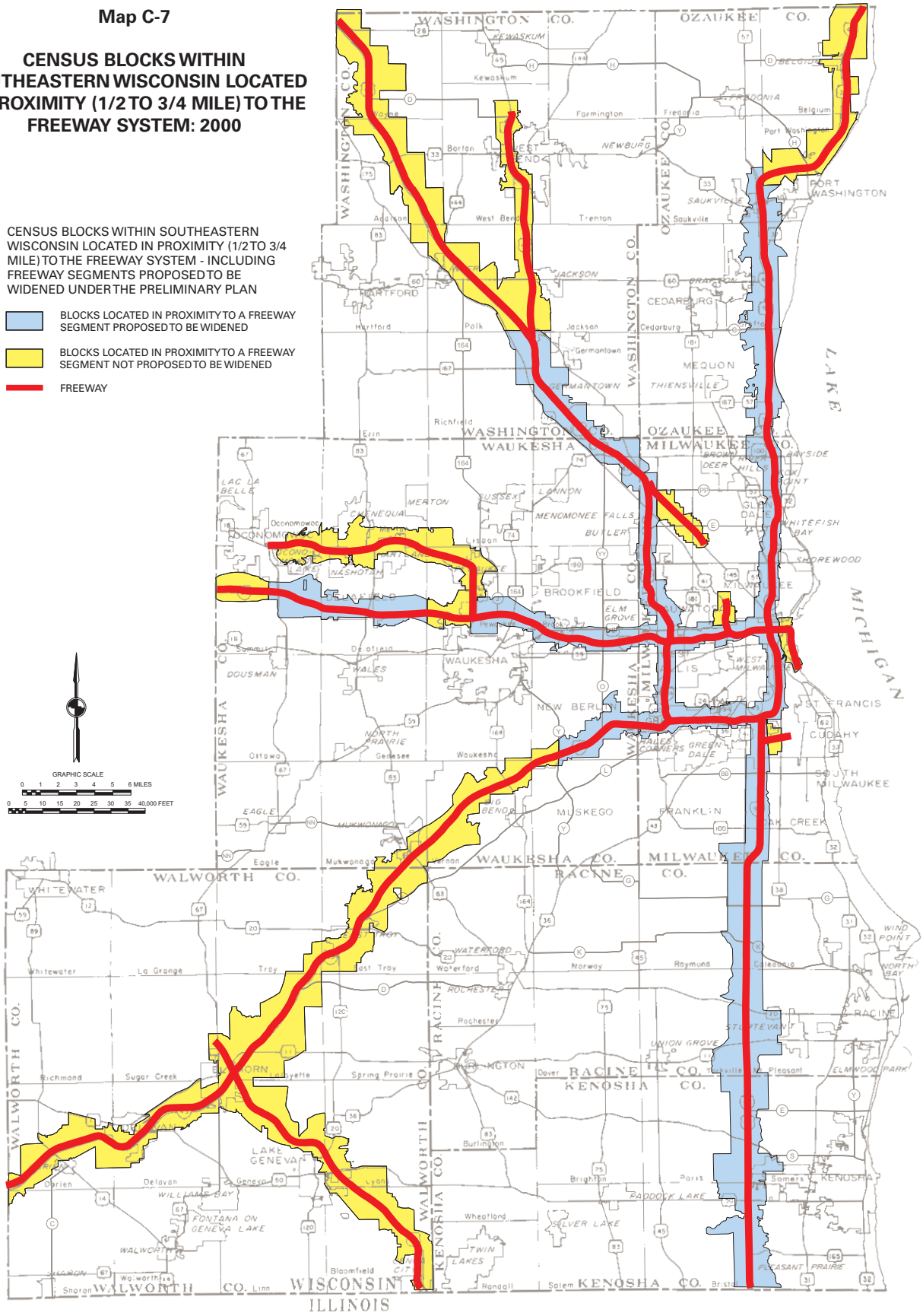
POVERTY THRESHOLDS BY SIZE OF FAMILY AND NUMBER OF RELATED CHILDREN UNDER 18 YEARS OF AGE FOR PURPOSES OF THE 2000 CENSUS

Size of family unit	Weighted Average Thresholds	Related Children Under 18 Years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	$8,501	--	--	--	--	--	--	--	--	--
Under 65 years	8,667	$8,667	--	--	--	--	--	--	--	--
65 years and over	7,990	7,990	--	--	--	--	--	--	--	--
Two persons	10,869	--	--	--	--	--	--	--	--	--
Householder under 65 years	11,214	11,156	$11,483	--	--	--	--	--	--	--
Householder 65 years and over	10,075	10,070	11,440	--	--	--	--	--	--	--
Three persons	13,290	13,032	13,410	$13,423	--	--	--	--	--	--
Four persons	17,029	17,184	17,465	16,895	$16,954	--	--	--	--	--
Five persons	20,127	20,723	21,024	20,380	19,882	$19,578	--	--	--	--
Six persons	22,727	23,835	23,930	23,436	22,964	22,261	$21,845	--	--	--
Seven persons	25,912	27,425	27,596	27,006	26,595	25,828	24,934	$23,953	--	--
Eight persons	28,967	30,673	30,944	30,387	29,899	29,206	28,327	27,412	$27,180	--
Nine persons or more	34,417	36,897	37,076	36,583	36,169	35,489	34,554	33,708	33,499	$32,208

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

Map C-7

CENSUS BLOCKS WITHIN SOUTHEASTERN WISCONSIN LOCATED IN PROXIMITY (1/2 TO 3/4 MILE) TO THE FREEWAY SYSTEM: 2000



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

Table C-4

COMPARISON OF TOTAL MINORITY POPULATIONS AND FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN AND THE MINORITY POPULATIONS AND FAMILIES IN POVERTY THAT RESIDE IN AREAS LOCATED IN PROXIMITY TO FREEWAYS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN[a]

KENOSHA COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	149,577	8,629	5.8	3,190	80	2.5
American Indian and Alaskan Native Persons	149,577	1,314	0.9	3,190	30	0.9
Asian and Pacific Islander Persons	149,577	1,930	1.3	3,190	70	2.2
Other Minority Persons	149,577	5,990	4.0	3,190	40	1.3
Hispanic Persons	149,577	10,757	7.2	3,190	110	3.4
Families in Poverty	38,671	2,094	5.4	3,690	90	2.4

MILWAUKEE COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	940,164	240,113	25.5	203,510	45,510	22.4
American Indian and Alaskan Native Persons	940,164	11,907	1.3	203,510	2,530	1.2
Asian and Pacific Islander Persons	940,164	28,930	3.1	203,510	5,970	2.9
Other Minority Persons	940,164	48,227	5.1	203,510	12,210	6.0
Hispanic Persons	940,164	82,406	8.8	203,510	22,710	11.2
Families in Poverty	226,685	26,454	11.7	54,490	6,470	11.9

Table C-4 (continued)

COMPARISON OF TOTAL MINORITY POPULATIONS AND FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN AND THE MINORITY POPULATIONS AND FAMILIES IN POVERTY THAT RESIDE IN AREAS LOCATED IN PROXIMITY TO FREEWAYS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN[a]

OZAUKEE COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	82,317	917	1.1	8,170	200	2.4
American Indian and Alaskan Native Persons	82,317	335	0.4	8,170	30	0.4
Asian and Pacific Islander Persons	82,317	1,131	1.4	8,170	200	2.4
Other Minority Persons	82,317	382	0.5	8,170	40	0.5
Hispanic Persons	82,317	1,073	1.3	8,170	110	1.3
Families in Poverty	23,153	391	1.7	5,800	80	1.4

RACINE COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	188,831	21,100	11.2	2,460	10	0.4
American Indian and Alaskan Native Persons	188,831	1,448	0.8	2,460	20	0.8
Asian and Pacific Islander Persons	188,831	1,885	1.0	2,460	10	0.4
Other Minority Persons	188,831	8,168	4.3	2,460	20	0.8
Hispanic Persons	188,831	14,990	7.9	2,460	50	2.0
Families in Poverty	50,052	2,908	5.8	2,230	50	2.2

Table C-4 (continued)

COMPARISON OF TOTAL MINORITY POPULATIONS AND FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN AND THE MINORITY POPULATIONS AND FAMILIES IN POVERTY THAT RESIDE IN AREAS LOCATED IN PROXIMITY TO FREEWAYS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN[a]

WALWORTH COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	93,759	983	1.0	- -	- -	- -
American Indian and Alaskan Native Persons	93,759	495	0.5	- -	- -	- -
Asian and Pacific Islander Persons	93,759	859	0.9	- -	- -	- -
Other Minority Persons	93,759	2,946	3.1	- -	- -	- -
Hispanic Persons	93,759	6,136	6.5	- -	- -	- -
Families in Poverty	23,388	1,078	4.6	- -	- -	- -

WASHINGTON COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	117,493	641	0.5	5,190	70	1.3
American Indian and Alaskan Native Persons	117,493	587	0.5	5,190	10	0.2
Asian and Pacific Islander Persons	117,493	938	0.8	5,190	50	1.0
Other Minority Persons	117,493	659	0.6	5,190	20	0.4
Hispanic Persons	117,493	1,529	1.3	5,190	50	1.0
Families in Poverty	32,953	867	2.6	2,970	30	1.0

Table C-4 (continued)

COMPARISON OF TOTAL MINORITY POPULATIONS AND FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN AND THE MINORITY POPULATIONS AND FAMILIES IN POVERTY THAT RESIDE IN AREAS LOCATED IN PROXIMITY TO FREEWAYS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN[a]

WAUKESHA COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/African American Persons	360,767	3,480	1.0	33,970	440	1.3
American Indian and Alaskan Native Persons	360,767	1,733	0.5	33,970	120	0.4
Asian and Pacific Islander Persons	360,767	6,497	1.8	33,970	1,030	3.0
Other Minority Persons	360,767	4,013	1.1	33,970	210	0.6
Hispanic Persons	360,767	9,503	2.6	33,970	550	1.6
Families in Poverty	101,008	1,674	1.7	14,680	260	1.8

REGION

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	1,932,908	275,863	14.3	256,490	46,310	18.1
American Indian and Alaskan Native Persons	1,932,908	17,819	0.9	256,490	2,740	1.1
Asian and Pacific Islander Persons	1,932,908	42,170	2.2	256,490	7,330	2.9
Other Minority Persons	1,932,908	70,385	3.6	256,490	12,540	4.9
Hispanic Persons	1,932,908	126,394	6.5	256,490	23,580	9.2
Families in Poverty	495,910	35,466	7.2	83,860	6,980	8.3

[a]*The information regarding racial and ethic populations in affected areas is year 2000 Census data for the Census blocks located in proximity (1/2 to 3/4 mile) to a freeway proposed to be widened under the preliminary freeway system reconstruction plan. The information regarding families in poverty is year 2000 Census data for the Census block groups located in proximity to a freeway proposed to be widened under the preliminary freeway system reconstruction plan.*

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

Maps C-8 through C-12 present information for each minority population which compares the location of freeways, including those proposed to be widened under the preliminary freeway system reconstruction plan, to the locations of areas with concentrations of minority populations, specifically, census blocks which exceed the seven county regional average of percentage of total population that is of a specific minority population or is low income. The American Indian and Alaska Native and Asian and Pacific Islander populations are located throughout the Region. The Hispanic and Other Minority populations have concentrations in the near south side of Milwaukee, and the Cities of Kenosha, Racine, and Waukesha, and as well, are located throughout the Region. The Black/African American population is primarily located in northern and northwestern Milwaukee County and in eastern Kenosha and Racine Counties. Map C-13 shows the location of concentrations of combined minority populations—Black/African American, American Indian and Alaska Native, Asian and Pacific Islander, Hispanic, and Other Minority—specifically, census blocks which exceed the regional average of percentage of the total population that is minority population. Map C-14 shows the location of concentrations of low income families within southeastern Wisconsin in comparison to the freeway system, including the segments of the freeway system proposed to be widened. While some segments of the freeway system, including those proposed to be widened, are located adjacent to individual and combined total minority and low income populations, the vast majority of the freeway system and the freeway segments proposed to be widened are not located adjacent to minority populations, and the vast majority of census blocks identified as having an above average concentration of a minority population are not located adjacent to a freeway or a freeway proposed to be widened under the preliminary plan. Table C-5 displays the total number of census blocks within the Region and each county, and, as well, the number and percent of census blocks in each county and Region which have above regional average concentrations of minority populations. Table C-6 displays the number of census blocks adjacent to, or traversed by, the freeway system in southeastern Wisconsin, along with the number and percent of those census blocks which have above regional average concentrations of minority populations. Comparison of Tables C-5 and C-6 indicates that the percentage of census blocks adjacent to the freeway system, including segments proposed to be widened, which have above regional average concentrations of minorities is, in almost all cases, less than the percentage of census blocks in each county and the Region which have above regional average concentrations of minorities. This analysis indicates there is not an over-population of minority populations in each county or the Region in areas adjacent to the freeway, or adjacent to the freeways proposed to be widened under the preliminary plan.

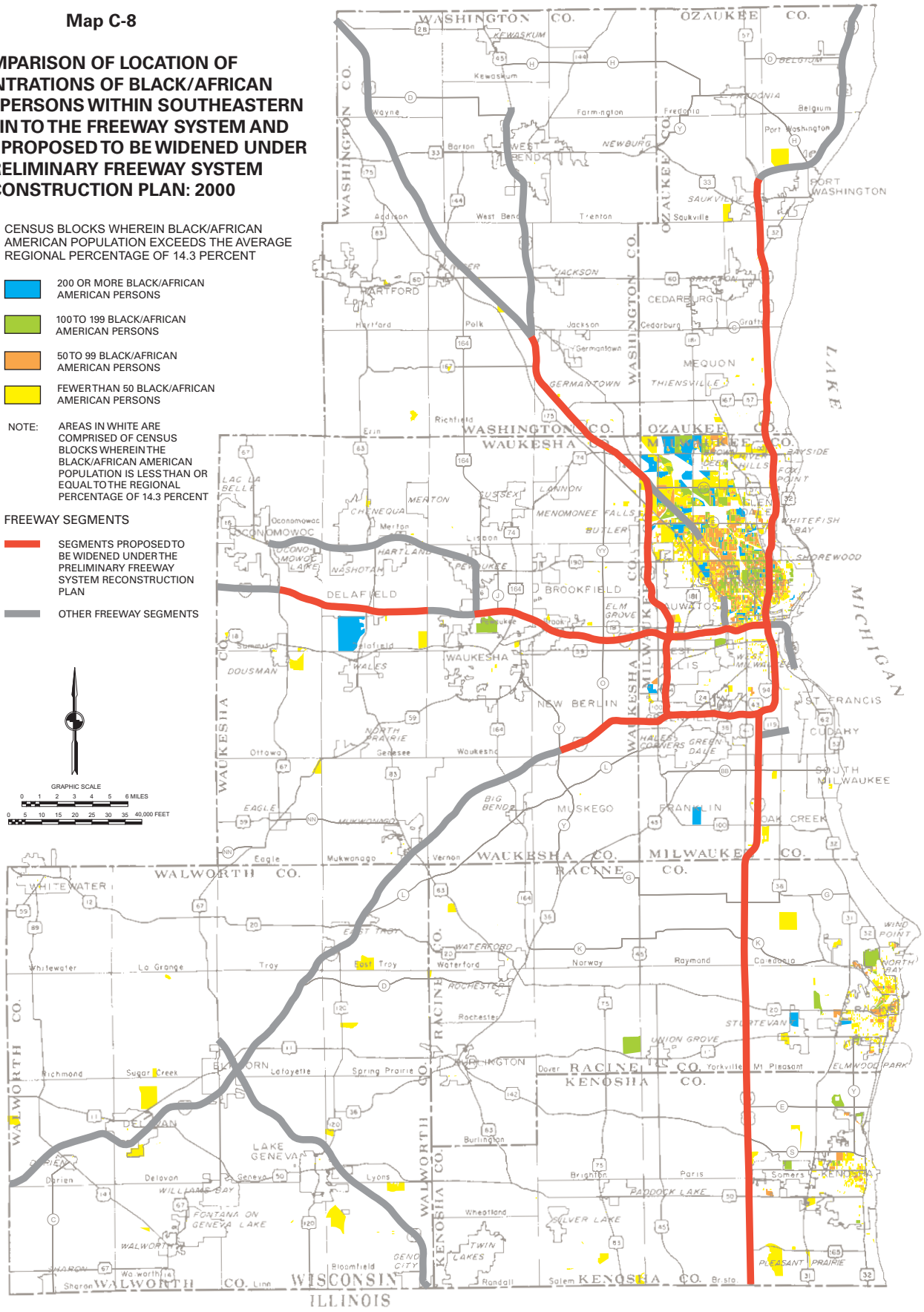
An analysis was conducted to determine by county, and for the Region, the extent to which the estimated right-of-way acquisition impacts of the preliminary plan were located in areas with minority and low income population concentrations. An estimate was prepared of the potential right-of-way acquisition associated with rebuilding the freeway system to modern design standards as recommended under the preliminary plan, and also rebuilding the freeway system with 127 miles of additional lanes as recommended under the preliminary plan. The estimated right-of-way requirements associated with rebuilding to modern design standards are substantially greater than the estimated right-of-way requirements associated with the 127 miles of additional lanes included in the preliminary freeway system reconstruction plan. The incremental right-of-way acquisition needs attendant to rebuilding the freeway system with 127 miles of additional lanes is an estimated 81 acres, 50 residences, eight commercial/industrial buildings, and one governmental/institutional building. The estimated right-of-way requirements associated with rebuilding the freeway system to modern design standards is 577 acres of land, 166 residences, 23 commercial/industrial buildings, and two governmental/ institutional buildings.

An analysis was conducted to determine by county, and for the Region, the extent to which the estimated residential and commercial/industrial right-of-way acquisition impacts were located in areas with above average concentrations of minority and low income populations. Tables C-7 through C-13 present the estimated residential and commercial/industrial right-of-way requirements by county for the five minority populations and the low income population.

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 14.3 percent of the total population) of Black/African American persons is 13.4 percent and 6.5 percent, respectively. These

Map C-8

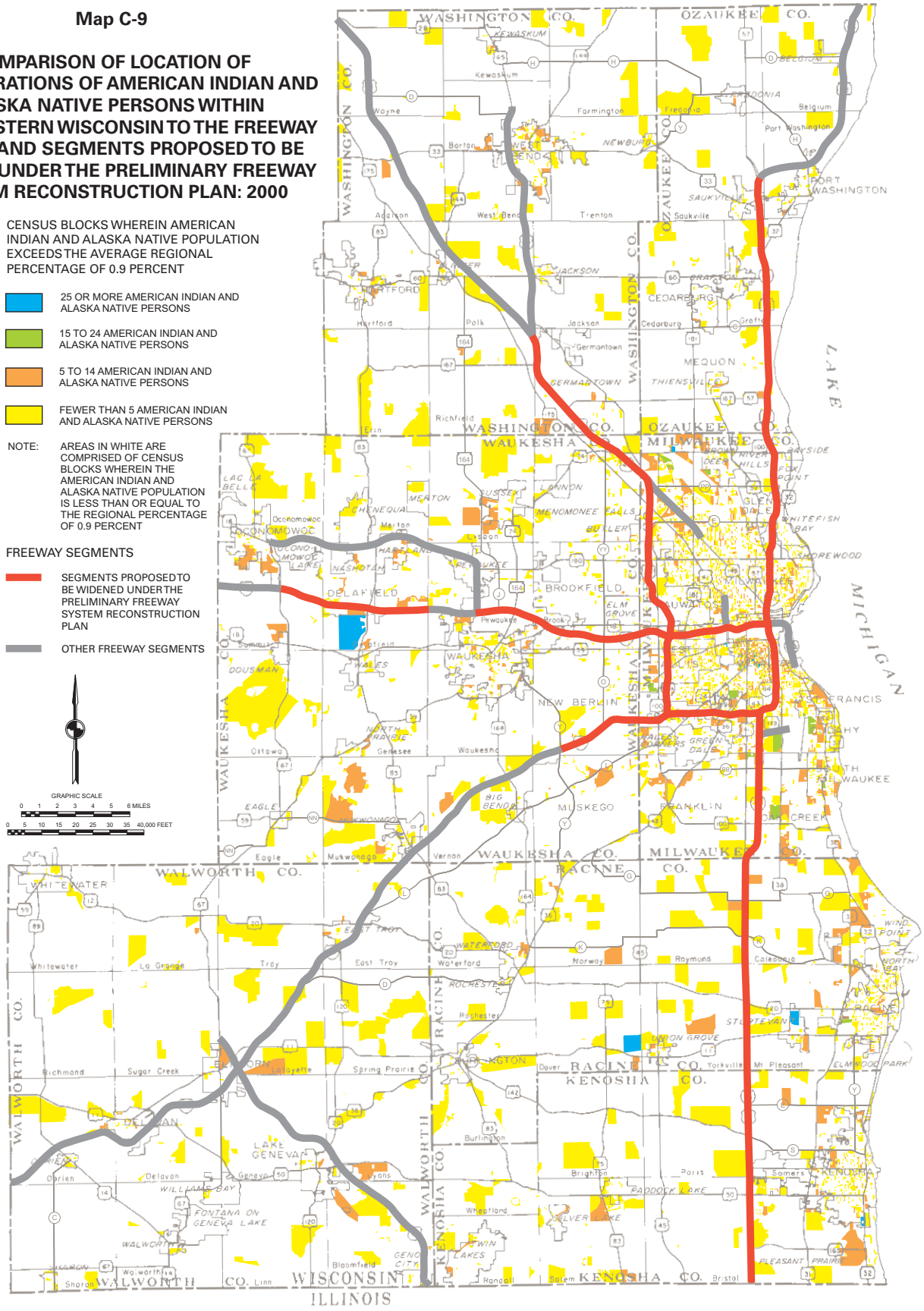
COMPARISON OF LOCATION OF CONCENTRATIONS OF BLACK/AFRICAN AMERICAN PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C-9

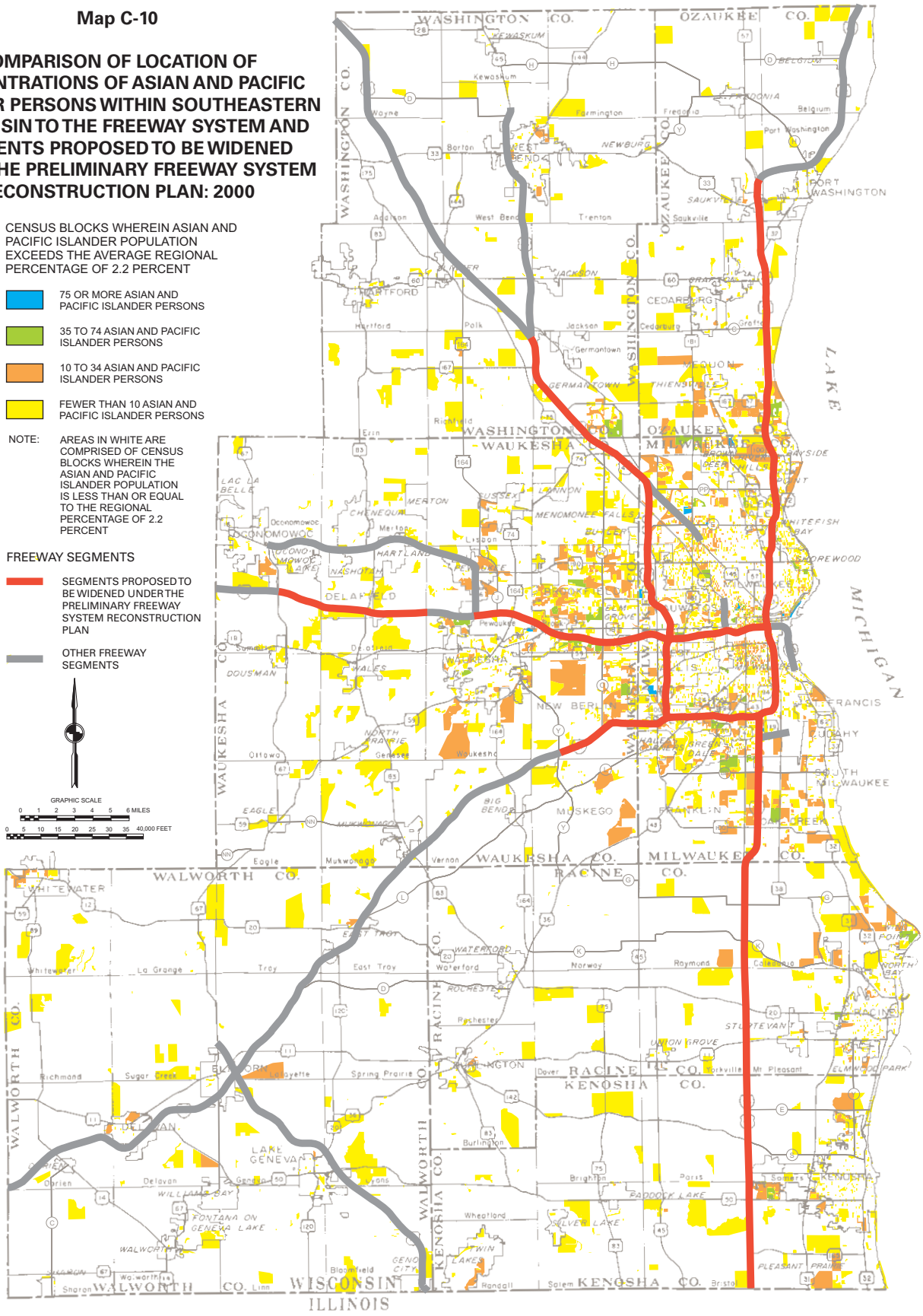
COMPARISON OF LOCATION OF CONCENTRATIONS OF AMERICAN INDIAN AND ALASKA NATIVE PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C-10

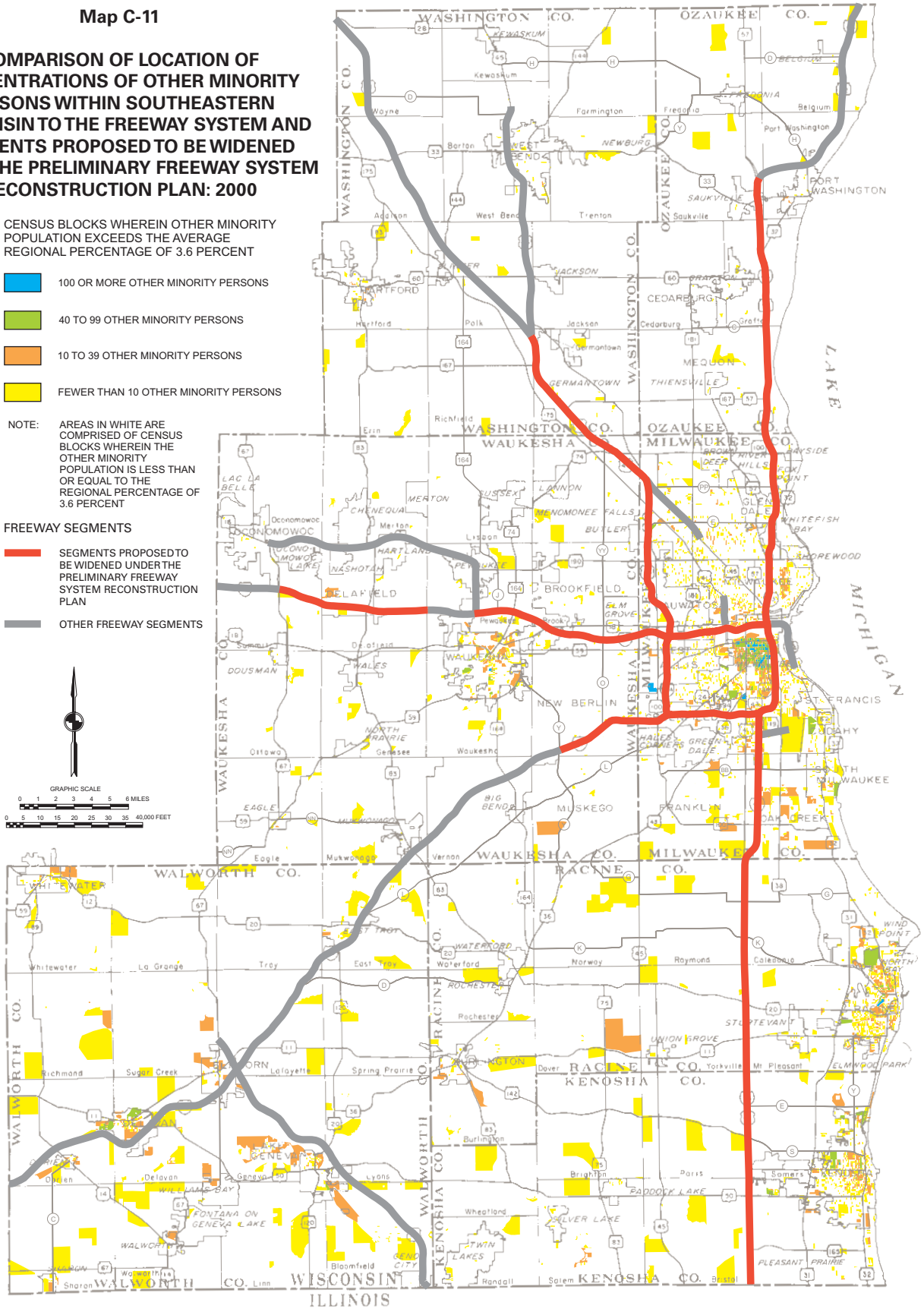
COMPARISON OF LOCATION OF CONCENTRATIONS OF ASIAN AND PACIFIC ISLANDER PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C-11

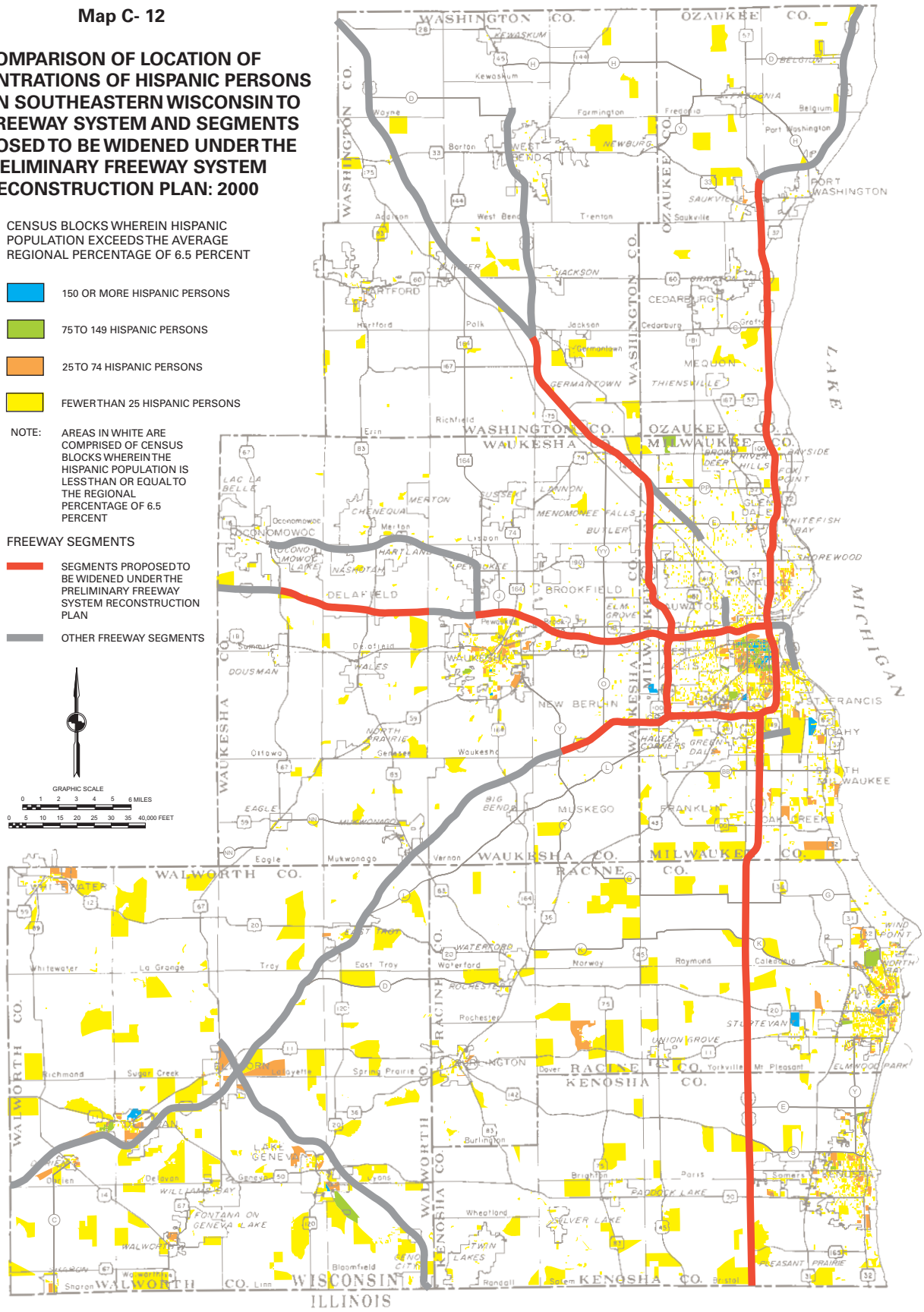
COMPARISON OF LOCATION OF CONCENTRATIONS OF OTHER MINORITY PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C- 12

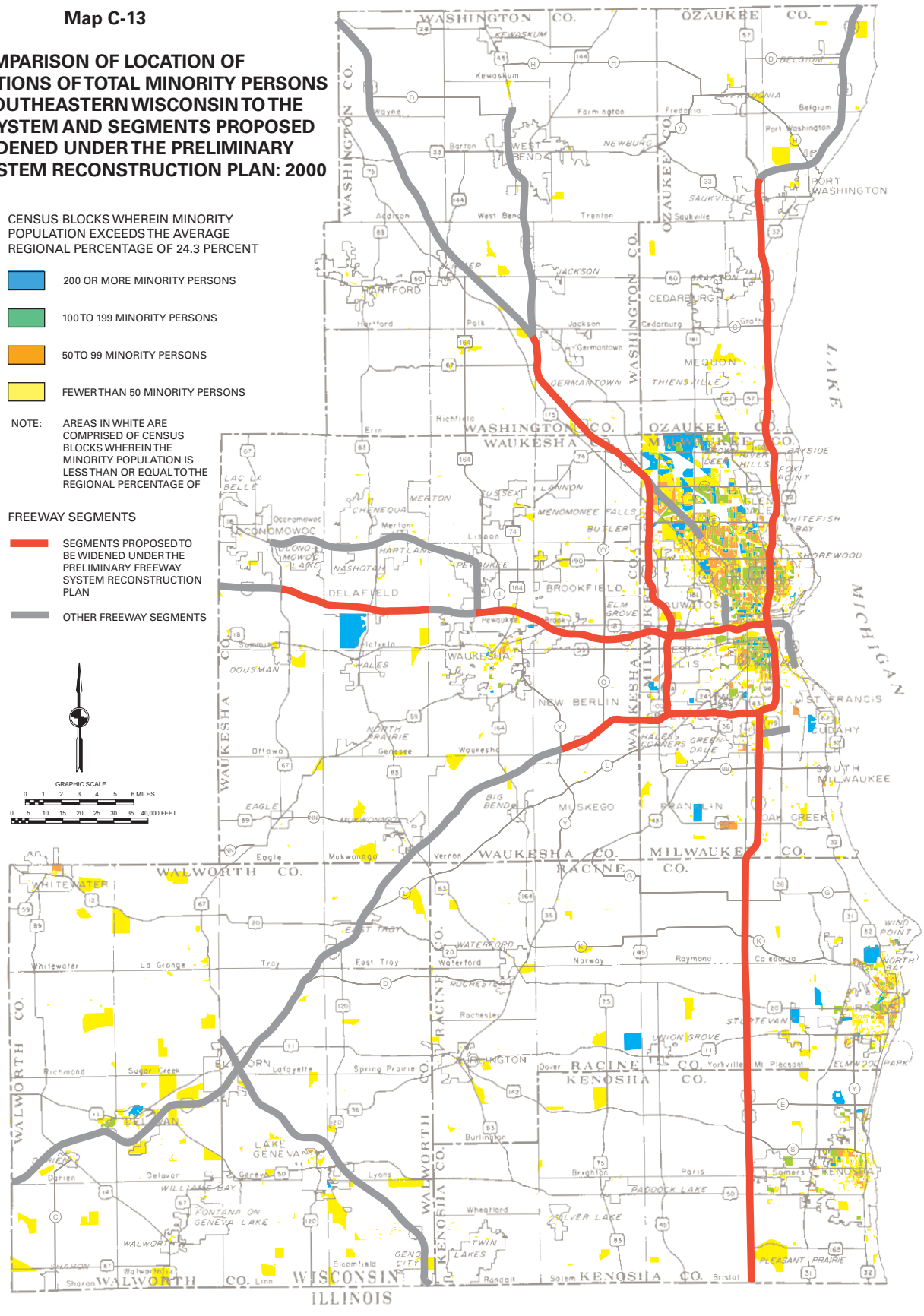
COMPARISON OF LOCATION OF CONCENTRATIONS OF HISPANIC PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C-13

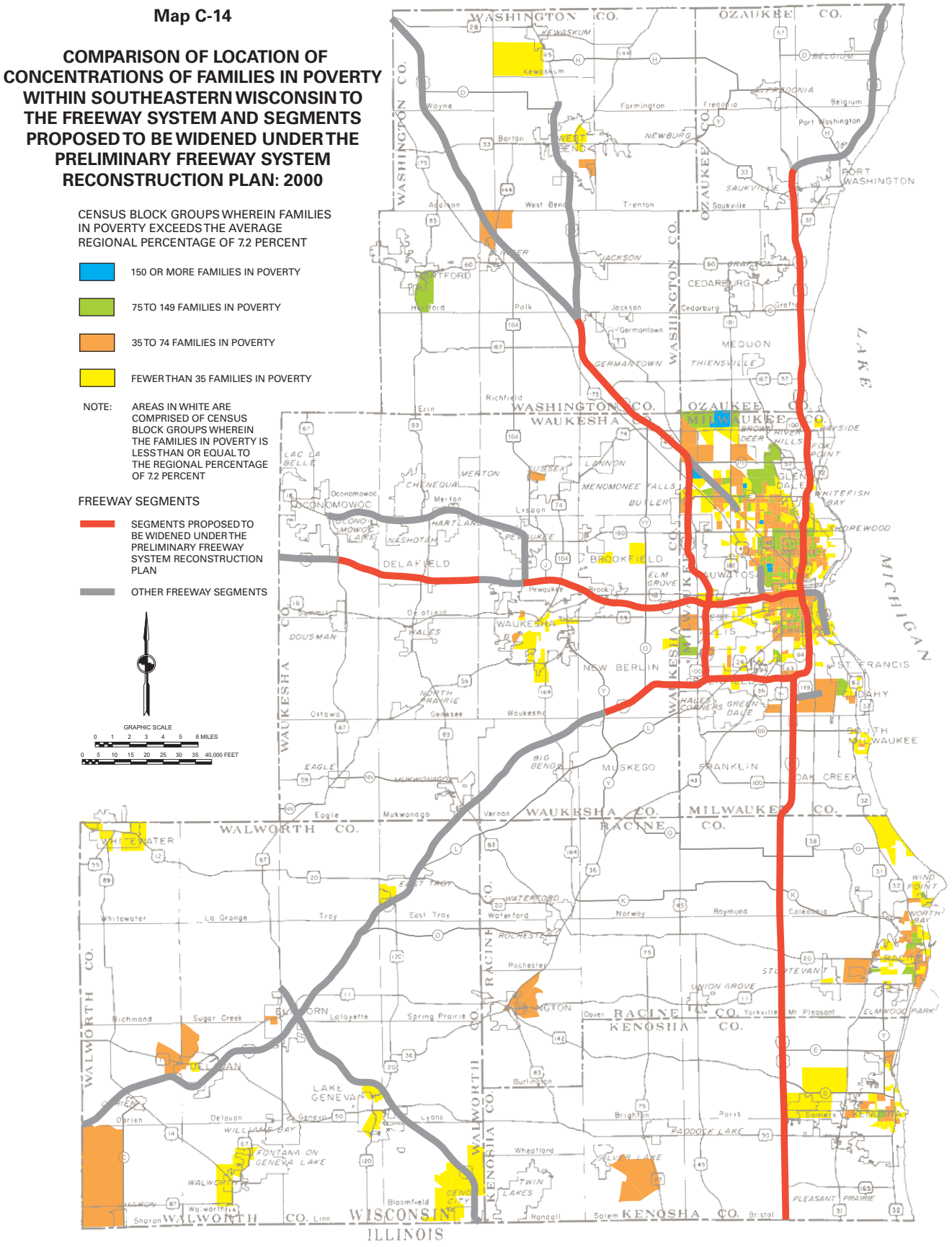
COMPARISON OF LOCATION OF CONCENTRATIONS OF TOTAL MINORITY PERSONS WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Map C-14

COMPARISON OF LOCATION OF CONCENTRATIONS OF FAMILIES IN POVERTY WITHIN SOUTHEASTERN WISCONSIN TO THE FREEWAY SYSTEM AND SEGMENTS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN: 2000



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

Table C-5

NUMBER AND PERCENT OF CENSUS BLOCKS/ BLOCK GROUPS WITHIN THE SOUTHEASTERN WISCONSIN REGION WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS

County	Total Number of Census Blocks	Census Blocks with Above Regional Average Concentrations of Minority Populations: 2000												Total Number of Census Block Groups: 2000	Census Block Groups with Above Average Concentration of Families in Poverty: 2000	
		Black/African American		American Indian and Alaskan Native		Asian and Pacific Islander		Other Minority		Hispanic		Total Minority Populations				
		Number	Percent of County/ Region Total	Number	Percent of County/ Region Total	Number	Percent of County/ Region Total	Number	Percent of County/ Region Total	Number	Percent of County/ Region Total	Number	Percent of County/ Region Total		Number	Percent of County/ Region Total
Kenosha	3,123	229	7.3	433	13.9	313	10.0	545	17.5	684	21.9	423	13.5	127	33	26.0
Milwaukee	12,447	3,226	25.9	3,039	24.4	2,844	22.8	2,283	18.3	2,503	20.1	4,117	33.1	880	435	49.4
Ozaukee	1,832	24	1.3	124	6.8	193	10.5	49	2.7	74	4.0	57	3.1	58	- -	- -
Racine	3,516	498	14.2	488	13.9	310	8.8	722	20.5	878	25.0	667	19.0	167	50	30.0
Walworth	3,445	42	1.2	184	5.3	163	4.7	327	9.5	465	13.5	254	7.4	86	17	19.8
Washington	2,376	11	0.5	204	8.6	156	6.6	72	3.0	95	4.0	35	1.5	79	7	8.9
Waukesha	6,663	45	0.7	557	8.4	893	13.4	316	4.7	483	7.2	219	3.3	254	16	6.3
Region	33,402	4,075	12.2	5,029	15.1	4,872	14.6	4,314	12.9	5,182	15.5	5,772	17.3	1,651	558	33.8

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

Table C-6

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS: 2000

BLACK/AFRICAN AMERICAN PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Black/African American Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	1	1.2	- -	- -	1	1.2
Milwaukee	12,447	755	148	903	80	10.6	43	29.1	123	13.6
Ozaukee	1,832	81	54	135	4	4.9	1	1.9	5	3.7
Racine	3,516	78	- -	78	- -	- -	- -	- -	- -	- -
Walworth	3,445	- -	226	226	- -	- -	1	0.4	1	0.4
Washington	2,376	43	149	192	1	2.3	3	2.0	4	2.1
Waukesha	6,663	212	184	396	1	0.5	- -	- -	1	0.3
Region Total	33,402	1,254	761	2,015	87	6.9	48	6.3	135	6.7

AMERICAN INDIAN AND ALASKA NATIVE PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of American Indian and Alaska Native Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	4	4.7	- -	- -	4	4.7
Milwaukee	12,447	755	148	903	114	15.1	22	14.9	136	15.1
Ozaukee	1,832	81	54	135	5	6.2	1	1.9	6	4.4
Racine	3,516	78	- -	78	7	9.0	- -	- -	7	9.0
Walworth	3,445	- -	226	226	- -	- -	9	4.0	9	4.0
Washington	2,376	43	149	192	- -	- -	11	7.4	11	5.7
Waukesha	6,663	212	184	396	12	5.7	7	3.8	19	4.8
Region Total	33,402	1,254	761	2,015	142	11.3	50	6.6	192	9.5

Table C-6 (continued)

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS: 2000 (108 MILES OF FREEWAY WIDENING)

ASIAN AND PACIFIC ISLANDER PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Asian and Pacific Islander Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	2	2.4	- -	- -	2	2.4
Milwaukee	12,447	755	148	903	113	15.0	17	11.5	130	14.4
Ozaukee	1,832	81	54	135	4	4.9	1	1.9	5	3.7
Racine	3,516	78	- -	78	1	1.3	- -	- -	1	1.3
Walworth	3,445	- -	226	226	- -	- -	3	1.3	3	1.3
Washington	2,376	43	149	192	2	4.7	5	3.4	7	3.6
Waukesha	6,663	212	184	396	25	11.8	11	6.0	36	9.1
Region Total	33,402	1,254	761	2,015	147	11.7	37	4.9	184	9.1

OTHER MINORITY PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Other Minority Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	1	1.2	- -	- -	1	1.2
Milwaukee	12,447	755	148	903	89	11.8	12	8.1	101	11.2
Ozaukee	1,832	81	54	135	1	1.2	4	7.4	5	3.7
Racine	3,516	78	- -	78	2	2.6	- -	- -	2	2.6
Walworth	3,445	- -	226	226	- -	- -	10	4.4	10	4.4
Washington	2,376	43	149	192	- -	- -	3	2.0	3	1.6
Waukesha	6,663	212	184	396	5	2.4	- -	- -	5	1.3
Region Total	33,402	1,254	761	2,015	98	7.8	29	3.8	127	6.3

Table C-6 (continued)

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS: 2000 (108 MILES OF FREEWAY WIDENING)

HISPANIC PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Hispanic Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	5	5.9	- -	- -	5	5.9
Milwaukee	12,447	755	148	903	105	13.9	12	8.1	117	13.0
Ozaukee	1,832	81	54	135	2	2.5	3	5.6	5	3.7
Racine	3,516	78	- -	78	3	3.8	- -	- -	3	3.8
Walworth	3,445	- -	226	226	- -	- -	11	4.9	11	4.9
Washington	2,376	43	149	192	- -	- -	2	1.3	2	1.0
Waukesha	6,663	212	184	396	7	3.3	2	1.1	9	2.3
Region Total	33,402	1,254	761	2,015	122	9.7	30	3.9	152	7.5

TOTAL MINORITY PERSONS

County	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Total Minority Persons[a] and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
Kenosha	3,123	85	- -	85	2	2.4	- -	- -	2	2.4
Milwaukee	12,447	755	148	903	131	17.4	42	28.4	173	19.2
Ozaukee	1,832	81	54	135	4	4.9	1	1.9	5	3.7
Racine	3,516	78	- -	78	- -	- -	- -	- -	- -	- -
Walworth	3,445	- -	226	226	- -	- -	2	0.9	2	0.9
Washington	2,376	43	149	192	1	2.3	3	2.0	4	2.1
Waukesha	6,663	212	184	396	4	1.9	2	1.1	6	1.5
Region Total	33,402	1,254	761	2,015	142	11.3	50	6.6	192	9.5

[a] *The total minority population represents all persons identified as a member of a racial minority group-Black/African American persons, American Indian and Alaska Native persons, Asian and Pacific Islander persons, and other minority persons-and Hispanic persons not identified as members of a racial minority group.*

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

Table C-7

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE-AVERAGE REGIONAL CONCENTRATIONS OF BLACK/AFRICAN AMERICAN PERSONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	14	- -	- -	- -	- -	- -	14	- -	- -
Milwaukee	131	21	16.0	46	7	15.2	177	28	15.8
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	- -	- -	- -	- -	- -	10	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	1	1	100.0	2	1	50.0
Waukesha	10	- -	- -	3	- -	- -	13	- -	- -
Region	166	21	12.7	50	8	16.0	216	29	13.4

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	5	- -	- -	- -	- -	- -	5	- -	- -
Milwaukee	12	- -	- -	8	2	25.0	20	2	10.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	- -	- -	- -	- -	- -	4	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha	1	- -	- -	- -	- -	- -	1	- -	- -
Region	23	- -	- -	8	2	25.0	31	2	6.5

[a]In 2000, 14.3 percent of the Region's total population was Black/African American persons. (Black/African American persons represented the following portions of each county's total population: Kenosha County, 5.7 percent; Milwaukee County 25.5 percent; Ozaukee County 1.1 percent; Racine County, 11.2 percent; Walworth County, 1.1 percent; Washington County 0.5 percent; and Waukesha County, 1.0 percent.)

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-8

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF AMERICAN INDIAN AND ALASKAN NATIVE PERSONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations		Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations		Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	14	4	28.6	- -	- -	- -	14	4	- -
Milwaukee.....	131	62	47.3	46	9	19.6	177	71	40.1
Ozaukee.....	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine.....	10	3	30.0	- -	- -	- -	10	3	- -
Walworth.....	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington.....	1	- -	- -	1	- -	- -	2	- -	- -
Waukesha.....	10	- -	- -	3	- -	- -	13	- -	- -
Region	166	69	41.6	50	9	18.0	216	78	36.1

County	Estimated Commercial/Industrial Residential Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations		Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations		Total	Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	5	2	40.0	- -	- -	- -	5	2	40.0
Milwaukee.....	12	4	33.3	8	- -	- -	20	4	20.0
Ozaukee.....	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine.....	4	1	25.0	- -	- -	- -	4	1	25.0
Walworth.....	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington.....	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha.....	1	- -	- -	- -	- -	- -	1	- -	- -
Region	23	7	30.4	8	- -	- -	31	7	22.6

[a]In 2000, American Indian and Alaskan Native Persons represented 0.9 percent of the Region's total population. American Indian and Alaskan Native Persons represented the following portions of each county's total population: Kenosha County, 0.9 percent; Milwaukee County 1.3 percent; Ozaukee County 0.4 percent; Racine County, 0.8 percent; Walworth County, 0.5 percent; Washington County 0.5 percent; and Waukesha County, 0.5 percent.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-9

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF ASIAN AND PACIFIC ISLANDER PERSONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	14	- -	- -	- -	- -	- -	14	- -	- -
Milwaukee	131	42	32.1	46	17	37.0	177	59	33.3
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	3	30.0	- -	- -	- -	10	3	30.0
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	1	- -	- -	2	- -	- -
Waukesha	10	9	90.0	3	3	100.0	13	12	92.3
Region	166	54	32.5	50	20	40.0	216	74	34.3

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	5	- -	- -	- -	- -	- -	5	- -	- -
Milwaukee	12	3	25.0	8	1	12.5	20	4	20.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	- -	- -	- -	- -	- -	4	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha	1	1	100.0	- -	- -	- -	1	1	- -
Region	23	4	17.4	8	1	12.5	31	5	16.1

[a]In 2000, Asian and Pacific Islander persons represented 2.2 percent of the Region's total population. Asian and Pacific Islander persons represented the following portions of each county's total population: Kenosha County, 1.3 percent; Milwaukee County 3.1 percent; Ozaukee County 1.3 percent; Racine County, 1.0 percent; Walworth County, 1.0 percent; Washington county 0.8 percent; and Waukesha County, 1.8 percent.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-10

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF OTHER MINORITY PERSONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
Kenosha	14	- -	- -	- -	- -	- -	14	- -	- -
Milwaukee	131	29	22.1	46	9	19.6	177	38	21.5
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	- -	- -	- -	- -	- -	10	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	1	- -	- -	2	- -	- -
Waukesha	10	1	10.0	3	- -	- -	13	1	7.7
Region	166	30	18.1	50	9	18.0	216	39	18.1

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
Kenosha	5	1	20.0	- -	- -	- -	5	1	20.0
Milwaukee	12	1	8.3	8	- -	- -	20	1	5.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	- -	- -	- -	- -	- -	4	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha	1	1	100.0	- -	- -	- -	1	1	100.0
Region	23	3	13.0	8	- -	- -	31	3	9.7

[a]In 2000, Other Minority persons represented 3.6 percent of the Region's total population. Other Minority persons represented the following portions of each county's total population: Kenosha County, 4.0 percent; Milwaukee County 5.1 percent; Ozaukee County 0.5 percent; Racine County, 4.3 percent; Walworth County, 3.1 percent; Washington County 0.6 percent; and Waukesha County, 1.1 percent.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-11

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF HISPANIC PERSONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	14	2	14.3	- -	- -	- -	14	2	14.3
Milwaukee	131	22	16.8	46	9	19.6	177	31	17.5
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	2	20.0	- -	- -	- -	10	2	20.0
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	1	- -	- -	2	- -	- -
Waukesha	10	- -	- -	3	- -	- -	13	- -	- -
Region	166	26	15.7	50	9	18.0	216	35	16.2

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons		Total	Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	5	3	60.0	- -	- -	- -	5	3	60.0
Milwaukee	12	4	33.3	8	- -	- -	20	4	20.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	2	50.0	- -	- -	- -	4	2	50.0
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha	1	- -	- -	- -	- -	- -	1	- -	- -
Region	23	9	39.1	8	- -	- -	31	9	29.0

[a]In 2000, Hispanic persons represented 6.5 percent of the Region's total persons. Hispanic persons represented the following portions of each county's total population: Kenosha County, 7.2 percent; Milwaukee County 8.8 percent; Ozaukee County 1.3 percent; Racine County, 8.2 percent; Walworth County, 6.5 percent; Washington County 1.3 percent; and Waukesha County, 2.6 percent.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-12

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF TOTAL MINORITY POPULATIONS[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
Kenosha	14	- -	- -	- -	- -	- -	14	- -	- -
Milwaukee	131	44	33.6	46	10	21.7	177	54	30.5
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	- -	- -	- -	- -	- -	10	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	1	- -	- -	2	- -	- -
Waukesha	10	- -	- -	3	- -	- -	13	- -	- -
Region	166	44	26.5	50	10	20.0	216	54	25.0

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
Kenosha	5	- -	- -	- -	- -	- -	5	- -	- -
Milwaukee	12	1	8.3	8	- -	- -	20	1	5.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	- -	- -	- -	- -	- -	4	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	- -	- -	- -	- -	- -	1	- -	- -
Waukesha	1	- -	- -	- -	- -	- -	1	- -	- -
Region	23	1	4.3	8	- -	- -	31	1	3.2

[a]Persons defined as being a member of a minority group were Black/African American persons; American Indian and Alaskan Native persons; Asian and Pacific Islander persons, Other Minority persons; and/or Hispanic persons. In 2000, 24.3 percent of the Region's total population was of a minority population. The total minority populations represented the following portions of each county's total population: Kenosha County, 15.7 percent; Milwaukee County 39.1 percent; Ozaukee County 4.3 percent; Racine County, 21.2 percent; Walworth County, 9.5 percent; Washington County 3.3 percent; and Waukesha County, 6.1 percent.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

Source: HNTB and SEWRPC.

Table C-13

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF FAMILIES IN POVERTY[a]

County	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty		Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty		Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	14	- -	- -	- -	- -	- -	14	- -	- -
Milwaukee	131	53	40.5	46	3	6.5	177	56	31.6
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	10	- -	- -	- -	- -	- -	10	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	1	100.0	1	- -	- -	2	1	50.0
Waukesha	10	- -	- -	3	- -	- -	13	- -	- -
Region	166	54	32.5	50	3	6.0	216	57	26.4

County	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
	Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty		Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty		Total	Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty	
		Number	Percent of All Relocations		Number	Percent of All Relocations		Number	Percent of All Relocations
Kenosha	5	- -	- -	- -	- -	- -	5	- -	- -
Milwaukee	12	8	66.7	8	5	62.5	20	13	65.0
Ozaukee	- -	- -	- -	- -	- -	- -	- -	- -	- -
Racine	4	- -	- -	- -	- -	- -	4	- -	- -
Walworth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Washington	1	1	100.0	- -	- -	- -	1	1	100.0
Waukesha	1	- -	- -	- -	- -	- -	1	- -	- -
Region	23	9	39.1	8	5	62.5	31	14	45.2

[a] *Families with incomes below the Federally-defined poverty level were defined as families in poverty and of low income. In 2000, 7.2 percent of the Region's total families were families with income below the Federally-defined poverty level. Families in poverty represented the following portions of each county's total families: Kenosha County, 5.4 percent; Milwaukee County 11.7 percent; Ozaukee County 1.7 percent; Racine County, 5.8 percent; Walworth County 4.6 percent; Washington County 2.6 percent; and Waukesha County, 1.7 percent.*

[b] *A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.*

Source: HNTB and SEWRPC.

percentages are about the same as the percentage of census blocks in the Region—12.2 percent—which have above average concentrations of Black/African American persons (see Table C-5).

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 0.9 percent of total population) of American Indian and Alaska Native persons is 36.6 percent and 22.6 percent, respectively. These percentages are greater than the percentage of census blocks in the Region—15.1 percent—with above regional average concentrations of American Indian and Alaska Native persons, that is, more than 0.9 percent of the total population in the census block were American Indian or Alaskan Native persons. However, of the 78 residences estimated to need to be acquired under the preliminary plan within census blocks with above regional average (0.9 percent of total population) concentrations of American Indian and Alaska Native persons, 58 residences or 74 percent would be located within census blocks with less than 3.0 percent American Indian or Alaska Native populations, 17 residences, or 22 percent, would be located within census block with between 3.0 and 6.1 percent American Indian and Alaska Native population, and three residences, or 4 percent, would be located within census blocks with 13.1 percent American Indian and Alaska Native persons. Also, of the 78 residences estimated to need to be acquired under the preliminary plan with above regional average concentrations (more than 0.9 percent to total population) of American Indian and Alaska Native populations, 69, or 88 percent, are attendant to rebuilding the freeway system to modern design standards and only 9, or 12 percent, are attendant to additional lanes.

With respect to the seven businesses estimated to need to be acquired under the preliminary plan in census blocks with above regional average concentrations (more than 0.9 percent of total population) of American Indian and Alaska Native persons, all of the seven businesses would need to be acquired due to rebuilding the freeway system to modern design standards, and none are attributable to rebuilding the freeway system with additional lanes. All of the seven businesses would be located within census blocks with between 2.0 and 4.0 percent American Indian and Alaska Native population.

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 2.2 percent of the total population) of Asian and Pacific Islander persons is 34.3 percent and 16.1 percent, respectively. The percentage of blocks within the Region with above regional average concentrations of Asian and Pacific Islander persons is 14.6 percent. The percentage—34.3 percent—of residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of Asian and Pacific Islander persons exceeds the percentage—14.6 percent—of census blocks within the Region with above regional average concentrations of Asian and Pacific Islander persons, while the percentage—16.1 percent—of businesses to be acquired under the preliminary plan within census blocks with above regional average concentrations of Asian and Pacific Islander persons is about the same as the percentage—14.6 percent—of census blocks within the Region with above regional average concentrations of Asian and Pacific Islander persons. With respect to the estimated 74 residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of Asian and Pacific Islander persons, 38, or 51 percent, would be located within census blocks with between 2.2 to 5.9 percent Asian and Pacific Islander population, 21, or 28 percent, would be located within census blocks with between 6.0 and 9.0 percent Asian and Pacific Islander population, and 15, or 20 percent, would be located within census blocks with between 10.0 and 14.0 percent Asian and Pacific Islander population. Also, of the 74 residences and 5 businesses estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 2.2 percent of total population) of Asian and Pacific Islander persons, 54, or 73 percent, of the residences and 4, or 80 percent of the businesses would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 3.6 percent of the total population) of Other Minority persons is 18.1 percent and 9.7 percent, respectively. The percentage of blocks within the Region with above regional average concentrations of Other Minority persons is 12.9 percent. Thus,

the percentage of residences—18.1 percent—and businesses—9.7 percent—to be acquired under the preliminary plan within census blocks with above regional average concentrations of Other Minority persons is about the same as the percentage of census blocks within the Region with above regional average concentrations of Other Minority persons—12.9 percent. Of the 39 residences and three businesses estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 3.6 percent of total population) of Other Minority persons, 30, or 77 percent, of the residences and all 3, or 100 percent, of the businesses would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 6.5 percent of total population) of Hispanic persons is 16.2 percent and 29.0 percent, respectively. The percentage of census blocks within the Region with above regional average concentrations of Hispanic persons is 15.5 percent. Thus, the percentage—16.2 percent—of residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of Hispanic persons is about the same as the percentage—15.5 percent—of census blocks within the Region with above regional average concentrations of Hispanic persons, while the percentage—29.0 percent—of businesses to be acquired under the preliminary plan within census blocks with above regional average concentration of Hispanic persons exceeds the percentage—15.5 percent—of census blocks within the Region with above regional average concentrations of Hispanic persons. With respect to the estimated nine businesses to be acquired under the preliminary plan within census blocks with above regional average concentrations of Hispanic persons (more than 6.5 percent of total population), 6, or 67 percent, would be located within census blocks with between 6.5 to 8.5 percent Hispanic population, 2, or 22 percent would be located within census blocks with between 8.5 and 14.0 percent Hispanic population, and 1, or 11 percent would be located with a census block with approximately 90 percent Hispanic population. Also, of the 35 residences and nine businesses estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 6.5 percent of total population) of Hispanic persons, 26, or 74, percent of the residences and all nine, or 100 percent, of the businesses would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

The percentage of residences and businesses within the Region which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 24.3 percent of the total population) of minority persons (Black/African American, Asian and Pacific Islander, American Indian and Alaska Native, Other Minority, and Hispanic) is 25.0 percent and 3.2 percent, respectively (see Table C-12). The percentage of blocks within the Region with above regional average concentrations of the total combined minority population is 17.3 percent. The percentage—25.0 percent—of residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of minority persons exceeds the percentage—17.3 percent—of census blocks within the Region with above regional average concentrations of minority persons, while the percentage—3.2 percent—of businesses to be acquired under the preliminary plan within census blocks with above regional average concentrations of Asian and Pacific Islander persons is less than the percentage—17.3 percent—of census blocks within the Region with above regional average concentrations of minority persons. With respect to the estimated 54 residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of minority persons, 16, or 30 percent, would be located within census blocks with between 24 to 34 percent total combined minority population, 16, or 30 percent, would be located within census blocks with between 35 and 67 percent total combined minority population, and 22, or 20 percent, would be located with census blocks with between 93 and 97 percent minority population. Also, of the 54 residences and one business estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 24.3 percent of total population) of minority persons, 44, or 81 percent, of the residences and the one business, or 100 percent of the businesses, would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

The percentage of residences and business within the Region which will need to be acquired under the preliminary plan within census block groups with above regional average concentrations (more than 7.2 percent

of total families) of low income families is 26.4 percent and 45.2 percent, respectively (see Table C-13). The percentage of census block groups within the Region with above regional average concentrations of low income families is 33.8 percent. Thus, the percentage—26.4 percent—of residences to be acquired under the preliminary plan within census block groups with above regional average concentrations of low income families is less than the percentage—33.8 percent—of census block groups within the Region with above regional average concentrations of low income families, while the percentage—45.2 percent—of businesses to be acquired under the preliminary plan within census blocks with above regional average concentrations of low income families exceeds the percentage—33.8 percent—of census block groups within the Region with above regional average concentrations of low income families. Of the 57 residences and 14 businesses estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 7.2 percent of total families) of low income families, 54, or 95 percent, of the residences and nine, or 64 percent, of the businesses would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

Conclusions

In conclusion, the analysis of potential adverse impacts of the preliminary recommended freeway system reconstruction plan on minority and low income populations does not indicate any significant disproportionate adverse impacts.

- Minority and low income populations are not significantly disproportionately represented in areas in proximity to proposed widened freeways.

- While some segments of the freeway system, including those proposed to be widened, are located adjacent to minority and low income populations, the vast majority of the freeway system and the freeway segments proposed to be widened are not adjacent to minority populations. Also, the vast majority of census blocks having an above average concentration of a minority population are not located adjacent or in proximity to the freeway system, or freeway segments proposed to be widened under the preliminary plan.

- The residences and businesses which are estimated to need to be acquired under the preliminary plan—particularly those required for additional lanes—are not disproportionately located in areas with above county or regional averages of minority or low income populations.

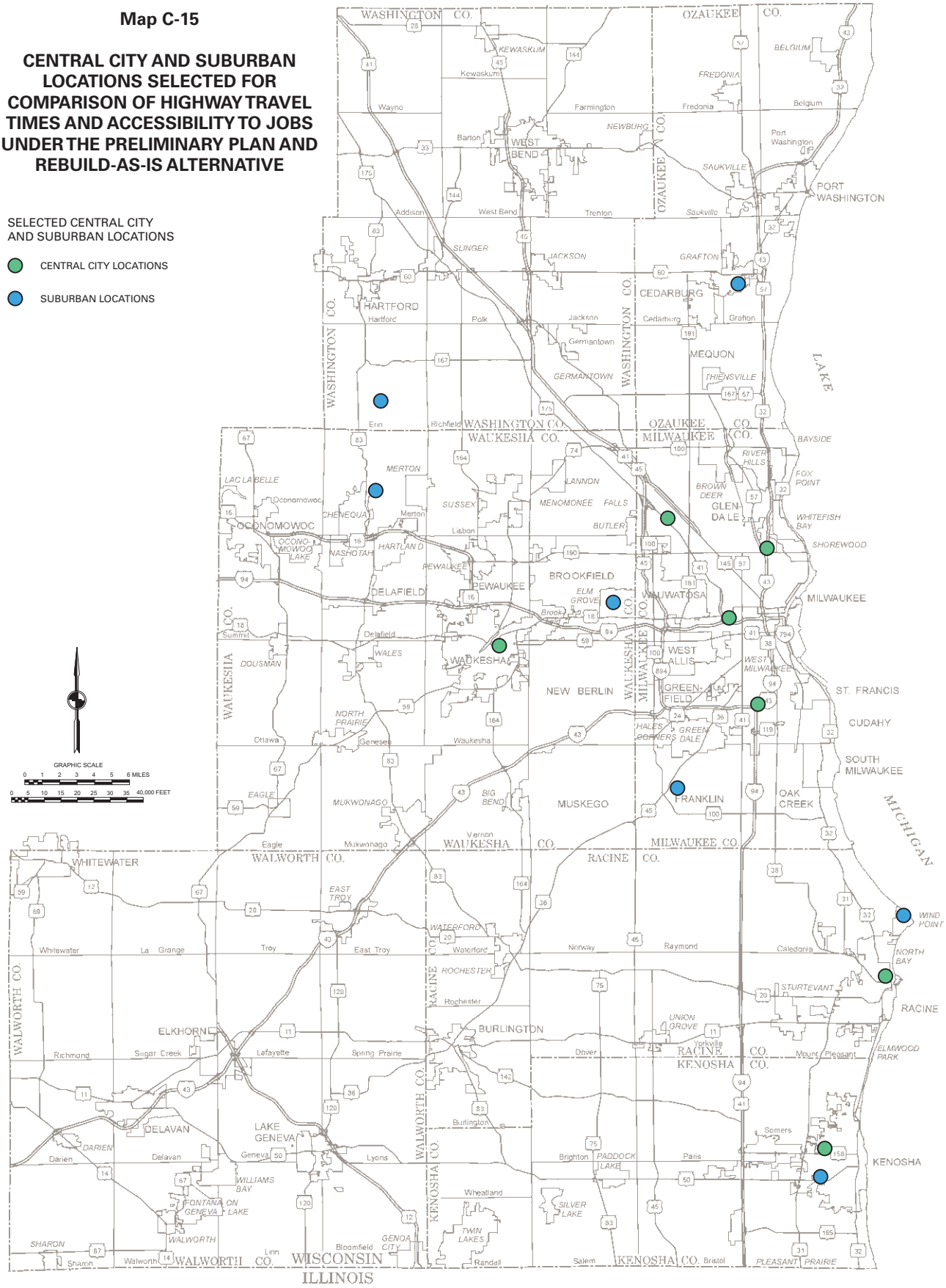
Benefits

The expected benefits of reconstructing the regional freeway system under the preliminary freeway system reconstruction plan include avoiding a forecast near doubling of freeway traffic congestion, with attendant avoidance of substantial increases in travel time. This projected potential to reduce future traffic congestion under the preliminary plan is principally a result of the proposal to reconstruct 127 miles of the freeway with additional lanes under the preliminary plan. The evaluation of expected benefits of the preliminary plan focused on differences in travel times and accessibility attendant to projected reduced congestion between the preliminary plan and an alternative which would rebuild the freeway system as it exists today. Reducing congestion and attendant travel times is also a safety-related issue, as reducing congestion will improve freeway traffic safety. Rear-end collision accident rates are five to 15 times higher on congested freeway segments as compared to uncongested freeway segments, with the highest rear-end collision accident rates on the most extremely congested freeway segments.

Analyses were prepared which compared forecast year 2020 peak traffic hour travel times for areas within southeastern Wisconsin with above regional average concentrations of minority populations to areas with below regional average concentrations of minority populations. The 14 areas selected for comparison are shown on Map C-15 and described in Table C-14. Maps C-16 through C-29 display the forecast peak hour travel times under the preliminary plan and rebuild as-is alternative for the seven selected areas with above regional average concentrations of minority populations and the seven selected areas with below regional average concentrations of minority populations. Compared to the freeway system reconstruction rebuild as-is alternative, the preliminary

Map C-15

CENTRAL CITY AND SUBURBAN LOCATIONS SELECTED FOR COMPARISON OF HIGHWAY TRAVEL TIMES AND ACCESSIBILITY TO JOBS UNDER THE PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE



Source: SEWRPC.

Table C-14

POPULATION CHARACTERISTICS OF CENTRAL CITY AND SUBURBAN LOCATIONS SELECTED FOR COMPARISON OF HIGHWAY TRAVEL TIMES AND ACCESSIBILITY TO JOBS

CENTRAL CITY LOCATIONS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF LOW INCOME AND MINORITY POPULATIONS[a]

Central City Location	Total Population	Black/African American Population		American Indian and Alaska Native Population		Asian and Pacific Islander Population		Other Minority Population		Hispanic Population		Total Minority Population[b]		Total Families	Families in Poverty	
		Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population		Number	Percent of Total Families
Intersection of Appleton Avenue and Silver Spring Drive in the City of Milwaukee (See Map16)	4,040	1,590	39.4	40	1.0	100	2.5	60	1.5	120	3.0	1,860	46.0	1,160	160	13.8
Intersection of 39th Street and St. Paul Avenue in the City of Milwaukee (See Map 17)	1,220	290	23.8	50	4.1	180	14.8	80	6.6	130	10.7	660	54.1	240	40	16.7
Intersection of N. Hartwell Avenue and E. Main Street in the City of Waukesha (See Map 18)	1,830	50	2.7	20	1.1	40	2.2	280	15.3	600	32.8	730	39.9	230	30	13.0
Central Business District of the City of Racine (See Map 19)	2,800	1,220	43.6	50	1.8	20	0.7	700	25.0	920	32.9	2,230	79.6	440	130	29.5
Intersection of 47th Street and STH 158 in the City of Kenosha (See Map 20)	1,480	350	23.6	30	2.0	10	0.7	200	13.5	290	19.6	710	48.0	400	40	10.0
Interchange of IH 43 at Capitol Drive in the City of Milwaukee (See Map 21)	920	860	93.5	10	1.1	20	2.2	10	1.1	10	1.1	890	96.7	230	40	17.4
IH 43/ IH 94 North of the Mitchell Interchange in the City of Milwaukee (See Map 22)	1,440	40	2.8	50	3.5	80	5.6	130	9.0	190	13.2	420	29.2	370	50	13.5
Total	13,730	4,400	32.0	250	1.8	450	3.3	1,460	10.6	2,260	16.5	7,500	54.6	3,070	490	16.0

SUBURBAN LOCATIONS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF LOW INCOME AND MINORITY POPULATIONS[a]

Suburban Location	Total Population	Black/African American Population		American Indian and Alaska Native Population		Asian and Pacific Islander Population		Other Minority Population[c]		Hispanic Population		Total Minority Population[b]		Total Families	Families in Poverty	
		Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population		Number	Percent of Total Families
Intersection of STH 83 and CTH Q in the Town of Erin (See Map 23)	970	- -	- -	10	1.0	10	1.0	10	1.0	10	1.0	30	3.1	440	20	4.5
Intersection of Four Mile Road and Lighthouse Drive in the Village of Wind Point (See Map 24)	1,370	10	0.7	10	0.7	70	5.1	- -	- -	10	0.7	100	7.3	800	20	2.5
Intersection of 69th Street and 46th Avenue in the City of Kenosha (See Map 25)	360	- -	- -	- -	- -	20	5.6	- -	- -	10	2.8	20	5.6	320	10	3.1
Intersection of Highland Drive and Juneau Boulevard in the Village of Elm Grove (See Map 26)	1,330	50	3.8	10	0.8	20	1.5	30	2.3	50	3.8	130	9.8	170	- -	- -
Intersection of CTH O and STH 60 in the Village of Grafton (See Map 27)	2,130	20	0.9	10	0.5	10	0.5	10	0.5	30	1.4	80	3.8	390	10	2.6
Intersection of STH 83 and CTH K in the Village of Chenequa (See Map 28)	2,600	20	0.8	- -	- -	20	0.8	10	0.4	20	0.8	70	2.7	510	10	2.0
Forest Hill Avenue and 88th Street in the City of Franklin (See Map 29)	2,470	20	0.8	- -	- -	40	1.6	10	0.4	50	2.0	110	4.5	1,100	- -	- -
Total	11,230	120	1.1	40	0.4	190	1.7	70	0.6	180	1.6	540	4.8	3,730	70	1.9

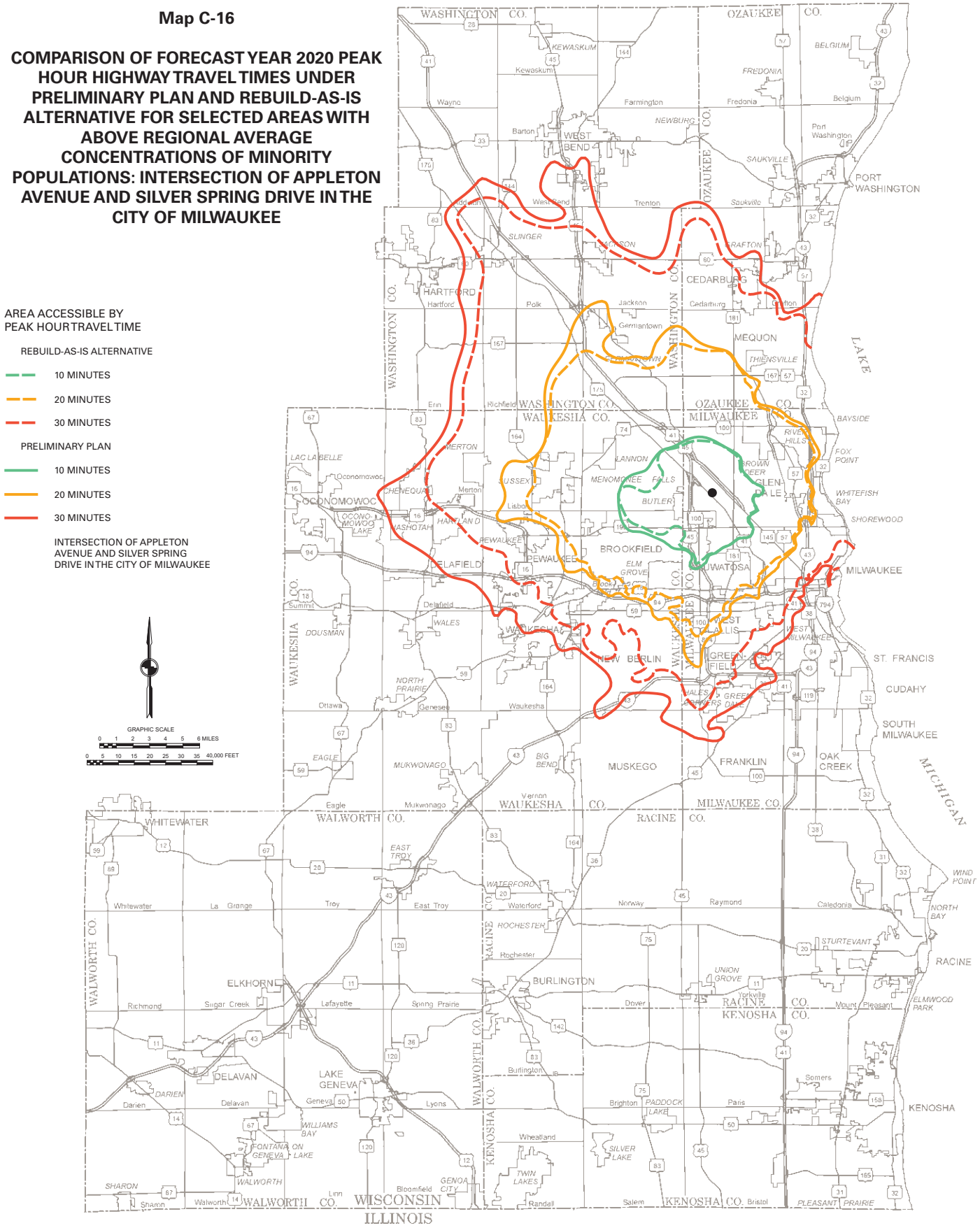
[a] *In 2000, Minority populations represented the following portions of the Region's population: Black/African American persons, 14.3 percent; American Indian and Alaskan Native persons, 0.9 percent; Asian and Pacific Islander persons, 2.2 percent; other minority persons, 3.6 percent; and Hispanic persons, 6.5 percent. The total minority population represented 24.3 percent of the Region's population. In 2000, 7.2 percent of the Region's families had incomes below the poverty level.*

[b] *The total minority population represents all persons identified as a member of a racial minority group-Black/African American persons, American Indian and Alaska Native persons, Asian and Pacific Islander persons, and other minority person-and Hispanic persons not identified as members of a racial minority group.*

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

Map C-16

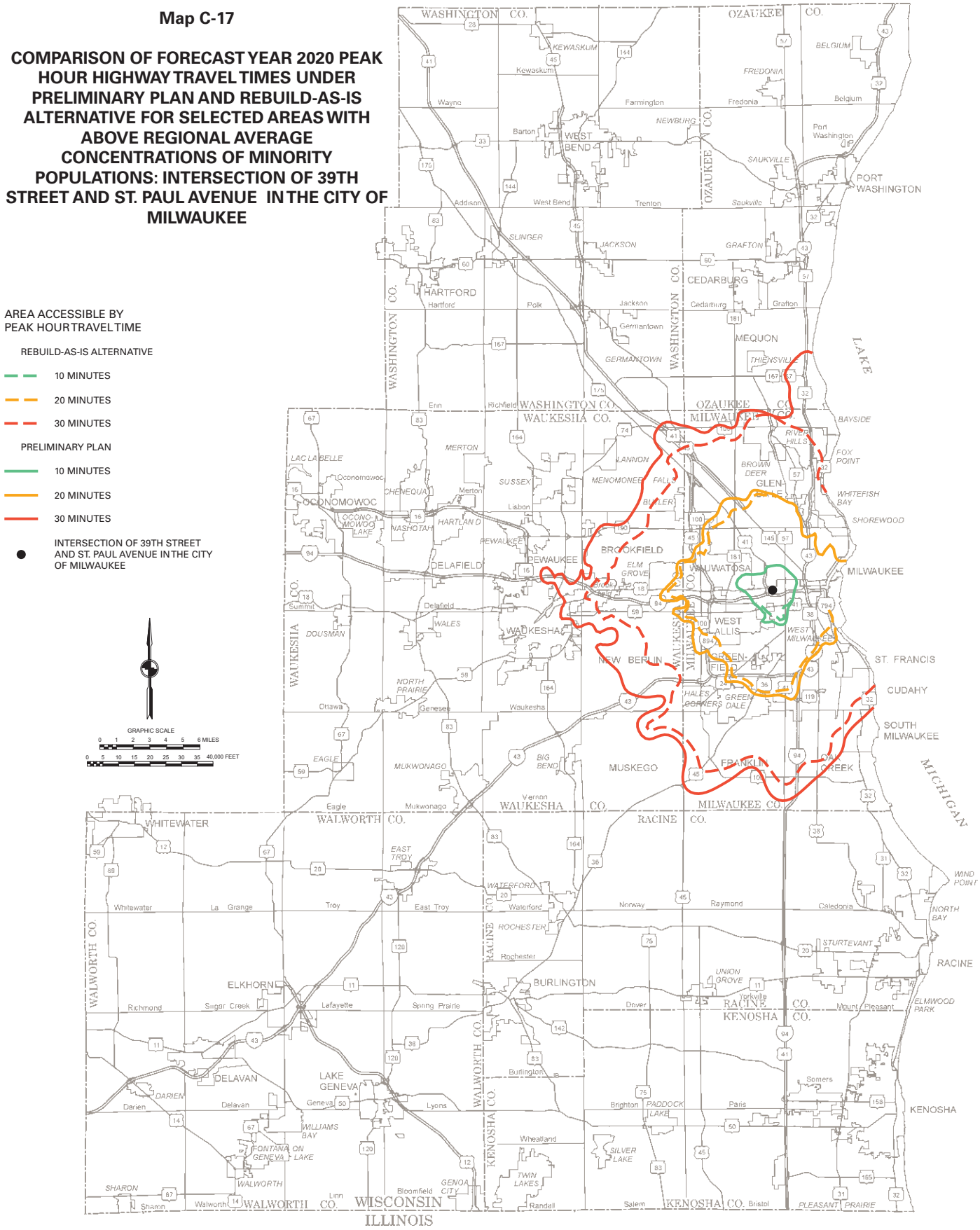
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF APPLETON AVENUE AND SILVER SPRING DRIVE IN THE CITY OF MILWAUKEE



Source: SEWRPC.

Map C-17

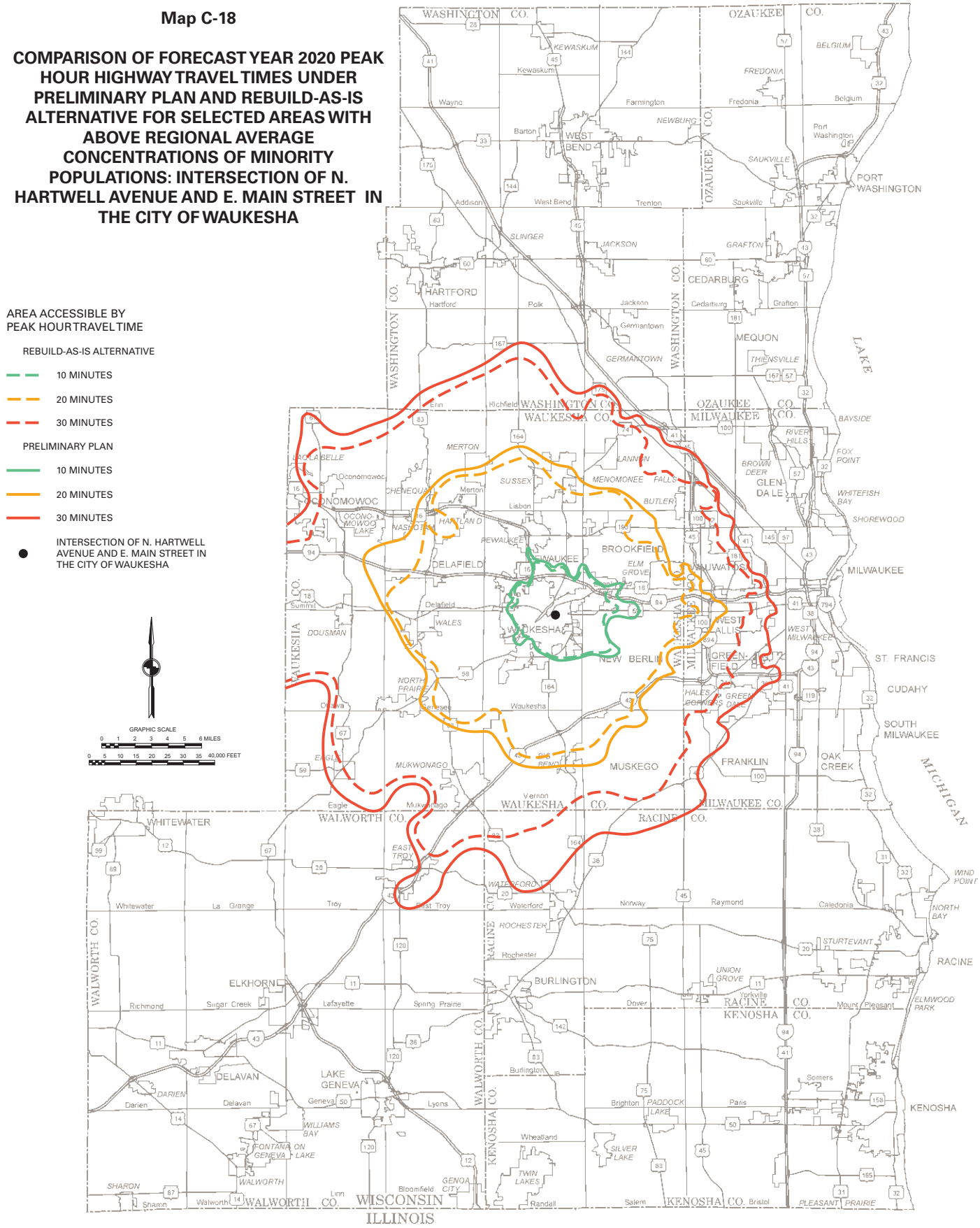
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF 39TH STREET AND ST. PAUL AVENUE IN THE CITY OF MILWAUKEE



Source: SEWRPC.

Map C-18

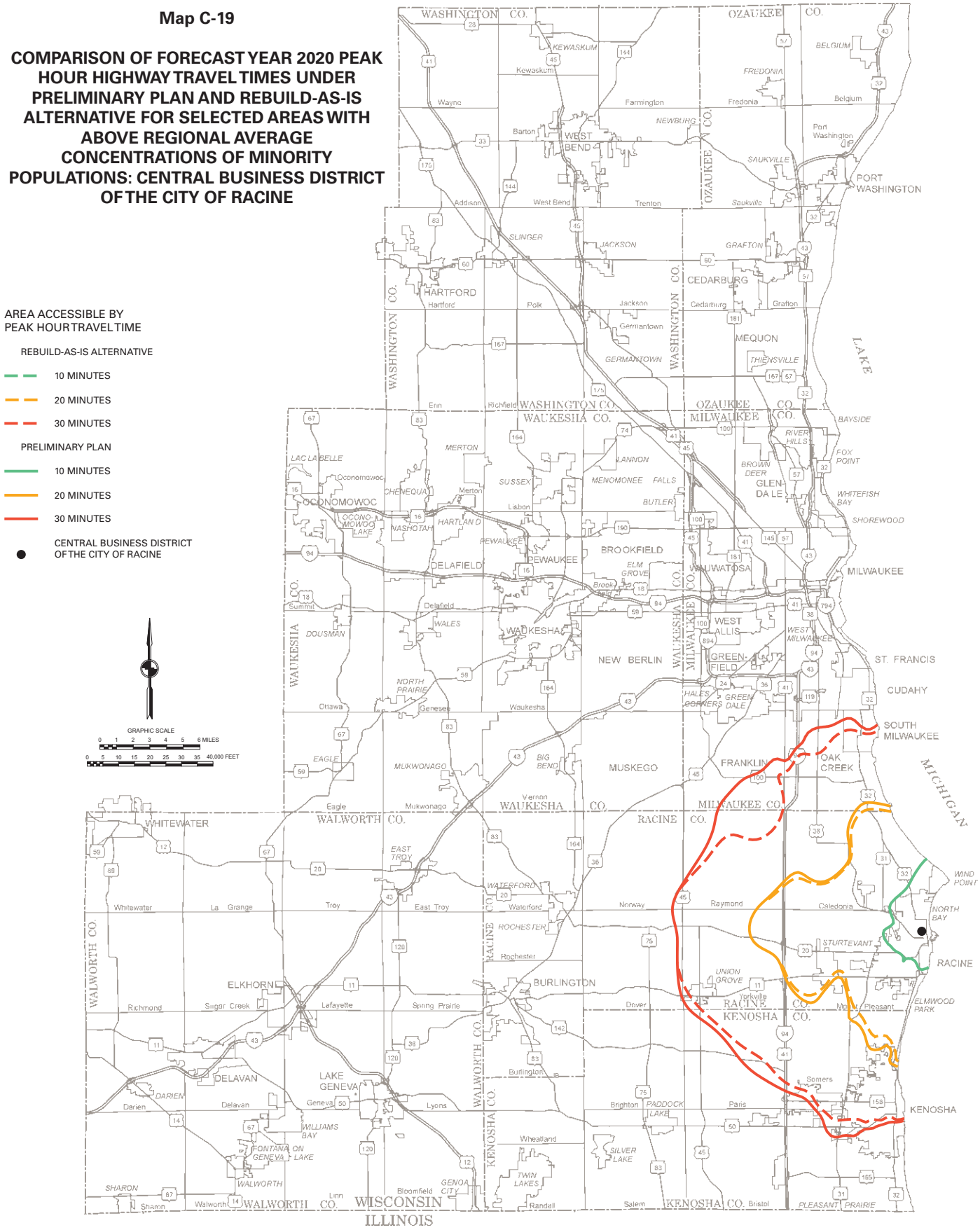
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF N. HARTWELL AVENUE AND E. MAIN STREET IN THE CITY OF WAUKESHA



Source: SEWRPC.

Map C-19

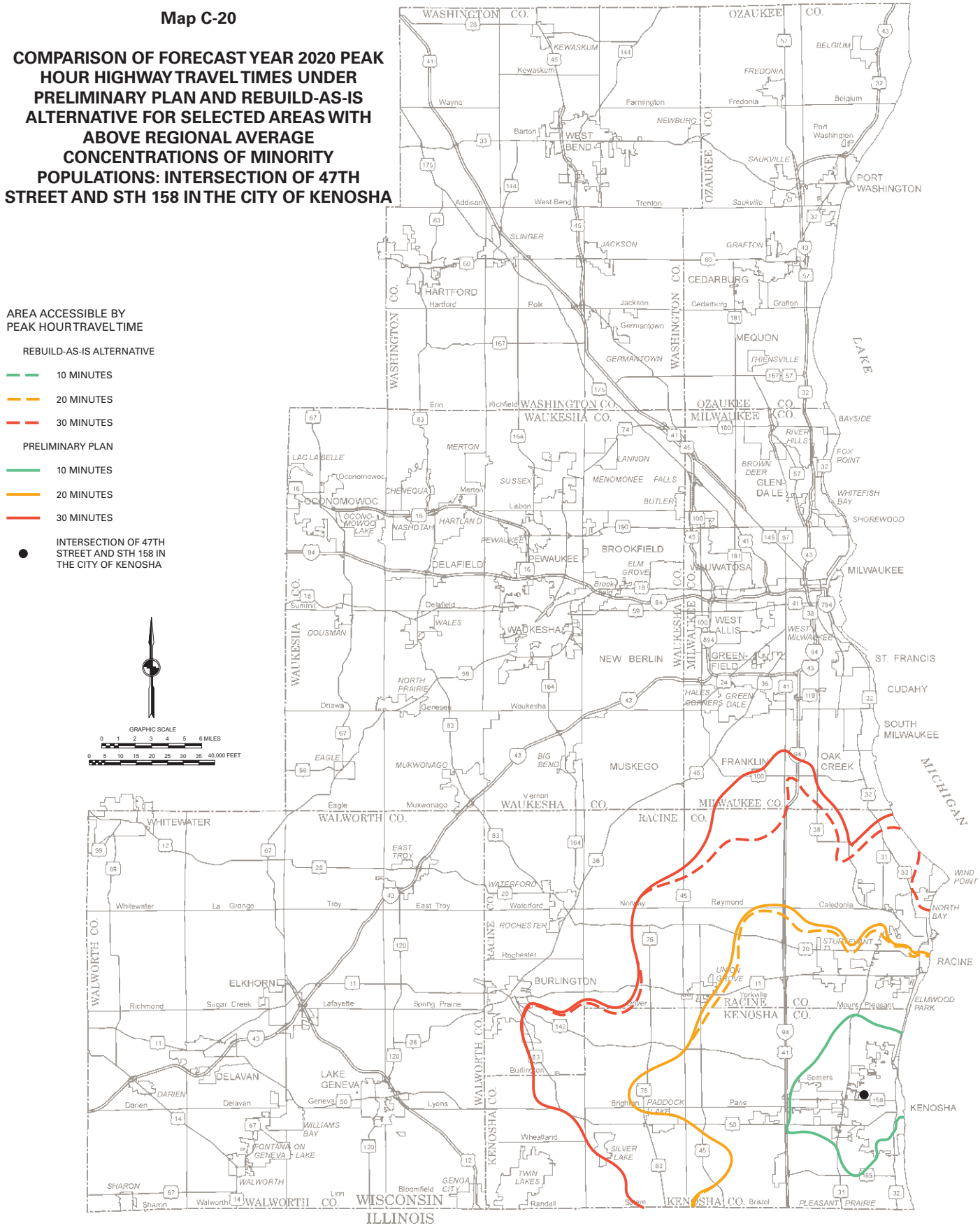
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: CENTRAL BUSINESS DISTRICT OF THE CITY OF RACINE



Source: SEWRPC.

Map C-20

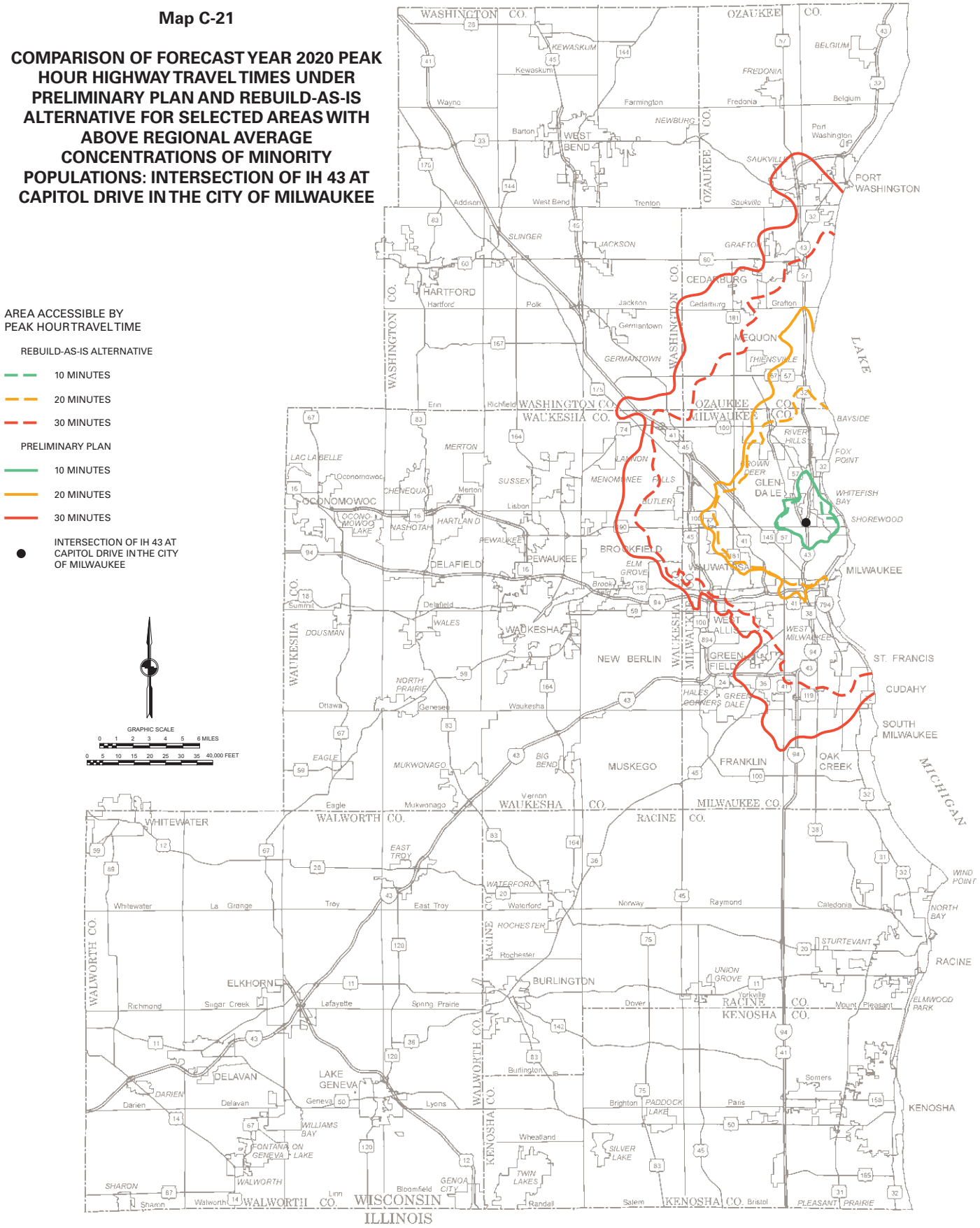
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF 47TH STREET AND STH 158 IN THE CITY OF KENOSHA



Source: SEWRPC.

Map C-21

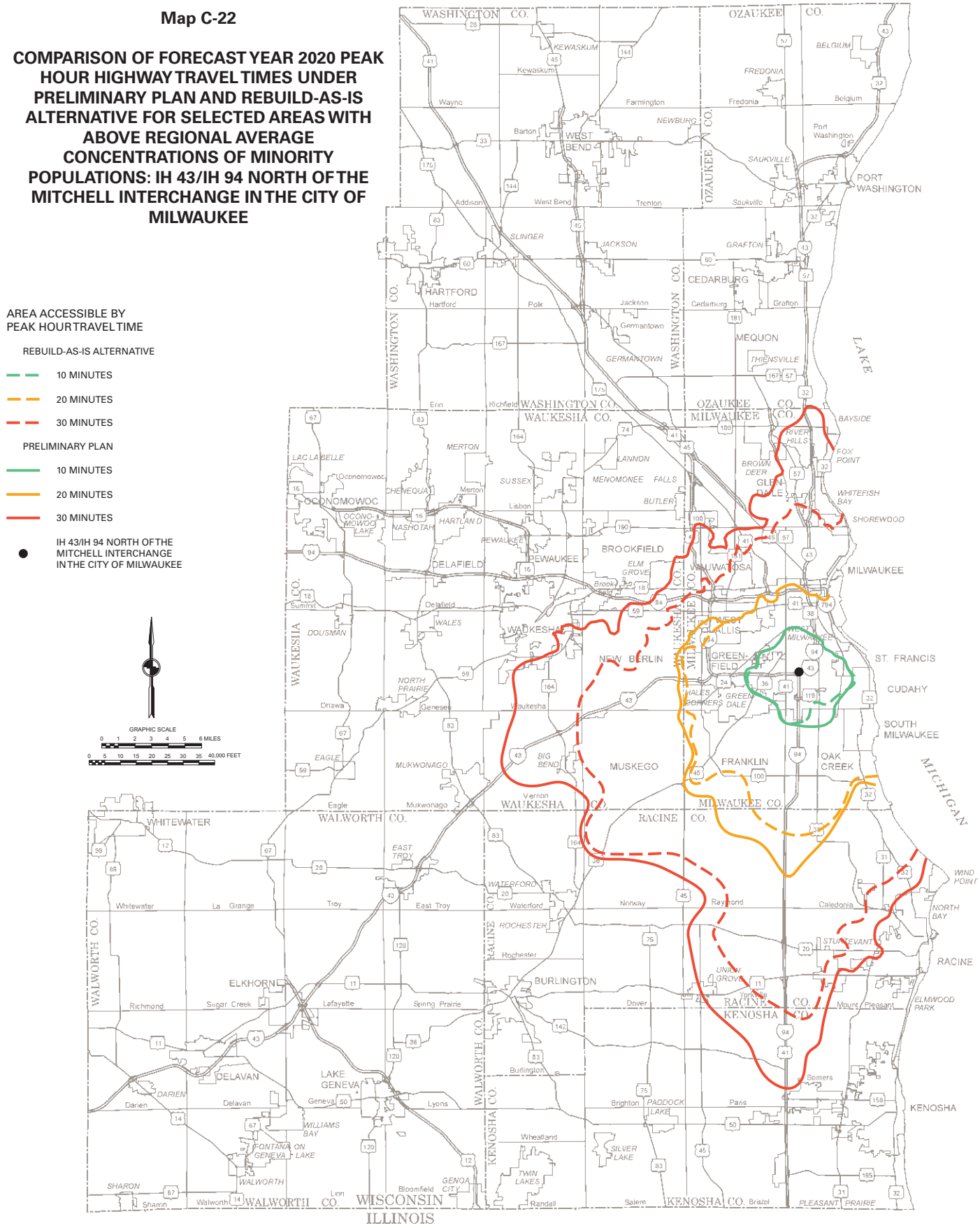
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF IH 43 AT CAPITOL DRIVE IN THE CITY OF MILWAUKEE



Source: SEWRPC.

Map C-22

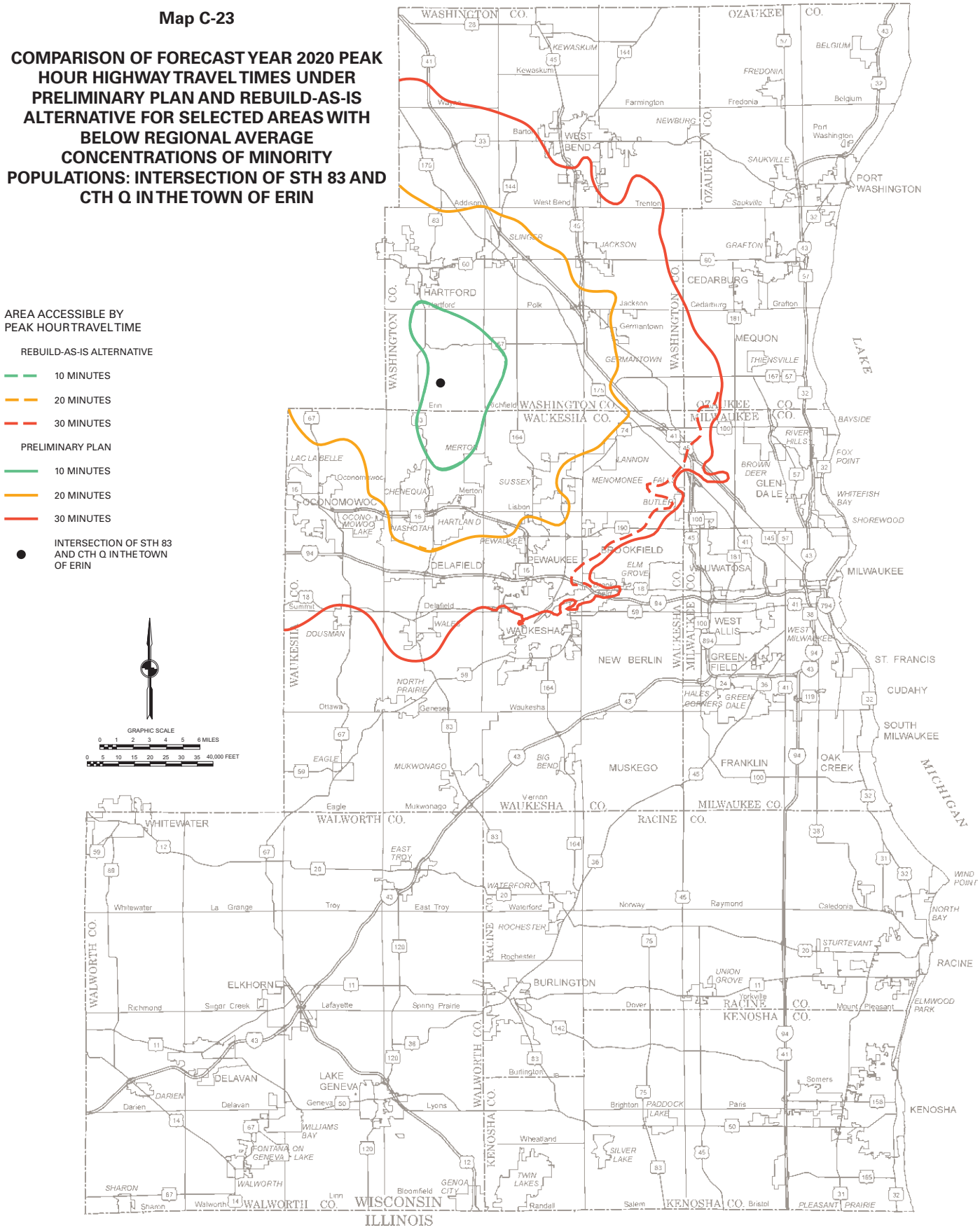
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: IH 43/IH 94 NORTH OF THE MITCHELL INTERCHANGE IN THE CITY OF MILWAUKEE



Source: SEWRPC.

Map C-23

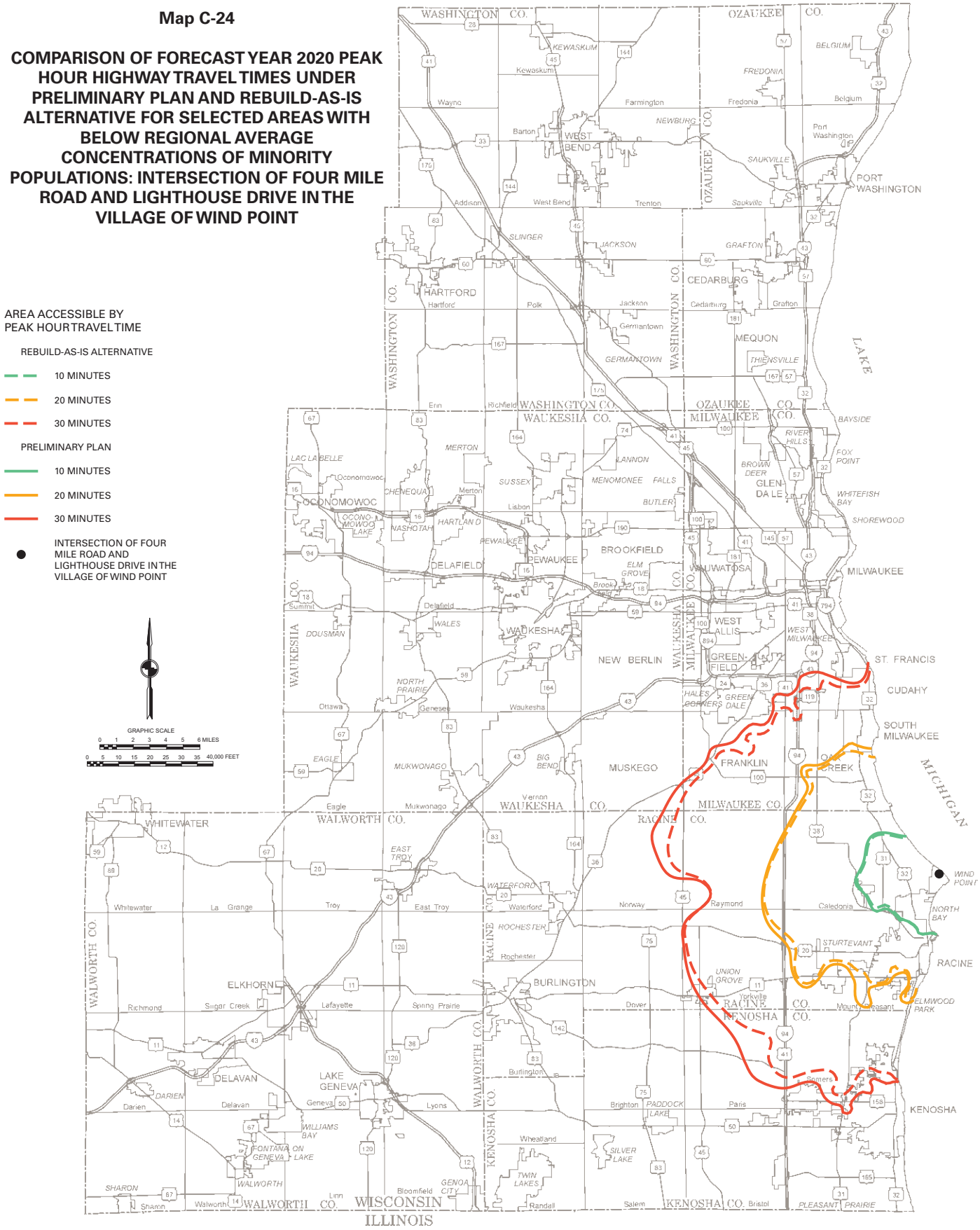
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF STH 83 AND CTH Q IN THE TOWN OF ERIN



Source: SEWRPC.

Map C-24

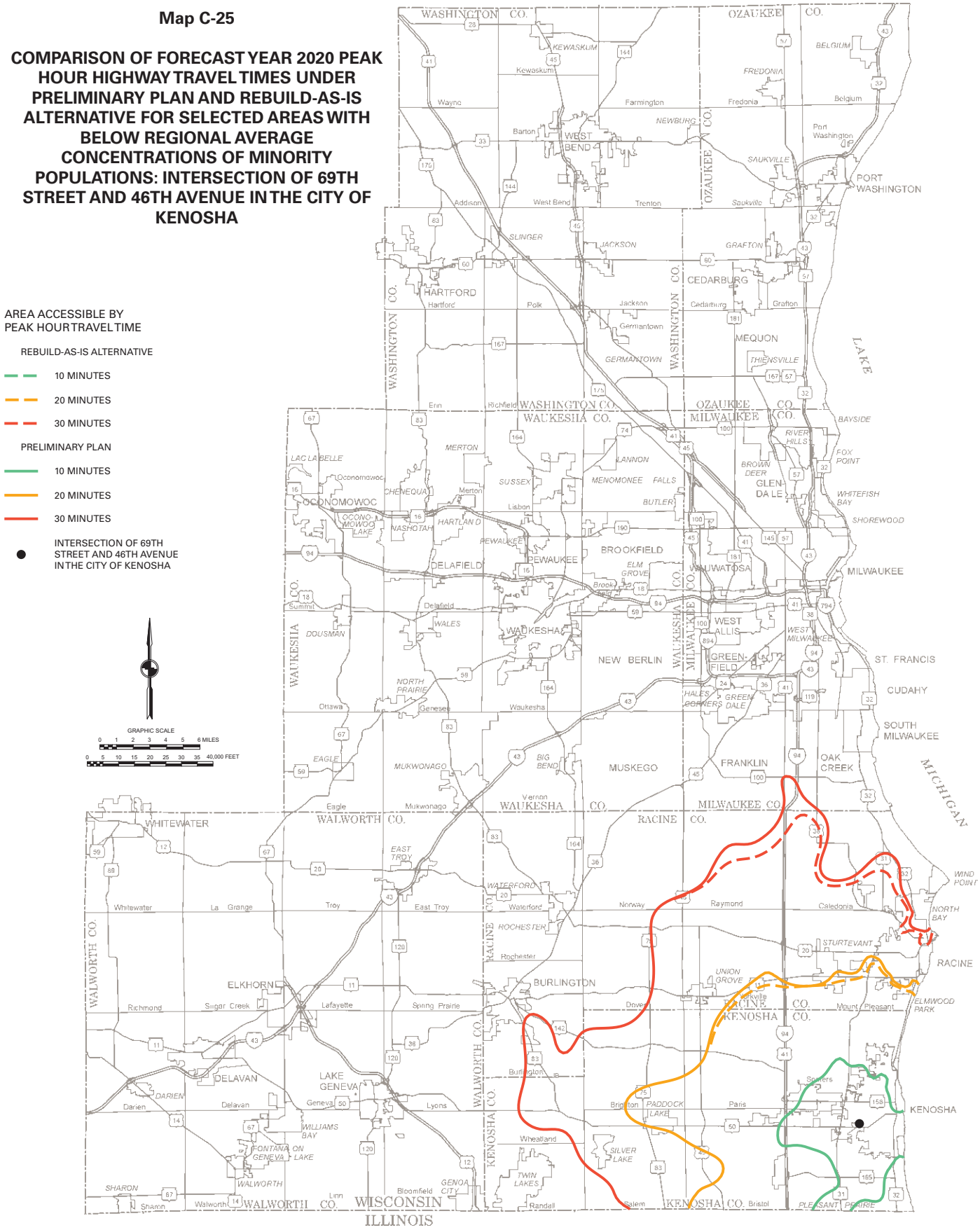
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF FOUR MILE ROAD AND LIGHTHOUSE DRIVE IN THE VILLAGE OF WIND POINT



Source: SEWRPC.

Map C-25

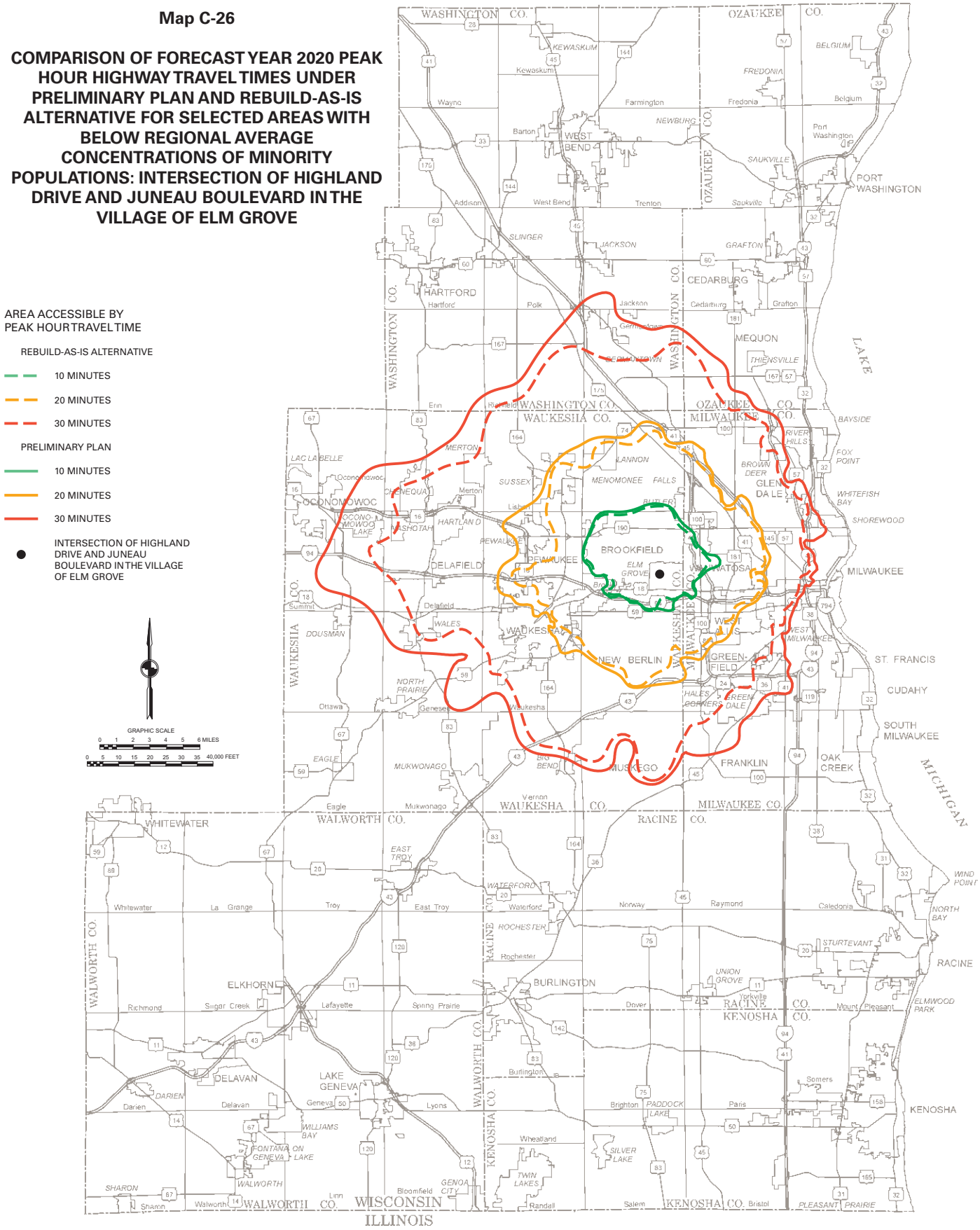
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF 69TH STREET AND 46TH AVENUE IN THE CITY OF KENOSHA



Source: SEWRPC.

Map C-26

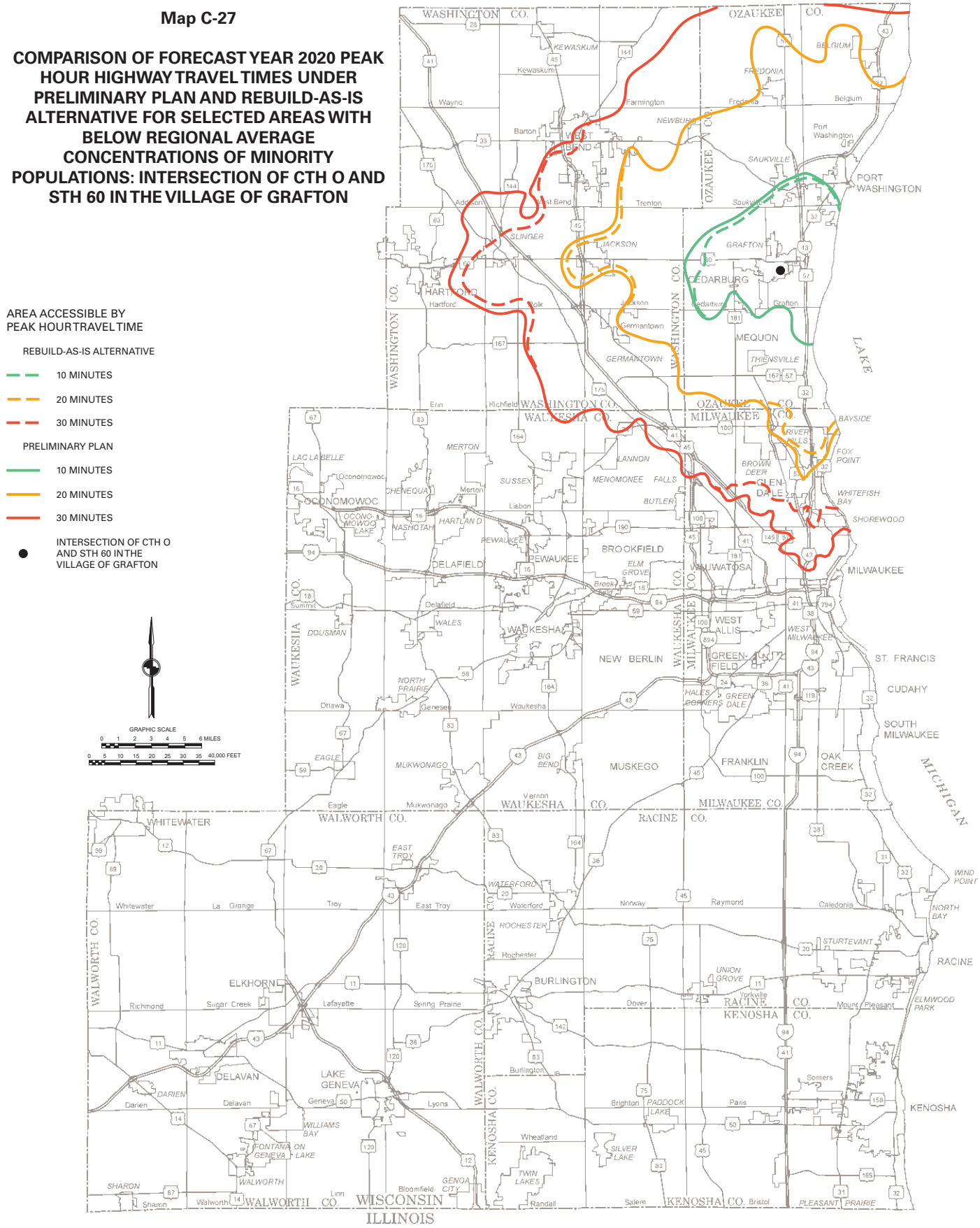
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF HIGHLAND DRIVE AND JUNEAU BOULEVARD IN THE VILLAGE OF ELM GROVE



Source: SEWRPC.

Map C-27

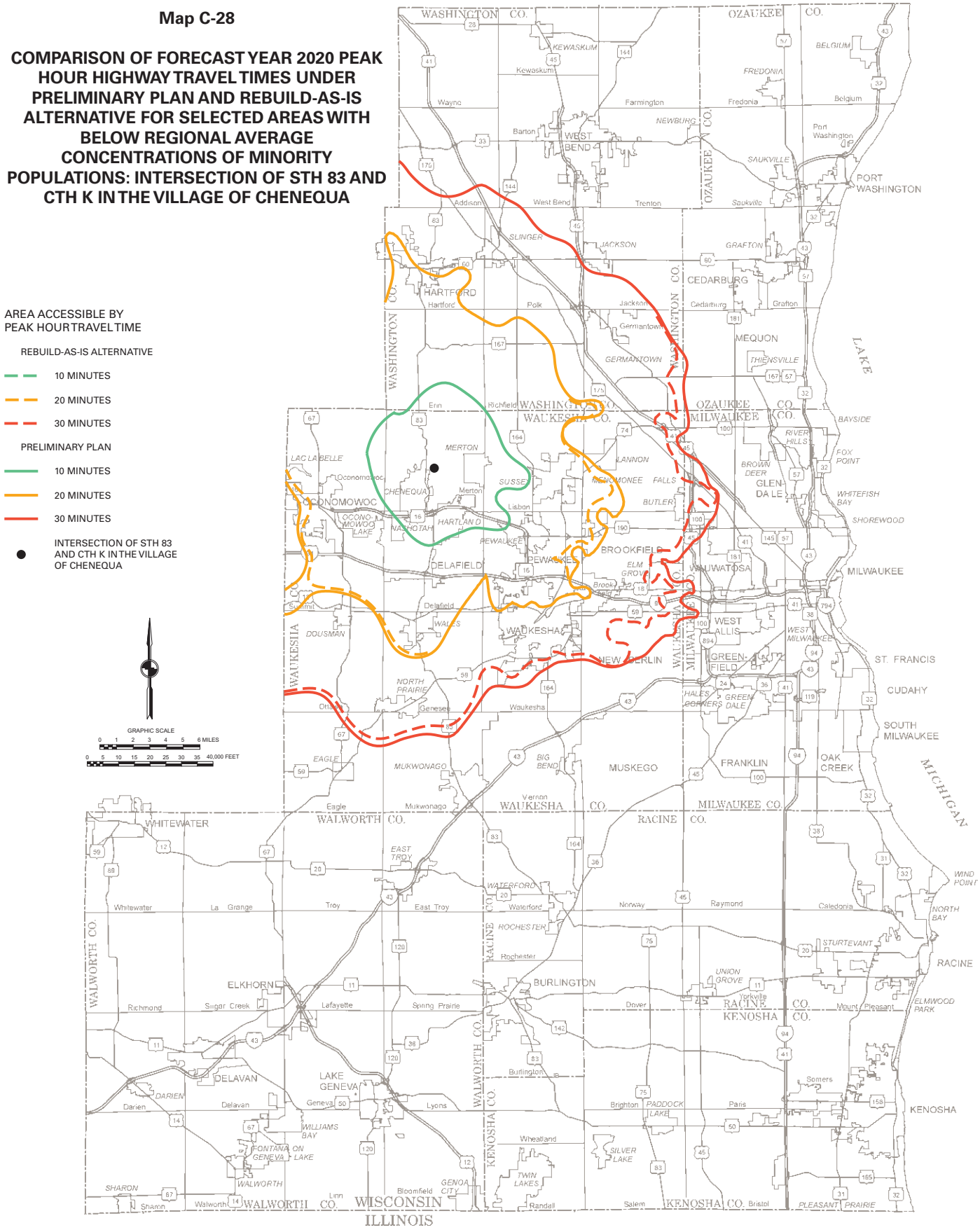
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF CTH O AND STH 60 IN THE VILLAGE OF GRAFTON



Source: SEWRPC.

Map C-28

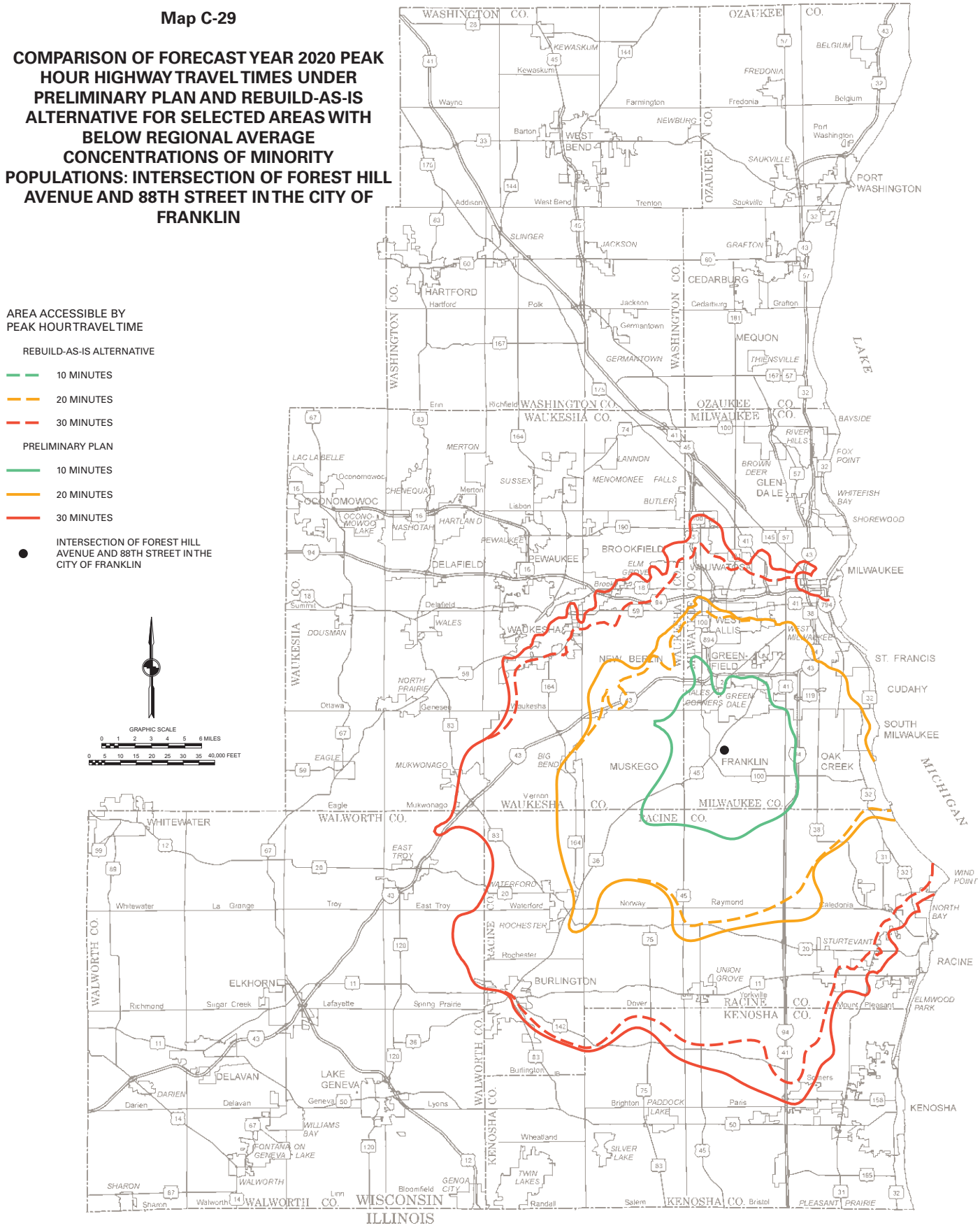
COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF STH 83 AND CTH K IN THE VILLAGE OF CHENEQUA



Source: SEWRPC.

Map C-29

COMPARISON OF FORECAST YEAR 2020 PEAK HOUR HIGHWAY TRAVEL TIMES UNDER PRELIMINARY PLAN AND REBUILD-AS-IS ALTERNATIVE FOR SELECTED AREAS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS: INTERSECTION OF FOREST HILL AVENUE AND 88TH STREET IN THE CITY OF FRANKLIN



Source: SEWRPC.

plan would reduce peak traffic hour highway travel times throughout the Region similarly in areas of above average and below average concentrations of minority populations. Table C-15 displays the changes in jobs accessible within 10, 20, and 30 minutes forecast year 2020 peak hour arterial street and highway travel times under the preliminary plan and rebuild as-is freeway reconstruction alternatives for the seven selected areas with above regional average concentrations of minority populations, and the seven selected areas with below regional average concentrations of minority populations. Compared to the freeway system reconstruction rebuild as-is alternative, the preliminary plan would provide similar percentage increases in the number of jobs accessible within 10, 20, and 30 minutes of peak hour highway travel in areas of above regional average and below regional average concentrations of minority populations.

The recommendations to rebuild the freeway system to modern design standards and to rebuild 127 miles of the freeway system with additional lanes as proposed under the preliminary plan constitute potential additions to the recommendations in the regional transportation system plan; that is, they will add to the recommendations already included in the regional transportation system plan. The regional transportation system plan includes:

- a travel demand and systems management element, including actions to promote more efficient travel choices and to make more efficient use of the existing transportation system,

- a surface arterial street and highway improvement and expansion element, and

- a public transit improvement and expansion element.

The recommendations of the regional plan with respect to public transit, in particular, provide for improved transit accessibility to those areas of the Region with above regional average concentrations of minority and low income populations. The next section of this report describes the transit element of the regional transportation system plan and evaluates the accessibility improvements of the transit element of the plan.

The regional plan recommends improvement and expansion of public transit service, including expansion of the geographic extent of public transit service, improvements in the hours of available service and frequency of transit service, and increased emphasis on rapid and express transit service. Altogether, service on the regional transit system under the plan would be increased by about 70 percent measured in terms of revenue transit vehicle-miles of service provided. As shown on Map C-30, the plan would provide for improved rapid, express, and local transit service as follows:

- The proposed rapid transit service would consist of buses operating over freeways between the Milwaukee central business district and outlying portions of the Milwaukee urbanized area and beyond, with service provided south to Racine and Kenosha, southwest to Mukwonago, west to Waukesha and Oconomowoc, northwest to West Bend, and north to Cedarburg, Grafton, Saukville, and Port Washington. The proposed rapid transit system would include the following: 1) service in both directions, providing for traditional and reverse commuting; 2) intermediate stops to increase accessibility to employment centers and to facilitate reverse commuting from residential areas within central Milwaukee County; 3)service throughout the day, with service frequencies of five to 30 minutes in peak travel periods and 30 to 60 minutes in off-peak periods; and 4) relatively high overall travel speeds averaging about 25 miles per hour, about twice typical local bus transit speeds, which average about 12 miles per hour.

- The proposed express transit system would consist primarily of buses operating over a grid of 12 limited-stop, higher-speed routes in Milwaukee and Waukesha Counties. The express transit service would include the following: 1) service in both directions during peak and off-peak travel periods; 2) stop spacing of about one-half mile; 3) service frequencies of 10 minutes during peak periods and 20 to 30 minutes during off-peak periods; and 4) overall travel speeds of about 18 miles per hour. Limited express bus service is also proposed in the Kenosha and Racine urbanized areas. All service would be provided by buses operating in mixed traffic over surface arterial streets and highways. The

Table C-15

COMPARISON OF PEAK TRAFFIC HOUR ACCESSIBILITY FROM CENTRAL CITY AND SUBURBAN LOCATIONS TO JOBS UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN AND REBUILD-AS-IS ALTERNATIVE: YEAR 2020

CENTRAL CITY LOCATIONS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF LOW INCOME AND MINORITY POPULATIONS[a]

Central City Location	Jobs Accessible within 10 Minutes				Jobs Accessible within 20 Minutes				Jobs Accessible within 30 Minutes			
	Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction Plan			Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction Plan			Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction Plan		
		Total	Increase in Jobs Accessible			Total	Increase in Jobs Accessible			Total	Increase in Jobs Accessible	
			Number	Percent			Number	Percent			Number	Percent
Intersection of Appleton Avenue and Silver Spring Drive in the City of Milwaukee (See Map 16)	90,100	93,200	3,100	3.4	314,000	355,400	41,400	13.2	567,100	655,900	88,800	15.7
Intersection of 39th Street and St. Paul Avenue in the City of Milwaukee (See Map 17)	34,700	41,500	6,800	19.6	383,500	393,300	9,800	2.6	657,100	718,800	61,700	9.4
Intersection of N. Hartwell Avenue and E. Main Street in the City of Waukesha (See Map 18)	54,400	56,400	2,000	3.7	158,200	189,700	31,500	19.9	326,100	390,800	64,700	19.8
Central Business District of the City of Racine (See Map 19)	31,700	31,700	- -	- -	77,500	77,500	- -	- -	128,900	149,700	20,800	16.1
Intersection of 47th Street and STH 158 in the City of Kenosha (See Map 20)	36,000	36,000	- -	- -	100,600	105,400	4,800	4.8	145,700	157,200	11,500	7.9
Interchange of IH 43 at Capitol Drive in the City of Milwaukee (See Map 21)	29,100	29,600	500	1.7	198,600	234,300	35,700	18.0	541,400	616,000	74,600	13.8
IH 43/ IH 94 North of the Mitchell Interchange in the City of Milwaukee (See Map 22)	41,900	45,600	3,700	8.8	195,100	215,000	19,900	10.2	473,500	602,400	128,900	27.2
Total	317,900	334,000	16,100	5.1	1,427,500	1,570,600	143,100	10.0	2,839,800	3,290,800	451,000	15.9

SUBURBAN LOCATIONS WITH BELOW REGIONAL AVERAGE CONCENTRATIONS OF LOW INCOME AND MINORITY POPULATIONS[a]

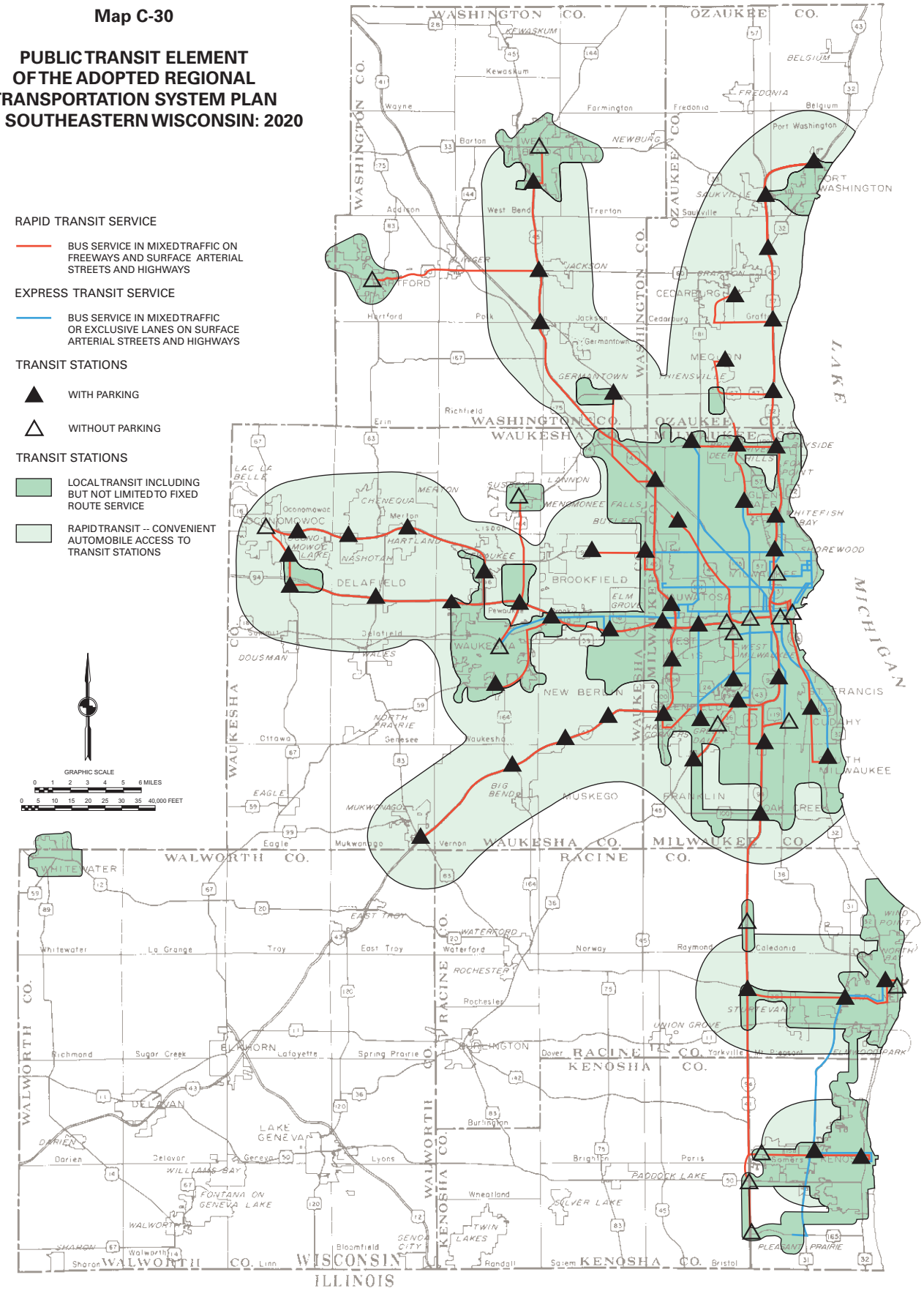
Suburban Location	Jobs Accessible within 10 Minutes				Jobs Accessible within 20 Minutes				Jobs Accessible within 30 Minutes			
	Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction Plan			Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction			Rebuild-As-Is Alternative	Preliminary Freeway System Reconstruction Plan		
		Total	Increase in Jobs Accessible			Total	Increase in Jobs Accessible			Total	Increase in Jobs Accessible	
			Number	Percent			Number	Percent			Number	Percent
Intersection of STH 83 and CTH Q in the Town of Erin (See Map 23)	700	700	- -	- -	28,600	29,400	800	2.8	144,000	170,100	26,100	18.1
Intersection of Four Mile Road and Lighthouse Drive in the Village of Wind Point (See Map 24)	12,200	12,200	- -	- -	68,800	71,700	2,900	4.2	141,200	153,900	12,700	9.0
Intersection of 69th Street and 46th Avenue in the City of Kenosha (See Map 25)	38,800	38,800	- -	- -	65,900	74,200	8,300	12.6	131,100	141,400	10,300	7.9
Intersection of Highland Drive and Juneau Boulevard in the Village of Elm Grove (See Map 26)	81,500	82,200	700	0.9	261,600	301,800	40,200	15.4	527,800	594,200	66,400	12.6
Intersection of CTH O and STH 60 in the Village of Grafton (See Map 27)	17,900	17,900	- -	- -	49,700	52,200	2,500	5.0	182,500	227,300	44,800	24.5
Intersection of STH 83 and CTH K in the Village of Chenequa (See Map 28)	7,400	7,400	- -	- -	65,200	73,200	8,000	12.3	219,200	262,500	43,300	19.8
Intersection of Forest Hill Avenue and 88th Street in the City of Franklin (See Map 29)	28,800	28,800	- -	- -	148,300	154,500	6,200	4.2	349,000	431,800	82,800	23.7
Total	187,300	188,000	700	0.4	688,100	757,000	68,900	10.0	1,694,800	1,981,200	286,400	16.9

[b]*In 2000, Minority populations represented the following portions of the Region's population: Black/African American persons, 14.3 percent; American Indian and Alaskan Native persons, 0.9 percent; Asian and Pacific Islander persons, 2.2 percent; other minority persons, 3.6 percent; and Hispanic persons, 6.5 percent. The total minority population represented 24.3 percent of the Region's population. The total minority population represents all persons identified as a member of a racial minority group-Black/African American persons, American Indian and Alaska Native persons, Asian and Pacific Islander persons, and other minority person-and Hispanic persons not identified as members of a racial minority group.*

Source: SEWRPC.

Map C-30

PUBLIC TRANSIT ELEMENT OF THE ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2020



Under the regional transportation system plan, rapid transit commuter rail facilities and express transit light rail facilities would be considered as alternatives to motor-bus transit service over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed transit planning alternatives analysis studies for each of the corridors identified under the plan. The potential corridors for commuter rail and light rail facilities are shown on Map C-31. The implementation of these fixed-guideway transit facilities would depend upon the outcome of the corridor studies. Upon completion of each study, the local units of government concerned--particularly, the potential transit operator involved--the Wisconsin Department of Transportation, and the Regional Planning Commission would have to affirm the study findings and, if necessary, amend the regional transportation system plan.

Source: SEWRPC

service could be upgraded over time to buses operating over reserved street lanes as is presently the case along Bluemound Road in Brookfield.

- The plan recommends the continued operation of local bus transit service over arterial and collector streets with frequent stops throughout the Kenosha, Milwaukee, and Racine urbanized areas. The plan calls for substantial improvements in the frequency of local transit service provided, particularly on major local routes. The plan holds open the potential to restructure local transit service to provide for transit center-oriented local systems to replace grid-route systems, depending upon detailed local plan implementation studies. The plan recommends the provision of local transit service through shared-ride taxis in the smaller urban areas of the Region. The plan also recommends the continuation of appropriate paratransit services to help meet the transportation needs of disabled individuals in the Region.

- The plan recommends that rapid and express transit service initially be provided with buses, but that consideration be given through the conduct of detailed corridor transit alternatives analysis studies to upgrading bus service to commuter rail for rapid transit service and light rail for express transit service. (See Map C-31.) Through these detailed corridor transit alternatives analysis studies, decisions would be made by the concerned local governments and transit operators whether to provide rapid transit service through buses on existing freeways or through commuter rail, and whether to provide express transit service through buses on surface arterials or through light rail. Such studies are currently underway in the Milwaukee-Racine-Kenosha corridor considering rapid transit commuter rail, and the Milwaukee Downtown Connector study considering express transit light rail and bus guideway technology.

The recommendations of the regional transportation system plan with respect to public transit, in particular, provide improved accessibility for the central urban areas of the Region where many residents are of minority population and/or low income and do not have access to an automobile. The proposed rapid and express transit system improvements may be expected to more fully integrate minority areas into the regional economic and social structures by, for example, increasing the number of central urban residents that may be able to access employment opportunities and other activities in a timely manner. The planned transit improvements are intended to help reduce overall travel times, improve travel convenience, and improve access to employment and activity centers. A series of travel time standards has been developed by the Commission to measure the adequacy of transit service available to any portion of the metropolitan area. These standards are listed in Table C-16. Map C-32 documents the areas within the urban areas of the Region which currently meet these travel time standards.

Table C-16

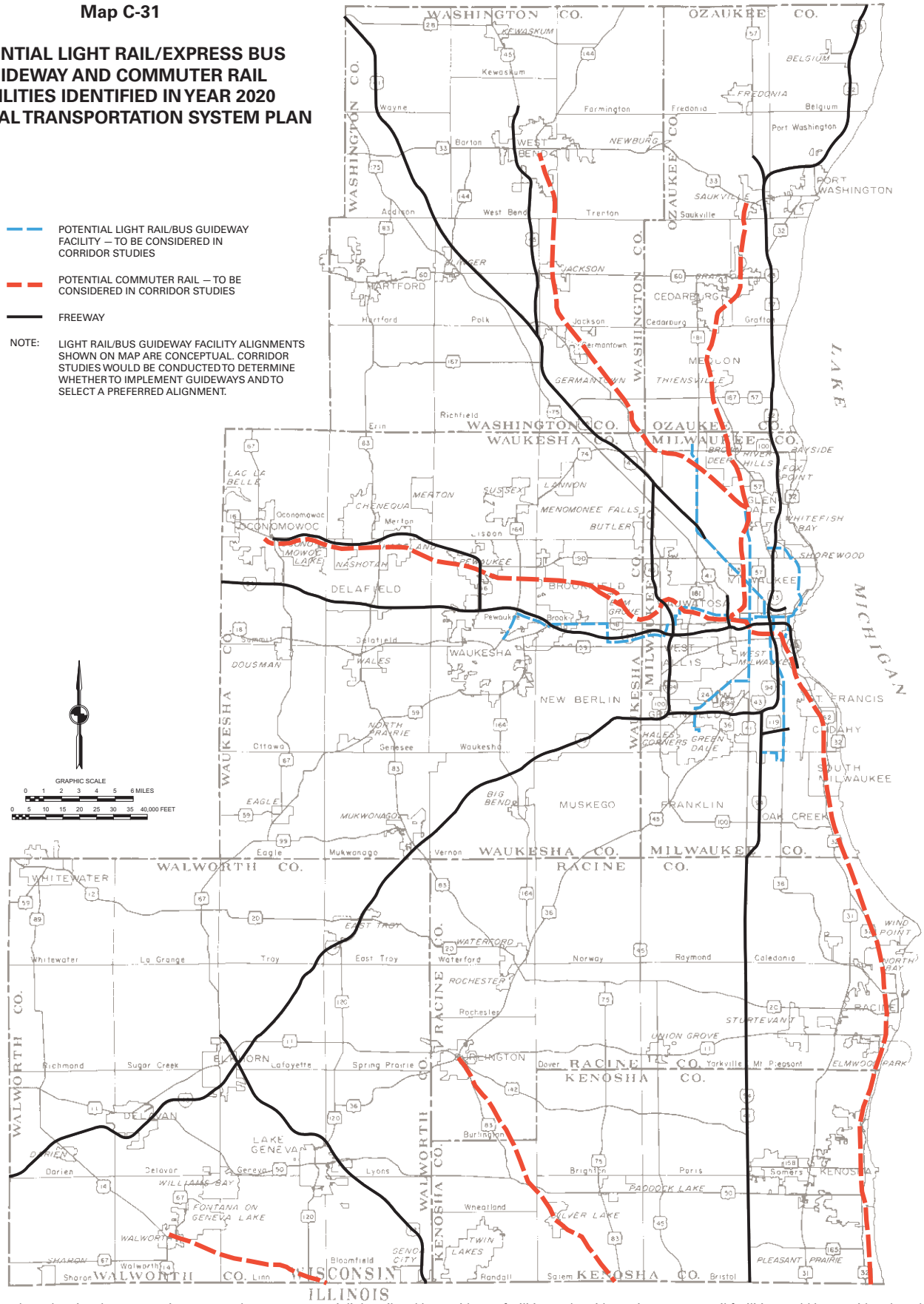
TRANSIT-RELATED TRAVEL TIME STANDARDS USED IN THE DESIGN AND EVALUATION OF THE REGIONAL TRANSPORTATION SYSTEM PLAN: 2020

Opportunity or Activity Center Concerned	Overall Travel Time Standards
Employment	45 minutes of 40 percent of urbanized area jobs
Major Retail-Service	35 minutes of three major retail and service centers in Milwaukee urbanized area and one major retail and service center in Kenosha and Racine urbanized areas
Medical Facility	40 minutes of a major regional medical center and/or 30 minutes of a hospital or medical clinic
Major Park	40 minutes of a major outdoor recreation center
Higher Education Facility	40 minutes of a vocational school, college, or university
Scheduled Air Transport	60 minutes of General Mitchell International Airport

Source: SEWRPC.

Map C-31

POTENTIAL LIGHT RAIL/EXPRESS BUS GUIDEWAY AND COMMUTER RAIL FACILITIES IDENTIFIED IN YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN



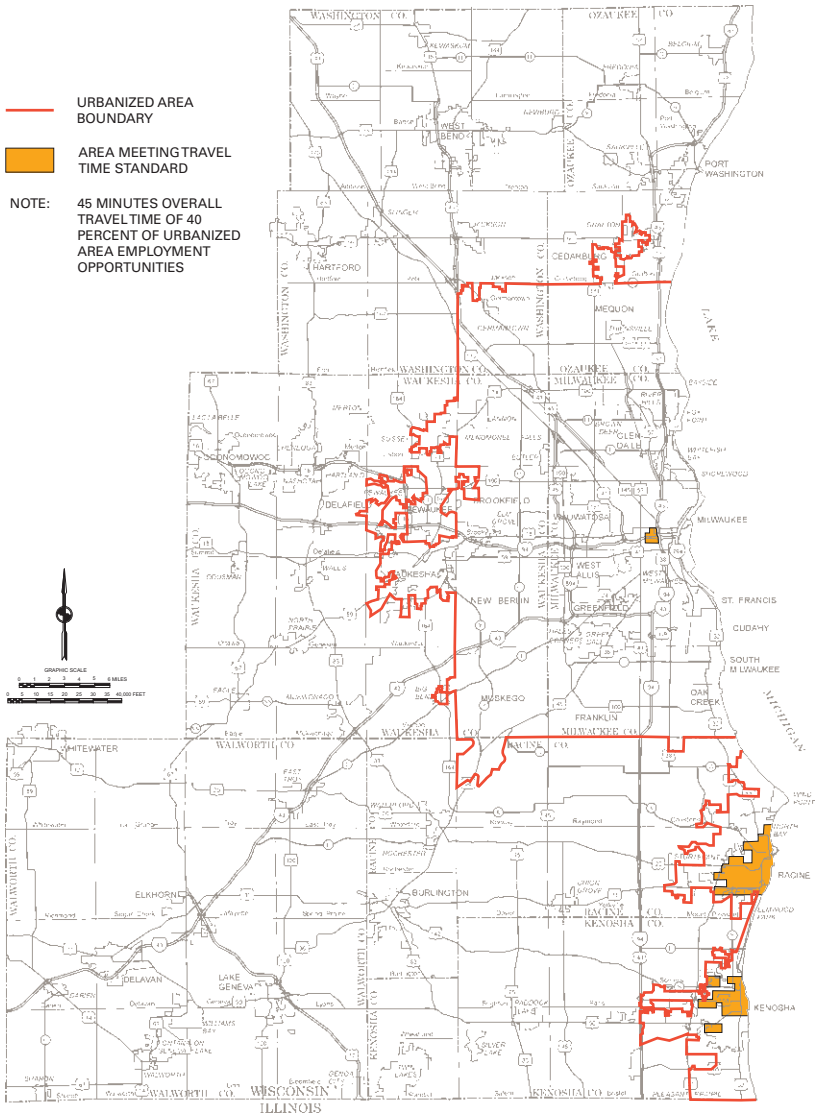
Under the adopted regional transportation system plan express transit light-rail and bus guideway facilities and rapid transit commuter rail facilities could be considered as alternatives to motor-bus transit service in mixed traffic over arterial street and highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required detailed planning transit alternatives analysis studies for each of the identified corridors. The addition of these potential fixed guideway transit facilities to the regional plan, and the ultimate implementation of these fixed guideway transit facilities, depends upon the outcome of the corridor studies. Upon completion of a study, the local units of government concerned -- specifically, the transit operator concerned -- the Wisconsin Department of Transportation and the Regional Planning Commission would have to affirm the study findings, determine to pursue guideway implementation, and, as necessary, amend the regional transportation system plan.

Source: SEWRPC

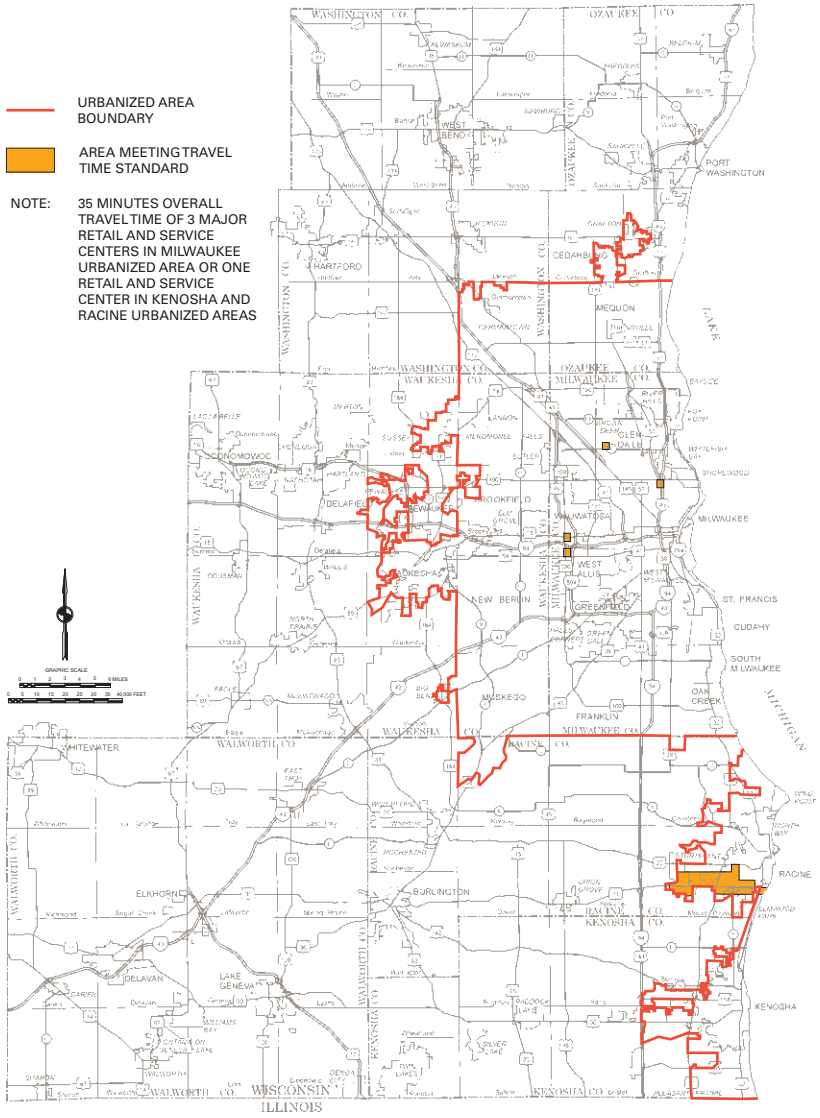
Map C-32

AREAS MEETING TRAVEL TIME STANDARDS FOR EMPLOYMENT AND SELECTED ACTIVITY CENTERS THROUGH TRAVEL BY TRANSIT: 1995

EMPLOYMENT: 1995

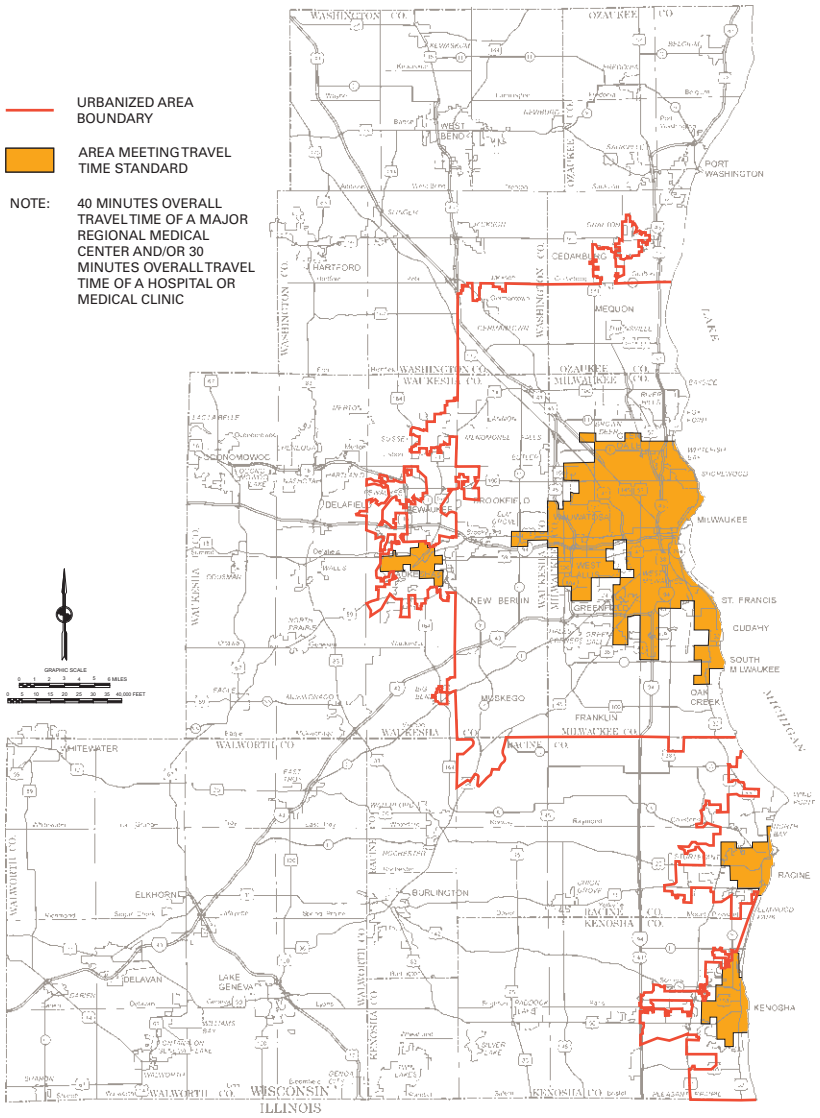


MAJOR RETAIL AND SERVICE CENTERS: 1995

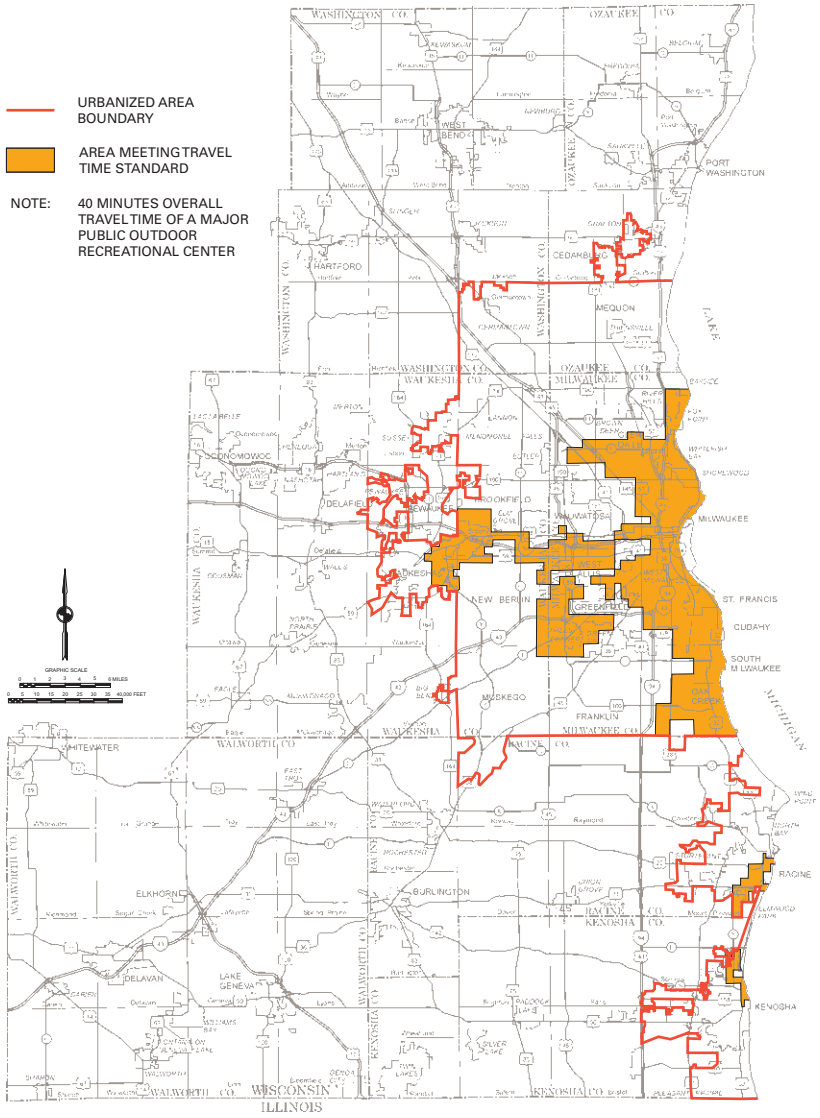


Map C-32 (continued)

MAJOR MEDICAL CENTERS: 1995

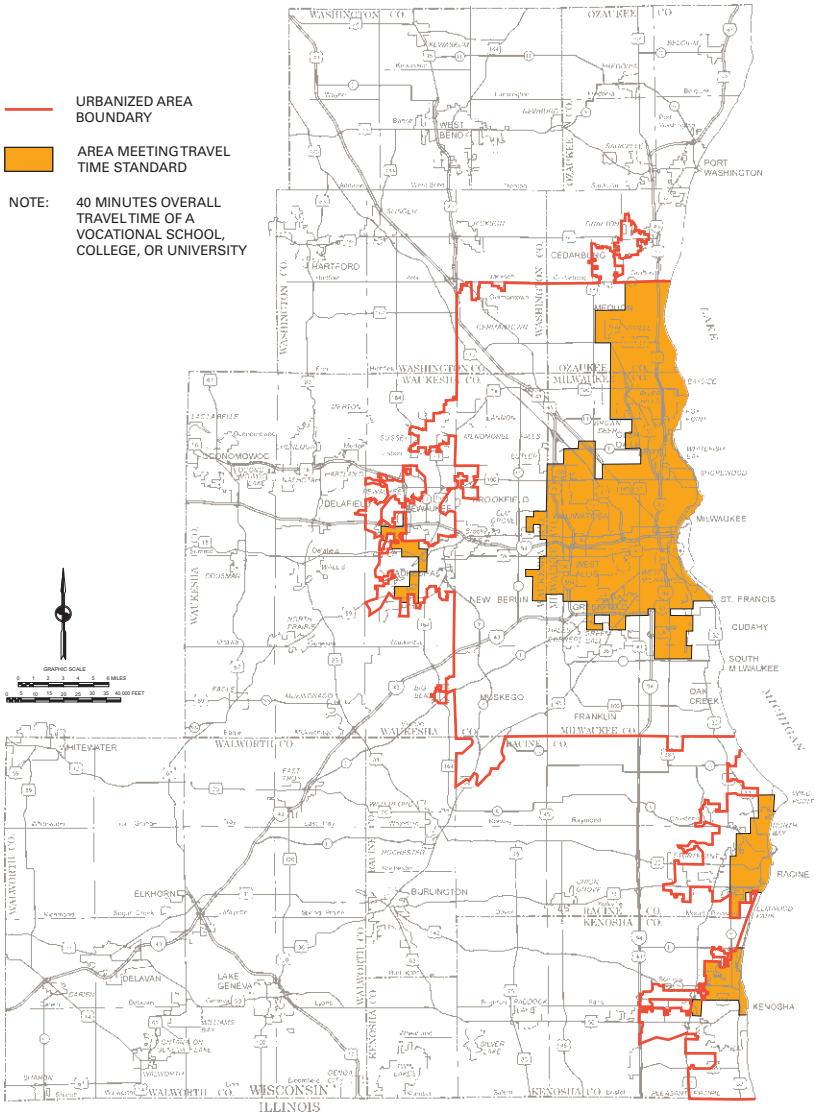


MAJOR RECREATIONAL CENTERS: 1995

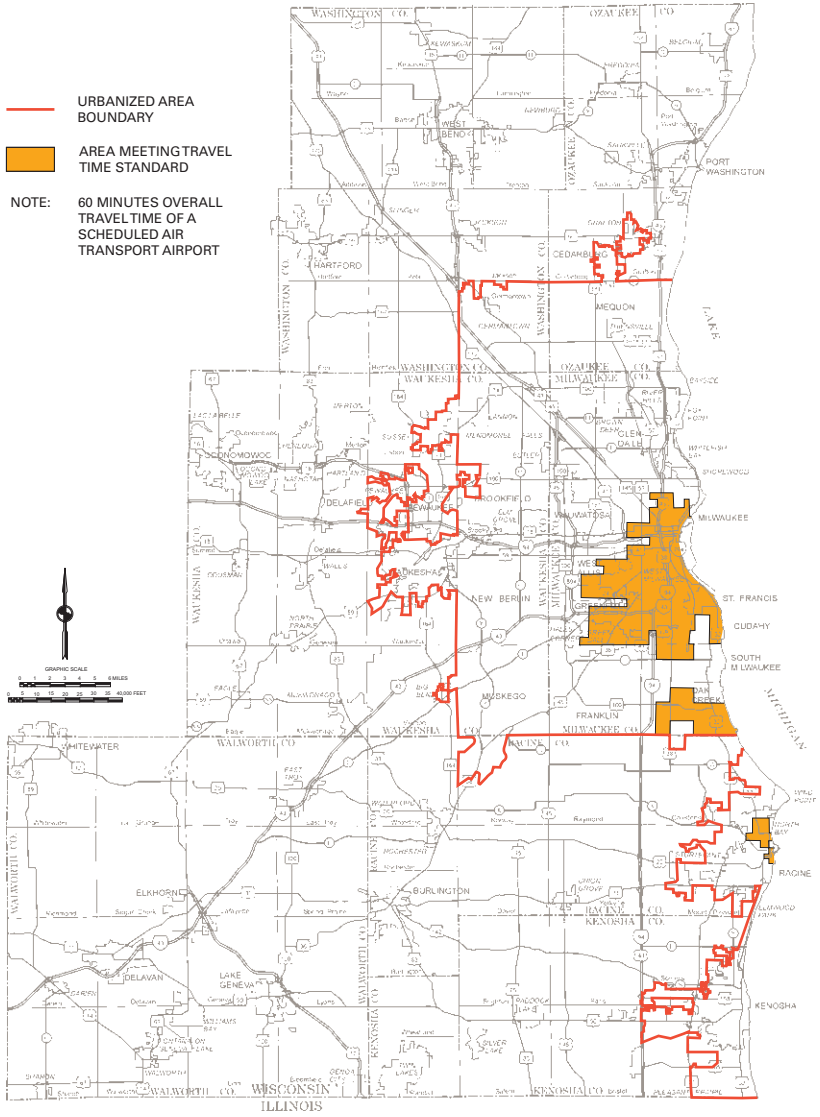


Map C-32 (continued)

MAJOR EDUCATIONAL CENTERS: 1995



SCHEDULED AIR TRANSPORT TERMINALS: 1995



Source: SEWRPC.

Map C-33 documents the areas which under the regional transportation system plan, and specifically, with the transit improvements under that plan, would meet those standards. A comparison indicates that the transit recommendations of the regional transportation system plan would improve accessibility to employment opportunities and other activity centers over existing conditions. A significant portion of the areas provided with improved accessibility coincide with areas having the largest concentrations of minority persons and low income families.

SUMMARY AND CONCLUSIONS

This report presents an analysis of estimated beneficial and adverse impacts of the preliminary freeway system reconstruction plan on minority and low income populations within southeastern Wisconsin. With respect to potential adverse impacts of the recommended freeway system reconstruction plan on minority and low income populations, the analysis indicates no significant disproportionate adverse impacts:

- Minority and low income populations are not significantly or disproportionately represented in areas in proximity to freeways proposed to be widened.

- While some segments of the freeway system, including those proposed to be widened, are located adjacent to minority and low income populations, the vast majority of the freeway system and freeway segments proposed to be widened are not adjacent to minority populations. Also, the vast majority of census blocks having above average concentrations of minority populations are not located adjacent to, or in proximity to, the freeway system or freeway segments proposed to be widened under the preliminary plan.

- The residences and businesses which are estimated to need to be acquired under this preliminary plan, particularly those required for additional lanes, are generally not disproportionately located in areas with above county or regional averages of minority or low income populations.

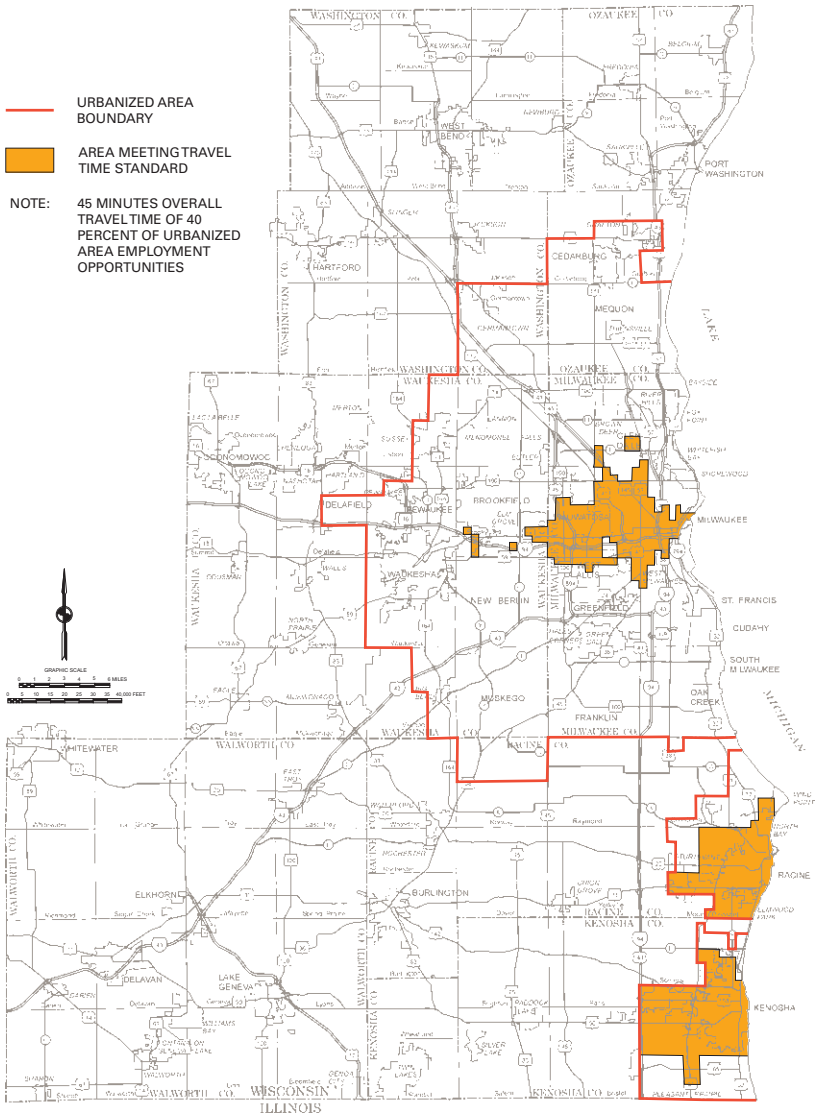
With respect to the potential benefits of improved accessibility under the preliminary plan as compared to an alternative of rebuilding the freeway system as it exists today, analyses indicate that the preliminary plan for freeway system reconstruction would reduce peak hour highway travel times throughout the Region similarly in areas of above regional average and below regional average concentrations of minority populations, and the preliminary plan would provide similar percentage increases in the number of jobs accessible within 10, 20, and 30 minutes of peak hour highway travel time in areas of above regional average and below regional average concentrations of minority concentrations.

Lastly, it is important to recognize that the recommendations of the regional freeway reconstruction study with respect to additional lanes and rebuilding the freeway system to modern design standards will add to the recommendations of the adopted regional land use and transportation plans. The recommendations currently in the regional land use and transportation plans with respect to land use, surface arterial improvement and expansion, travel demand management and transportation systems management, and improvement and expansion of public transit will continue to be recommendations of the regional plan. The regional plan recommends significant improvement and expansion of public transit, including the expansion of the geographic extent of public transit service, improvements in the hours of available service and frequency of service, and increased emphasis on rapid and express transit service. Altogether, service on the regional transit system under the plan would be increased by about 70 percent, measured in terms of revenue transit vehicle miles of service provided. The improvements in transit service and attendant improvements and accessibility attendant to the transit element of the existing regional transportation system plan would particularly be focused on those areas of the Region with above regional average concentrations of minority persons and persons of low income.

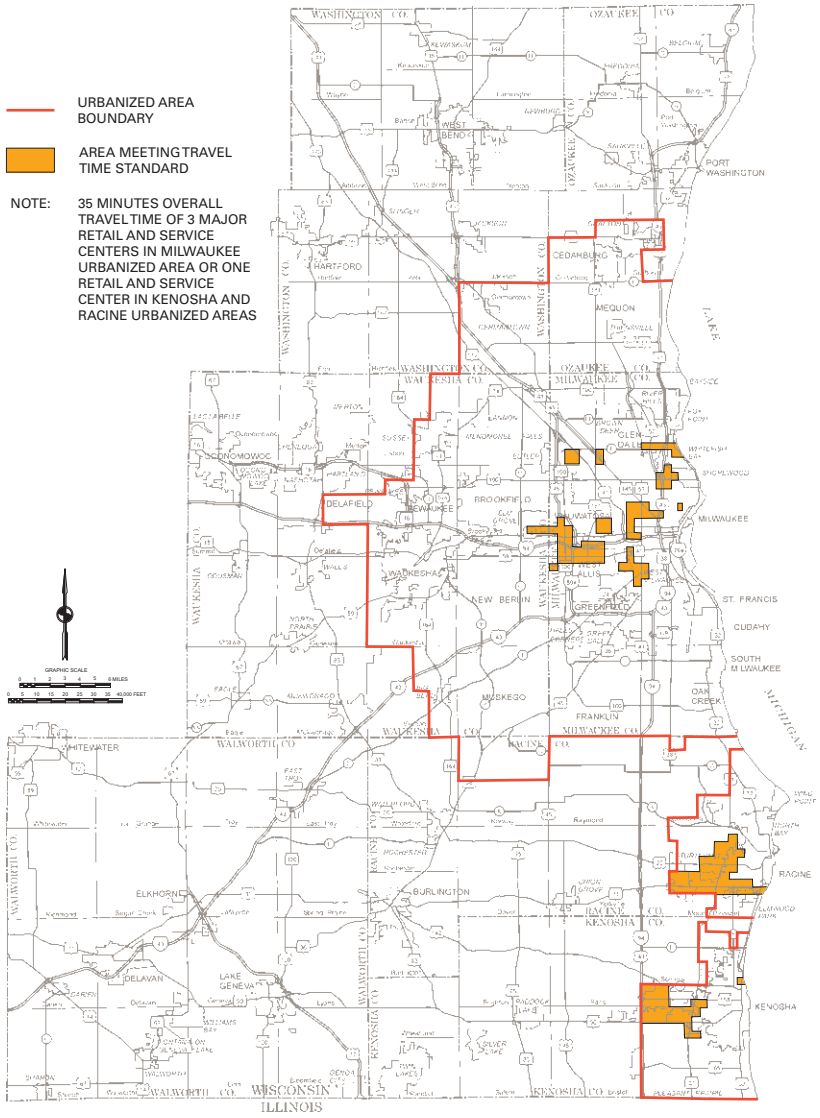
Map C-33

AREAS MEETING TRAVEL TIME STANDARDS FOR EMPLOYMENT AND SELECTED ACTIVITY CENTERS THROUGH TRAVEL BY TRANSIT: 2020 REGIONAL TRANSPORTATION PLAN

EMPLOYMENT: 2020 REGIONAL TRANSPORTATION PLAN

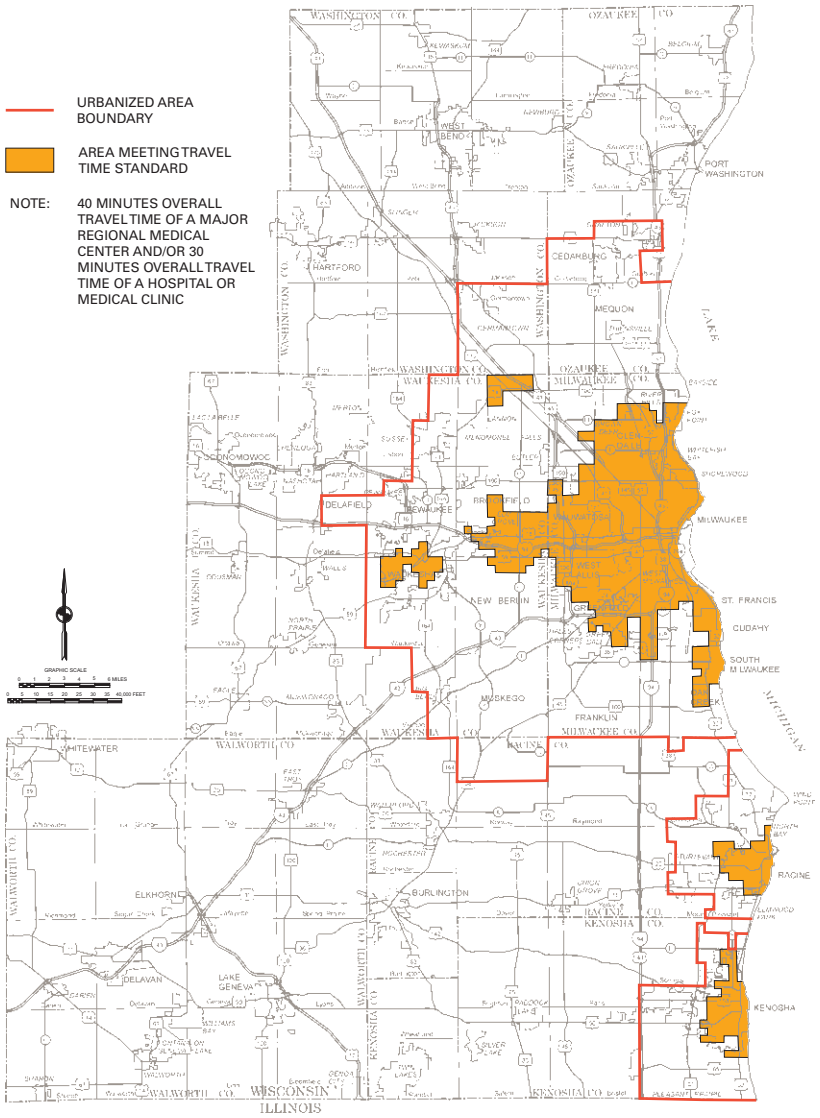


MAJOR RETAIL AND SERVICE CENTERS: 2020 REGIONAL TRANSPORTATION PLAN

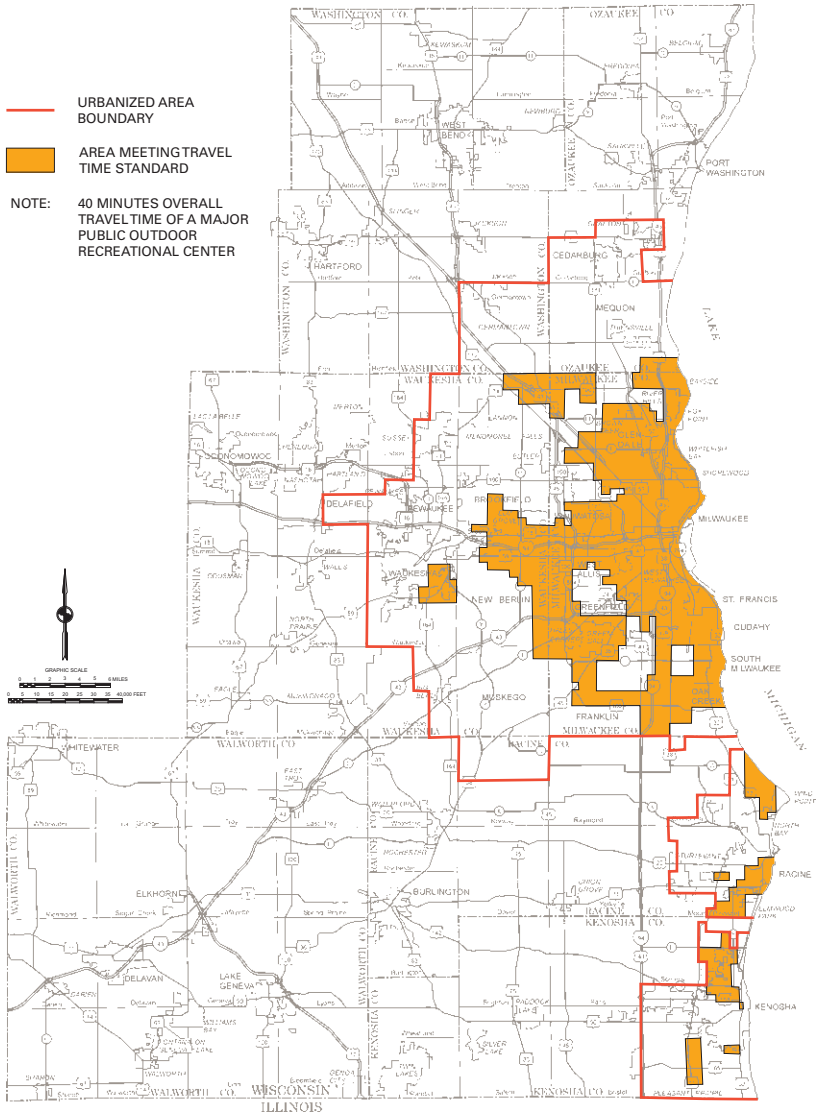


Map C-33 (continued)

MAJOR MEDICAL CENTERS:
2020 REGIONAL TRANSPORTATION PLAN

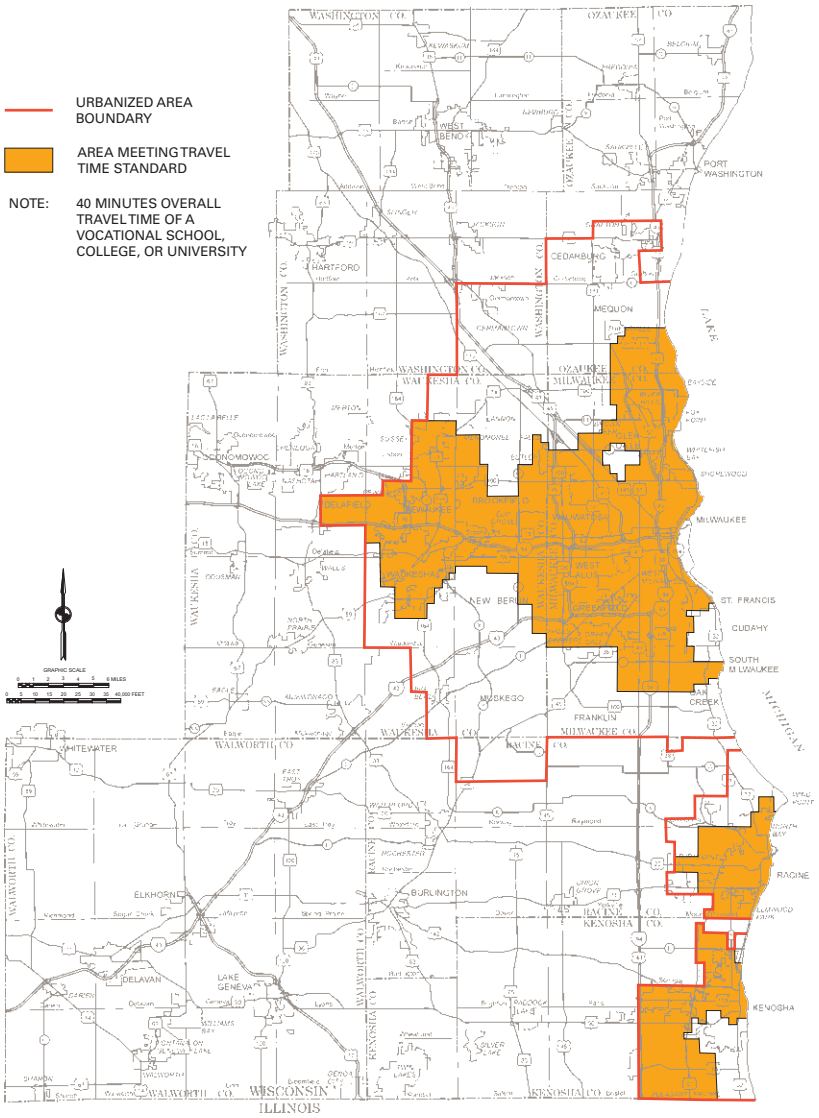


MAJOR RECREATIONAL CENTERS:
2020 REGIONAL TRANSPORTATION PLAN

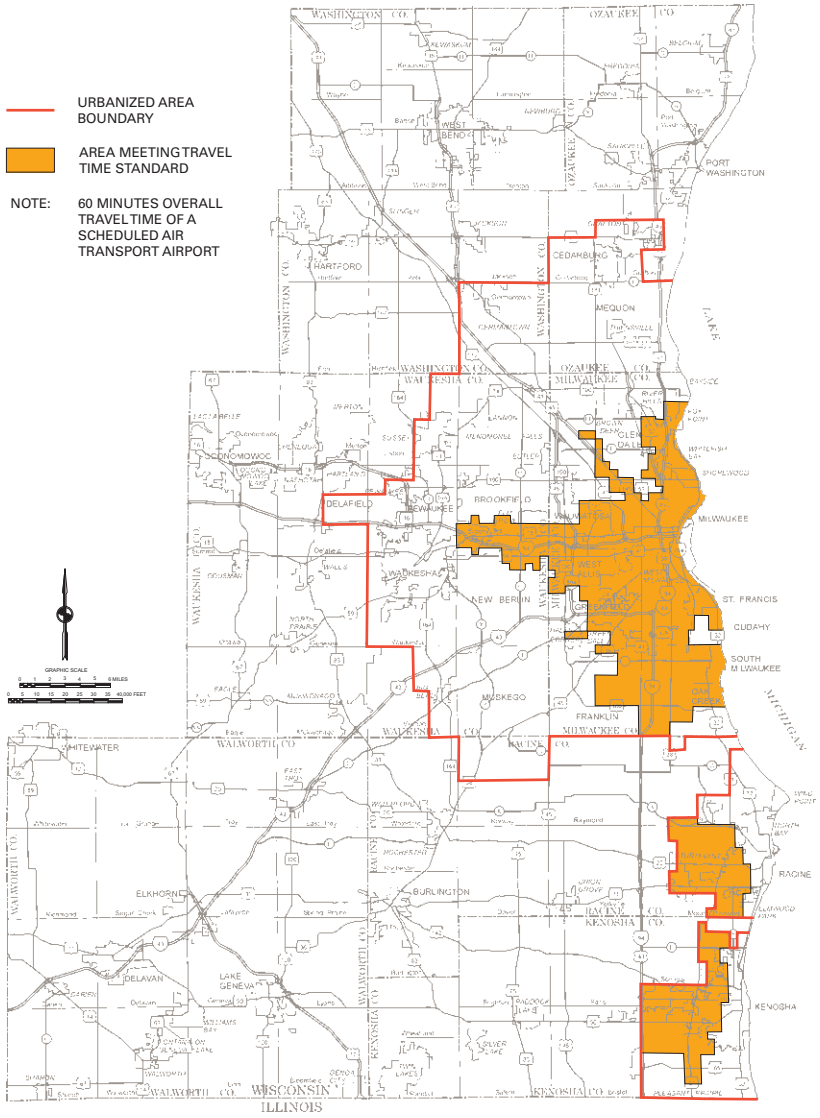


Map C-33 (continued)

MAJOR EDUCATIONAL CENTERS:
2020 REGIONAL TRANSPORTATION PLAN



SCHEDULED AIR TRANSPORT TERMINALS:
2020 REGIONAL TRANSPORTATION PLAN



Source: SEWRPC.

Attachment 1

EVALUATION OF THE IMPACTS IN THE CITY OF MILWAUKEE

INTRODUCTION

The previous sections of Appendix C, "Evaluation of the Impacts of the Preliminary Recommended Freeway System Reconstruction Plan on Minority and Low Income Populations in Southeastern Wisconsin," include analyses of impacts conducted at county and regional levels. Following the completion of the preliminary draft of the report, City of Milwaukee staff requested that similar analyses be conducted for the City of Milwaukee. This attachment includes analyses conducted specifically for the City of Milwaukee, and compares the results of those analyses to those reported for Milwaukee County and the entire Region.

MINORITY AND LOW INCOME POPULATIONS OF THE CITY OF MILWAUKEE

Previously identified in Maps C-1 through C-6 and Tables C-1 through C-3 of "Evaluation of the Impacts of the Preliminary Recommended Freeway System Reconstruction Plan on Minority and Low Income Populations in Southeastern Wisconsin" were the magnitude and location of minority and low income populations in each county of the Southeastern Wisconsin Region and the entire Region based on the year 2000 census. Tables C-17 through C-19 document the minority and low income populations of the City of Milwaukee in the year 2000 based on the year 2000 census.

ESTIMATED IMPACTS FOR THE CITY OF MILWAUKEE

The evaluation of the impact of the preliminary freeway system reconstruction plan on minority and low income populations included analysis of its potential adverse disproportionate impacts, specifically with respect to minority and low income populations. The locations of concentrations of minority and low income populations were compared to the locations of freeway segments proposed to be widened under the preliminary recommended freeway system reconstruction plan. Also, the location and amount of estimated right-of-way acquisition under the preliminary plan within areas with above regional average concentrations of minority and low income populations were determined.

The results of the analyses conducted regarding the City of Milwaukee indicated that there are generally not disproportionate impacts on low income and minority populations in the City of Milwaukee. The following are the results of the individual analyses:

- Population in proximity to freeways proposed to be widened – An analysis was conducted to evaluate whether the City of Milwaukee's minority and low income populations are disproportionately represented in areas in proximity to freeways proposed to widened. The results of this analysis, as presented in Table C-20, indicate that within the City of Milwaukee, the percentage of the total population located in proximity to the freeways proposed to be widened under the preliminary plan that is of a minority or low income population is generally similar (equal or only a few percent lower or higher) to the percentage of the total population of the City of Milwaukee which is of a minority or low income population. Thus, this analysis indicates there is not a significant over-representation of minority or low income populations in areas located in proximity to the freeways proposed to be widened under the preliminary plan within the City of Milwaukee, and therefore, no indication based on this analysis of any disproportionate adverse impact attendant to the proposed addition of freeway lanes under the preliminary plan.

- Census blocks adjacent to, or traversed by, a freeway proposed to be widened – An analysis was also conducted to evaluate whether there was a disproportionate amount of census blocks in the City of Milwaukee with above regional average concentrations of minority and low income persons located

Table C-17

POPULATION BY RACE IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

Area	White		Nonwhite								Total Population
			Black/African American		American Indian and Alaska Native		Asian and Pacific Islander		Other Race		
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	
City of Milwaukee	310,734	52.1	230,503	38.6	9,116	1.5	20,975	3.5	43,201	7.2	596,974
Milwaukee County	633,446	67.4	240,113	25.5	11,907	1.3	28,930	3.1	48,227	5.1	940,164
Region	1,561,522	80.8	275,863	14.3	17,819	0.9	42,170	2.2	70,385	3.6	1,932,908

NOTE: As part of the 2000 Federal census, individuals could be reported as being of more than one race. The figures on this table indicate the number of persons reported as being of a given race (as indicated by the column heading), including those who were reported as that race exclusively and those who were reported as that race and one or more other races. Accordingly, the population figures by race sum to more than the total population for each area.

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

Table C-18

HISPANIC POPULATION IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

Area	Total Population	Hispanic Population	
		Number	Percent of Total Population
City of Milwaukee	596,974	71,646	12.0
Milwaukee County	940,164	82,406	8.8
Region	1,932,908	126,394	6.5

NOTE: Persons of Hispanic origin may be of any race.

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

Table C-19

**FAMILIES WITH INCOME BELOW THE POVERTY LEVEL IN 2000:
CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION**

Area	Total Families	Families With Income Below the Poverty Level	
		Number	Percent of Total Families
City of Milwaukee	136,660	23,696	17.3
Milwaukee County	226,685	26,454	11.7
Region	495,910	35,466	7.2

NOTE: The U.S. Bureau of the Census uses a set of money income thresholds that vary by family size and composition to determine poverty status. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered to be below poverty. Poverty is not defined for people in military barracks, institutional group quarters, or for unrelated individuals under age 15, such as foster children.

**POVERTY THRESHOLDS BY SIZE OF FAMILY AND NUMBER OF RELATED
CHILDREN UNDER 18 YEARS OF AGE FOR PURPOSES OF THE 2000 CENSUS**

Size of Family Unit	Weighted Average Thresholds	Related Children Under 18 Years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	$8,501	--	--	--	--	--	--	--	--	--
Under 65 years	8,667	$8,667	--	--	--	--	--	--	--	--
65 years and over	7,990	7,990	--	--	--	--	--	--	--	--
Two persons	10,869	--	--	--	--	--	--	--	--	--
Householder under 65 years	11,214	11,156	$11,483	--	--	--	--	--	--	--
Householder 65 years and over	10,075	10,070	11,440	--	--	--	--	--	--	--
Three persons	13,290	13,032	13,410	$13,423	--	--	--	--	--	--
Four persons	17,029	17,184	17,465	16,895	$16,954	--	--	--	--	--
Five persons	20,127	20,723	21,024	20,380	19,882	$19,578	--	--	--	--
Six persons	22,727	23,835	23,930	23,436	22,964	22,261	$21,845	--	--	--
Seven persons	25,912	27,425	27,596	27,006	26,595	25,828	24,934	$23,953	--	--
Eight persons	28,967	30,673	30,944	30,387	29,899	29,206	28,327	27,412	$27,180	--
Nine persons or more	34,417	36,897	37,076	36,583	36,169	35,489	34,554	33,708	33,499	$32,208

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

Table C-20

COMPARISON OF TOTAL MINORITY POPULATIONS AND FAMILIES IN POVERTY AND THE MINORITY POPULATIONS AND FAMILIES IN POVERTY THAT RESIDE IN AREAS LOCATED IN PROXIMITY TO FREEWAYS PROPOSED TO BE WIDENED UNDER THE PRELIMINARY FREEWAY SYSTEM RECONSTRUCTION PLAN IN 2000[a]: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

CITY OF MILWAUKEE

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	596,974	230,503	38.6	124,760	43,740	35.1
American Indian and Alaskan Native Persons	596,974	9,116	1.5	124,760	1,970	1.6
Asian and Pacific Islander Persons	596,974	20,975	3.5	124,760	3,760	3.0
Other Minority Persons	596,974	43,201	7.2	124,760	11,270	9.0
Hispanic Persons	596,974	71,646	12.0	124,760	20,650	16.6
Families in Poverty	136,660	23,696	17.3	29,910	5,830	19.5

MILWAUKEE COUNTY

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	940,164	240,113	25.5	203,510	45,510	22.4
American Indian and Alaskan Native Persons	940,164	11,907	1.3	203,510	2,530	1.2
Asian and Pacific Islander Persons	940,164	28,930	3.1	203,510	5,970	2.9
Other Minority Persons	940,164	48,227	5.1	203,510	12,210	6.0
Hispanic Persons	940,164	82,406	8.8	203,510	22,710	11.2
Families in Poverty	226,685	26,454	11.7	54,490	6,470	11.9

Table C-20 (continued)

REGION

Minority Group	Total and Minority Populations			Population in Areas Located in Proximity to Freeways Proposed to be Widened		
	Total Population	Minority Group Population	Percent of Total Population that is Minority Group Population	Total Population	Minority Group Population	Percent of Affected Population that is Minority Group Population
Black/ African American Persons	1,932,908	275,863	14.3	256,490	46,310	18.1
American Indian and Alaskan Native Persons	1,932,908	17,819	0.9	256,490	2,740	1.1
Asian and Pacific Islander Persons	1,932,908	42,170	2.2	256,490	7,330	2.9
Other Minority Persons	1,932,908	70,385	3.6	256,490	12,540	4.9
Hispanic Persons	1,932,908	126,394	6.5	256,490	23,580	9.2
Families in Poverty	495,910	35,466	7.2	83,860	6,980	8.3

[a]*The information regarding racial and ethic populations in affected areas is year 2000 Census data for the Census blocks located in proximity (1/2 to 3/4 mile) to a freeway proposed to be widened under the preliminary freeway system reconstruction plan. The information regarding families in poverty is year 2000 Census data for the Census block groups located in proximity to a freeway proposed to be widened under the preliminary freeway system reconstruction plan.*

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

adjacent to, or traversed by, freeways proposed to be widened. Table C-21 displays the total number of census blocks within the City of Milwaukee and, as well, the number and percent of census blocks within the City which have above regional average concentrations of minority populations. Table C-22 displays the number of census blocks adjacent to, or traversed by, the freeway system in the City of Milwaukee, along with the number and percent of those census blocks which have above regional average concentrations of minority populations. Comparison of Tables C-21 and C-22 indicates that in the City of Milwaukee, the percentage of census blocks adjacent to the freeway system, including segments proposed to be widened, which have above regional average concentrations of minorities is, in all cases, less than the percentage of census blocks in the City of Milwaukee which have above regional average concentrations of minorities. This analysis also indicates there is not an over-representation of minority populations in the City of Milwaukee in areas adjacent to the freeway, or adjacent to the freeways proposed to be widened under the preliminary plan.

- Location of estimated right-of-way acquisition impacts – Estimates were prepared of the potential right-of-way acquisition in the City of Milwaukee associated with rebuilding the regional freeway system to modern design standards as recommended under the preliminary plan, and also rebuilding the regional freeway system with 127 miles of additional lanes as recommended under the preliminary plan. The estimated right-of-way requirements associated with rebuilding to modern design standards are substantially greater than the estimated right-of-way requirements associated with the 127 miles of additional lanes included in the preliminary freeway system reconstruction plan. The incremental right-of-way acquisition needs in the City of Milwaukee attendant to rebuilding the freeway system with 127 miles of additional lanes is an estimated 22 residences, five commercial/industrial buildings, and one governmental/institutional building. The estimated right-of-way requirements in the City of Milwaukee associated with rebuilding the freeway system to modern design standards is 118 residences and eight commercial/industrial buildings.

  An analysis was conducted to determine for the City of Milwaukee the extent to which the estimated residential and commercial/industrial right-of-way acquisition impacts were located in areas with above regional average concentrations of minority and low income populations. Tables C-23 through C-29 present the results of that analysis.

  As may be seen in Tables C-23 through C-29, in most cases, the proportions of right-of-way acquisition impacts in the City of Milwaukee in census blocks with above regional average concentrations of minority and low income persons is less than the proportions of census blocks in the City of Milwaukee with above regional average concentrations of minority and low income persons. The residences and businesses which are estimated to be needed to be acquired in the City of Milwaukee under the preliminary plan are generally not disproportionately located in areas with above regional average concentrations of minority or low income populations. Also, most of the relocations of residences and businesses which are estimated to be needed to be acquired in the City of Milwaukee in areas with above regional average concentrations of low income and minority persons under the preliminary plan are associated with the modernization of the freeway system, not the proposed additional lanes.

ESTIMATED BENEFICIAL IMPACTS FOR THE CITY OF MILWAUKEE

The previous sections of "Evaluation of the Impacts of the Preliminary Recommended Freeway System Reconstruction Plan on Minority and Low Income Populations in Southeastern Wisconsin" include analyses of the estimated beneficial impacts of the preliminary recommended plan for the entire Southeastern Wisconsin Region. The estimated beneficial impacts of the preliminary recommended plan identified in that report include the following:

- A substantial increase in freeway traffic congestion levels and freeway travel times would be avoided.

Table C-21

NUMBER AND PERCENT OF CENSUS BLOCKS/ BLOCK GROUPS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF MINORITY POPULATIONS IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND THE SOUTHEASTERN WISCONSIN REGION

Area	Total Number of Census Blocks	Census Blocks with Above Regional Average Concentrations of Minority Populations: 2000												Total Number of Census Block Groups: 2000	Census Block Groups with Above Regional Average Concentration of Families in Poverty: 2000	
		Black/African American		American Indian and Alaskan Native		Asian and Pacific Islander		Other Minority		Hispanic		Total Minority Populations[a]				
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total		Number	Percent of Total
City of Milwaukee	7,398	3,066	41.4	2,165	29.3	1,760	23.8	1,768	23.9	1,899	25.7	3,825	51.7	592	396	66.9
Milwaukee County	12,447	3,226	25.9	3,039	24.4	2,844	22.8	2,283	18.3	2,503	20.1	4,117	33.1	880	435	49.4
Region	33,402	4,075	12.2	5,029	15.1	4,872	14.6	4,314	12.9	5,182	15.5	5,772	17.3	1,651	558	33.8

[a]The total minority population represents all persons identified as a member of a racial minority group-Black/African American persons, American Indian and Alaska Native persons, Asian and Pacific Islander persons, and other minority persons-and Hispanic persons not identified as members of a racial minority group.

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

Table C-22

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

BLACK/AFRICAN AMERICAN PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Black/African American Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	71	14.3	43	29.3	114	17.8
Milwaukee County	12,447	755	148	903	80	10.6	43	29.1	123	13.6
Region	33,402	1,254	761	2,015	87	6.9	48	6.3	135	6.7

AMERICAN INDIAN AND ALASKA NATIVE PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of American Indian and Alaska Native Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	78	15.8	22	15.0	100	15.6
Milwaukee County	12,447	755	148	903	114	15.1	22	14.9	136	15.1
Region	33,402	1,254	761	2,015	142	11.3	50	6.6	192	9.5

Table C-22 (continued)

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

ASIAN AND PACIFIC ISLANDER PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Asian and Pacific Islander Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	67	13.5	17	11.6	84	13.1
Milwaukee County	12,447	755	148	903	113	15.0	17	11.5	130	14.4
Region	33,402	1,254	761	2,015	147	11.7	37	4.9	184	9.1

OTHER MINORITY PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Other Minority Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	70	14.1	12	8.2	82	12.8
Milwaukee County	12,447	755	148	903	89	11.8	12	8.1	101	11.2
Region	33,402	1,254	761	2,015	98	7.8	29	3.8	127	6.3

Table C-22 (continued)

COMPARISON OF TOTAL CENSUS BLOCKS AND CENSUS BLOCKS ADJACENT TO OR TRAVERSED BY A FREEWAY SEGMENT WITH ABOVE AVERAGE CONCENTRATIONS OF MINORITY GROUPS IN 2000: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION

HISPANIC PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Hispanic Persons and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	87	17.6	12	8.2	99	15.4
Milwaukee County	12,447	755	148	903	105	13.9	12	8.1	117	13.0
Region	33,402	1,254	761	2,015	122	9.7	30	3.9	152	7.5

TOTAL MINORITY PERSONS

Area	Total Number of Census Blocks	Total Census Blocks Adjacent to or Traversed by a Freeway Segment			Census Blocks With Above Regional Average Concentration of Total Minority Persons[a] and Adjacent to or Traversed by a Freeway Segment					
					Freeway Segment Proposed to be Widened		Other Freeway Segment		Total	
		Freeway Segment Proposed to be Widened	Other Freeway Segment	Total	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks	Number	Percent of All Adjacent and Traversed Census Blocks
City of Milwaukee	7,398	495	147	642	113	22.8	42	28.6	155	24.1
Milwaukee County	12,447	755	148	903	131	17.4	42	28.4	173	19.2
Region	33,402	1,254	761	2,015	142	11.3	50	6.6	192	9.5

[a] *The total minority population represents all persons identified as a member of a racial minority group-Black/African American persons, American Indian and Alaska Native persons, Asian and Pacific Islander persons, and other minority persons-and Hispanic persons not identified as members of a racial minority group.*

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

Table C-23

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE-AVERAGE REGIONAL CONCENTRATIONS OF BLACK/AFRICAN AMERICAN PERSONS: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

Area	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	21	17.8	22	4	18.1	140	25	17.9[c]
Milwaukee County	131	21	16.0	46	7	15.2	177	28	15.8
Region	166	21	12.7	50	8	16.0	216	29	13.4

Area	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Black/African American Persons	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	- -	- -	5	- -	- -	13	- -	- -[c]
Milwaukee County	12	- -	- -	8	2	25.0	20	2	10.0
Region	23	- -	- -	8	2	25.0	31	2	6.5

[a]In 2000, Black/African American persons represented 38.6 percent of the City of Milwaukee's total population, 25.5 percent of Milwaukee County's total population, and 14.3 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 14.3 percent of the total population) of Black/African American persons – 17.9 percent – is less than the percentage of census blocks in the City – 41.4 percent – which have above average concentrations of Black/African American persons. None of the commercial/industrial buildings which will need to be acquired within in the City of Milwaukee under the preliminary plan are located in census block with above regional average concentrations of Black/African American persons.

Source: HNTB and SEWRPC.

Table C-24

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF AMERICAN INDIAN AND ALASKAN NATIVE PERSONS: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations			Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations			Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	61	51.7	22	7	31.8	140	68	48.6[c]
Milwaukee County	131	62	47.3	46	9	19.6	177	71	40.1
Region	166	69	41.6	50	9	18.0	216	78	36.1

	Estimated Commercial/Industrial Residential Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations			Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations			Relocations in Census Blocks with Above Regional Average Concentration of American Indian and Alaskan Native Populations	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	1	12.5	5	- -	- -	13	1	7.7[c]
Milwaukee County	12	4	33.3	8	- -	- -	20	4	20.0
Region	23	7	30.4	8	- -	- -	31	7	22.6

[a]In 2000, American Indian and Alaskan Native Persons represented 1.5 percent of the City of Milwaukee's total population, 1.3 percent of Milwaukee County's total population, and 0.9 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 0.9 percent of total population) of American Indian and Alaska Native persons - 48.6 percent - is greater than the percentage of census blocks in the City of Milwaukee—29.3 percent—with above regional average concentrations of American Indian and Alaska Native persons. However, of the 68 residences estimated to need to be acquired under the preliminary plan within census blocks with above regional average (0.9 percent of total population) concentrations of American Indian and Alaska Native persons, 53 residences, or 78 percent, would be located within census blocks with less than 3.0 percent American Indian or Alaska Native population, 12 residences, or 18 percent, would be located within census block with between 3.0 and 6.1 percent American Indian and Alaska Native population, and three residences, or 4 percent, would be located within census blocks with 13.1 percent American Indian and Alaska Native persons. Also, of the 68 residences estimated to need to be acquired under the preliminary plan with above regional average concentrations (more than 0.9 percent to total population) of American Indian and Alaska Native populations, 61, or 90 percent, are attendant to rebuilding the freeway system to modern design standards and only seven, or 10 percent, are attendant to additional lanes.

The percentage of businesses within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 0.9 percent of total population) of American Indian and Alaska Native persons—7.7 percent—is less than the percentage of census blocks in the City of Milwaukee—29.3 percent—with above regional average concentrations of American Indian and Alaska Native persons.

Source: HNTB and SEWRPC.

Table C-25

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF ASIAN AND PACIFIC ISLANDER PERSONS: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	40	33.9	22	9	41.0	140	49	35.0[c]
Milwaukee County	131	42	32.1	46	17	37.0	177	59	33.3
Region	166	54	32.5	50	20	40.0	216	74	34.3

	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Asian and Pacific Islander Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	- -	- -	5	- -	- -	13	- -	- -[c]
Milwaukee County	12	3	25.0	8	1	12.5	20	4	20.0
Region	23	4	17.4	8	1	12.5	31	5	16.1

[a]In 2000, Asian and Pacific Islander persons represented 3.5 percent of the City of Milwaukee's total population, 3.1 percent of Milwaukee County's total population, and 2.2 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 2.2 percent of total population) of Asian and Pacific Islander persons—35.0 percent—is greater than the percentage of census blocks in the City of Milwaukee—23.8 percent—with above regional average concentrations of Asian and Pacific Islander persons. However, of the estimated 49 residences to be acquired under the preliminary plan within census blocks with above regional average concentrations of Asian and Pacific Islander persons, 25, or 51 percent, would be located within census blocks with between 2.2 to 5.9 percent Asian and Pacific Islander population, 18, or 37 percent, would be located within census blocks with between 6.0 and 9.0 percent Asian and Pacific Islander population, and 6, or 12 percent, would be located within census blocks with between 10.0 and 14.0 percent Asian and Pacific Islander population. Also, of the 49 residences estimated to need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 2.2 percent of total population) of Asian and Pacific Islander persons, 40, or 82 percent, of the residences would be needed to rebuild the freeway system to modern design standards, and are not attributable to the proposed additional lanes on the freeway system under the preliminary plan.

None of the commercial/industrial buildings which will need to be acquired within in the City of Milwaukee under the preliminary plan are located in census block with above regional average concentrations of Asian and Pacific Islander persons.

Source: HNTB and SEWRPC.

Table C-26

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF OTHER MINORITY PERSONS CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	29	24.6	22	7	31.8	140	36	25.7[c]
Milwaukee County	131	29	22.1	46	9	19.6	177	38	21.5
Region	166	30	18.1	50	9	18.0	216	39	18.1

	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Other Minority Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	1	12.5	5	- -	- -	13	1	7.7[c]
Milwaukee County	12	1	8.3	8	- -	- -	20	1	5.0
Region	23	3	13.0	8	- -	- -	31	3	9.7

[a]In 2000, Other Minority persons represented 7.2 percent of the City of Milwaukee's total population, 5.1 percent of Milwaukee County's total population, and 3.6 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 3.6 percent of total population) of Other Minority persons is 25.7 percent. The percentage of census blocks within the City of Milwaukee with above regional average concentrations of Other Minority persons is 23.9 percent. Thus, the percentage—25.7 percent—of residences to be acquired within the City of Milwaukee under the preliminary plan within census blocks with above regional average concentrations of Other Minority persons is about the same as the percentage—23.9 percent—of census blocks within the City of Milwaukee with above regional average concentrations of Other Minority persons. Also, of the 36 residences estimated to need to be acquired under the preliminary plan with above regional average concentrations (more than 3.6 percent to total population) of Other Minority populations, 29, or 81 percent, are attendant to rebuilding the freeway system to modern design standards and only seven, or 19 percent, are attendant to additional lanes.

The percentage of businesses within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 0.9 percent of total population) of Other Minority persons – 7.7 percent – is less than the percentage of census blocks in the City of Milwaukee—23.9 percent—with above regional average concentrations of Other Minority persons.

Source: HNTB and SEWRPC.

Table C-27

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF HISPANIC PERSONS CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	22	18.6	22	7	31.8	140	29	20.7[c]
Milwaukee County	131	22	16.8	46	9	19.6	177	31	17.5
Region	166	26	15.7	50	9	18.0	216	35	16.2

	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons			Relocations in Census Blocks with Above Regional Average Concentrations of Hispanic Persons	
Area	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	1	12.5	5	- -	- -	13	1	7.7[c]
Milwaukee County	12	4	33.3	8	- -	- -	20	4	20.0
Region	23	9	39.1	8	- -	- -	31	9	29.0

[a]In 2000, Hispanic persons represented 12.0 percent of the City of Milwaukee's total population, 8.8 percent of Milwaukee County's total population, and 6.5 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 6.5 percent of the total population) of Hispanic persons – 20.7 percent – is less than the percentage of census blocks in the City – 25.7 percent – which have above average concentrations of Hispanic persons.

The percentage of commercial/industrial buildings within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 6.5 percent of the total population) of Hispanic persons – 7.7 percent – is less than the percentage of census blocks in the City – 25.7 percent – which have above average concentrations of Hispanic persons.

Source: HNTB and SEWRPC.

Table C-28

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF TOTAL MINORITY POPULATIONS CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

Area	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	42	35.6	22	7	31.8	140	49	35.0[c]
Milwaukee County	131	44	33.6	46	10	21.7	177	54	30.5
Region	166	44	26.5	50	10	20.0	216	54	25.0

Area	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations			Relocations in Census Blocks with Above Regional Average Concentrations of Total Minority Populations	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	1	12.5	5	- -	- -	13	1	7.7[c]
Milwaukee County	12	1	8.3	8	- -	- -	20	1	5.0
Region	23	1	4.3	8	- -	- -	31	1	3.2

[a]Persons defined as being a member of a minority group were Black/African American persons; American Indian and Alaskan Native persons; Asian and Pacific Islander persons, Other Minority persons; and/or Hispanic persons. In 2000, the total minority population represented 55.5 percent of the City of Milwaukee's total population, 39.1 percent of Milwaukee County's total population, and 24.3 percent of the Region's total population.

[b]A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.

[c]The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 24.3 percent of the total population) of Total Minority persons – 35.0 percent – is less than the percentage of census blocks in the City – 51.7 percent – which have above average concentrations of Total Minority persons.

The percentage of commercial/industrial buildings within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 24.3 percent of the total population) of Total Minority persons – 7.7 percent – is less than the percentage of census blocks in the City – 51.7 percent – which have above average concentrations of Total Minority persons.

Source: HNTB and SEWRPC.

Table C-29

ESTIMATED RIGHT-OF-WAY REQUIREMENTS UNDER PRELIMINARY RECOMMENDED PLAN LOCATED IN AREAS WITH ABOVE REGIONAL AVERAGE CONCENTRATIONS OF FAMILIES IN POVERTY: CITY OF MILWAUKEE, MILWAUKEE COUNTY, AND SOUTHEASTERN WISCONSIN REGION[a]

Area	Estimated Residential Relocations[b]								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty			Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty			Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	118	53	44.9	22	3	13.6	140	56	40.0[c]
Milwaukee County	131	53	40.5	46	3	6.5	177	56	31.6
Region	166	54	32.5	50	3	6.0	216	57	26.4

Area	Estimated Commercial/Industrial Relocations								
	Relocations Due to Design and Design-Related Safety Improvements			Relocations Due to Additional Lanes			Total Relocations Under Preliminary Recommended Plan		
		Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty			Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty			Relocations in Census Block Groups with Above Regional Average Concentrations of Families in Poverty	
	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations	Total	Number	Percent of All Relocations
City of Milwaukee	8	8	100.0	5	5	100.0	13	13	100.0[c]
Milwaukee County	12	8	66.7	8	5	62.5	20	13	65.0
Region	23	9	39.1	8	5	62.5	31	14	45.2

[a]*Families with incomes below the Federally-defined poverty level were defined as families in poverty and of low income. In 2000, families with income below the Federally defined poverty level represented 17.3 percent of the City of Milwaukee's total population, 11.7 percent of Milwaukee County's total population, and 7.2 percent of the Region's total families.*

[b]*A residential relocation represents the acquisition of a single-family dwelling, an individual apartment unit, or an individual condominium unit.*

[c]*The percentage of residences within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 7.2 percent of total population) of families in poverty is 40.0 percent, less than the percentage of census blocks in the City of Milwaukee—66.9 percent—with above regional average concentrations of families in poverty.*

The percentage of businesses within the City of Milwaukee which will need to be acquired under the preliminary plan within census blocks with above regional average concentrations (more than 7.2 percent of total population) of families in poverty – 100.0 percent – is greater than the percentage of census blocks in the City of Milwaukee—66.9 percent—with above regional average concentrations of families in poverty. However, of the 13 businesses estimated to need to be acquired under the preliminary plan with above regional average concentrations (more than 7.2 percent to total population) of families in poverty, eight, or 62 percent, are attendant to rebuilding the freeway system to modern design standards and only five, or 38 percent, are attendant to additional lanes.

Source: HNTB and SEWRPC.

- Congestion-related safety would be addressed, as rear-end crash rates are five to 15 times higher on congested freeway segments compared to uncongested freeway segments.

- More jobs would be accessible in the year 2020 under the preliminary recommended plan compared to under a rebuild as-is alternative for both central city and suburban locations.

The report also addressed the benefits associated with the regional transportation plan, including the forecast increase in transit accessibility to employment and activity centers under the regional transportation plan.

The estimated beneficial impacts for the City of Milwaukee were not analyzed further because, unlike the estimated adverse impacts, the information was already provided in a manner sufficient for the evaluation of impacts on the City of Milwaukee. For example, the analysis of accessibility to jobs previously conducted that compared the forecast accessibility to job of suburban communities to the accessibility of central city locations clearly documented that there would be more jobs accessible to the City of Milwaukee locations in the year 2020 under the preliminary plan compared to under an alternative without the proposed additional lanes. Also, the maps previously presented to display accessibility to employment and activities centers via transit demonstrated that the recommended transit system improvements would improve transit accessibility over existing conditions. It was shown that a significant portion of the areas provided with improved accessibility coincide with areas having the largest concentrations of minority persons and low income families, including in the City of Milwaukee.

* * *

Appendix D

COMPARISON OF COSTS AND IMPACTS OF PRELIMINARY AND FINAL RECOMMENDED FREEWAY RECONSTRUCTION PLANS FOR SOUTHEASTERN WISCONSIN

Item	Recommended Plan	
	Preliminary	Final
Construction Cost	$6.25 billion	$6.23 billion
Right-of-Way Acquisition		
Design and Safety Improvements		
Acres	578	578
Residential relocations	166	166
Commercial relocations	23	23
Governmental/institutional relocations	2	2
Additional lanes		
Acres	81	66
Residential relocations	50	35
Commercial relocations	8	5
Governmental/institutional relocations	1	1
Total		
Acres	659	644
Residential relocations	216	201
Commercial relocations	31	28
Governmental/institutional relocations	3	3
Forecast Year 2020 Average Weekday Freeway System Traffic Congestion		
Moderate	14.8 miles	16.8 miles
Severe	17.2 miles	18.7 miles
Extreme	26.0 miles	26.0 miles
Total	58.0 miles	61.5 miles

Source: SEWRPC.

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