

Chapter V

RECOMMENDED TRANSPORTATION PLAN: 2020

INTRODUCTION

This chapter presents the year 2020 regional transportation system plan for Southeastern Wisconsin. The plan was prepared as an extension of the Commission's year 2010 plan, which was adopted by the Commission in December 1994. A major factor driving preparation of the year 2020 plan was a Federal planning requirement that metropolitan transportation plans have a design life of at least 20 years.

The new plan was substantially derived from the year 2010 plan. The process followed did not entail a major review, reappraisal, or reevaluation of the year 2010 plan for a number of reasons. First, the year 2010 plan had been adopted only recently by the Commission, by each of the seven counties in Southeastern Wisconsin, and by many municipalities, and endorsed by the Wisconsin Department of Transportation and the Wisconsin Department of Natural Resources. Second, the year 2010 plan had been well received by all parties concerned. Third, implementation of the year 2010 plan had only just been initiated, and it was too soon to determine whether the year 2010 plan warranted substantial change based upon the extent of plan implementation or transportation system performance. Fourth, new inventories of population, employment, and travel to support a major plan review, reappraisal, and reevaluation were not available, and would not be available until after the year 2000 Census.

The year 2020 regional transportation system plan was explicitly designed to serve the anticipated future travel demands derived from a companion year 2020 regional land use plan, as documented in SEWRPC Planning Report No. 45, *A Regional Land Use Plan for Southeastern Wisconsin: 2020*, December 1997. Thus, this year 2020 regional transportation system plan, like the previous year 2010 plan, was designed to serve and promote a desirable regional land use pattern, and not a land use pattern simply representing a continuation of existing trends. If transportation facilities and services do indeed influence land development and redevelopment, then the year 2020 regional transportation plan should serve to promote a desirable regional land use pattern.

Being derived from the year 2010 plan, the year 2020 regional transportation plan was designed to minimize

investment in the provision of additional highway capacity. The year 2010 plan explicitly considered highway capacity improvement and expansion as a measure of last resort in addressing traffic congestion problems. The potential for land use, public transit, travel demand management, and traffic management measures to alleviate traffic congestion were first considered. Only the residual traffic congestion problems which could not be resolved through these measures were subsequently addressed through the inclusion in the plan of arterial street and highway system capacity improvement and expansion.

The process for preparing the year 2020 regional transportation system plan consisted of six steps. The first step involved assessing the current performance of the regional transportation system and the trends in that performance since the completion of the year 2010 plan. The implementation of the year 2010 plan over the past three years was also reviewed.

The second step involved testing the ability of the adopted year 2010 regional transportation plan to accommodate travel derived from the year 2020 population, household, and employment forecasts as incorporated in the year 2020 regional land use plan. Thus, under this step, the potential for the year 2010 plan to meet the transportation needs of the Region 10 years further into the future was determined. The additional household and employment growth, and attendant travel and traffic growth, for the 10-year period between 2010 and 2020 was relatively modest, being approximately an 8 percent increase regionwide. In this first step, the deficiencies of the year 2010 plan in meeting year 2020 travel needs were ascertained in terms of identifying the following: 1) those additional areas of the Region warranting transit service by the year 2020; and 2) those arterial street and highway facilities expected to experience traffic congestion by the year 2020, even after undertaking the improvement and expansion projects proposed in the year 2010 plan.

The third step in the development of the year 2020 regional transportation system plan was to propose amendments to the adopted year 2010 plan to address the deficiencies and thereby extend and advance the plan to the year 2020. These amendments included the improvement and extension of transit service and the addition of highway capacity improvement and expansion projects.

Other amendments were derived from evaluating proposals for plan modifications advanced by local governments since completion of the year 2010 plan. All of the proposed amendments were reflected in the design of a preliminary recommended year 2020 plan.

The fourth step involved the testing and evaluation of the preliminary recommended year 2020 plan. This consisted of an assessment of the extent to which the plan met the several objectives for transportation system development and performance, and an assessment of the financial feasibility of implementing the plan. The performance of the preliminary plan was compared both to existing levels of transportation system performance and to the performance of the system under a “no-build,” or maintenance-of-existing-system, transportation plan alternative.

The fifth step involved obtaining public comment on the preliminary recommended year 2020 regional transportation system plan through the conduct of a public informational meeting and hearing.

The sixth and last step was preparation of a final year 2020 recommended regional transportation system plan. This effort took into consideration the comments made on the preliminary plan, modifying that plan as appropriate.

The remainder of this chapter documents the current adopted year 2010 regional transportation system plan, the results of the steps taken to extend that plan to the year 2020, and the year 2020 regional transportation system plan recommended for adoption.

THE ADOPTED YEAR 2010 REGIONAL TRANSPORTATION SYSTEM PLAN

The year 2010 regional transportation system plan was adopted by the Commission in December 1994. The adopted plan has three major elements: transportation systems management, public transit maintenance and improvement, and arterial street and highway maintenance and improvement. A more complete description of the plan is contained in SEWRPC Planning Report No. 41, *A Regional Transportation System Plan for Southeastern Wisconsin: 2010*, December 1994.

Transportation Systems Management Element

The transportation systems management element of the plan consists of the following seven measures:

1. Freeway Traffic Management
Implementation of the Milwaukee-area freeway traffic management system, including an operational control strategy that would seek to provide, through restricted access of single-occupancy vehicles at ramp meters, for average operating speeds of about 30 to 35 miles per hour on all freeway segments during peak periods. Buses and high-occupancy vehicles would receive preferential access at the ramps. The system would also include elements to provide advisory information and incident management.
2. Arterial Curb-Lane Parking Restrictions Potential
Restrictions of curb-lane parking during peak periods along about 400 miles, or about 12 percent, of the planned 3,607-mile arterial street and highway system in order to reduce congestion and help provide good transit service. Local governmental units would consider the proposed curb-lane parking restrictions as traffic volume and congestion increase.
3. Traffic Engineering
The use of state-of-the-art traffic engineering practices to assist in achieving efficient traffic flow on arterial facilities and to facilitate pedestrian and bicycle movements as arterial streets and highways are constructed and reconstructed.
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.
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 Maintenance and Improvement Element

The public transit system element of the plan proposes development within the Region of a true rapid transit system; development of a true express transit system; and significant improvement of the existing local bus transit systems. Map 19 displays the transit system recommendations and these three transit system components. Altogether, service on the regional transit system would be increased from service levels in 1991—the base year of the 2010 plan—by about 75 percent measured in terms of revenue transit vehicle-miles of service provided, and 46 percent measured in terms of revenue transit vehicle-hours of service provided.

Rapid Transit System Component

The proposed rapid transit system element would consist of buses operating over freeways between the Milwaukee central business district and outlying portions of Milwaukee County, the Milwaukee urbanized area, and Southeastern Wisconsin, and would have the following characteristics:

- The proposed bus rapid transit service would operate in both directions, providing both traditional commuter and reverse-commute service.
- The proposed rapid transit service would operate with some intermediate stops to increase accessibility to employment centers, and to increase accessibility for reverse-commute travel from residential areas within central Milwaukee County. Certain stops would be provided with shuttle bus or van service to nearby employment centers.
- The proposed service would operate throughout the day. The frequency of service provided would be every five to 30 minutes in peak travel periods, and every 30 to 60 minutes in off-peak periods.
- The proposed service would provide transit service at relatively high overall travel speeds averaging about 25 miles per hour, compared to typical overall local bus transit speeds, which average about 12 miles per hour.

Initially, all service could be provided over the regional freeway system, with service extensions on selected surface arterial streets and highways. Ultimately, depending upon the results of major transportation investment studies, the rapid transit routes could operate over exclusive busway facilities in the most congested freeway travel corridors in the Region (see Map 20). A preliminary engineering study/final environmental impact statement is currently under way in the IH 94 East-West Freeway Corridor considering such an exclusive busway.

Also recommended to be considered in these major investment studies is the potential to establish commuter-rail passenger service as an alternative form of rapid transit service to bus-on-freeway or bus-on-busway service in four major travel corridors, from Milwaukee to Kenosha, to Oconomowoc, to West Bend, and to Saukville.¹ Through these corridor studies, then, final decisions would be made as to whether to provide the rapid transit service through bus-on-freeway, bus-on-busway, or commuter-rail passenger service. Pending the conduct of these studies, all rapid transit service would be provided through the bus-on-freeway mode.

Express Transit System Component

The second component of the public transit element of the plan is an express transit system. The recommended express transit system would consist primarily of buses operating over a grid of 12 limited-stop, higher-speed routes within Milwaukee County. The express transit routes are also shown on Map 19.

The plan envisions that this system of limited-stop routes would initially consist of buses operating over arterial streets in mixed traffic. The service could be upgraded over time to buses operating on reserved street lanes, and could, ultimately, based on federally required corridor major investment studies, be considered for further upgrading to light-rail service.

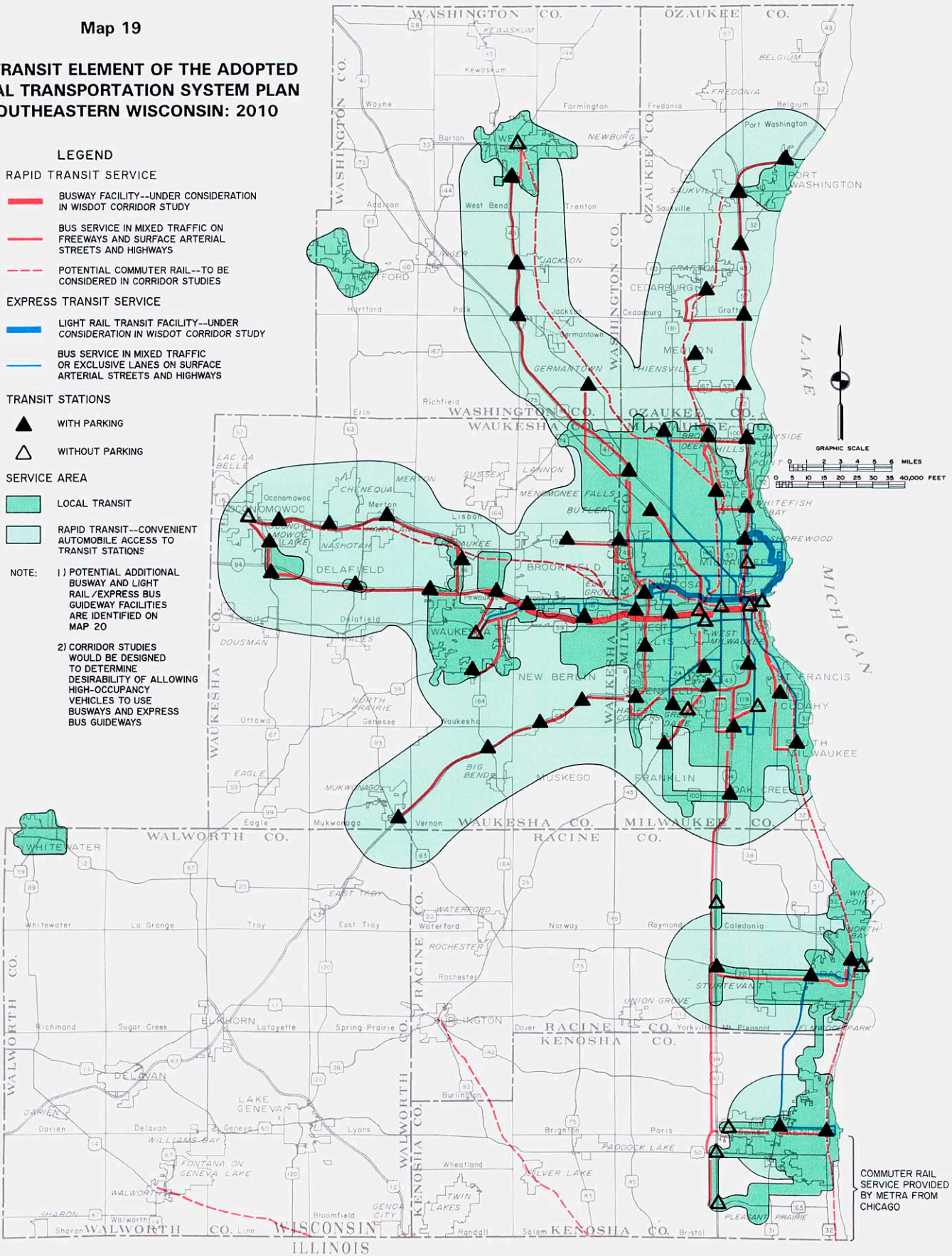
The ongoing IH 94 East-West Freeway major investment study/preliminary engineering study/final environmental impact statement is considering a light-rail facility between the Milwaukee central business district to the Milwaukee County Institutions Grounds and the Capitol Court shopping center.

¹*The precursor study to a potential major investment study—a feasibility study of commuter-rail service—is under way in three corridors: Milwaukee to Kenosha and on to Chicago, Burlington to Chicago, and Walworth to Chicago.*

Map 19

PUBLIC TRANSIT ELEMENT OF THE ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2010

- LEGEND**
- RAPID TRANSIT SERVICE**
- BUSWAY FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - BUS SERVICE IN MIXED TRAFFIC ON FREEWAYS AND SURFACE ARTERIAL STREETS AND HIGHWAYS
 - - - POTENTIAL COMMUTER RAIL--TO BE CONSIDERED IN CORRIDOR STUDIES
- EXPRESS TRANSIT SERVICE**
- LIGHT RAIL TRANSIT FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - BUS SERVICE IN MIXED TRAFFIC OR EXCLUSIVE LANES ON SURFACE ARTERIAL STREETS AND HIGHWAYS
- TRANSIT STATIONS**
- ▲ WITH PARKING
 - △ WITHOUT PARKING
- SERVICE AREA**
- LOCAL TRANSIT
 - RAPID TRANSIT--CONVENIENT AUTOMOBILE ACCESS TO TRANSIT STATIONS
- NOTE:**
- 1) POTENTIAL ADDITIONAL BUSWAY AND LIGHT RAIL/EXPRESS BUS GUIDEWAY FACILITIES ARE IDENTIFIED ON MAP 20
 - 2) CORRIDOR STUDIES WOULD BE DESIGNED TO DETERMINE DESIRABILITY OF ALLOWING HIGH-OCCUPANCY VEHICLES TO USE BUSWAYS AND EXPRESS BUS GUIDEWAYS

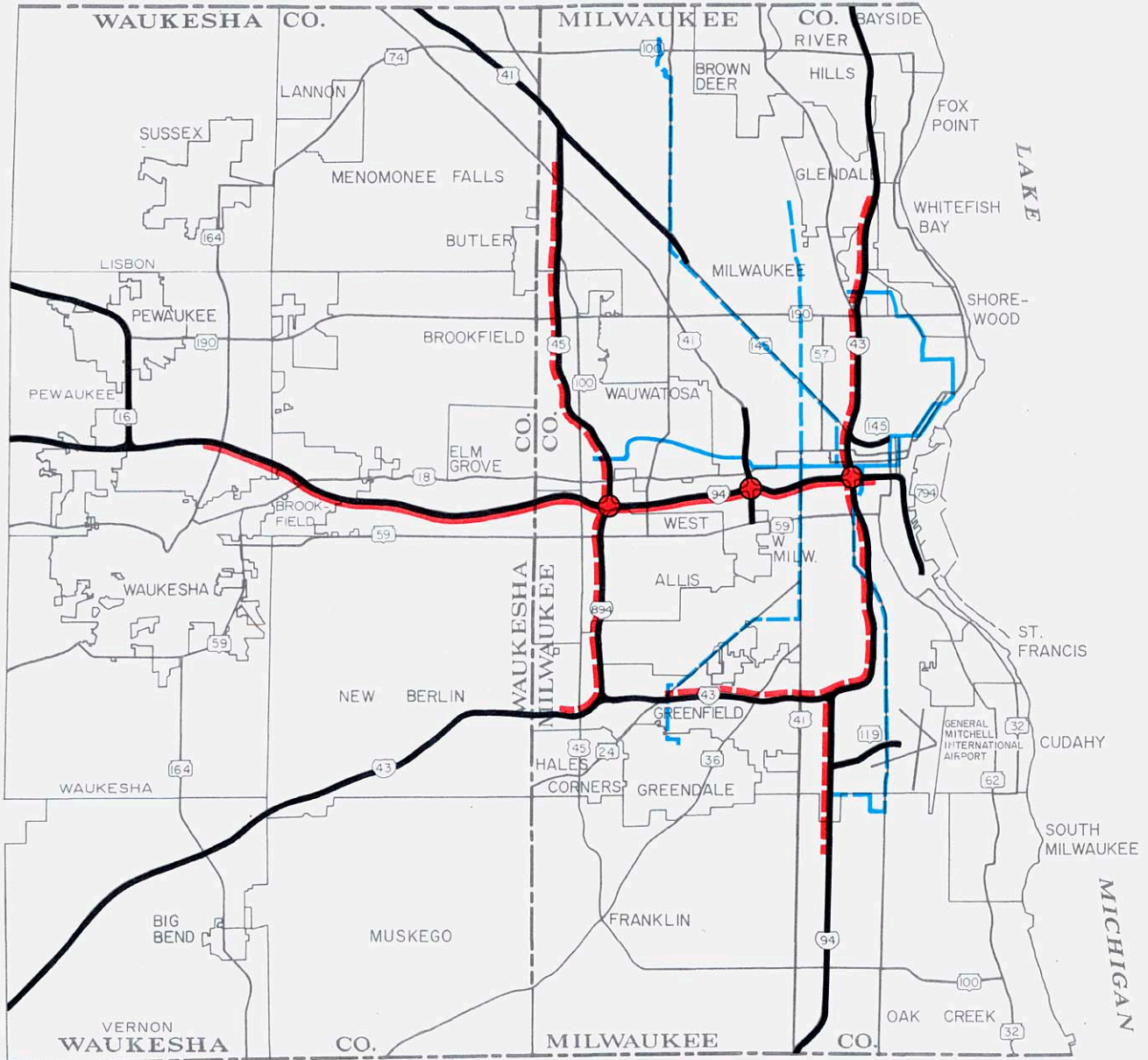


COMMUTER RAIL SERVICE PROVIDED BY METRA FROM CHICAGO

The regional transit system element of the adopted year 2010 regional transportation system plan envisions an extensive rapid transit system serving all major Milwaukee central business district travel corridors, an extensive grid system of express transit routes, particularly in Milwaukee County, and an expansion of local transit service areas with enhancements to accompanying paratransit services. The plan also incorporates the continuation of local shared-ride taxi service currently provided in certain smaller urban areas of the Region. The regional public transit system envisioned under the adopted year 2010 plan would consist of 3,640 round-trip route-miles, which would be about 59 percent greater than the level provided in 1991. The planned transit system would provide 110,600 revenue vehicle-miles of service per average weekday, or 75 percent more than in 1991, and 7,600 revenue vehicle-hours of service per average weekday, or 46 percent more than in 1991.

Source: SEWRPC.

POTENTIAL BUSWAY AND LIGHT-RAIL/EXPRESS-BUS-GUIDEWAY FACILITIES IDENTIFIED IN THE ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2010



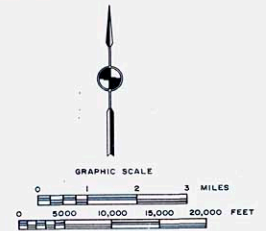
LEGEND

- BUSWAY FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
- - - BUSWAY FACILITY--TO BE CONSIDERED IN ADDITIONAL CORRIDOR STUDIES
- LIGHT RAIL TRANSIT FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
- - - LIGHT RAIL /BUS GUIDEWAY FACILITY--TO BE CONSIDERED IN ADDITIONAL CORRIDOR STUDIES
- MAJOR INTERCHANGE RECONSTRUCTION DESIGNED TO ACCOMMODATE BUSWAY FACILITY

NOTE: 1) PRELIMINARY RECOMMENDED PLAN INCLUDES ONLY THE BUSWAY AND LIGHT RAIL FACILITIES AND THEIR ATTENDANT COSTS AS DEVELOPED IN THE WISDOT EAST-WEST CORRIDOR STUDY

2) BUSWAY AND LIGHT RAIL /BUS GUIDEWAY FACILITY ALIGNMENTS SHOWN ON MAP ARE CONCEPTUAL; CORRIDOR STUDIES WOULD BE DESIGNED TO SELECT A PREFERRED ALIGNMENT

3) CORRIDOR STUDIES WOULD BE DESIGNED TO DETERMINE DESIRABILITY OF ALLOWING HIGH-OCCUPANCY VEHICLES TO USE BUSWAYS AND EXPRESS BUS GUIDEWAYS



Under the adopted year 2010 regional transportation system plan, rapid transit busway facilities and express transit light-rail facilities would be considered as alternatives to motor-bus transit service over arterial highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required major investment studies for each of the identified corridors. The busway facility, which extends along the IH 94 Corridor from the City of Milwaukee to the STH 164 interchange in Waukesha County, shown on the accompanying map, and the light-rail facility, which extends from the Village of Glendale through the central business district of Milwaukee to the Milwaukee County Institutions Grounds, have been explicitly included in the year 2010 plan. It is recognized that the implementation of these fixed-guideway transit facilities depends upon the ultimate outcome of the corridor study currently being conducted by the Wisconsin Department of Transportation. Upon completion of that study, the local units of government concerned, 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 plan envisions the following:

- The express service would operate in both directions during both peak and off-peak travel periods.
- The service would operate with a stop spacing of about one-half mile.
- The frequency of service provided would be about every 10 minutes during peak periods, and about every 20 to 30 minutes during off-peak periods.
- The overall travel speed provided would be about 18 miles per hour, a significant improvement over the average 12-mile-per-hour speed provided by the existing local bus transit service.

Local Transit Service

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, however, in the frequency of local transit service provided, particularly on the major local routes. In addition, the plan holds open the potential to restructure local transit services to provide for transit-center-oriented local systems to replace grid-route systems, depending upon detailed local plan implementation studies. The plan also recommends the provision of local transit services through shared-ride taxis in the smaller urban areas of the Region. Finally, the plan recommends the continuation of appropriate paratransit services to help meet the transportation needs of disabled individuals in the Region.

Arterial Street and Highway Maintenance and Improvement Element

The third element of the regional transportation system plan—and most important element in terms of impact upon daily travel and continued economic development of the Region—is the arterial street and highway system element. In 1991, there were about 3,274 miles of arterial streets and highways in the seven-county Region. The existing arterial street and highway system comprises about 30 percent of the total 11,200 miles of streets and highways existing within Southeastern Wisconsin. The arterial street and highway system is that component of the total street and highway system that has as its principal function the movement of traffic. This contrasts with nonarterial streets—consisting of land access and collector streets—which have as their principal function the provision of access to abutting property and the connection of land access streets to the arterials, respectively.

Currently, in the seven-county Southeastern Wisconsin Region, the arterial street and highway system carries about 97 percent of the total average weekday travel, with the public transit system carrying only about 3 percent of that demand, and with pedestrian and bicycle travel accounting for less than 1 percent. Even with the greatly expanded transit system envisioned in the year 2010 plan, the evolution of a more efficient regional land use pattern, and the travel demand management measures incorporated in the regional transportation system plan, the arterial street and highway system will be required to carry over 96 percent of the total travel demand, and will have to accommodate by the year 2010 a 30 percent increase in highway traffic over present levels.

The year 2010 plan recommended arterial street and highway system consists of 3,607 miles of facilities. This represents an increase of 333 miles, or about 10 percent, over the existing arterial system; it includes 202 miles of existing nonarterial facilities which may be expected to begin to serve an arterial function by the year 2010, and 131 miles of entirely new facilities.

The plan recommendations for the arterial street and highway system can be divided into three categories: system expansion, that is, the proposed construction of new arterial facilities; system improvement, that is, the proposed improvement of existing arterial facilities to carry additional traffic lanes and provide additional traffic capacity; and system preservation, that is, the proposed resurfacing and reconstruction of arterials to the same capacity as exists today. The recommendations by county are shown on Map 11 in Chapter II of this report (see pages 38 through 44).

The arterial street and highway system expansion recommendations of the plan include 131 miles of new arterial facilities. This system expansion component represents about 4 percent of the total planned arterial street and highway system in Southeastern Wisconsin.

The system improvement recommendations of the plan include a recommended 448 miles of existing arterial facilities proposed to be widened to carry additional traffic lanes or otherwise significantly improved. The 448 miles represent 12 percent of the total planned arterial street and highway system. The system improvement component of the arterial street and highway element represents in part a reaffirmation of the need for many long-planned arterial street and highway system improvements.

The third component of the arterial street and highway system recommendations of the plan is system preservation. Approximately 3,028 miles of arterial facilities,

representing 84 percent of the total planned arterial street and highway system, are recommended merely to be preserved at their same capacity to the year 2010 through resurfacing and reconstruction as needed.

The arterial street and highway system plan proposes about a 16 percent expansion in arterial street and highway system capacity. Freeway system improvements are limited to construction of the Oconomowoc bypass; the construction of the USH 12 Freeway extension from Elkhorn to Whitewater; and to two widening projects, including the widening of about one mile of IH 94 from STH 16 to CTH G in Waukesha County, and the widening of about eight miles of IH 43 from Bender Road to Highland Road in Milwaukee and Ozaukee Counties.

The plan thus does not contain or recommend any new freeway initiative, such as a Milwaukee-area circumferential freeway. Importantly, however, the plan recommends the reconstruction and modernization of the Milwaukee-area freeway system—particularly the IH 94 East-West Freeway, including the Zoo, Stadium, and Marquette Interchanges—and the reconstruction of freeway interchanges as needed in Waukesha, Racine, and Kenosha Counties to urban design standards. The plan does include four new interchanges on the freeway system: one at CTH ML on IH 94 in Kenosha County; one at Highland Road on IH 43 in Ozaukee County; one at Calhoun Road on IH 94 in Waukesha County; and one at CTH O on IH 43 in Walworth County. In the design of some segments, the plan recommends that consideration be given in major investment studies to the provision of exclusive high-occupancy vehicle lanes, that is, busway-carpool lanes.

The plan-recommended arterial improvement and expansion projects have been carefully designed to serve travel which may be expected to occur in and between the areas planned for conversion from rural to urban use under the adopted regional land use plan. Many of the proposed arterial street and highway improvements are needed to accommodate such planned development, while some are needed to provide direct and timely alternative routes for traffic which would otherwise use the area freeway system. It is important to note that highway improvements were recommended only as a last resort. The first elements considered were the transit and transportation system management elements. The potential of these elements to eliminate congestion was explicitly identified. Highway improvements were then recommended to resolve the residual existing and probable future residual traffic congestion.

The arterial street and highway element of the plan also recommends transfers of jurisdictional responsibilities with respect to arterial streets and highways. The recommended jurisdictional highway system plans for each county are shown on Map 21.

ASSESSMENT OF PERFORMANCE OF ADOPTED YEAR 2010 REGIONAL TRANSPORTATION PLAN IN MEETING YEAR 2020 TRAVEL DEMAND

The first step in extending the currently adopted year 2010 regional transportation plan by 10 years to provide a new year 2020 regional transportation plan was the determination of the ability of the currently adopted plan to meet the travel demands expected under the new year 2020 regional land use plan. This analysis of the performance of the year 2010 transportation system plan was undertaken with the aid of the Commission's travel simulation models, which are described in Chapter VII of SEWRPC Planning Report No. 41, *A Regional Transportation System Plan for Southeastern Wisconsin: 2010*, December 1994.

As shown in Table 34, the year 2020 regional land use plan incorporates regional population, household, and employment forecasts which anticipate growth of about 8 percent over the population, household, and employment forecasts incorporated in the year 2010 regional land use plan upon which the year 2010 regional transportation plan is based.²

²*A person-trip is defined as a one-way journey between a point of origin and a point of destination made by a person five years of age or older traveling as a driver or passenger in or on a private or personal vehicle—automobile, van, truck, or motorcycle—or as a passenger in a taxi, school bus, or urban public transit vehicle. The definition of a person-trip also includes trips made by bicycle and walking, but only for the trip purpose of going to or from work. Of the total 5,639,800 internal person-trips made within the Region in 1991, 5,177,400 trips, or 91.8 percent, were made by personal vehicle; 229,000 trips, or 4.1 percent, by school bus; 178,000 trips, or 3.1 percent, by public transit; and 55,000 trips, or 1.0 percent, by motorcycle, taxi, bicycle, or walking.*

A truck trip is a one-way journey between a point of origin and a point of destination made by a commercial truck.

(Footnote 2 continued on page 98)

Given the forecast year 2020 conditions, and the new year 2020 regional land use plan, it may be expected that the number of personal vehicles available in the Region will increase by nearly 256,700, or 23 percent, from about 1.13 million in 1991 to about 1.39 million in the year 2020. The number of personal vehicles expected to be available in the Region in the year 2020 would represent an increase of about 81,400, or 6 percent, from the level anticipated in the year 2010 under the year 2010 regional transportation plan and regional land use plan.

Similarly, given the year 2010 regional transportation system plan, and the travel demands anticipated under the year 2020 regional land use plan, a total of nearly 6.53 million internal person-trips may be expected to be generated on an average weekday in the year 2020, representing an increase of about 16 percent over the 5.54 million internal person-trips estimated to be generated on

(Footnote 2 continued from page 97)

Internal person-trips and truck trips are trips with both origin and destination within the Region, that is, trips internal to the Region. External person-trips and truck trips include trips with both origin and destination outside the Region—also known as through trips—and trips with one end of the trip inside the Region and the other end of the trip outside the Region—also known as internal-external trips.

Internal person-trips can be further divided into trips made by resident households of the Region; trips made by resident group-quartered persons of the Region (residents of dormitories, convents, nursing homes, and homes for the aged); and trips made by nonresidents of the Region. (Of the total 5,639,800 internal person-trips made within the Region in 1991, 5,540,900 trips, or 98.2 percent, were made by resident households; 53,400 trips, or 1.0 percent, were made by resident group-quartered persons; and 45,500 trips, or 0.8 percent, were made by nonresidents of the Region.)

Internal person-trips can also be divided according to trip purpose. Home-based trips are trips in which one end of the trip is home, that is, trips leaving from or going to home. Home-based trips are usually divided into home-based work, home-based shopping, and home-based other trips. Home-based other trips include trips between home and place of personal business, social-recreational activity, or medical-dental activity. Nonhome-based trips include all trips in which neither end of the trip is the home, for example, from work to shopping.

an average weekday in 1991, and an increase of 7 percent over the nearly 6.10 million internal person-trips forecast to be generated within the Region on an average weekday in the year 2010 under the year 2010 regional land use and transportation plans. The distribution of the expected future year 2020 trips by trip purpose is shown in Table 35, and the distribution of these internal person-trips by mode of travel is shown in Table 36. The number of expected future year 2020 internal vehicle-trips as well as external vehicle-trips by both private vehicles and commercial trucks is shown in Table 37.

Transit System Element

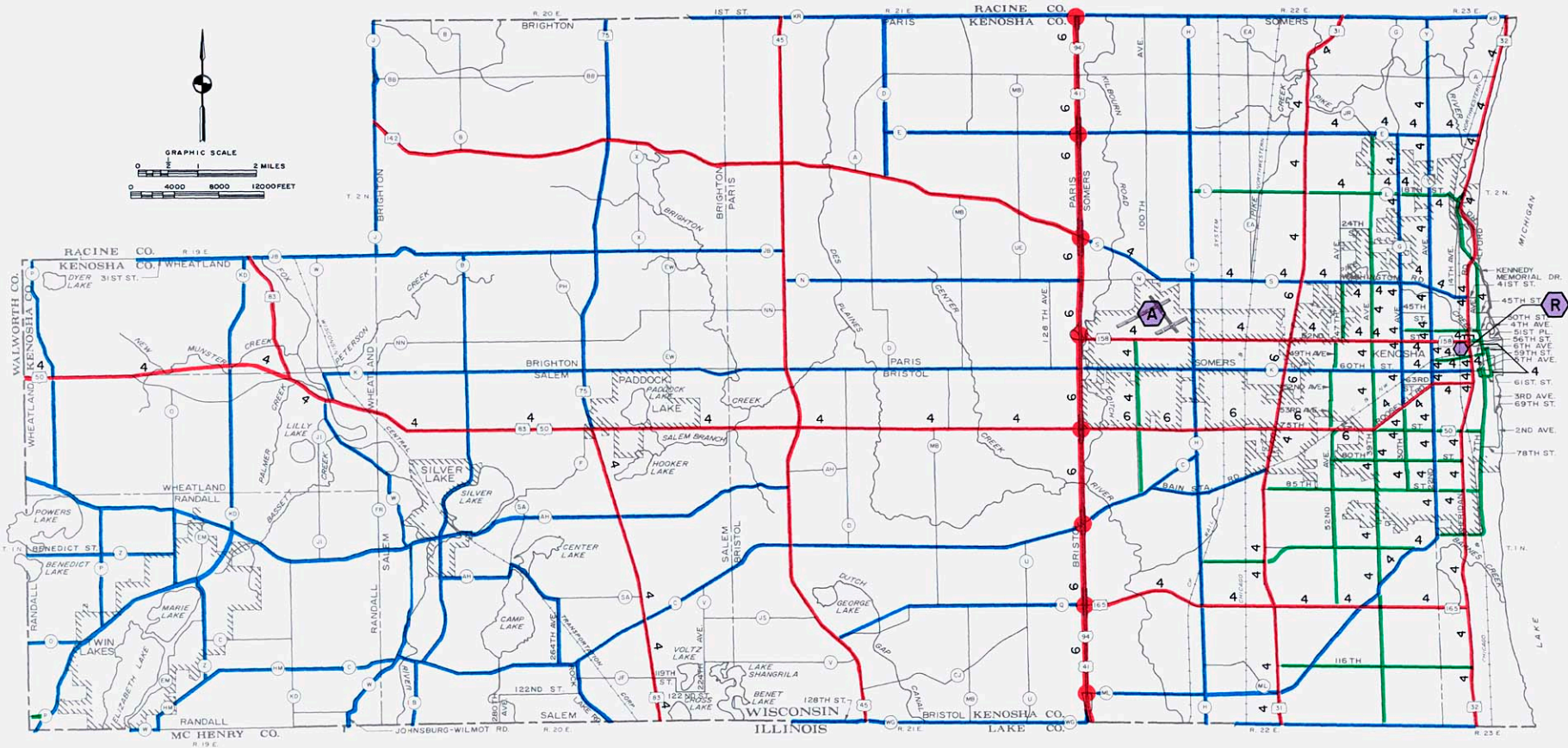
The anticipated performance of the public transit element of the year 2010 regional transportation plan in the year 2020 is shown in Table 38. Under the year 2010 plan, the number of revenue vehicle-miles of transit service provided on an average weekday was recommended to be increased by about 74 percent, from 63,300 in 1991 to 110,000 in the year 2010. The number of revenue vehicle-hours of service on an average weekday under the plan was proposed to increase by about 65 percent, from 5,200 in 1991 to 8,600 in the year 2010. Based upon these proposed improvements in the level of service, annual transit ridership within Southeastern Wisconsin may be expected to increase by about 21 percent, from about 50.2 million passengers in 1991 to about 60.9 million in the year 2020, and the percentage of internal person-trips made by public transit may be expected to increase from 3.1 percent in 1991 to 3.2 percent in 2020.

Comparison of the areas of planned population, household, and employment growth between the years 2010 and 2020 to the transit service improvement and expansion proposed under the year 2010 regional transportation plan indicates the following potential needs for improvement and extension of transit services beyond those in the 2010 plan to serve the planned development to the year 2020: improved local and/or express transit service to the Park Place major office center, to the Franklin major industrial center, to the Sussex major industrial center, to the Menomonee Falls major industrial center, to the Pleasant Prairie major industrial center, to the Hartford major industrial center, and to employment centers along Brown Deer Road in Milwaukee County.³

³*Envisioned 2020 major commercial centers are shown on Map 13 in Chapter III of this report (see page 63) and envisioned 2020 major industrial centers are shown on Map 14 in Chapter III of this report (see page 65).*

Map 21

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR KENOSHA COUNTY: 2010



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- 4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

- ◻ A-AIRPORT
- ◻ R-PASSENGER RAIL TERMINAL

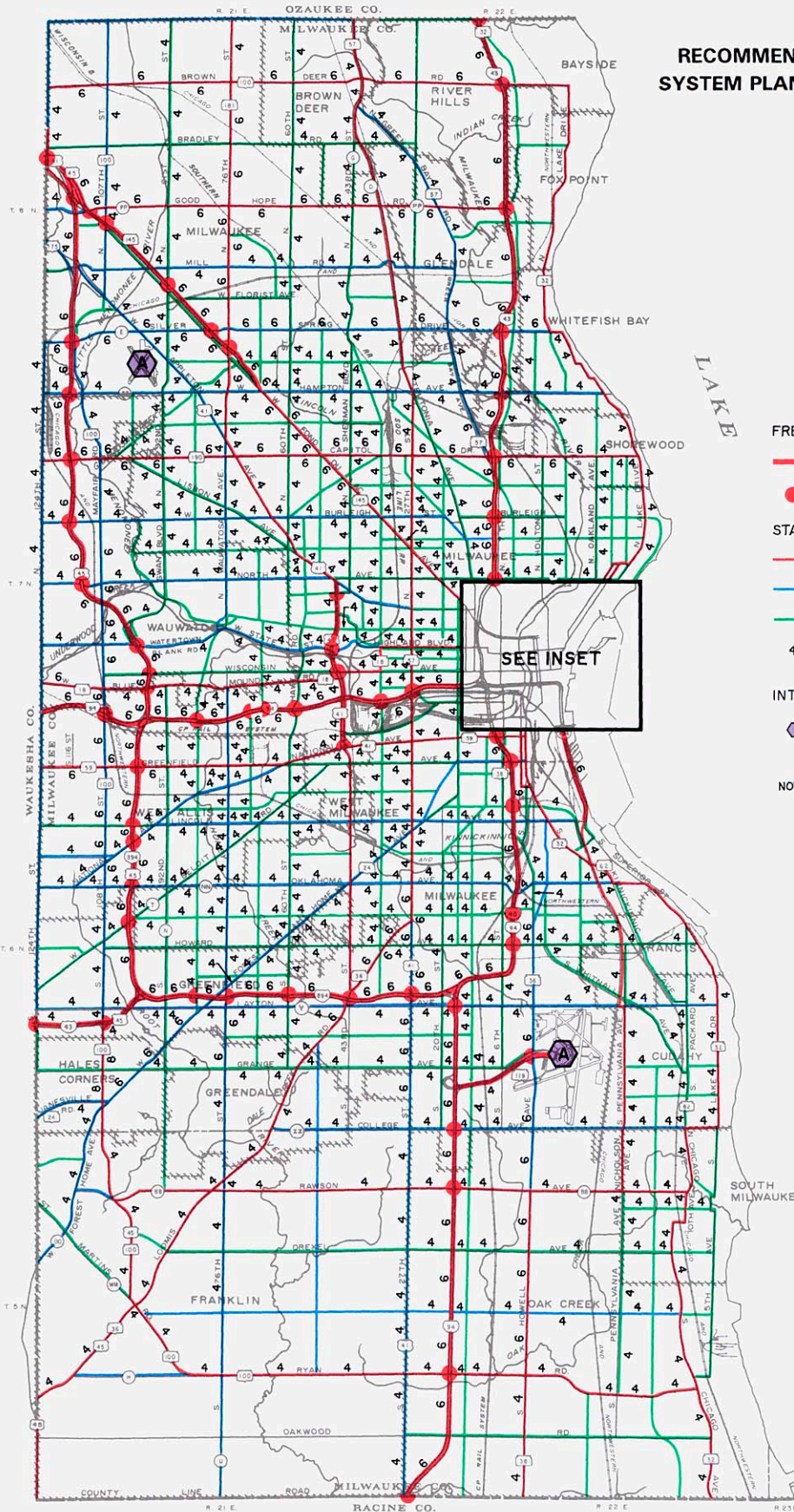
THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

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 IH 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.

The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Kenosha County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Kenosha County may be expected to total 355 miles. About 103 miles, or nearly 29 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 203 miles, or 57 percent, are recommended to be classified as County trunk highways; and the remaining 49 miles, or about 14 percent, are recommended to be classified as local arterials.

Map 21 (continued)

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR MILWAUKEE COUNTY: 2010



LEGEND

FREEWAY

STATE TRUNK HIGHWAY

INTERCHANGE

STANDARD ARTERIAL

STATE TRUNK HIGHWAY

COUNTY TRUNK HIGHWAY

LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

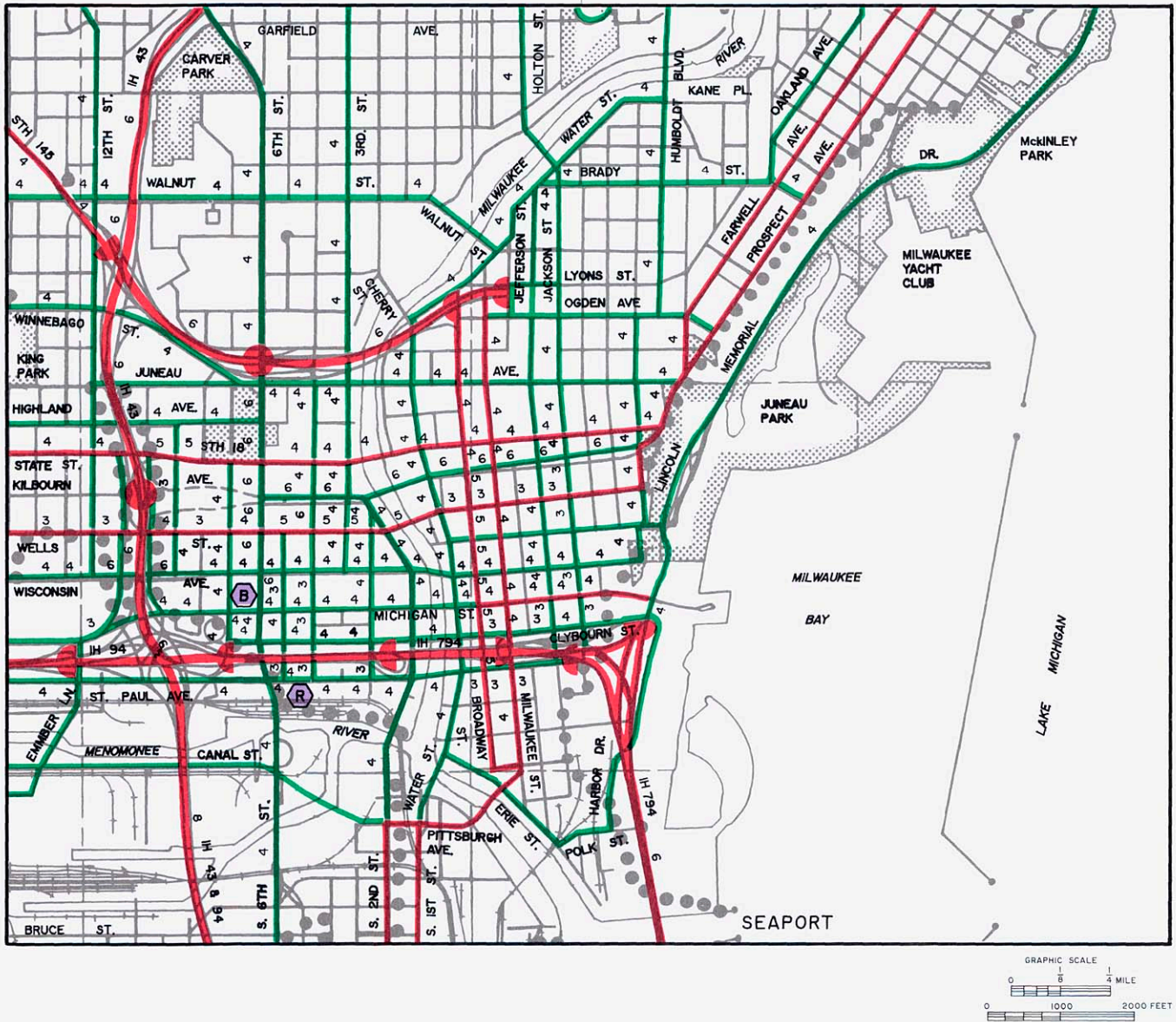
- A-AIRPORT
- B-BUS TERMINAL
- R-PASSENGER RAIL TERMINAL

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD AND HIGHLAND ROAD IN OZAUKEE COUNTY, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.

MICHIGAN LAKE

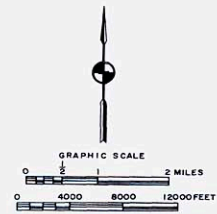
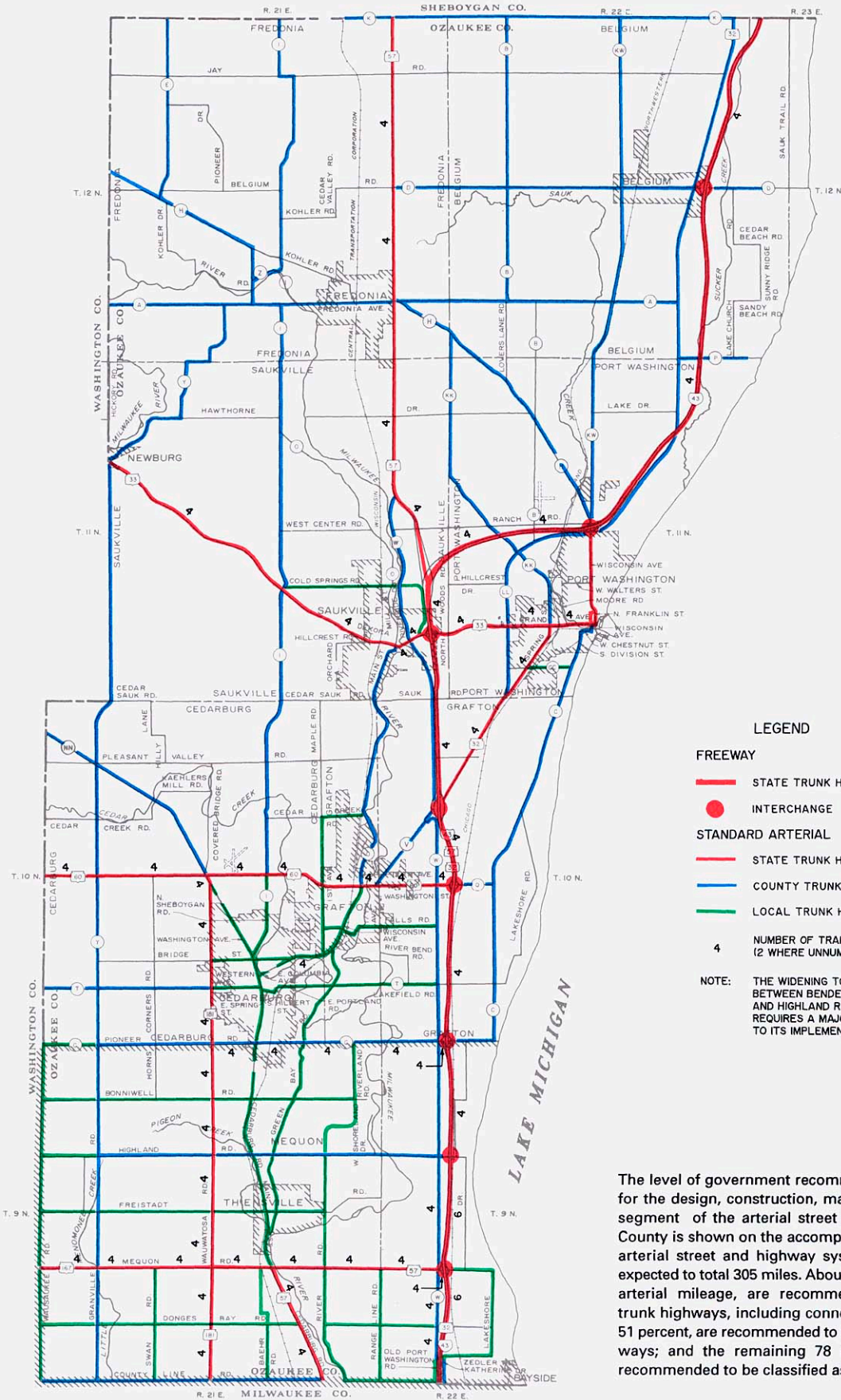
Map 21 Inset

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR MILWAUKEE COUNTY: 2010



The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Milwaukee County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Milwaukee County may be expected to total 797 miles. About 220 miles, or 28 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 184 miles, or 23 percent, are recommended to be classified as County trunk highways; and the remaining 393 miles, or about 49 percent, are recommended to be classified as local arterials.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR OZAUKEE COUNTY: 2010

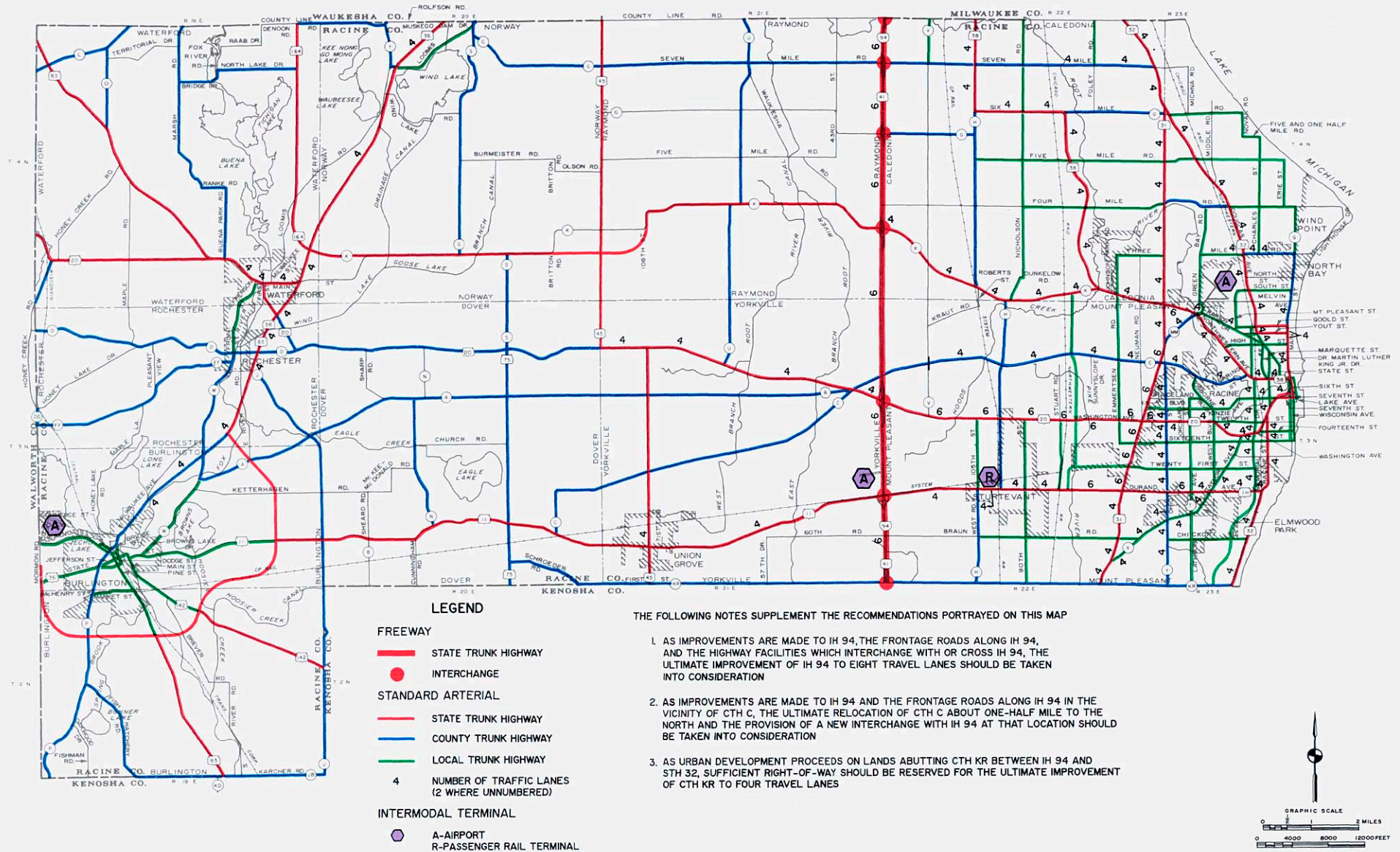


- LEGEND**
- FREEWAY**
 - STATE TRUNK HIGHWAY
 - INTERCHANGE
 - STANDARD ARTERIAL**
 - STATE TRUNK HIGHWAY
 - COUNTY TRUNK HIGHWAY
 - LOCAL TRUNK HIGHWAY
 - 4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)
 - NOTE:** THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD IN MILWAUKEE COUNTY AND HIGHLAND ROAD, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.

The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Ozaukee County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Ozaukee County may be expected to total 305 miles. About 72 miles, or 24 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 155 miles, or 51 percent, are recommended to be classified as County trunk highways; and the remaining 78 miles, or about 25 percent, are recommended to be classified as local arterials.

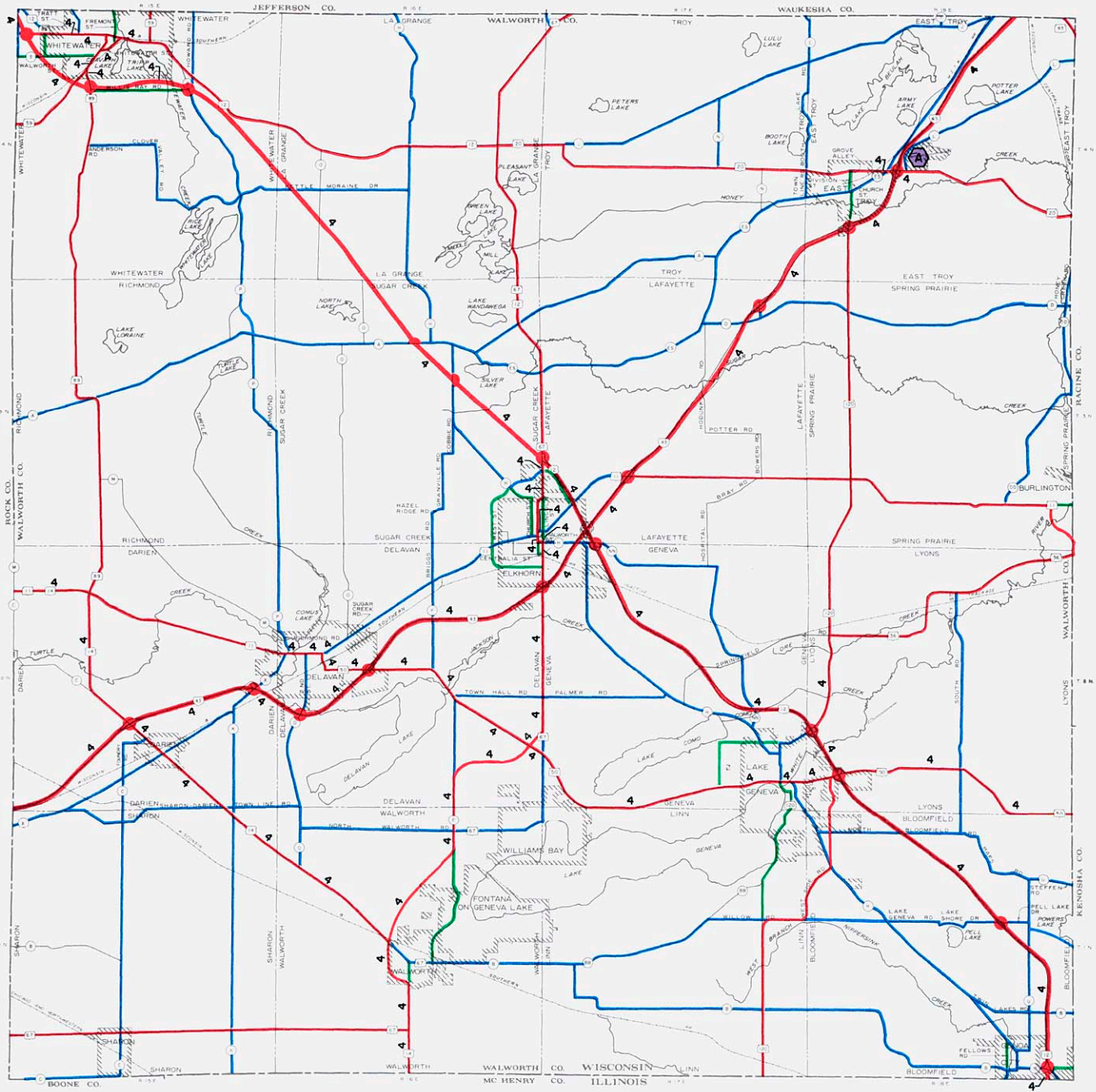
Map 21 (continued)

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR RACINE COUNTY: 2010



The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Racine County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Racine County may be expected to total 424 miles. About 160 miles, or 38 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 156 miles, or 37 percent, are recommended to be classified as County trunk highways; and the remaining 108 miles, or about 25 percent, are recommended to be classified as local arterials.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 2010



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

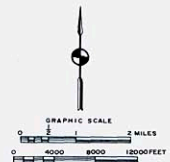
STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

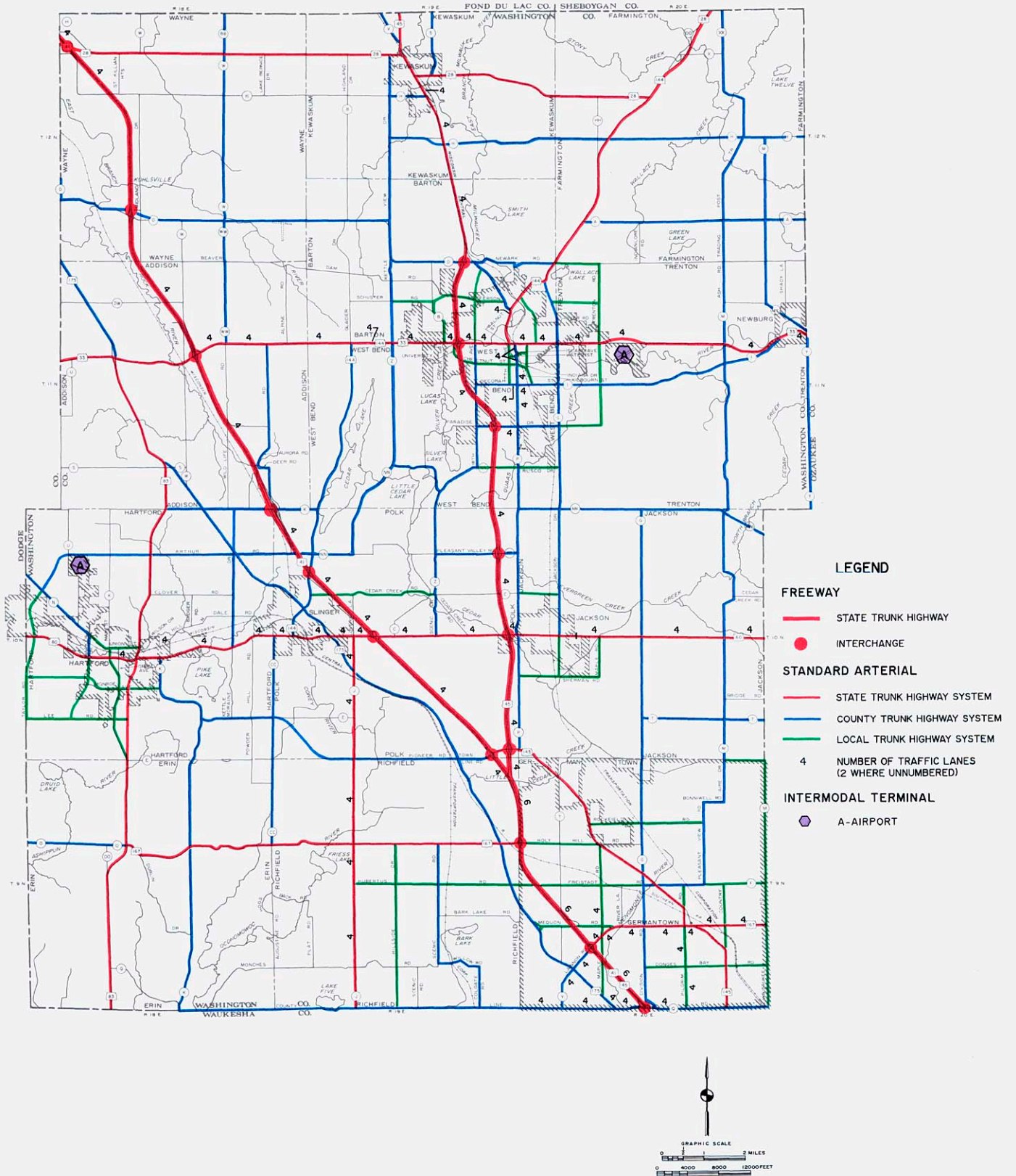
INTERMODAL TERMINAL

- A-AIRPORT



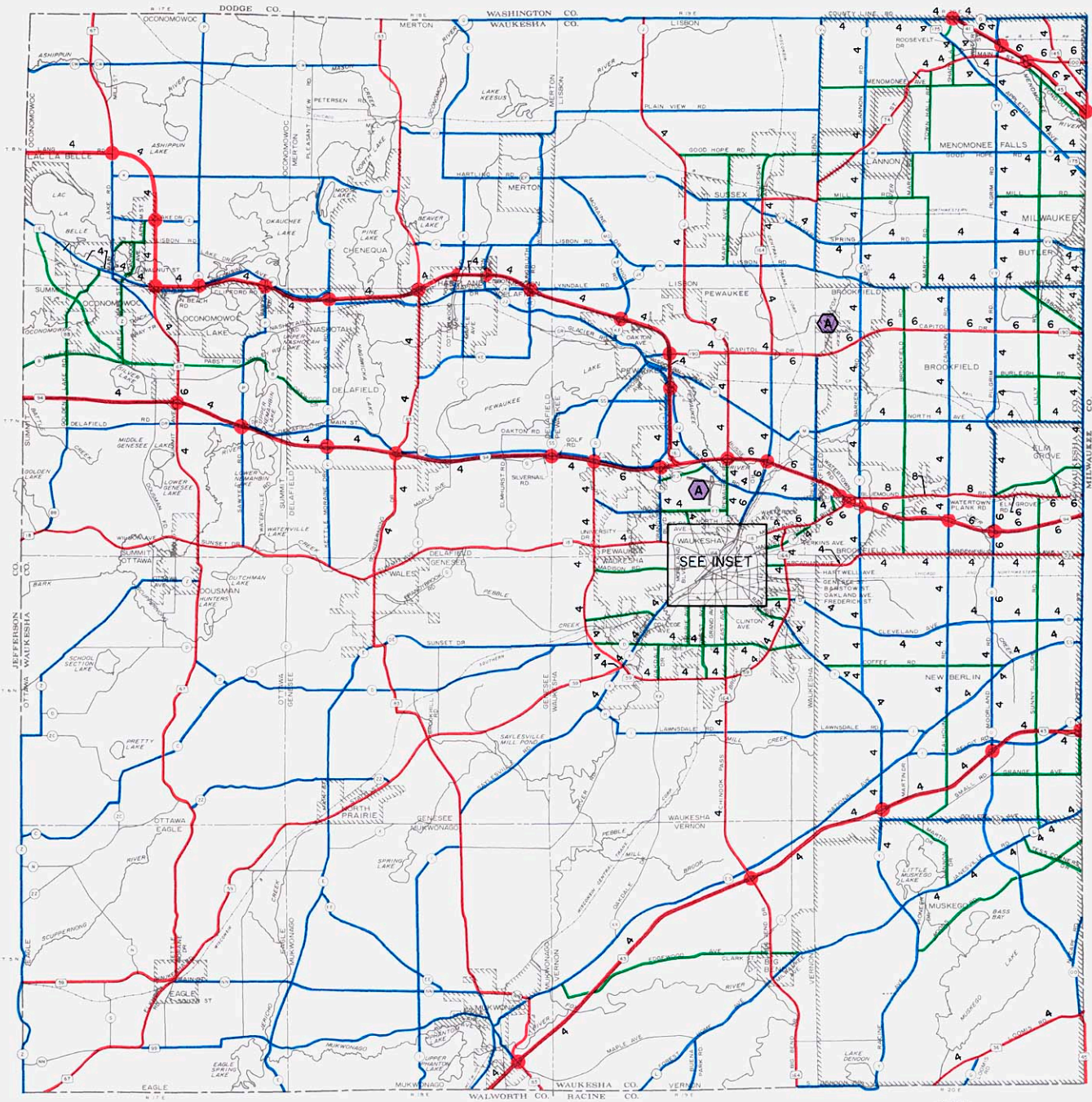
The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Walworth County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Walworth County may be expected to total 484 miles. About 223 miles, or 46 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 239 miles, or 49 percent, are recommended to be classified as County trunk highways; and the remaining 22 miles, or about 5 percent, are recommended to be classified as local arterials.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WASHINGTON COUNTY: 2010



The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Washington County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Washington County may be expected to total 468 miles. About 159 miles, or 34 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 234 miles, or 50 percent, are recommended to be classified as County trunk highways; and the remaining 75 miles, or about 16 percent, are recommended to be classified as local arterials.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WAUKESHA COUNTY: 2010



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

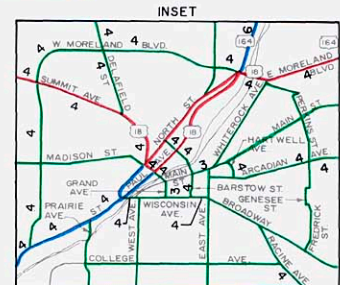
- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

- A-AIRPORT

NOTE: THE RECOMMENDATION TO PLACE CALHOUN ROAD ON THE COUNTY TRUNK HIGHWAY SYSTEM FROM CTH ES TO CTH K IS CONTINGENT UPON THE CONSTRUCTION OF A NEW INTERCHANGE ON IH 94 AT CALHOUN ROAD.



The level of government recommended to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Waukesha County is shown on the accompanying map. By the year 2010, the arterial street and highway system in Waukesha County may be expected to total 774 miles. About 230 miles, or 30 percent of planned arterial mileage, are recommended to be classified as State trunk highways, including connecting streets; about 413 miles, or 53 percent, are recommended to be classified as County trunk highways; and the remaining 131 miles, or about 17 percent, are recommended to be classified as local arterials.

Source: SEWRPC.

Table 34

SELECTED SOCIO-ECONOMIC AND TRANSPORTATION CHARACTERISTICS OF THE REGION: 1991, 2010, AND 2020

Characteristic	Base Year 1991	Year 2010 Land Use and Transportation Plans		Year 2020 Land Use Plan and Year 2010 Transportation Plan		
		Number	Percent Change	Number	Percent Change from 1991	Percent Change from 2010
Population	1,810,400	1,911,000	5.6	2,077,900	14.8	8.7
Households	676,100	774,300	14.5	827,100	22.3	6.8
Employment	1,067,200	1,180,000	10.6	1,277,100	19.7	8.2
Vehicles Available	1,132,000	1,307,300	15.5	1,388,700	22.7	6.2
Internal Person-Trips	5,541,000	6,104,300	10.2	6,531,200	17.9	7.0
Persons per Vehicle	1.6	1.5	-6.3	1.5	-6.3	--
Vehicles per Household ...	1.7	1.7	--	1.7	--	--
Trips per Capita	3.1	3.2	6.5	3.1	--	-3.1
Trips per Household	8.2	7.9	1.3	7.9	1.3	--

Source: SEWRPC.

Table 35

DISTRIBUTION OF INTERNAL PERSON-TRIPS MADE BY HOUSEHOLD RESIDENTS OF THE REGION ON AN AVERAGE WEEKDAY BY TRIP PURPOSE: 1991, 2010, AND 2020

Trip Purpose Category	Base Year 1991		Year 2010 Land Use and Transportation Plans				Year 2020 Land Use Plan and Year 2010 Transportation Plan					
	Number	Percent of Total	Forecast Increment		2010 Total		Forecast Increment from 1991		Forecast Increment from 2010		2020 Total	
			Number	Percent Change	Number	Percent of Total	Number	Percent Change	Number	Percent Change	Number	Percent of Total
Home-Based Work	1,302,700	23.5	152,100	11.7	1,454,800	23.8	256,600	17.6	104,500	7.2	1,559,300	23.9
Home-Based Shopping ..	798,000	14.4	84,600	10.6	882,600	14.5	196,400	22.3	111,800	12.7	999,400	15.2
Home-Based Other	1,687,300	30.5	195,300	11.6	1,822,600	29.9	268,700	14.7	133,400	7.3	1,956,000	29.9
Nonhome-Based	1,127,400	20.3	124,600	11.1	1,252,000	20.5	255,700	20.4	131,100	10.5	1,383,100	21.2
School	625,600	11.3	66,700	10.7	692,300	11.3	12,800	1.9	-53,900	-7.8	638,400	9.8
Total	5,541,000	100.0	623,300	11.3	6,104,300	100.0	990,200	16.2	426,900	7.0	6,531,200	100.0

Source: SEWRPC.

Table 36

DISTRIBUTION OF INTERNAL PERSON-TRIPS MADE BY HOUSEHOLD RESIDENTS OF THE REGION ON AN AVERAGE WEEKDAY BY MODE OF TRAVEL: 1991, 2010, AND 2020

Mode of Travel	Base Year 1991		Year 2010 Land Use and Transportation Plans				Year 2020 Land Use Plan and Year 2010 Transportation Plan					
	Number	Percent of Total	Forecast Increment		2010 Total		Forecast Increment from 1991		Forecast Increment from 2010		2020 Total	
			Number	Percent Change	Number	Percent of Total	Number	Percent Change	Number	Percent Change	Number	Percent of Total
Automobile Driver	4,060,900	73.3	629,000	15.5	4,689,900	76.8	972,000	20.7	343,000	7.3	5,032,900	77.1
Automobile Passenger	1,080,300	19.5	-147,400	-13.6	932,900	15.3	-13,100	-1.4	134,300	14.4	1,067,200	16.3
Transit Passenger	172,200	3.1	24,200	14.1	196,400	3.2	36,400	18.5	12,200	6.2	208,600	3.2
School Bus Passenger	227,600	4.1	57,500	25.3	285,100	4.7	-5,100	-1.8	-62,600	-22.0	222,500	3.4
Total	5,541,000	100.0	563,300	10.2	6,104,300	100.0	990,200	16.2	426,900	7.0	6,531,200	100.0

Source: SEWRPC.

Table 37

**DISTRIBUTION OF TOTAL VEHICLE-TRIPS IN THE REGION ON AN
AVERAGE WEEKDAY BY TRIP AND VEHICLE TYPE: 1991, 2010, AND 2020**

Type of Vehicle and Trip	Base Year 1991		Year 2010 Land Use and Transportation Plans				Year 2020 Land Use Plan and Year 2010 Transportation Plan					
	Number	Percent of Total	Forecast Increment		2010 Total		Forecast Increment from 1991		Forecast Increment from 2010		2020 Total	
			Number	Percent Change	Number	Percent of Total	Number	Percent Change	Number	Percent Change	Number	Percent of Total
Automobile												
Internal	4,060,900	83.0	629,000	15.5	4,689,900	82.3	972,000	23.9	343,000	7.3	5,032,900	82.0
External	229,200	4.7	77,100	33.6	306,300	5.4	104,100	45.4	27,000	8.8	333,300	5.4
Other	39,300	0.8	26,200	66.7	65,500	1.1	42,100	107.1	15,900	24.3	81,400	1.3
Subtotal	4,329,400	88.5	723,300	16.9	5,061,700	88.8	1,118,200	25.8	385,900	7.6	5,447,600	88.8
Truck												
Internal	520,100	10.6	58,900	11.3	579,000	10.2	102,800	19.8	43,900	7.6	622,900	10.2
External	44,100	0.9	14,100	32.0	58,200	1.0	20,600	46.7	6,500	11.2	64,700	1.0
Subtotal	564,200	11.5	73,000	12.9	637,200	11.2	123,400	21.9	50,400	7.9	687,600	11.2
Total	4,893,600	100.0	805,300	16.5	5,698,900	100.0	1,241,600	25.4	436,300	7.7	6,135,200	100.0

Source: SEWRPC.

Table 38

**TRANSIT SYSTEM PERFORMANCE IN THE REGION: 1991 AND 2020, ASSESSING
YEAR 2010 TRANSPORTATION PLAN UNDER YEAR 2020 LAND USE PLAN**

Transit System Characteristics	Base Year 1991	2020	Forecast Increment	
			Number	Percent Change
Service Provided, Average Weekday				
Revenue Vehicle-Miles				
Rapid	3,400	15,300	11,900	350.0
Express	3,300	20,500	17,200	521.2
Local	56,600	74,200	17,600	31.1
Total	63,300	110,000	46,700	73.8
Revenue Vehicle-Hours				
Rapid	170	600	430	252.9
Express	170	1,400	1,230	723.5
Local	4,880	6,600	1,720	35.2
Total	5,220	8,600	3,380	64.8
Seat-Miles	2,975,000	5,266,000	2,291,000	77.0
Service Utilization				
Ridership				
Average Weekday Revenue Passengers	172,200	208,600	36,400	21.1
Annual Revenue Passengers	50,222,900	60,911,000	10,688,100	21.3
Revenue Passengers per Revenue Vehicle-Hour	33.0	24.3	-8.7	-26.4
Average Weekday Passenger-Miles	609,100	1,006,500	397,400	65.2

Source: SEWRPC.

Table 39

VEHICLE-MILES OF TRAVEL ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION BY COUNTY: 1991, 2010, AND 2020

County	Arterial Vehicle-Miles of Travel on an Average Weekday (thousands)														
	Base Year 1991		Year 2010 Land Use Plan and Transportation Plan					Year 2020 Land Use Plan and Year 2010 Transportation Plan					Average Annual Rate of Increase 1991-2020	Average Annual Rate of Increase 2010-2020	
	Number	Percent of Total	Forecast Increment		2010 Total		Average Annual Rate of Increase 1991-2010	Forecast Increment 1991-2020		Forecast Increment 2010-2020		2020 Total			
			Number	Percent Change	Number	Percent of Total		Number	Percent Change	Number	Percent Change	Number			Percent of Total
Kenosha															
Freeway	675	27.0	338	50.1	1,013	26.4	2.2	483	71.6	145	14.3	1,158	27.2	1.9	1.3
Standard Arterial	1,825	73.0	997	54.6	2,822	73.6	2.3	1,268	69.5	271	9.6	3,093	72.8	1.8	0.9
Subtotal	2,500	100.0	1,335	53.4	3,835	100.0	2.3	1,751	70.0	416	10.9	4,251	100.0	1.8	1.0
Milwaukee															
Freeway	5,945	41.3	281	4.7	6,226	39.3	0.2	660	11.1	379	6.1	6,605	39.3	0.4	0.6
Standard Arterial	8,446	58.7	1,158	13.7	9,604	60.7	0.7	1,759	20.8	601	6.3	10,205	60.7	0.7	0.6
Subtotal	14,391	100.0	1,439	10.0	15,830	100.0	0.5	2,419	16.8	980	6.2	16,810	100.0	0.5	0.6
Ozaukee															
Freeway	762	39.2	218	28.6	980	41.9	1.3	426	55.9	208	21.2	1,188	41.3	1.5	1.9
Standard Arterial	1,180	60.8	177	15.0	1,357	58.1	0.7	511	43.3	334	24.6	1,691	58.7	1.2	2.2
Subtotal	1,942	100.0	395	20.3	2,337	100.0	1.0	937	48.3	542	23.2	2,879	100.0	1.4	2.1
Racine															
Freeway	708	23.9	329	46.5	1,037	26.2	2.0	519	73.3	190	18.3	1,227	28.4	1.9	1.7
Standard Arterial	2,258	76.1	667	29.5	2,925	73.8	1.4	838	37.1	171	5.9	3,096	71.6	1.1	0.6
Subtotal	2,966	100.0	996	33.5	3,962	100.0	1.5	1,357	45.8	361	9.1	4,323	100.0	1.3	0.9
Walworth															
Freeway	540	28.2	813	150.6	1,353	46.7	4.8	872	161.5	59	4.4	1,412	44.1	3.4	0.4
Standard Arterial	1,373	71.8	173	12.6	1,546	53.3	0.6	416	30.3	243	15.7	1,789	55.9	0.9	1.5
Subtotal	1,913	100.0	986	51.4	2,899	100.0	2.2	1,288	67.3	302	10.4	3,201	100.0	1.8	1.0
Washington															
Freeway	546	23.0	708	129.7	1,254	40.5	4.4	825	151.1	117	9.3	1,371	38.2	3.2	0.9
Standard Arterial	1,833	77.0	8	0.4	1,841	59.5	0.0	381	20.8	373	20.3	2,214	61.8	0.7	1.9
Subtotal	2,379	100.0	716	30.1	3,095	100.0	1.4	1,206	50.7	490	15.8	3,585	100.0	1.4	1.5
Waukesha															
Freeway	2,421	34.7	1,118	46.2	3,539	33.8	2.0	1,244	51.4	126	3.6	3,665	32.8	1.4	0.4
Standard Arterial	4,560	65.3	2,364	51.8	6,924	66.2	2.1	2,946	64.6	582	8.4	7,506	67.2	1.7	0.8
Subtotal	6,981	100.0	3,482	49.9	10,463	100.0	2.1	4,190	60.0	708	6.8	11,171	100.0	1.6	0.7
Southeastern Wisconsin Region															
Freeway	11,597	35.1	3,805	32.8	15,402	36.3	1.5	5,029	43.4	1,224	8.0	16,626	36.0	1.2	0.8
Standard Arterial	21,475	64.9	5,544	25.8	27,019	63.7	1.2	8,119	37.8	2,575	9.5	29,594	64.0	1.1	0.9
Total	33,072	100.0	9,349	28.3	42,421	100.0	1.3	13,148	39.8	3,799	9.0	46,220	100.0	1.2	0.9

Source: SEWRPC.

Arterial Street and Highway System Element

With respect to the arterial street and highway system element of the year 2010 regional transportation system plan, the vehicle-miles of travel on the arterial street and highway system may be expected to increase from about 33.1 million per average weekday in 1991 to nearly 46.0 million by the year 2020 under the new year 2020 regional land use plan, an increase of about 39 percent (see Table 39). The forecast year 2020 regional vehicle-miles of travel represent an increase of 3.5 million vehicle-miles of travel on an average weekday, or 8 percent over the anticipated year 2010 vehicle-miles of travel under the adopted year 2010 regional land use and transportation system plans.

The impact of the anticipated increase in highway traffic beyond the year 2010 to the year 2020 under the adopted year 2010 regional transportation system plan is reflected in the number of arterial miles that may be expected to operate over design capacity and experience traffic congestion, as shown in Table 40 and on Maps 22, 23, and 24. The number of miles anticipated to be moderately congested would decline from 106 miles, or 3 percent of the system in 1991, to 82 miles and 2 percent of the system in the year 2010, and increase again to 149 miles and 4 percent of the system in the year 2020. The number of miles anticipated to experience severe traffic congestion may be expected to decrease from 217 miles and 7 percent of the system in 1991 to 48 miles and 1 percent of the system in the year 2010, and then increase to 60 miles and 2 percent of the system in the year 2020. The number of miles anticipated to experience extreme traffic congestion may be expected to decrease from 62 miles and 2 percent of the system in 1991 to 36 miles and 1 percent of the system in the year 2010, and then increase to 48 miles and 1 percent of the system in the year 2020. A comparison of Maps 23 and 24 indicates that the following arterial facilities may be expected to experience severe or extreme traffic congestion between the year 2010 and the year 2020 if no further improvement is added to the year 2010 regional transportation system plan, as it is proposed to be extended in time to the year 2020:

- Milwaukee County

- IH 94 between W. Rawson Avenue and the Milwaukee-Racine county line
- IH 894 between W. 84th Street and the Hale Interchange
- IH 43 between W. Silver Spring Drive and W. Good Hope Road

- N. 76th Street between W. Industrial Drive and W. Brown Deer Road
- W. Brown Deer Road between N. 60th Street and N. 76th Street
- S. Pennsylvania Avenue between E. College Avenue and E. Rawson Avenue
- N. Port Washington Road between W. Bender Road and W. Daphne Road

- Racine County

- IH 94 between CTH K and the Racine-Milwaukee county line
- STH 11 between 90th Street and Wisconsin Street

- Waukesha County

- STH 83 between IH 43 and CTH NN
- St. Paul Avenue between STH 59 and Moreland Boulevard
- STH 59 between St. Paul Avenue and STH 83
- USH 18 between CTH TT and STH 83
- STH 83 between CTH NN and STH 59

DEVELOPMENT OF PRELIMINARY RECOMMENDED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN

Based upon the preceding assessment of the performance of the adopted year 2010 regional transportation plan in meeting the year 2020 travel demands as defined under the year 2020 regional land use plan, and the identification of specific deficiencies of the year 2010 transportation plan in serving potential year 2020 travel, the following modifications to the year 2010 transportation plan are recommended to be made in the extension of that plan to the year 2020:

- Public Transit Plan Element

Extensions and/or improvements in express/local transit service to the Park Place major office center, Franklin major industrial center, Sussex major

Table 40

TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM^a

Base Year 1991									
County	At or under Design Capacity		Over Design Capacity						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	
Kenosha	294.1	92.5	8.5	2.7	10.4	3.3	4.7	1.5	317.7
Milwaukee	610.8	78.8	42.7	5.5	101.4	13.1	20.5	2.6	775.4
Ozaukee	264.7	91.7	10.5	3.6	7.0	2.4	6.3	2.3	288.5
Racine	305.6	87.9	8.0	2.3	28.3	8.1	6.0	1.7	347.9
Walworth	419.5	97.8	6.6	1.5	3.1	0.7	--	--	429.2
Washington	376.7	94.4	3.0	0.7	12.5	3.1	7.0	1.8	399.2
Waukesha	617.2	86.1	27.1	3.8	54.5	7.6	17.5	2.5	716.3
Total	2,888.6	88.2	106.4	3.2	217.2	6.6	62.0	2.0	3,274.2

Year 2010 Land Use Plan and Year 2010 Transportation Plan									
County	At or under Design Capacity		Over Design Capacity						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	
Kenosha	351.8	97.1	--	--	3.3	0.9	--	--	355.1
Milwaukee	707.3	88.8	42.9	5.4	22.2	3.1	24.6	0.8	797.0
Ozaukee	300.9	98.9	3.5	1.1	--	--	--	--	304.4
Racine	417.6	98.5	5.5	1.3	0.7	0.2	--	--	423.8
Walworth	484.1	100.0	--	--	--	--	--	--	484.1
Washington	468.3	100.0	--	--	--	--	--	--	468.3
Waukesha	711.8	92.0	30.0	3.9	21.3	2.8	11.1	1.5	774.2
Total	3,441.8	95.4	81.9	2.3	47.5	1.3	35.7	1.0	3,606.9

Year 2020 Land Use Plan and Year 2010 Transportation Plan									
County	At or under Design Capacity		Over Design Capacity						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	Miles	Percent of Total	
Kenosha	333.4	93.9	18.4	5.2	3.3	0.9	--	--	355.1
Milwaukee	696.6	87.4	41.2	5.2	29.5	3.7	29.7	3.7	797.0
Ozaukee	298.5	98.1	5.9	1.9	--	--	--	--	304.4
Racine	387.1	91.3	31.2	7.4	5.5	1.3	--	--	423.8
Walworth	481.2	99.4	2.9	0.6	--	--	--	--	484.1
Washington	467.8	99.9	0.5	0.1	--	--	--	--	468.3
Waukesha	684.4	88.4	45.4	5.9	26.0	3.3	18.4	2.4	774.2
Total	3,349.0	92.8	145.5	4.1	64.3	1.8	48.1	1.3	3,606.9

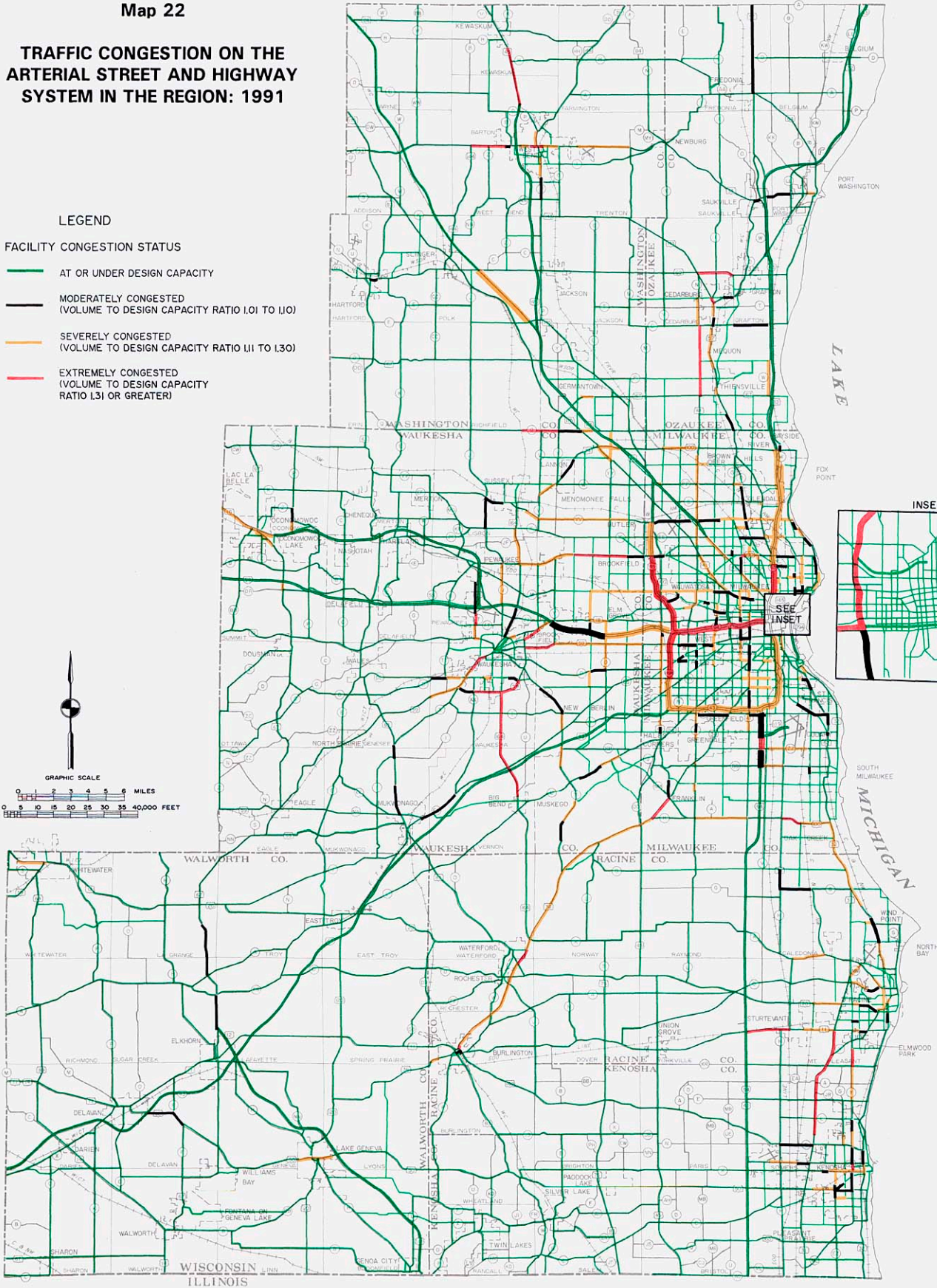
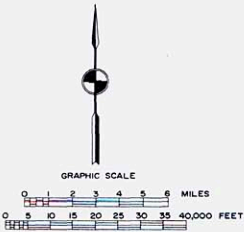
^aA definition and explanation of the characteristics of the levels of traffic congestion are provided in Chapter IV of this report, which chapter is entitled "Objectives, Principles, and Standards."

Source: SEWRPC.

Map 22

**TRAFFIC CONGESTION ON THE
ARTERIAL STREET AND HIGHWAY
SYSTEM IN THE REGION: 1991**

- LEGEND**
- FACILITY CONGESTION STATUS**
- AT OR UNDER DESIGN CAPACITY
 - MODERATELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.01 TO 1.01)
 - SEVERELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.11 TO 1.30)
 - EXTREMELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.31 OR GREATER)



In the base year 1991, 12 percent of the 3,274-mile arterial system, or 385 miles, operated over design capacity, with a volume-to-design-capacity ratio of 1.01 or greater. About 106 miles, or 3 percent of the arterial mileage, were moderately congested; 217 miles, or 7 percent of arterial mileage, were severely congested; and 62 miles, or about 2 percent of the arterial mileage, were extremely congested.

Source: SEWRPC.

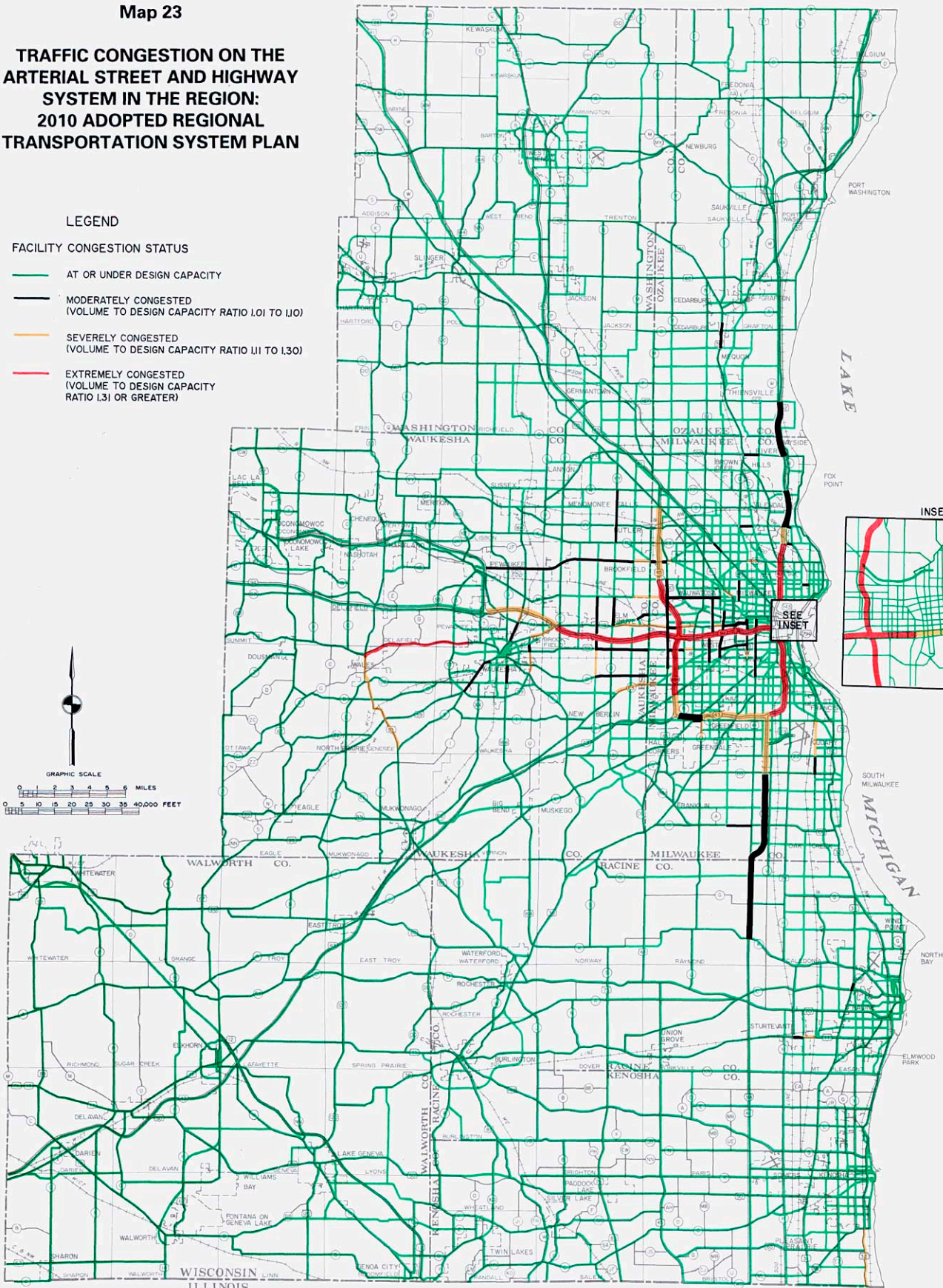
Map 23

**TRAFFIC CONGESTION ON THE
ARTERIAL STREET AND HIGHWAY
SYSTEM IN THE REGION:
2010 ADOPTED REGIONAL
TRANSPORTATION SYSTEM PLAN**

LEGEND

FACILITY CONGESTION STATUS

- AT OR UNDER DESIGN CAPACITY
- MODERATELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.01 TO 1.10)
- SEVERELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.11 TO 1.30)
- EXTREMELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.31 OR GREATER)



Under the adopted year 2010 plan, the level of traffic congestion may be expected to be substantially below that which would occur under the "no-build" alternative plan. By the year 2010, only about 5 percent of the planned 3,607-mile arterial system, or 165 miles, would operate over design capacity. About 82 miles, or over 2 percent, of planned arterial mileage would be moderately congested; 47 miles, or about 1 percent, would be severely congested; and 36 miles, or 1 percent, would be extremely congested. While the transportation development proposals included in the year 2010 plan serve to reduce traffic congestion throughout the entire Region, the Milwaukee-area freeway system may be expected to carry traffic volumes exceeding its design capacity and to operate with congested conditions through the year 2010.

industrial center, Menomonee Falls major industrial center, Pleasant Prairie major industrial center, Hartford major industrial center, and employment centers along Brown Deer Road.

- Arterial Street and Highway Plan Element

- Milwaukee County

- IH 94 between W. Rawson Avenue and the Milwaukee-Racine County Line

Addition of this segment of freeway to the transit plan element, which proposes potential future major investment study to consider special bus and carpool lanes.

- IH 894 between S. 84th Street and the Hale Interchange

Addition of this segment of freeway to the transit plan element which proposes potential future major investment study to consider special bus and carpool lanes.

- IH 43 between W. Silver Spring Drive and W. Good Hope Road

Addition of this segment of freeway to the transit plan element which proposes potential future major investment study to consider special bus and carpool lanes.

- N. 76th Street between W. Industrial Drive and W. Brown Deer Road

No change in plan, as N. 68th Street extension which would have addressed this congestion was removed from 2010 plan at request of City of Milwaukee, and facility is fully improved to six-lane divided arterial.

- S. Pennsylvania Avenue between E. College Avenue and E. Rawson Avenue

No change, as Lake Parkway extension which would have addressed this congestion was removed from 2010 plan by Wisconsin Department of Transportation. Also, facility is under construction to four-lane undivided arterial.

- W. Brown Deer Road between N. 60th Street and N. 76th Street

No change, as this facility is fully improved to six-lane divided arterial.

- N. Port Washington Road between W. Bender Road and W. Daphne Road

Recommendation of capacity improvement from two to four lanes as proposed by City of Glendale.

- Racine County

- IH 94 between CTH K and the Racine-Milwaukee County Line

Addition of this segment of freeway to the transit plan element which proposes potential future major investment study to consider special bus and carpool lanes.

- STH 11 between 90th Street and Wisconsin Street

No addition of traffic lanes is recommended due to right-of-way constraints. Consideration should be given to turn-lane and median provision.

- Waukesha County

- STH 83 between IH 43 and CTH NN

Recommendation of capacity improvement from two to four lanes as proposed in preliminary engineering study under way which is concluding that limits on potential bypass location and speed will limit future bypassable traffic.

- St. Paul Avenue between STH 59 and Moreland Boulevard

Recommendation of capacity improvement from two to four traffic lanes.

- STH 59 between St. Paul Avenue and STH 83

Recommendation of capacity improvement from two to four traffic lanes. Will maintain existing level of accessibility.

- USH 18 between CTH TT and STH 83

Recommendation of capacity improvement from two to four traffic lanes. Will maintain existing level of accessibility.

- STH 83 between CTH NN and STH 59

Recommendation of capacity improvement from two to four traffic lanes. Will maintain existing level of accessibility.

These proposed modifications to the year 2010 transportation plan were incorporated in the preliminary recom-

mended year 2020 regional transportation plan. The capacity improvements recommended total 21 miles of arterial streets proposed to be widened, representing less than a 1 percent expansion of total arterial system capacity as the plan is extended 10 years from 2010 to 2020.

Also, several modifications to the arterial street and highway capacity improvement and expansion recommendation in the year 2010 regional transportation plan have been proposed by local governments within Southeastern Wisconsin since the completion of the year 2010 transportation plan. The modifications proposed to date, and recommendations with respect to their incorporation in the preliminary year 2020 plan, are as follows:

- Milwaukee County

- Change in Recommended Number of Traffic Lanes from Four to Two on N. 124th Street between W. Hampton Avenue and W. Silver Spring Drive (Requested by the City of Milwaukee)

Engineering studies are under way for the reconstruction of this facility, which will convert it from a rural to an urban cross-section. Current traffic volumes are well within the design capacity of two traffic lanes, although future year 2020 traffic volumes approach the design capacity of two traffic lanes assuming implementation of the plan-recommended extension of N. 124th Street from W. Watertown Plank Road to W. Greenfield Avenue. The roadway cross-section proposed in the engineering studies being conducted by the City of Milwaukee would accommodate a two-traffic-lane roadway with auxiliary/parking lanes; however, a four-traffic-lane roadway with auxiliary/parking lanes could also be accommodated. It is recommended that the proposed change in number of traffic lanes from four to two on N. 124th Street between W. Hampton Avenue and W. Silver Spring Drive be made in the preliminary plan.

- Change in Recommended Number of Traffic Lanes from Two to Four on S. 92nd Street between W. Lincoln Avenue and W. Oklahoma Avenue (Requested by the City of West Allis)

Engineering studies are under way for the reconstruction of this facility, which will convert it from a rural to an urban cross-section. Current traffic volumes are within the design capacity of two traffic lanes, and future year

2020 traffic volumes may be expected to approach the design capacity of two traffic lanes. The existing right-of-way is more than adequate to provide for four traffic lanes and two auxiliary/parking lanes. Existing sidewalks are generally set back to provide for the City-proposed four traffic lanes and two auxiliary/parking lanes. Accordingly, it is recommended that the proposed change in the number of traffic lanes from two to four on N. 92nd Street between W. Lincoln Avenue and W. Oklahoma Avenue be made in the preliminary plan.

- Change in Recommended Number of Traffic Lanes from Four to Two on W. North Avenue between N. 60th Street and N. 76th Street (Requested by the City of Wauwatosa)

The adopted year 2010 regional transportation plan recommends the provision of four traffic lanes on this segment of W. North Avenue by the prohibition of existing on-street parking. The facility currently provides two traffic lanes and two parking lanes. Existing and forecast traffic volumes on this segment of W. North Avenue equal the existing design capacity of two traffic lanes on the eastern portion, and moderately to severely exceed the existing design capacity on the western portion. The City of Wauwatosa has already implemented a reconstruction and streetscape project of the segment of W. North Avenue between N. 60th Street and N. 62nd Street, effectively foreclosing the potential to prohibit parking and thereby provide four traffic lanes, and has engineering studies under way to similarly foreclose that potential between N. 62nd Street and N. 76th Street. Accordingly, it is recommended that the City-proposed change in the number of traffic lanes from four to two on W. North Avenue between N. 60th Street and N. 76th Street be made in the preliminary plan.

- Ozaukee County

- Addition of Extension of Walters Street from Wisconsin Avenue to Spring Street/CTH KK and CTH LL (Requested by the City of Port Washington)

This two-traffic-lane facility was recommended in the original Ozaukee County jurisdictional highway system plan, the year 2000 regional transportation system plan, and the preliminary year 2010 regional transportation system plan

taken to public hearing. The then Mayor of the City of Port Washington requested that the facility extension be removed from the final year 2010 regional transportation system plan, and it was deleted from the final plan. The City of Port Washington Common Council, in its adoption of the year 2010 plan, requested that the plan be amended to include the long-planned Walters Street extension. The City of Port Washington Plan Commission recently determined to include the Walters Street extension on a new City master plan, as it may be expected to provide relief to existing and future traffic congestion, provide desirable arterial street spacing, assist in avoiding excessive traffic on local land access streets, and connect existing and developing urban land uses. Accordingly, it is recommended that the City-proposed change to add the two-lane Walters Street extension from Wisconsin Avenue to CTH LL to the regional transportation plan be made in the preliminary plan.

- Racine County

- Addition to the Plan of the Conversion and Extension of Calumet Street from a Nonarterial Street to a Four-Lane Arterial Street between Bridge Street and Market Street, the Relocation of a Bridge Spanning the Fox River in the City of Burlington, and the Conversion of the One-Way Pair of Chestnut Street and Commerce Street between Milwaukee Street and Oregon Street to a Two-Way Commerce Street (Requested by the City of Burlington)

These changes in the City of Burlington may be expected to permit the elimination of one-way arterial street pairs, and the elimination of 90-degree turns on major arterial routes. The changes may also be expected to promote a planned riverfront redevelopment. The changes include the addition of Calumet Street as an arterial between Bridge Street and Market Street, the conversion of the Chestnut Street-Commerce Street one-way pair to a two-way Commerce Street with a new transition roadway between Chestnut Street and Commerce Street at Oregon Street, the relocation of the STH 11 Fox River bridge to Adams Street, the conversion of Dodge Street to a nonarterial, and operation of Pine Street as a two-way arterial.

- Addition to the Plan of 90th Street between STH 20 and CTH C as a Two-Lane Arterial Facility (Requested by the Town of Mt. Pleasant)

This facility would be a new street extension. The adopted year 2010 plan recommends 90th Street to be a two-lane arterial from the Racine-Kenosha county line to STH 20. The proposed facility extension would provide arterial service to planned land development in the Town of Mt. Pleasant and Village of Sturtevant. It is recommended that the proposed addition of the extension of 90th Street as a two-lane arterial facility between STH 20 and CTH C be made in the preliminary plan.

- Removal from the Plan of the Proposed Extension of Emmertsen Road between STH 38 and Three Mile Road, and Removal from the Plan as an Arterial Facility of Existing Three Mile Road between STH 31 and the Proposed Extension of Emmertsen Road (Requested for Consideration by Racine County)

These facilities have long been proposed in the regional transportation system plan and Racine County jurisdictional highway system plan. However, such facilities would have more limited utility given the determination set forth in the year 2010 adopted plan to no longer recommend the extension of Three Mile Road from STH 31 to Green Bay Road. The arterials which these two proposed facilities would relieve include segments of STH 31 between STH 38 and Three Mile Road, and STH 38 between STH 31 and Emmertsen Road. Both of these roadway segments have adequate existing and/or planned traffic carrying capacity as four-lane divided facilities. Moreover, the proposed segments of Three Mile Road and the Emmertsen Road extension would generally operate as collector facilities, rather than arterials, and therefore need not be included in the new regional transportation plan or Racine County jurisdictional highway system plan. It will be important, however, for the urban development intended to occur in the vicinity of these two facilities to provide reasonably direct access to both STH 31 and STH 38 to avoid unnecessary local travel over those arterials which could otherwise occur within the neighborhood and, as well, for the development to be designed to avoid the potential for through traffic to occur on neighborhood streets. Given the fore-

going, it is recommended that the extension of Emmertsen Road between STH 38 to Three Mile Road, and Three Mile Road between Emmertsen Road and STH 31, be removed from the preliminary plan.

— Addition to the Plan of Oakes Road between STH 11 and Braun Road as a Two-Lane Arterial Facility (Requested by Racine County)

This facility would be a new arterial street extension. The adopted year 2010 plan recommends that an existing segment of Oakes Road and its extension to the north and south be a two-lane arterial from CTH K to STH 11 in Racine County. The proposed further extension to Braun Road would serve current and planned development between STH 11 and Braun Road west of STH 31. It is recommended that the proposed addition of the extension of Oakes Road as a two-lane arterial facility between STH 11 and Braun Road be made in the preliminary plan.

● Walworth County

— Removal from the Plan of the Extension of Grant Street as a Proposed Two-Lane Arterial (Requested by the City of Lake Geneva)

This facility would have provided an alternative for movement of east-west traffic within the City of Lake Geneva, and would have provided some relief to the congested segment of STH 50 within the City of Lake Geneva. This facility was requested to be removed from the plan by the City of Lake Geneva, as development has taken place along the path of the proposed extension of Grant Street and the construction of the facility is no longer feasible. Accordingly, it is recommended that the City-proposed change relative to the removal of the extension of Grant Street be made in the preliminary plan.

● Washington County

— Addition to the Plan of an Interchange with USH 41-USH 45 at Freistadt Road within Washington County (Requested by Washington County)

This interchange was initially requested by Washington County in the making of the year 2010 plan. The findings of the evaluation of the addition of the interchange at that time continue to hold for the year 2020 plan. The interchange was requested to provide relief to the existing

interchanges 1.0 mile north of Freistadt Road at Holy Hill Road (STH 167 West) and 2.0 miles south at Lannon Road (STH 167 East). The new interchange was also requested to provide access to existing and planned development at the interchange and along Freistadt Road, and to reduce travel indirection. Freistadt Road is an existing and planned arterial, and there would be adequate capacity on USH 41-USH 45 and on Freistadt Road to accommodate an interchange.

The existing interchanges north and south of Freistadt Road, however, have adequate capacity to handle current traffic and, as well, future year 2020 traffic. Some improvements may be expected to be needed at these interchanges, including the addition of turning lanes and widening of approach pavements and, as well, the widening of Lannon Road/Mequon Road. Also, traffic signalization of the major intersections at the interchanges and along Lannon Road and Mequon Road may be necessary to better accommodate existing and future traffic. With these improvements, the existing interchanges may be expected to handle future traffic as well.

The proposed interchange is located at the fringe of the Milwaukee urbanized area, and the provision of a new interchange at Freistadt Road would not be consistent with rural Federal Highway Administration interchange spacing standards of six miles. In addition, the Wisconsin Department of Transportation continues to oppose the construction of the proposed interchange. The Wisconsin Department of Transportation has indicated that it would not construct either a full or half interchange at the Freistadt Road location, and has recommended that it not be included in the regional transportation plan, as it would provide a false signal to local officials and developers that a future interchange may be expected to be implemented at Freistadt Road. Given the foregoing, it is recommended that the proposed interchange at Freistadt Road with USH 41-USH 45 not be added to the preliminary plan.

With these additions and deletions in highway capacity improvement and expansion, the incremental improvement and expansion in highway capacity proposed as the regional transportation plan is extended 10 years from the year 2010 to the year 2020 totals 22 miles of widened and

new arterials, representing less than a 1 percent expansion in capacity of the 3,607-mile planned arterial street and highway system.

THE PROPOSED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN

The proposed regional transportation system plan for the year 2020 is the regional transportation system plan adopted by the Commission in December 1994 with a design year of 2010, modified by modest amendments. This is proposed for a number of reasons. First, the year 2010 plan has been well received by all parties concerned and has been adopted by the Commission, each of the seven counties in the Region, and many municipalities, and has been endorsed by the Wisconsin Departments of Transportation and Natural Resources. There is no reason to explore a major departure from the framework of transportation development and improvement envisioned in the 2010 plan. Second, forecasts of regional change another 10 years beyond the year 2010 to the year 2020 indicate only modest growth in levels of households, employment, travel, transit ridership, and highway traffic, that is, increases of approximately 8 percent. Analyses of the ability of the year 2010 plan to meet year 2020 travel and traffic demands indicate that minimal change in the year 2010 plan is necessary for that plan to serve year 2020 travel and traffic needs. The third reason that the year 2020 plan is principally derived from the year 2010 plan is that the only concern that has been expressed about the year 2010 plan since its adoption is that it may be too ambitious to be accomplished within the remaining 13-year time frame. Its extension by another 10 years, and modest amendment to include actions to address additional needs over those additional 10 years, responds to that concern. The fourth reason is that substantial changes have not yet occurred, and additional data are not yet available, to warrant the expenditure of the time and resources for a major plan reevaluation at this time.

The proposed year 2020 plan has three major elements: transportation systems management, public transit maintenance and improvement, and arterial street and highway maintenance and improvement.

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. Freeway Traffic Management
Implementation of an areawide freeway traffic management system, including an operational control strategy that would, through restricted access of single-occupancy vehicles at ramp meters, attempt to eliminate freeway traffic flow breakdown and stop-and-go traffic and provide for average operating speeds of about 30 to 35 miles per hour on all freeway segments during peak traffic periods. Buses and high-occupancy vehicles would receive preferential access at the ramps. The system would also include elements to provide advisory information and to better manage incidents.
2. Arterial Curb-Lane Parking Restrictions
Restriction of curb-lane parking as needed during peak periods along about 400 miles, or about 11 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 consider 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, 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, as well as 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 Maintenance and Improvement Element

The recommended public transit system element of the plan proposes development within the Region of a true rapid transit system; development of a true express transit system; and significant improvement of the existing local bus transit systems. Map 25 displays the transit system recommendations by each of the three components. Altogether, service on the regional transit system would be increased from service levels in 1995—the base year of the 2020 plan—by about 69 percent measured in terms of revenue transit vehicle-miles of service provided, and 61 percent measured in terms of revenue transit vehicle-hours of service provided (see Table 41).

Rapid Transit System Component

The proposed rapid transit system element would consist of buses operating over freeways between the Milwaukee central business district and outlying portions of Milwaukee County, the Milwaukee urbanized area, and Southeastern Wisconsin, and would have the following characteristics:

- The bus rapid transit service would operate in both directions, providing both traditional commuter and reverse-commute service.
- The rapid transit service would operate with some intermediate stops to increase accessibility to employment centers, and to increase accessibility for reverse-commute travel from residential areas within central Milwaukee County. Certain stops would be provided with shuttle bus or van service to nearby employment centers.

- The service would operate throughout the day. The frequency of service provided would be every five to 30 minutes in peak travel periods, and every 30 to 60 minutes in off-peak periods.
- Transit service would be provided at relatively high overall travel speeds averaging about 25 miles per hour, compared to typical overall local bus transit speeds, which average about 12 miles per hour.

Initially, all service could be provided over the regional freeway system, with service extensions on selected surface arterial streets and highways. Ultimately, depending upon the results of major transportation investment studies, the rapid transit routes could operate over exclusive busway facilities in the most congested freeway travel corridors in the Region (see Map 26). A major investment study/preliminary engineering study/final environmental impact statement process is currently under way in the IH 94 East-West Freeway Corridor considering such an exclusive busway.

Also recommended to be considered in these major investment studies is the potential to establish commuter-rail passenger service as an alternative form of rapid transit service to bus-on-freeway or bus-on-busway service in four major travel corridors, from Milwaukee to Kenosha, to Oconomowoc, to West Bend, and to Saukville. Through these corridor studies, then, final decisions would be made as to whether to provide the rapid transit service through bus-on-freeway, bus-on-busway, or commuter-rail passenger service. Pending the conduct of these studies, all rapid transit service would be provided through the bus-on-freeway mode.

Express Transit System Component

The second component of the public transit element of the plan is an express transit system. The recommended express transit system would consist primarily of buses operating over a grid of 12 limited-stop, higher-speed routes within Milwaukee County. The express transit routes are also shown on Map 25.

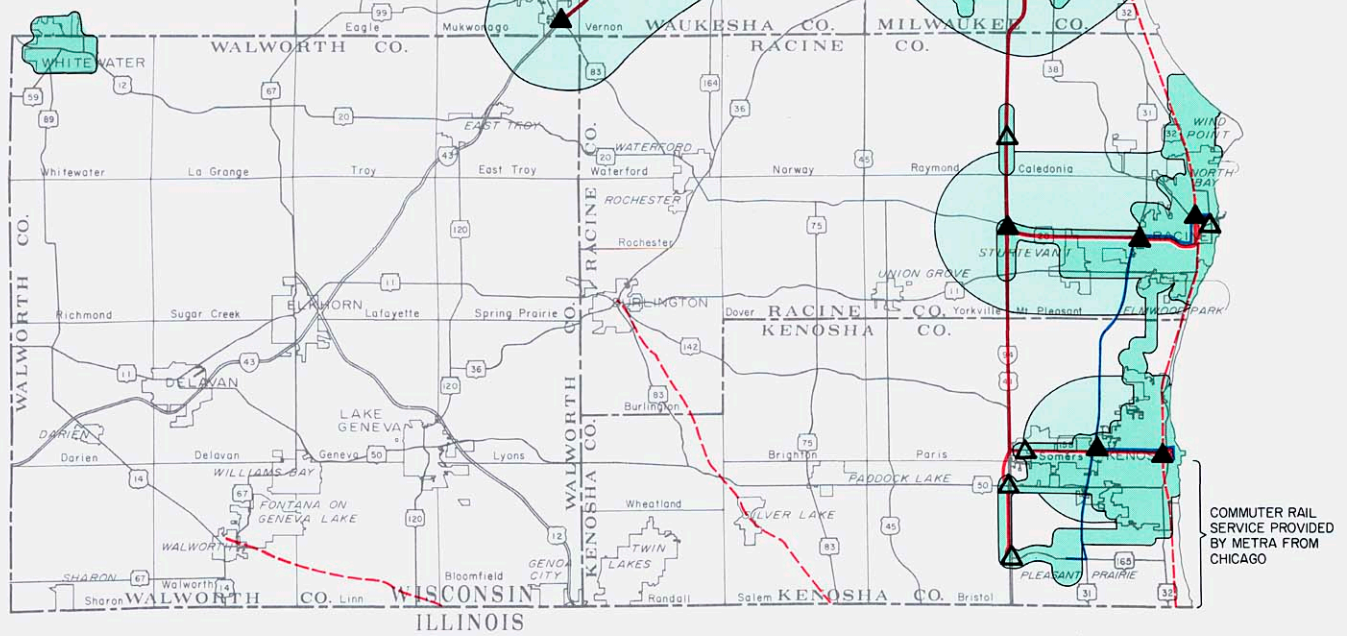
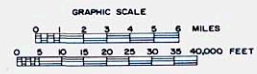
The plan envisions that this system of limited-stop routes would initially consist of buses operating over arterial streets in mixed traffic. The service could be upgraded over time to buses operating on reserved street lanes, and could, ultimately, based on federally required corridor major investment studies, be considered for further upgrading to light-rail service.

The ongoing IH 94 East-West Freeway major investment study/preliminary engineering study/final environmental impact statement process is considering a light-rail facility

Map 25

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

- LEGEND**
- RAPID TRANSIT SERVICE**
- BUSWAY FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - - - BUS SERVICE IN MIXED TRAFFIC ON FREEWAYS AND SURFACE ARTERIAL STREETS AND HIGHWAYS
 - - - POTENTIAL COMMUTER RAIL--TO BE CONSIDERED IN CORRIDOR STUDIES
- EXPRESS TRANSIT SERVICE**
- LIGHT RAIL TRANSIT FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - - - BUS SERVICE IN MIXED TRAFFIC OR EXCLUSIVE LANES ON SURFACE ARTERIAL STREETS AND HIGHWAYS
- TRANSIT STATIONS**
- ▲ WITH PARKING
 - △ WITHOUT PARKING
- SERVICE AREA**
- LOCAL TRANSIT INCLUDING BUT NOT LIMITED TO FIXED ROUTE SERVICE
 - RAPID TRANSIT--CONVENIENT AUTOMOBILE ACCESS TO TRANSIT STATIONS
- NOTE:**
- 1) POTENTIAL ADDITIONAL BUSWAY AND LIGHT RAIL/EXPRESS BUS GUIDEWAY FACILITIES ARE IDENTIFIED ON MAP 26
 - 2) CORRIDOR STUDIES WOULD BE DESIGNED TO DETERMINE DESIRABILITY OF ALLOWING HIGH-OCCUPANCY VEHICLES TO USE BUSWAYS AND EXPRESS BUS GUIDEWAYS



The proposed year 2020 regional transit system consists of an extensive rapid transit system serving all major Milwaukee central business district travel corridors, an extensive grid system of express transit routes, particularly in Milwaukee County, and an expansion of local transit service areas with enhancements to accompanying paratransit services. The plan also incorporates the continuation of local shared-ride taxicab service currently provided in certain smaller urban areas of the Region. The regional public transit system envisioned under the proposed plan would provide 111,500 revenue vehicle-miles of service per average weekday, or 69 percent more than in 1991, and 8,600 revenue vehicle-hours of service per average weekday, or 61 percent more than in 1991.

Source: SEWRPC.

Table 41

TRANSIT SYSTEM ELEMENT OF PROPOSED YEAR 2020 REGIONAL TRANSPORTATION PLAN

Transit System Characteristics	Existing System: Base Year 1991	Proposed 2020 Plan	Forecast Increment	
			Number	Percent Change
Service Provided, Average Weekday				
Revenue Vehicle-Miles				
Rapid	3,800	14,700	11,900	313.2
Express	5,500	21,500	16,000	343.8
Local	56,800	75,300	18,500	32.6
Total	66,100	111,500	45,400	68.7
Revenue Vehicle-Hours				
Rapid	200	600	400	200.0
Express	320	1,400	1,080	337.5
Local	4,810	6,600	1,790	37.2
Total	5,330	8,600	3,270	61.4
Service Utilization				
Ridership				
Average Weekday Revenue Passengers	163,100	208,600	45,500	27.9
Annual Revenue Passengers	47,150,600	60,911,000	13,760,400	27.9
Revenue Passengers				
per Revenue Vehicle-Hour	30.6	24.3	-6.3	-20.6
Average Weekday Passenger Miles	582,300	1,006,500	424,200	72.3

Source: SEWRPC.

connecting the Milwaukee central business district, the Milwaukee County Institutions Grounds, and the Capitol Court shopping center.

As envisioned under the plan:

- The express service would operate in both directions during both peak and off-peak travel periods.
- The service would operate with a stop spacing of about one-half mile.
- The frequency of service provided would be about every 10 minutes during peak periods, and about every 20 to 30 minutes during off-peak periods.
- The overall travel speed provided would be about 18 miles per hour, a significant improvement over the average 12-miles-per-hour speed provided by the existing local bus transit service.

Local Transit Service

The plan recommends the continued operation of local bus transit service over arterial and collector streets with frequent stops throughout the Kenosha, Milwaukee, and

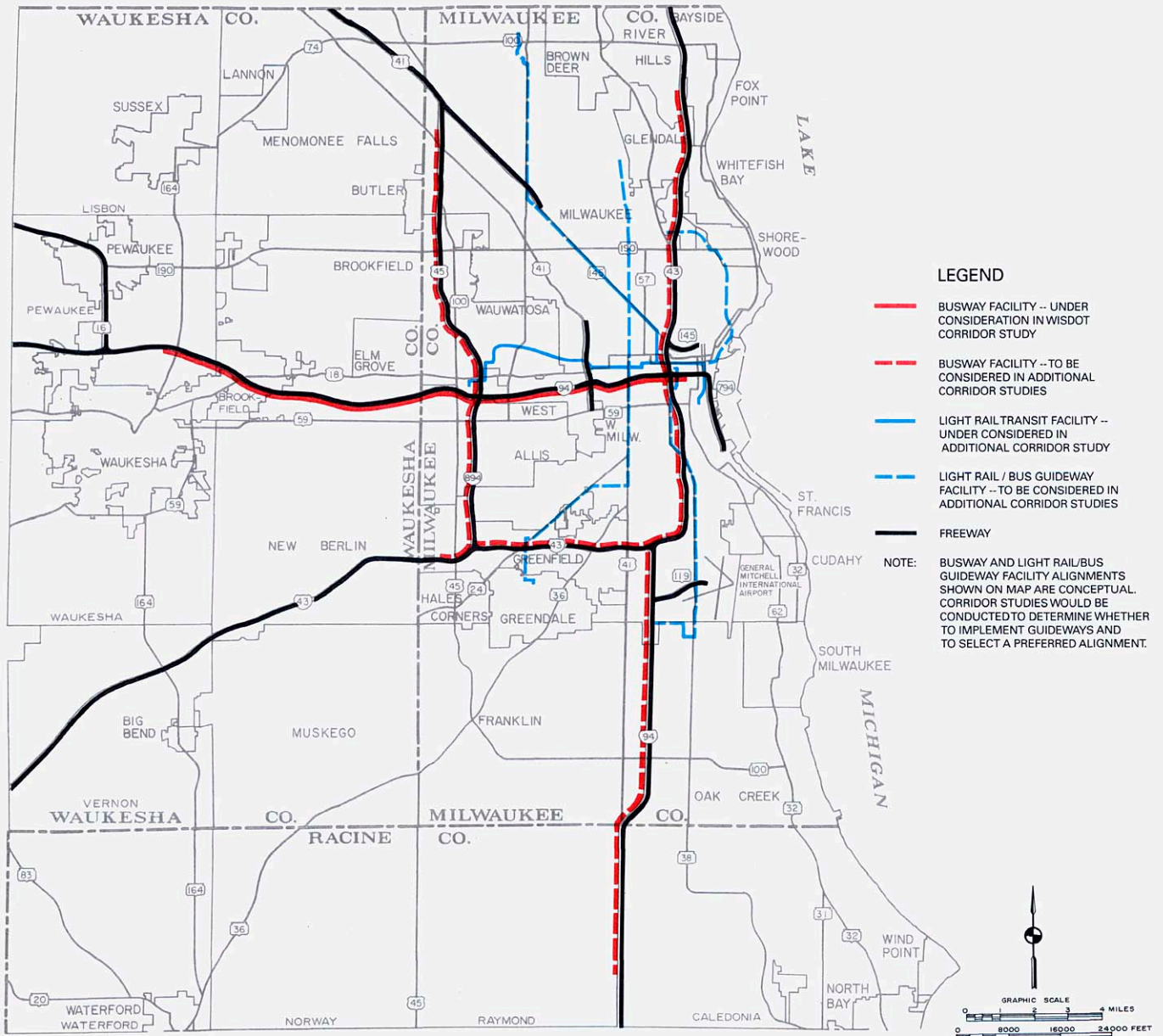
Racine urbanized areas. The plan calls for substantial improvements, however, in the frequency of local transit service provided, particularly on the major local routes. In addition, the plan holds open the potential to restructure local transit services to provide for transit-center-oriented local systems to replace grid-route systems, depending upon detailed local plan implementation studies. The plan also recommends the provision of local transit services through shared-ride taxis in the smaller urban areas of the Region. Finally, the plan recommends the continuation of appropriate paratransit services to help meet the transportation needs of disabled individuals in the Region. In special subregional planning efforts, the Commission has further recommended rural public transportation systems for Ozaukee and Washington Counties.

Arterial Street and Highway Maintenance and Improvement Element

The third element of the regional transportation system plan is the arterial street and highway system element. In 1995, there were about 3,277 miles of arterial streets and highways in the seven-county Region. The existing arterial street and highway system comprises about 29 percent of the total 11,268 miles of streets and highways existing within Southeastern Wisconsin. The arterial street and

Map 26

POTENTIAL BUSWAY AND LIGHT-RAIL/EXPRESS-BUS-GUIDEWAY FACILITIES IDENTIFIED IN THE PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2020



Under the proposed regional transportation system plan, rapid transit busway facilities and express transit light-rail facilities would be considered as alternatives to motor-bus transit service over arterial highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required major investment studies for each of the identified corridors. The busway facility, which extends along the IH 94 Corridor from the City of Milwaukee to the STH 164 interchange in Waukesha County, shown on the accompanying map, and the light-rail facility, which extends from Walker's Point through the central business district of Milwaukee to the Milwaukee County Institutions Grounds with a branch extending along Fond du Lac Avenue to the Capitol Court shopping center, have been acknowledged in the plan as a basis for providing a higher level of service than express bus. It is recognized that the implementation of these fixed-guideway transit facilities depends upon the ultimate outcome of the corridor study currently being conducted by the Wisconsin Department of Transportation. Upon completion of that study, the local units of government concerned, 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.

highway system is that component of the total street and highway system that has as its principal function the movement of traffic. This contrasts with nonarterial streets—consisting of land access and collector streets—which have as their principal function the provision of access to abutting property and the connection of land access streets to the arterials, respectively.

Currently, in the seven-county Southeastern Wisconsin Region, the arterial street and highway system carries about 97 percent of the total average weekday travel, with the public transit system carrying about 3 percent of that demand, and with pedestrian and bicycle travel accounting for less than 1 percent. Even with the greatly expanded transit system envisioned in the year 2010 plan, the evolution of a more efficient regional land use pattern, and the travel demand management measures incorporated in the regional transportation system plan, the arterial street and highway system will be required to carry over 96 percent of the total travel demand, and will have to accommodate by the year 2020 a 30 percent increase in highway traffic over present levels.

The year 2020 plan recommended arterial street and highway system consists of 3,612 miles of facilities. This represents an increase of 335 miles, or about 10 percent, over the existing 1995 arterial system, including 210 miles of existing nonarterial facilities which may be expected to begin to serve an arterial function by the year 2020 and 125 miles of entirely new facilities.

The plan recommendations for the arterial street and highway system can be divided into three categories: system expansion, that is, the proposed construction of new arterial facilities; system improvement, that is, the proposed improvement of existing arterial facilities to carry additional traffic lanes and provide additional traffic capacity; and system preservation, that is, the proposed resurfacing and reconstruction of arterials to the same capacity as exists today. The recommendations by county are shown on Map 27 and summarized in Table 42.

The arterial street and highway system expansion recommendations of the plan include 125 miles of new arterial facilities. This system expansion component represents about 3 percent of the total planned arterial street and highway system in Southeastern Wisconsin.

The system improvement recommendations of the plan include a recommended 405 miles of existing arterial facilities proposed to be widened to carry additional traffic lanes or otherwise significantly improved. The 405 miles represent about 11 percent of the total planned arterial street and highway system. The system improve-

ment component of the arterial street and highway element represents in part a reaffirmation of the need for many long-planned arterial street and highway system improvements.

The third component of the arterial street and highway system recommendations of the plan is system preservation. Approximately 3,082 miles of arterial facilities, representing about 86 percent of the total planned arterial street and highway system, are recommended to be preserved at their same capacity to the year 2020 through resurfacing and reconstruction as needed.

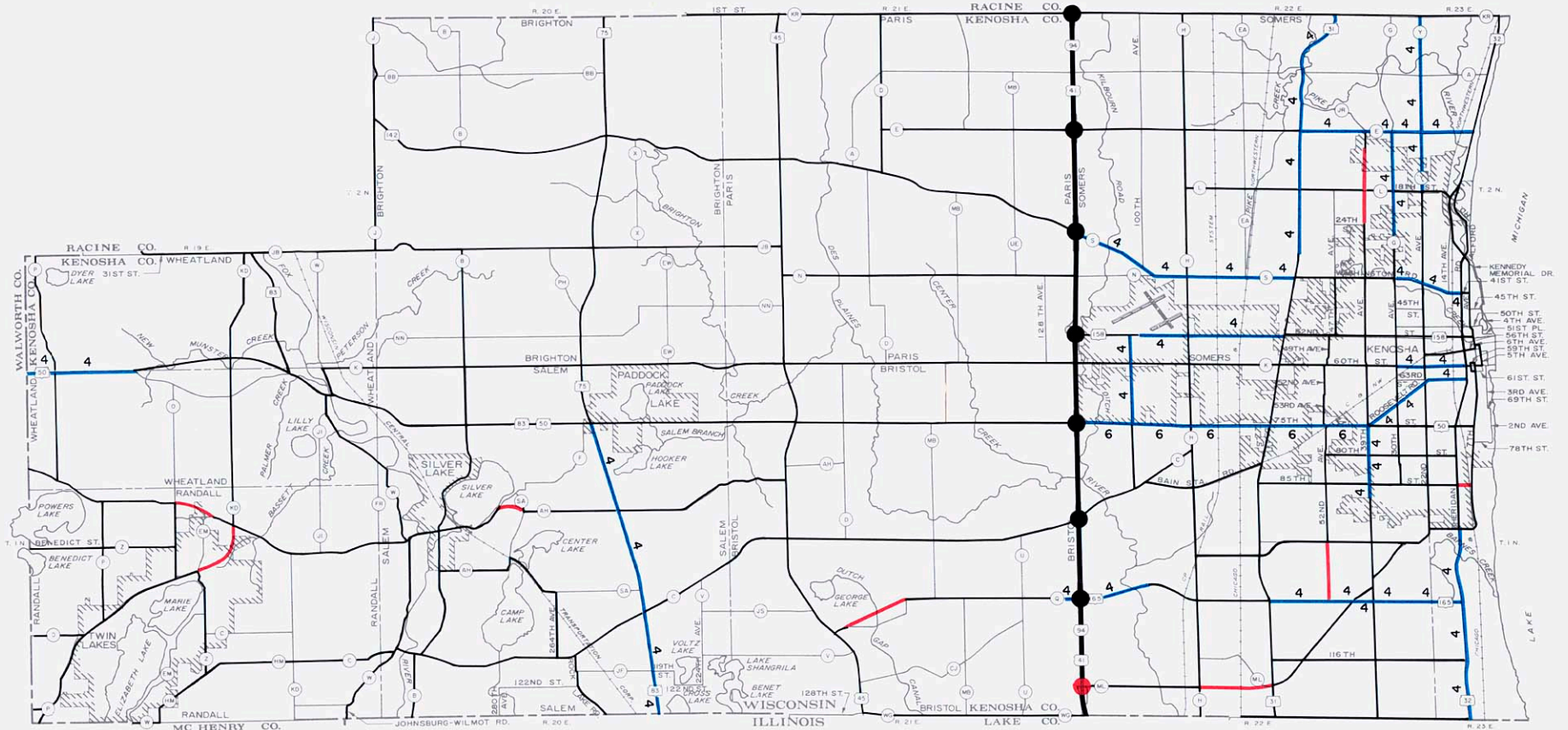
The arterial street and highway system plan element proposes about a 14 percent expansion in arterial street and highway system capacity. Freeway system improvements are limited to construction of the Oconomowoc bypass; the construction of the USH 12 Freeway extension from Elkhorn to Whitewater; and to two widening projects, including the widening of about one mile of IH 94 from CTH T to CTH G in Waukesha County, and the widening of about eight miles of IH 43 from Bender Road to Highland Road in Milwaukee and Ozaukee Counties.

The plan thus does not contain or recommend any new freeway initiative, such as a Milwaukee-area circumferential freeway. Importantly, however, the plan recommends the reconstruction and modernization of the Milwaukee-area freeway system—particularly the IH 94 East-West Freeway, including the Zoo, Stadium, and Marquette Interchanges—and the reconstruction of freeway interchanges as needed in Waukesha, Racine, and Kenosha Counties to urban design standards. The plan does envision some new interchanges on the freeway system, including a new interchange at Highland Road on IH 43 in Ozaukee County and a new interchange on IH 94 at Calhoun Road in Waukesha County. In the design of some segments of freeway reconstruction, the plan recommends that consideration be given in major investment studies to the provision of exclusive high-occupancy-vehicle lanes, that is, busway-carpool lanes (see Map 25).

The plan-recommended arterial improvement and expansion projects have been carefully designed to serve travel which may be expected to occur in and between the areas planned for conversion from rural to urban use under the year 2020 regional land use plan. Many of the proposed arterial street and highway improvements are needed to accommodate such planned development, while some are needed to provide direct and timely alternative routes for traffic which would otherwise use the area freeway system. Highway improvements were recommended only as a last resort. The first elements considered were the

Map 27

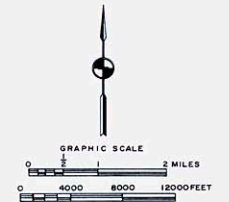
FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN KENOSHA COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

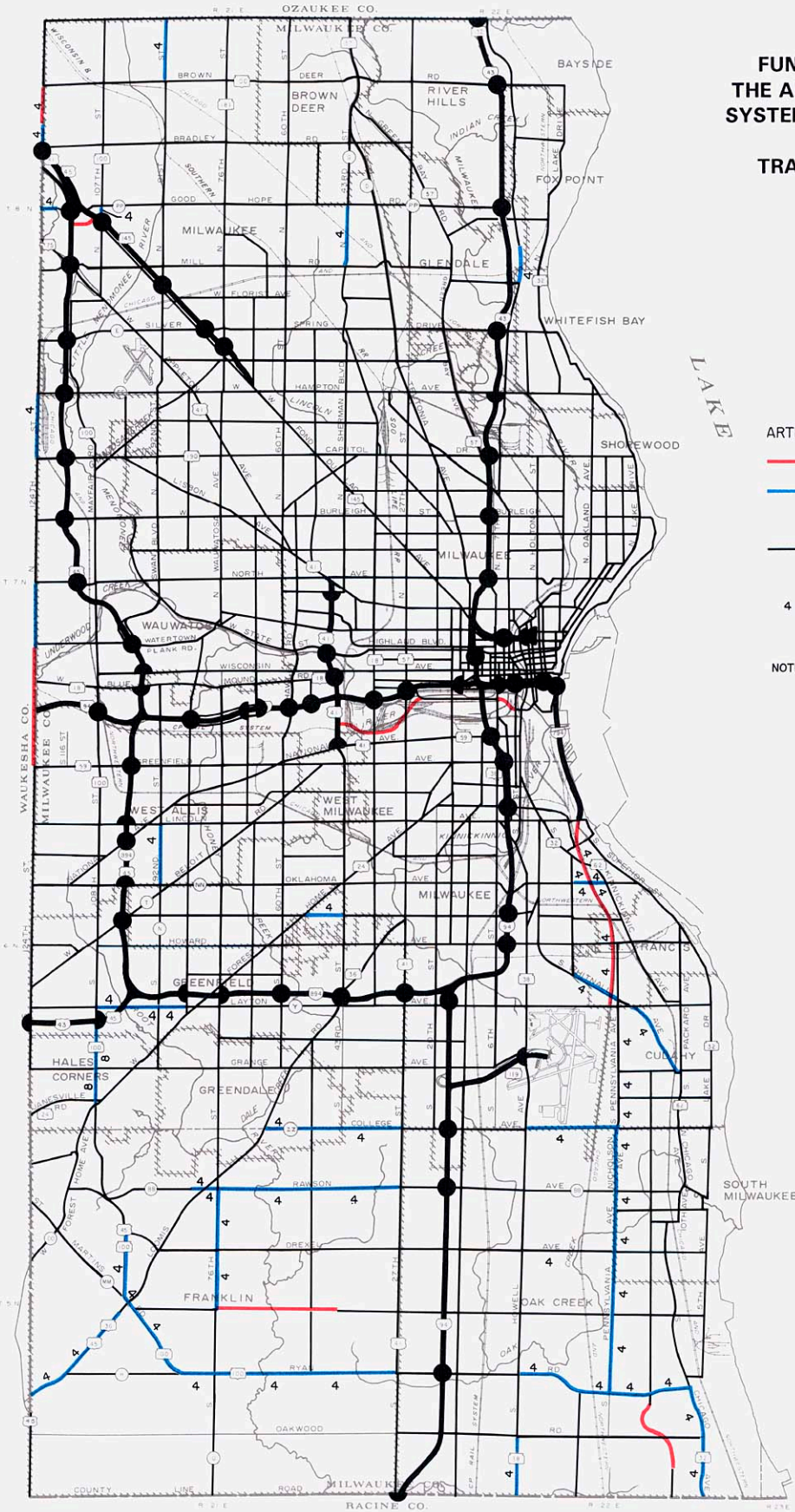
ARTERIAL STREET OR HIGHWAY

- 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)



Under the proposed regional transportation system plan, the arterial street and highway system in Kenosha County would be expanded by 37 miles, or 12 percent, from 318 miles in 1995 to 355 miles in the year 2020. The increase in arterial mileage would come about through the construction of nine miles of facilities and through the conversion of 28 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of nine miles of new arterial facilities, for the widening of 45 miles, and for the preservation of 301 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN MILWAUKEE COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN

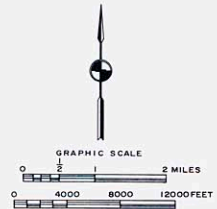


LEGEND

ARTERIAL STREET OR HIGHWAY

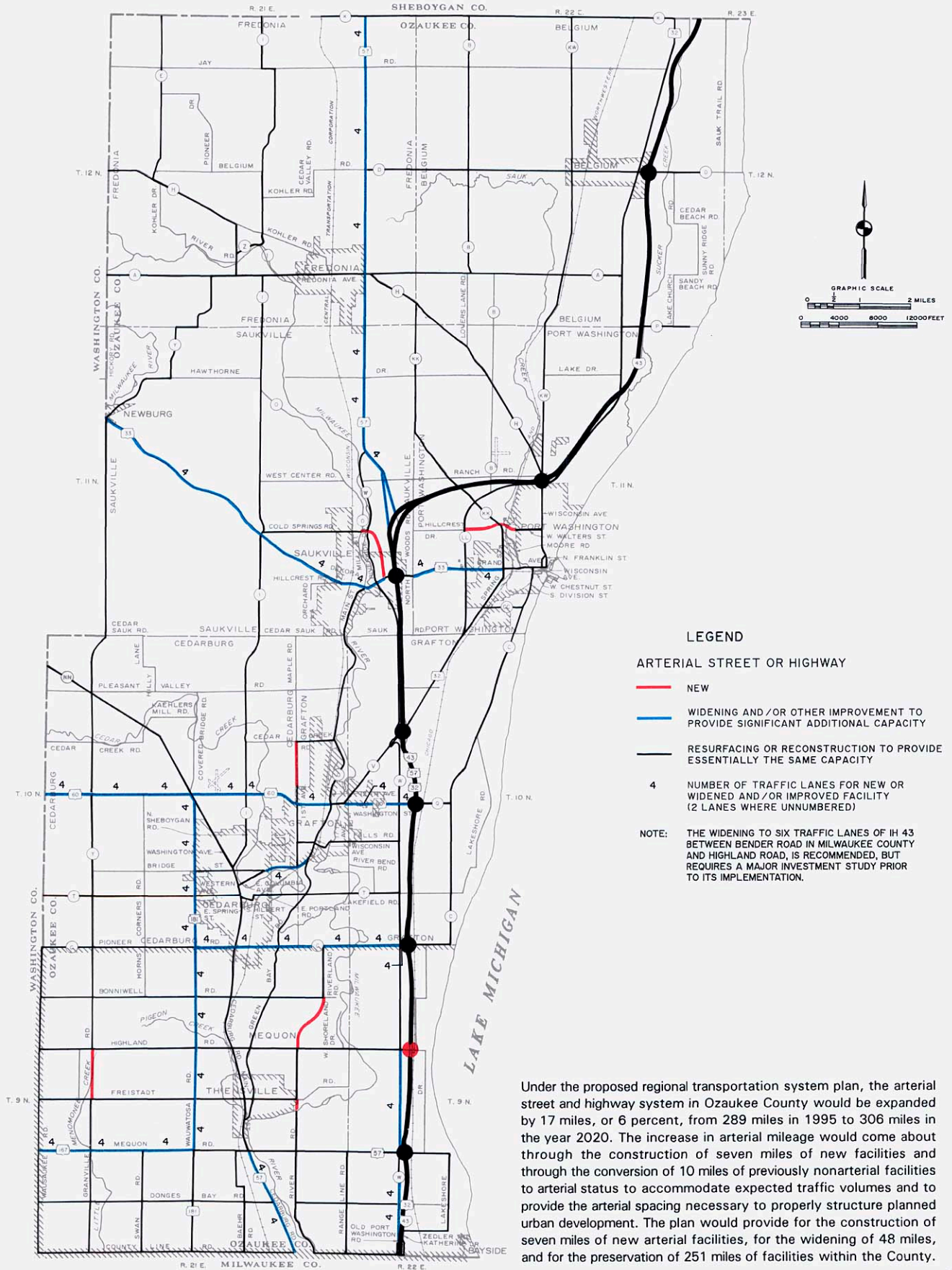
- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD AND HIGHLAND ROAD IN OZAUKEE COUNTY, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.



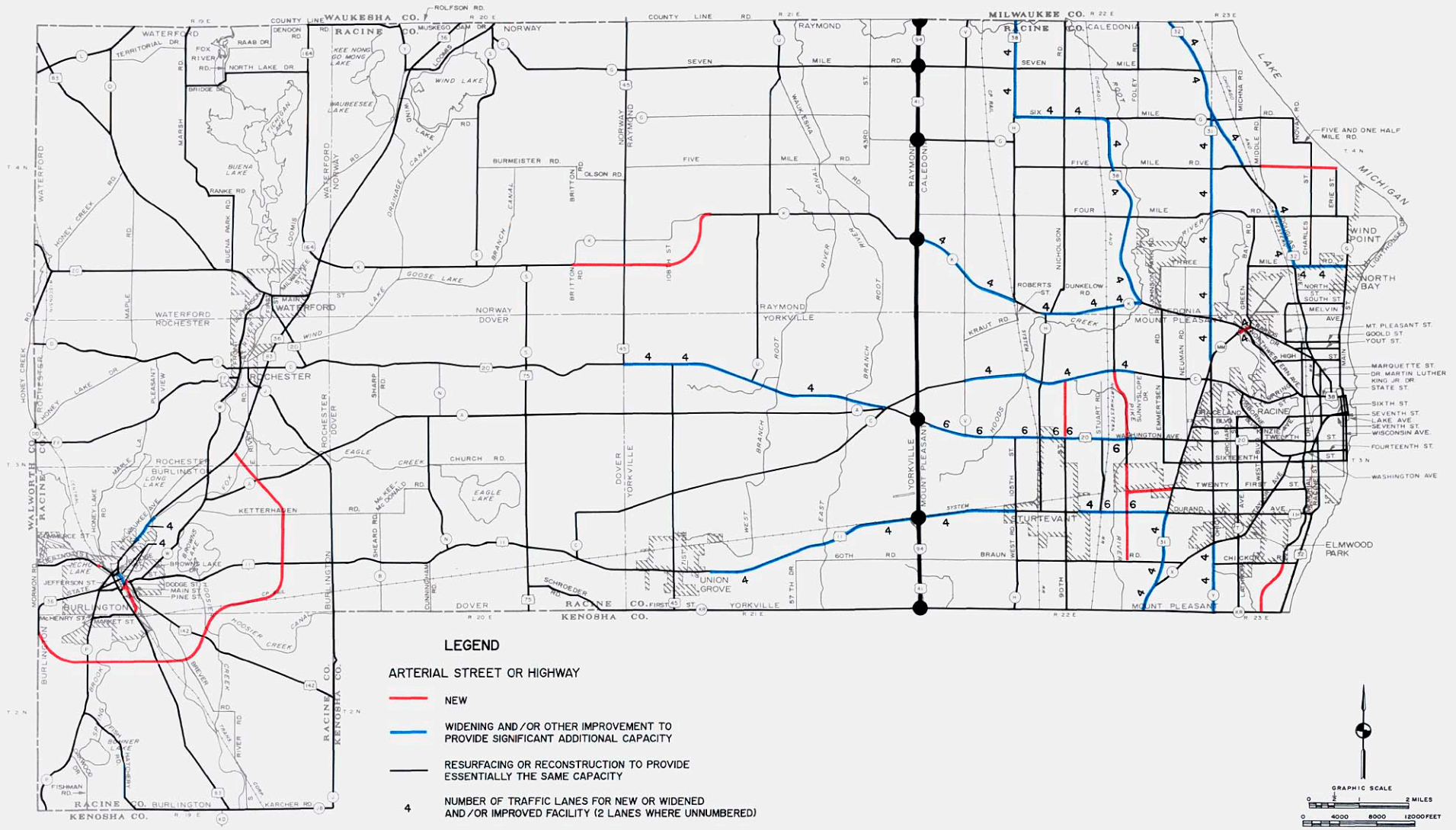
Under the proposed regional transportation system plan, the arterial street and highway system in Milwaukee County would be expanded by 22 miles, or 3 percent, from 775 miles in 1995 to 797 miles in the year 2020. The increase in arterial mileage would come about through the construction of 10 miles of new facilities and through the conversion of 12 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 10 miles of new arterial facilities, for the widening of 40 miles, and for the preservation of 747 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN OZAUKEE COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



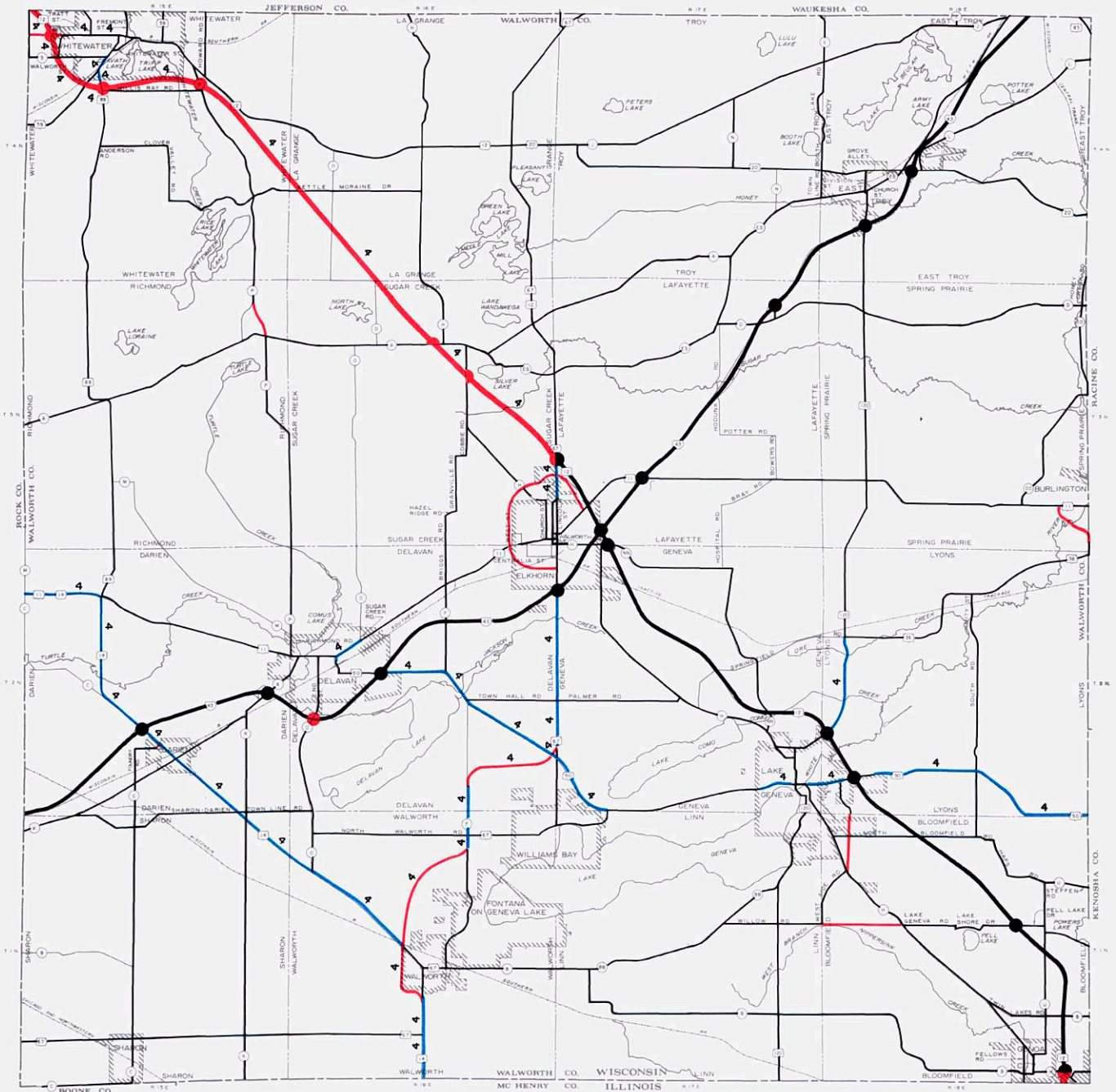
Under the proposed regional transportation system plan, the arterial street and highway system in Ozaukee County would be expanded by 17 miles, or 6 percent, from 289 miles in 1995 to 306 miles in the year 2020. The increase in arterial mileage would come about through the construction of seven miles of new facilities and through the conversion of 10 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of seven miles of new arterial facilities, for the widening of 48 miles, and for the preservation of 251 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN RACINE COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



Under the proposed regional transportation system plan, the arterial street and highway system in Racine County would be expanded by 77 miles, or 22 percent, from 349 miles in 1995 to 426 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 56 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes, and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 miles of new arterial facilities, for the widening of 51 miles, and for the preservation of 354 miles of facilities within the County.

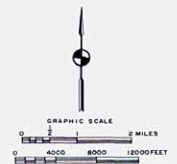
FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WALWORTH COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

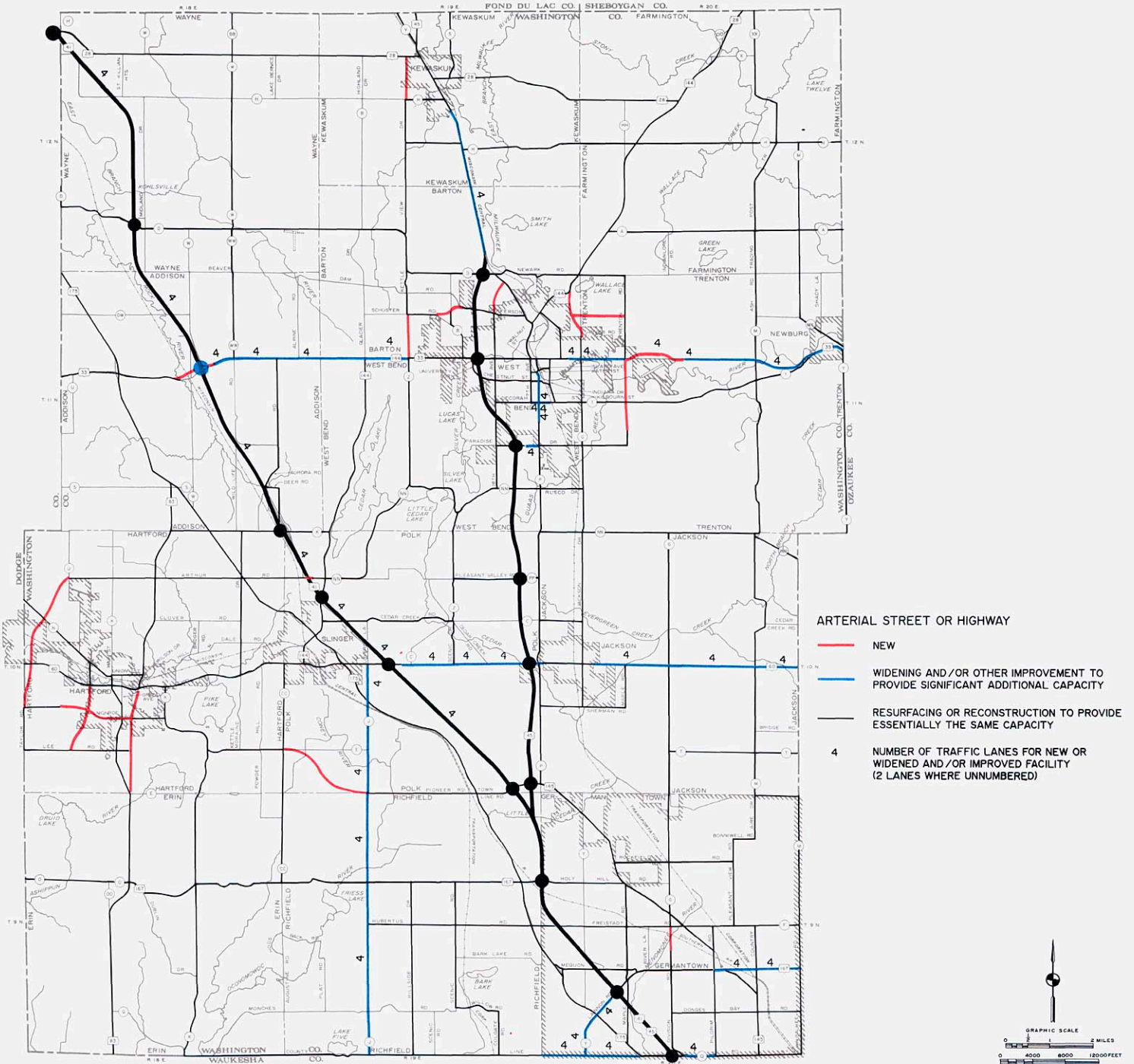
ARTERIAL STREET OR HIGHWAY

- 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)



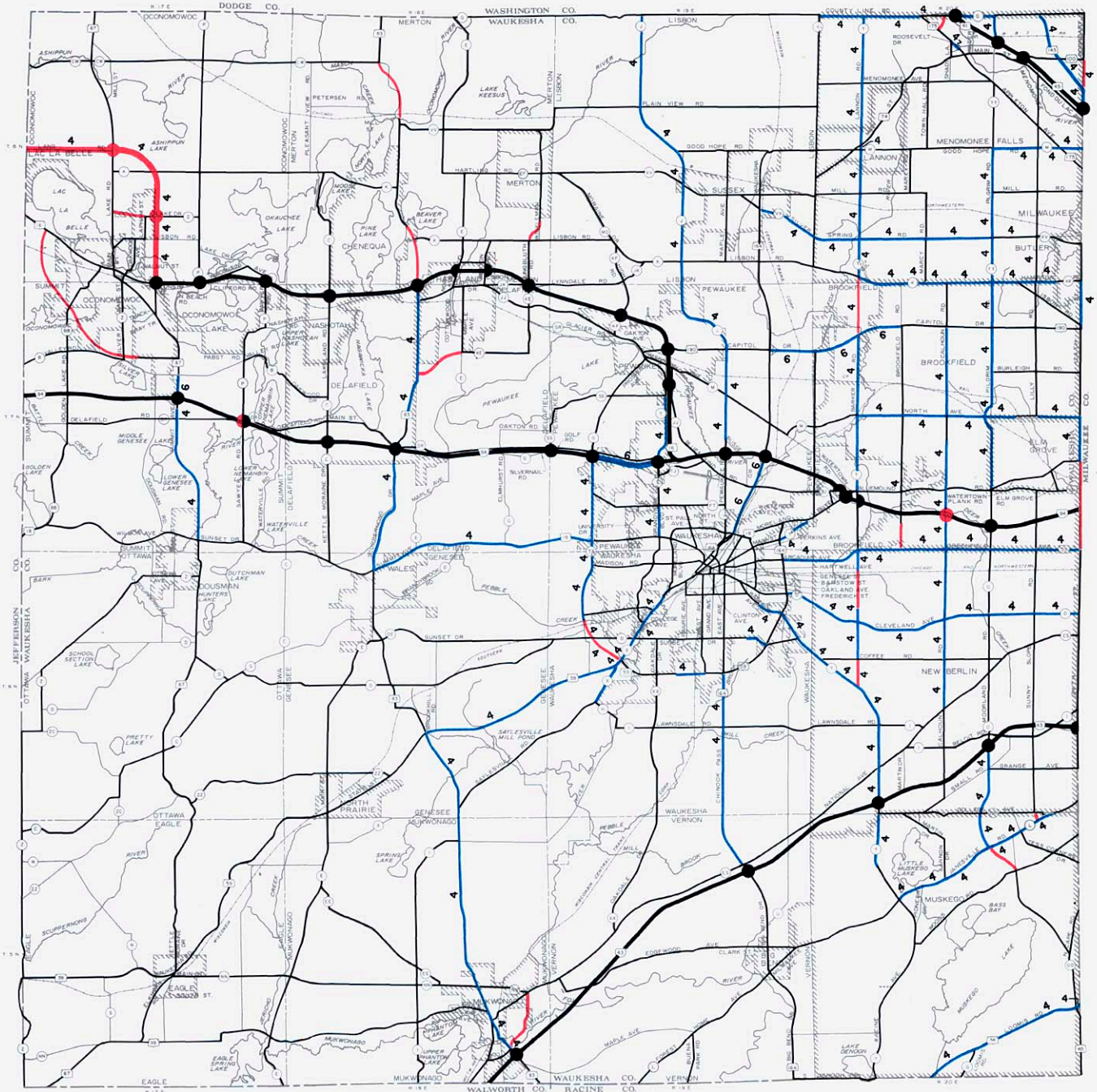
Under the proposed regional transportation system plan, the arterial street and highway system in Walworth County would be expanded by 52 miles, or 12 percent, from 430 miles in 1995 to 482 miles in the year 2020. The increase in arterial mileage would come about through the construction of 34 miles of new facilities and through the conversion of 18 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 34 miles of new arterial facilities, for the widening of 37 miles, and for the preservation of 411 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WASHINGTON COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



Under the proposed regional transportation system plan, the arterial street and highway system in Washington County would be expanded by 69 miles, or 17 percent, from 399 miles in 1995 to 468 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 48 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 miles of new arterial facilities, for the widening of 43 miles, and for the preservation of 404 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

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)



Under the proposed regional transportation system plan, the arterial street and highway system in Waukesha County would be expanded by 59 miles, or 8 percent, from 718 miles in 1995 to 777 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 38 miles of previously nonarterial facilities to arterial status in order to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 new miles of arterial facilities, for the widening of 142 miles, and for the preservation of 614 miles of facilities within the County.

Source: SEWRPC.

Table 42

**ARTERIAL STREET AND HIGHWAY SYSTEM PRESERVATION, IMPROVEMENT, AND EXPANSION BY
ARTERIAL FACILITY TYPE AND COUNTY: 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN**

County	System Preservation (miles)	System Improvement (miles)	System Expansion (miles)	Total Miles
Kenosha				
Freeway	12.0	0.0	0.0	12.0
Standard Arterial	289.3	44.8	9.0	343.1
Subtotal	301.3	44.8	9.0	355.1
Milwaukee				
Freeway	69.2	0.0	0.0	69.2
Standard Arterial	677.2	40.3	10.3	727.8
Subtotal	746.4	40.3	10.3	797.0
Ozaukee				
Freeway	27.4	0.0	0.0	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	0.0	0.0	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	0.0	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	0.0	0.0	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	271.9	1.0	22.4	295.3
Standard Arterial	2,810.1	404.3	102.1	3,316.5
Total	3,082.0	405.3	124.5	3,611.8

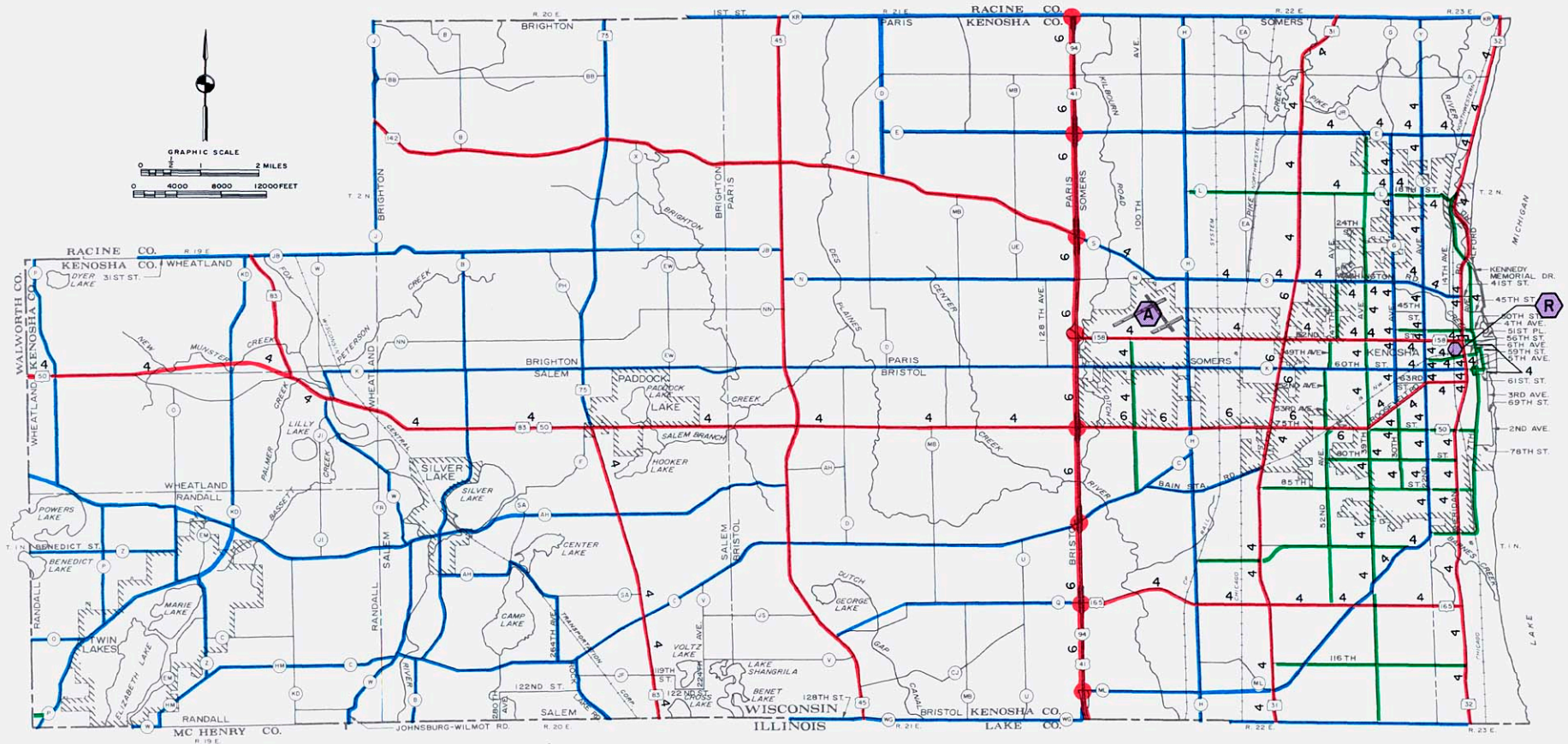
Source: SEWRPC.

transit and transportation system management elements. The potential of these elements to eliminate congestion was explicitly identified. Highway improvements were then recommended to resolve the residual existing and probable future residual traffic congestion.

The arterial street and highway element of the plan also recommends transfers of jurisdictional responsibilities with respect to arterial streets and highways. The recommended jurisdictional highway system plans for each county are shown on Map 28. These plans may be expected to be

Map 28

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR KENOSHA COUNTY: 2020



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- 4 NUMBER OF TRAFFIC LANES (2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

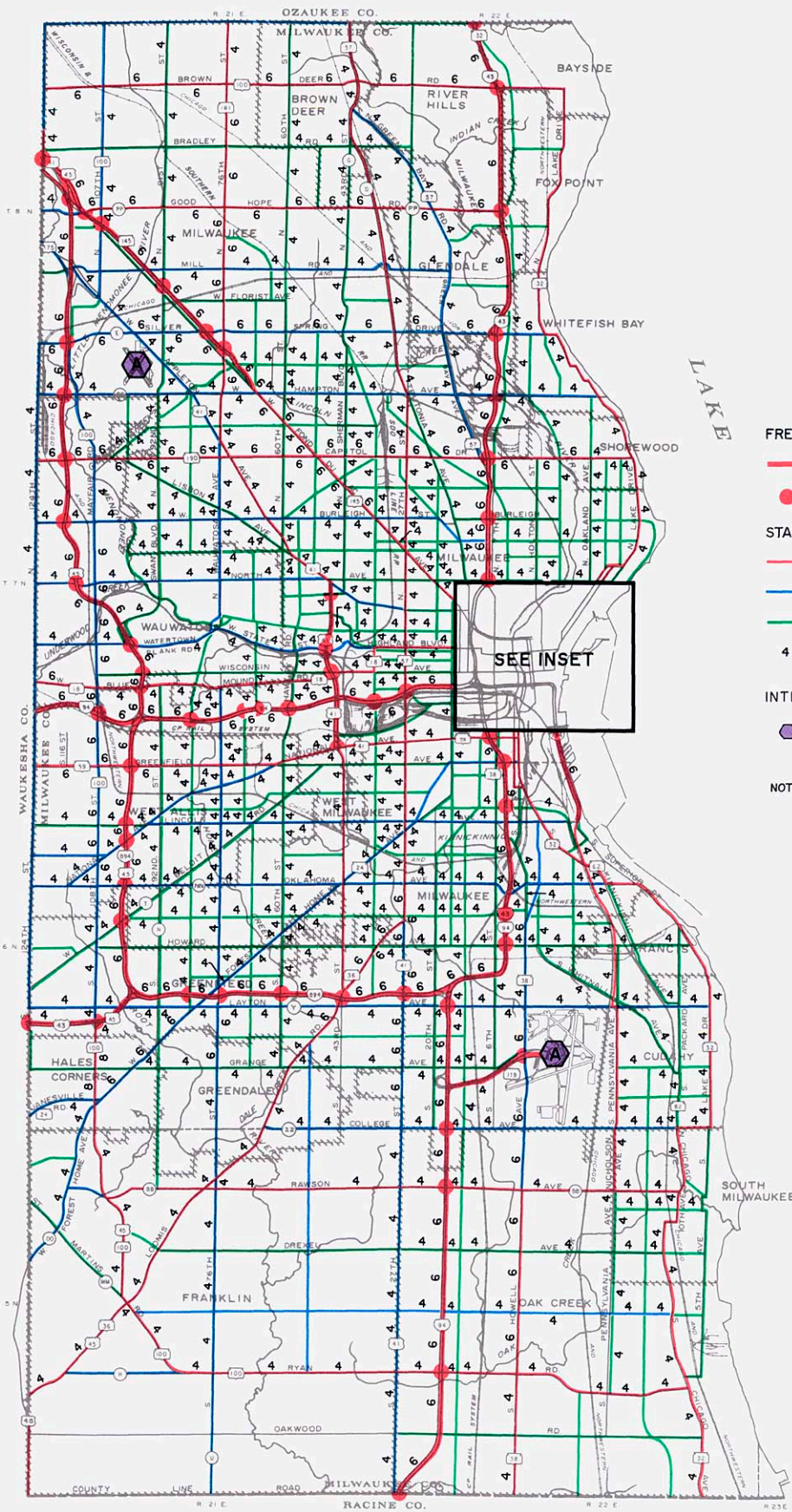
- ⬡ A-AIRPORT
- ⬡ R-PASSENGER RAIL TERMINAL

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 IH 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.

The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Kenosha County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Kenosha County may be expected to total 355 miles. About 103 miles, or nearly 29 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 203 miles, or 57 percent, are proposed to be classified as County trunk highways; and the remaining 49 miles, or about 14 percent, are proposed to be classified as local arterials.

**PROPOSED JURISDICTIONAL
HIGHWAY SYSTEM PLAN FOR
MILWAUKEE COUNTY: 2020**



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

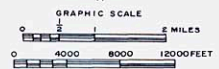
STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- 4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

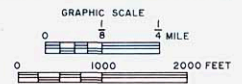
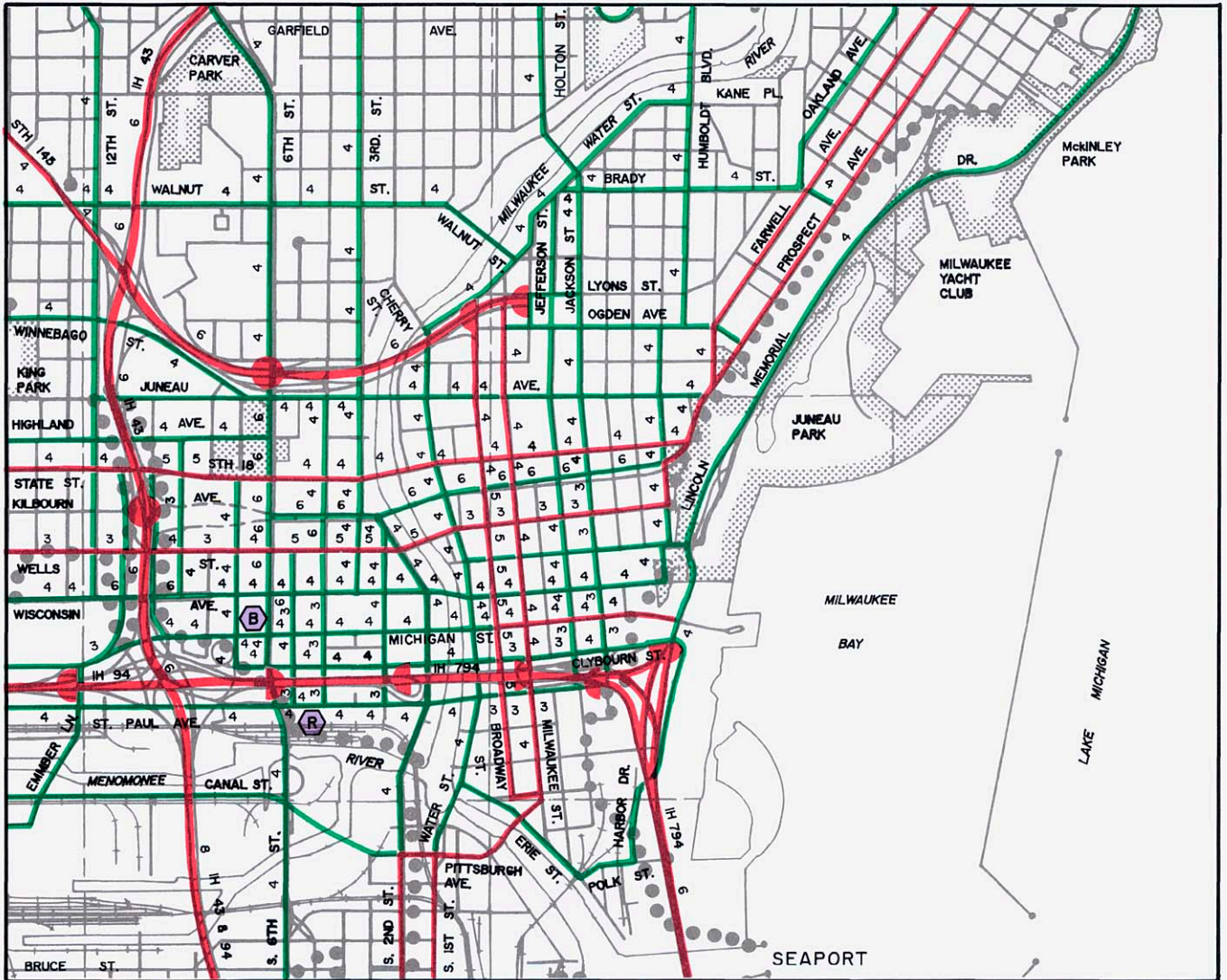
- A-AIRPORT
- B-BUS TERMINAL
- R-PASSENGER RAIL TERMINAL

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD AND HIGHLAND ROAD IN OZAUKEE COUNTY, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.



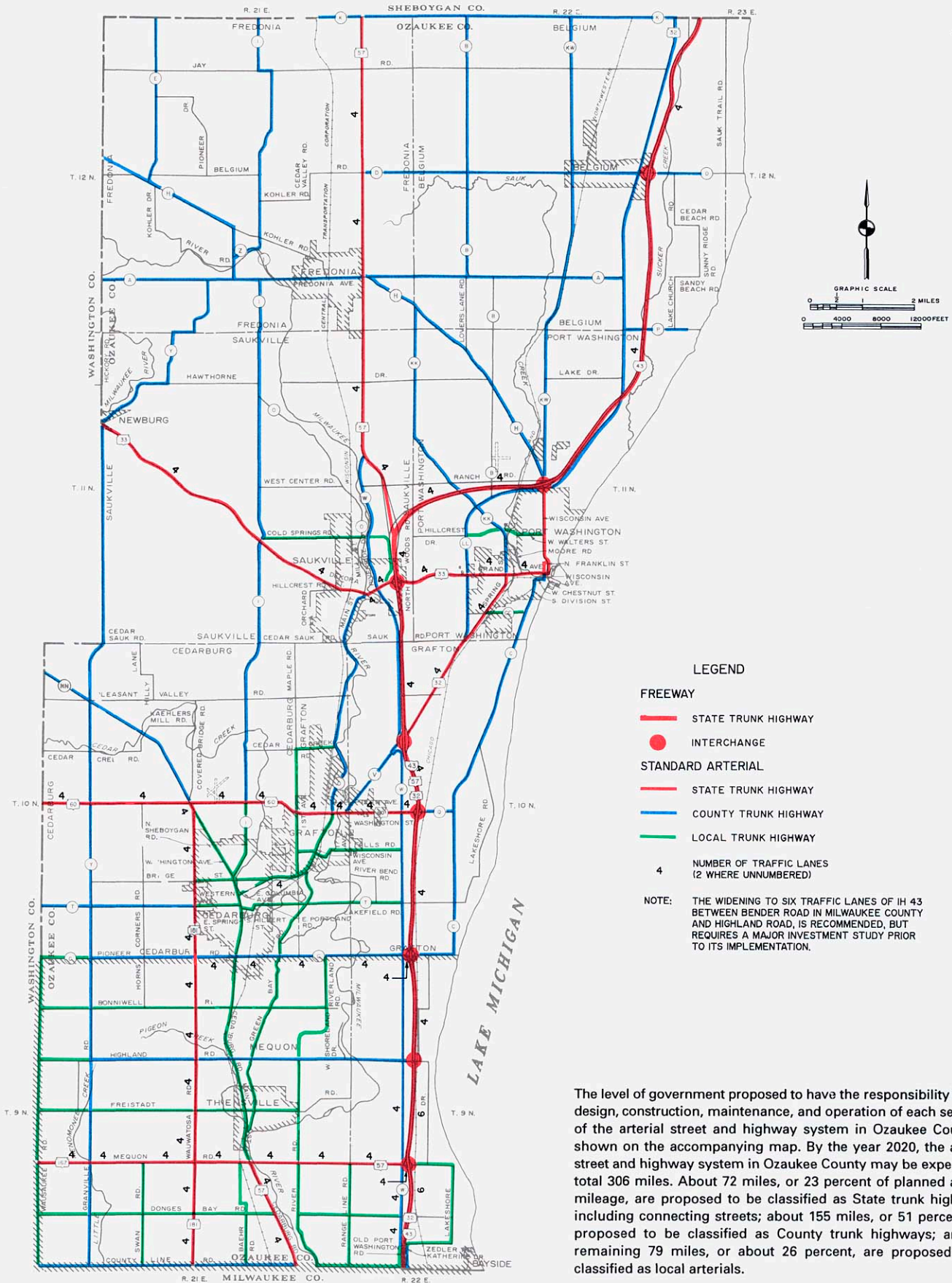
Map 28 Inset

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR MILWAUKEE COUNTY: 2020



The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Milwaukee County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Milwaukee County may be expected to total 797 miles. About 220 miles, or 28 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 184 miles, or 23 percent, are proposed to be classified as County trunk highways; and the remaining 393 miles, or about 49 percent, are proposed to be classified as local arterials.

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR OZAUKEE COUNTY: 2020



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

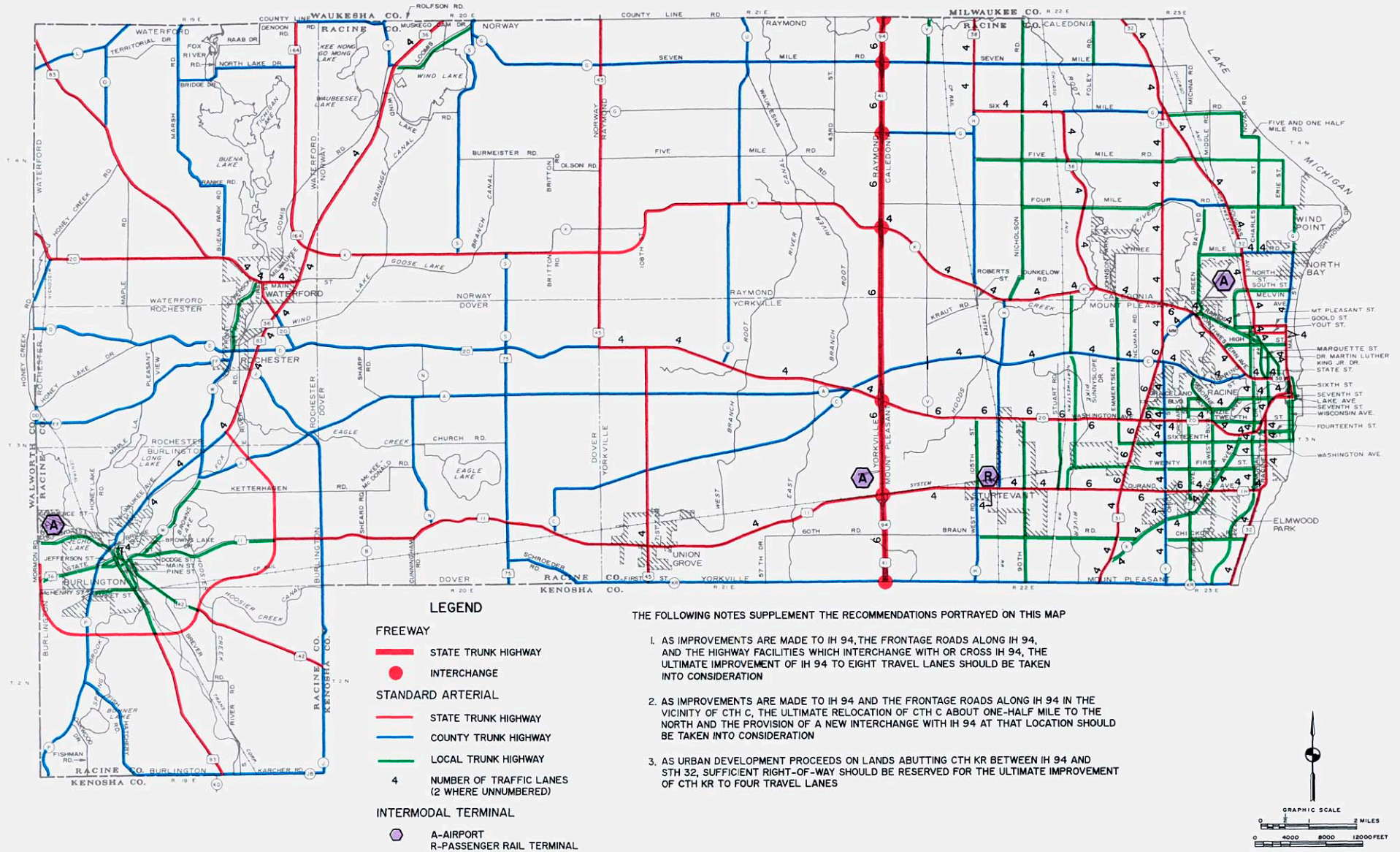
4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD IN MILWAUKEE COUNTY AND HIGHLAND ROAD, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.

The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Ozaukee County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Ozaukee County may be expected to total 306 miles. About 72 miles, or 23 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 155 miles, or 51 percent, are proposed to be classified as County trunk highways; and the remaining 79 miles, or about 26 percent, are proposed to be classified as local arterials.

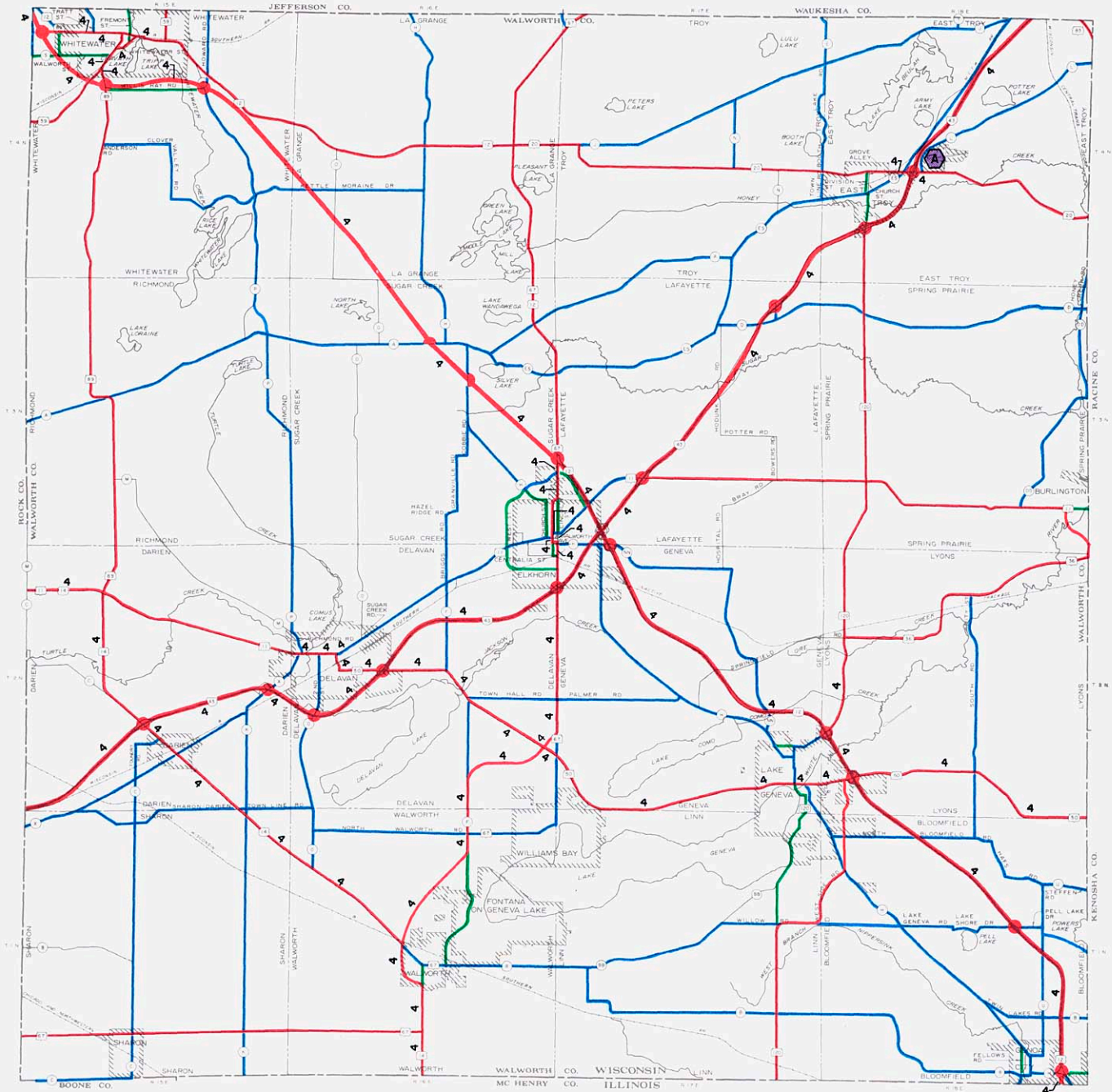
Map 28 (continued)

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR RACINE COUNTY: 2020



The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Racine County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Racine County may be expected to total 426 miles. About 160 miles, or 37 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 156 miles, or 37 percent, are proposed to be classified as County trunk highways; and the remaining 110 miles, or about 26 percent, are proposed to be classified as local arterials.

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 2020



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

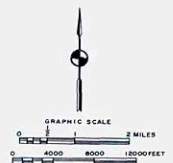
STANDARD ARTERIAL

- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

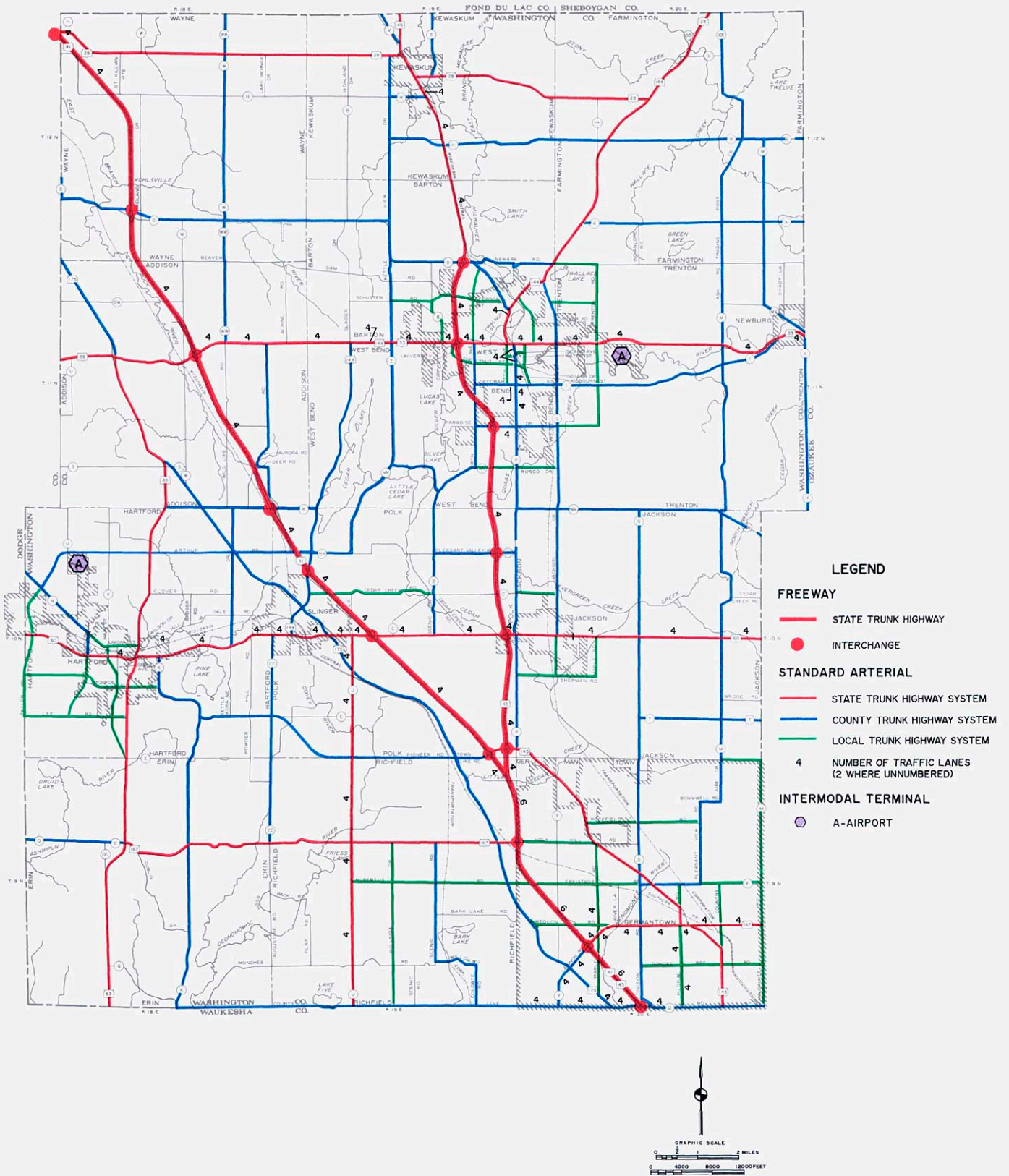
INTERMODAL TERMINAL

- A-AIRPORT



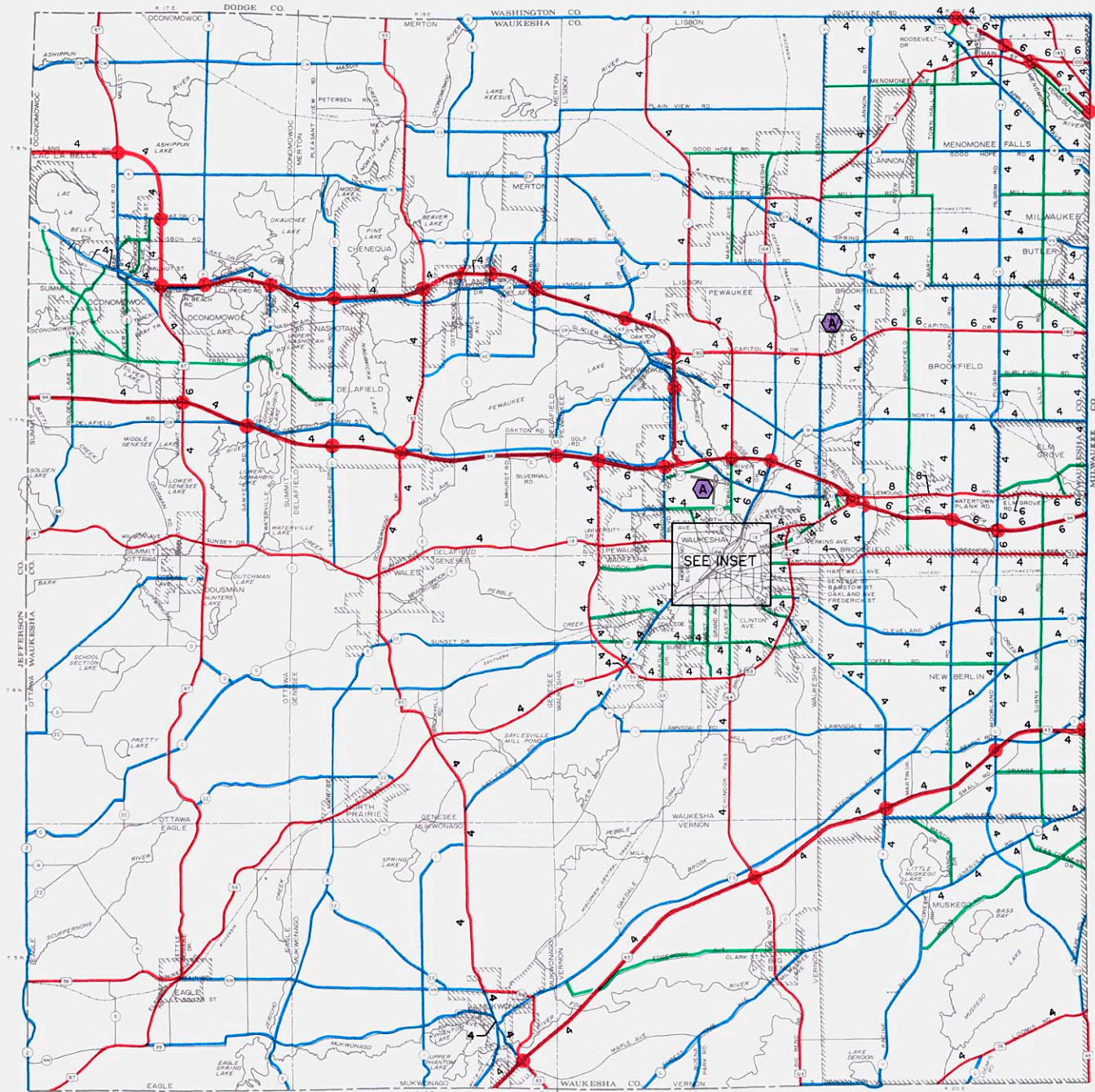
The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Walworth County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Walworth County may be expected to total 482 miles. About 223 miles, or 46 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 239 miles, or 50 percent, are proposed to be classified as County trunk highways; and the remaining 20 miles, or about 4 percent, are proposed to be classified as local arterials.

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WASHINGTON COUNTY: 2020



The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Washington County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Washington County may be expected to total 468 miles. About 159 miles, or 34 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 234 miles, or 50 percent, are proposed to be classified as County trunk highways; and the remaining 75 miles, or about 16 percent, are proposed to be classified as local arterials.

PROPOSED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WAUKESHA COUNTY: 2020



LEGEND

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

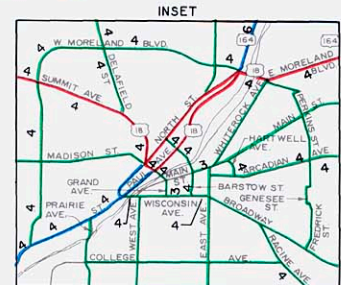
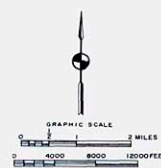
- STATE TRUNK HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

INTERMODAL TERMINAL

- A-AIRPORT

NOTE: THE RECOMMENDATION TO PLACE CALHOUN ROAD ON THE COUNTY TRUNK HIGHWAY SYSTEM FROM CTH ES TO CTH K IS CONTINGENT UPON THE CONSTRUCTION OF A NEW INTERCHANGE ON IH 94 AT CALHOUN ROAD.



The level of government proposed to have the responsibility for the design, construction, maintenance, and operation of each segment of the arterial street and highway system in Waukesha County is shown on the accompanying map. By the year 2020, the arterial street and highway system in Waukesha County may be expected to total 777 miles. About 230 miles, or 30 percent of planned arterial mileage, are proposed to be classified as State trunk highways, including connecting streets; about 413 miles, or 53 percent, are proposed to be classified as County trunk highways; and the remaining 134 miles, or about 17 percent, are proposed to be classified as local arterials.

Source: SEWRPC.

Table 43

**SUMMARY OF TRANSPORTATION PERFORMANCE CHARACTERISTICS: 1995
AND 2020 PROPOSED REGIONAL TRANSPORTATION SYSTEM PLAN**

Performance Characteristic		Base Year 1995	Proposed Plan: 2020	Percent Change
Category	Specific Measure			
Travel	Internal person-trips (average weekday)	5.8 million	6.5 million	12.1
	Internal vehicle-trips (average weekday)	4.8 million	5.7 million	18.8
	Vehicle-miles of travel ^a (average weekday)	35.9 million	47.0 million	30.9
	Transit ridership (average weekday)	163,100	207,300	27.1
	Relative distribution of trips by mode of travel (average weekday)			
	Auto driver	74.1 percent	77.1 percent	--
	Auto passenger	19.0 percent	16.3 percent	--
	Transit passenger	2.8 percent	3.2 percent	--
	School bus passenger	4.1 percent	3.4 percent	--
	Proportion of trips made by transit within Milwaukee County	3.8 percent	3.8 percent	--
Proportion of trips made by transit to Milwaukee central business district	13.0 percent	12.0 percent	--	
Proportion of passenger-miles travel made on transit average weekday)	1.1 percent	1.5 percent	--	
Traffic Congestion	Amount and proportion of arterial street and highway system over design capacity			
	Moderately congested (V/C ratio 1.31 or greater	148 miles 4.5 percent	146 miles 4.0 percent	-1.4 --
	Severely congested (V/C ratio 1.11 to 1.30)	203 miles 6.2 percent	57 miles 1.6 percent	-71.9 --
	Extremely congested (V/C ratio 1.31 or greater	82 miles 2.5 percent	38 miles 1.1 percent	-53.7 --

^aWithin Walworth County, vehicle-miles of travel may be expected to increase from 1.91 million in 1991 to 3.2 million in 2020, a 68 percent increase.

Source: SEWRPC.

amended from time to time as individual counties update and extend these plans.

Plan Performance and Costs

Selected characteristics of the proposed regional transportation system plan for the year 2020 are identified in Tables 43 and 44. The number of internal person-trips

generated within the Region on an average weekday is expected to increase under the plan from 5.8 million in 1995 to about 6.5 million in the year 2020, or by about 12 percent. The number of transit trips made on an average weekday is expected to increase from about 163,100 in 1995 to about 207,300 in the year 2020, or by about 27 percent, assuming the transit plan recommendations are imple-

Table 44

AVERAGE ANNUAL COSTS AND REVENUES ASSOCIATED WITH THE PROPOSED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN: 1998 THROUGH 2020^a

Cost or Revenue Item	Proposed Plan 2020
Transportation System Cost (average annual 1998-2020 expressed as millions of dollars)	
Arterial Street and Highway System	
Capital	\$224
Operating	63
Subtotal	\$287
Transit System	
Capital	\$ 26
Operating ^b	104
Subtotal	\$130
Total	\$417
Transportation System Revenues (average annual 1998-2020 expressed as millions of dollars)	
Highway Capital	
Federal	\$ 90
State	70
Local	15
Subtotal	\$175
Highway Operating	
State	\$ 30
Local	30
Subtotal	\$ 60
Transit Capital	
Federal	\$ 17
Local	3
Subtotal	\$ 20
Transit Operating	
Federal	\$ 4
State	53
Local	18
Subtotal	\$ 75
Total	\$330
Cost-Revenue Comparison	
Average Annual Difference between Cost and Revenue (millions of dollars)	\$ 87
Motor-Fuel Tax Required to Fund Shortfall (cents per gallon)	10

^aAll cost and revenue figures in this table are expressed in constant 1997 dollars.

^bNet operating cost (total operating costs less fare-box revenue).

Source: SEWRPC.

mented. Despite this increase in daily transit trip making, the proportion of total internal person-trips made by transit would remain at about 3 percent over the plan design period.

The number of vehicle-miles of travel within the Region on an average weekday is expected to increase by about 31 percent, from about 35.9 million in 1995 to about 47.0 million in 2020. Of the latter total, about 17.5 million

vehicle-miles of travel, or about 37 percent, are expected to be made on freeways, which would comprise about 8 percent of the total arterial system.

Arterial street and highway congestion is expected to decrease, with the number of miles of facilities operating extremely over design capacity decreasing from about 82 miles, or about 2.5 percent of the total system, in 1995 to about 38 miles, or about 1.1 percent of the total system, in 2020, and the number of miles operating severely over design capacity decreasing from 203 miles, or 6.2 percent of the system in 1995, to 57 miles, or 1.6 percent, of the system in 2020. The number of arterial miles operating moderately over design capacity is also expected to decrease, from about 148 miles, or about 4.5 percent of the total system in 1995, to about 146 miles, or about 4.0 percent of the total system, in 2020. The location of the facilities expected to operate under congested conditions are shown on Map 29.

The average annual public cost of carrying out the recommended plan, including the construction of new facilities and the operation and maintenance of the arterial street and highway and transit systems, are estimated at nearly \$417 million. All cost and revenue figures are expressed in constant 1997 dollars. The anticipated average annual public revenues, excluding transit fare-box revenues, are estimated at \$330 million. Thus, the difference between anticipated costs and expected revenues is \$87 million per year over the plan design period. The equivalent of a 10 cents-per-gallon increase in the motor-fuel tax within the Region would be necessary to eliminate the estimated \$87 million annual shortfall.

PUBLIC REACTION TO THE PRELIMINARY RECOMMENDED PLAN

The public comment offered on the proposed year 2020 plan was very limited. In large part, this may be attributed to the preliminary year 2020 regional transportation plan being largely based upon the year 2010 plan, with modest amendments. The year 2010 plan was completed less than three years before the proposed 2020 plan was. The preparation of the year 2010 plan had been shaped, and the final year 2010 plan was modified, to reflect extensive public comment obtained through a series of public informational meetings and hearings held in each of the seven counties, an all-day regional planning conference, a series of four Commission newsletters widely distributed

throughout the Region, extensive media coverage, and involvement of Commission Advisory Committees reviewing the plan. The Advisory Committees included representation from each of the 154 local units of government within Southeastern Wisconsin.

A public informational meeting and hearing on the proposed year 2020 plan was held on November 6, 1997. The proposed year 2020 plan was reviewed by Commission Advisory Committees which included representation from each of the seven counties within the Region, and representation from each of the units of government within the urbanized areas of the Region. The full record of comment on the year 2020 plan is documented in a SEWRPC document entitled *Record of Public Informational Meeting and Public Hearing, Preliminary Regional Land Use and Transportation System Plans for Southeastern Wisconsin: 2020, and Transportation Improvement Program for Southeastern Wisconsin: 1998-2000*, November 1997, which is on file at the Commission offices.

The comments received at the public hearing and in correspondence during the public comment period were related to two potential changes to the plan. Comments were received expressing support for the addition to the plan of a new interchange with USH 41-USH 45 at Freistadt Road. A number of letters were received from businesses and from the Washington County Economic Development Corporation citing traffic congestion and safety concerns and a desire for improved access. Many of these businesses are located in the Village of Germantown Industrial Park, located to the east of the potential interchange. Comments were made at the hearing in support of the interchange by the Village of Germantown Chamber of Commerce.

The other comment received on the plan was in opposition to a proposed highway improvement in the year 2020 plan, which improvement was first proposed in the Kenosha County jurisdictional highway system plan prepared and adopted by the Kenosha County Board of Supervisors and the Commission in 1975. This proposed highway improvement envisioned the extension of CTH AH for approximately one-half mile from CTH SA to CTH F in the Town of Salem in Kenosha County to eliminate indirection in the County trunk highway system. The comment made in opposition to the proposed arterial highway improvement cited the attendant disruption of existing residences and of a primary environmental corridor.

ADVISORY COMMITTEE RESPONSE TO PUBLIC COMMENT ON PRELIMINARY PLAN

In response to the public comment concerning the addition of the Freistadt Road interchange to the regional transportation system plan, the Technical Coordinating and Advisory Committee on Regional Transportation System Planning noted that it had previously considered this matter and rejected inclusion of the interchange in the plan. Accordingly, the Committee reaffirmed its position not to include the Freistadt Road interchange on the plan. In so doing, the Committee noted that existing interchanges are located approximately 1.0 mile north of Freistadt Road at Holy Hill Road—STH 167 West—and 2.0 miles south at Mequon Road/Lannon Road—STH 167 East. These existing interchanges north and south of Freistadt Road were determined to have adequate traffic-carrying capacity to accommodate current traffic as well as future year 2020 traffic. Improvements would be needed, however, under both current and future conditions at these interchanges, including the addition of turning lanes and widening of approach pavements, as well as the planned widening to four traffic lanes of Lannon Road and Mequon Road. Also, traffic signalization of the major intersections at the interchanges and along Lannon Road and Mequon Road may also be necessary to better accommodate existing and future traffic. With these modest improvements, the existing interchanges may be expected to adequately accommodate current and future traffic.

In response to the comment concerning the deletion from the plan of the proposed extension of CTH AH from CTH SA to CTH F in Kenosha County, the Advisory Committee determined to delete this proposed roadway extension from the regional transportation system plan and incorporate in its place the existing segments of CTH SA and CTH F to provide a connection between CTH AH and F. The proposed facility extension would have been expected to carry a limited amount of current and future traffic volume, estimated at under 2,000 vehicles per average weekday, and its construction would have had disruptive impacts on existing residences and a segment of primary environmental corridor. While the area served by the facility extension would include the Village of Silver Lake, the area served by the facility extension is currently, and is planned to remain, largely rural.

FINAL RECOMMENDED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN

The final recommended regional transportation system plan for the year 2020 is identical to the preliminary plan, with the exception of the deletion of the one-half mile extension of CTH AH in Kenosha County. The final recommended year 2020 regional transportation system plan is also largely identical to the regional transportation plan adopted by the Commission in December 1994 with a design year of 2010, being modified only by modest amendments. The development of the year 2020 plan largely upon the year 2010 plan was done for a number of reasons. First, the year 2010 plan has been well received by all parties concerned and adopted by the Commission, each of the seven counties of the Region, and many municipalities, and endorsed by the Wisconsin Departments of Transportation and Natural Resources. There was no reason to explore a major departure from the framework of transportation development and improvement envisioned in the 2010 plan. Second, forecasts of regional change another 10 years beyond the year 2010 to the year 2020 indicated that only modest growth may be expected in levels of households, employment, travel, transit ridership, and highway traffic, that is, increases of approximately 8 percent. Analyses of the ability of the year 2010 plan to meet year 2020 travel and traffic demands indicated that minimal change in the year 2010 plan was necessary for that plan to serve year 2020 travel and traffic needs. The third reason that the year 2020 plan was principally derived from the year 2010 plan was that the only concern that had been expressed about the year 2010 plan since its adoption is that it may be too ambitious to be accomplished within the remaining 13-year time frame. Its extension by another 10 years, and modest amendment to include actions to address additional needs over those additional 10 years, responds to that concern. A fourth reason was that substantial changes have not yet occurred in the Region, and additional data were not yet available, to warrant the expenditure of the time and resources for a major plan reevaluation at this time. A fifth and last reason was that the year 2010 plan had been shaped and modified to reflect the substantial public comment received during its development, and that public comment, received less than three years ago, remained sufficiently valid to be directly incorporated within the year 2020 plan.

The final recommended year 2020 plan has three major elements: transportation systems management, public transit maintenance and improvement, and arterial street and highway maintenance and improvement.

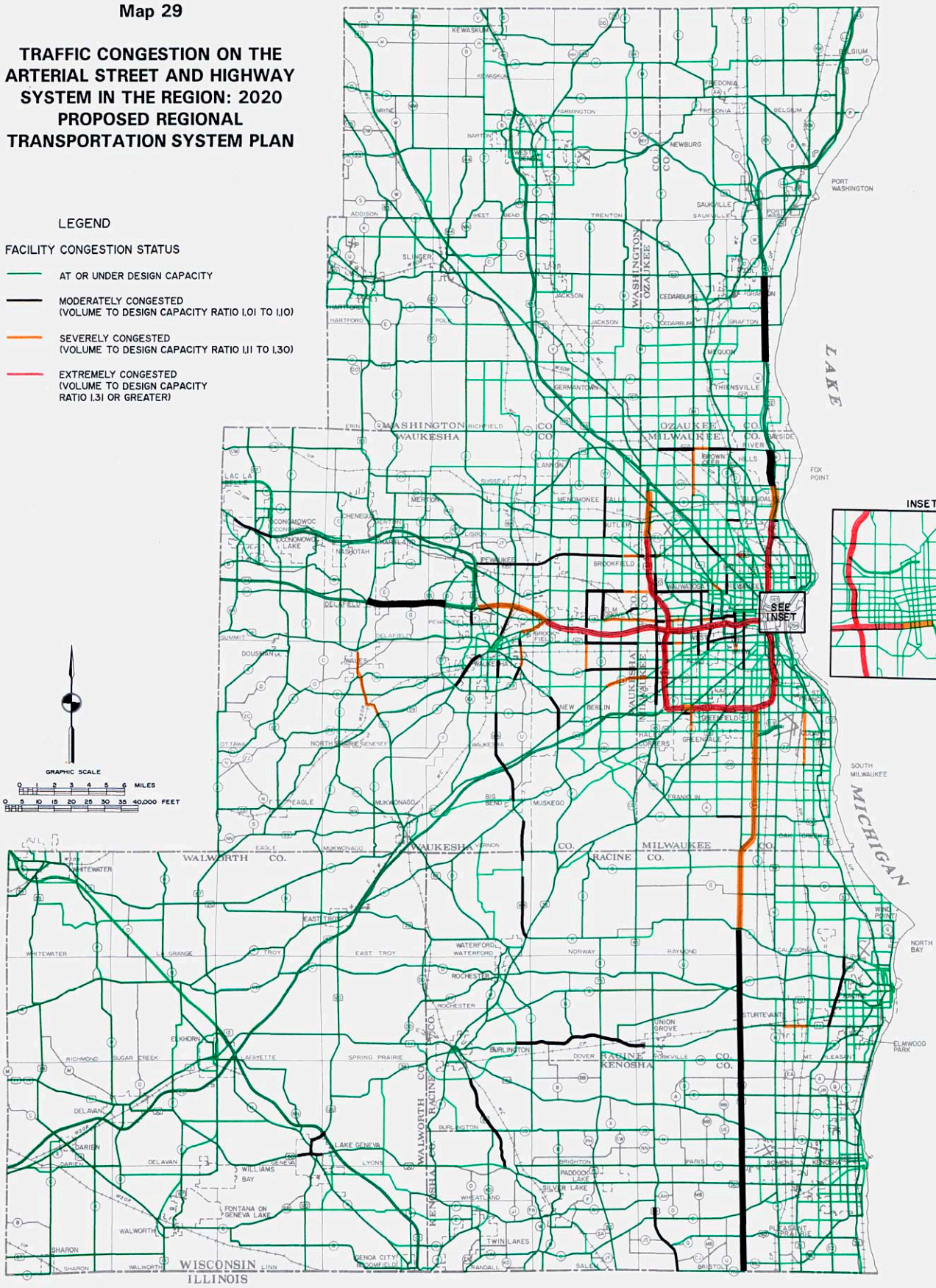
Map 29

**TRAFFIC CONGESTION ON THE
ARTERIAL STREET AND HIGHWAY
SYSTEM IN THE REGION: 2020
PROPOSED REGIONAL
TRANSPORTATION SYSTEM PLAN**

LEGEND

FACILITY CONGESTION STATUS

- AT OR UNDER DESIGN CAPACITY
- MODERATELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.01 TO 1.10)
- SEVERELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.11 TO 1.30)
- EXTREMELY CONGESTED
(VOLUME TO DESIGN CAPACITY RATIO 1.31 OR GREATER)



Under the proposed plan, the level of traffic congestion may be expected to be substantially below that which was experienced in 1995. By the year 2020, only about 7 percent of the planned 3,612-mile arterial system, or 241 miles, would operate over design capacity. About 146 miles, or about 4 percent, of planned arterial mileage would be moderately congested; 57 miles, or about 2 percent, would be severely congested; and 38 miles, or about 1 percent, would be extremely congested. While the transportation development proposals included in the proposed plan are intended to serve to reduce traffic congestion throughout the entire Region, the Milwaukee-area freeway system may be expected to carry traffic volumes exceeding its design capacity and to operate with congested conditions through the year 2020.

Source: SEWRPC.

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. Freeway Traffic Management
Implementation of an areawide freeway traffic management system, including an operational control strategy that would, through restricted access of single-occupancy vehicles at ramp meters, attempt to eliminate freeway traffic flow breakdown and stop-and-go traffic and provide for minimum average operating speeds of about 30 to 35 miles per hour on all freeway segments during peak traffic periods. Buses and high-occupancy vehicles would receive preferential access at the ramps. The system would also include elements to provide advisory information and to better manage incidents.
2. Arterial Curb-Lane Parking Restrictions
Restriction of curb-lane parking as needed during peak periods along about 400 miles, or about 11 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 consider 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 turning lanes as needed, efficient traffic signalization, including interconnection of traffic signal systems, 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 and the use of zoning, subdivision ordinances, and official mapping to facilitate travel by transit, bicycle, and pedestrian movement, as recommended in the year 2020 regional land use plan, and to promote implementation of the 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 the improvement of transit vehicle speeds through priority systems and signal preemption, the promotion of innovative fare-payment systems, the use of improved vehicles and facilities to provide for more comfortable travel and waiting for travel vehicles, and the conduct of marketing efforts.

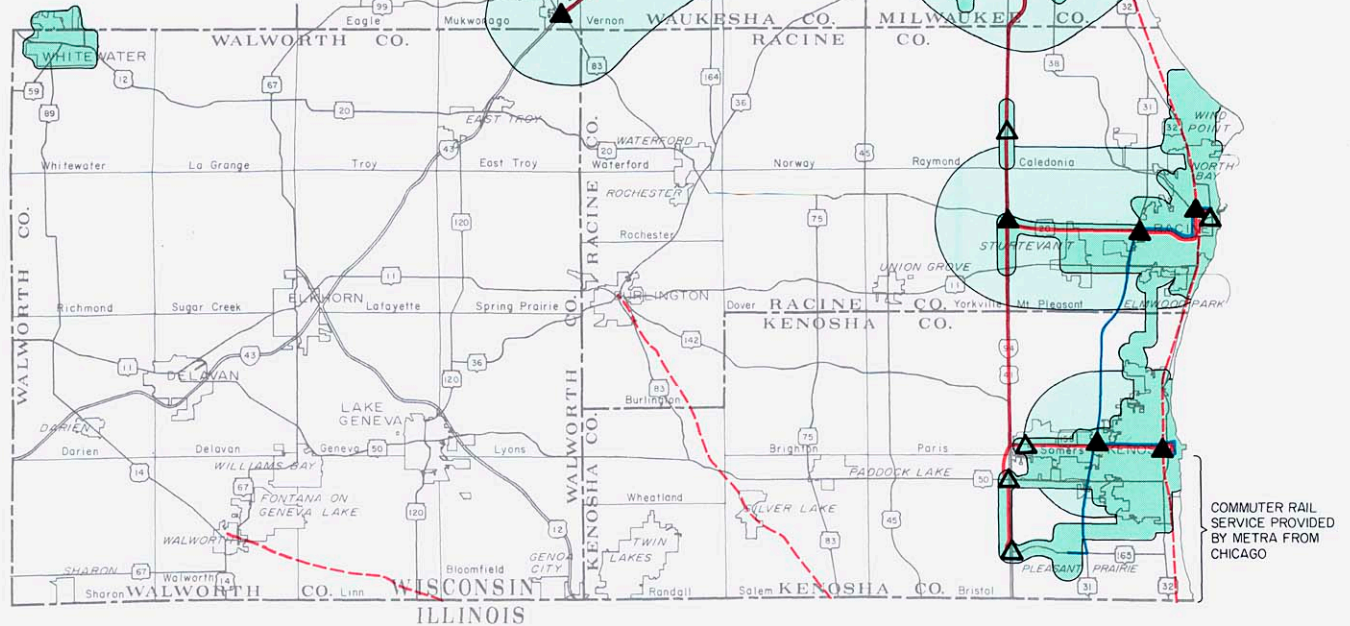
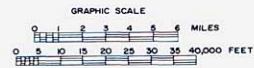
Public Transit Maintenance and Improvement Element

The recommended public transit system element of the plan proposes development within the Region of a true rapid transit system; development of a true express transit system; and significant improvement of the existing local bus transit systems. The rapid transit system would connect the outlying counties and urban centers of the Region to each other and to the Milwaukee central business district and the greater Milwaukee area through its interconnection with a grid of express transit routes within Milwaukee County. The grid of express transit routes would interconnect largely with Milwaukee County major employment and shopping centers, tourist attractions and entertainment centers, and residential areas. Map 30 displays the transit system recommendations by each of the three transit system components. Altogether, service on the regional transit system would be increased from service levels in 1995—the base year of the 2020 plan—by about 69 percent measured in terms of revenue transit vehicle-miles of service provided, and 61 percent measured in

Map 30

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

- LEGEND**
- RAPID TRANSIT SERVICE**
- BUSWAY FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - BUS SERVICE IN MIXED TRAFFIC ON FREEWAYS AND SURFACE ARTERIAL STREETS AND HIGHWAYS
 - - - POTENTIAL COMMUTER RAIL--TO BE CONSIDERED IN CORRIDOR STUDIES
- EXPRESS TRANSIT SERVICE**
- LIGHT RAIL TRANSIT FACILITY--UNDER CONSIDERATION IN WISDOT CORRIDOR STUDY
 - BUS SERVICE IN MIXED TRAFFIC OR EXCLUSIVE LANES ON SURFACE ARTERIAL STREETS AND HIGHWAYS
- TRANSIT STATIONS**
- ▲ WITH PARKING
 - △ WITHOUT PARKING
- SERVICE AREA**
- LOCAL TRANSIT INCLUDING BUT NOT LIMITED TO FIXED ROUTE SERVICE
 - RAPID TRANSIT--CONVENIENT AUTOMOBILE ACCESS TO TRANSIT STATIONS
- NOTE:**
- 1) POTENTIAL ADDITIONAL BUSWAY AND LIGHT RAIL/EXPRESS BUS GUIDEWAY FACILITIES ARE IDENTIFIED ON MAP 31
 - 2) CORRIDOR STUDIES WOULD BE DESIGNED TO DETERMINE DESIRABILITY OF ALLOWING HIGH-OCCUPANCY VEHICLES TO USE BUSWAYS AND EXPRESS BUS GUIDEWAYS



The final recommended year 2020 regional transit system consists of an extensive rapid transit system serving all major Milwaukee central business district travel corridors, an extensive grid system of express transit routes particularly in Milwaukee County, and an expansion of local transit service areas with enhancements to accompanying paratransit services. The plan also incorporates the continuation of local shared-ride taxicab service currently provided in certain smaller urban areas of the Region. The regional public transit system envisioned under the proposed plan would provide 111,500 revenue vehicle-miles of service per average weekday, or 69 percent more than in 1995, and 8,600 revenue vehicle-hours of service per average weekday, or 61 percent more than in 1995.

Table 45

TRANSIT SYSTEM ELEMENT OF FINAL RECOMMENDED YEAR 2020 REGIONAL TRANSPORTATION PLAN

Transit System Characteristics	Existing System 1995	Final Recommended 2020 Plan	Forecast Increment	
			Number	Percent Change
Service Provided, Average Weekday				
Revenue Vehicle-Miles				
Rapid	3,800	14,700	10,900	286.8
Express	5,500	21,500	16,000	290.9
Local	56,800	75,300	18,500	32.6
Total	66,100	111,500	45,400	68.7
Revenue Vehicle-Hours				
Rapid	200	600	400	200.0
Express	320	1,400	1,080	337.5
Local	4,810	6,600	1,790	37.2
Total	5,330	8,600	3,270	61.4
Service Utilization				
Ridership				
Average Weekday Revenue Passengers	163,100	208,600	45,500	27.9
Annual Revenue Passengers	47,150,600	60,911,000	13,760,400	27.9
Revenue Passengers per Revenue Vehicle-Hour	30.6	24.3	-6.3	-20.6
Average Weekday Passenger-Miles	582,300	1,006,500	424,200	72.3

Source: SEWRPC.

terms of revenue transit vehicle-hours of service provided (see Table 45).

Rapid Transit System Component

The proposed rapid transit system would consist of buses operating over freeways between the Milwaukee central business district and outlying portions of Milwaukee County, the Milwaukee urbanized area, and Southeastern Wisconsin, and would have the following characteristics:

- The bus rapid transit service would operate in both directions, providing both traditional commuter and reverse-commute service.
- The rapid transit service would operate with some intermediate stops to increase accessibility to employment centers and to increase accessibility for reverse-commute travel from residential areas within central Milwaukee County. Certain stops would be provided with shuttle bus or van service to nearby employment centers.
- The service would operate throughout the day. The frequency of service provided would be every five to 30 minutes in peak travel periods, and every 30 to 60 minutes in off-peak periods.

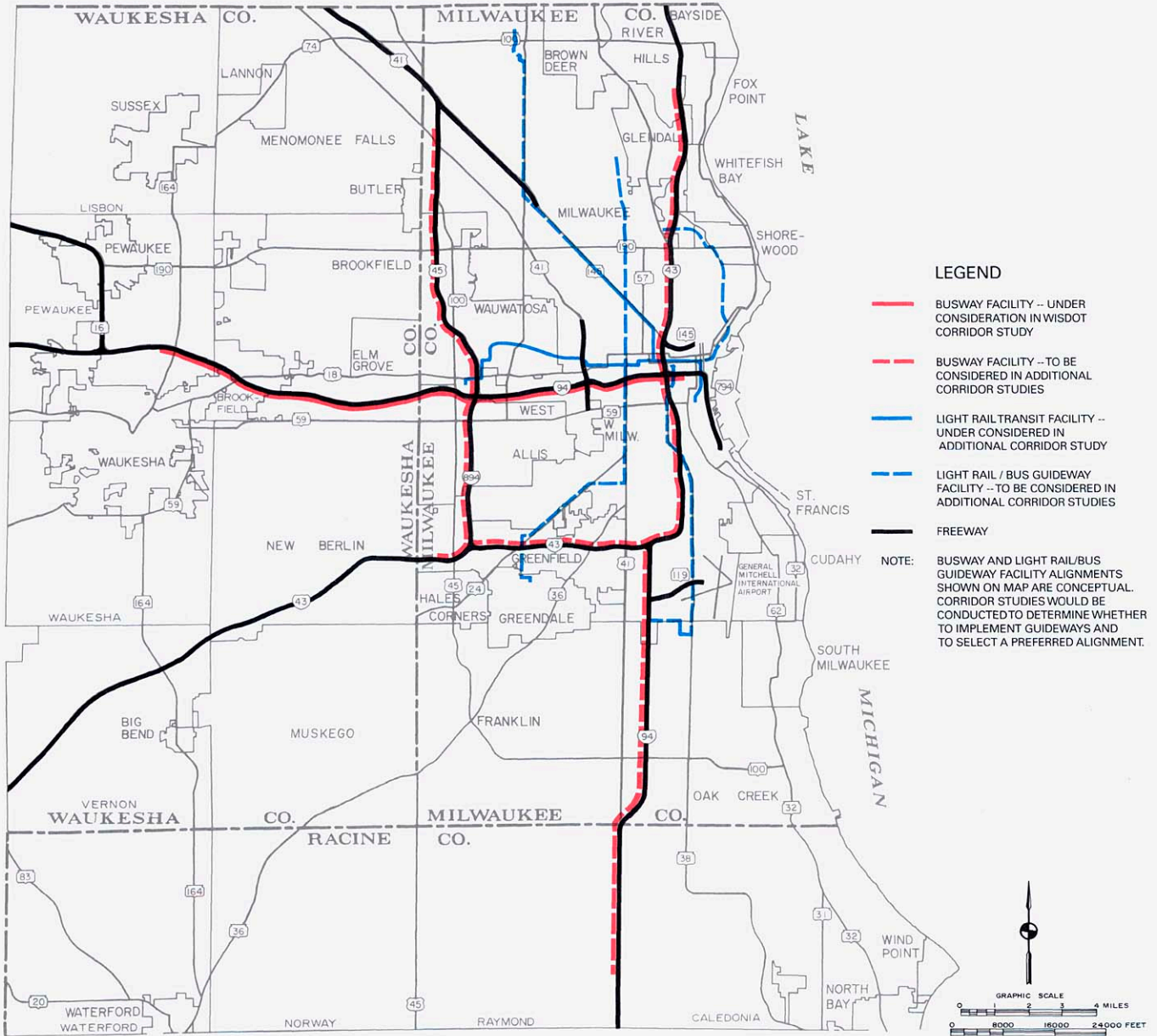
- Transit service would be provided at relatively high overall travel speeds averaging about 25 miles per hour, compared to typical overall local bus transit speeds, which average about 12 miles per hour.

Initially, all service could be provided over the regional freeway system, with service extensions on selected surface arterial streets and highways. Ultimately, depending upon the results of major transportation investment studies, the rapid transit routes could operate over exclusive busway facilities in the most congested freeway travel corridors in the Region (see Map 31). A major investment study/preliminary engineering study/final environmental impact statement process remains under way in the IH 94 East-West Freeway Corridor considering such an exclusive busway for buses and carpools.

Also recommended to be considered in these major investment studies is the potential to establish commuter-rail passenger service as a form of rapid transit service alternative to bus-on-freeway or bus-on-busway service in four major travel corridors, from Milwaukee to Kenosha, to Oconomowoc, to West Bend, and to Saukville. Through these corridor studies, then, final decisions would be made as to whether to provide the rapid transit service through bus-on-freeway, bus-on-busway, or commuter-

Map 31

POTENTIAL BUSWAY AND LIGHT-RAIL/EXPRESS-BUS-GUIDEWAY FACILITIES IDENTIFIED IN THE FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN FOR SOUTHEASTERN WISCONSIN: 2020



Under the final recommended regional transportation system plan, rapid transit busway facilities and express transit light-rail facilities would be considered as alternatives to motor-bus transit service over arterial highway lanes. Consideration of such fixed-guideway transit service facilities would be initiated as part of federally required major investment studies for each of the identified corridors. The busway facility, which extends along the IH 94 Corridor from the City of Milwaukee to the STH 164 interchange in Waukesha County, shown on the accompanying map, and the light-rail facility, which extends from Walker's Point through the central business district of Milwaukee to the Milwaukee County Institutions Grounds, with a branch extending along Fond du Lac Avenue to the Capitol Court shopping center, have been acknowledged in the plan as a basis for providing a higher level of service than express bus. It is recognized that the implementation of these fixed-guideway transit facilities depends upon the ultimate outcome of the corridor study currently being conducted by the Wisconsin Department of Transportation. Upon completion of that study, the local units of government concerned, 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.

rail passenger service. Pending the conduct of these studies, all rapid transit service would be provided through the bus-on-freeway mode.

Express Transit System Component

The second component of the public transit element of the plan is an express transit system. The recommended express transit system would consist primarily of buses operating over a grid of 12 limited-stop, higher-speed routes within Milwaukee County. The express transit routes are also shown on Map 30.

The plan envisions that this system of limited-stop routes would initially consist of buses operating over arterial streets in mixed traffic. The service could be upgraded over time to buses operating on reserved street lanes and could, ultimately, based on federally required corridor major investment studies, be considered for further upgrading to light-rail service.

The ongoing IH 94 East-West Freeway major investment study/preliminary engineering study/final environmental impact statement process has been considering a light-rail facility connecting the Milwaukee central business district, the Milwaukee County Institutions Grounds, and the Capitol Court shopping center.

As envisioned under the plan:

- The express service would operate in both directions during both peak and off-peak travel periods.
- The service would operate with a stop spacing of about one-half mile.
- The frequency of service provided would be about every 10 minutes during peak periods, and about every 20 to 30 minutes during off-peak periods.
- The overall travel speed provided would be about 18 miles per hour, a significant improvement over the average 12-miles-per-hour speed provided by the existing local bus transit service.

Local Transit Service

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, however, in the frequency of local transit service provided, particularly on the major local routes. In addition, the plan holds open the potential to restructure local transit services to provide for transit-center-oriented local systems to replace grid-route systems, depending

upon detailed local plan implementation studies. The plan also recommends the provision of local transit services through shared-ride taxis in the smaller urban areas of the Region. In special subregional planning efforts, the Commission has further recommended rural public transportation systems for Ozaukee and Washington Counties.

The recommended plan also includes a paratransit service component which is consistent with the Federal Americans with Disabilities Act (ADA) of 1990. The plan assumes that all transit vehicles that provide conventional fixed-route transit service would be accessible to persons with disabilities, including those persons using wheelchairs. This assumption is reflected in the capital cost estimate for transit-vehicle-fleet replacement and expansion under the recommended plan. The plan also assumes that all public entities operating fixed-route transit systems will continue to provide comparable paratransit service to those disabled persons within local transit service areas who are unable to use fixed-route transit services. Accordingly, the complementary paratransit services currently provided within the Region would continue to be operated and expanded consistent with the planned expansion of local transit service areas within the Kenosha, Milwaukee, and Racine urbanized areas.

Like existing complementary paratransit services provided within the Region, the planned paratransit services would meet federally specified ADA eligibility and service requirements. The complementary paratransit services would serve any person with a permanent or temporary disability who is unable independently to board, ride, or disembark from an accessible vehicle used to provide fixed-route transit service; who is capable of using an accessible vehicle, but one is not available for the desired trip; or who is unable to travel to or from the boarding or disembarking location of the fixed-route transit service. Within a given area, the planned paratransit service would be available during the same hours and on the same days as the fixed-route transit service, would be provided to eligible persons on a "next-day" trip-reservation basis, would not limit service to eligible persons based on restrictions or priorities relative to trip purpose, and would not be operated under capacity constraints which might limit the ability of eligible persons to receive service for a particular trip. The paratransit service fares assumed under the recommended plan would in each case be twice the applicable public transit fare per one-way trip.

Arterial Street and Highway

Maintenance and Improvement Element

The third element of the regional transportation system plan is the arterial street and highway system element. In 1995, there were about 3,277 miles of arterial streets and

highways in the seven-county Region. The existing arterial street and highway system comprises about 29 percent of the total 11,268 miles of streets and highways existing within Southeastern Wisconsin. The arterial street and highway system is that component of the total street and highway system that has as its principal function the movement of traffic. This contrasts with nonarterial streets—consisting of land access and collector streets—which have as their principal function the provision of access to abutting property and the connection of land access streets to the arterials, respectively.

Currently, in the seven-county Southeastern Wisconsin Region, the arterial street and highway system carries about 97 percent of the total average weekday travel, with the public transit system carrying about 3 percent of that demand, and with pedestrian and bicycle travel accounting for less than 1 percent. Even with the greatly expanded transit system envisioned in the year 2020 plan, the evolution of a more efficient regional land use pattern, and the travel demand management measures incorporated in the regional transportation system plan, the arterial street and highway system will be required to carry over 97 percent of the total travel demand in the year 2020, and will have to accommodate by the year 2020 a 30 percent increase in highway traffic over present levels.

The year 2020 plan recommended arterial street and highway system consists of 3,612 miles of facilities. This represents an increase of 335 miles, or about 10 percent, over the existing 1995 arterial system, including 211 miles of existing nonarterial facilities which may be expected to begin to serve an arterial function by the year 2020 and 124 miles of entirely new facilities.

The plan recommendations for the arterial street and highway system can be divided into three categories: system expansion, that is, the proposed construction of new arterial facilities; system improvement, that is, the proposed improvement of existing arterial facilities to carry additional traffic lanes and provide substantial additional traffic capacity; and system preservation, that is, the proposed resurfacing, reconstruction, and modernization as needed of arterials to largely the same capacity as exists today. The recommendations by county are shown on Map 32 and summarized in Table 46.

There are no typical cross-sections identified on the planned arterial system. Rather, only the number of lanes recommended to be provided on each segment of the arterial system is indicated. The number of lanes identified in each case 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 to be provided for left- and right-turning movements, for vehicle parking, or for use by distressed vehicles.

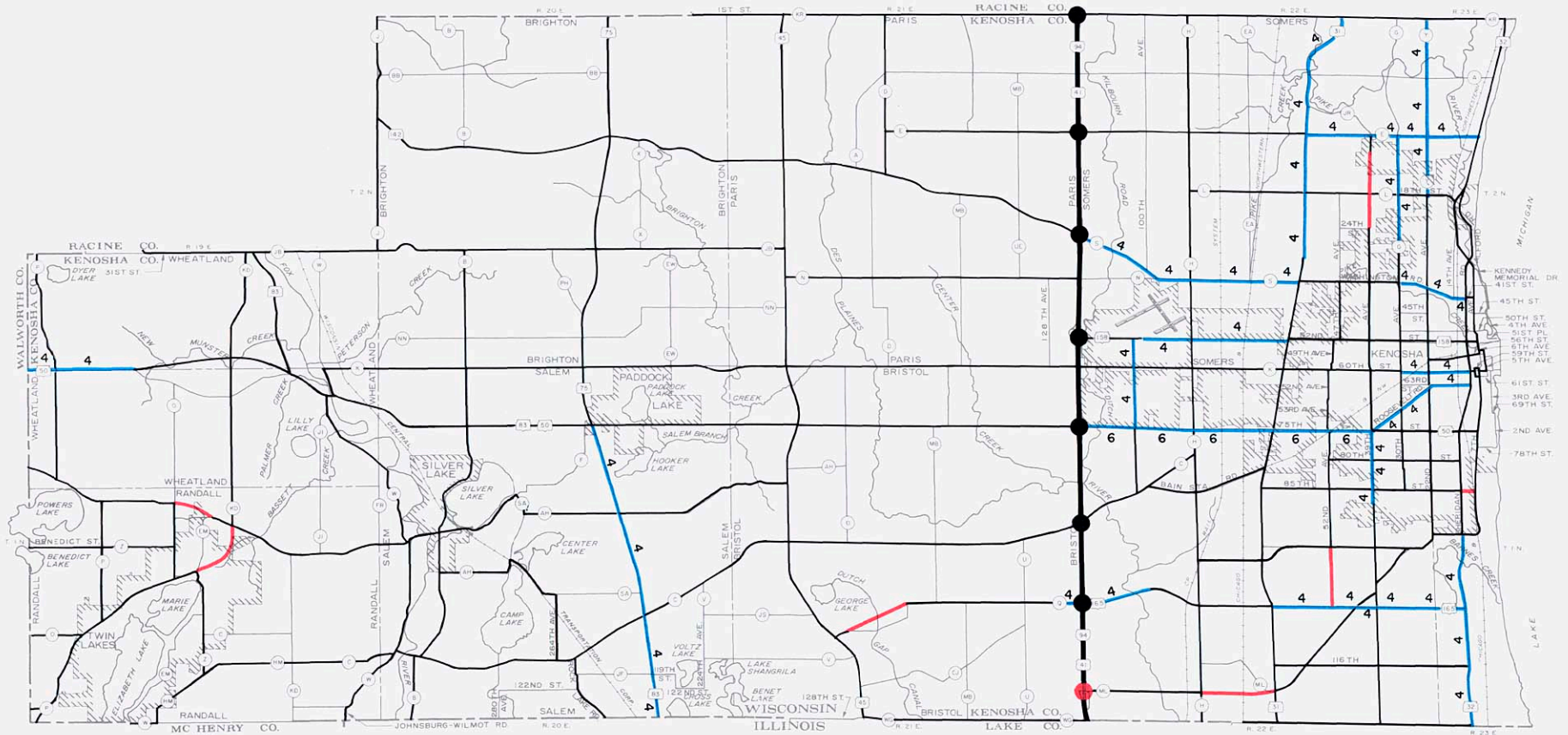
It is recommended that implementing agencies, as they construct new facilities, widen existing facilities, and resurface and reconstruct existing facilities, consider and provide as needed surface arterial right- and left-turn lanes where the volumes of turning vehicles would adversely affect the movement of vehicles through an intersection. In addition to determining whether or not right- and/or left-turn lanes should be provided at intersections, implementing agencies should determine whether or not a given surface 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 would be determined by the State, county, and local implementing agencies following appropriate design study.

It is further recommended that as freeways and surface arterials in the Region are reconstructed, and, in appropriate cases, as they are resurfaced, that consideration be given to the modernization of these facilities. With respect to surface arterials, consideration should be given to the provision of turning lanes, desirable lane widths, bicycle accommodation, auxiliary lanes, and shoulders, as appropriate; improvements in horizontal and vertical curvature, intersection configuration, and access control; and improvement of traffic signalization, including signal interconnection. With respect to freeways, consideration should be given to elimination of lane drops at interchanges, provision of adequate merging and diverging lane lengths, provision of auxiliary lanes, provision of adequate shoulders and lateral clearance, improvements in horizontal and vertical curvature, and conversion of left-hand off- and on-ramps to the right-hand side of the freeway.

The arterial street and highway system expansion recommendations of the plan include 124 miles of new arterial facilities. This system expansion component represents about 3 percent of the total planned arterial street and highway system in Southeastern Wisconsin.

The system improvement recommendations of the plan include a recommended 405 miles of existing arterial facilities proposed to be widened to carry additional traffic lanes. The 405 miles represent 11 percent of the total planned arterial street and highway system. The system improvement component of the arterial street and highway element represents in part a reaffirmation of the need for many long-planned arterial street and highway system improvements.

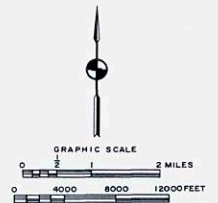
FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN KENOSHA COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

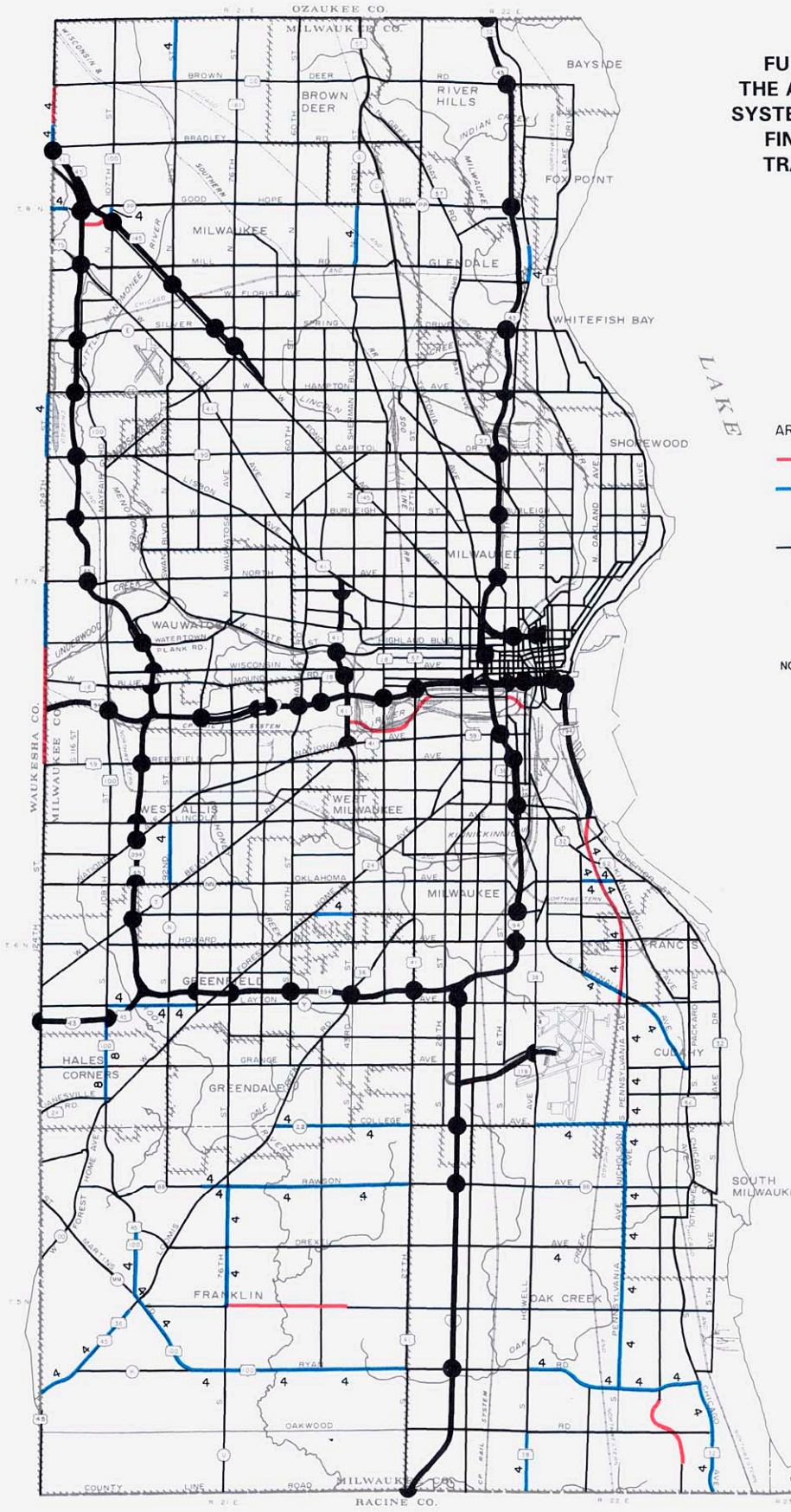
ARTERIAL STREET OR HIGHWAY

- 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)



Under the final recommended regional transportation system plan, the arterial street and highway system in Kenosha County would be expanded by 38 miles, or 12 percent, from 318 miles in 1995 to 356 miles in the year 2020. The increase in arterial mileage would come about through the construction of nine miles of facilities and through the conversion of 29 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of nearly nine miles of new arterial facilities, for the widening of 45 miles, and for the preservation of 302 miles of facilities within the County.

**FUNCTIONAL IMPROVEMENTS TO
THE ARTERIAL STREET AND HIGHWAY
SYSTEM IN MILWAUKEE COUNTY: 2020
FINAL RECOMMENDED REGIONAL
TRANSPORTATION SYSTEM PLAN**

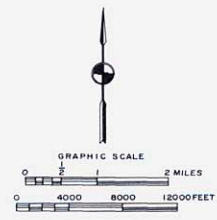


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ARTERIAL STREET OR HIGHWAY

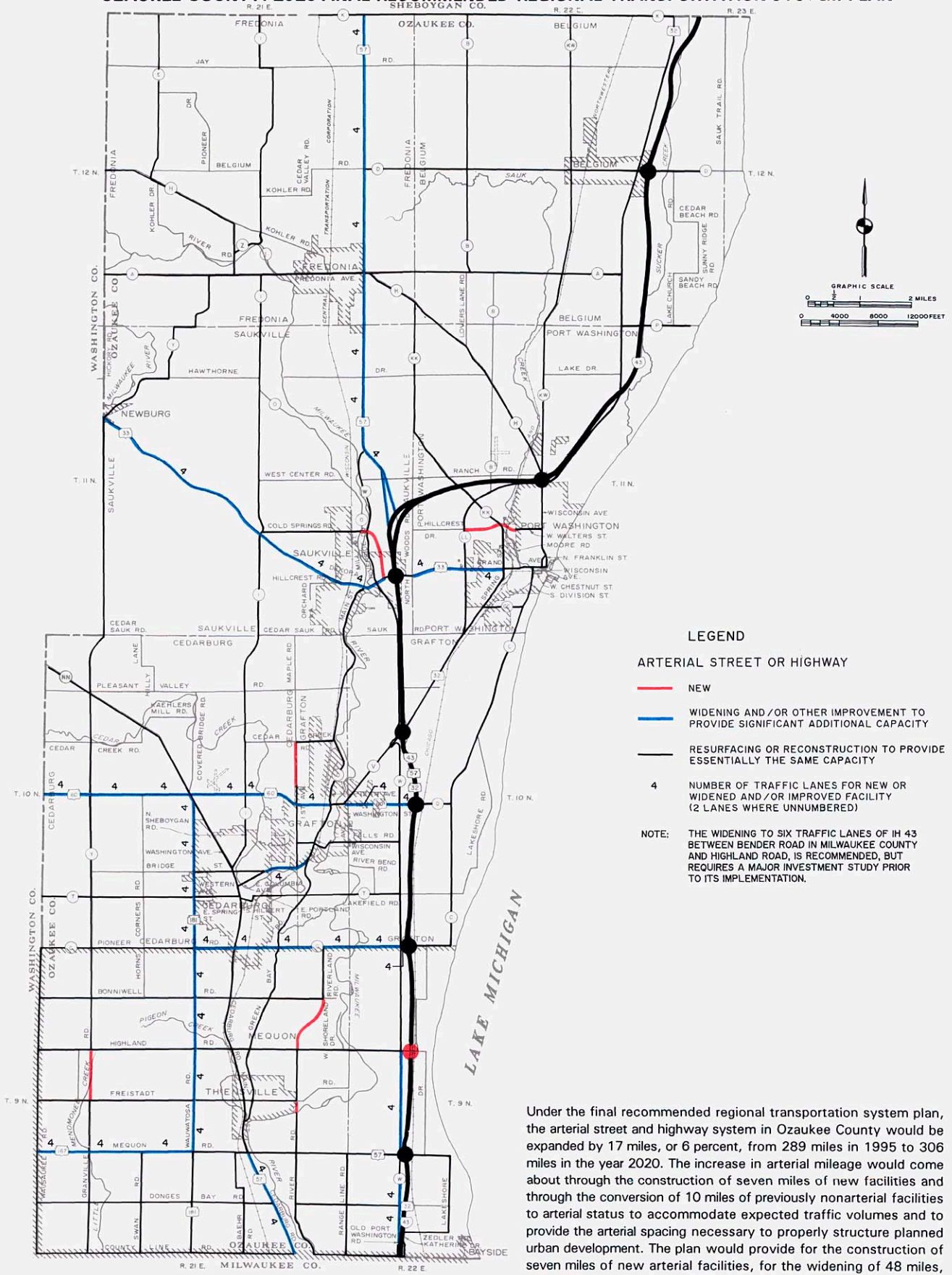
- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD AND HIGHLAND ROAD IN OZAUKEE COUNTY, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.



Under the final recommended regional transportation system plan, the arterial street and highway system in Milwaukee County would be expanded by 22 miles, or 3 percent, from 775 miles in 1995 to 797 miles in the year 2020. The increase in arterial mileage would come about through the construction of 10 miles of new facilities and through the conversion of 12 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 10 miles of new arterial facilities, for the widening of 40 miles, and for the preservation of 747 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN OZAUKEE COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

ARTERIAL STREET OR HIGHWAY

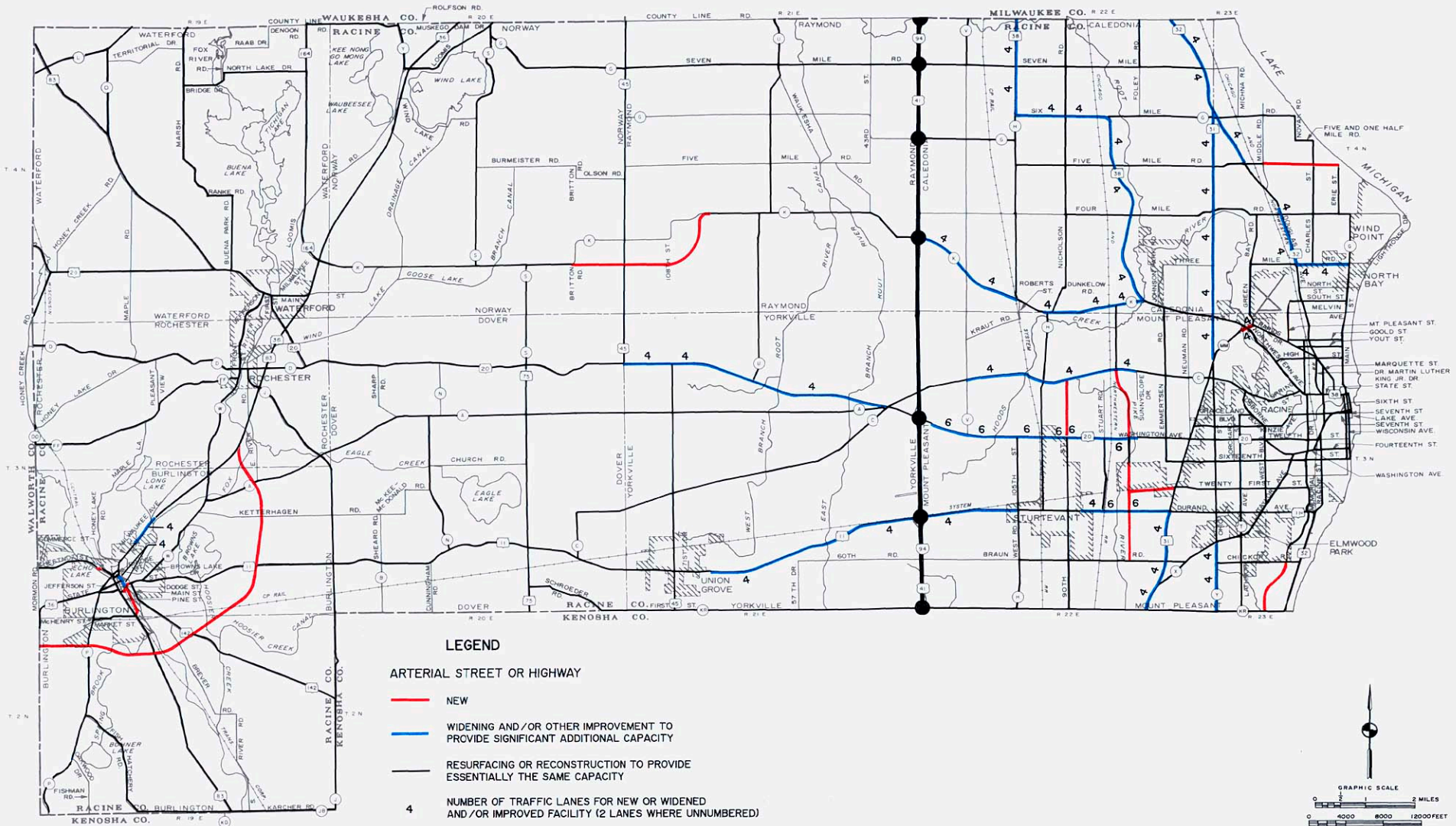
- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY

4 NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

NOTE: THE WIDENING TO SIX TRAFFIC LANES OF IH 43 BETWEEN BENDER ROAD IN MILWAUKEE COUNTY AND HIGHLAND ROAD, IS RECOMMENDED, BUT REQUIRES A MAJOR INVESTMENT STUDY PRIOR TO ITS IMPLEMENTATION.

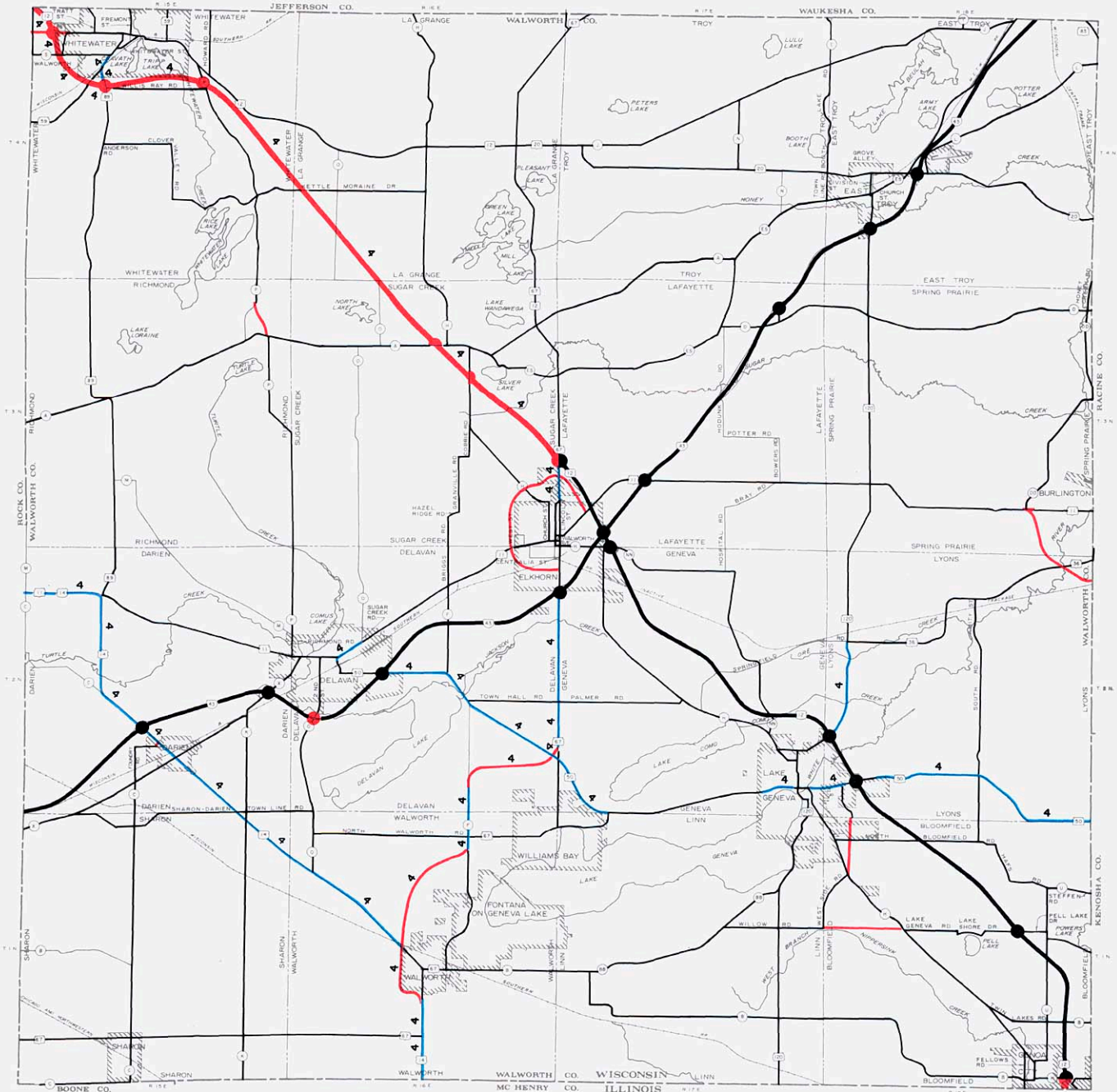
Under the final recommended regional transportation system plan, the arterial street and highway system in Ozaukee County would be expanded by 17 miles, or 6 percent, from 289 miles in 1995 to 306 miles in the year 2020. The increase in arterial mileage would come about through the construction of seven miles of new facilities and through the conversion of 10 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of seven miles of new arterial facilities, for the widening of 48 miles, and for the preservation of 251 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN RACINE COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



Under the final recommended regional transportation system plan, the arterial street and highway system in Racine County would be expanded by 77 miles, or 22 percent, from 349 miles in 1995 to 426 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 56 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 miles of new arterial facilities, for the widening of 51 miles, and for the preservation of 354 miles of facilities within the County.

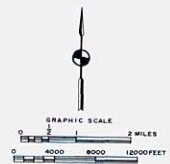
**FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN
WALWORTH COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN**



LEGEND

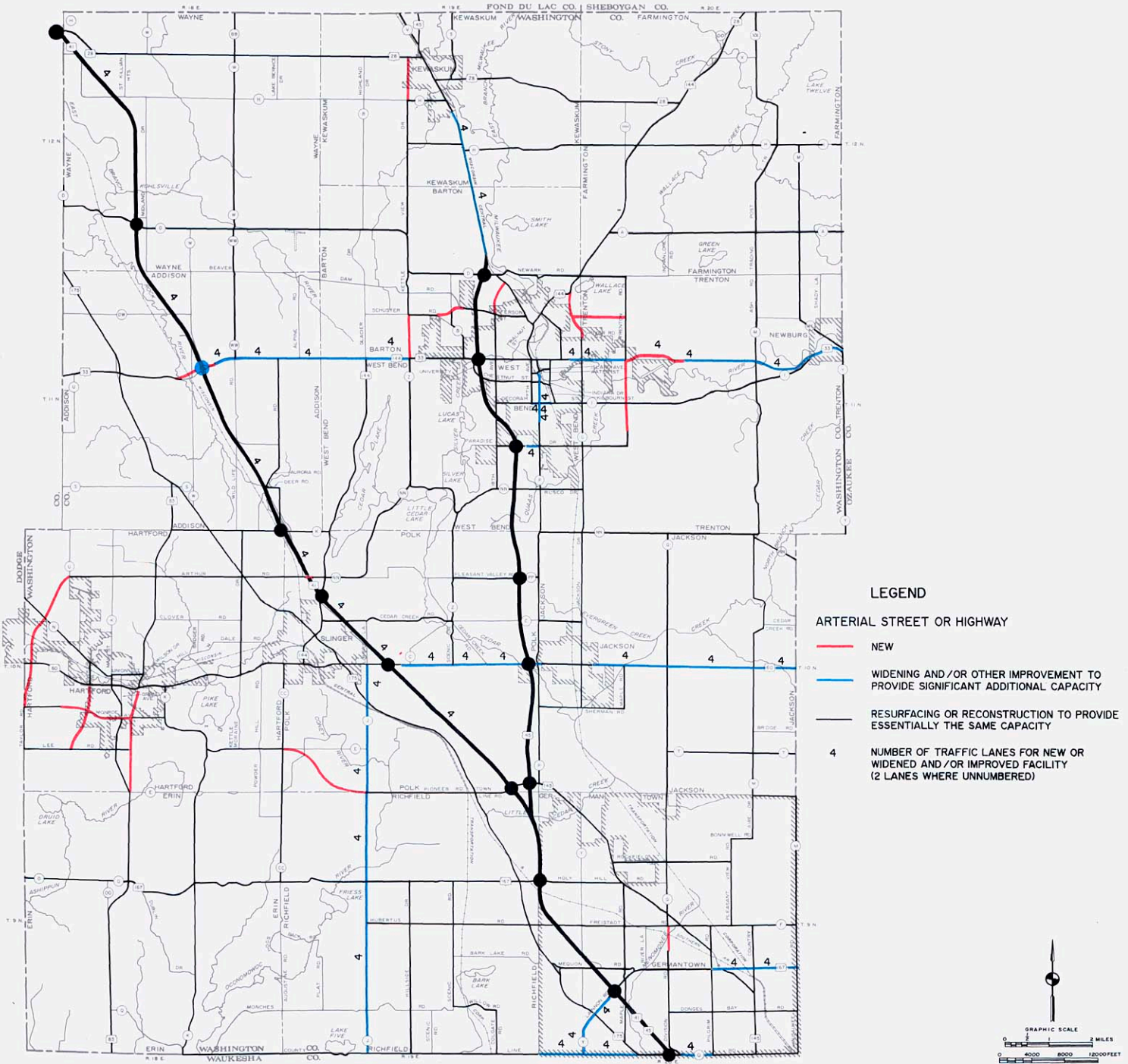
ARTERIAL STREET OR HIGHWAY

- 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)



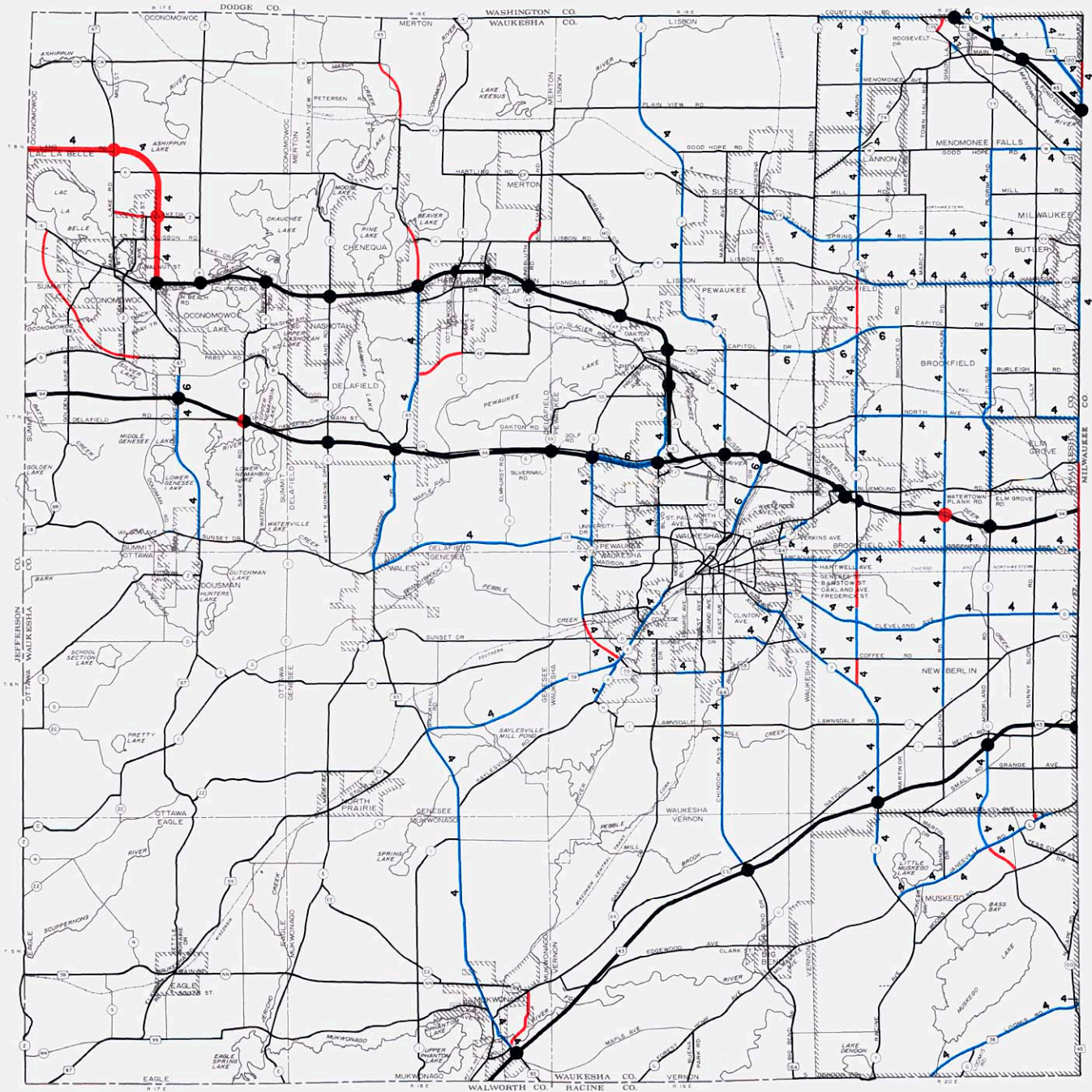
Under the final recommended regional transportation system plan, the arterial street and highway system in Walworth County would be expanded by 52 miles, or 12 percent, from 430 miles in 1995 to 482 miles in the year 2020. The increase in arterial mileage would come about through the construction of 34 miles of new facilities and through the conversion of 18 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 34 miles of new arterial facilities, for the widening of 37 miles, and for the preservation of 411 miles of facilities within the County.

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WASHINGTON COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



Under the final recommended regional transportation system plan, the arterial street and highway system in Washington County would be expanded by 69 miles, or 17 percent, from 399 miles in 1995 to 468 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 48 miles of previously nonarterial facilities to arterial status to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 miles of new arterial facilities, for the widening of 43 miles, and for the preservation of 404 miles of facilities within the County.

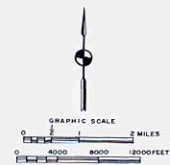
FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



LEGEND

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)



Under the final recommended regional transportation system plan, the arterial street and highway system in Waukesha County would be expanded by 59 miles, or 8 percent, from 718 miles in 1995 to 777 miles in the year 2020. The increase in arterial mileage would come about through the construction of 21 miles of new facilities and through the conversion of 38 miles of previously nonarterial facilities to arterial status in order to accommodate expected traffic volumes and to provide the arterial spacing necessary to properly structure planned urban development. The plan would provide for the construction of 21 miles of new arterial facilities, for the widening of 142 miles, and for the preservation of 614 miles of facilities within the County.

Source: SEWRPC.

Table 46

ARTERIAL STREET AND HIGHWAY SYSTEM PRESERVATION, IMPROVEMENT, AND EXPANSION BY ARTERIAL FACILITY TYPE AND COUNTY: 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN

County	System Preservation (miles)	System Improvement (miles)	System Expansion (miles)	Total Miles
Kenosha				
Freeway	12.0	0.0	0.0	12.0
Standard Arterial	290.3	44.8	8.5	343.6
Subtotal	302.3	44.8	8.5	355.6
Milwaukee				
Freeway	69.2	0.0	0.0	69.2
Standard Arterial	677.2	40.3	10.3	727.8
Subtotal	746.4	40.3	10.3	797.0
Ozaukee				
Freeway	27.4	0.0	0.0	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	0.0	0.0	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	0.0	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	0.0	0.0	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	271.9	1.0	22.4	295.3
Standard Arterial	2,811.1	404.3	101.6	3,317.0
Total	3,083.0	405.3	124.0	3,612.3

Source: SEWRPC.

The third component of the arterial street and highway system recommendations of the plan is system preservation. Approximately 3,083 miles of arterial facilities, representing 86 percent of the total planned arterial street and highway system, are recommended to be preserved to the year 2020 through resurfacing, reconstruction, and modernization as needed.

The arterial street and highway system plan proposes about a 14 percent expansion in arterial street and highway system capacity. Freeway system improvements are limited to construction of the Oconomowoc bypass; the initiation of the construction of the USH 12 Freeway extension from Elkhorn to Whitewater; and to two widening projects, including the widening of about one

mile of IH 94 from CTH T to CTH G in Waukesha County, and the widening of about eight miles of IH 43 from Bender Road to Highland Road in Milwaukee and Ozaukee Counties.

The plan thus does not contain or recommend any new freeway initiative, such as a Milwaukee-area circumferential freeway. Importantly, however, the plan recommends the reconstruction and modernization of the Milwaukee-area freeway system—particularly the IH 94 East-West Freeway, including the Zoo, Stadium, and Marquette Interchanges—and the reconstruction of freeway interchanges as needed in Waukesha, Racine, and Kenosha Counties to urban design standards. The plan includes three new interchanges on the freeway system: one at Highland Road on IH 43 in Ozaukee County; one at Calhoun Road on IH 94 in Waukesha County; and one at CTH O on IH 43 in Walworth County. In the design of some segments of freeway reconstruction, the plan recommends that consideration be given in major investment studies to the provision of exclusive high-occupancy-vehicle lanes, that is, busway-carpool lanes (see Map 31). The plan-recommended arterial improvement and expansion projects have been carefully designed to serve travel which may be expected to occur in and between the areas planned for conversion from rural to urban use under the year 2020 regional land use plan. Many of the proposed arterial street and highway improvements are needed to accommodate such planned development, while some are needed to provide direct and timely alternative routes for traffic which would otherwise use the area freeway system.

Highway improvements were recommended only as a last resort, that is, to address 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 plan were the transit and transportation system management elements. The potential of these elements to eliminate congestion was explicitly identified. Highway improvements were then recommended to be added to the regional transportation plan to resolve, to the extent practicable, the residual existing and probable future traffic congestion.

Proposed Amendments to Year 2010 Adopted Plan

The changes and modifications to the year 2010 plan that are recommended as part of the extension of the plan to the year 2020 in the proposed year 2020 plan are listed in Table 47.

Plan Performance and Costs

Selected characteristics of the regional transportation system plan for the year 2020 are identified in Table 48. The number of internal person-trips generated within the Region on an average weekday is expected to increase under the plan from about 5.8 million in 1995 to about 6.5 million in the year 2020, or by about 12 percent. The number of transit trips made on an average weekday is expected to increase from about 163,100 in 1995 to about 207,300 in the year 2020, or by about 27 percent, assuming the transit plan recommendations are implemented. Despite this increase in daily transit trip making, the proportion of total internal person-trips made by transit would remain at about 3 percent over the plan design period.

The number of vehicle-miles of travel within the Region on an average weekday is expected to increase by about 31 percent, from about 35.9 million in 1995 to about 47.0 million in 2020. Of the latter total, about 17.0 million vehicle-miles of travel, or about 36 percent, are expected to be made on freeways, which would comprise about 8 percent of the total arterial system.

Arterial street and highway severe and extreme congestion is expected to decrease, with the number of miles of facilities operating severely and extremely over design capacity decreasing from about 285 miles, or about 9 percent of the total system, in 1995 to about 95 miles, or about 3 percent of the total arterial system, in 2020. The number of arterial system miles operating moderately over design capacity, however, is expected to decrease only slightly, from about 148 miles, or about 4.5 percent of the total arterial system, in 1995 to about 146 miles, or about 4.0 percent of the total arterial system, in 2020.

The average annual public cost of carrying out the recommended plan, including the construction of new facilities and the operation and maintenance of the arterial street and highway and transit systems, is estimated at nearly \$417 million. All cost and revenue figures are expressed in constant 1997 dollars. The anticipated average annual public revenues, excluding transit fare-box revenues, are estimated at \$330 million. Thus, the difference between anticipated costs and expected revenues is \$87 million per year over the plan design period. The equivalent of a \$0.10-per-gallon increase in the motor-fuel tax within the Region would be necessary to eliminate the estimated \$87 million annual shortfall.

Table 47

**CHANGES FROM THE YEAR 2010 REGIONAL TRANSPORTATION SYSTEM PLAN INCORPORATED
IN THE FINAL RECOMMENDED YEAR 2020 REGIONAL TRANSPORTATION SYSTEM PLAN**

Plan Element	Changes from Year 2010 Plan
<p>Public Transit System Element</p>	<p>Additions to Plan</p> <p>Kenosha County</p> <ul style="list-style-type: none"> ● Express transit service to the Pleasant Prairie major industrial center <p>Milwaukee County</p> <ul style="list-style-type: none"> ● Express transit service to the Park Place major office center ● Express transit service to the Franklin major industrial center ● Local transit service to employment centers along W. Brown Deer Road <p>Washington County</p> <ul style="list-style-type: none"> ● Rapid transit service to Hartford major industrial center <p>Waukesha County</p> <ul style="list-style-type: none"> ● Rapid transit service to the Menomonee Falls major industrial center ● Rapid transit service to the Sussex major industrial center <p>Deletions from Plan</p> <ul style="list-style-type: none"> ● None
<p>Arterial Street and Highway Element</p>	<p>Additions to Plan</p> <p>Milwaukee County</p> <ul style="list-style-type: none"> ● Widening from two to four traffic lanes on N. Port Washington Road between W. Bender Road and W. Daphne Road ● Widening from two to four traffic lanes on S. 92nd Street between W. Lincoln Avenue and W. Oklahoma Avenue <p>Ozaukee County</p> <ul style="list-style-type: none"> ● Extension of Walters Street from Grant Street to CTH LL as two-lane arterial <p>Racine County</p> <ul style="list-style-type: none"> ● Extension of 90th Street from STH 20 to CTH C as two-traffic-lane arterial ● Extension of Oakes Street from STH 11 to Braun Road as two-traffic-lane arterial ● Addition of Calumet Street and its extension as four-traffic-lane arterial between Bridge Street and Pine Street at Market Street ● Addition of the relocation of the STH 11 bridge over the Fox River to Adams Street <p>Waukesha County</p> <ul style="list-style-type: none"> ● Widening from two to four traffic lanes on STH 83 between IH 43 and CTH NN ● Widening from two to four traffic lanes on St. Paul Avenue between STH 59 and Moreland Boulevard ● Widening from two to four traffic lanes on STH 59 between St. Paul Avenue and STH 83 ● Widening from two to four traffic lanes on USH 18 between CTH TT and STH 83 ● Widening from two to four traffic lanes on STH 83 between CTH NN and STH 59 <p>Deletions from Plan</p> <p>Kenosha County</p> <ul style="list-style-type: none"> ● Delete extension of CTH AH as two-lane arterial from CTH SA to CTH F <p>Milwaukee County</p> <ul style="list-style-type: none"> ● Reduce recommended number of traffic lanes from four to two on N. 124th Street between W. Hampton Avenue and W. Silver Spring Drive ● Reduce recommended number of traffic lanes from four to two on W. North Avenue between N. 60th Street and N. 76th Street <p>Racine County</p> <ul style="list-style-type: none"> ● Delete extension of Emmertsen Road as two-lane arterial between STH 38 and Three Mile Road ● Delete conversion of Three Mile Road to two-lane arterial between extended Emmertsen Road and STH 31 ● Delete Dodge Street as two-lane arterial between Chestnut Street and Adams Street ● Delete Chestnut Street as two-lane arterial between Origen Street and Pine Street ● Delete Jefferson Street and Main Street as two-lane arterials between Calumet Street and State Street <p>Walworth County</p> <ul style="list-style-type: none"> ● Delete extension of Grant Street as two-lane arterial between CTH H and STH 50

Source: SEWRPC.

Table 48

**SUMMARY OF TRANSPORTATION PERFORMANCE CHARACTERISTICS: 1995
AND 2020 FINAL RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN**

Performance Characteristic		Base Year 1995	Recommended Plan: 2020	Percent Change
Category	Specific Measure			
Travel	Internal person-trips (average weekday)	5.8 million	6.5 million	12.1
	Internal vehicle-trips (average weekday)	4.8 million	5.7 million	18.8
	Vehicle-miles of travel (average weekday)	35.9 million	47.0 million	30.9
	Transit ridership (average weekday)	163,100	207,300	27.1
	Relative distribution of trips by mode of travel (average weekday)			
	Auto driver	74.1 percent	77.1 percent	--
	Auto passenger	19.0 percent	16.3 percent	--
	Transit passenger	2.8 percent	3.2 percent	--
	School bus passenger	4.1 percent	3.4 percent	--
	Proportion of trips made by transit within Milwaukee County	3.8 percent	3.8 percent	--
Proportion of trips made by transit to Milwaukee central business district	13.0 percent	12.0 percent	--	
Proportion of passenger-miles of travel made on transit (average weekday)	1.1 percent	1.5 percent	--	
Traffic Congestion	Amount and proportion of arterial street and highway system over design capacity			
	Moderately congested (V/C ratio 1.01 to 1.10)	148 miles 4.5 percent	146 miles 4.0 percent	-1.4 --
	Severely congested (V/C ratio 1.11 to 1.30)	203 miles 6.2 percent	57 miles 1.6 percent	-71.9 --
	Extremely congested (V/C ratio 1.31 or greater)	82 miles 2.5 percent	38 miles 1.1 percent	-53.7 --

Source: SEWRPC.

SUMMARY AND CONCLUSIONS

This chapter has described the final recommended year 2020 regional transportation plan. The final plan was developed largely upon the regional transportation system plan adopted by the Commission in December 1994 with a design year of 2010, modified by modest amendments. This was done for a number of reasons. First, the year 2010 plan had been well received by all parties concerned and adopted by the Commission, each of the seven counties of the Region, and many municipalities, and endorsed by the Wisconsin Departments of Transportation

and Natural Resources. There was no reason to explore a major departure from the framework of transportation development and improvement envisioned in the 2010 plan. Second, forecasts of regional change another 10 years beyond the year 2010 to the year 2020 indicated that only modest growth may be expected in levels of households, employment, travel, transit ridership, and highway traffic, that is, increases of approximately 8 percent. As documented in this chapter, analyses of the ability of the year 2010 plan to meet year 2020 travel and traffic demands indicated that minimal change in the year 2010 plan was necessary for that plan to serve year 2020 travel and traffic needs. The third reason that the year 2020 plan

was principally derived from the year 2010 plan was that the only concern that had been expressed about the year 2010 plan since its adoption was that it may be too ambitious to be accomplished within the remaining 13-year time frame. Its extension by another 10 years, and modest amendment to include actions to address additional needs over those additional 10 years, responds to that concern. The fourth reason was that substantial changes have not yet occurred in the Region, and additional data were not yet available, to warrant the expenditure of the time and resources for a major plan reevaluation at this time. The fifth reason was that the year 2010 plan had been shaped and modified on the basis of public review and comment received less than three years ago, and that public comment continued to remain sufficiently valid to be directly incorporated within the year 2020 plan.

The final recommended regional transportation system plan for the year 2020 has three major elements: transportation systems management, public transit maintenance and improvement, and arterial street and highway maintenance and improvement.

The recommended plan proposes the use of transportation system management measures to ensure that maximum use is made of existing transportation facilities before commitments are made to new capital investment. The plan envisions the completion of the comprehensive freeway traffic management system within the Milwaukee area; the imposition of peak-hour curb-lane parking restrictions on approximately 400 miles of urban arterial streets; the use of appropriate traffic management and engineering techniques to assist in achieving efficient traffic flow on urban arterial streets; the application of intelligent transportation systems technology; areawide promotional measures to encourage carpooling, vanpooling, telecommuting, and rescheduling of work time; and transit management and operational measures that have the potential to make transit use more convenient.

The plan also recommends the preparation of community- and neighborhood-level land use plans to guide the development of new urban neighborhoods and the redevelopment of older neighborhoods to promote a mix of land use activities, higher-density development near transit lines and stations, the orientation of buildings on sites in a manner facilitating transit use, and the use of bicycle and pedestrian as well as transit facilities.

The plan also proposes that an integrated system of rapid, express, and local transit facilities be developed within the Region, representing a proposed 69 percent expansion of service measured in terms of transit vehicle-miles of service. The plan seeks to provide bus rapid transit service

within the major travel corridors emanating from the Milwaukee central business district (CBD). The plan calls for the provision of such service south to the Cities of Racine and Kenosha, southwest to the Village of Mukwonago, and west to the Cities of Waukesha and Oconomowoc. The plan would also provide such service in the Northwest Corridor to the City of West Bend and in the IH 43 North Corridor to the Village of Saukville and the City of Port Washington.

Upon the conduct of corridor major investment studies, and concurrence in the recommendations for implementation by the implementing units of government, the plan envisions that the bus rapid transit service could be upgraded to bus service over special bus and carpool lanes, or to commuter-rail service. A major investment study is under way in the East-West Corridor considering special lanes on the IH 94 East-West Freeway, and feasibility studies—precursor studies to major investment studies—are under way considering commuter-rail service in three corridors: Kenosha to Milwaukee; Antioch, Illinois, to Burlington; and Fox Lake, Illinois, to Walworth.

The plan also proposes that an express transit system consisting of 12 regular express transit bus routes be provided within the Region. Within the Milwaukee urbanized area, the express transit routes would be provided in major travel corridors connecting major activity centers to the Milwaukee CBD, as well as in a grid pattern of crosstown routes. An express transit route would also connect the Cities of Racine and Kenosha. Upon the conduct of corridor major investment studies, and concurrence in the recommendations for implementation by the implementing units of government, the plan envisions that the bus service in mixed traffic or reserved arterial-street lanes could be upgraded to light-rail transit or bus service on exclusive busways. A major investment study under way in the East-West Corridor is considering a light-rail transit line.

The plan also proposes the expansion and improvement of local public transit service within Milwaukee County and the Cities of Waukesha, Racine, and Kenosha and their immediate environs. The plan also recognizes the need to provide local transit service in the smaller outlying urban and rural communities of the Region, particularly through shared-ride taxi service.

The recommended plan envisions that the arterial street and highway system would, by the plan design year 2020, consist of about 3,612 route-miles of facilities. In 1995, the arterial system consisted of about 3,277 route-miles of facilities. The plan recommends the construction of 124 route-miles of new arterial facilities, the widening to carry

additional traffic lanes of 405 miles of existing arterial facilities, and the preservation of the remaining 3,083 route-miles of existing arterial facilities. The recommended plan envisions that as part of resurfacing and particularly reconstruction to preserve existing arterials, actions will be taken to modernize the area surface arterial and freeway system to current design standards.

The number of internal person-trips generated within the Region on an average weekday may be expected to increase from 5.8 million in 1995 to about 6.5 million in the year 2020, or by 12 percent. The number of transit trips made on an average weekday may be expected to increase from about 163,100 in 1995 to about 207,300 by the year 2020, or by 27 percent. The proportion of total internal person-trips made by transit may be expected to remain, however, at about 3 percent.

Vehicle-miles of travel within the Region on an average weekday may be expected to increase from about 35.9 million in 1995 to about 47.0 million by the year 2020, or by about 31 percent. Severe arterial street and highway congestion, as indicated by the number of arterial miles

expected to operate severely or extremely over design capacity, may be expected to decrease from about 285 miles, or 9 percent of the total arterial mileage, in 1995, to about 95 miles, or 3 percent of the total arterial mileage, by 2020. The arterial mileage operating moderately over design capacity and experiencing some congestion, however, may be expected to remain about the same between 1995 and 2020.

The public cost of carrying out the recommended plan, including the construction of new facilities and the operation and maintenance of the arterial street and highway and transit systems, is estimated at an average of about \$417 million per year over the 23-year plan implementation period. All cost and revenue figures are expressed in constant 1997 dollars. The public revenues anticipated to be available, based on existing trends, are estimated at an average \$330 million per year. The difference between anticipated costs and revenues is approximately \$87 million per year. An equivalent of a \$0.10-per-gallon motor-fuel tax would be necessary to cover this \$87 million annual shortfall in order to fully implement the recommended regional transportation system plan for the year 2020.