

CONGESTION MANAGEMENT PROCESS IN SOUTHEASTERN WISCONSIN

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William J. Stauber Chief Land Use Planner

**MEMORANDUM REPORT
NUMBER 203**

**CONGESTION MANAGEMENT PROCESS IN
SOUTHEASTERN WISCONSIN**

Prepared by the

Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, Wisconsin 53187-1607
www.sewrpc.org

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EXECUTIVE SUMMARY

This memorandum documents how the Federally required congestion management process for Southeastern Wisconsin has been incorporated into the year 2035 regional transportation plan completed in 2006, the reappraisal of the year 2035 regional transportation plan completed in 2010, and the regional transportation operations plan completed in 2012. The congestion management process in Southeastern Wisconsin includes the following elements:

- Definition of congestion management objectives and performance measures;
- A program for data collection and system performance monitoring, including the evaluation of the efficiency and effectiveness of implemented actions;
- Testing and evaluation of alternative transportation plans and strategies, including their effects on congestion;
- Identification of recommended action and implementation schedules, responsibilities, and possible funding; and
- The periodic assessment of the effectiveness of implemented strategies, particularly with respect to the established performance measures.

The congestion management objectives and performance measures are identified in the year 2035 regional transportation plan. These objectives and performance measures were reviewed and refined during the plan reappraisal completed in 2010. It may be expected that during plan reappraisal every four years, and major plan reevaluation every 10 years, these objectives and performance measures will be reviewed and refined.

The performance measures address both recurring and non-recurring traffic congestion. Recurring traffic congestion refers to that congestion which is predictable, repetitious, and is largely a function of vehicle traffic volumes exceeding available arterial street and highway traffic carrying capacity. Nonrecurring traffic congestion refers to that congestion related to specific incidents—including unplanned congestion caused by traffic incidents (both disabled vehicles and/or major crashes), weather conditions, and work zones, and planned congestion caused by concentrated traffic volumes generated by special events. The congestion performance measures identified, as summarized in this memorandum, include the following:

- Extent of arterial street and highway system peak hour traffic congestion, and the number of hours of congestion, by level of congestion – moderate, severe, or extreme, which allows a direct comparison between the extent of existing and historic traffic congestion and assists in an assessment of the

effectiveness of the implemented actions recommended in the regional transportation plan to affect causes of recurring traffic congestion;

- Peak hour travel times and speeds on selected surface arterial street and highway segments and on the freeway system in Southeastern Wisconsin, which allows for a direct comparison to historic speed data and assist in identifying the extent and duration of recurring traffic congestion; and
- Existing and historic crashes and crash rates by county, which allows for identification of those segments of the arterial street and highway system which exceed the average crash rate for the county in which they are located and allows for an assessment of the effectiveness of the implemented actions recommended in the regional transportation plan to increase traffic safety and address a key cause of nonrecurring traffic congestion.

These congestion management performance measures are monitored and assessed during the preparation of the regional transportation plan and its major reevaluation every 10 years, and during plan reappraisal on a four year cycle. The latest regional transportation plan was completed in 2006, and its reappraisal was completed in 2010. The most recent review done as part of the plan reappraisal completed in 2010 is documented in this memorandum.

The development, evaluation, and recommendation of actions to address existing and probable future traffic congestion is explicitly considered in the preparation of the regional transportation plan, which was last completed in 2006 and undergoes major reevaluation on a 10-year cycle. The development of the year 2035 regional transportation plan was built upon the year 2020 regional transportation plan, recognizing the cyclical nature of the regional transportation planning and implementation process. In addition, the year 2035 regional transportation plan was explicitly designed to serve, and to be consistent with, the year 2035 regional land use plan. All future needs for transit, street and highway, and other transportation improvements considered in the regional transportation plan process were derived from the future growth proposed in, and the projected travel from, the regional land use plan.

The development of the year 2035 regional transportation system plan began first with consideration of travel demand management, transportation systems management, bicycle and pedestrian, and public transit improvements and expansion. These four elements, along with a more efficient future land use pattern as proposed in the regional land use plan, were considered and developed and quantitatively tested and evaluated with respect to their travel impacts and potential to reduce congestion prior to any consideration given to arterial street and highway system improvement and expansion. The effects on travel of a regional transportation plan alternative including these four combined plan elements and land use (the Transportation Systems Management – TSM - plan alternative) were quantitatively tested and evaluated, and compared to that of a no-build plan which proposed to maintain the existing year 2005 transportation system.

Arterial street and highway system improvement and expansion was then considered to address the residual highway traffic volume and traffic congestion which may not be expected to be alleviated by the plan's other elements of travel demand management, transportation systems management, bicycle and pedestrian actions, and public transit improvement and expansion. This alternative, which became the final recommended plan, incorporated arterial street and highway system improvement and expansion, as well as travel demand management, transportation systems management, bicycle and pedestrian, and public transit elements, and was compared and contrasted to the TSM plan alternative and to a no-build transportation plan alternative. The final recommended year 2035 regional transportation plan is summarized within this memorandum.

The implementation responsibilities and schedule, and possible funding resources for each recommended action, including congestion management strategies, as identified in year 2035 the regional transportation plan, and as updated in the regional transportation plan reappraisal completed in 2010, are summarized in this memorandum. The implementation responsibilities and strategies, and possible funding resources recommendations are reviewed and updated on a 10-year cycle with the major reevaluation and extension of the design year of the regional transportation plan, and also every 4 years with the review and reappraisal of the regional transportation plan. Additional detail is provided with respect to implementation responsibilities and schedule in the air quality conformity analysis report for the regional transportation plan and plan reappraisal. In addition, the regional transportation operations plan provides further detail for transportation system management measures with respect to implementation responsibilities, schedule, and funding resources. However, the Regional Planning Commission, by State law, is an advisory agency, and implementation of the regional transportation plan is dependent upon the actions taken by local, county, area wide, State, and Federal agencies of government.

In each regional transportation plan reappraisal every four years, and as well in each major regional transportation plan reevaluation every 10 years, those congestion management strategies/plan recommendations which have been implemented are documented, along with the changes in regional demographic and economic conditions and total travel. The review and reappraisal of the regional transportation plan, last completed in 2010 and as summarized in this memorandum, includes an assessment of the effectiveness of the recommended congestion management strategies. The performance measures identified to monitor and assess transportation system performance are then reviewed to assess the effectiveness of the implemented strategies/plan recommendations. The trend in the performance measures indicate the changes over time in traffic congestion, travel time, and traffic safety and the effectiveness of the implemented strategies/recommendations in addressing congestion given the changes in economic and demographic conditions, and travel. Beginning with the regional transportation plan reappraisal to be completed in 2014, the Regional Planning Commission will assess the effectiveness of individual implemented strategies/plan recommendations including selected systems management, public transit, and arterial street and highway actions.

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Southeastern Wisconsin Regional Planning Commission
Staff Memorandum

CONGESTION MANAGEMENT PROCESS IN SOUTHEASTERN WISCONSIN

INTRODUCTION

Federal Statute and regulations require transportation management areas (TMAs), such as Southeastern Wisconsin, to develop and implement a congestion management process as part of the regional transportation planning process. Federal regulations state that the congestion management process shall include methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of recurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the effectiveness of implemented actions. Specific elements of the congestion management process include: 1) definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods; 2) establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions; 3) identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures (strategies considered should include demand management, operational improvements, public transit improvements, and additional highway system capacity—with highway capacity expansion considered after other strategies and a determination that these other strategies cannot fully address the identified congestion); 4) identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation; and 5) implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures.

The preparation of the regional transportation plan for Southeastern Wisconsin, its reappraisal on a four year cycle, its major reevaluation and extension on a ten year cycle, and its refinement through more detailed planning and programming efforts, provide the congestion management process for Southeastern Wisconsin. The adopted year 2035 regional transportation plan was completed in 2006. Its reappraisal began in 2009 and was completed in 2010. The regional transportation operations plan, which provides

refinement of the transportation systems management recommendations of the regional transportation plan, was initiated in 2011 and was completed in early 2012. And, a major reevaluation of the regional transportation plan has been initiated and will be completed in 2015.

The congestion management process in Southeastern Wisconsin included extensive governmental and public outreach and involvement. The congestion management process—including the regional transportation plan, the plan reappraisal, and the regional transportation operations plan—was developed under the guidance of the Advisory Committee on Regional Transportation Planning. This Advisory Committee included representatives of the seven counties and 146 municipalities of the Region, representatives from the Wisconsin Departments of Transportation and Natural Resources, and representatives from the U.S. Department of Transportation and the U.S. Environmental Protection Agency. The Advisory Committee was responsible for proposing to the Commission, after careful study and evaluation, a recommended regional transportation system plan, an amended plan following plan reappraisal, and the regional transportation operations plan. The Advisory Committee structure was intended to promote intergovernmental and interagency coordination, and to serve as a direct liaison between the Commission planning effort and the local and State governments that will be responsible for implementing the recommended plan.

Throughout the multi-year process of preparing the regional transportation plan—which incorporated nearly every element of the congestion management process, extensive efforts were made to inform, and obtain input from the public regarding study scope, regional trends, and the shaping of plan alternatives, and the preliminary and final recommended plans. These efforts included four series of public meeting and hearings throughout Southeastern Wisconsin; a series of newsletters and summary brochures prepared throughout the study process; the Commission website, www.sewrpc.org, containing comprehensive information regarding the study, including notifications of meetings; draft plan materials; Advisory Committee rosters, agendas, and minutes; and a variety of summary materials. The website also provided the opportunity to submit comments on the plan. The Commission staff also provided briefings and presentations, and conducted outreach to provide information about, and obtain input on, the regional plans and the planning process to minority and low-income populations, business and industry groups, freight transportation interests, and Federal and State environmental resource agencies.

The remainder of this memorandum describes each element of the congestion management process in Southeastern Wisconsin, and identifies how each element was incorporated in the preparation of the year 2035 regional transportation plan, the regional transportation plan reappraisal completed every four years, and in the regional transportation operations plan.

DEFINITION OF CONGESTION MANAGEMENT OBJECTIVES AND PERFORMANCE MEASURES

The first element of the congestion management process is the definition of traffic congestion objectives and performance measures. This was accomplished during the preparation of the year 2035 plan and is documented in Chapter VII, “Objectives, Principles, and Standards,” of SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*. These objectives and measures were refined and revised during the reappraisal of the regional transportation plan documented in SEWRPC Memorandum Report No. 197, *Review, Update, and Reaffirmation of the Regional Transportation Plan*. It may be expected that during plan reappraisal every four years, and major plan reevaluations every ten years, these objectives and measures will be reviewed and refined.

The performance measures address both recurring and non-recurring traffic congestion. Recurring traffic congestion refers to that congestion which is predictable, repetitious, and is largely a function of vehicle traffic volumes exceeding available arterial street and highway traffic carrying capacity. Nonrecurring traffic congestion refers to that congestion related to specific incidents, both planned and unplanned. This type of traffic congestion is typically temporary and may be associated with a temporary reduction in available traffic carrying capacity, such as with traffic incidents – both disabled vehicles and/or major crashes – weather conditions, and work zones. Nonrecurring congestion may also be associated with a relatively high demand for available arterial street and highway traffic carrying capacity over a relatively short period of time, such as the concentrated traffic volumes generated by special events.

Recurring Traffic Congestion

Traffic congestion is principally measured by the level of peak traffic hour average weekday recurring traffic congestion on each segment of the arterial street and highway system in Southeastern Wisconsin. As shown in Table 1, congestion is categorized as moderate, severe, or extreme with each level described by travel speed, operating conditions, and level of service.

Additional performance measures are provided for regional freeway system traffic congestion. The freeway system represents less than 10 percent of total arterial system mileage, but carries nearly 40 percent of total regional average weekday vehicle-miles of travel. A much greater proportion of the freeway system—as compared to the surface arterial street system—experiences extreme and severe peak hour traffic congestion, and experiences traffic congestion during hours of the weekday other than the peak traffic hours. This additional measurement of traffic congestion on the freeway system identifies for each segment of the freeway system on an average weekday the number of hours of congestion experienced at each level of congestion: extreme, severe, and moderate.

FREEWAY AND SURFACE ARTERIAL TRAFFIC CONGESTION

Freeway			
Level of Traffic Congestion	Level of Service	Average Speed	Operating Conditions
None	A and B	Freeway free-flow speed	No restrictions on ability to maneuver and change lanes.
None	C	Freeway free-flow speed	Ability to maneuver and change lanes noticeably restricted.
Moderate	D	1 to 2 mph below free-flow speed	Ability to maneuver and change lanes more noticeably limited; reduced driver physical and psychological comfort levels.
Severe	E	Up to 10 mph below free-flow speed	Virtually no ability to maneuver and change lanes. Operation at maximum capacity. No usable gaps in the traffic stream to accommodate lane changing.
Extreme	F	Typically 20 to 30 mph or less	Breakdown in vehicular flow with stop-and-go, bumper-to-bumper traffic.

Surface Arterial			
Level of Traffic Congestion	Level of Service	Average Speed	Operating Conditions
None	A and B	70 to 100 percent of free-flow speed	Ability to maneuver within traffic stream is unimpeded. Control delay at signalized intersections is minimal.
None	C	50 to 100 percent of free-flow speed	Restricted ability to maneuver and change lanes at mid-block locations.
Moderate	D	40 to 50 percent of free-flow speed	Restricted ability to maneuver and change lanes. Small increases in flow lead to substantial increases in delay and decreases in travel speed.
Severe	E	33 to 40 percent of free-flow speed	Significant restrictions on lane changes. Traffic flow approaches instability.
Extreme	F	25 to 33 percent of free-flow speed	Flow at extremely low speeds. Intersection congestion with high delays, high volumes, and extensive queuing.

Source: SEWRPC.

In addition, to provide an assessment of freight traffic movement congestion, the level of traffic congestion experienced on designated truck routes and the National Highway System is another performance measure considered. Designated truck routes are defined by the State of Wisconsin which maintains a truck operations map that identifies streets and highways for operation of vehicles and combination of vehicles for which the overall lengths cannot be limited, and restricted truck routes where the overall lengths are limited. The National Highway System includes highways important to the nation's economy, defense, and mobility. Congestion is measured utilizing the definition of congestion provided in Table 1.

Lastly, congestion is measured by travel speeds. One measurement is peak hour travel speeds on selected freeway and surface arterial street segments. Another measurement is peak hour traveltime contours for vehicle travel over the arterial street and highway system from the two largest concentrations of development and travel in the Region, the Milwaukee central business district and the Regional Medical Center near the Zoo Interchange. The third measurement is the ratio of total overall transit travel time to automobile travel time between selected locations during the weekday morning peak period and midday off-peak period. Transit travel time is longer than automobile travel time, because it includes not only the time spent in the transit vehicle, but also includes the time spent walking to a bus stop, waiting for a bus, transferring between routes including waiting for another bus, and walking to a destination. Much of the transit out-of-vehicle time is related to waiting time for each bus used. Automobile travel time includes the time spent in vehicle parking and walking between parking location and trip origin and destination.

Nonrecurring Traffic Congestion

The primary means for defining nonrecurring traffic congestion in Southeastern Wisconsin is through the identification of the magnitude of the traffic safety problem and the identification of traffic safety problem locations. Both are accomplished through the review of a three year history of traffic crash records. Historic vehicular crash data for the seven-county Southeastern Wisconsin Region are maintained for the Wisconsin Department of Transportation (WisDOT) by the Wisconsin Traffic Operations and Safety Laboratory at the University of Wisconsin.¹ The performance measures utilize the most recent three year crash history.

One performance measure is the total number of crashes in the Region and by County, and also the total number of fatal and injury crashes. This crash data is provided for freeways, other State highways, and county and local streets and highways.

¹ A reportable crash is any crash resulting in: 1) an injury to or death of any person; 2) damage to government non-vehicle property to an apparent extent of \$200 or more; and, 3) damage to a government-owned vehicle or to property owned by any one person to an apparent extent of \$1,000 or more.

Another performance measure considers crashes and crash rate by location, including average annual vehicular crash rate, average annual number of crashes, average annual number of incapacitating injury or fatal crashes, and total number of fatal crashes. The first three of these performance measures are currently only available for State highways. It is expected that they will be available for local streets and highways within the next two years.

Another performance measure are those locations in the Region identified by WisDOT as being among the State's 5 percent most severe highway safety problems.

Another performance measure is the number and rate of transit crashes resulting in property damage and the number and rate of transit crashes resulting in passenger injuries for the most recent three year history.

MONITORING AND ASSESSMENT OF HISTORIC AND EXISTING TRAFFIC CONGESTION

The monitoring and assessment of existing and historic traffic congestion occurs during the preparation of the regional transportation plan and its major reevaluation every ten years, and during plan reappraisal on a four year cycle. The regional transportation plan was completed in 2006, and its reappraisal was completed in 2010, and the monitoring and assessment of existing and historic traffic congestion in Southeastern Wisconsin is documented in those reports. The results of the most recent review from the plan reappraisal completed in 2010 are documented in the following.

Recurring Traffic Congestion

Recurring traffic congestion is congestion which routinely occurs every weekday as traffic volumes exceed roadway design capacity, principally during weekday peak traffic hours.

Arterial Street and Highway System Congestion

Table 2 and Map 1 present the existing level of traffic congestion experienced during weekday peak traffic hours in the year 2005 on the arterial street and highway system, and compare that level of congestion to the level experienced in 2001. Traffic congestion did not significantly change between 2001 and 2005. (Traffic congestion is estimated approximately every five years, as WisDOT conducts traffic counts of the arterial street and highway system on a cycle of approximately three years.).

Table 3 and Figure 1 compare the estimated change in traffic congestion on the arterial street and highway system over the years 1963, 1972, 1991, 2001, and 2005. The miles of arterials experiencing traffic congestion declined from 217 miles in 1963 to 160 miles in 1972, even though traffic grew during

Table 2

TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION BY COUNTY: YEARS 2001 AND 2005

2001

County	Under or At Design Capacity		Over Design Capacity						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	303.2	95.5	9.9	3.1	1.5	0.5	3.0	0.9	317.6
Milwaukee.....	641.1	82.0	72.1	9.2	24.7	3.2	43.4	5.6	781.3
Ozaukee.....	244.2	97.4	4.3	1.7	1.5	0.6	0.8	0.3	250.8
Racine.....	341.3	96.8	9.4	2.7	0.5	0.1	1.4	0.4	352.6
Walworth.....	430.1	98.4	5.1	1.2	1.1	0.3	0.3	0.1	436.6
Washington.....	391.1	96.2	15.4	3.8	--	--	--	--	406.5
Waukesha.....	650.9	87.2	70.7	9.5	11.4	1.5	13.4	1.8	746.4
Region	3,001.9	91.2	186.9	5.7	40.7	1.2	62.3	1.9	3,291.8

2005

County	Under or At Design Capacity		Over Design Capacity						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	303.6	94.9	12.8	4.0	1.0	0.3	2.6	0.8	320.0
Milwaukee.....	620.6	79.0	83.5	10.6	25.6	3.3	55.6	7.1	785.3
Ozaukee.....	243.4	97.0	6.6	2.6	0.1	0.0	0.7	0.3	250.8
Racine.....	338.1	95.9	9.3	2.6	1.1	0.3	4.1	1.2	352.6
Walworth.....	433	98.3	6.2	1.4	1.0	0.2	0.3	0.1	440.5
Washington.....	394.5	97.0	11.4	2.8	--	--	0.6	0.1	406.5
Waukesha.....	659	88.3	62.5	8.4	12.9	1.7	12	1.6	746.4
Region	2,992.2	90.6	192.3	5.8	41.7	1.3	75.9	2.3	3,302.1

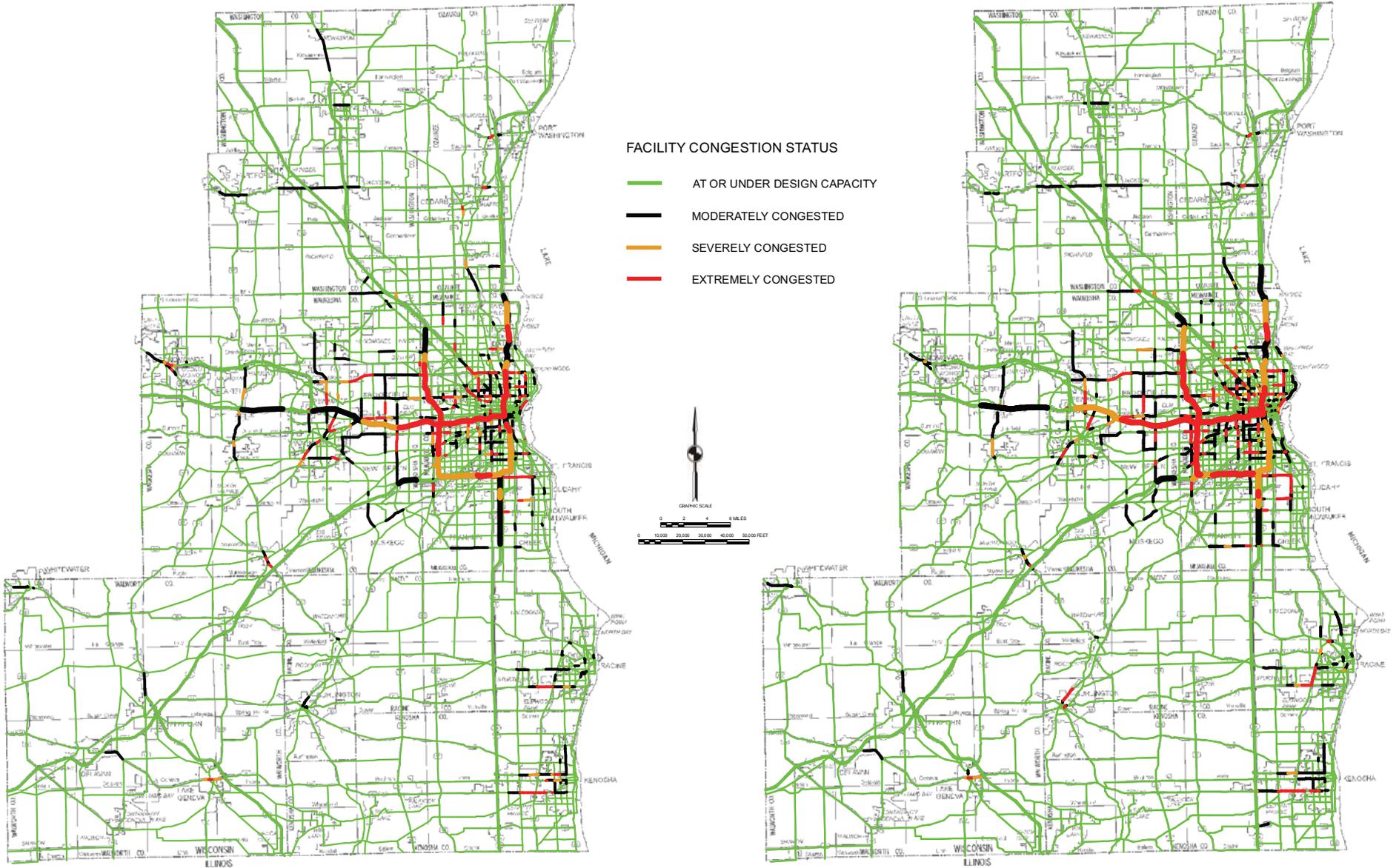
Source: SEWRPC.

Map 1

CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION: YEARS 2001 AND 2005

2001

2005



Source: Wisconsin Department of Transportation and SEWRPC

Table 3

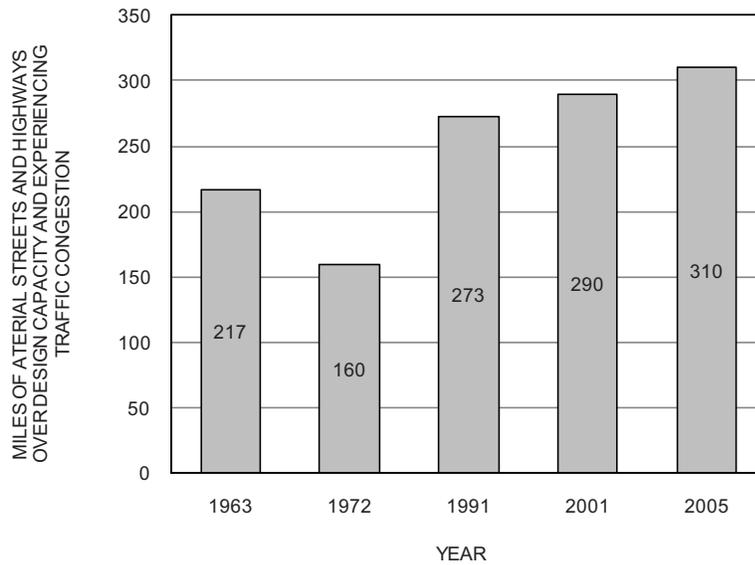
TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION: 1963, 1972, 1991, 2001, AND 2005

Traffic Congestion	Arterial Street and Highway Mileage				
	1963	1972	1991	2001	2005
Under or At Design Capacity	2,971	2,959	2,986	3,002	2,993
Over Design Capacity and Experiencing Traffic Congestion.....	217	160	273	290	310
Total	3,188	3,119	3,259	3,292	3,303

Source: SEWRPC.

Figure 1

TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION: 1963, 1972, 1991, 2001, AND 2005



Source: SEWRPC.

that period by over 50 percent. The decline in traffic congestion may be attributed to the completion of the freeway system during that period. Between 1972 and 1991, the miles of arterials experiencing traffic congestion is estimated to have increased from 160 miles to 273 miles, as traffic grew during that period by nearly 65 percent, as Regional employment and households increased by about 30 percent, and vehicle occupancy and carpooling significantly declined. The decline in vehicle occupancy from an average of 1.39 persons per vehicle to 1.22 persons per vehicle alone is estimated to have resulted in nearly a 15 percent increase in vehicle traffic. As well, limited transportation system improvement and expansion was completed between 1972 and 1991 in Southeastern Wisconsin. The miles of arterials carrying traffic volumes exceeding their design capacity and experiencing traffic congestion is estimated to have increased modestly from 273 miles in 1991 to 290 miles in 2001, and to 310 miles in 2005. From 1991 to 2001, traffic is estimated to have increased by about 21 percent and from 2001 to 2005 by about 6 percent. The modest increase in traffic congestion from 1991 to 2005 may be attributed to the implementation of an extensive number of significant surface arterial street and highway widening and new construction projects between 1991 and 2005. The estimated modest increase in congestion between 1991 and 2005 is not uniform systemwide, as the extent and severity of congestion on the Milwaukee area freeway system is estimated to have substantially increased between 1991 and 2005.

Freeway System Congestion

Table 4, Figure 2, and Map 2 present more detail on existing and historic congestion on the freeway system, including the number of hours of congestion experienced on congested freeway segments on an average weekday. Significant increases in freeway congestion occurred between 1972 and 1991, and between 1991 and 2001. Congestion also increased slightly between 2001 and 2005.

National Highway System and Designated Truck Route Congestion

Table 5 and Map 3 present the existing level of traffic congestion experienced on designated truck routes and the National Highway System in the years 2001 and 2005. The State of Wisconsin maintains a truck operations map that identifies streets and highways for operation of vehicles and combination of vehicles for which the overall lengths cannot be limited. In addition, the truck operations map identifies restricted truck routes where the overall lengths are limited. The National Highway System includes highways important to the nation's economy, defense, and mobility. The coverage of these two systems illustrates the ability of freight to move throughout the Region. The miles of designated truck routes and National Highway System carrying traffic volumes exceeding their design capacity increased from 202 miles in 2001 to 221 miles in 2005, or by about 9 percent. As congestion on these roadways increase, the travel time of freight movement is adversely affected.

Table 4

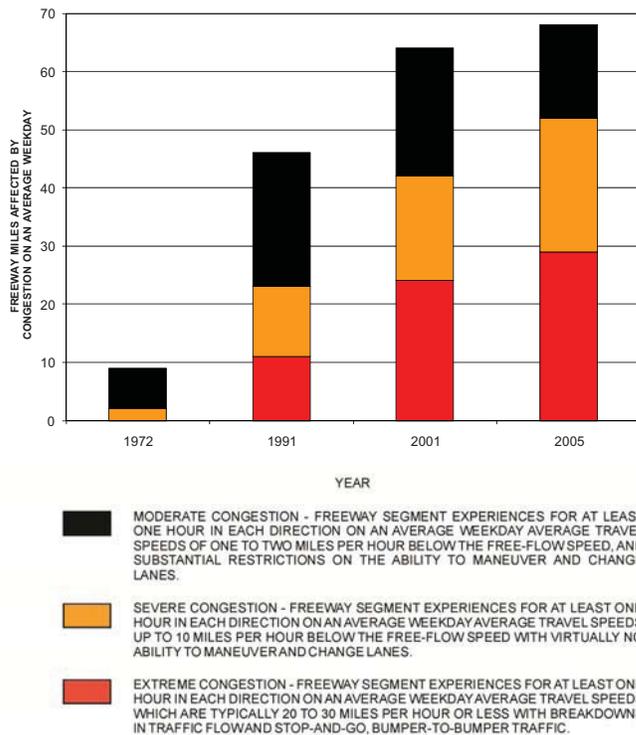
**ESTIMATED EXISTING SOUTHEASTERN WISCONSIN FREEWAY SYSTEM
TRAFFIC CONGESTION ON AN AVERAGE WEEKDAY: 1972, 1991, 2001, AND 2005**

Year	Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
		Number	Percent of Freeway System	Extreme	Severe	Moderate	Total
2005	Extreme	29	10.7	1.2	2.7	3.7	7.6
	Severe	23	8.5	--	1.2	2.3	3.5
	Moderate	16	6.0	--	--	2.2	2.2
	Total	68	25.2	--	--	--	--
2001	Extreme	24	8.9	1.4	3.3	4.4	9.1
	Severe	18	6.7	--	1.5	2.5	4.0
	Moderate	22	8.1	--	--	2.1	2.1
	Total	64	23.7	--	--	--	--
1991	Extreme	11	4.4	1.0	2.1	3.1	6.2
	Severe	12	4.8	--	1.1	2.9	4.0
	Moderate	23	9.1	--	--	2.3	2.3
	Total	46	18.3	--	--	--	--
1972	Extreme	--	--	--	--	--	--
	Severe	2	1.2	--	1.0	3.0	4.0
	Moderate	7	4.3	--	--	2.8	2.8
	Total	9	5.5	--	--	--	--

Source: SEWRPC.

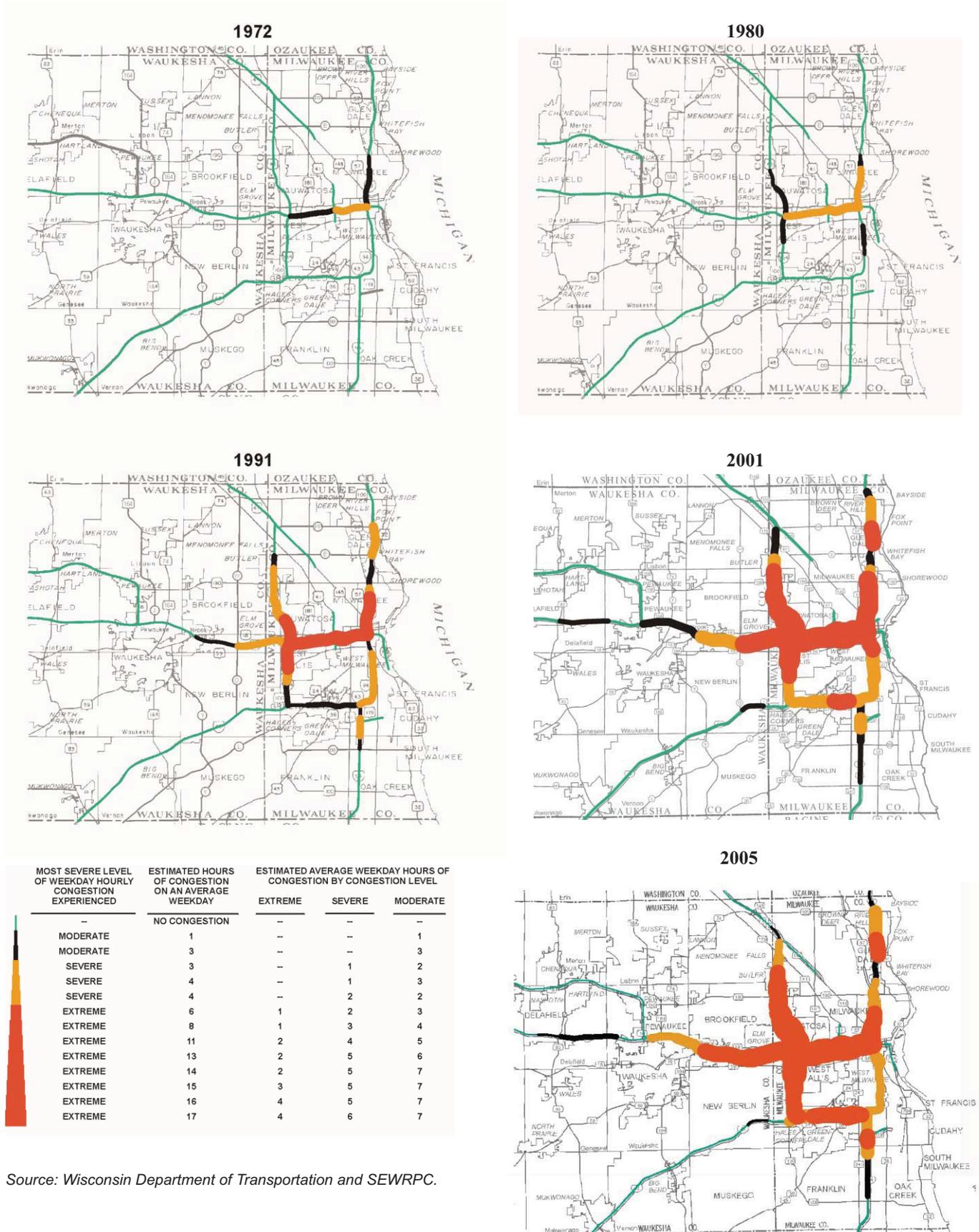
Figure 2

**ESTIMATED EXISTING SOUTHEASTERN WISCONSIN
FREEWAY SYSTEM TRAFFIC CONGESTION ON AN
AVERAGE WEEKDAY: 1972, 1991, 2001, AND 2005**



Map 2

HISTORIC TRAFFIC CONGESTION ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM



MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION EXPERIENCED	ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY	ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL		
		EXTREME	SEVERE	MODERATE
NO CONGESTION	0	0	0	0
MODERATE	1	0	0	1
MODERATE	3	0	0	3
SEVERE	3	0	1	2
SEVERE	4	0	1	3
SEVERE	4	0	2	2
EXTREME	6	1	2	3
EXTREME	8	1	3	4
EXTREME	11	2	4	5
EXTREME	13	2	5	6
EXTREME	14	2	5	7
EXTREME	15	3	5	7
EXTREME	16	4	5	7
EXTREME	17	4	6	7

Source: Wisconsin Department of Transportation and SEWRPC.

Table 5
TRAFFIC CONGESTION ON DESIGNATED TRUCK ROUTES AND
THE NATIONAL HIGHWAY SYSTEM IN THE REGION: 2001 AND 2005

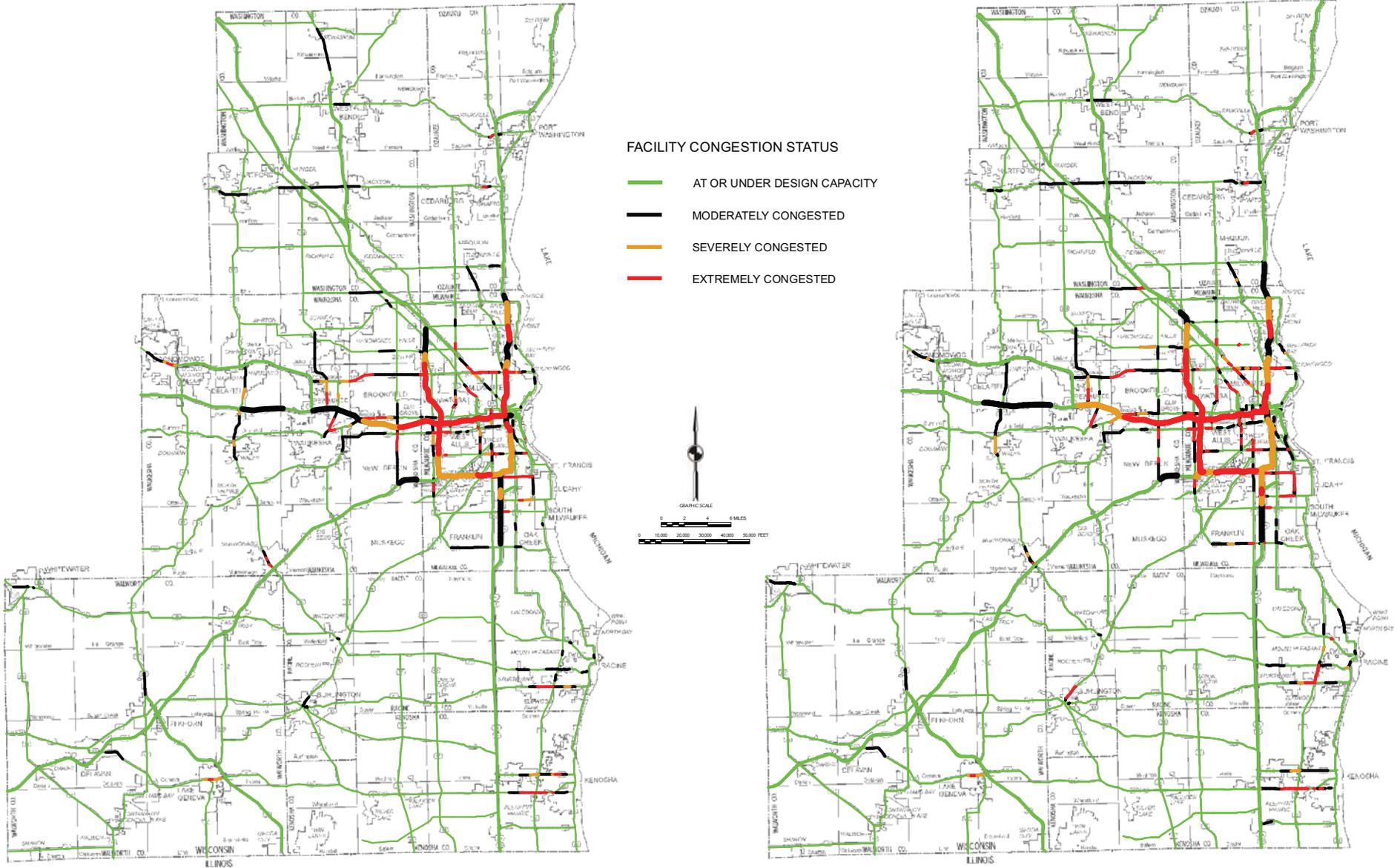
Year	Under or At Design Capacity	Over Design Capacity			Total Mileage
		Moderate Congestion	Severe Congestion	Extreme Congestion	
2001	1,114	119	32	51	1,316
2005	1,105	121	36	64	1,324

Map 3

CONGESTION ON DESIGNATED TRUCK ROUTES AND THE NATIONAL HIGHWAY SYSTEM IN THE REGION: YEARS 2001 AND 2005

2001

2005



Source: Wisconsin Department of Transportation and SEWRPC

Arterial Street and Highway Travel Times

Map 4 compares the year 2001 and 2005 estimated peak hour travel speeds for selected freeway and surface arterial street segments. Map 5 compares estimated peak hour arterial street and highway travel time contours for years 2001 and 2005 for two locations: The Milwaukee central business district and the Milwaukee regional medical center. Year 2001 and 2005 arterial street and highway travel times are very similar, displaying little change.

Public Transit Travel Times

Map 6 presents the ratio of total overall transit travel time to automobile travel time between selected locations during the weekday morning peak period and midday off-peak period in 2005. Transit travel time is longer than automobile travel time, because it includes not only the time spent in the transit vehicle, but also includes the time spent walking to a bus stop, waiting for a bus, transferring between routes including waiting for another bus, and walking to a destination. Much of the transit out-of-vehicle time is related to waiting time for each bus used. Automobile travel time includes the time spent in vehicle parking and walking between parking location and trip origin and destination.

The travel time ratios developed for travel between the selected locations indicate that the lowest ratios—and most competitive transit travel times—are for short transit trips made between areas within and adjacent to the downtown Milwaukee, and the highest ratios—and least competitive transit travel times—are generally for transit trips to and from outlying portions of Milwaukee County, including locations in the northwest, southeast, and southwest portions of the Milwaukee County area. Some reduction in transit service has occurred since 2005; however, the travel time ratios from 2005 likely have not changed significantly.

Nonrecurring Traffic Congestion

Most nonrecurring congestion is a result of vehicle crashes, but disabled vehicles and weather can also result in nonrecurring congestion. Work zones and special events can also result in nonrecurring traffic congestion.

Total Vehicle Crashes

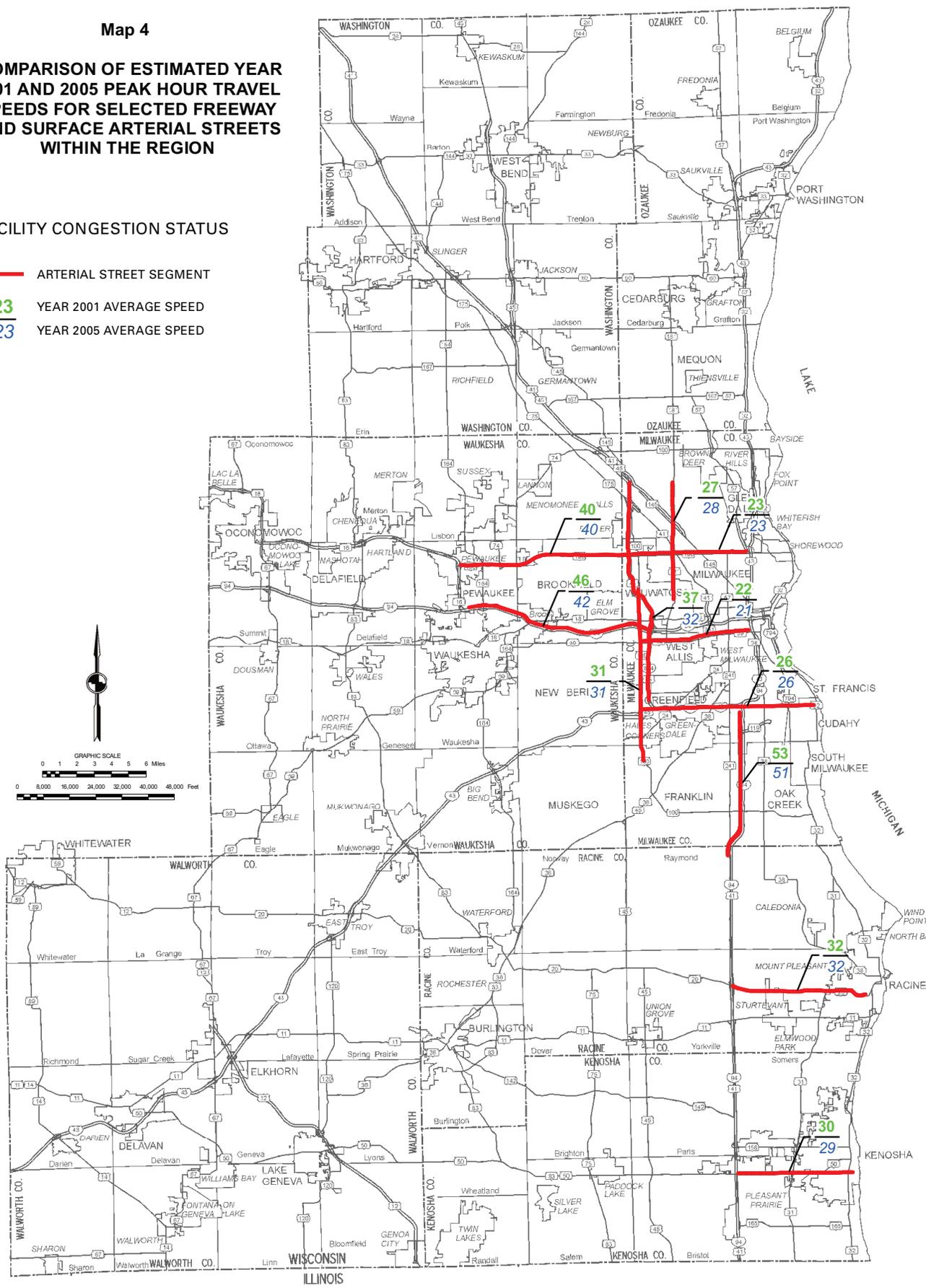
Historic vehicular crash data for 2006, 2007, and 2008 for the seven-county Southeastern Wisconsin Region were collated from data maintained for WisDOT by the Wisconsin Traffic Operations and Safety Laboratory at the University of Wisconsin. A total of about 133,100 vehicular crashes were reported over the three year period on the street and highway system. The number of reported crashes for 2006, 2007, and 2008 are shown in Table 6 by county, by freeway and non-freeway, and by crash severity.

Map 4

COMPARISON OF ESTIMATED YEAR 2001 AND 2005 PEAK HOUR TRAVEL SPEEDS FOR SELECTED FREEWAY AND SURFACE ARTERIAL STREETS WITHIN THE REGION

FACILITY CONGESTION STATUS

-  ARTERIAL STREET SEGMENT
-  YEAR 2001 AVERAGE SPEED
-  YEAR 2005 AVERAGE SPEED



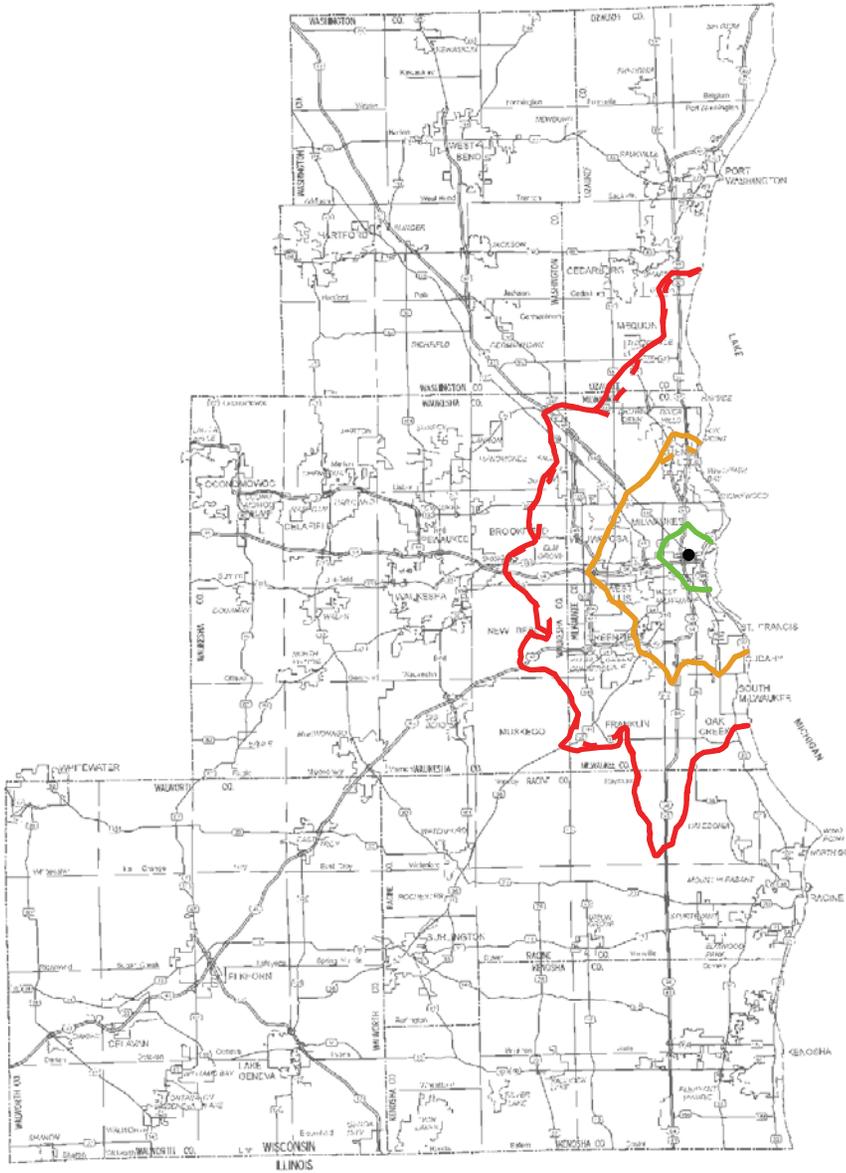
Source: Wisconsin Department of Transportation and SEWRPC.

Map 5

ESTIMATED PEAK HOUR ARTERIAL STREET AND HIGHWAY TRAVEL TIME CONTOURS: YEARS 2001 AND 2005

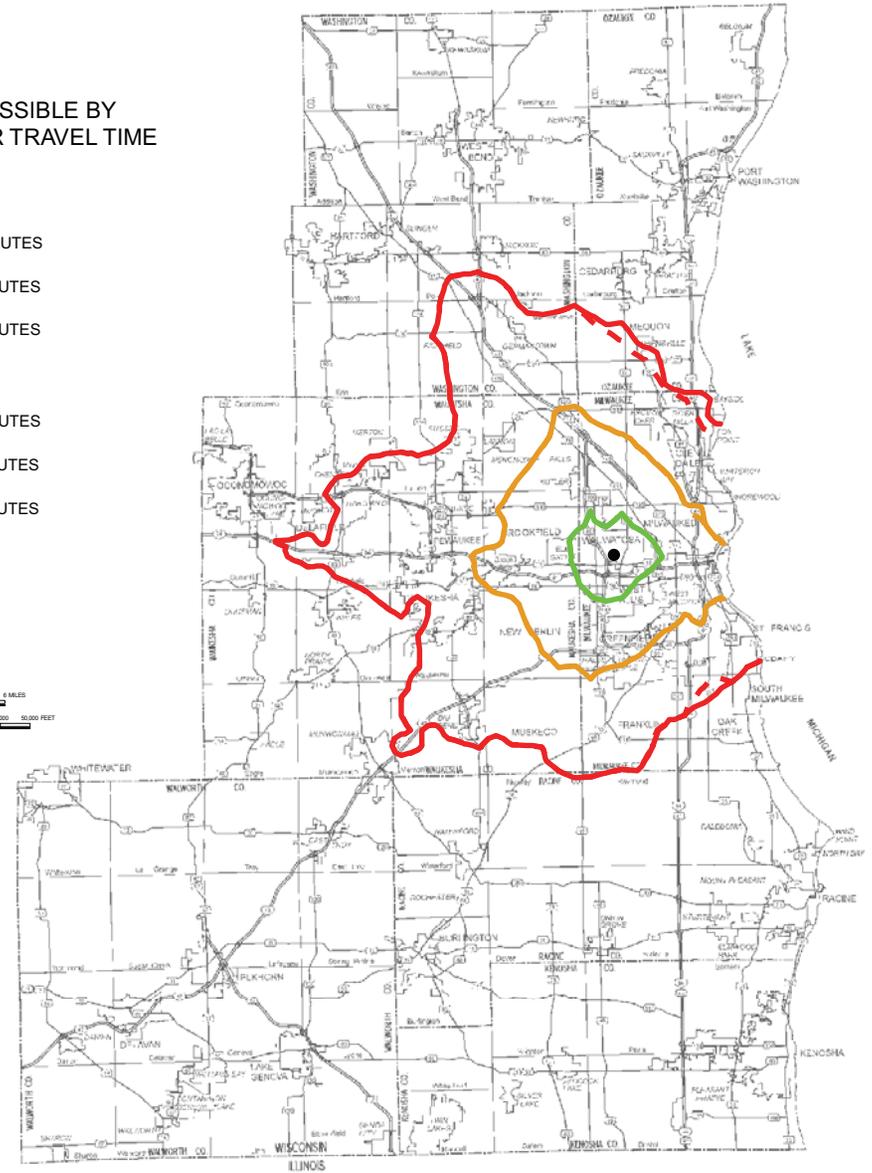
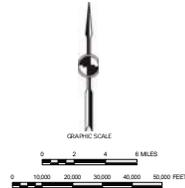
MILWAUKEE CENTRAL BUSINESS DISTRICT

MILWAUKEE REGIONAL MEDICAL CENTER



AREA ACCESSIBLE BY PEAK HOUR TRAVEL TIME

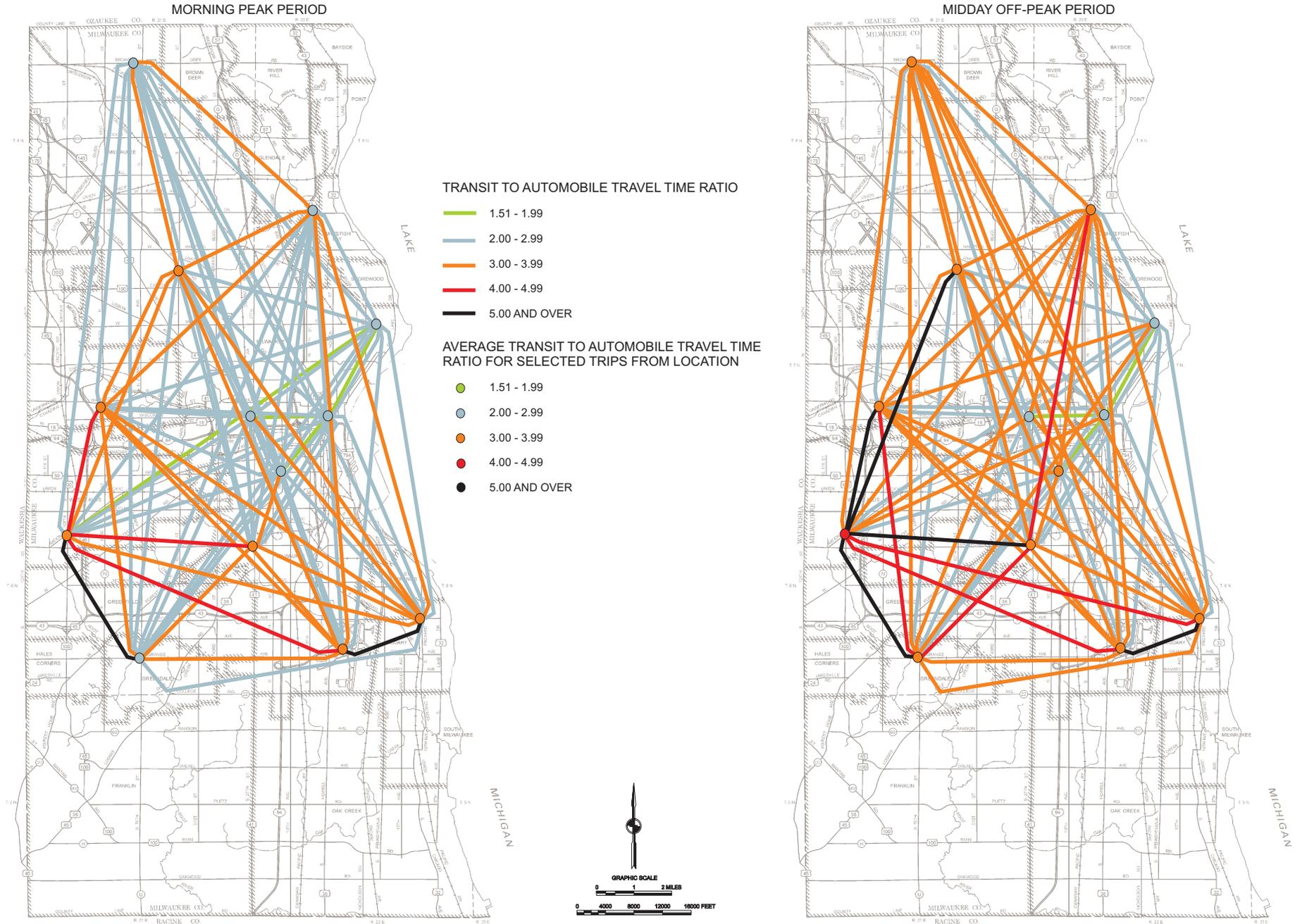
- 2001
- 10 MINUTES
- 20 MINUTES
- 30 MINUTES
- 2005
- 10 MINUTES
- 20 MINUTES
- 30 MINUTES



Source: SEWRPC

Map 6

RATIOS OF OVERALL TRANSIT TRAVEL TIMES TO OVERALL AUTOMOBILE TRAVEL TIMES BETWEEN SELECTED LOCATIONS IN MILWAUKEE COUNTY FOR WEEKDAY PEAK AND OFF-PEAK PERIODS: 2005



Source: SEWRPC.

Table 6

STREET AND HIGHWAY CRASHES BY COUNTY AND BY LOCAL OR STATE JURISDICTION IN SOUTHEASTERN WISCONSIN: 2006, 2007, AND 2008

County	Crashes ^a											
	County Highways and Local Streets/Roads			Non-Freeway State and United States Highways			Interstate and Non-Interstate Freeways			Total		
	Fatal	Injury	Total (Including Property Damage)	Fatal	Injury	Total (Including Property Damage)	Fatal	Injury	Total (Including Property Damage)	Fatal	Injury	Total (Including Property Damage)
Kenosha												
2006	10	787	2,138	13	531	1,206	1	50	161	24	1,368	3,505
2007	12	792	2,286	3	572	1,311	3	61	268	18	1,425	3,865
2008	15	763	2,421	10	516	1,348	1	39	215	26	1,318	3,984
Milwaukee												
2006	38	5,644	16,450	11	893	2,271	6	1,020	3,626	55	7,557	22,347
2007	34	4,752	15,038	12	1,740	4,828	7	1,189	4,019	53	7,681	23,885
2008	35	4,225	14,070	8	1,695	4,891	3	1,129	3,940	46	7,049	22,901
Ozaukee												
2006	2	211	709	1	105	354	4	56	205	7	372	1,268
2007	2	208	625	3	96	349	2	56	244	7	360	1,218
2008	3	188	793	1	102	355	1	54	265	5	344	1,413
Racine												
2006	7	886	2,395	10	600	1,449	1	63	172	18	1,549	4,016
2007	10	810	2,393	5	609	1,599	0	53	173	15	1,472	4,165
2008	10	679	2,214	9	555	1,529	1	58	205	20	1,292	3,948
Walworth												
2006	6	305	885	8	189	570	1	49	194	15	543	1,649
2007	5	294	1,082	5	204	651	1	65	248	11	563	1,981
2008	3	270	1,060	1	194	628	0	52	270	4	516	1,958
Washington												
2006	5	385	1,408	4	272	872	0	62	283	9	719	2,563
2007	6	398	1,448	1	336	1,095	1	109	396	8	843	2,939
2008	2	371	1,389	4	283	954	1	85	423	7	739	2,766
Waukesha												
2006	13	1,230	4,184	6	607	1,898	2	232	963	21	2,069	7,045
2007	15	1,269	4,395	8	638	2,081	6	324	1,263	29	2,231	7,739
2008	10	1,170	4,560	6	556	2,011	8	329	1,335	24	2,055	7,906
Region												
2006	81	9,448	28,169	53	3,197	8,620	15	1,532	5,604	149	14,177	42,393
2007	84	8,523	27,267	37	4,195	11,914	20	1,857	6,611	141	14,575	45,792
2008	78	7,666	26,507	39	3,901	11,716	15	1,746	6,653	132	13,313	44,876

^aIncludes all vehicular crashes including transit vehicle crashes which occurred on all street and highway classes, including and arterials, collectors, and land access streets. It does not include parking lot or private property crashes. A reportable crash is any crash resulting in: 1) an injury to or death of any person; 2) damage to government-owned non-vehicle property to an apparent extent of \$200 or more; 3) damage to a government-owned vehicle to an apparent extent of \$1,000 or more; 4) or total damage to property owned by any one person to an apparent extent of \$1,000 or more.

Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC.

Approximately 90,600 vehicular crashes, or about two-thirds of the total 133,100 vehicular crashes reported in Southeastern Wisconsin during the three year period from 2006 through 2008, resulted in property damage only. The remaining nearly 42,500 vehicular crashes, or approximately one-third of all crashes, resulted in either injury or death. Less than one third of 1 percent of all reported vehicular crashes, or 422 crashes during the three-year period, resulted in one or more deaths. The 422 fatal vehicular crashes resulted in 460 deaths and about 380 injured persons. Additionally, about 59,300 persons were injured in the nearly 42,100 injury-only crashes in Southeastern Wisconsin during that three-year period. The crash data indicate from 2006 to 2008 a decline in fatal and injury crashes, and an increase in total crashes.

The crash data also indicate a decline from 2006 to 2008 in crashes on local streets and highways, and an increase in crashes on freeways and State highways other than freeways. Analysis of freeway system recurring traffic congestion levels and crash data including overall crash rate and crash rate by type—fixed object, rear end, angle, and sideswipe—indicate that the total crash rate, and specifically, the rear end crash rate increases with the level of recurring traffic congestion (see Table 7). Rear end crash rates were 5 to 15 times greater for congested freeway segments than for uncongested freeway segments, with the highest rear end crash rates on the most extremely congested freeway segments.

Crash Rate and Crashes by Location

Map 7 displays the location of fatal crashes over the three year period from 2006 to 2008. Maps 8, 9, and 10 provide data for the State highway system by segment for the years 2005 to 2009 for average annual crash rate, average number of annual crashes, and average annual severe injury and fatality crashes. The State of Wisconsin is working to expand this data to the local street and highway system, and the Commission will utilize and monitor this data when available. Table 8 identifies those locations on the State and local highway network, in Southeastern Wisconsin which are considered to be among the State's 5 percent most severe highway safety problems.

Transit Crashes and Passenger Injuries

Table 9 provides a comparison of the number and rate of transit crashes resulting in property damage and the number of passenger injuries for the years 2006, 2007, and 2008. Following a slight reduction of the rate of transit crashes from 3,728 crashes per 100,000,000 revenue miles in 2006 to 3,720 crashes per 100,000,000 revenue miles in 2007, the rate of transit crashes then increased to 4,514 crashes per 100,000,000 revenue miles in 2008, or an increase of about 21 percent between 2006 and 2008. Following

Table 7

COMPARISON OF SELECTED HISTORIC CRASH RATES TO LEVELS OF CONGESTION BY SEGMENT OF THE REGIONAL FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN^a

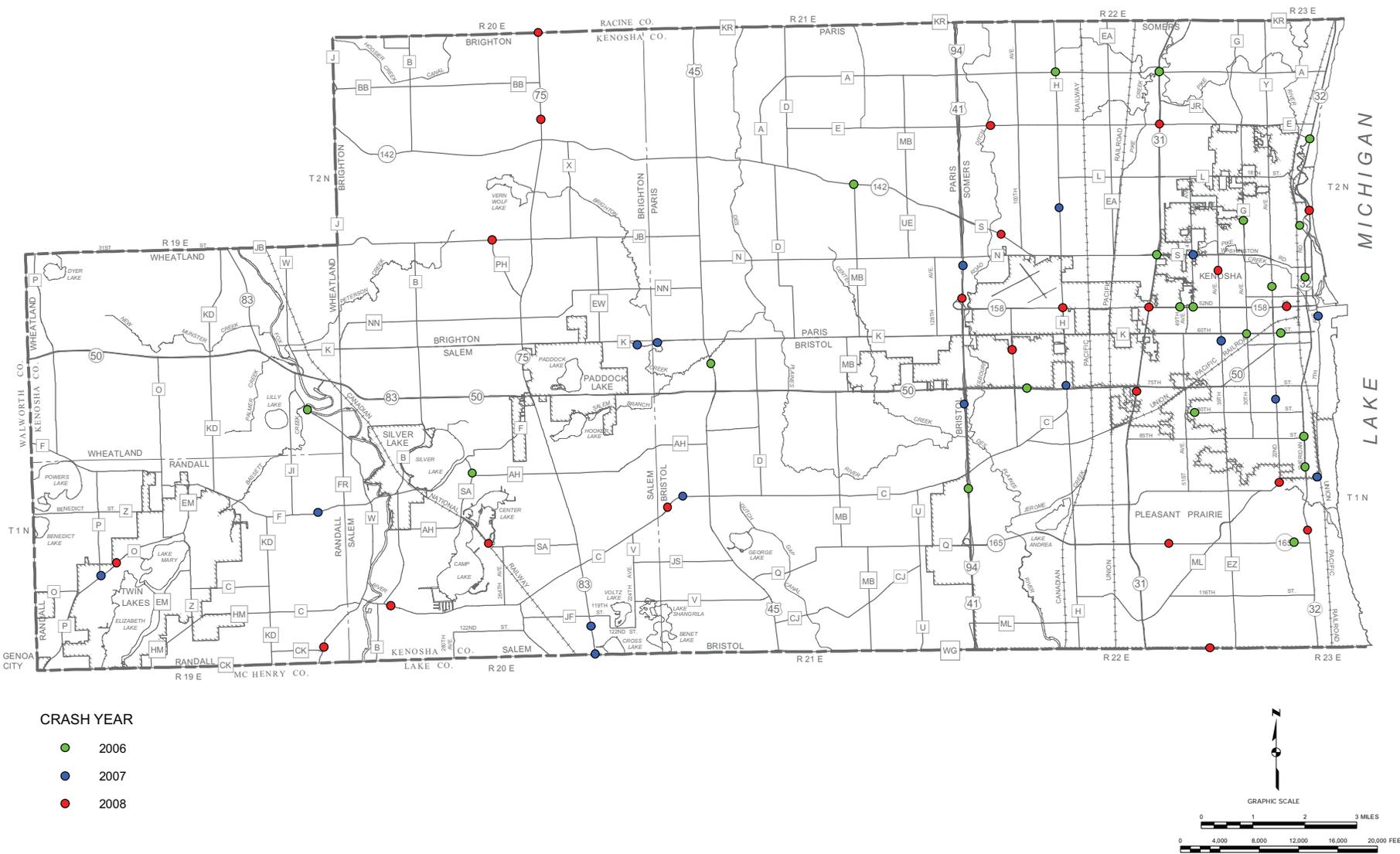
Freeway Segment	Level of Traffic Congestion in 1999	Crash Rate Per 100 Million Vehicle Miles of Travel				
		Overall	Fixed Object	Rear End	Angle	Side Swipe
IH 94 in Kenosha and Racine Counties	Uncongested	65	34	14	7	9
USH 41/45 from STH 145 to STH 167	Uncongested	24	12	5	3	3
USH 41/45 from STH 167 to STH 28	Uncongested	57	37	8	5	6
IH 43 from Hale Interchange to USH 14	Uncongested	34	17	7	5	5
STH 16 from IH 94 to STH 67	Uncongested	41	20	6	9	6
IH 94 from STH 16 to Jefferson County line	Uncongested to Moderate	43	19	12	4	5
IH 794 from Marquette Interchange to Carferry Drive	Uncongested to Moderate	82	36	32	6	7
IH 94 from Milwaukee-Racine County line to Mitchell Interchange	Uncongested to Extreme	43	14	13	3	11
IH 94 from Zoo Interchange to STH 16	Moderate to Extreme	62	15	28	9	8
IH 894 from Mitchell Interchange to Hale Interchange	Severe	75	19	33	8	15
IH 94 from Mitchell Interchange to Marquette Interchange	Severe to Extreme	103	26	47	5	24
USH 45 from Zoo Interchange to STH 145	Severe to Extreme	92	22	40	4	18
IH 894 from Hale Interchange to Zoo Interchange	Severe to Extreme	86	21	49	3	16
IH 94 from Stadium Interchange to Marquette Interchange	Extreme	156	19	114	3	2
IH 94 from Zoo Interchange to Stadium Interchange	Extreme	168	29	114	5	18
IH 43 from Marquette Interchange to Sheboygan County line	Uncongested to Extreme	115	32	53	7	21

^a The data in this table were derived from data set forth in Table 7 of a draft document dated August 3, 2001, prepared by the Wisconsin Department of Transportation entitled Systemwide Crash Analysis Information Report. The data is for the years 1996, 1997, and 1998.

Source: Wisconsin Department of Transportation and SEWRPC.

Map 7

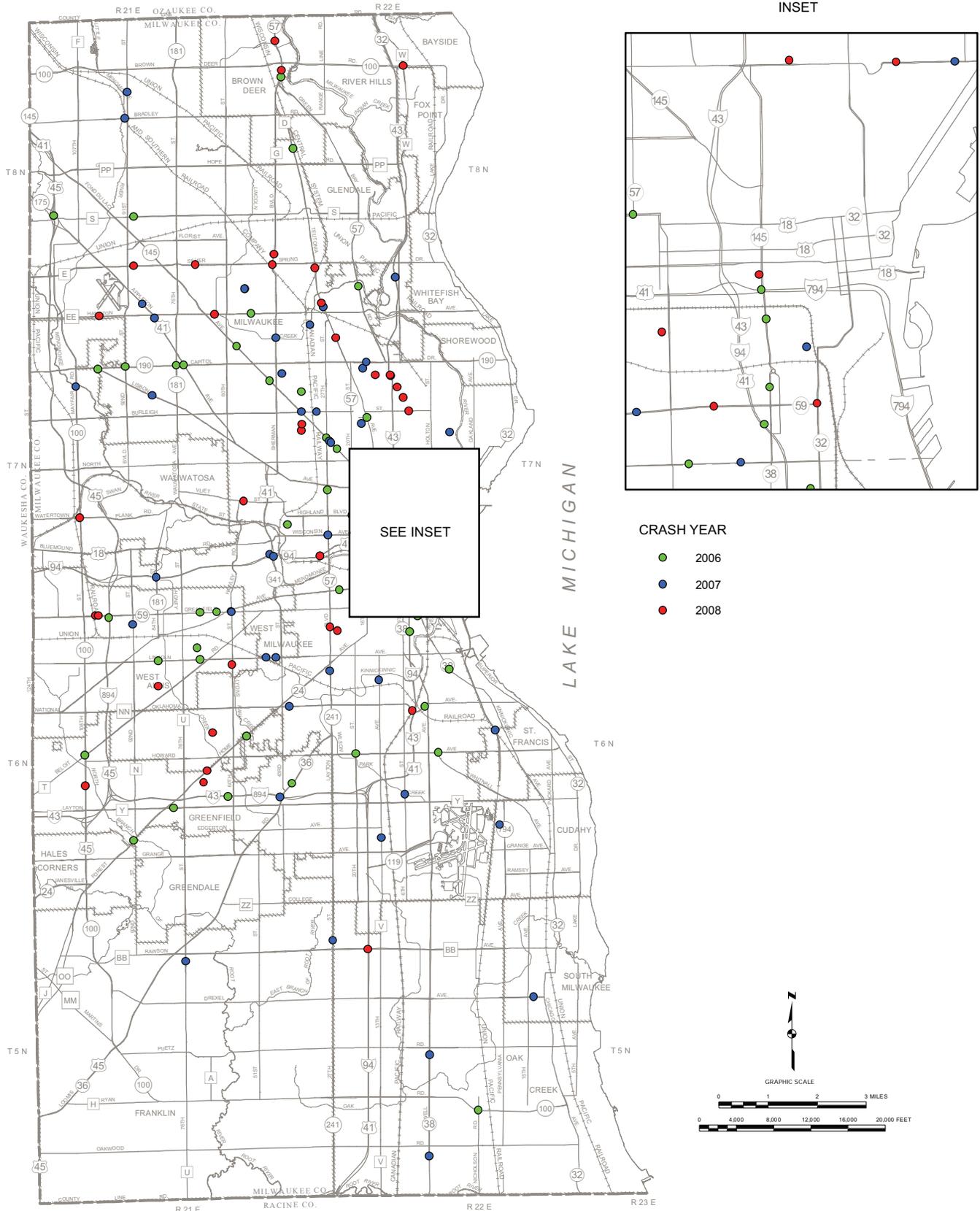
FATAL CRASHES ON ARTERIAL HIGHWAYS IN KENOSHA COUNTY: 2006, 2007, AND 2008



Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC

Map 7 (continued)

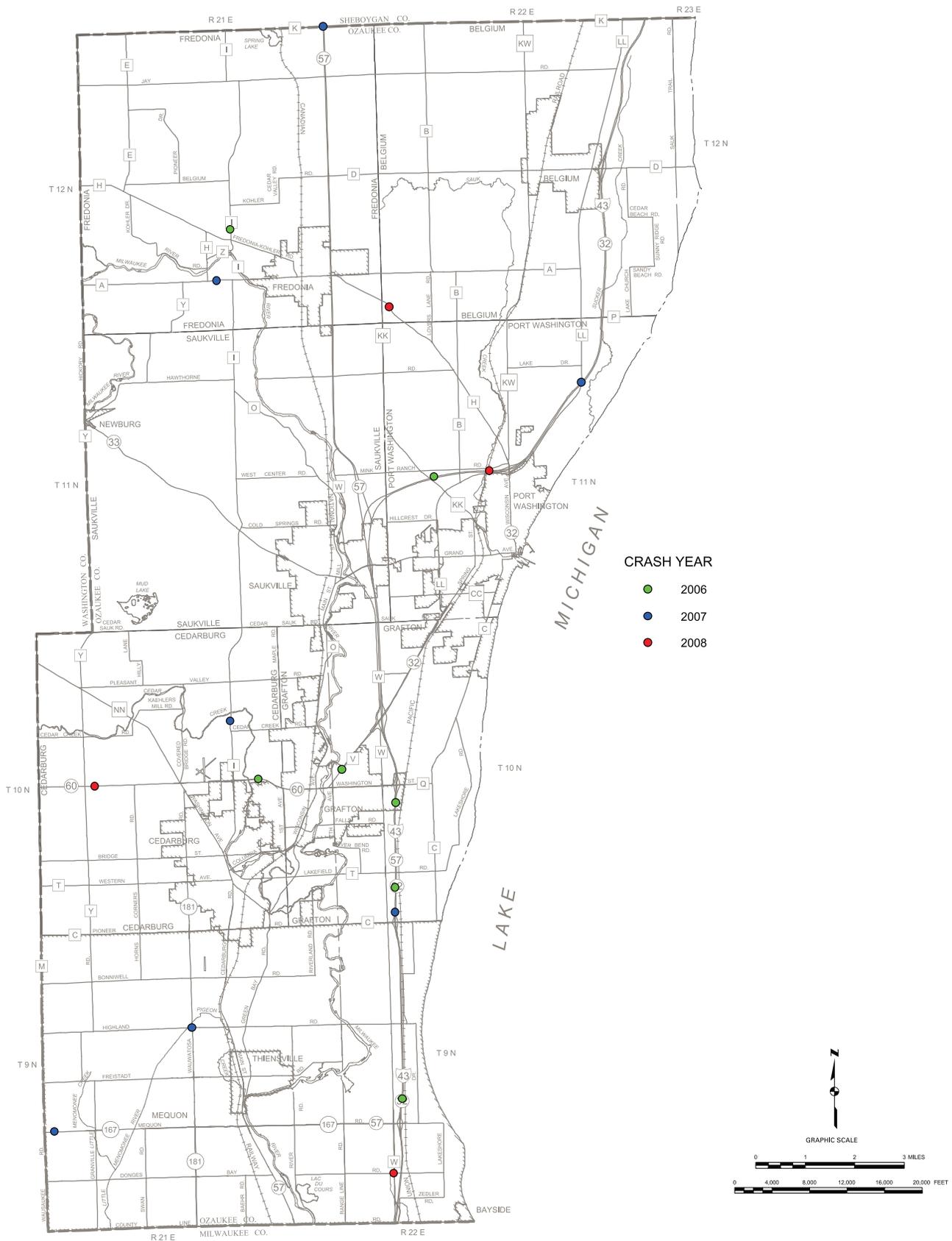
FATAL CRASHES ON ARTERIAL HIGHWAYS IN MILWAUKEE COUNTY: 2006, 2007, AND 2008



Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC

Map 7 (continued)

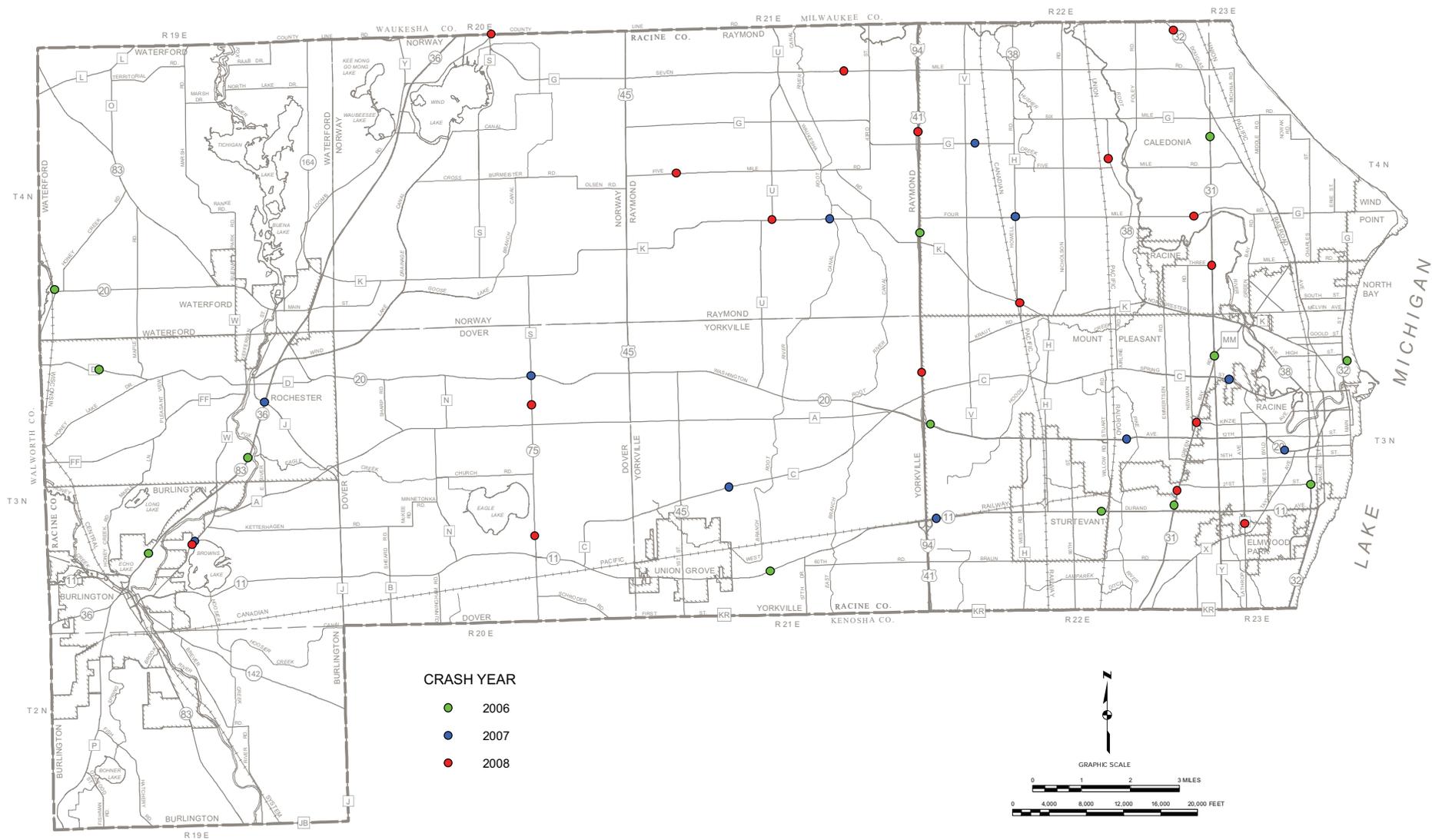
FATAL CRASHES ON ARTERIAL HIGHWAYS IN OZAUKEE COUNTY: 2006, 2007, AND 2008



Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC

Map 7 (continued)

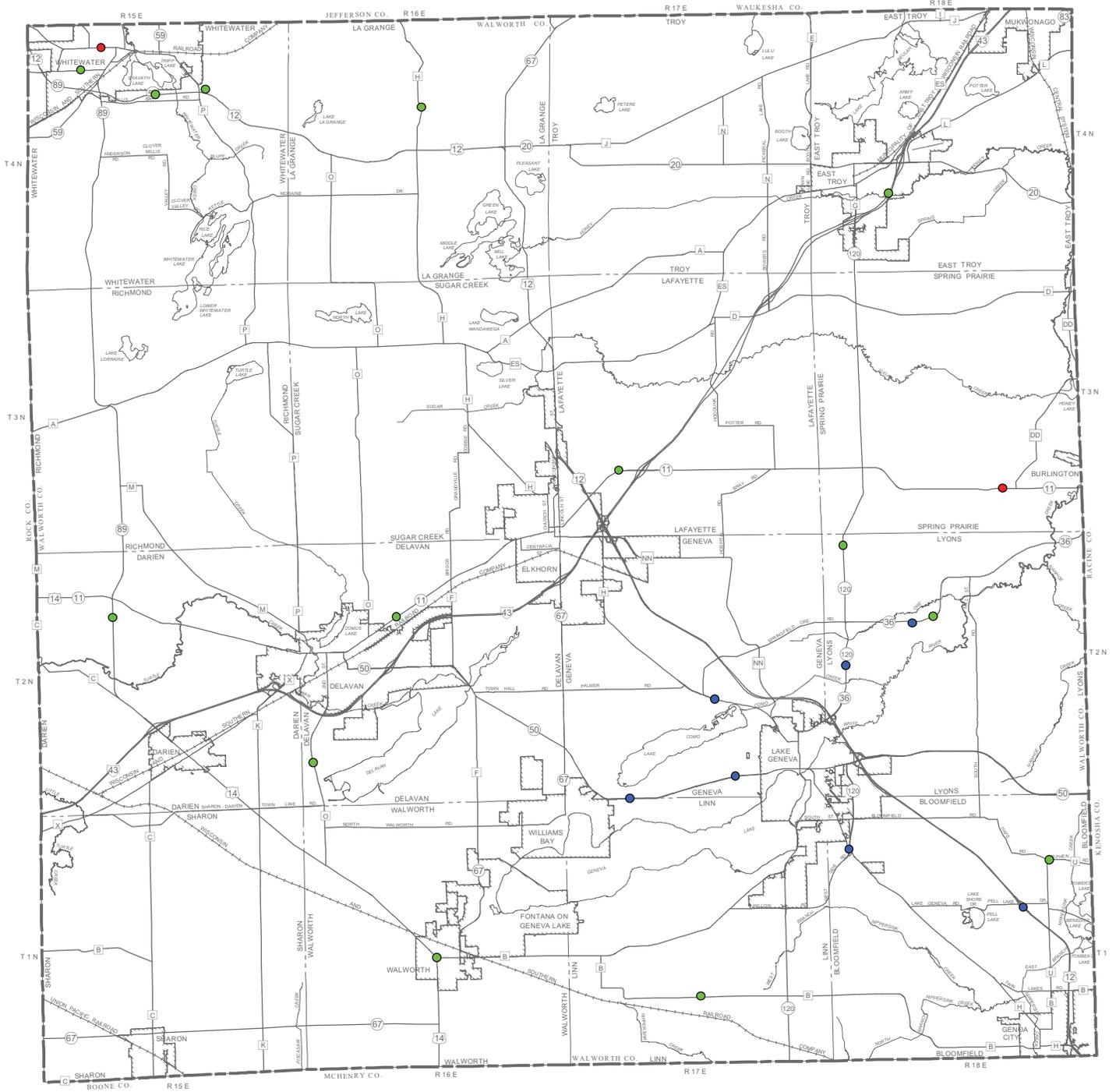
FATAL CRASHES ON ARTERIAL HIGHWAYS IN RACINE COUNTY: 2006, 2007, AND 2008



Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC

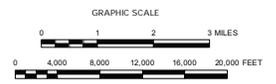
Map 7 (continued)

FATAL CRASHES ON ARTERIAL HIGHWAYS IN WALWORTH COUNTY: 2006, 2007, AND 2008



CRASH YEAR

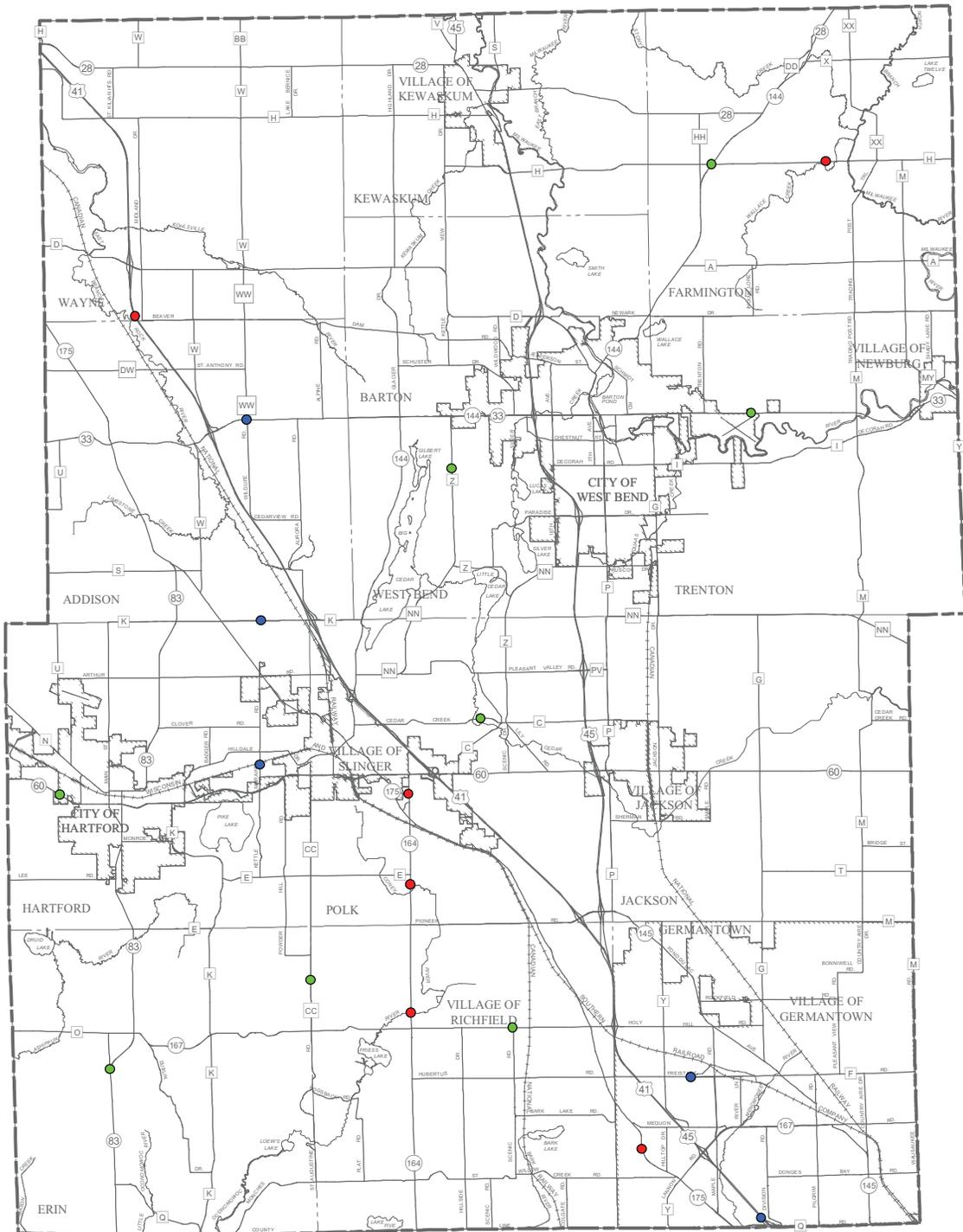
- 2006
- 2007
- 2008



Source: Wisconsin Traffic Operations & Safety Laboratory, University of Wisconsin and SEWRPC

Map 7 (continued)

FATAL CRASHES ON ARTERIAL HIGHWAYS IN WASHINGTON COUNTY: 2006, 2007, AND 2008



CRASH YEAR

- 2006
- 2007
- 2008

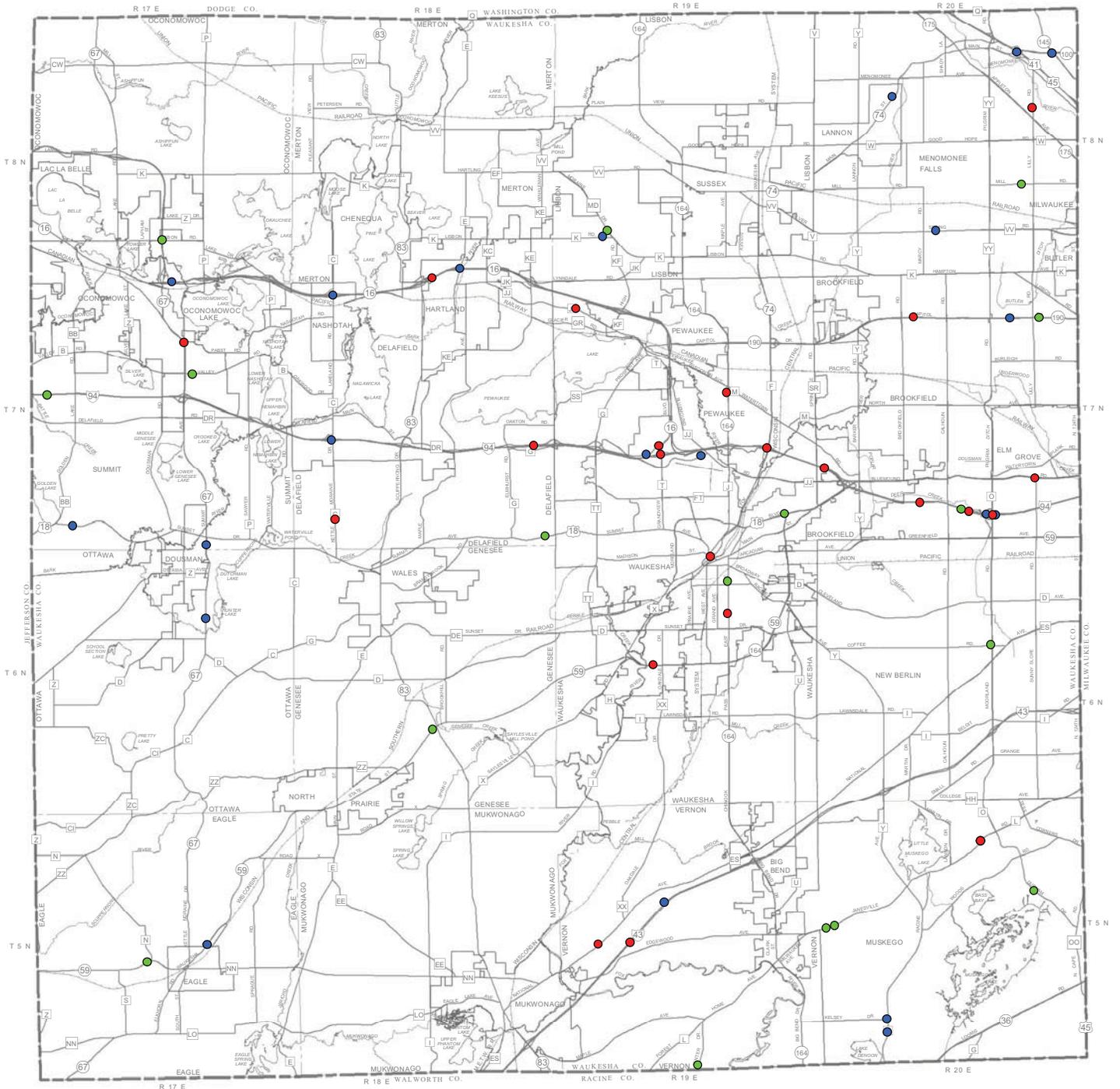


GRAPHIC SCALE



Map 7 (continued)

FATAL CRASHES ON ARTERIAL HIGHWAYS IN WAUKESHA COUNTY: 2006, 2007, AND 2008

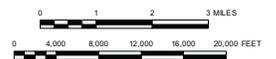


CRASH YEAR

- 2006
- 2007
- 2008

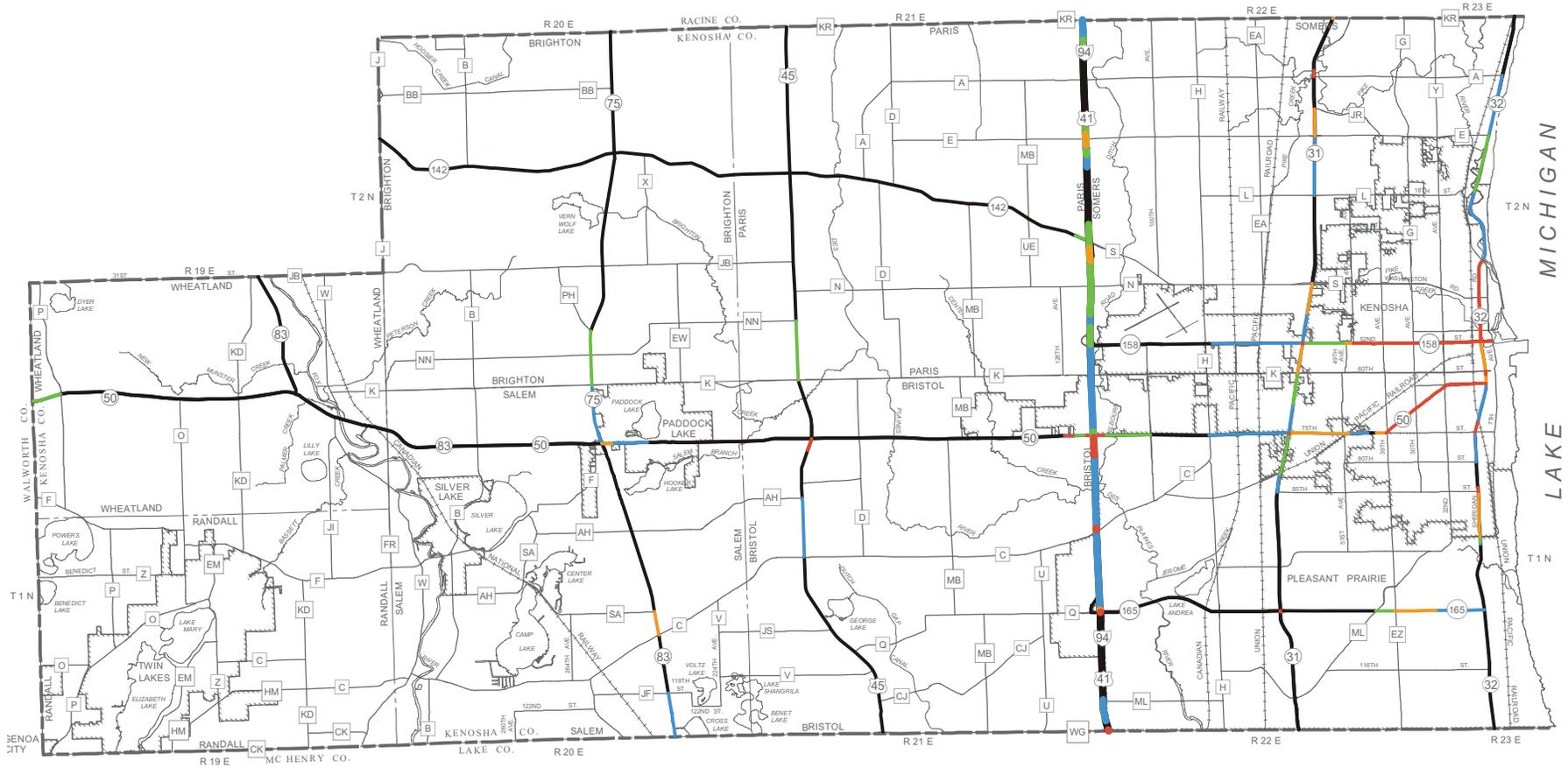


GRAPHIC SCALE



Map 8

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN KENOSHA COUNTY: 2005-2009



STATE TRUNK HIGHWAY

- FREEWAY
- SURFACE ARTERIAL

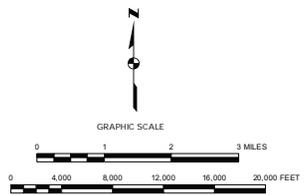
PERCENT OF COUNTYWIDE AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- 100 PERCENT TO 200 PERCENT ABOVE
- MORE THAN 200 PERCENT ABOVE

NOTES: 1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN KENOSHA COUNTY FROM 2005 THROUGH 2009 WAS 45.8 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 277.5 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.

2. A SEPERATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.

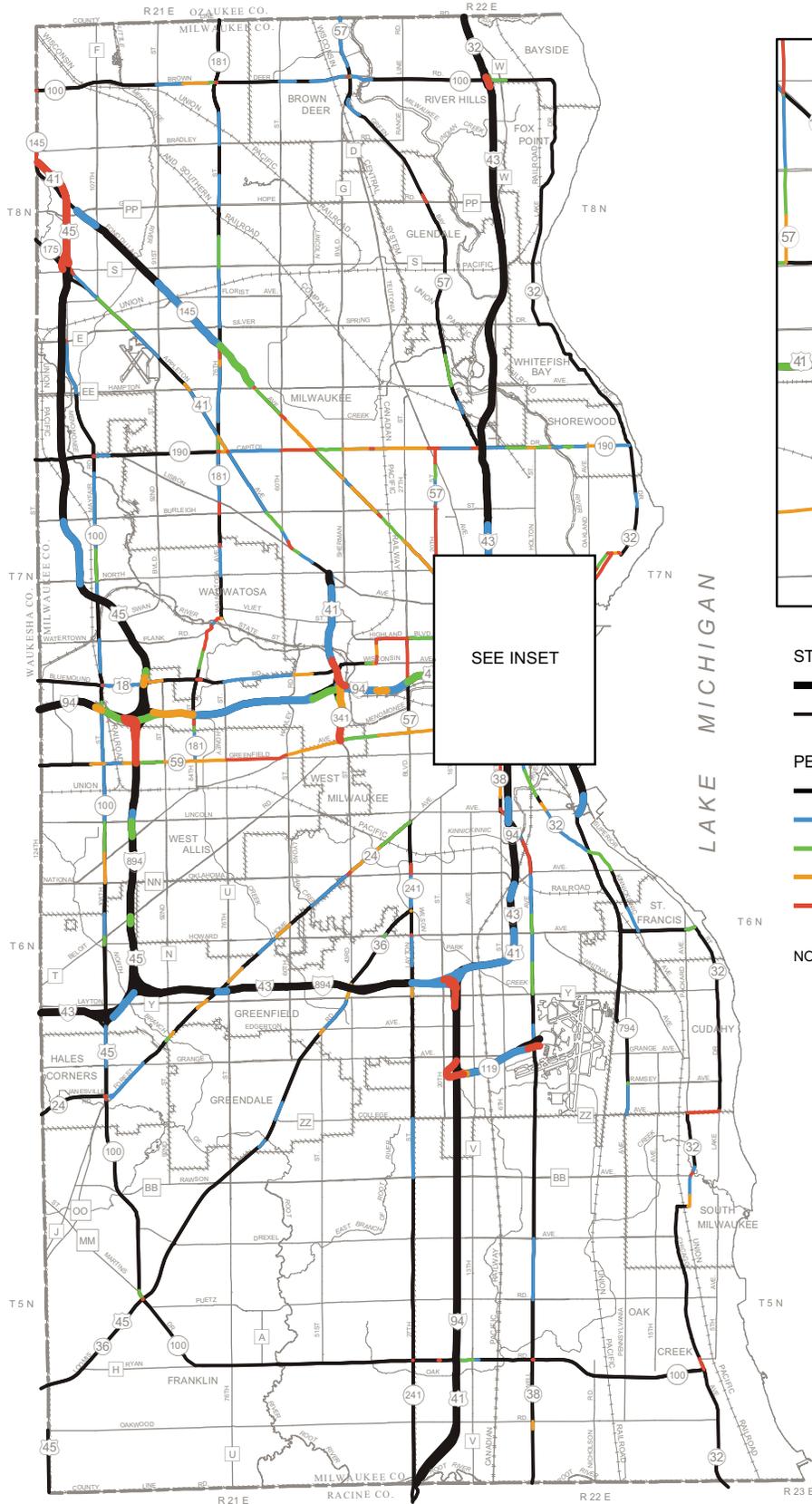
3. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.



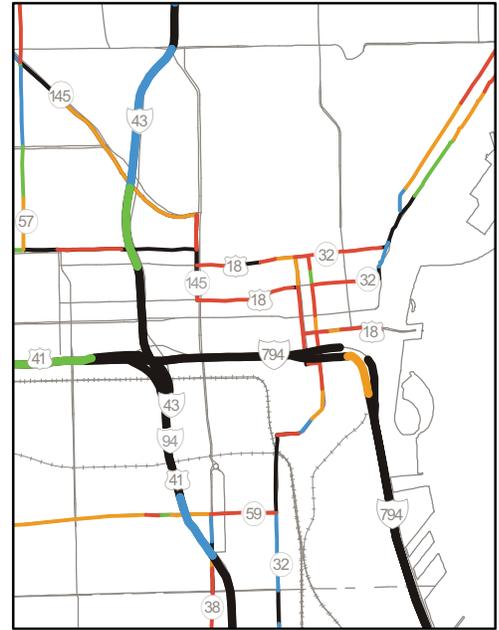
Source: The Wisconsin Department of Transportation and SEWRPC.

Map 8 (continued)

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN MILWAUKEE COUNTY: 2005-2009



INSET



STATE TRUNK HIGHWAY

- FREEWAY
- SURFACE ARTERIAL

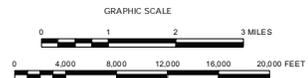
PERCENT OF COUNTYWIDE AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- 100 PERCENT TO 200 PERCENT ABOVE
- MORE THAN 200 PERCENT ABOVE

NOTES: 1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN MILWAUKEE COUNTY FROM 2005 THROUGH 2009 WAS 160.1 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 438.5 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.

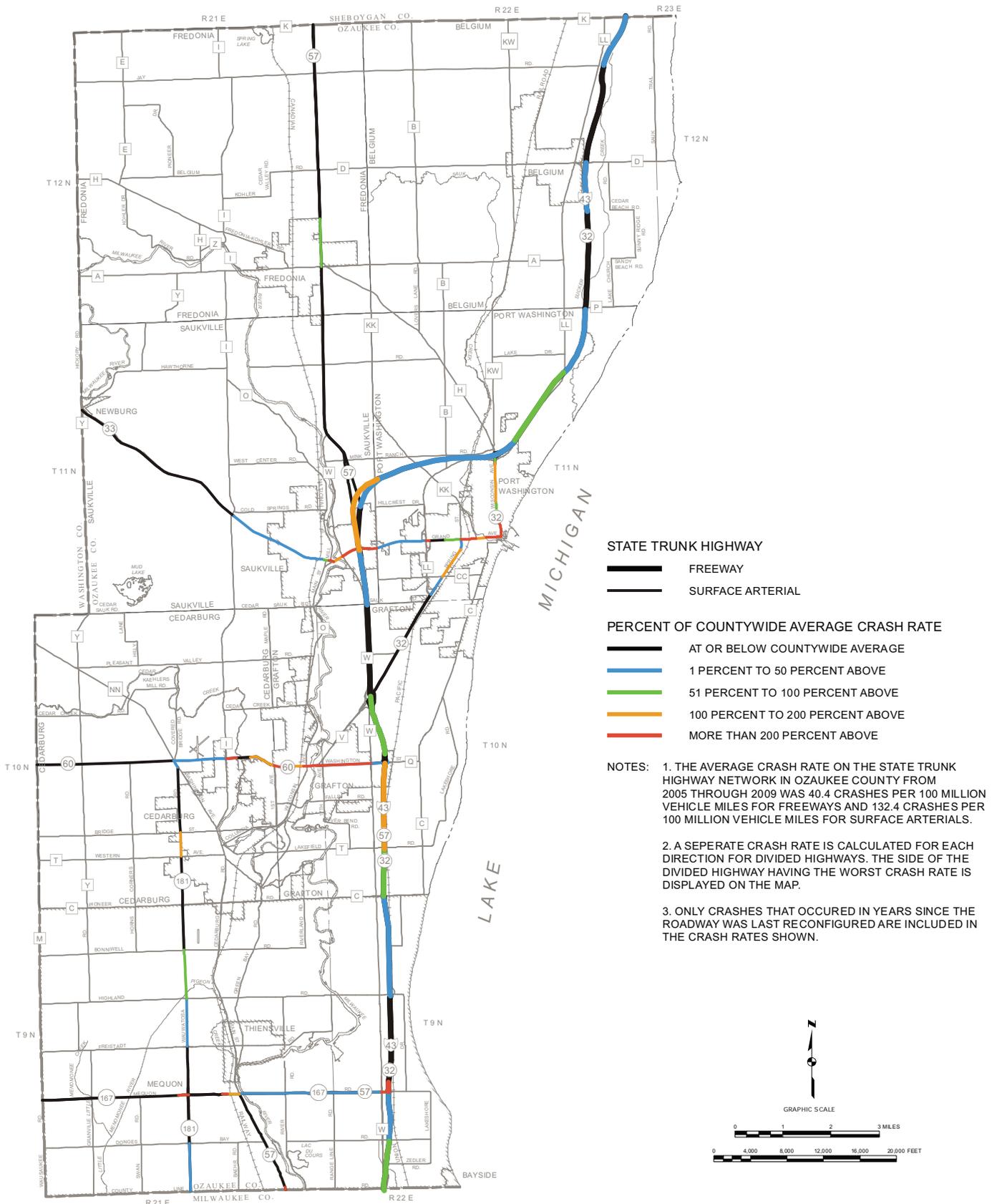
2. A SEPERATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.

3. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.



Map 8 (continued)

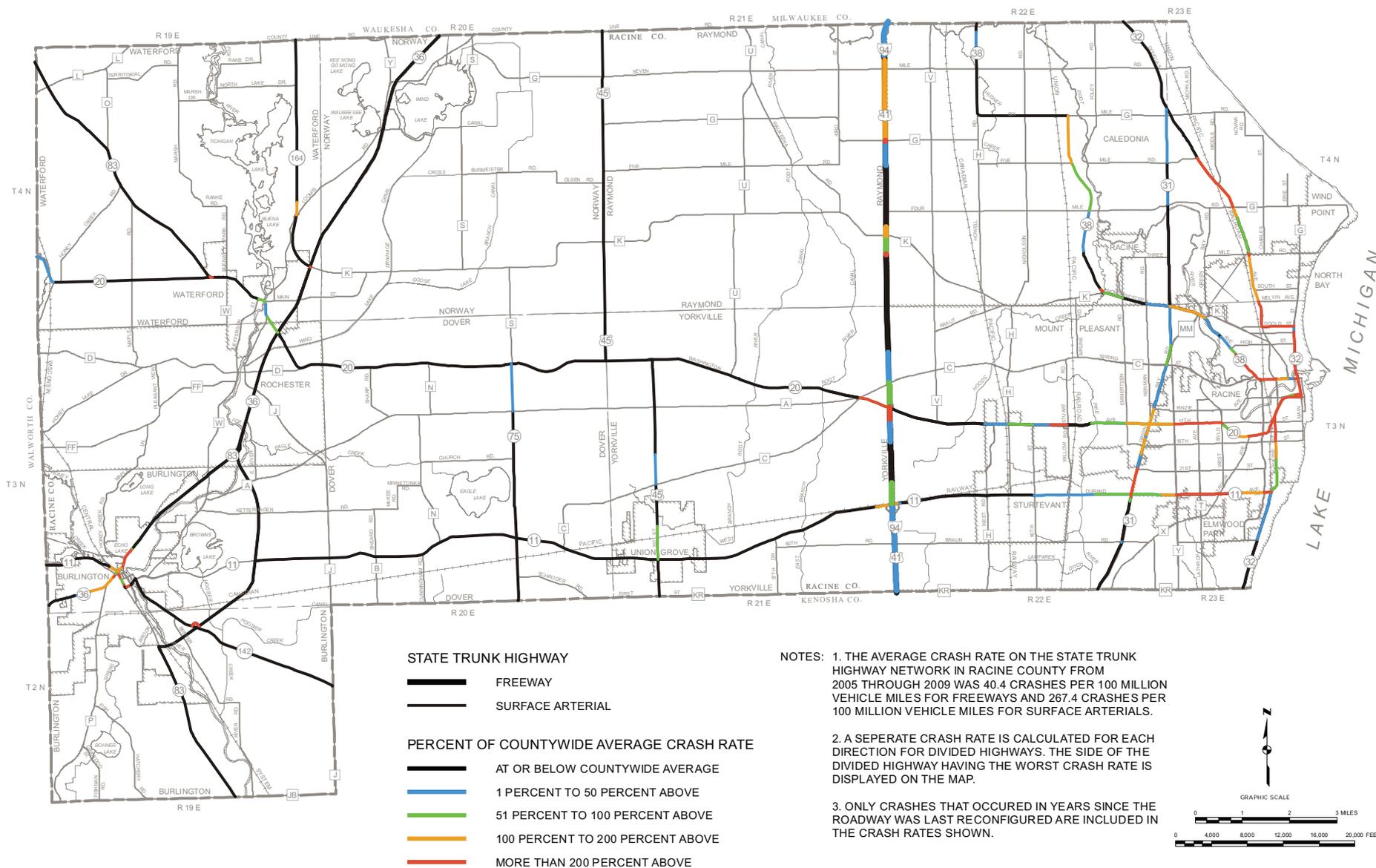
AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN OZAUKEE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 8 (continued)

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN RACINE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 8 (continued)

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN WALWORTH COUNTY: 2005-2009



STATE TRUNK HIGHWAY

- FREEWAY
- SURFACE ARTERIAL

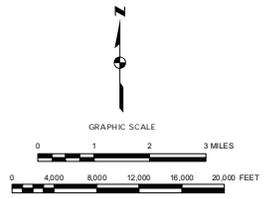
PERCENT OF COUNTYWIDE AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- 100 PERCENT TO 200 PERCENT ABOVE
- MORE THAN 200 PERCENT ABOVE

NOTES: 1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN WALWORTH COUNTY FROM 2005 THROUGH 2009 WAS 44.4 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 141.3 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.

2. A SEPARATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.

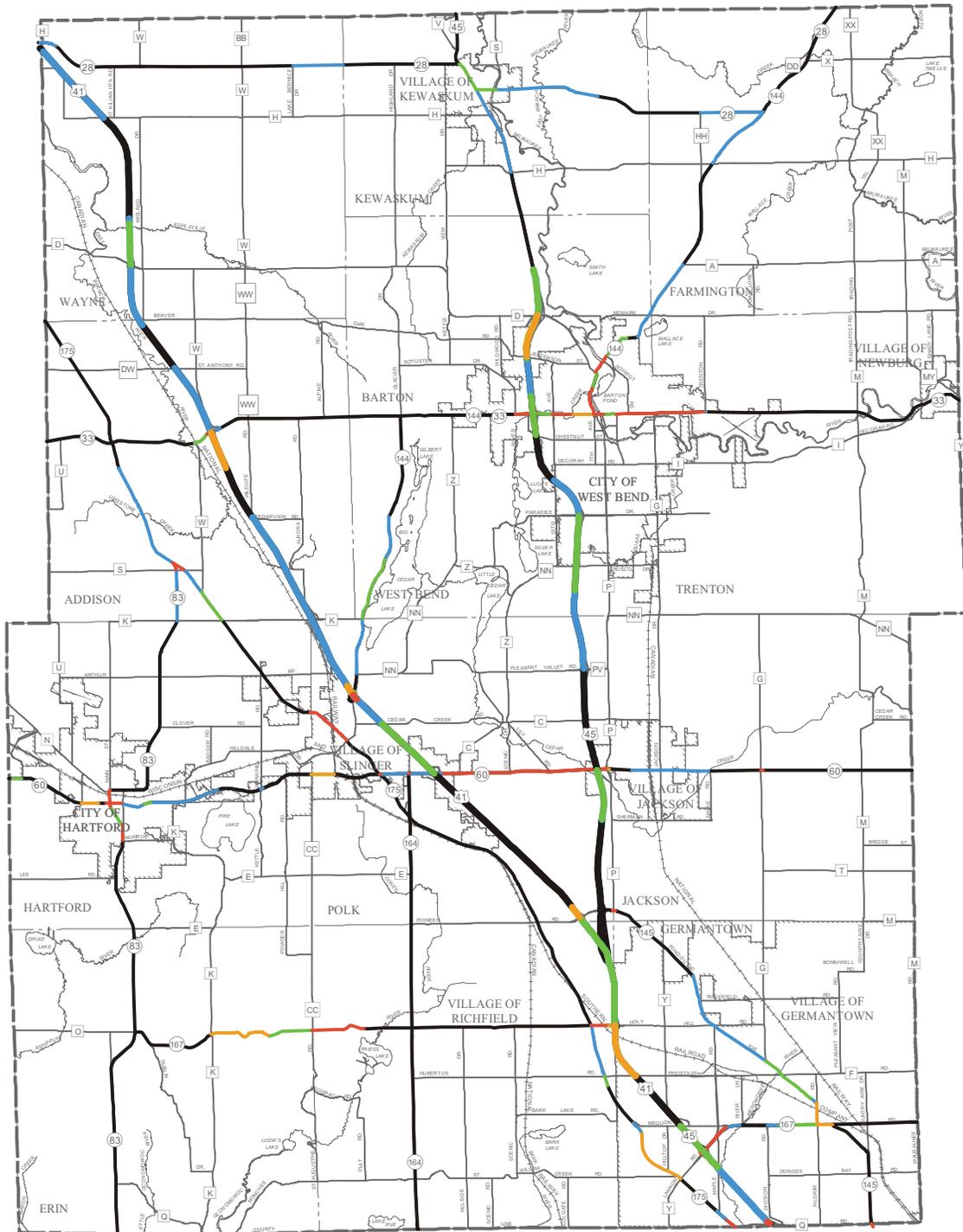
3. ONLY CRASHES THAT OCCURRED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 8 (continued)

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN WASHINGTON COUNTY: 2005-2009



STATE TRUNK HIGHWAY

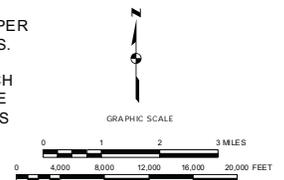
- FREEWAY
- SURFACE ARTERIAL

PERCENT OF COUNTYWIDE AVERAGE CRASH RATE

- AT OR BELOW COUNTYWIDE AVERAGE
- 1 PERCENT TO 50 PERCENT ABOVE
- 51 PERCENT TO 100 PERCENT ABOVE
- 100 PERCENT TO 200 PERCENT ABOVE
- MORE THAN 200 PERCENT ABOVE

NOTES:

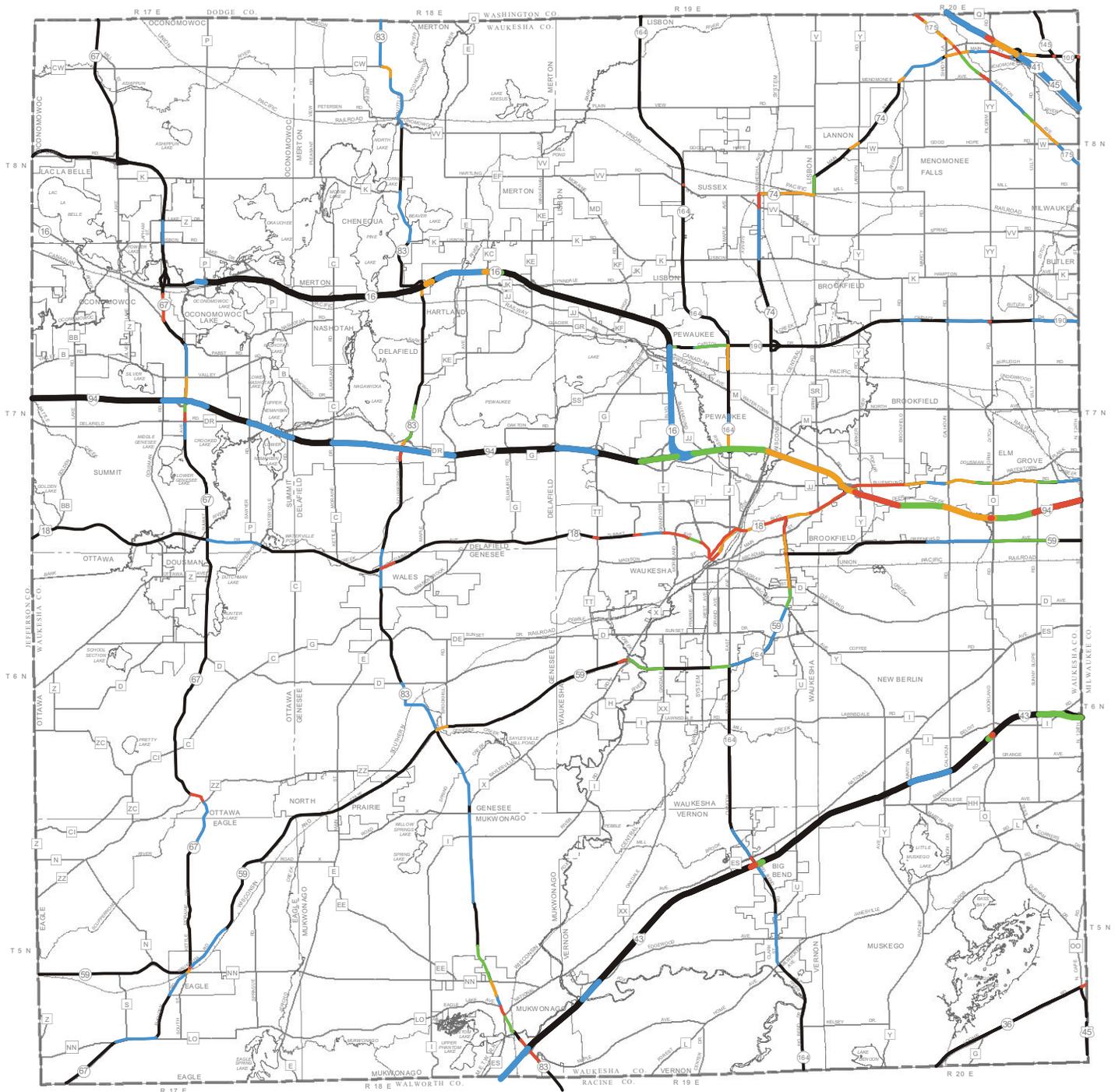
1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN WASHINGTON COUNTY FROM 2005 THROUGH 2009 WAS 45.8 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 222.8 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.
2. A SEPERATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.
3. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 8 (continued)

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN WAUKESHA COUNTY: 2005-2009



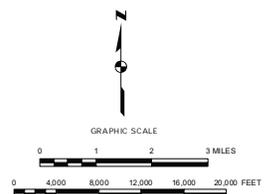
STATE TRUNK HIGHWAY
 ——— FREEWAY
 ——— SURFACE ARTERIAL

PERCENT OF COUNTYWIDE AVERAGE CRASH RATE
 ——— AT OR BELOW COUNTYWIDE AVERAGE
 ——— 1 PERCENT TO 50 PERCENT ABOVE
 ——— 51 PERCENT TO 100 PERCENT ABOVE
 ——— 100 PERCENT TO 200 PERCENT ABOVE
 ——— MORE THAN 200 PERCENT ABOVE

NOTES: 1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN WAUKESHA COUNTY FROM 2005 THROUGH 2009 WAS 46.2 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 205.0 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.

2. A SEPARATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.

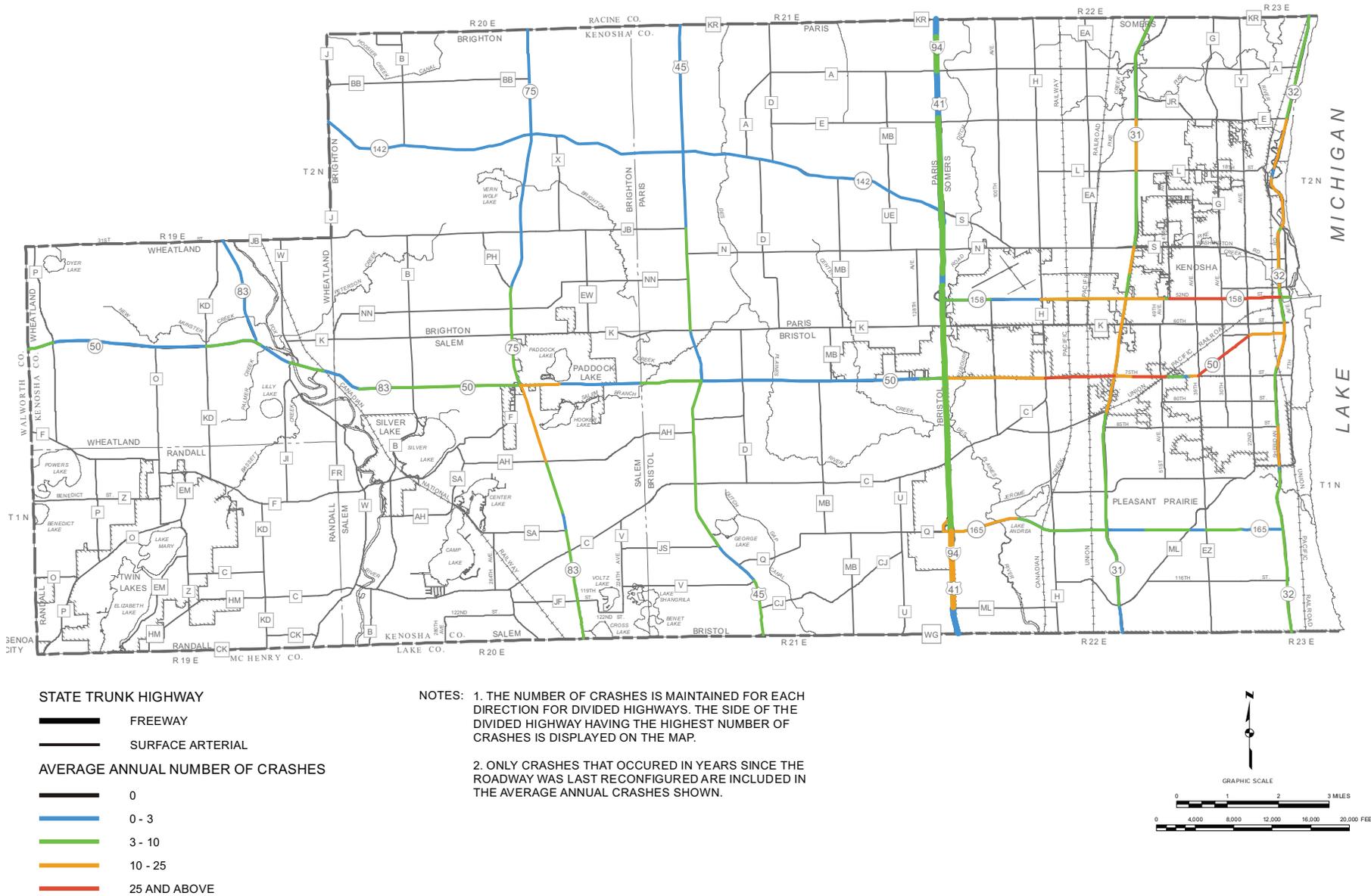
3. ONLY CRASHES THAT OCCURRED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9

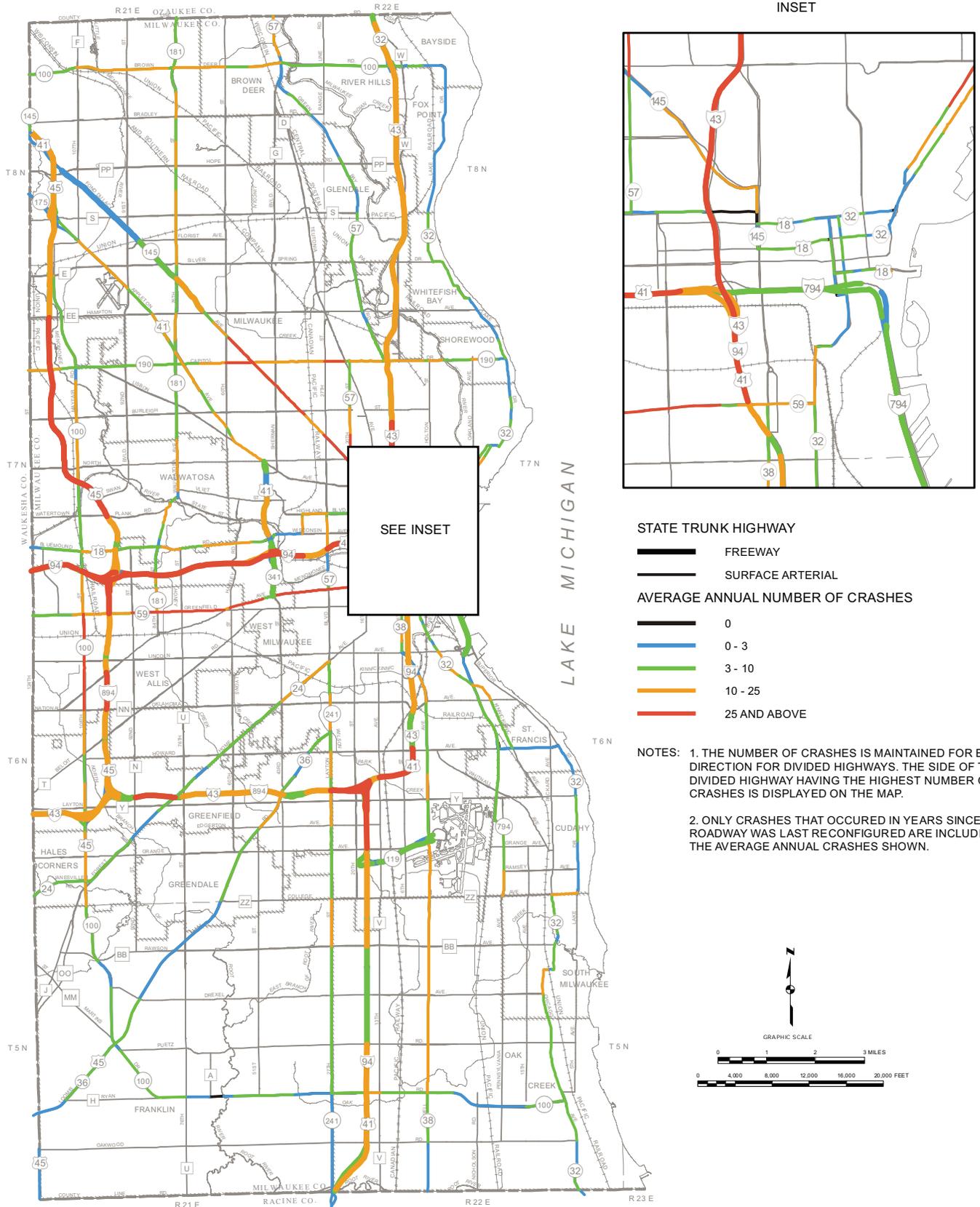
AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN KENOSHA COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9 (continued)

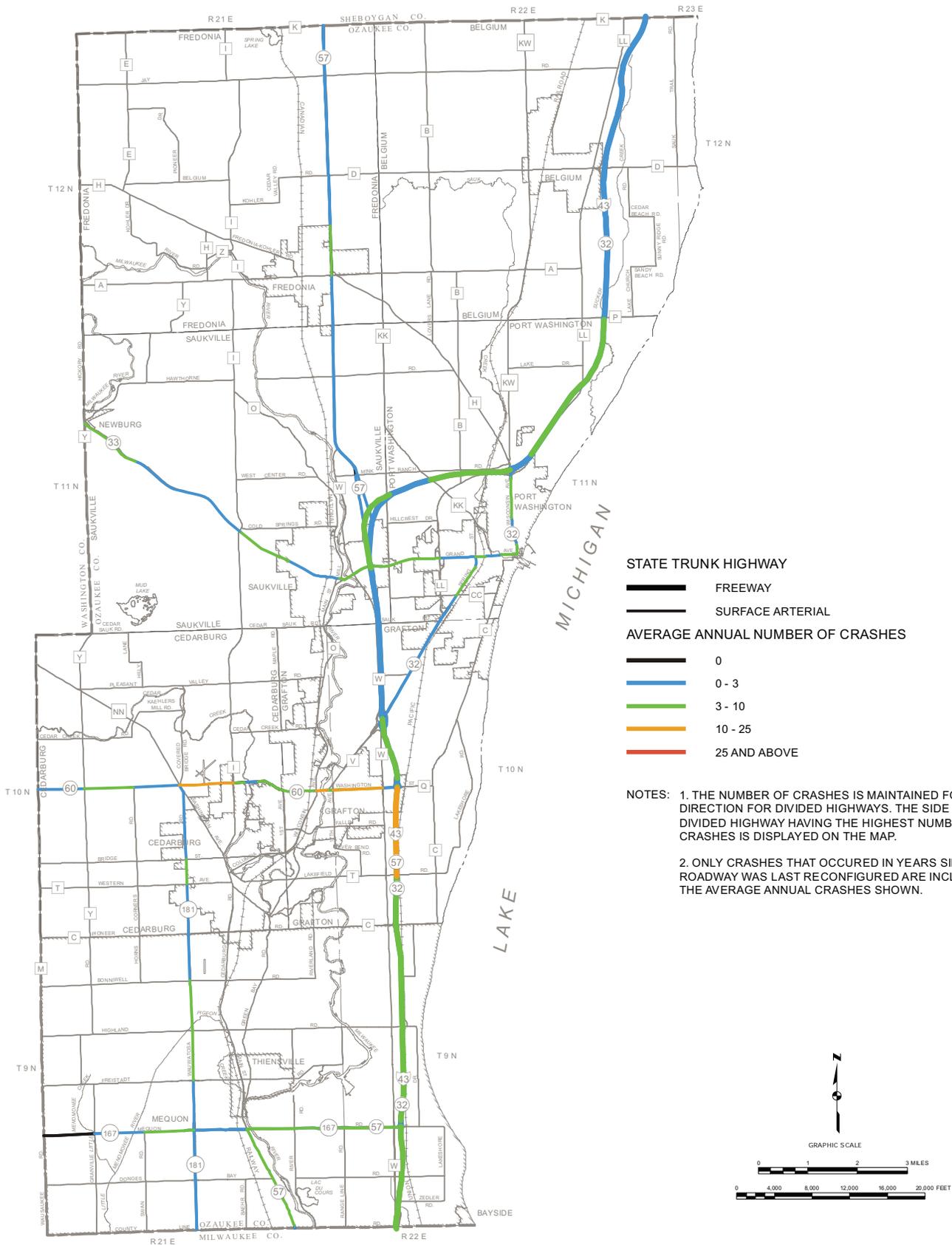
AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN MILWAUKEE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9 (continued)

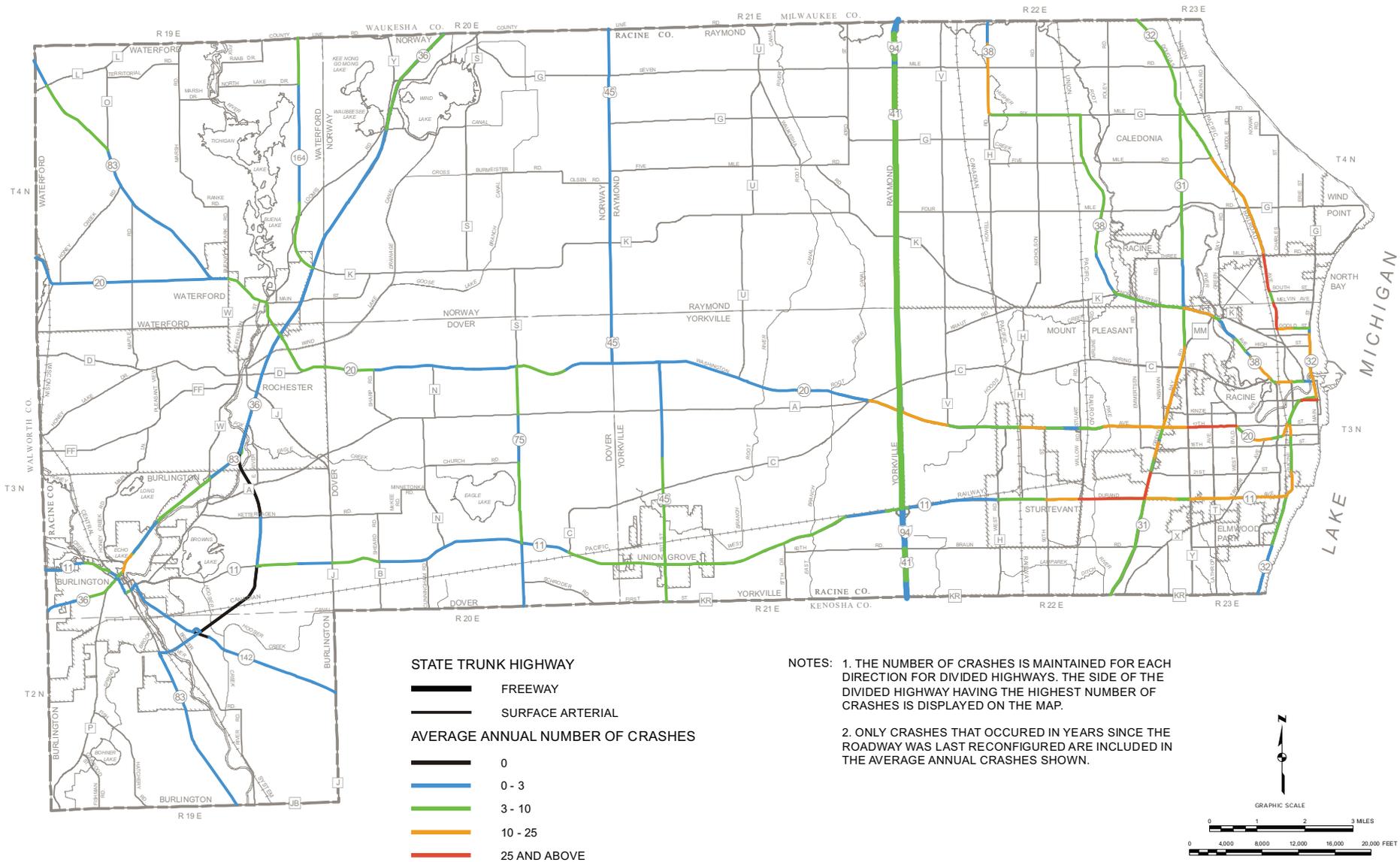
AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN OZAUKEE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN RACINE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN WALWORTH COUNTY: 2005-2009



STATE TRUNK HIGHWAY

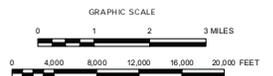
- FREEWAY
- SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES

- 0
- 0 - 3
- 3 - 10
- 10 - 25
- 25 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

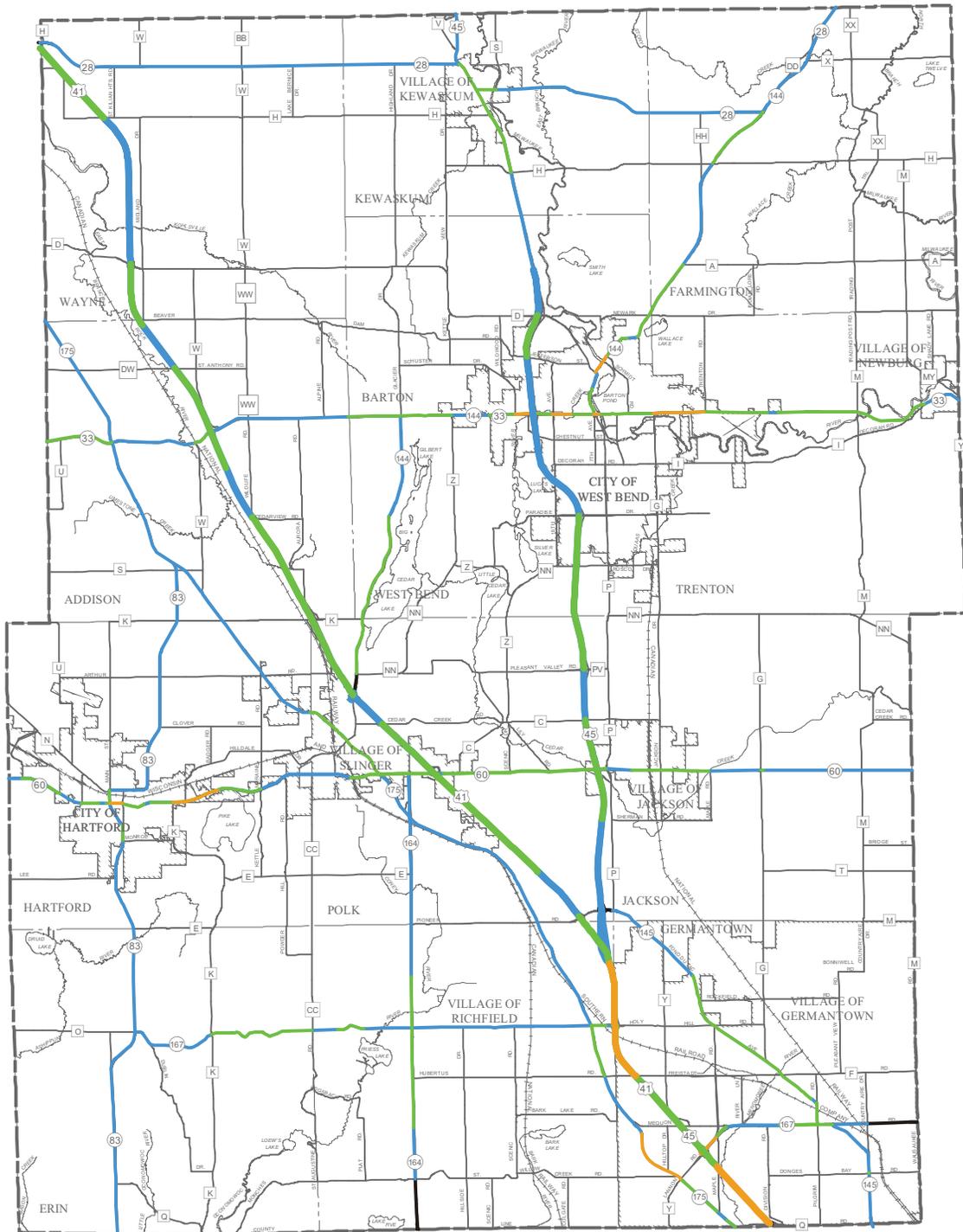
2. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 9 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN WASHINGTON COUNTY: 2005-2009



STATE TRUNK HIGHWAY

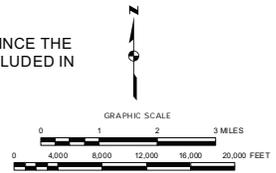
FREEWAY
 SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES

0
 0 - 3
 3 - 10
 10 - 25
 25 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

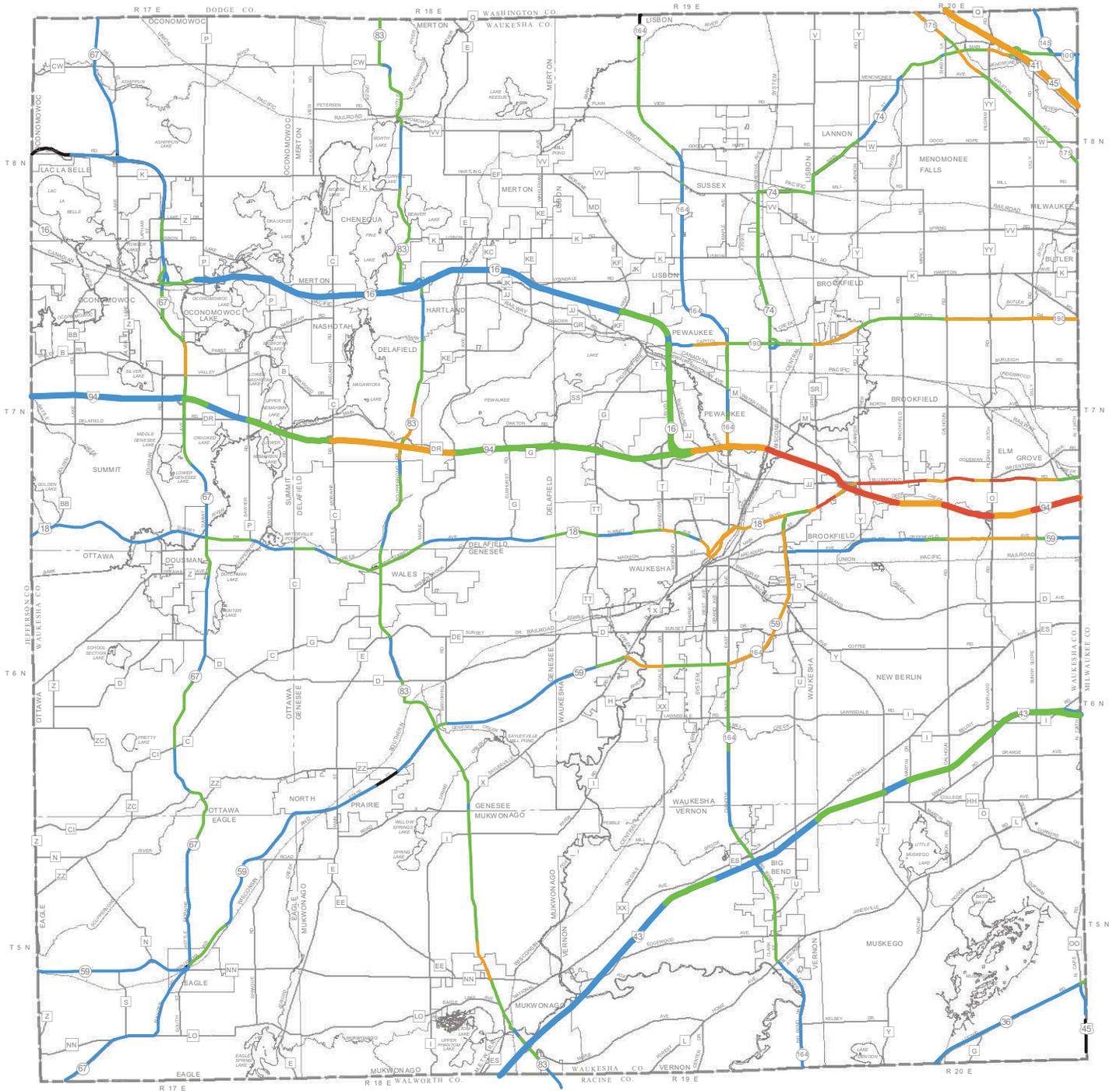
2. ONLY CRASHES THAT OCCURRED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

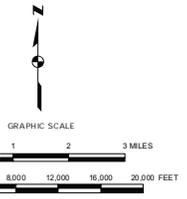
Map 9 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES ON THE STATE TRUNK HIGHWAYS IN WAUKESHA COUNTY: 2005-2009



NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

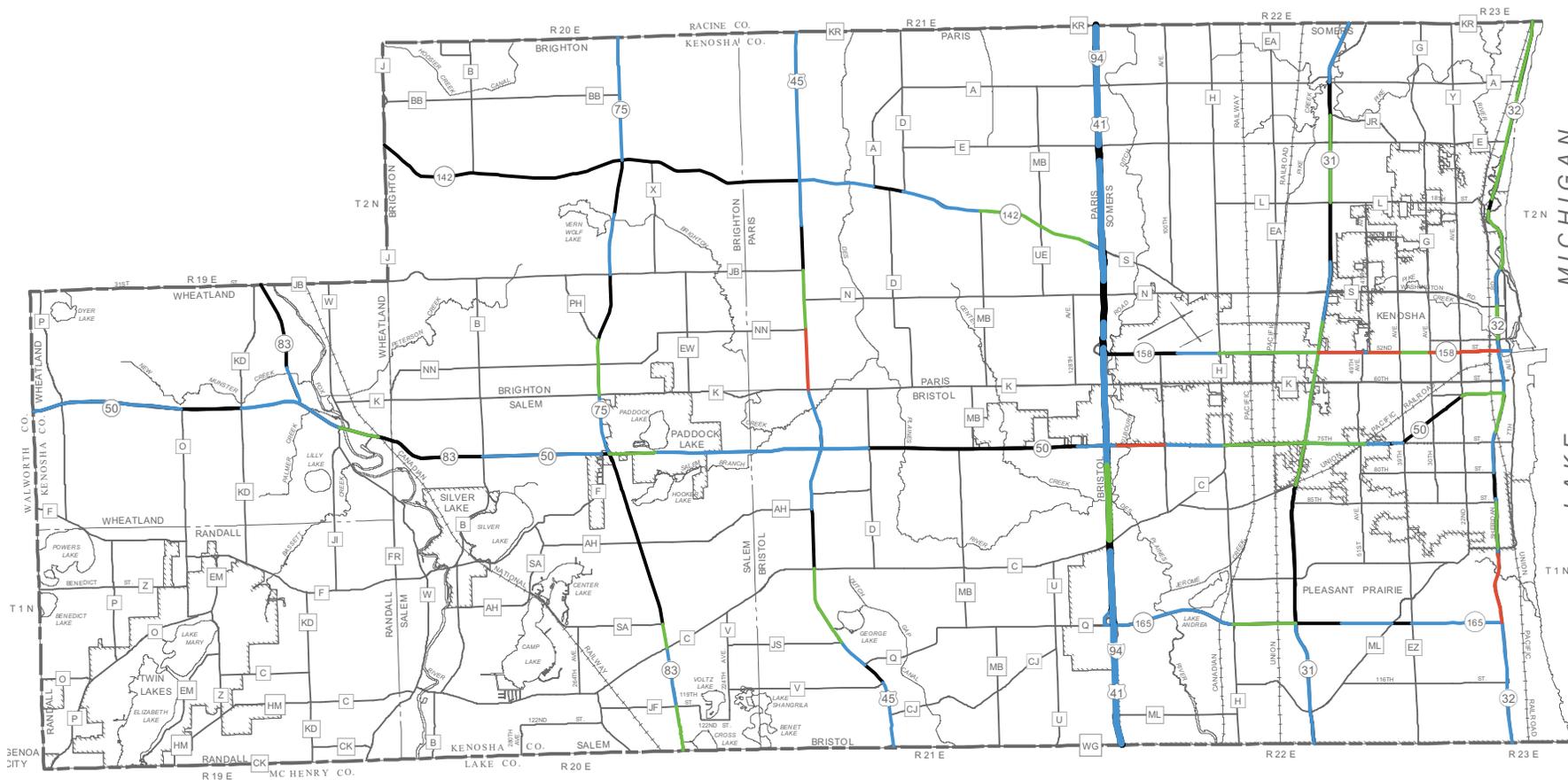
2. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN KENOSHA COUNTY: 2005-2009



STATE TRUNK HIGHWAY

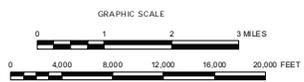
- FREEWAY
- SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES

- 0.00
- 0.00 - 0.50
- 0.50 - 1.00
- 1.00 - 1.20
- 1.20 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST AVERAGE NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

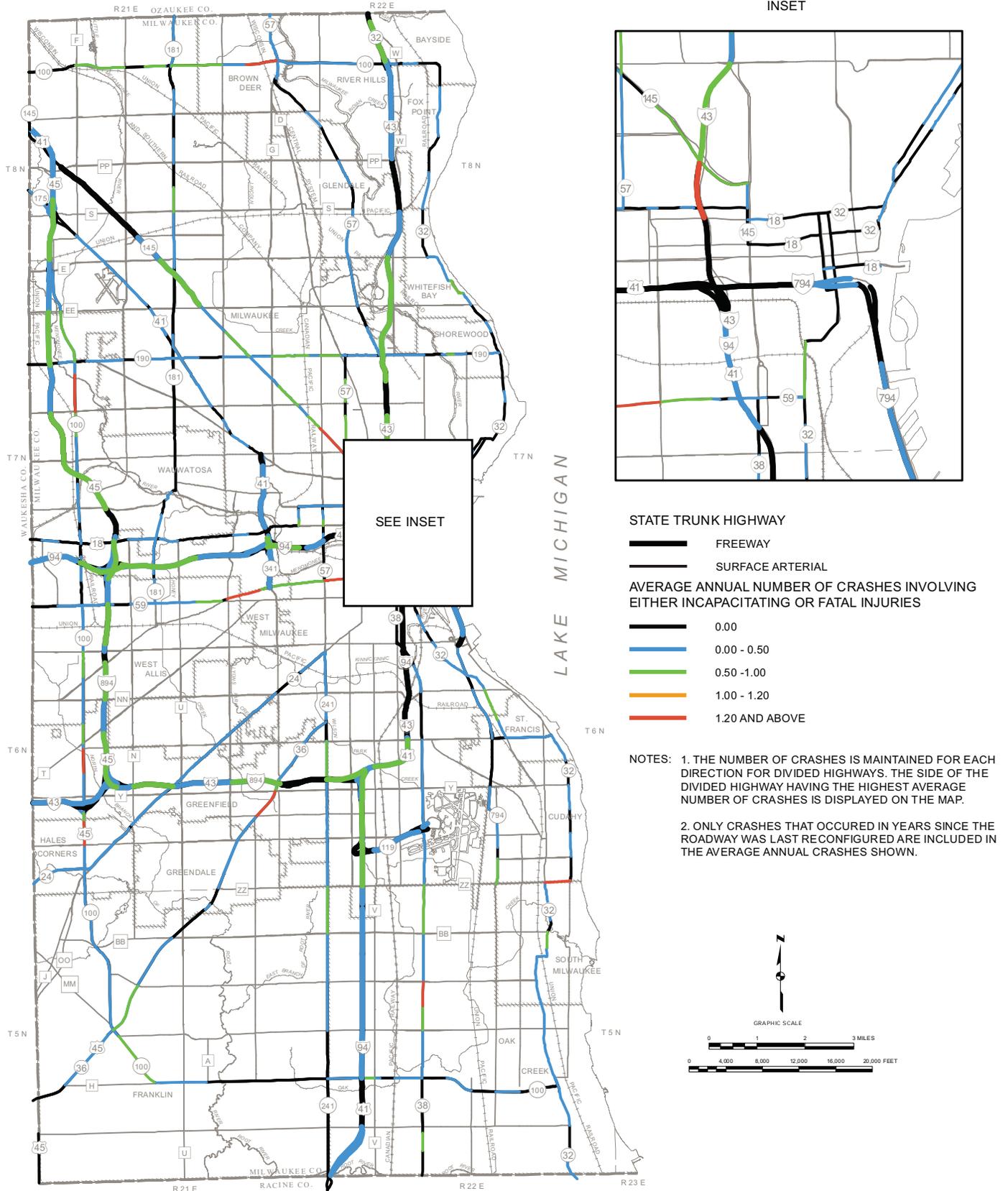
2. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

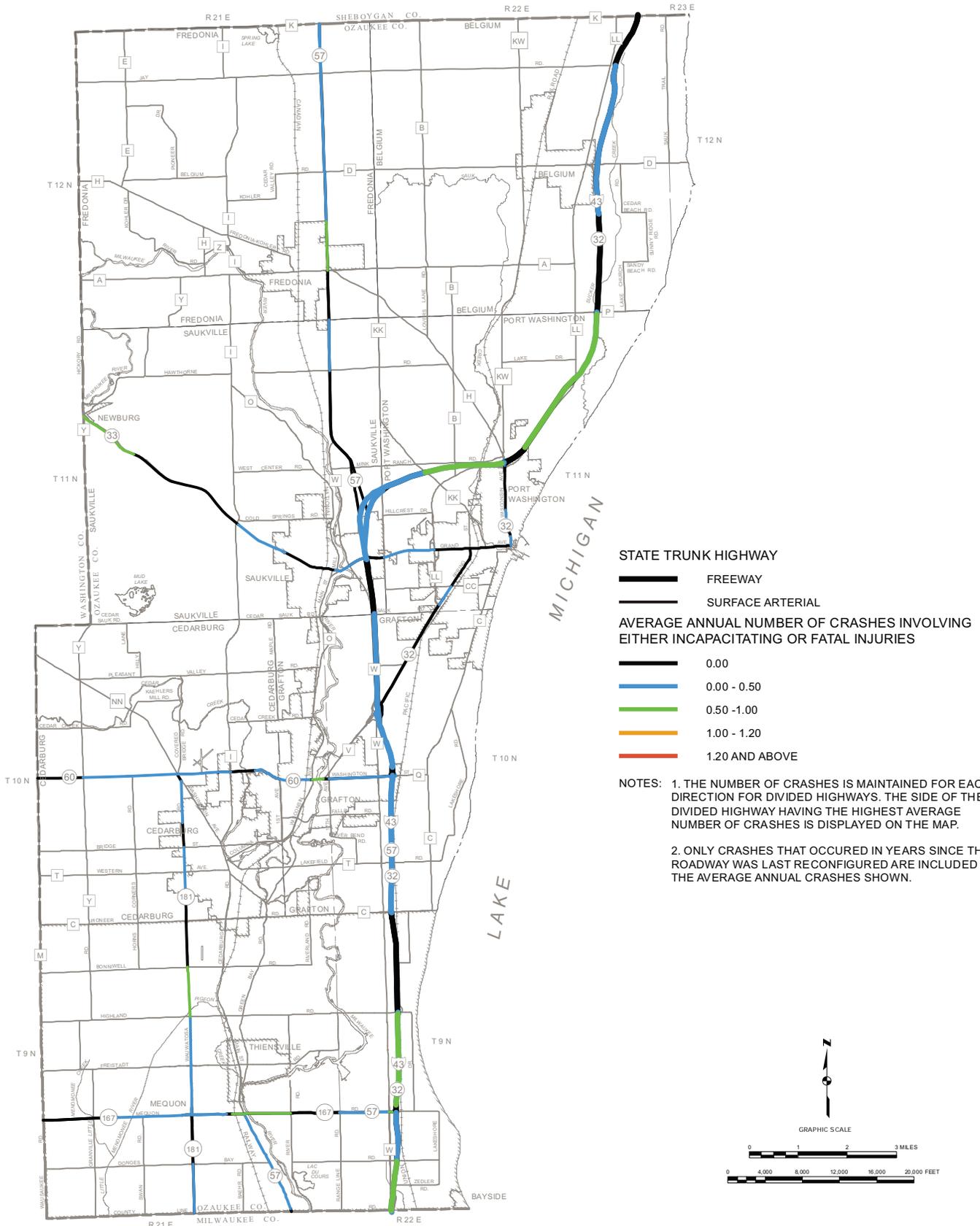
AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN MILWAUKEE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

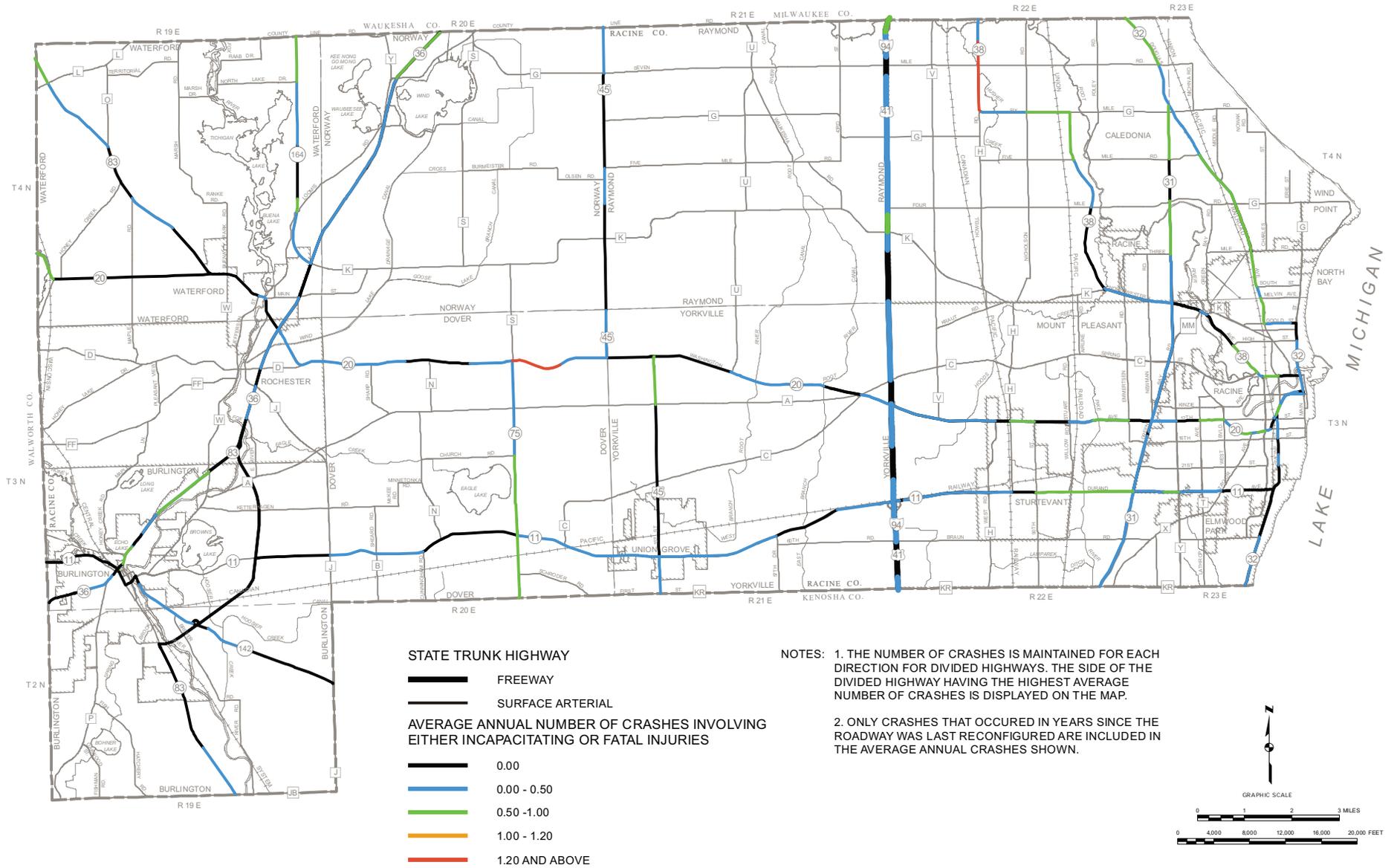
AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN OZAUKEE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

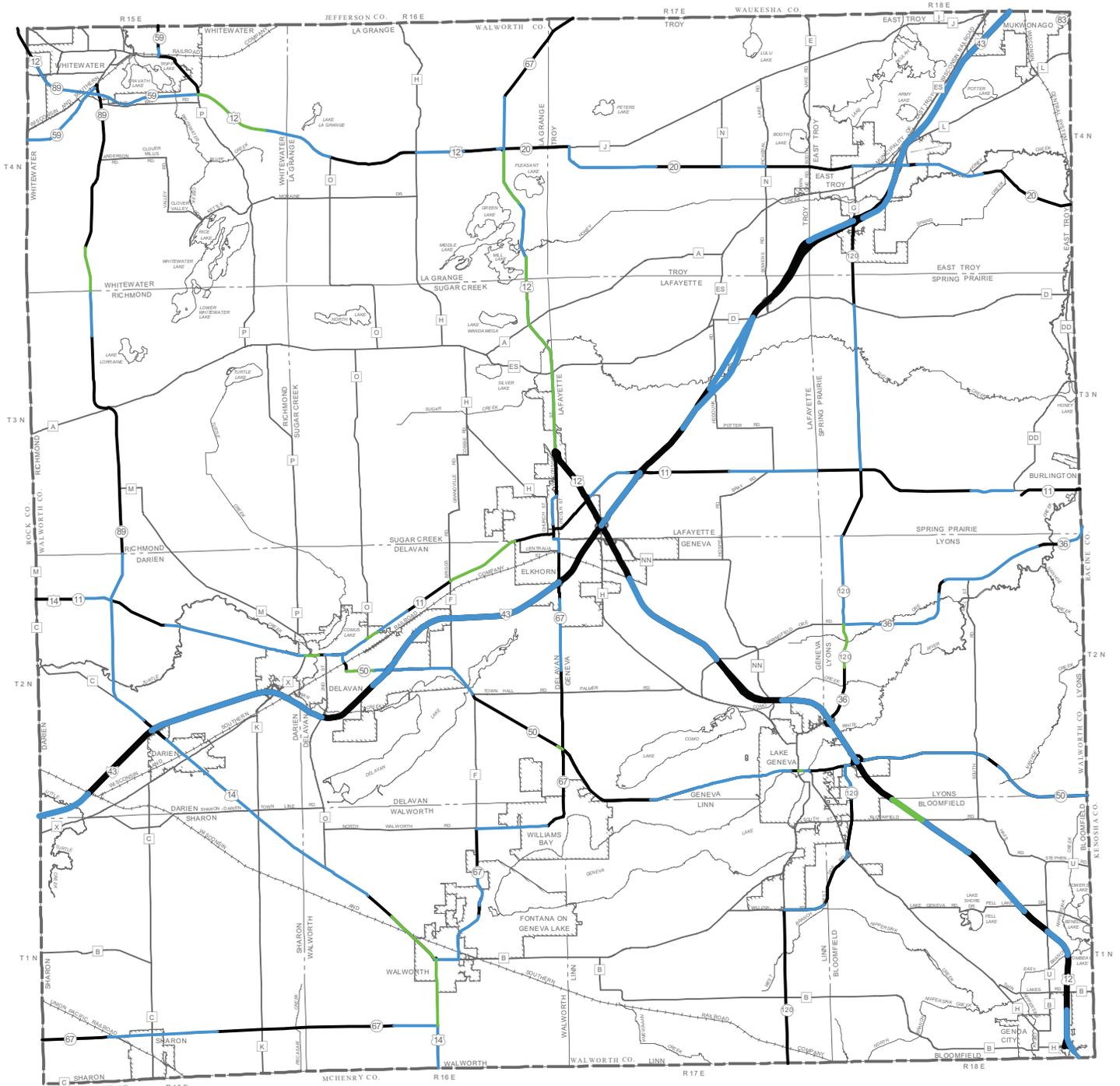
AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN RACINE COUNTY: 2005-2009



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN WALWORTH COUNTY: 2005-2009



STATE TRUNK HIGHWAY

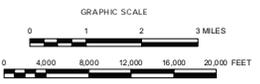
- FREEWAY
- SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES

- 0.00
- 0.00 - 0.50
- 0.50 - 1.00
- 1.00 - 1.20
- 1.20 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST AVERAGE NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

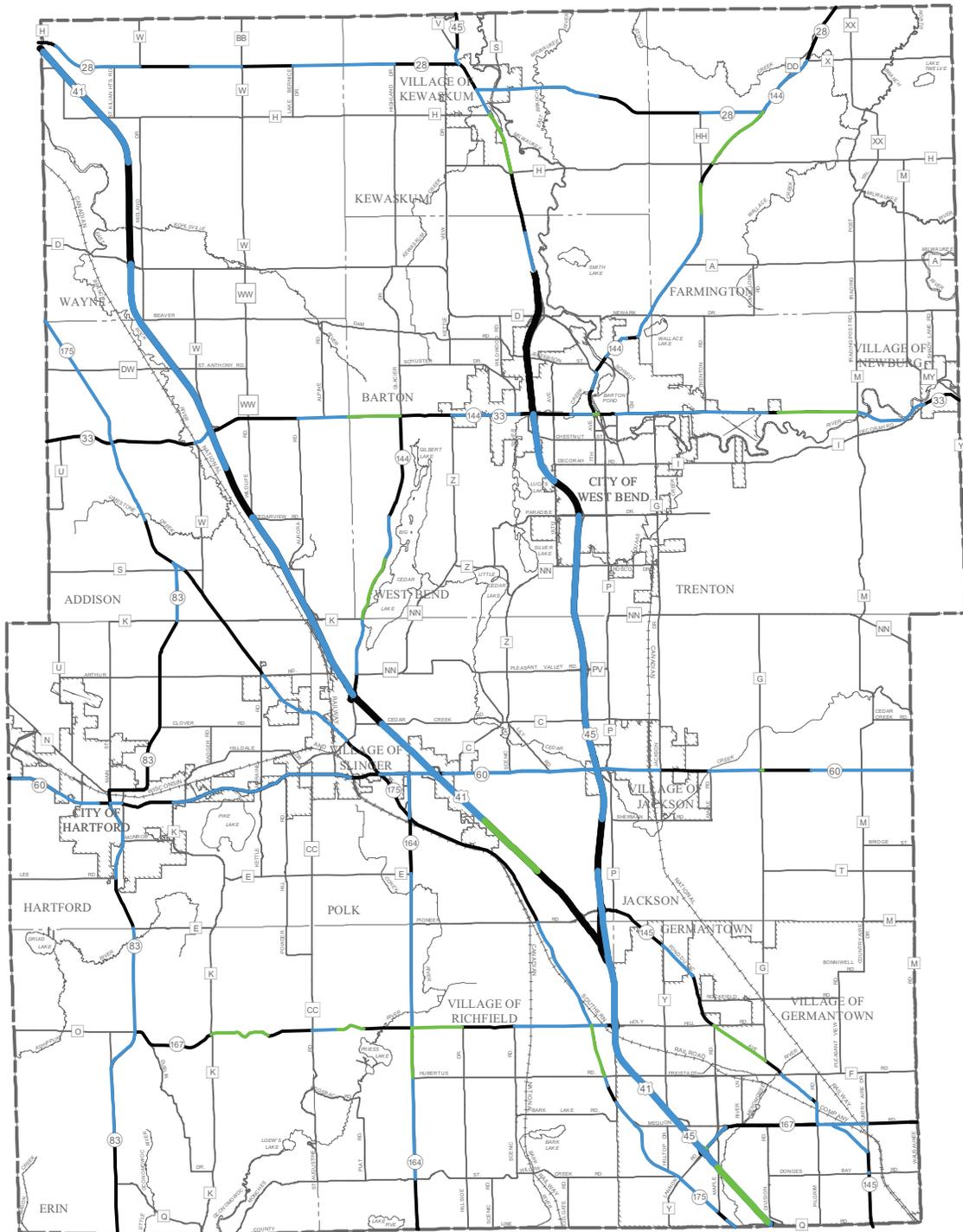
2. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN WASHINGTON COUNTY: 2005-2009



STATE TRUNK HIGHWAY

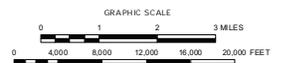
- FREEWAY
- SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES

- 0.00
- 0.00 - 0.50
- 0.50 - 1.00
- 1.00 - 1.20
- 1.20 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST AVERAGE NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

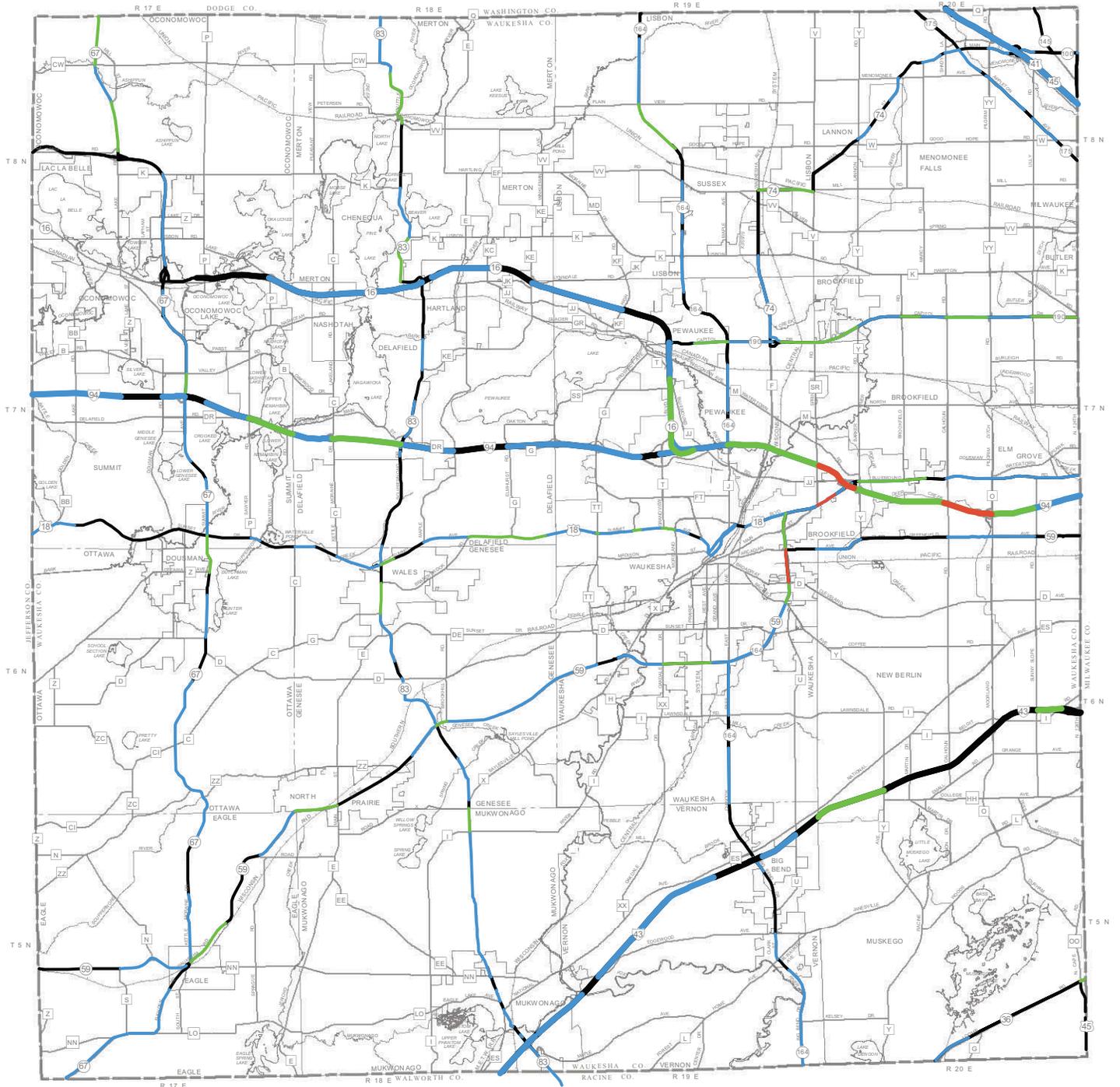
2. ONLY CRASHES THAT OCCURRED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



Source: The Wisconsin Department of Transportation and SEWRPC.

Map 10 (continued)

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES ON THE STATE TRUNK HIGHWAYS IN WAUKESHA COUNTY: 2005-2009



STATE TRUNK HIGHWAY

- FREEWAY
- SURFACE ARTERIAL

AVERAGE ANNUAL NUMBER OF CRASHES INVOLVING EITHER INCAPACITATING OR FATAL INJURIES

- 0.00
- 0.00 - 0.50
- 0.50 - 1.00
- 1.00 - 1.20
- 1.20 AND ABOVE

NOTES: 1. THE NUMBER OF CRASHES IS MAINTAINED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE HIGHEST AVERAGE NUMBER OF CRASHES IS DISPLAYED ON THE MAP.

2. ONLY CRASHES THAT OCCURED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE AVERAGE ANNUAL CRASHES SHOWN.



GRAPHIC SCALE



Source: The Wisconsin Department of Transportation and SEWRPC.

Table 8

**LOCATIONS IN THE SOUTHEASTERN WISCONSIN
REGION AMONG THE FIVE PERCENT MOST SEVERE
TRAFFIC SAFETY PROBLEMS IN THE STATE OF WISCONSIN**

- State Trunk Highway Locations (Segments and Intersections)
 - USH 45 at CTH K in Kenosha County
 - STH 20 at CTH H in Racine County

- Local Trunk Highway Locations (Intersections)
 - Milwaukee County
 - Brown Street and 27th Street in the City of Milwaukee
 - Holton Street and Locust Street in the City of Milwaukee
 - Locust Street and 35th Street in the City of Milwaukee
 - Locust Street and Sherman Boulevard in the City of Milwaukee
 - Kenosha County
 - 22nd Avenue and Washington Road in the City of Kenosha

Source: SEWRPC.

Table 9

COMPARISON OF TRANSIT CRASHES AND PASSENGER INJURIES: 2006, 2007, AND 2008

Characteristic	2006	2007	2008
Crashes ^a	621	609	726
Crashes ^a per 100,000,000 Revenue Miles.....	3,728	3,720	4,514
Passenger Injuries	477	470	449
Passenger Injuries per 100,000,000 Revenue Miles.....	2,864	2,871	2,792

^aIncludes crashes resulting in property damage.

Source: SEWRPC.

the slight increase in the rate of passenger injuries from 2,864 passenger injuries per 100,000,000 revenue miles in 2006 to 2,871 passenger injuries per 100,000,000 revenue miles in 2007, the rate decreased in 2008 to 2,792 passenger injuries per 100,000,000 revenue miles, or a decrease of about 3 percent between 2006 and 2008.

DEVELOPMENT, EVALUATION, AND RECOMMENDATION OF ACTIONS TO ADDRESS EXISTING AND PROBABLE FUTURE TRAFFIC CONGESTION

The development, evaluation, and recommendation of actions to address existing and probable future traffic congestion is explicitly considered in the preparation of the regional transportation plan, which was last completed in 2006, and undergoes major reevaluation on a ten year cycle. During the preparation of the year 2035 regional transportation system plan for Southeastern Wisconsin, which was completed in 2006, this effort was documented in Chapter VIII, “Regional Transportation Plan Development and Evaluation,” and Chapter IX, “Recommended Regional Transportation Plan,” of SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*. The development of the year 2035 regional transportation plan built upon the year 2020 regional transportation plan, recognizing the cyclical nature of the regional transportation planning and implementation process. The development of the year 2035 regional transportation plan explicitly considered the record of implementation of the year 2020 plan – approximately 15 to 20 percent of the year 2020 plan had been implemented by the year 2005 with respect to public transit, bicycle and pedestrian, and arterial street and highway systems elements. The development of the regional transportation plan was also based upon extensive inventories and analyses of existing conditions, and trends in Southeastern Wisconsin travel habits and patterns, and transportation system facility supply and use, including traffic congestion.

The year 2035 regional transportation system plan was explicitly designed to serve, and to be consistent with, the year 2035 regional land use plan. All future needs for transit, street and highway, and other transportation improvements considered in the regional transportation planning process were derived from the future growth proposed in, and the projected travel derived from, the regional land use plan. The year 2035 regional land use plan recommends a more efficient future regional land use pattern, including the preservation of the Region’s primary environmental corridors, secondary environmental corridors, and isolated natural resource areas in essentially natural, open uses, continuing to account for about 23 percent of the area of the Region. These areas encompass the best remaining features of the Region’s natural landscape—lakes, rivers, streams, and associated shorelands and floodlands, wetlands, woodlands, prairie remnants, wildlife habitat, rugged terrain and steep slopes, unique landforms and geological formations, existing and potential outdoor recreation sites, and scenic areas and vistas. The regional land use plan also

recommends the preservation of the prime, or most productive farmland in the Region, principally the farmland with soils considered to be most suitable for agriculture is farmland covered by agricultural capability Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service. Farmland with Class I and Class II soils accounted for about 36 percent of the land area in the Region and 75 percent of all farmland in Southeastern Wisconsin in the year 2000. The regional land use plan also recommends that new urban development should be accommodated within and around existing urban centers as infill development, through redevelopment, and through the orderly expansion of planned urban service areas on lands proximate to these centers. Particular emphasis is placed on stabilizing and revitalizing the central cities of Milwaukee, Racine, and Kenosha. The plan further proposes that the forecast increment in population and residential land be allocated to these urban centers and their planned urban growth/sanitary sewer service areas predominantly at medium and high densities—88 percent of all new housing units—in residential neighborhoods and in more mixed use settings. The plan proposes that residential neighborhoods be designed as cohesive units, properly related to the larger community of which they are a part, and served by an interconnected internal street, bicycle-way, and pedestrian system and by a neighborhood school, park, and shopping area. The regional plan also envisions residential development in mixed-use settings including dwellings above the ground floor of commercial uses; residential structures intermixed with, or located in proximity to compatible commercial, institutional, or civic uses; and residential development integrated into, or located in proximity to, major employment and activity centers. Lastly, the regional plan envisions a range of commercial and industrial areas. The largest commercial and industrial areas, in terms of employment levels, are identified as major economic activity centers. These are defined as areas containing a concentration of commercial and/or industrial land having at least 3,500 total jobs or 2,000 retail jobs. Sixty such centers would accommodate about 50 percent of all jobs in the Region in 2035. The plan envisions the continued development and redevelopment of the Region's existing major commercial and industrial centers, and those now under development or redevelopment. The regional land use plan is documented in SEWRPC Planning Report No. 48, *A Regional Land Use Plan for Southeastern Wisconsin: 2035*.

The development of the year 2035 regional transportation system plan began first with consideration of travel demand management, transportation systems management, bicycle and pedestrian, and public transit improvements and expansion. These four elements, along with a more efficient future land use pattern as proposed in the regional land use plan, were considered and developed and quantitatively tested and evaluated with respect to their travel impacts and potential to reduce congestion prior to any consideration given to arterial street and highway system improvement and expansion. The effects on travel of a regional transportation plan alternative including these four combined plan elements and land use (the Transportation Systems Management – TSM - plan alternative) were quantitatively tested and evaluated, and compared to that of a no-build plan which proposed to maintain the existing year 2005 transportation system.

Arterial street and highway system improvement and expansion was then considered to address the residual highway traffic volume and traffic congestion which may not be expected to be alleviated by the plan's other elements of travel demand management, transportation systems management, bicycle and pedestrian actions, and public transit improvement and expansion. A regional transportation plan alternative, which became the final recommended plan, incorporated arterial street and highway system improvement and expansion, as well as travel demand management, transportation systems management, bicycle and pedestrian, and public transit elements, and was compared and contrasted to the TSM plan alternative and to a no-build transportation plan alternative. The results of this evaluation with respect to traffic congestion are shown on Maps 11 and 12 and in Tables 10 and 11. The comprehensive evaluation of these two plan alternatives is fully documented in SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*. The regional transportation plan also recommended operational management and demand management actions to be implemented along with the arterial highway capacity expansion recommendations.

The final recommended regional transportation system plan for Southeastern Wisconsin is documented in SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*, and SEWRPC Memorandum Report No. 197, *Review, Update, and Reaffirmation of the Year 2035 Regional Transportation Plan* (the plan reappraisal completed in 2010), and in summary includes the following recommendations with respect to each of the five plan elements.

Public Transit Element

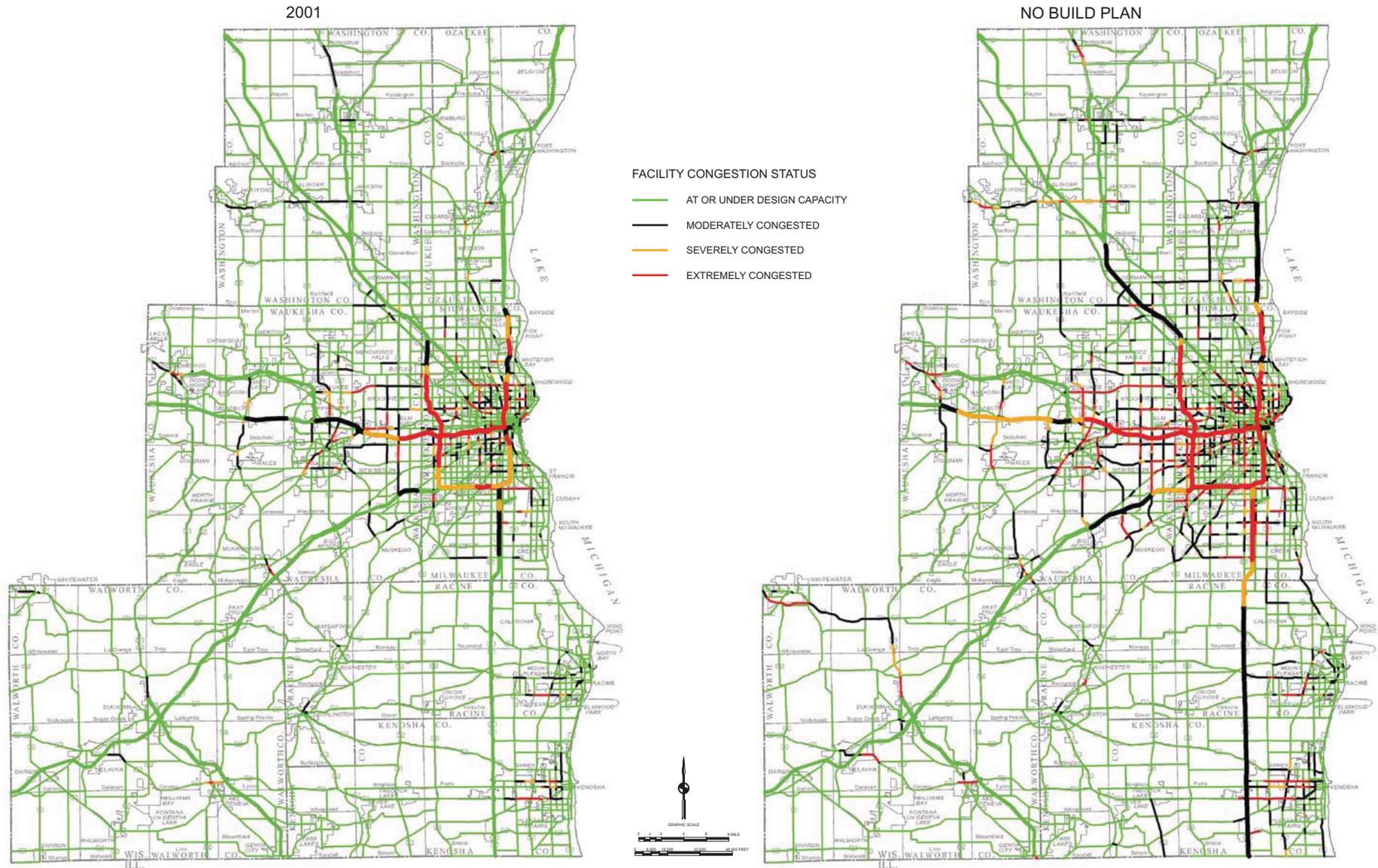
The public transit element of the plan envisions significant improvement and expansion of public transit in Southeastern Wisconsin, including development within the Region of a high-speed rail line, rapid transit and express transit systems, improvement of existing local bus service, and the integration of local bus service with the recommended rapid and express transit services, as shown on Map 13. Altogether, service on the regional transit system would be increased from service levels existing in 2005 by about 100 percent measured in terms of revenue transit vehicle-miles of service provided, from about 69,000 vehicle-miles of service on an average weekday in the year 2005 to 138,000 vehicle-miles of service in the year 2035, as shown in Table 12.

Rapid Transit Service

The recommended rapid transit service would principally consist of buses operating over freeways connecting the Milwaukee central business district, the urbanized areas of the Region, and the urban centers and outlying counties of the Region. Rapid transit bus service would be provided south to Racine, southwest to Mukwonago and East Troy, west to Waukesha and Oconomowoc, northwest to West Bend

Map 11

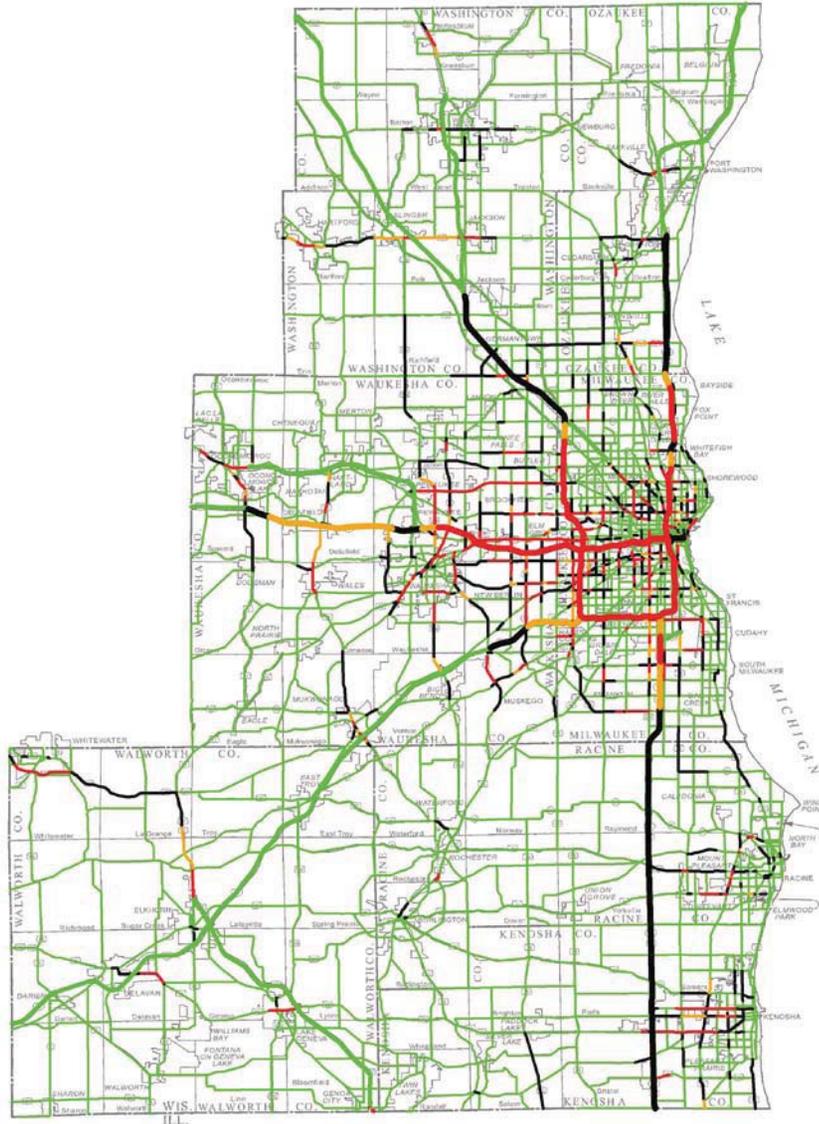
COMPARISON OF EXISTING YEAR 2001 AND FORECAST FUTURE YEAR 2035 AVERAGE WEEKDAY TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION UNDER THE NO-BUILD PLAN, TSM PLAN ALTERNATIVE, AND THE RECOMMENDED PLAN



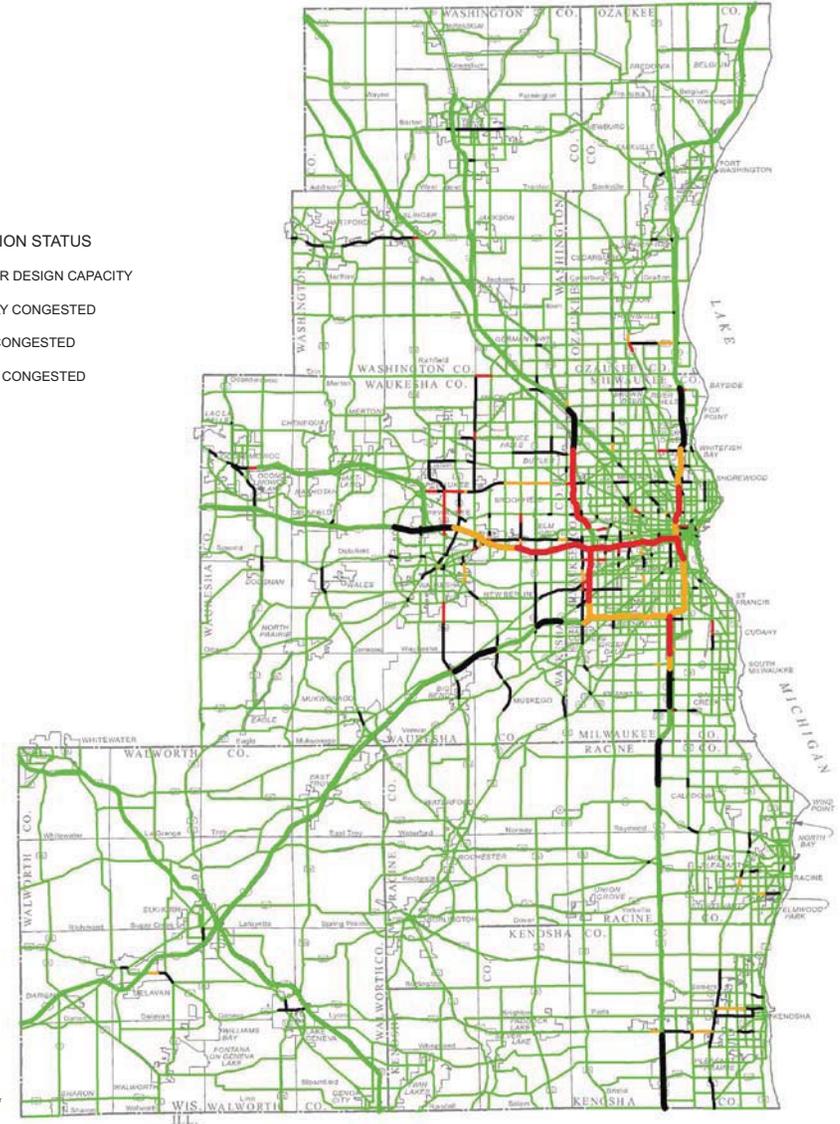
Map 11 (continued)

TSM PLAN ALTERNATIVE

RECOMMENDED PLAN



- FACILITY CONGESTION STATUS
- AT OR UNDER DESIGN CAPACITY
 - MODERATELY CONGESTED
 - SEVERELY CONGESTED
 - EXTREMELY CONGESTED



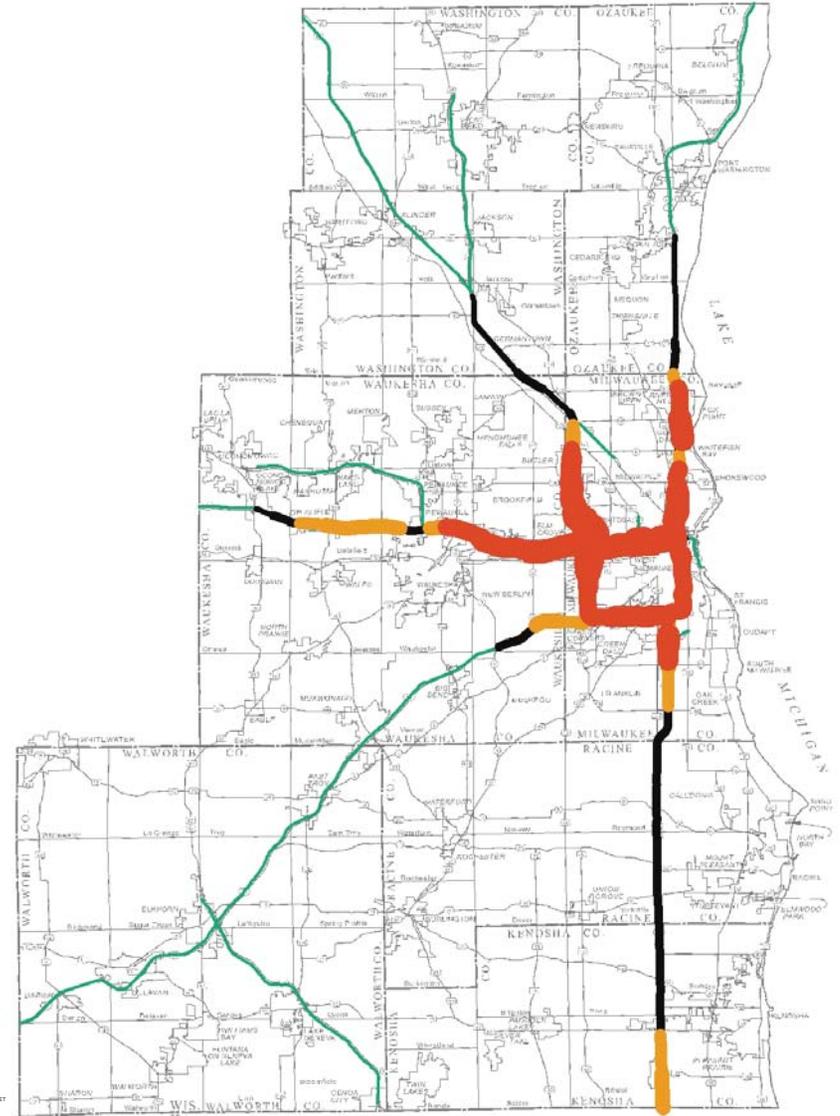
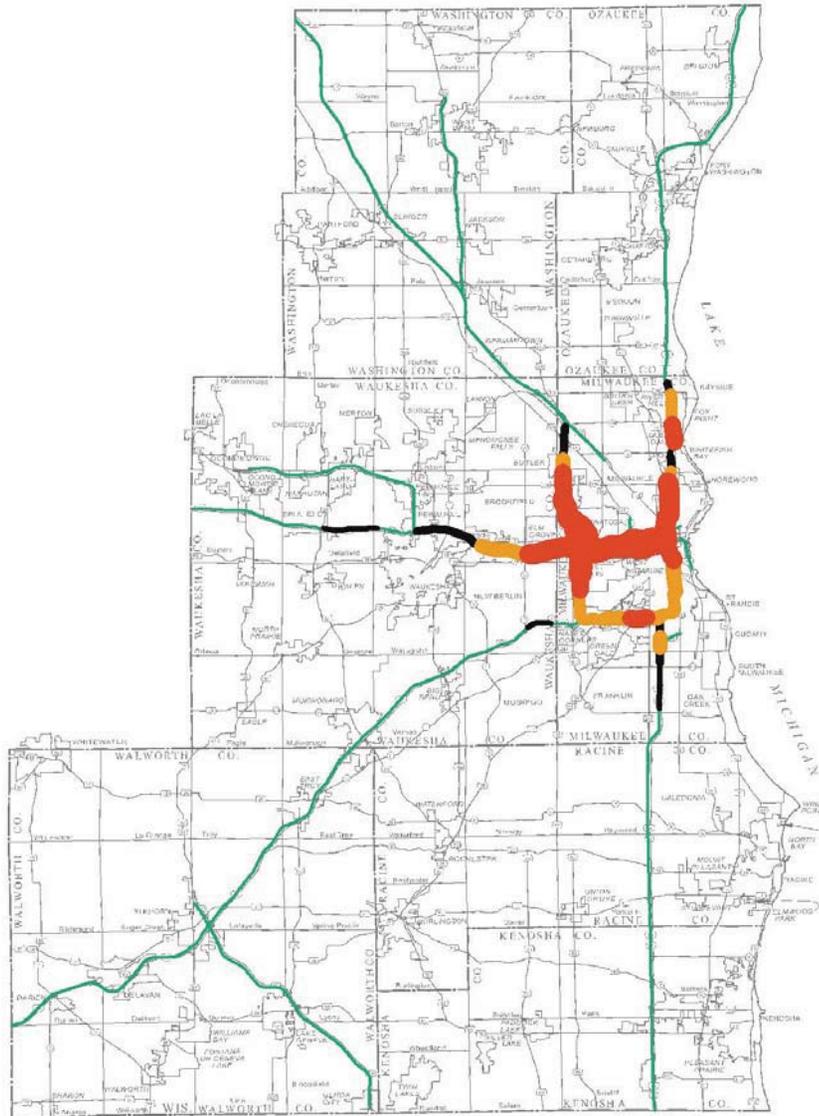
Source: SEWRPC.

Map 12

COMPARISON OF ESTIMATED EXISTING YEAR 2001 AND FORECAST FUTURE YEAR 2035
AVERAGE WEEKDAY TRAFFIC CONGESTION ON THE FREEWAY SYSTEM IN THE REGION

ESTIMATED EXISTING YEAR 2001

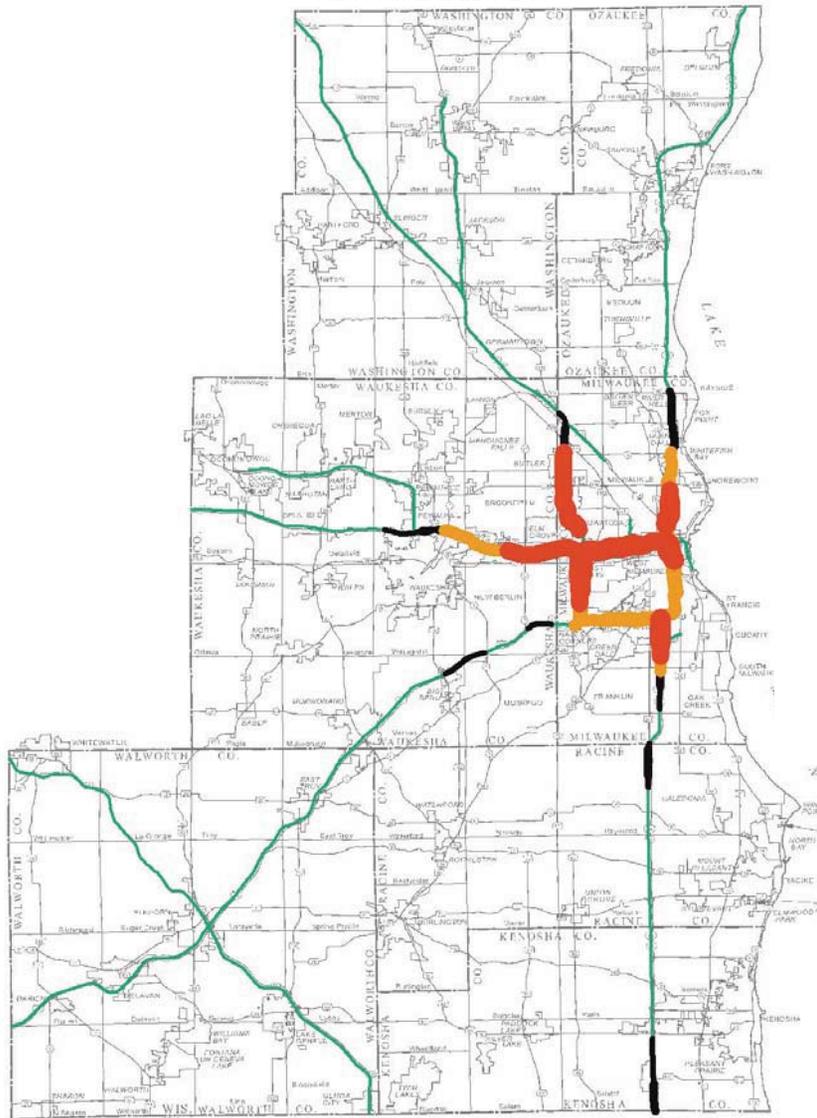
TSM PLAN ALTERNATIVE



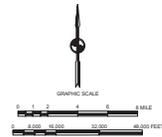
Source: SEWRPC.

Map 12 (continued)

RECOMMENDED PLAN



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



Source: SEWRPC.

Table 10

COMPARISON OF EXISTING YEAR 2001 AND FORECAST FUTURE YEAR 2035 AVERAGE WEEKDAY TRAFFIC CONGESTION ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION UNDER THE NO-BUILD PLAN, TSM PLAN ALTERNATIVE, AND THE RECOMMENDED PLAN

County	Existing Base Year 2001								Total Mileage
	Under or At Design Capacity		Over Design Capacity						
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	303.2	95.5	9.9	3.1	1.5	0.5	3.0	0.9	317.6
Milwaukee.....	641.1	82.0	72.1	9.2	24.7	3.2	43.4	5.6	781.3
Ozaukee.....	244.2	97.4	4.3	1.7	1.5	0.6	0.8	0.3	250.8
Racine.....	341.3	96.8	9.4	2.7	0.5	0.1	1.4	0.4	352.6
Walworth.....	430.1	98.4	5.1	1.2	1.1	0.3	0.3	0.1	436.6
Washington.....	391.1	96.2	15.4	3.8	--	--	--	--	406.5
Waukesha.....	650.9	87.2	70.7	9.5	11.4	1.5	13.4	1.8	746.4
Region	3,001.9	91.2	186.9	5.7	40.7	1.2	62.3	1.9	3,291.8

County	Year 2035 No-Build Plan								Total Mileage
	Under or At Design Capacity		Over Design Capacity						
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	298.9	83.7	44.7	12.5	3.3	0.9	10.2	2.9	357.1
Milwaukee.....	533.1	67.0	133.0	16.7	26.1	3.3	103.6	13.0	795.8
Ozaukee.....	265.2	87.7	31.4	10.4	2.2	0.7	3.7	1.2	302.5
Racine.....	379.2	90.4	33.9	8.1	2.9	0.7	3.3	0.8	419.3
Walworth.....	441.1	94.1	14.7	3.1	3.2	0.7	9.6	2.1	468.6
Washington.....	382.6	89.9	31.0	7.3	7.1	1.7	5.0	1.1	425.7
Waukesha.....	567.9	74.1	113.0	14.7	26.0	3.4	59.4	7.8	766.3
Region	2868.0	81.1	401.7	11.4	70.8	2.0	194.8	5.5	3,535.3

County	Year 2035 TSM Plan								Total Mileage
	Under or At Design Capacity		Over Design Capacity						
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	298.9	83.7	44.7	12.5	3.3	0.9	10.2	2.9	357.1
Milwaukee.....	573.9	72.1	110.5	13.9	24.7	3.1	86.7	10.9	795.8
Ozaukee.....	264.8	87.5	31.8	10.5	2.2	0.7	3.7	1.3	302.5
Racine.....	379.3	90.5	36.0	8.6	0.7	0.2	3.3	0.7	419.3
Walworth.....	441.1	94.1	14.7	3.1	3.2	0.7	9.6	2.1	468.6
Washington.....	382.6	89.9	31.0	7.3	7.1	1.7	5.0	1.1	425.7
Waukesha.....	571.5	74.6	109.4	14.3	26.0	3.4	59.4	7.7	766.3
Region	2,912.1	82.4	378.1	10.7	67.2	1.9	177.9	5.0	3,535.3

County	Year 2035 Recommended Plan								Total Mileage
	Under or At Design Capacity		Over Design Capacity						
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha.....	339.0	94.6	15.4	4.3	3.9	1.1	--	--	358.3
Milwaukee.....	704.0	88.1	46.4	5.8	20.9	2.6	28.0	3.5	799.3
Ozaukee.....	305.8	98.2	2.8	0.9	2.1	0.7	0.6	0.2	311.3
Racine.....	431.5	97.8	8.7	2.0	0.9	0.2	--	--	441.1
Walworth.....	465.9	98.8	5.0	1.1	0.6	0.1	--	--	471.5
Washington.....	448.6	97.6	10.7	2.3	--	--	0.6	0.1	459.9
Waukesha.....	689.8	87.8	72.0	9.2	10.6	1.3	13.1	1.7	785.5
Region	3,384.6	93.3	161.0	4.4	39.0	1.1	42.3	1.2	3,626.9

Source: SEWRPC.

Table 11

SOUTHEASTERN WISCONSIN FREEWAY SYSTEM TRAFFIC CONGESTION ON AN AVERAGE WEEKDAY: YEAR 2001, YEAR 2035 ALTERNATIVE TRANSPORTATION SYSTEM MANAGEMENT (TSM) PLAN, AND YEAR 2035 RECOMMENDED PLAN^a

ESTIMATED EXISTING YEAR 2001

Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
	Number	Percent of Freeway System	Extreme	Severe	Moderate	Total
Extreme	24.4	9.0	1.4	3.3	4.4	9.1
Severe	19.8	7.3	--	1.5	2.5	4.0
Moderate	20.8	7.8	--	--	2.2	2.2
Total	65.0	24.1	--	--	--	--

FORECAST YEAR 2035 UNDER NO-BUILD PLAN

Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
	Number	Percent of Freeway System	Extreme	Severe	Moderate	Total
Extreme	53.8	19.9	1.4	3.2	4.2	8.8
Severe	20.7	7.7	--	1.3	2.7	4.0
Moderate	53.5	19.8	--	--	2.8	2.8
Total	128.0	47.4	--	--	--	--

FORECAST YEAR 2035 UNDER TSM PLAN

Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
	Number	Percent of Freeway System	Extreme	Severe	Moderate	Total
Extreme	48.2	17.9	1.4	3.3	4.3	9.0
Severe	24.2	9.0	--	1.4	2.6	4.0
Moderate	52.2	19.4	--	--	2.3	2.3
Total	124.6	46.3	--	--	--	--

FORECAST YEAR 2035 UNDER RECOMMENDED PLAN

Highest Level of Hourly Congestion Experienced	Miles of Congested Freeways		Average Hours of Congestion on an Average Weekday			
	Number	Percent of Freeway System	Extreme	Severe	Moderate	Total
Extreme	25.7	9.0	1.1	2.5	3.5	7.1
Severe	20.6	7.2	--	1.5	2.5	4.0
Moderate	25.5	8.9	--	--	1.9	1.9
Total	71.8	25.1	--	--	--	--

^aThe TSM Plan includes improvement and expansion of public transit, bicycle and pedestrian facilities, travel demand management, and transportation systems management. It includes no arterial and street and highway system capacity expansion. The recommended plan includes the TSM plan plus arterial street and highway system capacity expansion.

Source: SEWRPC.

Map 13

PUBLIC TRANSIT ELEMENT OF THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

RAPID/EXPRESS BUS ROUTE

- RAPID BUS ROUTE - FREEWAY PORTION
- RAPID BUS ROUTE - NONFREEWAY PORTION
- EXPRESS BUS ROUTE

FIXED GUIDEWAY ROUTE

- HIGH SPEED RAIL
- COMMUTER RAIL
- STREETCAR

TRANSIT STATIONS

- WITH PARKING
- WITHOUT PARKING

SERVICE AREA

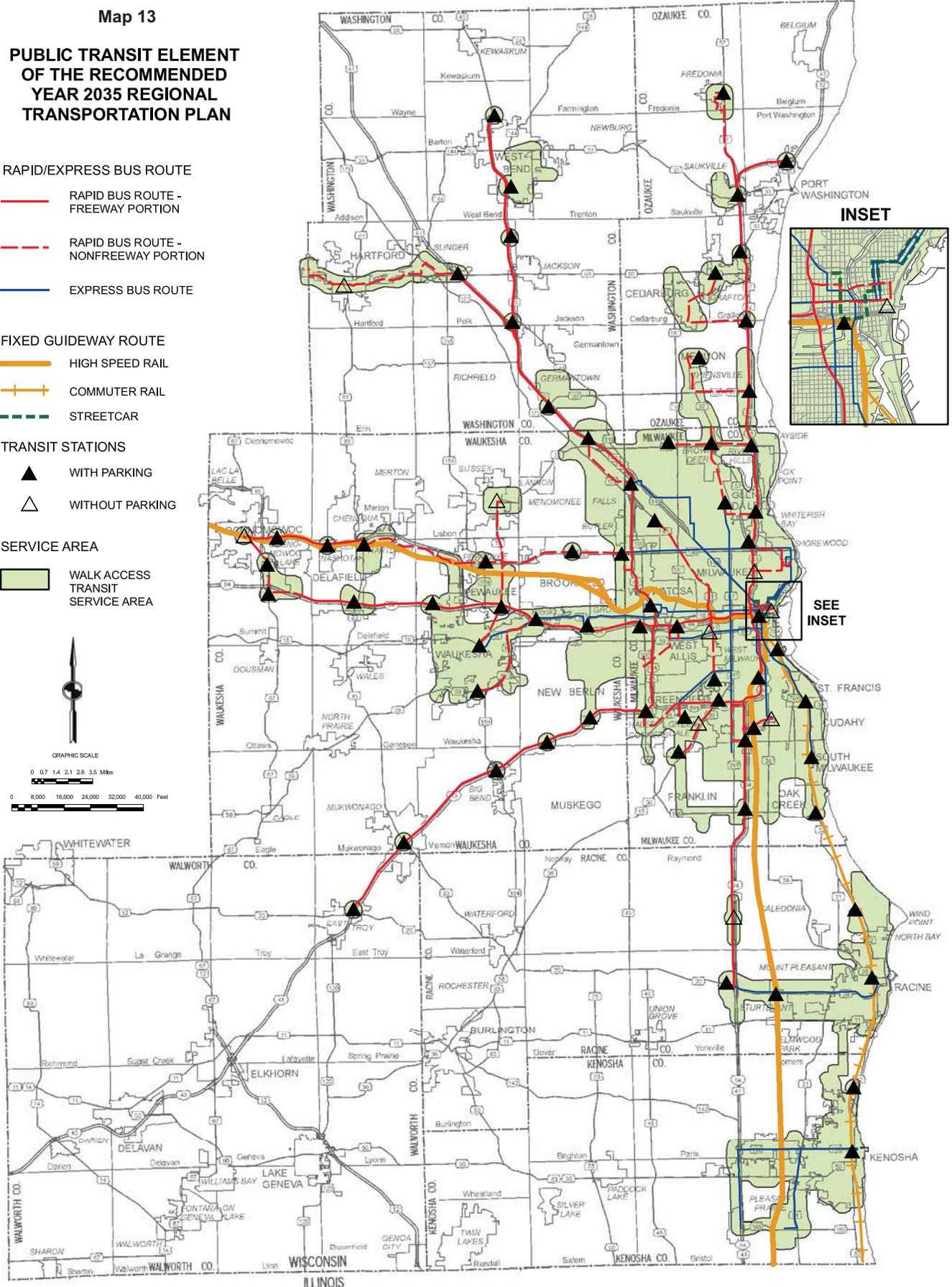
- WALK ACCESS
TRANSIT
SERVICE AREA



GRAPHIC SCALE

0 0.7 1.4 2.1 2.8 3.5 Miles

0 8,000 16,000 24,000 32,000 40,000 Feet



Source: SEWRPC.

Table 12

PUBLIC TRANSIT ELEMENT OF THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

Average Weekday Transit Service Characteristics	Existing 2005 ^a	Recommended Plan 2035	Planned Increment	
			Number	Percent Change
Revenue Vehicle-Miles				
Rapid				
Bus	7,900 ^b	21,100	13,200	167.1
Commuter Rail.....	--	2,200	2,200	--
Subtotal	7,900	23,300	15,400	194.9
Express.....	--	17,000	17,000	--
Local.....	61,100	97,000	35,900	58.8
Total	69,000	137,300	68,300	99.0
Revenue Vehicle-Hours				
Rapid				
Bus	350 ^d	1,000	650	185.7
Commuter Rail.....	--	100	100	--
Subtotal	350	1,100	750	214.3
Express.....	--	1,100	1,100	--
Local.....	4,750	8,900	4,150	87.4
Total	5,100	11,100	6,000	117.6

^aEstimated.

^bIncludes the existing commuter bus route operated in the Kenosha-Milwaukee-Racine corridor. While portions of this route operate with express stop spacing, the long trips served by, and average operating speeds of, this route are typical of those for rapid service.

Source: SEWRPC.

and Hartford, and north to Cedarburg, Grafton, Saukville, and Port Washington. The proposed rapid transit system would have the following characteristics:

- The rapid transit service would be provided by buses with commuter seating and amenities, and would operate in both directions during all time periods of the day and evening providing both traditional commuter and reverse-commute service.
- The rapid transit service would operate with some intermediate stops spaced about three to five miles apart to increase accessibility to employment centers and to increase accessibility for reverse-commute travel from residential areas within central Milwaukee County. The stops would provide connections with express transit service, local transit service, or shuttle bus or van service to nearby employment centers.
- The service would operate throughout the day. The frequency of service provided would be every 10 to 30 minutes in weekday peak travel periods, and every 30 to 60 minutes in weekday off-peak periods and on weekends, as shown in Table 13.

The recommended rapid transit service also includes a commuter rail line connecting Milwaukee, Racine, and Kenosha, as well as the Chicago area through existing Chicago Kenosha Metra commuter rail. The commuter rail would operate similar to the bus rapid transit service, providing service at convenient frequencies in both directions throughout the day and evening with stops spaced about three to five miles apart.

An approximately 200 percent increase in rapid transit service is recommended as measured by daily vehicle-miles of bus service, from the 7,900 vehicle-miles of such service provided on an average weekday in the year 2005, to 23,300 vehicle-miles in the plan design year 2035.

Express Transit Service

The recommended express transit service would consist of a grid of limited-stop, higher-speed routes located largely within Milwaukee County connecting major employment centers and shopping areas, other major activity centers such as General Mitchell International Airport, tourist attractions and entertainment centers, and residential areas. The express routes would replace existing major local bus

Table 13

**PROPOSED TRANSIT SERVICE HOURS AND FREQUENCY
UNDER THE RECOMMENDED TRANSPORTATION PLAN: YEAR 2035**

Service Type	Existing Year 2005		Recommended Plan	
	Service Hours	Service Headways	Service Hours	Service Headways
Rapid Transit Service				
Milwaukee County	<u>Weekdays only</u> 6:00 a.m.-8:30 a.m. 3:30 p.m.-6:00 p.m. (Peak direction service only)	15-30 minutes	<u>Daily</u> 6:00 a.m.-10:00 p.m. (both directions)	10-30 minutes weekday peak period 30-60 minutes off-peak period and weekends
Waukesha County Waukesha	<u>Weekdays Only</u> 5:30 a.m.-8:30 p.m.	15-30 minutes peak period 60-90 minutes off-peak periods	<u>Daily</u> 6:00 a.m.-10:00 p.m. (both directions)	20-30 minutes weekday peak periods
Oconomowoc, Mukwonago, Menomonee Falls	<u>Weekdays Only</u> Peak period and peak direction only service	30-40 minutes		60 minutes off-peak periods and weekends
Washington County	<u>Weekdays Only</u> Peak period and peak direction only service	30-40 minutes	<u>Daily</u> 6:00 a.m.-10:00 p.m. (both directions)	20-30 minutes weekday peak periods 60 minutes off-peak periods and weekends
Ozaukee County	<u>Weekdays Only</u> 5:00 a.m.-11:00 p.m.	30-40 minutes peak periods 60 minutes off-peak periods	<u>Daily</u> 6:00 a.m.-10:00 p.m. (both directions)	20-30 minutes weekday peak periods 60 minutes off-peak periods and weekends
Kenosha-Racine- Milwaukee County	<u>Weekdays Only</u> 5:00 a.m.-10:00 p.m.	40 minutes peak periods 120 minutes off-peak periods	<u>Daily</u> 6:00 a.m.-10:00 p.m. (both directions)	20-30 minutes weekday peak periods 60 minutes off-peak periods and weekends
	<u>Weekends</u> 8:00 a.m.-10:00 p.m.	<u>Headways</u> 60-120 minutes		
Express Transit Service	None	--	<u>Weekdays</u> 5:00 a.m.-1:00 a.m. <u>Weekends</u> 5:00 a.m.-1:00 a.m.	5-15 minutes peak periods 10-20 minutes off-peak periods 10-20 minutes
Local Transit Service				
Central Milwaukee County	<u>Weekdays</u> 5:00 a.m.-1:00 a.m. <u>Weekends</u> 5:00 a.m.-1:00 a.m.	5-20 minutes peak periods 10-30 minutes midday 15-30 minutes evening 15-60 minutes	<u>Weekdays</u> 5:00 a.m.-1:00 a.m. <u>Weekends</u> 5:00 a.m.-1:00 a.m.	5-10 minutes peak periods 10-15 minutes midday 10-20 minutes evening 10-20 minutes
Outlying Milwaukee County	<u>Weekdays</u> 5:00 a.m.-1:00 a.m. <u>Weekends</u> 5:00 a.m.-1:00 a.m.	15-60 minutes peak periods 20-60 minutes off-peak periods 20-60 minutes	<u>Weekdays</u> 5:00 a.m.-1:00 a.m. <u>Weekends</u> 5:00 a.m.-1:00 a.m.	10-30 minutes peak periods 20-60 minutes off-peak periods 20-60 minutes
Kenosha Area	<u>Weekdays</u> 6:00 a.m.-7:30 p.m.	30-40 minutes peak periods 40-60 minutes off-peak periods	<u>Daily</u> 6:00 a.m.-10:00 p.m.	<u>Weekdays</u> 15-30 minutes peak periods 30 minutes midday 60 minutes evening <u>Weekends</u> 30-60 minutes Saturday 60 minutes Sunday

Table 13 (continued)

Service Type	Existing Year 2005		Recommended Plan	
	Service Hours	Service Headways	Service Hours	Service Headways
Local Transit Service (continued)				
Racine Area	<u>Weekdays</u> 5:30 a.m.-12:00 a.m. <u>Saturdays</u> 5:30 a.m.-10:00 p.m. <u>Sundays</u> 9:30 a.m.-7:00 p.m.	<u>Weekdays</u> 30-60 minutes peak periods 60 minutes off-peak periods <u>Weekends</u> 60 minutes	<u>Daily</u> 6:00 a.m.-10:00 p.m. <u>Daily</u> 6:00 a.m.-10:00 p.m.	<u>Weekdays</u> 15-30 minutes peak periods 30 minutes midday 60 minutes evening <u>Weekends</u> 30-60 minutes Saturday 60 minutes Sunday
Waukesha Area	<u>Weekdays</u> 5:30 a.m.-10:00 p.m. <u>Saturdays</u> 8:00 a.m.-10:00 p.m. <u>Sundays</u> 9:00 a.m.-7:00 p.m.	<u>Weekdays</u> 35-70 minutes peak periods 30-60 minutes off-peak periods <u>Weekends</u> 30-60 minutes	<u>Daily</u> 6:00 a.m.-10:00 p.m.	<u>Weekdays</u> 20 minutes peak period 30 minutes midday 60 minutes evening <u>Weekends</u> 30-60 minutes Saturday 30-60 minutes Sunday

Source: SEWRPC.

routes. Stops would typically be spaced about one-quarter mile apart. It was envisioned that this system of limited-stop express service routes would initially consist of buses operating over arterial streets in mixed traffic, and would be upgraded over time to buses operating on reserved street lanes with priority treatment at traffic signals.

As envisioned under the plan:

- The express service would operate in both directions during all periods of the day and evening providing both traditional and reverse-commute service.
- The service would generally operate with a stop spacing of about one-quarter mile with one-half mile stop spacing in outlying portions of Milwaukee County and the Milwaukee urbanized area.
- The frequency of service provided would be about every 10 minutes during weekday peak periods, and about every 20 to 30 minutes during weekday off-peak periods and on weekends.
- The overall travel speed provided would be about 16 to 18 miles per hour, a significant improvement over the average 12 miles per hour speed provided by the existing local bus transit service.
- No express transit service existed in the Region in 2005. As proposed, about 17,000 vehicle-miles of express transit service would be provided on an average weekday in the Region in the year 2035.
- The recommended express service also includes the City of Milwaukee downtown streetcar line.

Local Transit Service

The improvement and expansion of local bus transit service over arterial and collector streets, with frequent stops throughout the Kenosha, Milwaukee, and Racine urbanized areas is also recommended. Service would be provided on weekdays, and during weekday evenings, Saturdays, and Sundays. An approximately 59 percent increase in local bus service is recommended from the 61,100 vehicle-miles of local bus service provided in 2005 on an average weekday to 97,000 vehicle-miles in the plan design year 2035. The recommendations included expansion of service area and hours, and significant improvements in the frequency of local transit service provided, particularly on major local routes.

Paratransit Service

Paratransit service is recommended to be provided consistent with the Federal Americans with Disabilities Act (ADA) of 1990. Under the provisions of this Act, all transit vehicles that provide conventional fixed-route transit service must be accessible to persons with disabilities, including those persons using wheelchairs. All public entities operating fixed-route transit systems must also continue to provide paratransit service to those disabled persons within local transit service areas who are unable to use fixed-route transit services consistent with federally specified eligibility and service requirements. The complementary paratransit services must 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. The planned paratransit service must be available during the same hours and on the same days as the fixed-route transit service, be provided to eligible persons on a "next-day" trip-reservations basis, not limit service to eligible persons based on restrictions or priorities to trip purpose, and 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 must be no more than twice the applicable public transit fare per one-way trip for curb-to-curb service.

Upgrading to Rail Transit or Bus Guideways

Rapid and express transit service is recommended to initially be provided with buses. This bus service would ultimately be upgraded to commuter rail in six corridors for rapid transit service and to bus guideway or light rail in six corridors for express transit service, as shown on Map 14.

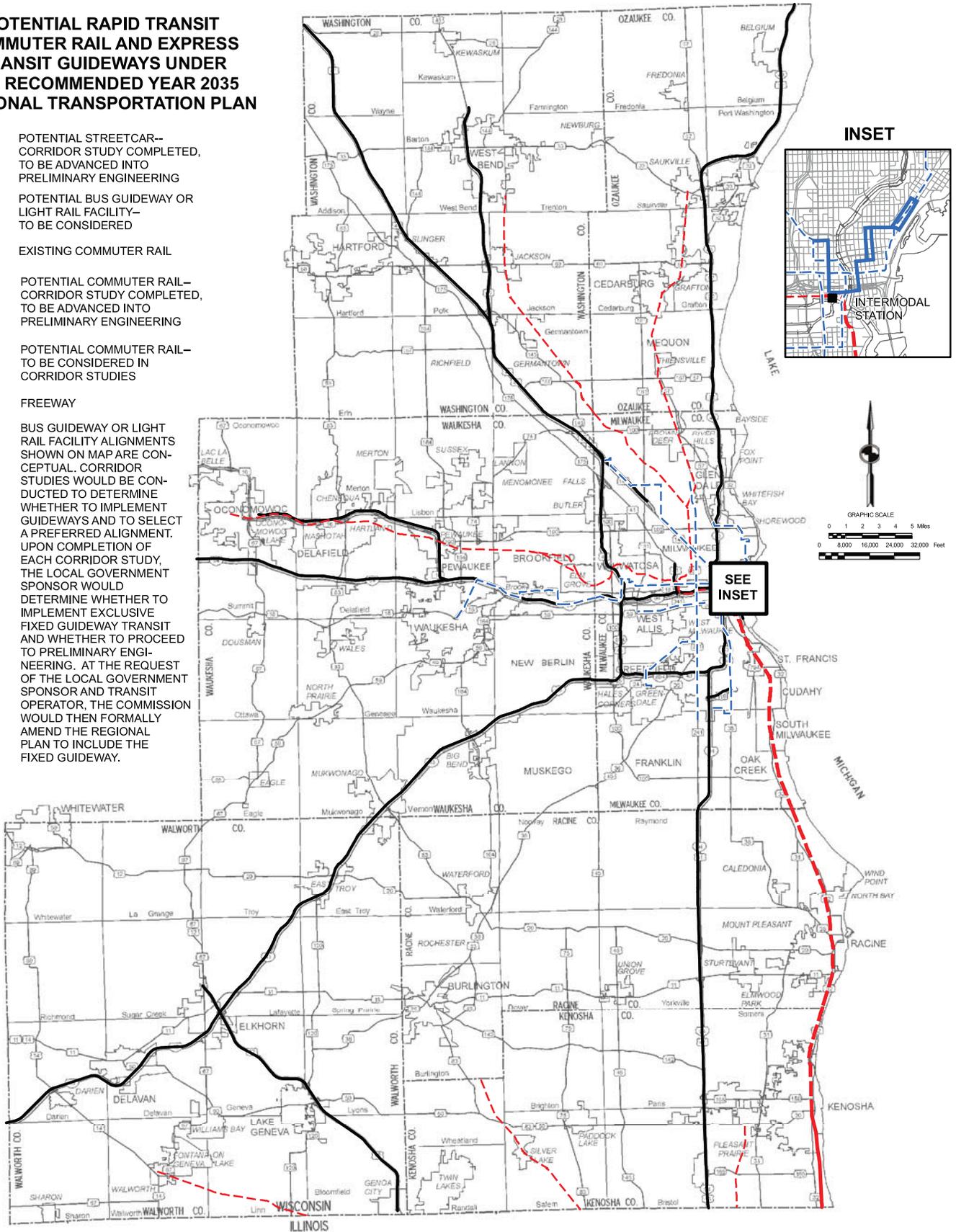
There were two efforts underway in Southeastern Wisconsin during the review and update of the regional plan considering upgrading to fixed guideway transit. The City of Milwaukee, as the potential transit operator of the streetcar line and having completed corridor planning and preliminary engineering examining transit alternatives, and concluding that they will be implementing the streetcar alternative, is advancing to final engineering. Advancement of the commuter rail line connecting the Kenosha, Racine, and Milwaukee areas to preliminary engineering was being considered during the review and update of the regional transportation plan in 2010, but in 2011 the regional authority responsible for implementing the commuter rail line was dissolved.

Map 14

POTENTIAL RAPID TRANSIT COMMUTER RAIL AND EXPRESS TRANSIT GUIDEWAYS UNDER THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

-  POTENTIAL STREETCAR--CORRIDOR STUDY COMPLETED, TO BE ADVANCED INTO PRELIMINARY ENGINEERING
-  POTENTIAL BUS GUIDEWAY OR LIGHT RAIL FACILITY--TO BE CONSIDERED
-  EXISTING COMMUTER RAIL
-  POTENTIAL COMMUTER RAIL--CORRIDOR STUDY COMPLETED, TO BE ADVANCED INTO PRELIMINARY ENGINEERING
-  POTENTIAL COMMUTER RAIL--TO BE CONSIDERED IN CORRIDOR STUDIES
-  FREEWAY

NOTE: BUS GUIDEWAY OR LIGHT RAIL FACILITY ALIGNMENTS SHOWN ON MAP ARE CONCEPTUAL. CORRIDOR STUDIES WOULD BE CONDUCTED TO DETERMINE WHETHER TO IMPLEMENT GUIDEWAYS AND TO SELECT A PREFERRED ALIGNMENT. UPON COMPLETION OF EACH CORRIDOR STUDY, THE LOCAL GOVERNMENT SPONSOR WOULD DETERMINE WHETHER TO IMPLEMENT EXCLUSIVE FIXED GUIDEWAY TRANSIT AND WHETHER TO PROCEED TO PRELIMINARY ENGINEERING. AT THE REQUEST OF THE LOCAL GOVERNMENT SPONSOR AND TRANSIT OPERATOR, THE COMMISSION WOULD THEN FORMALLY AMEND THE REGIONAL PLAN TO INCLUDE THE FIXED GUIDEWAY.



Source: SEWRPC.

Summary and Conclusions—Public Transit

The recommended expansion of public transit in Southeastern Wisconsin represented a doubling of transit service in Southeastern Wisconsin by the year 2035 from the base year—2005—of the regional transportation plan, and now represents a somewhat more than doubling from current year 2010 regional transit service levels, given the reductions in transit service in the Region between 2005 and 2010. As shown in Figure 3, this would entail about a 3.5 percent annual increase in transit service to the year 2035, slightly higher than the annual increase which occurred between 1995 and 2000. Significant implementation of the year 2020 plan occurred between 1997 and 2000 as transit service expanded by over 25 percent. However, due to State and local budget problems, transit service was significantly reduced from 2000 to 2010.

Implementation of this recommended expansion would be dependent upon the continued commitment of the State to be a partner in the maintenance, improvement and expansion, and attendant funding of public transit. The State has historically funded 40 to 45 percent of transit operating costs, and has increased funding to address inflation in the cost of providing public transit, and to provide for transit improvement and expansion.

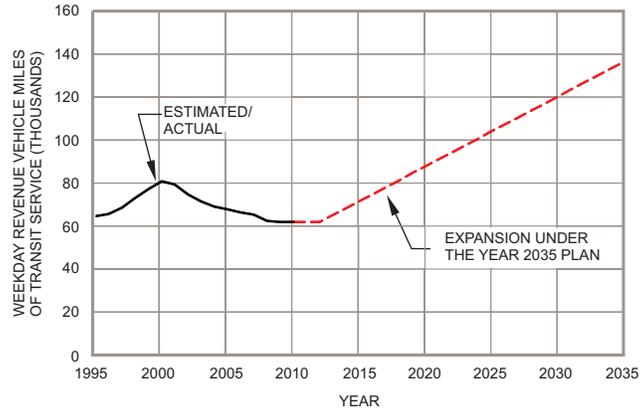
Implementation of the recommended expansion of public transit in Southeastern Wisconsin would also be dependent upon attaining dedicated local funding for public transit. Most public transit systems nationwide have dedicated local funding, typically a sales tax of 0.25 to 1.0 percent, and are not nearly as dependent upon Federal and State funding.

Bicycle and Pedestrian Facility Element

The bicycle and pedestrian facility element of the recommended plan is intended to promote safe accommodation of bicycle and pedestrian travel, and encourage bicycle and pedestrian travel as an alternative to personal vehicle travel. The plan recommends that as each segment of the surface arterial street system of about 3,600 miles in the Region is constructed, resurfaced, and reconstructed, the provision of accommodation for bicycle travel should be considered and implemented, if feasible, through bicycle lanes, widened outside travel lanes, widened shoulders, or separate bicycle paths. The surface arterial street system of the Region provides a network of direct travel routes serving virtually all travel origins and destinations within Southeastern Wisconsin. Arterial streets and highways—particularly those with high-speed traffic or heavy volumes of truck or transit vehicle traffic—require improvements such as

Figure 3

**HISTORIC AND PLANNED
VEHICLE-MILES OF PUBLIC TRANSIT
SERVICE ON AN AVERAGE WEEKDAY IN THE
SOUTHEASTERN WISCONSIN REGION: 1995-2035**



Source: SEWRPC.

extra-wide outside travel lanes, paved shoulders, bicycle lanes, or a separate bicycle path in order to safely accommodate bicycle travel. Land access and collector streets, because of low traffic volumes and speeds, are capable of accommodating bicycle travel with no special accommodation for bicycle travel.

The level and unit of government responsible for constructing and maintaining the surface arterial street or highway should have responsibility for constructing, maintaining, and funding the associated bicycle facility. A detailed evaluation of the alternatives for accommodation of bicycles on surface arterial streets or highways should necessarily be conducted by the responsible level and unit of government as part of the engineering for the resurfacing, reconstruction, and new construction of each segment of surface arterial.

The plan also recommends that a system of off-street bicycle paths be provided between the Kenosha, Milwaukee, and Racine urbanized areas and the cities and villages within the Region with a population of 5,000 or more located outside these three urbanized areas. This system of off-street bicycle paths was initially also proposed in the adopted park and open space plans prepared by the Commission for each of the seven counties of the Region. These off-street bicycle paths would be located in natural resource and utility corridors and are intended to provide reasonably direct connections between the Region's urbanized and small urban areas on safe and aesthetically attractive routes with separation from motor vehicle traffic. Some on-street bicycle connections would be required to connect segments of this system of off-street paths. These connections if provided over surface arterials would include some type of bicycle accommodation—paved shoulders, extra-wide outside travel lanes, bicycle lanes, or separate parallel bicycle paths—or if provided over a nonarterial collector or land access street would require no special accommodation. The proposed system of on- and off-street bicycle facilities, as shown on Map 15, includes 586 miles of off-street bicycle paths with 147 miles of surface arterial and 83 miles of nonarterial connections. Approximately 238 miles of the planned 586 miles of off-street bicycle paths were in existence in 2010.

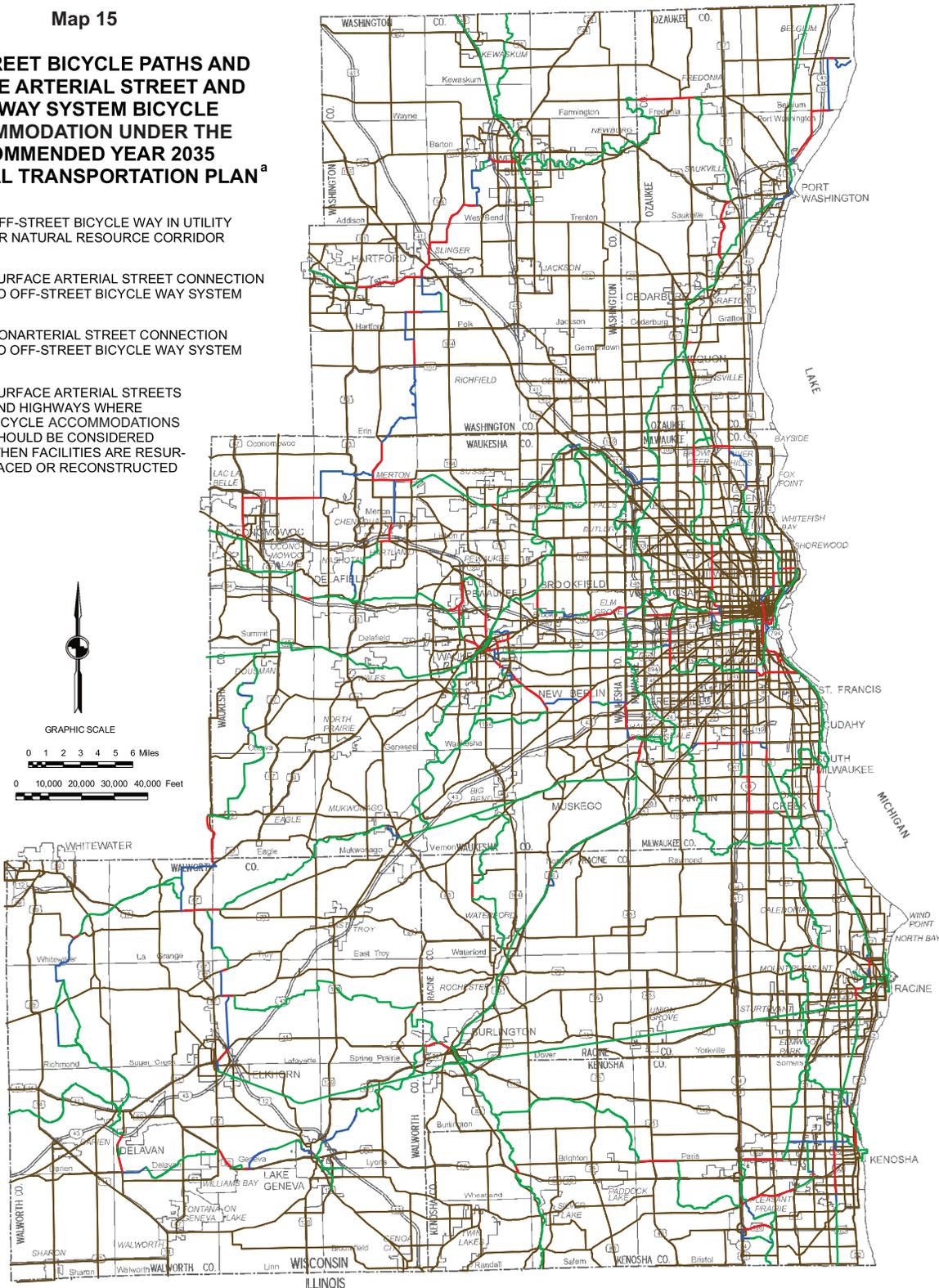
Pedestrian Facilities

The pedestrian facilities portion of the recommended bicycle and pedestrian facilities plan element is a policy plan, rather than a system plan. It recommends that the various units and agencies of government responsible for the construction and maintenance of pedestrian facilities in Southeastern Wisconsin adopt and follow a series of recommended standards and guidelines with regard to the development of those facilities, particularly within planned neighborhood units. These standards include the provision of sidewalks in the urban portions of the Region.

Map 15

OFF-STREET BICYCLE PATHS AND SURFACE ARTERIAL STREET AND HIGHWAY SYSTEM BICYCLE ACCOMMODATION UNDER THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN^a

- OFF-STREET BICYCLE WAY IN UTILITY OR NATURAL RESOURCE CORRIDOR
- SURFACE ARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE WAY SYSTEM
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE WAY SYSTEM
- SURFACE ARTERIAL STREETS AND HIGHWAYS WHERE BICYCLE ACCOMMODATIONS SHOULD BE CONSIDERED WHEN FACILITIES ARE RESURFACED OR RECONSTRUCTED



^aDuring the preparation of the Walworth County Comprehensive plan in 2009, the Towns of LaFayette, Richmond, Spring Prairie, Troy, and Whitewater indicated opposition to segments of the off-street bicycle path system proposed in the regional transportation plan. In some cases, the affected town prefers not to have a bike trail. In others, the affected town questions the proposed location of the trail, but may not object to having a trail if the location is changed. The Walworth County Comprehensive plan noted the objections of the affected towns, and explained that the plan does not establish a definite location or layout for the trails shown. Prior to construction, trail location will have to be determined with more specificity. Moreover, it was recommended that the rights-of-way or easements for the trails will not be acquired by eminent domain proceedings or by dedications required as a condition of plat approval or as a condition of any other zoning action. Local municipalities shall have final approval of any bike trail plan. Further, it was agreed that the review and update of the Walworth County Park and Open Space Plan to be conducted in 2011 will reexamine and amend the proposed off-street bicycle trails in Walworth County, specifically addressing the concerns of the five towns. The Walworth County Board of Supervisors Parks Committee has recommended that the off-street bicycle paths concerned be removed from the County Park and Open Space Plan. The updated County plan will be used to amend the regional transportation plan, as that plan undergoes a major review and reevaluation beginning in 2011.

Community Bicycle and Pedestrian Plans

The plan also recommends that local units of government prepare community bicycle and pedestrian plans to supplement the regional plan. The local plans should provide for facilities to accommodate bicycle and pedestrian travel within neighborhoods, providing for convenient travel between residential areas and shopping centers, schools, parks, and transit stops within or adjacent to the neighborhood. It also recommends that local units of government consider the preparation and implementation of land use plans that encourage more compact and dense development patterns, in order to facilitate pedestrian and bicycle travel.

Transportation Systems Management Element

The transportation systems management element of the recommended year 2035 regional transportation plan includes measures intended to manage and operate existing transportation facilities to their maximum carrying capacity and travel efficiency, including: freeway traffic management, surface arterial street and highway traffic management, and major activity center parking management and guidance.

Freeway Traffic Management

Recommended measures to improve the operation and management of the regional freeway system include operational control, advisory information, and incident management measures, as well as a traffic operations center supporting these measures. Essential to achieving freeway operational control, advisory information, and incident management is the Wisconsin Department of Transportation (WisDOT) traffic operations center (TOC) in the City of Milwaukee. At the TOC all freeway segments in the Milwaukee area are monitored, freeway operational control and advisory information is determined, and incident management detection and confirmation is conducted. The TOC is important to the safe and efficient operation of the regional freeway system and is in operation 365 days a year, 24 hours a day.

Operational Control

Measures to improve freeway operation—both during average weekday peak traffic periods and during minor and major incidents—through monitoring of freeway operating conditions and control of entering freeway traffic include traffic detectors, freeway on-ramp-meters, and ramp-meter control strategy. Traffic detectors measure the speed, volume, and density of freeway traffic, and are used for operational control, advisory information, and incident management. Existing freeway system traffic detectors in 2010 consisted of detectors embedded in the pavement at one-half mile intervals on the freeways in Milwaukee County and on IH 94 in Waukesha County, and at about one- to two-mile intervals on IH 94 in Kenosha and Racine Counties. The data collected from these traffic detectors was monitored by WisDOT at the TOC for the purposes of detecting freeway system travel speed and time, traffic

congestion, traffic flow breakdowns, and incidents. Freeway ramp meter traffic entry rates could be modified based upon the traffic volume and congestion indicated by the traffic detectors. Travel information on traffic congestion and delays were provided to freeway system users through the WisDOT website and on variable message signs. Traffic speeds and congestion indicated by traffic detectors could instantaneously identify the presence of a freeway incident. It was recommended that existing freeway system traffic detectors be maintained, and that traffic detectors be installed on the freeway system throughout the Region at one-half mile intervals as the freeway system was reconstructed. The only exceptions for installing detectors on freeway segments may be those segments with current and expected future traffic volumes which would be substantially less than freeway traffic carrying design capacity, including IH 43 north of STH 57 in Ozaukee County, USH 45 north of the Richfield Interchange, USH 41 north of STH 60 in Washington County, and IH 43 and USH 12 in Walworth County.

Ramp-meters are traffic signals located on freeway entrance ramps or, in some cases, freeway-to-freeway entrance ramps, and are used to control the rate of entry of vehicles onto a freeway segment to achieve more efficient operation of the adjacent freeway segment and the downstream freeway system. To encourage ridesharing and transit use, preferential access for high-occupancy vehicles is provided at ramp-meter locations to allow the high-occupancy vehicles to bypass traffic waiting at a ramp-metering signal. In 2010, there were 127 freeway on-ramps currently in the Milwaukee area equipped with ramp-meters. Buses and high-occupancy vehicles received preferential access at 61 of the 127 on-ramp-meter locations. It is recommended that as the freeway system is reconstructed, ramp-meters be installed on all freeway on-ramps within the Region, with high-occupancy vehicle preferential access provided at these metered ramps, particularly those which would be used by existing and planned public transit. The only exception for ramp-meter installation may be those freeway segments identified above which would be expected to carry current and future traffic volumes below their design capacity.

Another element of freeway operational control is the strategy used in the operational control of ramp-meters. The existing ramp-meters on the Southeastern Wisconsin freeway system were controlled in two ways. Some are controlled in a "pre-timed" mode, operating during specified peak traffic hours of the weekday at specified release rates of vehicles. Others are controlled as well during specified peak traffic hours of the weekday, but the vehicle release rates were based upon adjacent freeway system traffic volume and congestion. It is recommended that the strategy of controlling ramp-meters through consideration of adjacent congestion be expanded throughout the freeway system, and that an operational control strategy be considered which would consider downstream freeway traffic congestion and seek to minimize total travel delay on the freeway system while providing for equitable average and maximum delays at each ramp-meter, and avoiding the extension of vehicle queues onto surface streets. It is also

recommended that the need for expanded vehicle storage on freeway on-ramps be considered, and addressed, during the reconstruction of the regional freeway system.

Advisory Information Measures

Providing advisory information to motorists is an integral part of providing an efficient street and highway system. By providing information on current travel conditions, motorists can choose travel routes which were more efficient for their travel, and the result is a more efficient transportation system. Advisory information measures include permanent variable message signs (VMS), the WisDOT website, and provision of information to the media. WisDOT uses the permanent VMS to provide real time information to travelers about downstream freeway traffic conditions, such as current travel times to selected areas, information about lane and ramp closures, and where travel delays begin and end. In 2010, there were 25 permanent VMS located on the freeway system, primarily in the Milwaukee area, and 16 on surface arterials which connected with the freeway system primarily located in western Milwaukee County. It is recommended that variable message signs be provided on the entire freeway system as the freeway system is reconstructed, and on surface arterials leading to the most heavily used freeway system on-ramps.

WisDOT also provides substantial information about current freeway system traffic conditions on a website using data collected from freeway system traffic detectors. The information included maps depicting the current level of freeway traffic congestion and the locations of confirmed incidents, views of freeway system traffic available from the freeway system closed circuit television camera network, and current travel times and delays on the major freeway segments in the Milwaukee area. The data on the website was also available to the media and used in daily radio and television broadcasts. It is recommended that WisDOT continue to enhance and expand the information provided on its website and to the media, and maintain the regional 511 traveler information system which allows the public to dial "511" and receive automated messages about current travel conditions along their desired route through a series of predetermined automated menus.

Incident Management Measures

Incident management measures have as their objective the timely detection, confirmation, and removal of freeway incidents. As noted earlier, the WisDOT freeway system TOC and freeway system traffic volume detectors are essential to incident management, as well as freeway operational control and advisory information. Other incident management measures recommended include closed circuit television, enhanced freeway location reference markers, freeway service patrols, crash investigation sites, the

Traffic Incident Management Enhancement Program, ramp closure devices, and alternate route designations.

Closed-circuit television (CCTV) cameras provide live video images to WisDOT and the Milwaukee County Sheriff's Department which allow for the rapid confirmation of congested areas and the presence of an incident, and immediate determination of the appropriate response to the incident and direction of the proper equipment to be deployed in response to the incident. In 2010, there were 103 closed-circuit television cameras on the Southeastern Wisconsin freeway system, covering Milwaukee County freeways, IH 94 and USH 41/45 in eastern Waukesha County, and IH 94 in Kenosha and Racine Counties. It is recommended that the CCTV camera network be provided on the entire regional freeway system as the freeway system is reconstructed, with the possible exception of the freeway segments identified earlier which carry existing and future traffic volumes well below their design capacity.

Enhanced reference markers assist motorists in identifying specific locations along a freeway segment when reporting incidents. These markers are typically small signs provided at one-tenth mile intervals along the freeway system which typically display the highway shield and mile marker. Enhanced reference markers were provided in 2010 in Milwaukee County in the freeway median at each one-tenth mile on USH 45 from the Zoo Interchange to the Milwaukee-Waukesha County line, and on IH 94 from the Mitchell Interchange to the Illinois-Wisconsin State line, including the freeway segments of IH 94 in Kenosha and Racine Counties. It is recommended that enhanced reference markers be provided on the entire regional freeway system as the freeway system is reconstructed.

Freeway service patrols provide for rapid removal of disabled vehicles and initial response to clearing incidents. Freeway service patrols consist of specially-equipped vehicles designed to assist disabled motorists and assist in clearance of incidents. Freeway service patrol vehicles may be equipped to provide limited towing assistance, as well as minor services such as fuel, oil, water, and minor mechanical repairs. In 2010, freeway service patrols operated in a limited role on the Milwaukee County freeway system and on IH 94 in Kenosha and Racine Counties. In Kenosha, Milwaukee, and Racine Counties, service patrols operated all day and into the evening on weekdays. In Kenosha and Racine Counties, service patrols also operated on weekends. In Kenosha, and Racine Counties, one service patrol vehicle served 12 to 15 miles of freeways, and in Milwaukee County one service patrol vehicle served 70 miles of freeways. Expansion of the freeway service patrol is recommended to serve the entire regional freeway system, and to provide greater coverage including all day weekday and weekend service, evening service, and increased vehicle coverage of one vehicle per 12 to 15 miles of freeway.

Crash investigation sites are designated safe zones for distressed motorists to relocate to if they are involved in a crash or an incident on the freeway. In 2010, there were 35 crash investigation sites on the Southeastern Wisconsin freeway system, with the largest concentration—24 of the 35, or about 69 percent—located on the system in Milwaukee County. It is recommended that as the freeway system is reconstructed, WisDOT evaluate the extent of use and attendant benefits of existing crash investigation sites, and consider expansion as needed to serve the entire regional freeway system.

The Traffic Incident Management Enhancement (TIME) Program, sponsored by WisDOT, serves to bring together, and coordinate, the transportation engineering, law enforcement, media, emergency responders, transit, tow and recovery, and other freeway system operational interests at monthly meetings. The goals of the TIME program are to improve and enhance freeway incident management, improve freeway safety, and enhance the quality and efficiency of freeway travel. It is recommended that the TIME program continue to be operated and sponsored by WisDOT.

Ramp closure devices were deployed in 2010 on freeways in Kenosha, Ozaukee, Racine, Washington, and Waukesha Counties. The ramp closure devices were either Type III barricades or swing arm gates. These ramp closure devices allow for the closure of freeway on-ramps during planned and unplanned major incidents, such as special events and severe inclement weather. It is recommended that WisDOT evaluate the use and attendant benefits of existing ramp closure devices, and consider their application throughout the Region.

Alternate routes are designated, clearly marked and signed surface arterial street and highway routes which generally parallel freeway segments. These routes would be intended to be used by motorists during major freeway incidents and ramp closures and during particularly extreme congestion. Motorists would be directed through advisory information to these routes during major incidents and periods of particularly extreme congestion. It is recommended that WisDOT and the Regional Planning Commission, together with the concerned and affected local governments, examine the potential for the designation of alternative routes, and consider implementation of a pilot effort in a designated corridor.

Surface Arterial Street and Highway Traffic Management

This group of recommended transportation system management measures would attempt to improve the operation and management of the regional surface arterial street and highway network, and include improved traffic signal coordination, intersection traffic engineering improvements, curb lane parking restrictions, access management, and advisory information.

Coordinated traffic signal systems provide for the efficient progression of traffic along arterial streets and highways, allowing motorists to travel through multiple signalized intersections along an arterial route at the speed limit and minimizing or eliminating the number of stops at signalized intersections. In the Region, coordinated traffic signal systems generally ranged from systems comprising two traffic signals to systems comprising about 100 traffic signals. Approximately 1,100 of the 1,700 traffic signals in the Region, or about 65 percent, were estimated to be part of a coordinated signal system in 2006. This measure recommends that Commission staff work with State and local government to develop recommendations for improvement and expansion of coordinated signal systems. These actions would be identified and prioritized for funding in the regional transportation operations plan.

It is also recommended that State and local governments aggressively consider and implement needed individual arterial street and highway intersection improvements, such as adding right- and/or left-turn lanes; improvements in the type of traffic control deployed at the intersection, including two- or four-way stop control, roundabouts, or signalization; or improvements in signal timing at individual signalized intersections. This measure proposes that State, county, and municipal governments each prepare a prioritized short-range (two to six year) program of arterial street and highway intersection improvements under their jurisdiction, pursue aggressive implementation of the programs, and review and update the programs every two to five years. These projects would also be identified and prioritized for funding in the regional transportation operations plan.

It is also recommended that local governments consider implementation of curb-lane parking restrictions during peak traffic periods in the peak traffic direction as traffic volumes and congestion increase. These parking restrictions would be implemented rather than the widening with additional lanes or construction of new arterial streets. These projects would also be identified and prioritized for funding in the regional transportation operations plan.

Access management is also recommended to improve transportation systems operations and provide for full use of roadway capacity. Access management involves applying standards for the location, spacing, and operation of driveways, median openings, and street connections. This measure recommends that State, county, and municipal governmental units with arterial streets and highways under their jurisdiction adopt access management standards, consider and implement these standards as development takes place along arterials under their jurisdiction, and prepare and implement access management plans along arterials which currently are developed and have access which violates these standards. These projects could also be identified and prioritized for funding in the regional transportation operations plan.

Advisory information should also be provided to motorists concerning the surface arterial street and highway network in the Region. It was recommended that the WisDOT improve and expand the data provided on its website (travel times, congestion maps, and camera images) concerning freeway travel to include surface arterial street and highway travel, beginning with the pilot route designated as an alternative route to a segment of the freeway system.

Major Activity Center Parking Management and Guidance

Another recommended transportation system management measure would attempt to improve traffic operation conditions by reducing the traffic circulation of motorists seeking parking in major activity centers. The City of Milwaukee in 2010 was about to construct and implement a central business district parking management and guidance system. The system will provide motorists with real-time information about available parking in the downtown area through signs located throughout the business district, freeway dynamic message signs, a website, and a telephone line. The year 2035 plan supports the City of Milwaukee initiative.

Regional Transportation Operations Plan

It is also recommended that WisDOT, in cooperation with SEWRPC and all transportation system operators in the Region, work to prepare a regional transportation operation plan (RTOP). The RTOP would program high priority short-range (three to five year) operational improvement projects for implementation, principally drawing these projects from the transportation systems management recommendations in the regional transportation system plan. The preparation of the RTOP was initiated in 2011 and was completed in 2012, as documented in SEWRPC Memorandum Report No. 202, *Regional Transportation Operations Plan for Southeastern Wisconsin: 2012-2016*.

Travel Demand Management Element

The travel demand management measures included in the recommended year 2035 regional transportation plan include measures intended to reduce personal and vehicular travel or to shift such travel to alternative times and routes, allowing for more efficient use of the existing capacity of the transportation system. These measures were in addition to the public transit and pedestrian and bicycle plan elements previously described.

Seven categories of travel demand management measures are recommended for inclusion in the year 2035 plan: high-occupancy vehicle preferential treatment, park-ride lots, transit pricing, personal vehicle pricing, travel demand management promotion, transit information and marketing, and detailed site-specific neighborhood and major activity center land use plans.

High-Occupancy Vehicle Preferential Treatment

This group of recommended travel demand management measures would attempt to provide preferential treatment for transit vehicles, vanpools, and carpools on the existing arterial street and highway system. The recommended preferential treatment category consists of four specific travel demand management measures: the provision of high-occupancy vehicle (HOV) queue bypass lanes at metered freeway on-ramps; reserved bus lanes along congested surface arterial streets and highways; transit priority signal systems; and preferential carpool and vanpool parking.

The provision of HOV queue bypass lanes at metered freeway on-ramps existed at 61 of the 127 metered freeway on-ramp locations within the Milwaukee area. The recommended travel demand management measure recommends that consideration be given during freeway system reconstruction to providing HOV bypass lanes at all metered freeway on-ramps within the Region, dependent upon right-of-way and on-ramp geometric design constraints. For this measure to be truly effective, strict enforcement of HOV bypass lanes will be required.

Reserved bus lanes similar to those along Blue Mound Road in Waukesha County allow transit vehicles to bypass vehicle queues attendant to traffic signals on congested arterial streets and highways. These reserved lanes may be expected to reduce transit travel times and improve transit travel time reliability during peak travel periods. This recommended travel demand management measure would expand the use of reserved bus lanes throughout the Region on the congested surface arterial streets and highways which currently, or may be expected in the future, to accommodate express and major local transit routes, and on the surface arterial portion of rapid transit routes.

The third recommended travel demand management measure within the high-occupancy vehicle preferential treatment category is transit priority signal systems. This recommended measure would allow transit vehicles to extend the end of the green phase of traffic signals as they approach a signalized intersection. This recommended measure would include transit priority signal systems along all express and major local transit routes, and the surface arterial portion of rapid transit routes within the Region.

The fourth recommended travel demand management measure within the high-occupancy vehicle preferential treatment category is preferential carpool and vanpool parking. This recommended measure would be voluntary and would propose that employers providing free/subsidized parking for their employees consider providing and enforcing preferential parking for those employees who carpool or vanpool to the employment site. This recommended measure may reduce vehicle trips by encouraging ridesharing.

Park-Ride Lots

To promote public transit use and carpooling and the resultant more efficient use of the Region's transportation system, a network of 75 park-ride lots are recommended, to facilitate carpooling, an expansion of 24 from the existing 51 park-ride lots, as shown on Map 16. Park-ride lots are recommended along all major routes at their major intersections and interchanges where sufficient demand may be expected to warrant provision of an off-street parking facility.

Transit Pricing

This group of recommended travel demand management measures would build upon existing transit pricing programs conducted by the transit operators in the Region. The recommended transit pricing category consists of three travel demand management measures: annual transit pass programs, monthly or weekly pass programs, and vanpool programs.

The Milwaukee County Transit System has implemented a pass system at four colleges and universities which provided for free transit use with a reduced fee included in student tuition and fees. This annual transit pass program should be expanded to include the other local public transit operators in the Region and additional colleges and universities within the Region. This annual pass program should also be expanded to employers, with the Region's transit operators negotiating an annual fee with individual employers, which would allow those employers to provide each employee with an annual transit pass.

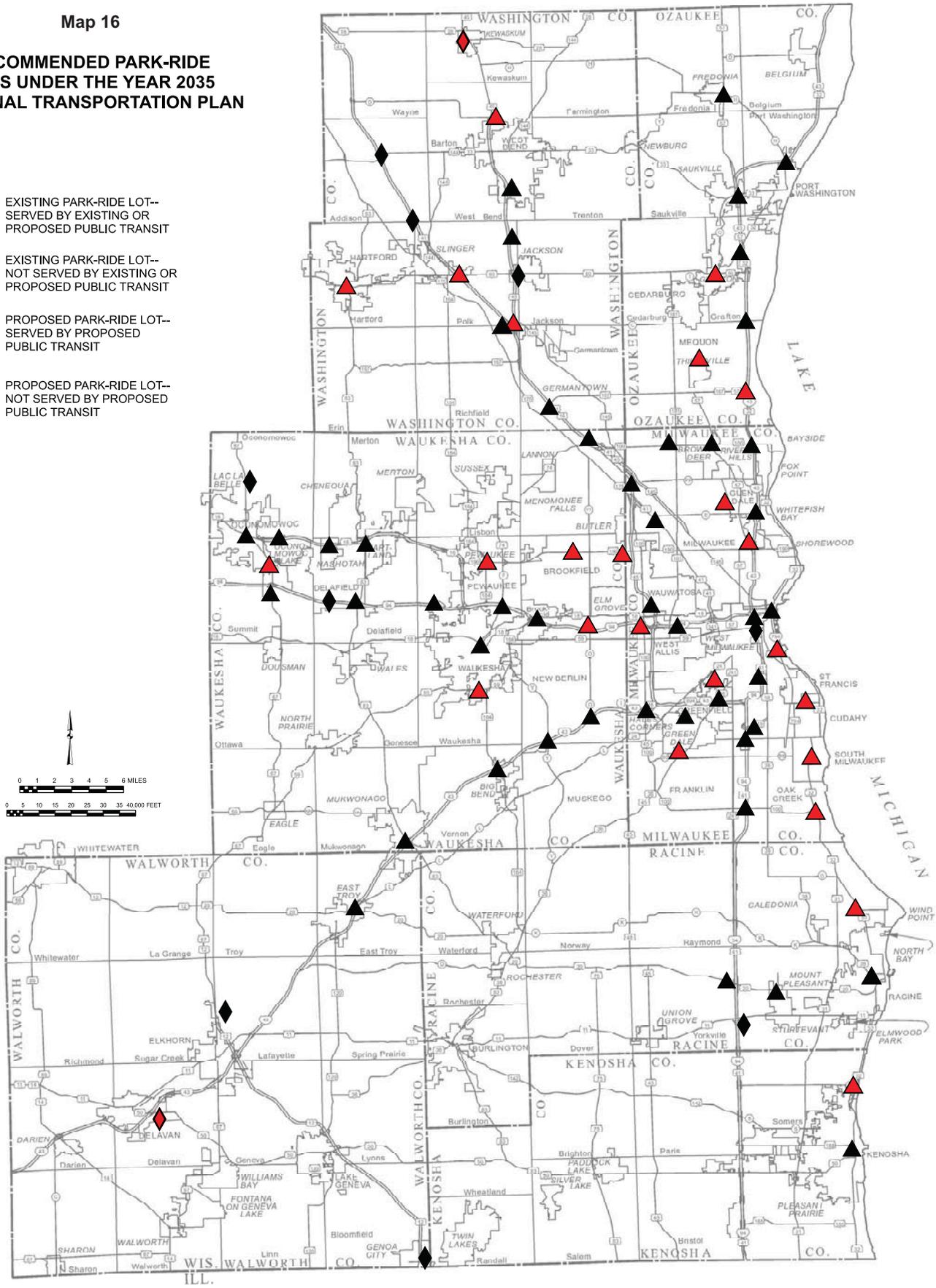
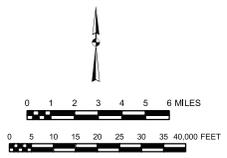
Monthly or weekly discount pass programs existed for three of the Region's public transit operators—the Milwaukee County Transit System, the Racine Belle Urban System, and the Waukesha Metro Transit System. This recommended monthly or weekly pass program would allow employers to offer their employees discounted monthly or weekly passes, where the employer and the transit operator have negotiated an agreement in which they both agreed to subsidize a portion of the monthly or weekly pass.

The third proposed travel demand management measure within the transit pricing category is the expansion of vanpool programs, in which a group of employees who live in the same general area split the operation, maintenance, and a portion of the capital costs of a van. In 2010, the Milwaukee County Transit System operated a vanpool program with about 20 vanpools, with vanpool users paying 20 percent of the capital costs of a van. Waukesha County was about to implement a vanpool program with eight vanpools.

Map 16

**RECOMMENDED PARK-RIDE
LOTS UNDER THE YEAR 2035
REGIONAL TRANSPORTATION PLAN**

- ▲ EXISTING PARK-RIDE LOT--
SERVED BY EXISTING OR
PROPOSED PUBLIC TRANSIT
- ◆ EXISTING PARK-RIDE LOT--
NOT SERVED BY EXISTING OR
PROPOSED PUBLIC TRANSIT
- ▲ PROPOSED PARK-RIDE LOT--
SERVED BY PROPOSED
PUBLIC TRANSIT
- ◆ PROPOSED PARK-RIDE LOT--
NOT SERVED BY PROPOSED
PUBLIC TRANSIT



Source: SEWRPC

Personal Vehicle Pricing

The recommended personal vehicle pricing group of travel demand management measures proposes to allocate a larger percentage of the full costs of construction, maintenance, and operation of street and highway facilities and services directly on the users of the system. The proposed personal vehicle pricing category consists of two specific travel demand management measures—cash-out of employer-paid parking, and auto pricing.

Cash-out of employee paid parking would recommend that employers currently providing free/subsidized parking to employees would voluntarily begin charging their employees the market value of parking. Employers could offset the additional cost of parking through cash payment or salary increases to employees. This recommended measure would potentially reduce vehicle-trips and vehicle-miles of travel through the increased use of transit, ridesharing, walking, and bicycling, as some employees may "pocket" the cash payment and use other modes of travel.

The second recommended travel demand management measure within the personal vehicle pricing category encourages the continued and expanded use of user fees to pay the costs of construction, maintenance, and operation of street and highway facilities and services. Currently, user fees primarily include the Federal and State motor fuel tax and vehicle registration fees. These user fees currently fund 100 percent of the costs associated with State highways and about 20 to 25 percent of the costs associated with county and municipal streets and highways. There is substantial and growing opposition to increases in motor fuel taxes. In addition, there is the potential in the future for technological advances, such as increased fuel efficiency and alternative fuels, to render the current motor fuel tax obsolete. However, there is merit in having the users of the transportation system pay the actual costs of constructing, maintaining, and operating the transportation system. Travel behavior is affected by the cost of travel, and user fees can encourage more efficient travel.

Travel Demand Management Promotion

A regionwide program to aggressively promote transit use, bicycle use, ridesharing, pedestrian travel, telecommuting, and work-time rescheduling, including compressed work weeks is recommended to encourage alternatives to drive alone personal vehicle travel. The program would include education, marketing, and promotion elements.

Transit Information and Marketing

Recommended transit information and marketing measures would include the continuation and expansion of the joint marketing efforts of the transit operators within Southeastern Wisconsin. It is also

recommended that a single website be developed in which transit users could access all necessary information for each transit system in Southeastern Wisconsin. This recommended website would allow a potential transit user to enter such information as beginning and ending addresses of a desired trip within the Region, and then would display the most feasible transit routing of the desired trip including all fares, transfers, and schedules.

The third recommended transit information and marketing measure is real-time travel information. This recommended measure would utilize global positioning system (GPS) data to provide real-time transit information to transit riders at transit centers and transit stops, including transit vehicle arrival times, and real-time maps, showing where on the route a transit vehicle is currently located. The Milwaukee County Transit System has been approved to receive Federal funding to initiate “next bus” arrival time information signing at bus stops.

Detailed Site-Specific Neighborhood and Major Activity Center Land Use Plans

The preparation and implementation by local governmental units of detailed, site-specific neighborhood and major activity center plans to facilitate travel by transit, bicycle, and pedestrian movement and reduce dependence on automobile travel is recommended, and is also recommended in the regional land use plan.

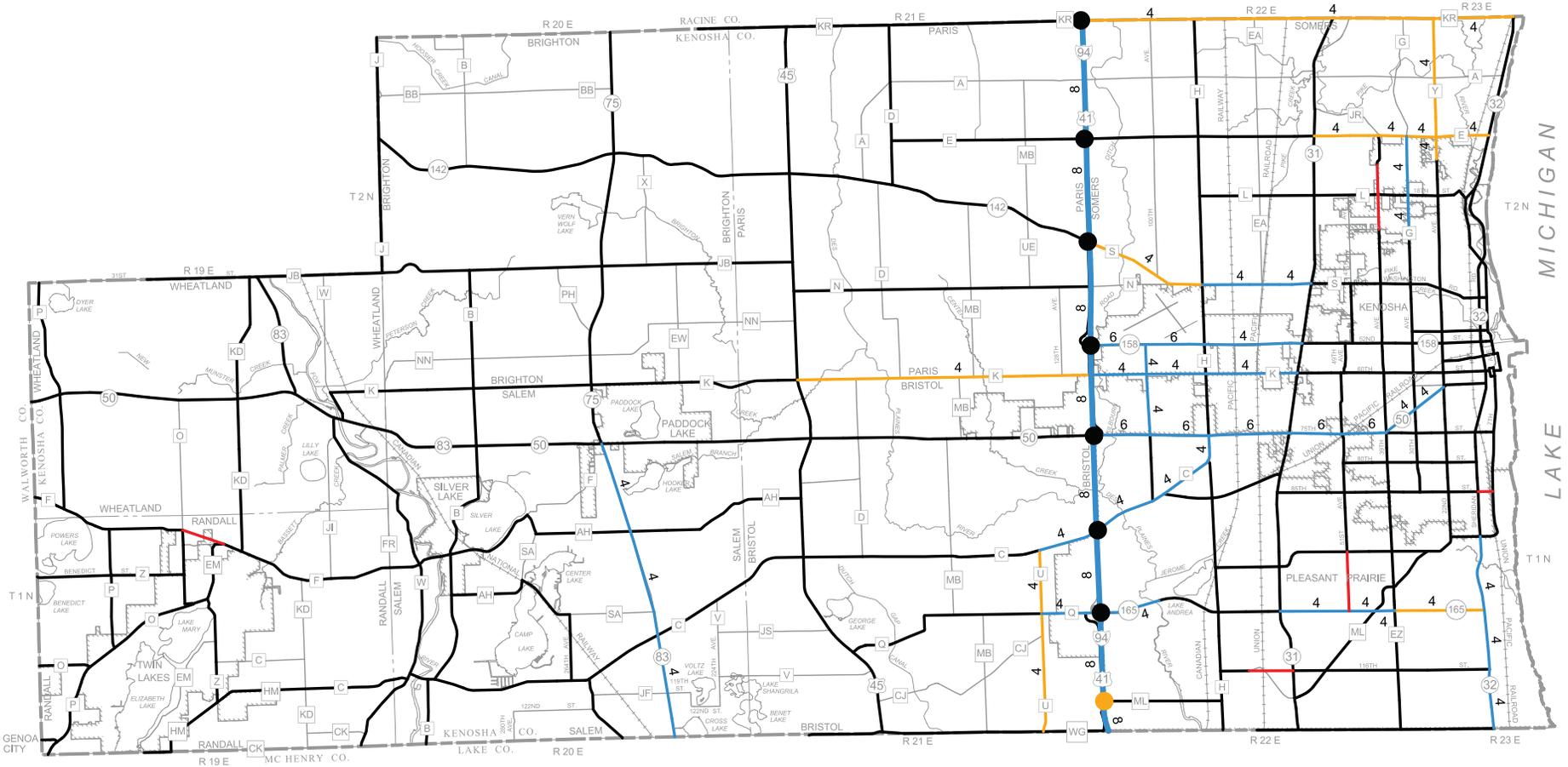
Arterial Street and Highway Element

The arterial street and highway element of the recommended year 2035 regional transportation plan as amended, and adjusted to account for plan implementation through 2010, totals 3,652 route-miles. Approximately 88 percent, or 3,228 of these route-miles, are recommended to be resurfaced and reconstructed to their same capacity. Approximately 344 route-miles, or less than 10 percent of the total recommended year 2035 arterial street and highway system, are recommended for widening upon reconstruction to provide additional through traffic lanes, including 127 miles of freeways. The remaining 80 route-miles, or about 2 percent of the total arterial street mileage, were proposed new arterial facilities. Thus, the plan recommends over the next 25 years a capacity expansion of 12 percent of the total arterial system, and--viewed in terms of added lane-miles of arterials--only about a 10 percent expansion over the next 30 years. Map 17 shows each arterial street and highway segment recommended for capacity expansion.

The recommended arterial street and highway capacity expansion addresses the residual congestion which may not be expected to be alleviated by recommended land use, systems management, demand management, bicycle and pedestrian facilities, and public transit measures in the recommended plan. Each recommended arterial street and highway improvement, expansion, and preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or

Map 17

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN KENOSHA COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION PLAN

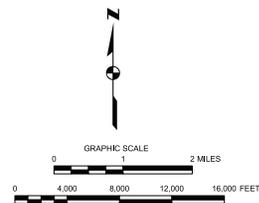


ARTERIAL STREET OR HIGHWAY

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

FREEWAY INTERCHANGE

- EXISTING
- RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (POTENTIAL NEW INTERCHANGE)



THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement, expansion, or preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible State, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.
2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.

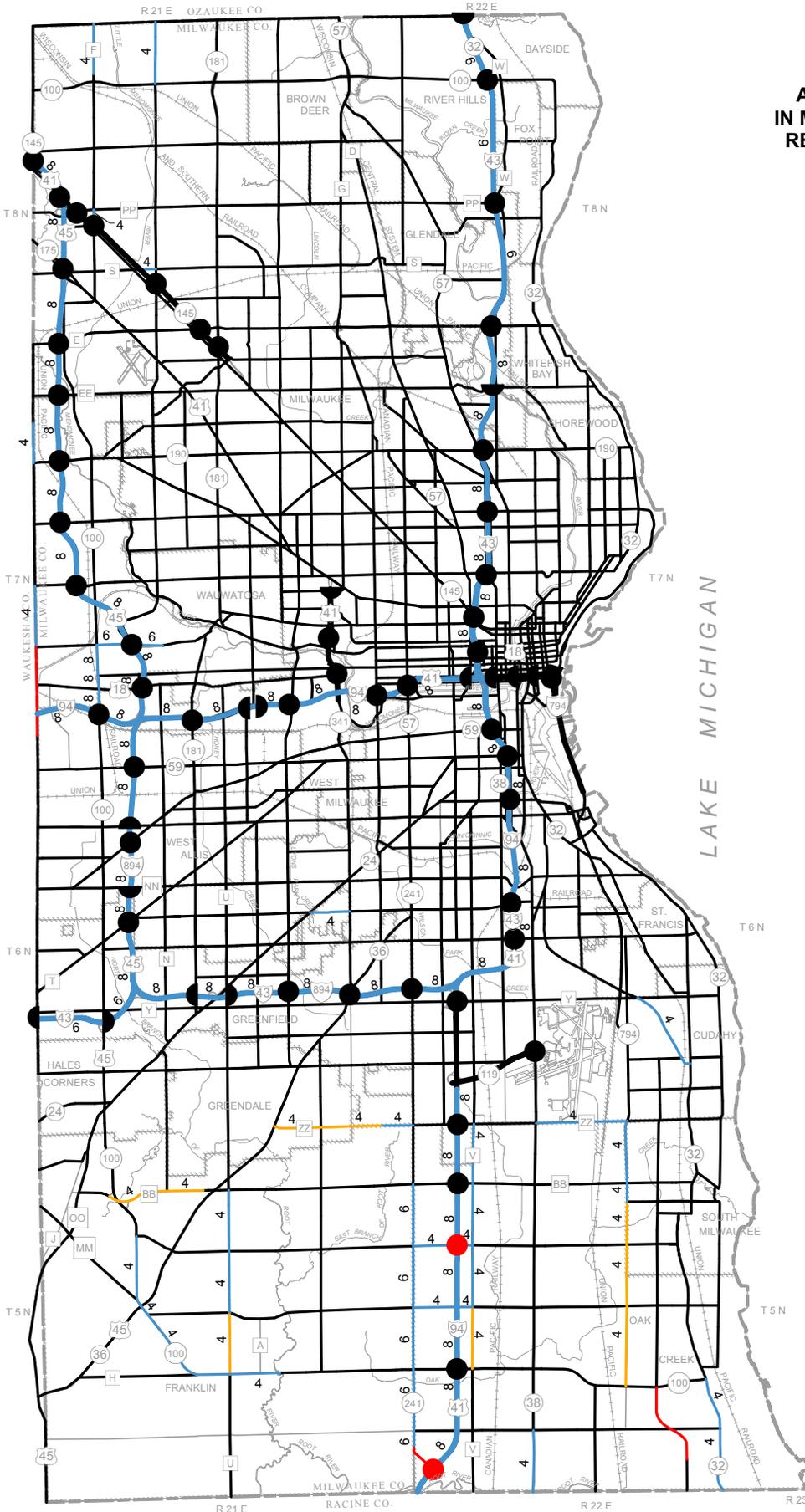
3. The plan recommends that the Wisconsin Department of Transportation during its preliminary engineering for IH 94 consider the provision of an interchange with CTH K in Kenosha County, including the alternative of collector-distributor roadways connecting CTH K, STH 50, and STH 158, and an additional potential new future freeway interchange at CTH ML with IH 94. Should the preliminary engineering study conclude with a recommendation to construct one or both of the interchanges, the Regional Planning Commission, upon request of the concerned local governments and the Wisconsin Department of Transportation, would take action to amend the regional plan to recommend the construction of the interchange.

4. Sufficient right-of-way should be reserved along STH 158 from CTH H to STH 31 to accommodate its ultimate improvement to six travel lanes.

5. Sufficient right-of-ways should be reserved along CTH K from IH 94 to STH 31 to accommodate its ultimate improvement to six travel lanes.

Map 17 (continued)

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN MILWAUKEE COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN



ARTERIAL STREET OR HIGHWAY

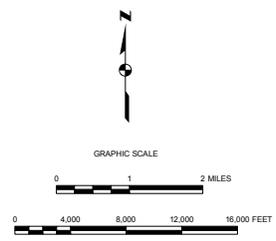
- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 NUMBER OF LANES (2 WHERE UNNUMBERED)

FREEWAY INTERCHANGE

- NEW
- ◐ HALF NEW
- EXISTING

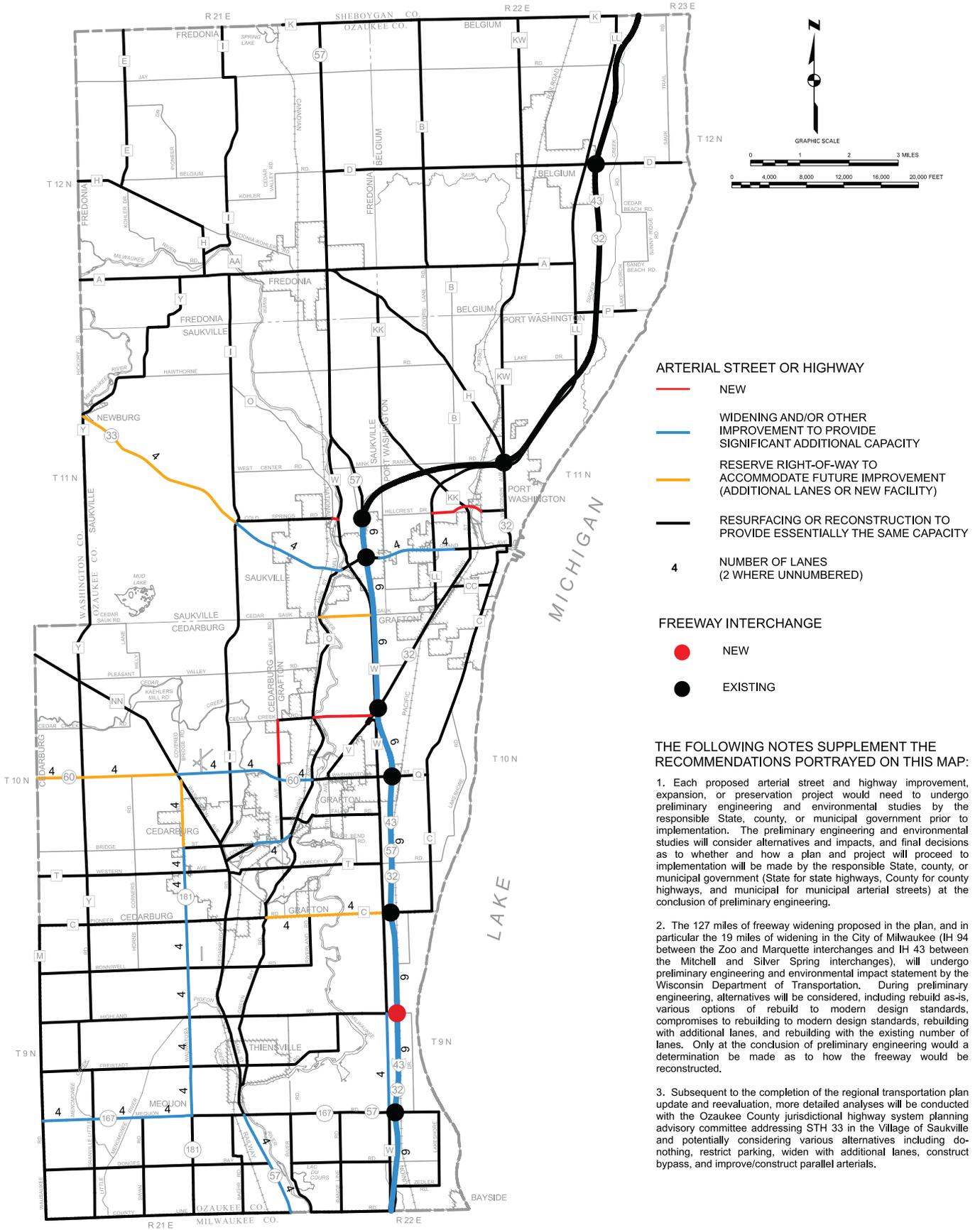
THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement, expansion, or preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible State, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.
2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.
3. The plan also provides further recommendations with respect to freeway half-interchanges. The plan recommends that the Wisconsin Department of Transportation, during the reconstruction of the freeway system:
 - Convert the S. 27th Street with IH 94 interchange to a full interchange;
 - Consider as an alternative (where conditions permit) combining selected half-interchanges into one full interchange. (For example, STH 100 and S. 124th Street with IH 43.)
 - Retain all other existing half-interchanges and examine during preliminary engineering the improvement of connection between adjacent interchanges.
4. The plan also recommends that during preliminary engineering for the reconstruction of STH 100 from W. Forest Home Avenue to IH 43, consideration be given to alternatives without additional traffic lanes, alternatives with additional traffic lanes or auxiliary lanes, and alternatives with frontage roads.



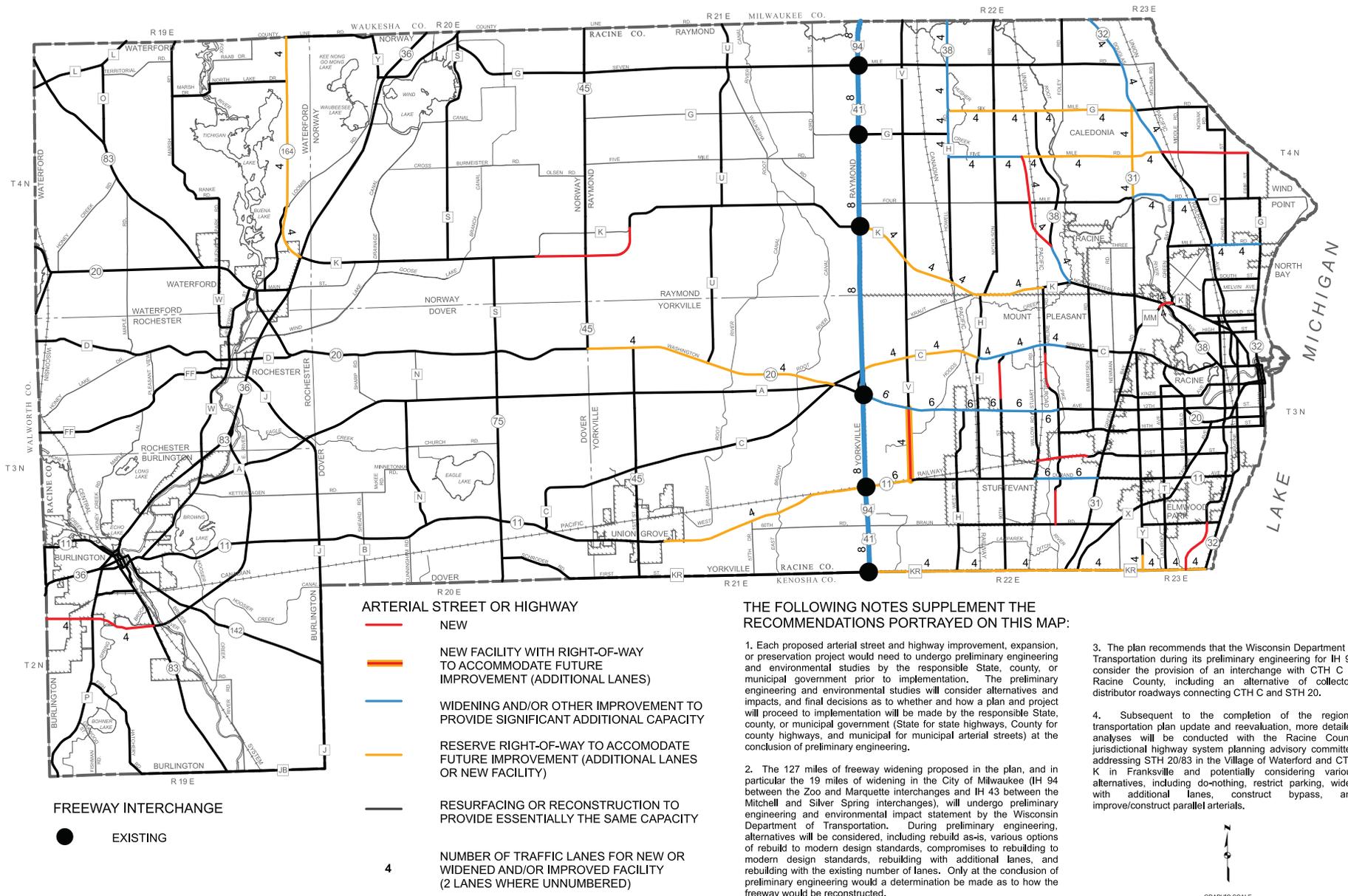
Map 17 (continued)

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN OZAUKEE COUNTY: 2035 REGIONAL TRANSPORTATION PLAN



Map 17 (continued)

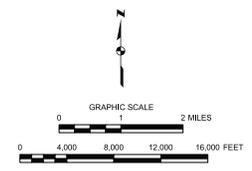
FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN RACINE COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION PLAN



- ARTERIAL STREET OR HIGHWAY**
- NEW
 - NEW FACILITY WITH RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES)
 - WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
 - RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)
 - RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- FREEWAY INTERCHANGE**
- EXISTING
- 4** NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

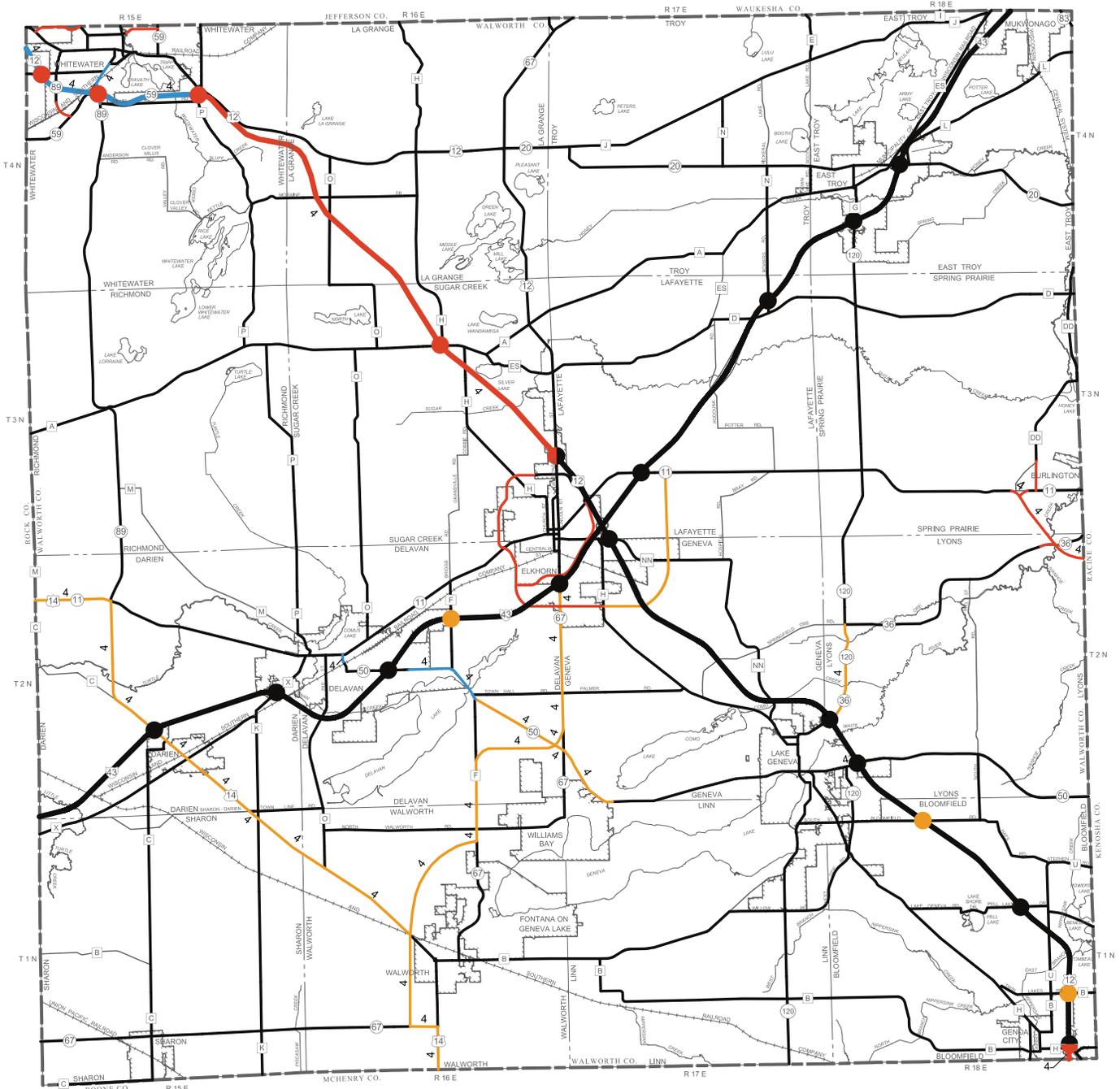
THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement, expansion, or preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible State, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.
2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.
3. The plan recommends that the Wisconsin Department of Transportation during its preliminary engineering for IH 94 consider the provision of an interchange with CTH C in Racine County, including an alternative of collector-distributor roadways connecting CTH C and STH 20.
4. Subsequent to the completion of the regional transportation plan update and reevaluation, more detailed analyses will be conducted with the Racine County jurisdictional highway system planning advisory committee addressing STH 20/83 in the Village of Waterford and CTH K in Franksville and potentially considering various alternatives, including do-nothing, restrict parking, widen with additional lanes, construct bypass, and improve/construct parallel arterials.



Map 17 (continued)

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WALWORTH COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION PLAN



ARTERIAL STREET OR HIGHWAY

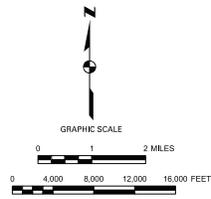
- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4** NUMBER OF LANES FOR NEW OR WIDENED AND/OR IMPROVED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

FREEWAY INTERCHANGE

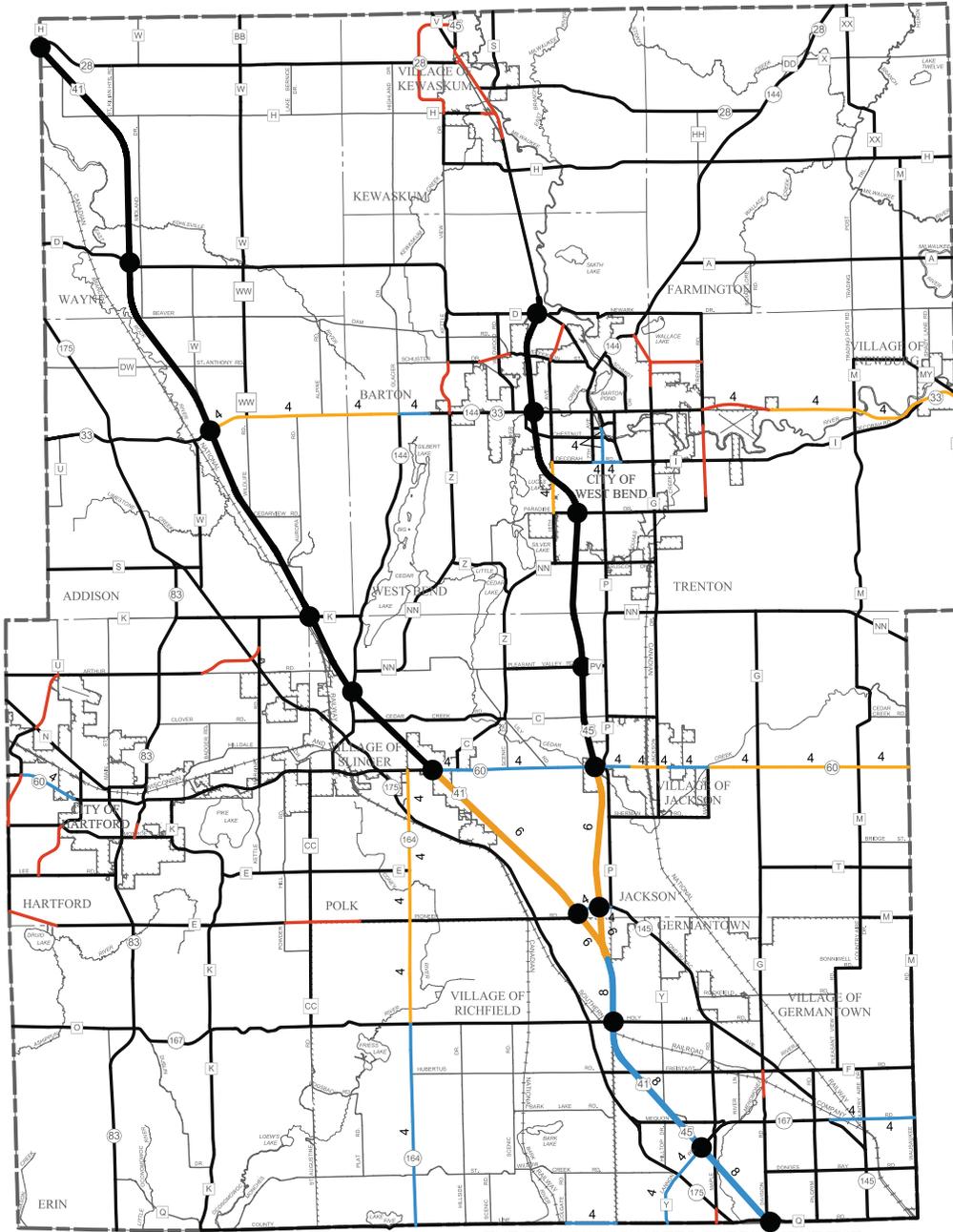
- NEW
- ◐ NEW HALF
- EXISTING
- RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (POTENTIAL NEW INTERCHANGE)

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement, expansion, or preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible State, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.
2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (I-94 between the Zoo and Marquette interchanges and I-43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.



FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WASHINGTON COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION PLAN



ARTERIAL STREET OR HIGHWAY

- NEW
- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
- 4 NUMBER OF LANES (2 WHERE UNNUMBERED)

FREEWAY INTERCHANGE

- EXISTING

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

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

2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.

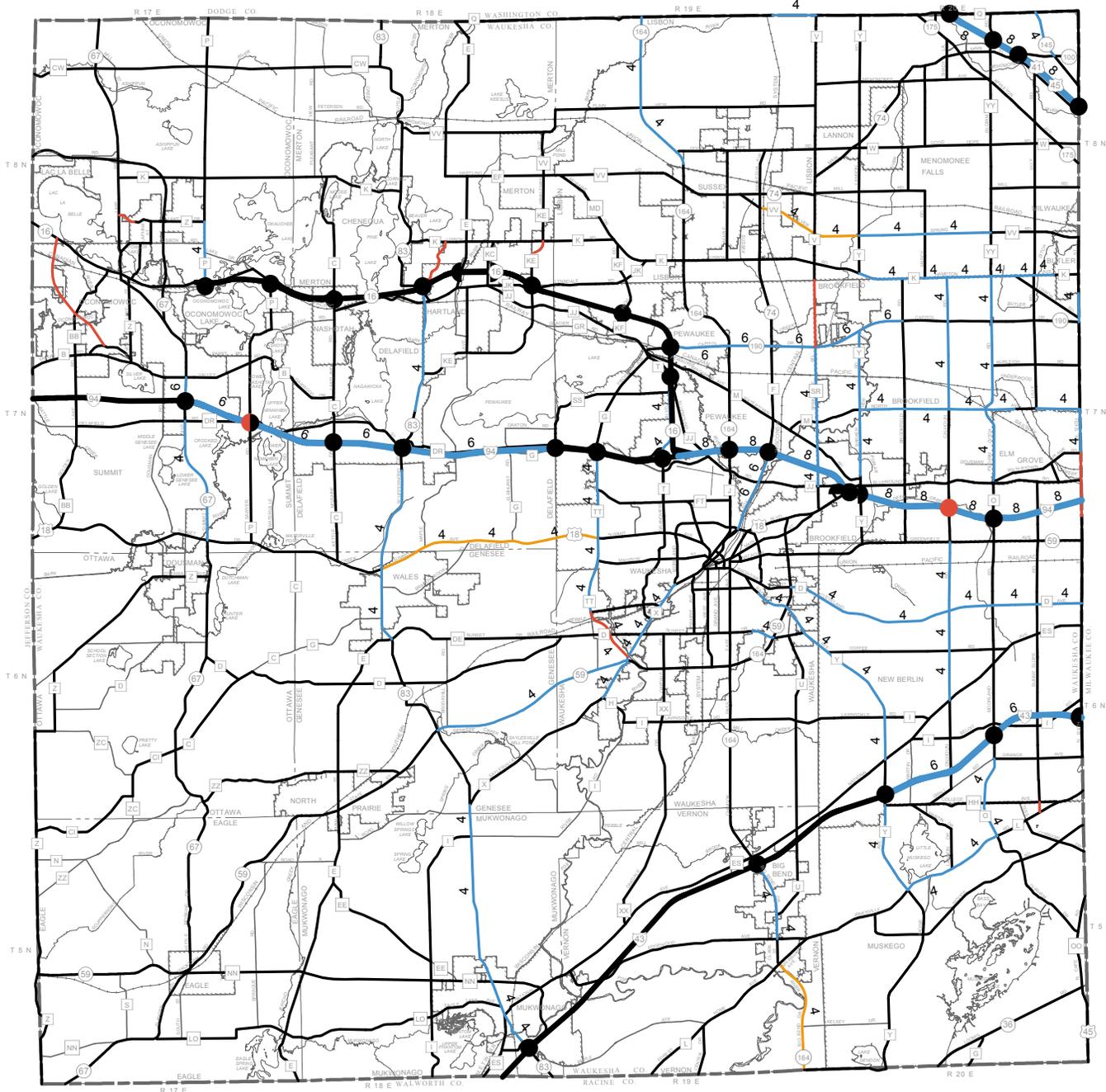


GRAPHIC SCALE



Map 17 (continued)

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION PLAN

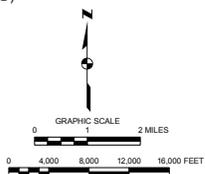


ARTERIAL STREET OR HIGHWAY

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

FREEWAY INTERCHANGE

- NEW
- ◐ NEW HALF
- EXISTING



THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement, expansion, or preservation project would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation will be made by the responsible State, county, or municipal government (State for state highways, County for county highways, and municipal for municipal arterial streets) at the conclusion of preliminary engineering.
2. The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will undergo preliminary engineering and environmental impact statement by the Wisconsin Department of Transportation. During preliminary engineering, alternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how the freeway would be reconstructed.
3. The plan also provides further recommendations with respect to freeway half-interchanges. The plan recommends that the Wisconsin Department of Transportation during the reconstruction of the freeway system:
 - Convert the CTH P with IH 94 interchange to a full interchange.
 - Consider as an alternative (where conditions permit) the combination of selected half-interchanges into one full interchange; and
 - Retain all other existing half-interchanges and examine during preliminary engineering the improvement of connection between adjacent interchanges.
4. Subsequent to the completion of the regional transportation plan update and reevaluation, more detailed analysis will be conducted with the Waukesha County jurisdictional highway system planning advisory committee addressing STH 164 in the Village of Big Bend and potentially considering various alternatives, including do-nothing, restrict parking, widen with additional lanes, construct bypass, and improve/construct parallel arterials.

municipal government prior to implementation. The preliminary engineering and environmental studies would consider alternatives and impacts, and final decisions as to whether and how a planned project will proceed to implementation would be made by the responsible State, county, or municipal government at the conclusion of preliminary engineering.

The 127 miles of freeway widening proposed in the plan, and in particular the 19 miles of widening in the City of Milwaukee (IH 94 between the Zoo and Marquette interchanges and IH 43 between the Mitchell and Silver Spring interchanges), will necessarily first undergo preliminary engineering and environmental impact statement by WisDOT. During preliminary engineering, alternatives would be considered, including rebuild-as-is, various options of rebuilding to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of the preliminary engineering would a determination be made as to how each freeway segment would be reconstructed.

IDENTIFICATION OF AN IMPLEMENTATION SCHEDULE AND IMPLEMENTATION RESPONSIBILITIES, AND POSSIBLE FUNDING SOURCES FOR EACH RECOMMENDED ACTION

Implementation responsibilities and schedule, and possible funding resources for congestion management strategies are identified in the regional transportation plan, SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*, and in the regional transportation plan reappraisal, SEWRPC Memorandum No. 197, *Review, Update, and Reaffirmation of the Year 2035 Regional Transportation Plan*. The implementation responsibilities and schedule, and possible funding resources recommendations are reviewed and updated on a ten year cycle with the major reevaluation and extension of design year of the regional transportation plan, and also every four years with the review and reappraisal of the regional transportation plan. Additional detail is provided with respect to implementation responsibilities and schedule in the air quality conformity analysis report for the regional transportation plan and plan reappraisal, the latest report being SEWRPC Memorandum Report No. 196, *Assessment of Conformity of the Year 2035 Regional Transportation System Plan and the Year 2009-2012 Transportation Improvement Program with Respect to the State of Wisconsin Air Quality Implementation Plan – Six County Southeastern Wisconsin Ozone Nonattainment Area and Three County Fine Particulate Nonattainment Area*. In addition, further detail for transportation systems management measures with respect to implementation responsibilities, schedule, and funding resources is provided in the regional transportation operations plan, SEWRPC Memorandum Report No. 202, *Regional Transportation Operations Plan for Southeastern Wisconsin: 2012-2016*.

The Regional Planning Commission, by State law, is an advisory agency, and implementation of the regional transportation plan is dependent upon the actions taken by local, county, areawide, State, and Federal agencies of government. There are a number of agencies whose actions will affect the

implementation of the recommended regional transportation system plan and whose full cooperation in plan implementation will be essential – Local Plan Commissions, Local Boards of Public Works, Committees of the County Boards: Highway, Transit, and Public Works, Transit Commissions and Boards, Cooperative Contract Commissions, the Regional Planning Commission, the Wisconsin Department of Transportation, the Wisconsin Department of Natural Resources, the University of Wisconsin-Extension, the U.S. Department of Transportation – Federal Highway Administration and Federal Transit Administration, and the U.S. Environmental Protection Agency.

Provided below is a summary of the agencies responsible for implementation of, and implementation schedule for, the actions recommended under the five plan elements of the year 2035 regional transportation plan:

Transportation Systems Management and Travel Demand Management

- It is recommended that the WisDOT continue to house and take the lead in the regional Intelligent Transportation System (ITS) architecture maintenance, review, and update efforts, and ensure that the regional ITS architecture conform to the national ITS architecture and standards. The Regional Planning Commission will continue to support the WisDOT in these efforts;
- It is recommended that the WisDOT continue to operate, enhance, and expand the freeway traffic management system in Southeastern Wisconsin—including ramp-meters, freeway traffic detectors, closed circuit television, enhanced reference markers, and variable message signs—with the expansion to occur upon freeway system reconstruction;
- It is recommended that the WisDOT and local governments prepare and implement coordinated traffic signal plans along all surface arterial streets and highways where the signal spacing is one-half mile or less—projects to be identified and prioritized for funding as part of the regional transportation operations plan;
- It is recommended that the WisDOT and local governments aggressively consider and implement individual arterial street and highway intersection improvements—projects to be identified and prioritized for funding as part of the regional transportation operations plan;
- It is recommended that local governments consider the restriction of curb-lane parking and operation of the curb parking lanes as through traffic lanes as needed during peak periods in

order to reduce traffic congestion and to help to provide good transit service—projects to be identified and prioritized for funding as part of the regional transportation operations plan;

- It is recommended that State, county, and local governments with arterial streets and highways under their jurisdiction adopt the recommended access management standards and implement these standards as development or redevelopment takes place along arterials under their jurisdiction, and prepare and implement access management plans along arterials which currently are developed and have access which violates these standards—projects to be identified and prioritized for funding as part of the regional transportation operations plan;
- The WisDOT should also provide advisory information to motorists concerning the surface arterial street and highway network in the Region (to be implemented as part of freeway segment reconstruction);
- It is recommended that the City of Milwaukee expand its current initiative to construct a SummerFest shuttle bus parking management and guidance system to include all of the Milwaukee CBD at all times of the year;
- It is recommended that the WisDOT in cooperation with the Regional Planning Commission and all transportation system operators in the Region work to prepare, maintain, and update as needed a regional transportation operations plan—initiated in 2011 and completed in 2012;
- It is recommended that the WisDOT and local governments provide preferential treatment for high-occupancy vehicles on the existing arterial street and highway system (WisDOT to consider and provide at freeway on-ramps upon freeway reconstruction and transit operators to provide on express and rapid bus surface arterial routes as routes are implemented);
- It is recommended that the WisDOT continue to promote carpooling and the efficient use of the Region’s transportation system through the proposed expansion of the existing network of park-ride lots to include locations along all major routes at their major intersections and interchanges where sufficient demand may be expected to warrant provision of an off-street parking facility;
- It is recommended that transit operators in the Region build upon and expand existing transit pricing programs;

- It is recommended that the WisDOT implement a program to aggressively promote transit use, bicycle use, ridesharing, pedestrian travel, telecommuting, and work-time rescheduling, including compressed work weeks in an effort to encourage alternatives to drive alone personal vehicle travel;
- It is recommended that the transit operators expand and enhance transit information and marketing in the Region; and
- It is recommended that local units of government, upon adoption of the regional land use plan, prepare and implement detailed, site-specific neighborhood and major activity center plans to facilitate travel by transit, bicycle, and pedestrian movement and reduce dependence on automobile travel.

The regional transportation operations plan provides additional detail for implementation schedule and responsibilities, and proposed funding sources and priorities for transportation system management actions.

The preparation of the regional transportation operations plan was initiated in 2011 and completed in 2012, as documented in SEWRPC Memorandum Report No. 202, *Regional Transportation Operations Plan for Southeastern Wisconsin: 2012-2016*. Each County, City, Village, and Town in Southeastern Wisconsin and the Wisconsin Department of Transportation were asked to identify candidate transportation systems management projects for the years 2012 through 2016 from the transportation systems management projects recommended in the regional transportation plan. The candidate projects were evaluated, and prioritized for implementation, particularly with respect to U.S. Department of Transportation, Federal Highway Administration Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding. Tables 14, 15, and 16 list the candidate projects and present a priority listing of the projects. Corridor projects (Table 14) are considered to have greater priority than individual intersection projects (Table 15), as corridor projects include multiple intersections and have greater potential impact on transportation operations. Study projects (Table 16) have lower priority than both corridor and intersection projects, as study projects would not have immediate impact on transportation operations. Candidate projects would continue to be solicited on a four year cycle, with the next solicitation of projects in 2015. The prioritization of projects presented in the regional transportation operations plan is intended to be used in the next two CMAQ funding cycles, the first to request projects in 2012, with projects to be implemented in 2013 through 2015, and the next to request projects in 2014, with projects to be implemented in 2015 through 2017.

Table 14

Recommended Priority Grouping for Candidate Corridor Transportation Systems Management Projects

Project Description	Location	Sponsor	Length	Number of Traffic Signals	Average Signal Spacing	Traffic Volume and Congestion ^a	Estimated Construction Cost	Project Priority Score	Project Priority Grouping
Design and Install Traffic Adaptive Signal Control System Including Remote Management Capability	W. Good Hope Road (CTH PP) Corridor from USH 41/USH 45 to IH 43	Milwaukee County	7.0 miles	13	0.58 miles	<u>23,900 – 35,700</u> 38,000	\$410,000	9	1
Design and Install Traffic Signal Interconnection	CTH L from CTH Y to Tess Corners Drive	Waukesha County	3.2 miles	6	0.64 miles	<u>11,200 – 21,100</u> 14,000	\$200,000	9	1
Design and Install Traffic Adaptive Signal Control System Including Remote Management Capability	W. Silver Spring Drive (CTH E) Corridor from N. 91 st Street to N. 124 th Street	Milwaukee County	2.0 miles	7	0.33 miles	<u>26,500 – 31,500</u> 27,000	\$210,000	9	1
Design and Install Traffic Adaptive Signal Control System Including Remote Management Capability	S. 76 th Street (CTH U) from Oklahoma Avenue to Parkview Road	Milwaukee County	3.5 miles	11	0.35 miles	<u>18,300 – 22,300</u> 27,000	\$396,000	9	1
Design and Install Traffic Signal Interconnection	CTH K from CTH V to 124 th Street	Waukesha County	6.1 miles	7	1.02 miles	<u>5,500 – 19,000</u> 14,000	\$200,000	8	2
Design and Install Traffic Signal Interconnection	CTH O from STH 59 to USH 18	Waukesha County	1.3 miles	8	0.19 miles	<u>33,200 – 39,200</u> 38,000	\$200,000	8	2
Design and Install Traffic Adaptive Signal Control System Including Remote Management Capability	W. Layton Avenue (CTH Y) Corridor from W. Loomis Road (STH 36) to S. 108th Street (STH 100)	Milwaukee County	4.0 miles	8	0.57 miles	<u>11,200 – 24,900</u> 27,000	\$216,000	7	2
Design and Install Traffic Signal Interconnection	CTH F from North of IH 94 to Duplainville Road	Waukesha County	1.2 miles	4	0.40 miles	<u>31,800 – 34,700</u> 38,000	\$200,000	7	2
Design and Install Traffic Adaptive Signal Control System Including Remote Management Capability	W. Oklahoma Avenue (CTH NN) Corridor from S. 76 th Street to S. 92 nd Street	Milwaukee County	1.0 miles	4	0.33 miles	<u>21,300 – 23,100</u> 27,000	\$144,000	6	3
Design and Install Traffic Signal Interconnection	CTH VV from Marcy Road to Lilly Road	Waukesha County	2.5 miles	4	0.83 miles	<u>19,900 – 23,500</u> 27,000	\$200,000	4	3

^aEstimated average weekday traffic volume compared to typical average weekday design capacity.

Source: SEWRPC

Table 15

Recommended Priority Grouping for Candidate Intersection Transportation Systems Management Projects

Project Description	Location	Sponsor	Traffic Volume and Congestion-Primary Street ^a	Traffic Volume and Congestion-Secondary Street ^a	Annual Number of Vehicle Crashes ^b	Vehicle Crash Rate ^b	Estimated Construction Cost	Project Priority Score	Project Priority Grouping
Install Traffic Signals	95 th Street and 88 th Avenue (CTH H) Intersection	Village of Pleasant Prairie	<u>5,600-7,300</u> 14,000	<u>6,500^c</u> 14,000	5.7	1.73	\$160,000	16	1
Install Traffic Signals	CTH KF and CTH JK Intersection	Waukesha County	<u>4,900-10,100</u> 14,000	<u>1,900-5,500</u> 14,000	3.7	0.97	\$900,000	13	1
Upgrade Traffic Signals	CTH YY and Burleigh Road Intersection	Waukesha County	<u>12,900-14,800</u> 14,000	<u>9,200^c</u> 14,000	1.7	0.27	\$650,000	12	2
Install Traffic Signals	CTH Y and Gebhardt Road Intersection	Waukesha County	<u>17,500-21,200</u> 14,000	<u>4,300^d</u> 14,000	1.7	0.23	\$500,000	11	2
Install Traffic Signals	CTH I and CTH ES (west) Intersection	Waukesha County	<u>8,100-9,000</u> 14,000	<u>900^d</u> 14,000	2.7	0.88	\$850,000	11	2
Install Traffic Signals	CTH Y and CTH K Intersection	Waukesha County	<u>8,900-9,500</u> 14,000	<u>4,300^c</u> 14,000	2.3	0.59	\$650,000	11	2
Construct Exclusive Turn Lanes	W. Beloit Road (CTH) and S. 112 th Street Intersection	Milwaukee County	<u>10,000-15,100</u> 14,000	<u>1,800-4,400</u> 14,000	2.0	0.38	\$300,000	10	2
Construct Exclusive Turn Lanes	W. Rawson Avenue (CTH BB) and W. Forest Home Avenue (CTH OO) Intersection	Milwaukee County	<u>7,100-7,500</u> 14,000	<u>4,100^c</u> 14,000	2.0	0.63	\$350,000	10	2
Install Traffic Signals	CTH Y and CTH I Intersection	Waukesha County	<u>8,500-12,100</u> 14,000	<u>2,500-2,900</u> 14,000	2.0	0.45	\$550,000	9	3
Install Traffic Signals	CTH VV and Lake Five Road Intersection	Waukesha County	<u>5,900-6,300</u> 14,000	<u>1,700-3,400</u> 14,000	2.0	0.68	\$500,000	9	3
Install Traffic Signals	CTH I and CTH ES (east) Intersection	Waukesha County	<u>9,000-10,100</u> 14,000	<u>2,500^d</u> 14,000	1.0	0.27	\$850,000	7	3
Reconstruct as Roundabout	116 th Avenue, 120 th Avenue, and Corporate Drive Intersection	Village of Pleasant Prairie	<u>5,600-6,800</u> 14,000	<u>--^c</u> 14,000	1.3	0.61	\$1,500,000	7	3
Install Traffic Signals	CTH I and Calhoun Road Intersection	Waukesha County	<u>3,400-6,200</u> 14,000	<u>1,700-4,700</u> 14,000	1.0	0.37	\$600,000	6	3
Reconstruct as Roundabout	Bain Station Road and 88 th Avenue (CTH H) Intersection	Village of Pleasant Prairie	<u>6,700-7,300</u> 14,000	<u>1,400-2,200</u> 14,000	1.3	0.43	\$1,700,000	6	3
Reconstruct as Roundabout	STH 32 (Sheridan Road) and 116 th Street Intersection	Village of Pleasant Prairie	<u>9,000-10,100</u> 14,000	<u>1,100-1,900</u> 14,000	0.7	0.19	\$1,600,000	6	3

^aEstimated average weekday traffic volume compared to estimated average weekday design capacity.

^bNumber of vehicle crashes and crash rate are based on a three year average. Vehicle crash rate is the annual number of crashes per 1,000,000 approaching vehicles at the intersection.

^cTraffic volume data is not available in one or both legs of the secondary street. The available traffic volume data on the primary and secondary streets was used in the calculation of the vehicle crash rate.

^dSecondary street is the minor leg of a T-intersection.

Source: SEWRPC

Table 16

**RECOMMENDED PRIORITY GROUPING IN REGIONAL TRANSPORTATION OPERATIONS PLAN
FOR CANDIDATE STUDY TRANSPORTATION SYSTEMS MANAGEMENT PROJECTS: 2012-2016**

Corridor Projects

Project Description	Location	Sponsor	Length	Number of Traffic Signals	Average Signal Spacing	Traffic Volume and Congestion^a	Estimated Construction Cost	Project Priority Grouping
Study to Improve Traffic Flow Including Signal Timing and Turn Lanes	14 Intersections in the City of Burlington on former STH 11, 36, 83, and 142	City of Burlington	--	14	--	--	\$43,000	--

Intersection Projects
None

^aEstimated average weekday traffic volume compared to typical average weekday design capacity.

Source: SEWRPC

Public Transit System Maintenance and Improvement

The recommended schedule for public transit expansion is shown on Figure 4. A more detailed implementation schedule is shown in Table 17. Implementation of the proposed expansion in public transit service will be dependent upon the following:

- Continued State funding of the maintenance, improvement, and expansion of public transit. The State has historically funded 40 to 45 percent of transit operating costs, and has increased funding to address inflation in the cost of providing public transit, and to provide transit improvement and expansion; and
- The development of a dedicated source of local funding for public transit.

The creation of a regional transit authority could assist in implementing the transit plan element both by providing dedicated funding and by implementing transit service across community and county boundaries. The current operators of public fixed-route transit services in the Region – Ozaukee, Milwaukee, Washington, and Waukesha Counties and the Cities of Kenosha, Racine, and Waukesha – are capable with the necessary funding of implementing the plan recommendations for expansion of transit services. The transit operators have demonstrated this in the past by implementing transit service improvements that expanded service within each county or extended service across county or municipal boundaries to serve areas outside their primary service area.

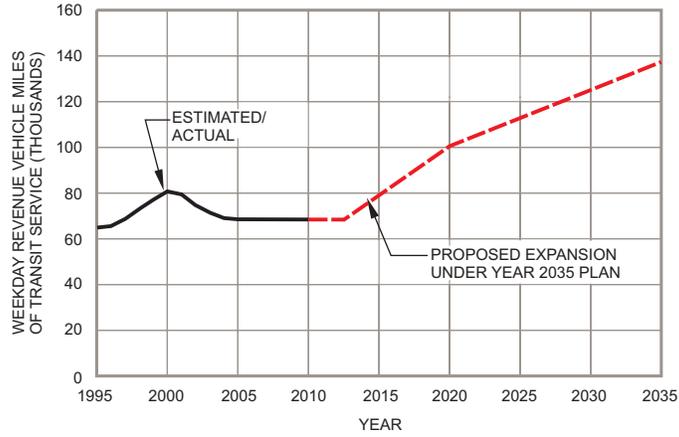
The plan identifies potential corridors for rapid and express fixed guideway transit services and recommends that more detailed planning be conducted through corridor studies for each corridor. The studies would be conducted by the transit operator concerned, or jointly by the multiple transit operators concerned, to determine whether to implement a fixed guideway transit alternative in each corridor and to refine the conceptual guideway alignments shown in the regional plan. At the conclusion of each corridor study, the transit operator(s) would determine whether to implement fixed guideway transit and identify the preferred alignment within the corridor that should proceed into preliminary engineering. The Commission would then, at the request of the transit operator(s), revise and amend the regional plan to include the fixed guideway.

Bicycle and Pedestrian Facility Element

- A more detailed evaluation of the recommended accommodation of bicycles on surface arterial streets or highways should necessarily be conducted by the implementing agency as part of the engineering for the resurfacing, reconstruction, and new construction of each segment of surface

Figure 4

**HISTORIC AND PROPOSED
VEHICLE-MILES OF PUBLIC TRANSIT
SERVICE ON AN AVERAGE WEEKDAY IN THE
SOUTHEASTERN WISCONSIN REGION: 1995-2035**



Source: SEWRPC.

Table 17

POTENTIAL STAGES OF THE TRANSIT PLAN ELEMENT: 2012, 2020, 2030, AND 2035

Transit Service Element	Year	Description
Rapid Transit	2012	Continue operation of 2005 transit services
	2020	<p>Initiate rapid commuter rail service between Kenosha, Racine, and Milwaukee using exiting Union Pacific and Canadian Pacific freight lines. Service provided in both directions during all time periods with 14 weekday trains in each direction.</p> <p>Restore rapid “freeway flyer” bus services in Milwaukee County to routes and service levels operated in 2001, and add new rapid services to downtown Milwaukee including:</p> <ul style="list-style-type: none"> • From the City of Franklin via STH 36, IH 43/894, and IH43/94 • From the Town of Yorkville via STH 20, IH 94, and IH 94/43 with a stop at General Mitchell International Airport • From the City of Hartford via STH 60, USH 41/45, and IH94 • From the City of Waukesha via STH 59, STH 164, STH 18, and IH 94 <p>Modify other existing rapid bus services to downtown Milwaukee including:</p> <ul style="list-style-type: none"> • Change the Oconomowoc/Hartland-Milwaukee route to operate via STH 16, Capitol Drive, USH 45 and IH 94 between Hartland and downtown Milwaukee • Extend the Mukwonago-Milwaukee route to a park-ride lot at the East Troy municipal airport via IH 43 and STH 20 <p>Provide rapid bus service in Milwaukee County on weekdays with 10 to 30-minute headways during peak periods and 60-minute headways during midday periods on all routes; between Kenosha, Racine, and Milwaukee, and between Waukesha and Milwaukee, on weekdays with 20 to 30-minute headways during peak periods and 30 to 60 minute headways during midday and evening periods; and to all other areas on weekdays with 30-minute headways during peak periods and 60-minute headways during midday periods on all routes</p> <p>Provide all rapid bus services in both travel directions on all routes in the Region</p>
	2030	<p>Add new rapid services to the City of Milwaukee central business district including:</p> <ul style="list-style-type: none"> • From S. 43rd Street and Morgan Avenue in the City of Milwaukee via S. 43rd Street and IH 94 • From Green Bay Avenue and Congress Street (extended) in the City of Glendale via Green Bay Road and IH 43 • From IH 94 and STH 164 in the City of Pewaukee via IH 94 <p>Modify route between the City of Milwaukee central business district and IH 94 and STH 20 in Racine County to include stop at IH 94 and CTH K in Racine County to serve industrial development along IH 94</p> <p>Reduce headways on rapid service to provide 20 to 30 minute service during weekday peak periods on routes serving Milwaukee County</p> <p>Maintain headways proposed for 2020 stage on rapid routes operated outside Milwaukee County</p>
	2035	<p>Reduce headways on rapid routes serving Milwaukee County to provide 10 to 30 minute service during weekday peak periods, 30 to 60 minute service during weekday midday periods</p> <p>Expand service on routes serving Milwaukee County to include weekday evening and weekend service provided at 60 minute headways</p> <p>Reduce headways on routes serving areas outside Milwaukee County to provide 20 to 30 minute service during weekday peak periods and 60 minute service during weekday midday periods</p> <p>Expand service on routes serving areas outside Milwaukee County to include weekday midday and evenings service and weekend service, all provided at 60 minute headways</p>
Express Transit	2012	Continue operation of 2005 transit services
	2020	<p>Reinstate express bus services in Milwaukee County by adding new express bus routes to replace existing local bus service in the same corridors and with similar service levels as in 2001 including:</p> <ul style="list-style-type: none"> • Between the Park Place commercial center and downtown Milwaukee over Good Hope Road, Mill Road, 60th Street, Fond du Lac Avenue, 16th/17th Street, and Wisconsin Avenue • Between the Southridge Shopping Center and park-ride lot at Teutonia Avenue and Florist Avenue over 76th Street, Forest Home Avenue, and 27th Street • Between a 27th Street and Sycamore Street and a park-ride lot at Teutonia Avenue and Florist Avenue over 27th Street • Between downtown Waukesha, downtown Milwaukee, and the University of Wisconsin-Milwaukee over Moreland Boulevard, Bluemound Road, Wisconsin Avenue, Maryland Avenue and Downer Avenue • Between South Milwaukee/Cudahy and downtown Milwaukee over 13th Avenue, Packard Avenue, Kinnickinnic Avenue, Plankinton Avenue, and Wisconsin Avenue • Between State Fair Park and downtown Milwaukee over Greenfield Avenue, National Avenue, 2nd Street, and Wisconsin Avenue <p>Operate express bus service throughout the day with 10 to 15-minute headways during weekday peak periods and 15 to 20 minute headways during the weekday off-peak periods, and on weekends</p> <p>Reinstate express UBUS service in Milwaukee County over Route Nos. 5U, Oklahoma Avenue UBUS, and 63U, Silver Spring Drive UBUS.</p>

Table 17 (continued)

POTENTIAL STAGES OF THE TRANSIT PLAN ELEMENT: 2012, 2020, 2030, AND 2035

Transit Service Element	Year	Description
Express Transit (continued)	2030	<p>Expand express bus service in the Milwaukee urbanized area by adding new express bus routes to replace existing local bus service including:</p> <ul style="list-style-type: none"> • Between the 124th Street and Capitol Drive park-ride lot and the University of Wisconsin-Milwaukee over Capitol Drive, Downer Avenue, and Kenwood Boulevard • Between IH 94 and College Avenue park-ride lot and downtown Milwaukee over College Avenue, Howell Avenue, Chase Avenue, 6th Street and Wisconsin Avenue <p>Add express bus service from the Kenosha central business district to the Business Park of Kenosha and Kenosha Outlet Mall and to the Lakeview Corporate Park in the Village of Pleasant Prairie over 52nd Street, Green Bay Road, and 75th Street</p> <p>Maintain headways and service periods proposed for 2020 stage on express routes</p>
	2035	<p>Reduce headways on all express routes serving Milwaukee County to be no longer than 5-15 minutes during weekday peak periods and 10 to 20 minutes during weekday midday and evening off-peak periods and on weekends</p> <p>Reduce headways on express routes serving Waukesha County and eastern Kenosha and Racine Counties to 30 minutes during weekday peak and midday periods and no longer than 60 minutes during weekday evenings and on weekends</p>
Local Transit	2012	Continue operation of 2005 transit services
	2020	<p>Restore local bus services in Milwaukee County to include most routes operated in 2001 with 2001 service levels.</p> <p>Reduce headways on major local routes in central Milwaukee County outside express corridors to provide no less than 15-minute peak period, 20-minute midday period, and 20- to 30-minute evening period service on weekdays and 20- to 30-minute weekend service; restore remaining local bus services in Milwaukee County to the routes and service levels operated in 2001</p> <p>Extend local bus services to medium density development and industrial areas in:</p> <ul style="list-style-type: none"> • Northern and southern Milwaukee County • Eastern Racine and Kenosha Counties between Green Bay Road and IH94 • The west and northwest sides of the City of Waukesha • Add streetcar service in downtown Milwaukee and expand streetcar service in downtown Kenosha <p>Reduce midday headways on the local routes serving the Cities of Kenosha, Racine, and Waukesha from 60 minutes to 30 minutes, and restore headways on the local routes serving all three cities during the other service periods to those operated in 2001</p> <p>Extend service hours on the Kenosha transit system to include weekday and Saturday evenings</p>
	2030	<p>Continue extending fixed-route service to medium-density development and industrial areas in:</p> <ul style="list-style-type: none"> • Northern and southern Milwaukee County • The Butler, Menomonee Falls, Sussex, Waukesha and Muskego areas in eastern Waukesha County • The area around IH 94 and CTH K in eastern Racine County • The Oconomowoc, Delafield, and Hartland areas in western Waukesha County • The Slinger and Hartford areas in Washington County <p>Reduce headways on major local routes in central Milwaukee County outside express corridors to provide 5- to 10-minute peak period, 10 to 20-minute midday period, and 15- to 30-minute evening period service on weekdays and 15- to 30-minute weekend service</p> <p>Reduce headways on major routes in the Cities of Racine and Kenosha to provide 15-minute peak period service</p>
	2035	<p>Continue extending fixed-route service to medium-density development and industrial areas in:</p> <ul style="list-style-type: none"> • Northern and southern Milwaukee County • The City of Mequon and southern Ozaukee County • The Germantown, Jackson, Slinger, and Hartford areas in Washington County • The Oconomowoc, Delafield, Hartland, and Mukwonago areas in western Waukesha County <p>Reduce headways on local routes in outlying portions of Milwaukee County to provide 10 to 30-minute headways during weekday peak periods, 20 to 30-minute headways during the weekday midday period, 30 to 60-minute headways during weekday evening periods, and 20 to 60 minutes on weekends</p>

Source: SEWRPC.

arterial and should be implemented as part of reconstruction and new construction, and if practical, as part of resurfacing;

- If the detailed evaluation process indicates that the recommended bicycle way location is not feasible during reconstruction or new construction due to site constraints, excessive costs, the traffic and operating characteristics of the roadway, or other factors, the implementing agency should identify an alternative location and evaluate the feasibility of the alternative route;
- The Regional Planning Commission should review and update the jurisdictional responsibility of the off-street bicycle facilities as well as conduct an assessment of the priority of need for bicycle accommodation on each segment of the surface arterial street and highway system considering factors including traffic volume, composition, speed, and congestion.
- It is recommended that local units of government prepare community bicycle and pedestrian plans to supplement the regional plan.

Arterial Street and Highway System Capacity Expansion

The planned capacity expansion (arterials widened to carry additional traffic lanes and new arterial streets and highways) on the regional arterial street and highway system is identified in the regional transportation plan and in the regional transportation plan reappraisal. The planned expansion is shown on county maps and summarized by county in tables. The following recommendations are made in those documents with respect to the implementation of the planned arterial capacity expansion:

- It is recommended that the WisDOT act to expand, improve, and maintain, in accordance with the plan recommendations, the arterial street and highway facilities under State jurisdiction;
- It is recommended that the county boards of the seven constituent counties in the Region, upon recommendation of their respective county public works, highway, and transportation committees, act to expand, improve, and maintain, in accordance with the plan recommendations, the arterial street and highway facilities under county jurisdictions;
- It is recommended that the common councils, village boards, and town boards within the Region, upon recommendations of their respective plan commissions and boards of public works, act to expand, improve, and maintain, in accordance with the plan recommendations, the arterial street and highway facilities under local jurisdiction.

Tables 18 and 19 show the anticipated schedule and cost for the completion of the regional freeway system reconstruction and major surface arterial street and highway improvement and expansion projects, respectively. A more detailed implementation schedule for all arterial streets and highways is provided in Tables 20 and 21. Each proposed arterial street and highway improvement, expansion, and preservation project would necessarily undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternative alignments and impacts, including a no-build option, and final decisions as to whether to implement, and how a planned project will proceed to implementation, will be made by the responsible State, county, or municipal unit of government at the conclusion of preliminary engineering.

Funding Sources

In the regional transportation plan, and the regional transportation plan reappraisal, the average annual cost of the year 2035 regional transportation plan over the plan design period—including preservation of the existing transportation system, necessary operations and maintenance, and recommended system improvement and expansion—is compared to estimated available revenues (see Tables 22 and 23). Estimated available revenues are largely based on historic State and local expenditures and potential use of Federal funding programs and are identified and quantified in Tables 24 and 25.

ASSESSMENT OF THE EFFECTIVENESS OF IMPLEMENTATION OF RECOMMENDED PLAN

The review and reappraisal of the regional transportation plan (SEWRPC Memorandum Report No. 197, *Review, Update, and Reaffirmation of the Year 2035 Regional Transportation Plan*) which was completed in 2010 and is conducted on a four year cycle includes an assessment of the effectiveness of the recommended congestion management strategies. As described earlier in this document, these strategies are incorporated in the recommended actions of the regional transportation plan.

In each regional transportation plan reappraisal every four years, and as well in each major regional transportation plan reevaluation every ten years, those congestion management strategies/plan recommendations which have been implemented are documented, along with the changes in regional demographic and economic conditions and total travel. Chapter 5 of SEWRPC Memorandum Report No. 197, *Review, Update, and Reaffirmation of the Year 2035 Regional Transportation Plan*, documents those plan recommendations/congestion management strategies which have been implemented. Chapter 3 provides a review of changes over that some time period in Southeastern Wisconsin population, employment, travel, and traffic. The performance measures identified to monitor and assess

Table 18
ESTIMATED COST AND POTENTIAL SCHEDULE OF
FREEWAY RECONSTRUCTION WITHIN SOUTHEASTERN WISCONSIN^C

Period Completed And Open to Traffic	Facility	Limits of Project	Estimated Cost		Estimated Funding-- Year of Expenditure Dollars ^d (millions)
			Year 2009 Constant Dollars (millions)	Year of Expenditure Dollars (millions)	
2010 to 2015	IH 94 North/South Freeway ^a	Howard Ave./27 th St. to Illinois State Line	\$ 1,150.2	\$ 1,238.9	--
	CTH P Interchange	--	17.1	19.1	--
	Subtotal		\$ 1,167.3	\$ 1,258.0	\$ 2,051.0
2016 to 2020	Zoo Interchange ^b	Burleigh Rd. to Lincoln Ave. & 124 th St. to 70 th St.	\$ 1,290.0	\$ 1559.9	--
	Hale Interchange	--	181.9	233.8	--
	IH 894	Zoo Interchange to Hale Interchange	94.3	121.3	--
	IH 894	Hale Interchange to Mitchell Interchange	147.0	194.6	--
Subtotal		\$ 1,713.2	\$ 2,109.6	\$ 1,988.8	
2021 to 2025	IH 43	Silver Spring Dr. to STH 60	\$ 387.1	\$ 387.7	--
	USH 45	Burleigh Rd. to North Interchange	318.4	456.2	--
	IH 94	STH 16 to 124 th St.	395.8	579.2	--
	USH 41/45	North Interchange to Richfield Interchange	272.8	418.0	--
	IH 94	Jefferson County line to STH 16	253.1	395.2	--
Subtotal		\$ 1,627.2	\$ 2,236.3	\$ 2,283.3	
2026 to 2030	USH 12	STH 67 to Dodge County line	\$ 239.8	\$ 386.2	--
	IH 43	STH 83 to Hale Interchange	277.0	449.5	--
	Stadium Interchange	--	177.8	297.6	--
	IH 94	70 th St. to Stadium Interchange	73.9	126.5	--
	IH 43	Howard Ave. to Marquette Interchange	297.3	509.7	--
	STH 145	Hampton Ave. to Good Hope Rd.	96.5	167.2	--
	USH 41	Stadium Interchange to Lisbon Ave.	60.6	107.2	--
	IH 43/USH 12	--	31.7	55.8	--
	IH 43	Marquette Interchange to Silver Spring Dr.	268.7	484.2	--
Subtotal		\$ 1,523.3	\$ 2,583.9	\$ 2,621.4	
2031 to 2035	Marquette Interchange	Completion of Planned Work	\$ 537.4	\$ 1008.0	--
	IH 794	Lake Interchange to Carferry Dr.	172.3	340.9	--
	IH 43	STH 60 to Sheboygan County line	155.7	310.5	--
	STH 16	STH 67 to IH 94	168.1	343.8	--
	USH 12	Illinois State line to STH 67	183.3	378.3	--
	USH 45	Richfield Interchange to CTH D	135.0	284.5	--
	USH 12	Rock County line to STH 83	270.1	578.5	--
	USH 41	Dodge County line to USH 45	139.2	301.6	--
	Subtotal		\$ 1,761.1	\$ 3,546.1	\$ 3,009.5
Total		\$ 7,792.1	\$ 11,733.9	\$ 11,954.0	

^aThis 2009 constant dollar project cost is equivalent to the current WisDOT project under construction and its estimated year of expenditure cost of \$1,900 million with the following adjustments:

- Expansion of the project limits north to, but not including the Howard Avenue service interchange; west to, but not including the Loomis Road (STH 36) service interchange. Includes additional freeway mainline and service interchange reconstruction. (These costs are included in the above table in the connecting freeway segments.)
- Inclusion of arterial resurfacing and reconstruction being done as part of the freeway reconstruction project: the resurfacing of Layton Avenue (CTH Y) between Loomis Road and 27th Street (STH 241), the reconstruction of Layton Avenue (CTH Y) between IH 94 and 13th Street, the resurfacing of Loomis Road (STH 36) between STH 100 and 27th Street (STH 241), the addition of auxiliary lanes along Loomis Road (STH 36) adjacent to IH 894, the resurfacing and median improvement of S. 27th Street (STH 241) between College Avenue (CTH ZZ) and Howard Avenue, the construction of the extension of STH 241 from S. 27th Street to a new service interchange with IH 94, and the reconstruction of the east and west frontage roads in Kenosha and Racine County. (These surface arterial resurfacing and reconstruction costs are included in the costs of surface arterials under the plan.)
- Construction of new freeway service interchanges with Drexel Avenue and with the 27th Street (STH 241) extension. (These costs are included separately for each planned new freeway interchange.)
- Additional extension of project limits from the Wisconsin/Illinois State line to, but not including, the USH 41 service interchange with IH 94.
- Inflation of costs to year of expenditure.

Table 18 (continued)

^bThe WisDOT currently is conducting preliminary engineering for the Zoo Interchange. The preliminary engineering has not yet been completed with the selection of a final preferred alternative. The most substantial alternative currently being considered has an estimated cost of approximately \$2.3 billion in year of expenditure dollars. The 2009 constant dollar project cost shown in the above table is equivalent to the WisDOT estimated project cost with the following adjustments:

- Inclusion of arterial resurfacing and reconstruction proposed to be done as part of the freeway reconstruction project: Blue Mound Road (USH 18) from STH 100 to USH 45, Kearney Street and O'Connor Avenue between 84th Street (STH 181) and 76th Street, Greenfield Avenue (STH 59) between STH 100 and USH 45, approximately 0.4 miles of North Avenue west of STH 100, Swan Boulevard between USH 45 and Menomonee River Parkway, 0.5 miles of Watertown Plank Road east of STH 100, Wisconsin Avenue between STH 100 and USH 45, and STH 100 between Greenfield Avenue (STH 59) and Blue Mound Road (USH 18). (These surface arterial resurfacing and reconstruction costs are included in the costs of surface arterials under the plan.)
- Inflation of costs to year of expenditure.
- The preliminary engineering to date has included a contingency factor of 40 percent in its cost estimates of preliminary alternatives. It is expected that the final preferred alternative will have a contingency factor of 10 percent.

^cThe schedule of freeway reconstruction shown in this table represents an estimate of the timing of freeway reconstruction for the purposes of comparison of costs and revenues, and is not a recommendation for the schedule of freeway reconstruction. Such a schedule can only be developed by the Wisconsin Department of Transportation and will necessarily entail frequent updating, for example, due to pavement and structure condition.

^dEstimated available funding is an annual \$310 million in Southeastern Wisconsin freeway rehabilitation funding provided in the 2009-2011 State budget projected to increase at 2.8 percent annually.

Source: SEWRPC.

Table 19

ESTIMATED COST AND POTENTIAL SCHEDULE OF MAJOR SURFACE ARTERIAL CONSTRUCTION AND RECONSTRUCTION PROJECTS^{a,c}

Period Completed and Open to Traffic	County	Facility	Limits of Project	Cost (Millions 2009 Dollars) ^b	Cost (Millions Year of Expenditure Dollars)	Mileage
2010 to 2015	Racine and Walworth	Burlington Bypass	STH 83 to STH 11	\$ 15.6	--	4.9
	Racine	STH 32 (part)	Five Mile Rd. to STH 31	4.3	--	1.3
	Waukesha	Waukesha West Bypass	IH 94 to STH 59	28.0	--	5.1
	Subtotal			\$ 47.9	\$ 52.8	--
2016 to 2020	Milwaukee and Racine	STH 38 (part)	Oakwood Rd. to Six Mile Rd. and Five Mile Rd. to CTH K	\$ 25.3	--	6.1
	Milwaukee	USH 45/STH 100	Drexel Avenue to 60 th St.	26.6	--	4.5
	Milwaukee	STH 241 (part)	College Ave. to Drexel Ave.	8.8	--	1.0
	Waukesha	Pilgrim Road	USH 18 to Lisbon Rd.	26.4	--	4.8
	Waukesha	Springdale Rd./Town Line Rd. extension	CTH JJ to Weyer Rd.	25.7	--	4.7
	Waukesha	CTH Y	CTH L to College Avenue and Hickory Trail to Downing Dr.	21.9	--	6.0
	Waukesha	STH 83	Bay View Rd. to CTH X	19.5	--	4.8
	Waukesha	STH 83 (part)	Mariner Dr. to STH 16	14.0	--	3.6
	Waukesha	STH 83 (part)	CTH DE to USH 18	7.0	--	1.8
	Waukesha	STH 164	Howard Lane to CTH Q	13.7	--	3.5
	Waukesha	STH 190 (part)	Brookfield Rd. to Calhoun Rd.	8.8	--	1.0
Subtotal			\$ 197.7	\$ 253.7	--	
2021 to 2025	Milwaukee	STH 241 (part)	Drexel Ave. to Racine County line	\$ 44.7	--	5.0
	Racine	STH 20	IH 94 to Oaks Rd.	24.5	--	4.5
	Waukesha	CTH D (part)	Milwaukee County line to Calhoun Rd.	16.5	--	3.0
	Waukesha	STH 83 (part)	USH 18 to Phyllis Pkwy.	9.4	--	2.4
	Waukesha	STH 190 (part)	STH 16 to Brookfield Rd.	24.2	--	4.4
	Subtotal			\$ 119.3	\$ 175.7	--
2026 to 2030	Kenosha	STH 50	IH 94 to 39 th Ave.	\$ 44.9	--	5.1
	Kenosha	STH 83	STH 50 to Illinois State line	25.3	--	5.1
	Milwaukee and Racine	STH 32 (part)	STH 100 to STH 31	14.8	--	3.8
	Ozaukee and Washington	STH 167	STH 181 to STH 145	17.9	--	4.6
	Ozaukee	STH 181	STH 167 to Bridge Street	21.9	--	5.5
	Waukesha	CTH D (part)	Calhoun Rd. to STH 59/164	13.3	--	3.8
	Subtotal			\$ 138.1	\$ 233.6	--
2031 to 2035	Kenosha	STH 50 (part)	39 th Ave. to 63 rd St.	6.6	--	1.2
	Racine	STH 38	Six Mile Road to UP Railroad	12.0	--	2.6
	Washington	STH 164 (part)	CTH Q to STH 167	14.0	--	4.0
	Subtotal			\$ 32.6	\$ 63.3	--
Total			\$ 535.6	\$ 779.1	--	

^a Major projects include those projects involving new construction or widening with a cumulative length of four or more miles.

^b Cost of construction does not include the cost of right of way required for the project.

^c The schedule shown in this table represents an estimate of the timing of construction and reconstruction for the purposes of comparison of costs and revenues, and is not a recommendation for the schedule of construction and reconstruction. Such a schedule can only be developed by the responsible implementing agency and will necessarily entail frequent updating, for example, due to pavement and structure condition.

Table 20

**ARTERIAL HIGHWAY CAPACITY IMPROVEMENT AND EXPANSION PROJECTS IN THE YEAR 2035
RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN**

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2012a	Kenosha	Expansion	39th Avenue extension	18th Street to 24th Street	Construct two lanes on new alignment
2012a		Widening	CTH K	Union Pacific Railway to STH 31	Widen from two to four traffic lanes
2012a	Milwaukee	Widening	CTH U (76th Street)	Imperial Drive to Puetz Road	Widen from two to four traffic lanes
2012a			CTH ZZ (College Avenue)	STH 38 (Howell Avenue) to STH 794 (Pennsylvania Avenue)	Widen from two to four traffic lanes
2012a			Drexel Avenue	STH 241 (27th Street) to CTH V (13th Street)	Widen from two to four traffic lanes
2012a	Ozaukee	Widening	CTH W	STH 167 to Glen Oaks Lane	Widen from two to four traffic lanes
2012a			STH 33	Market Street to Tower Drive	Widen from two to four traffic lanes
2012a	Racine	Expansion	Burlington Bypass	Walworth County Line to STH 83	Construct four lanes on new alignment
2012a	Walworth	Expansion	Burlington Bypass	STH 11 to Racine County Line	Construct four lanes on new alignment
2012a	Washington	Widening	CTH Y	CTH Q to STH 175	Widen from two to four traffic lanes
2012a			STH 60	USH 41 to USH 45	Widen from two to four traffic lanes
2012a	Waukesha	Widening	CTH VV (silver Spring Drive)	Marcy Road to Bette Drive	Widen from two to four traffic lanes
2012a			CTH X	Harris Highland Drive to STH 59	Widen from two to four traffic lanes
2020	Kenosha	Expansion	51st Avenue extension	93rd Street to STH 165	Construct two lanes on new alignment
2020a		Widening	CTH C	CTH U to West Frontage Road	Widen from two to four traffic lanes
2020a			CTH K	104th Street to CTH H	Widen from two to four traffic lanes
2020a			CTH K	CTH H to Union Pacific Railway	Widen from two to four traffic lanes
2020a			CTH K	IH 94 to 104th Street	Widen from two to four traffic lanes
2020			CTH Q	CTH U to IH 94	Widen from two to four traffic lanes
2020			CTH S	CTH H to STH 31	Widen from two to four traffic lanes
2020a			IH 94	Illinois State Line to Racine County Line	Widen from six to eight traffic lanes
2020a			STH 158 (52nd Street)	STH 31 to 95th Avenue	Widen from two/four to six traffic lanes
2020			Milwaukee	Expansion	15th Avenue extension
2020a	IH 94/USH 41	27th Street Interchange			Construct new interchange
2020a	IH 94/USH 41	Drexel Avenue Interchange			Construct new interchange
2020a	Kenosha-Racine-Milwaukee Commuter Rail	Kenosha Metra Station to Milwaukee Intermodal Terminal			Construct commuter rail line
2020a	Widening	STH 241 extension		27th Street to IH 94	Construct two lanes on new alignment
2020		107th Street		Good Hope Road to STH 145	Widen from two to four traffic lanes
2020		124th Street		Lisbon Avenue to Ruby Avenue	Widen from two to four traffic lanes
2020a		91st Street		STH 100 to Ozaukee County Line	Widen from two to four traffic lanes
2020		CTH F (107th Street)		STH 100 to Ozaukee County Line	Widen from two to four traffic lanes
2020		CTH V		CTH ZZ to Puetz Road	Widen from two to four traffic lanes
2020		CTH ZZ (W College Avenue)	35th Street to 27th Street	Widen from two to four traffic lanes	
2020		IH 43/IH 894	Hale Interchange to STH 241	Widen from six to eight traffic lanes	
2020		IH 43/IH 894/USH 45	Hale Interchange	Interchange reconstruction and modernization	
2020		IH 894/USH 45	Hale Interchange to Zoo Interchange	Widen from six to eight traffic lanes	
2020		IH 94	Waukesha County Line to Zoo Interchange	Widen from six to eight traffic lanes	
2020a		IH 94/IH 894/USH 41/STH 119	Mitchell & Airport Interchanges	Interchange reconstruction and modernization	
2020a		IH 94/IH 894/USH 45	Zoo Interchange	Interchange reconstruction and modernization	
2020a		IH 94/USH 41	Racine County Line to Mitchell Interchange	Widen from six to eight traffic lanes	
2020		Morgan Avenue	Forest Home Avenue to 43rd Street	Widen from two to four traffic lanes	
2020a		Pennsylvania Avenue	Rawson Avenue to College Avenue	Widen from two to four traffic lanes	
2020	Pennsylvania Avenue	Milwaukee Avenue to College Avenue	Widen from two to four traffic lanes		
2020	Puetz Road	STH 241 to CTH V	Widen from two to four traffic lanes		
2020a	STH 100 (Ryan Road)	STH 36 (Loomis Road) to 60th Street	Widen from two to four traffic lanes		
2020a	STH 241	Drexel Avenue to Rawson Avenue	Widen from four to six traffic lanes		
2020	STH 38	County Line to Oakwood Road	Widen from two to four traffic lanes		
2020a	USH 45/STH 100	Drexel Avenue to STH 36	Widen from two to four traffic lanes		
2020	Watertown Plank Road	USH 45 to 92nd Street	Widen from four to six traffic lanes		
2020a	Watertown Plank Road	STH 100 to USH 45	Widen from four to six traffic lanes		
2020	Ozaukee	Expansion	IH 43	Highland Road Interchange	Construct new interchange
2020		Widening	CTH W	Glen Oaks Lane to Highland Road	Widen from two to four traffic lanes
2020	STH 57		Milwaukee County Line to STH 167	Widen from two to four traffic lanes	
2020	Racine	Expansion	21st Street extension	Loni Lane to Willow Road	Construct two lanes on new alignment
2020			CTH V extension	STH 20 to STH 11	Construct two lanes on new alignment
2020			Memorial Drive extension	Chicory Road to CTH KR	Construct two lanes on new alignment
2020			Oakes Road extension	Oakes Road to Airline Road	Construct two lanes on new alignment
2020			Oakes Road extension	Braun Road to Oakes Road	Construct two lanes on new alignment
2020			Proposed STH 38 realignment	Five Mile Road to Existing STH 38	Construct four lanes on new alignment

Table 20 (continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description		
2020a	Racine	Widening	CTH C	Airline Road to Sunnyslope Road	Widen from two to four traffic lanes		
2020a			IH 94	Racine County Line to Milwaukee County Line	Widen from six to eight traffic lanes		
2020a			STH 11	Willow Road to STH 31	Widen from four to six traffic lanes		
2020a			STH 32	Five Mile Road to STH 31	Widen from two to four traffic lanes		
2020			STH 38	Proposed STH 38 to CTH K	Widen from two to four traffic lanes		
2020			STH 38	Milwaukee County Line to CTH H	Widen from two to four traffic lanes		
2020	Walworth	Expansion	W Market Street extension	CTH H to Voss Road	Construct two lanes on new alignment		
2020a		Widening	STH 50	North Shore Drive to CTH F	Widen from two to four traffic lanes		
2020			STH 50	STH 11 to Washington Street	Widen from two to four traffic lanes		
2020	Washington	Expansion	18th Avenue extension	Jefferson Street to CTH D	Construct two lanes on new alignment		
2020			Arthur Road extension	CTH N to Arthur Road	Construct two lanes on new alignment		
2020			Maple Road extension	CTH Q to STH 175	Construct two lanes on new alignment		
2020			New Facility	Arthur Road to Kettle Moraine Road	Construct two lanes on new alignment		
2020		Widening	CTH Y	STH 175 to USH 41/45	Widen from two to four traffic lanes		
2020a			STH 33	Trenton Road to Oak Road	Widen from two to four lanes lanes		
2020			STH 60	USH 45 to Industrial Drive	Widen from two to four traffic lanes		
2020			USH 41	STH 60 Interchange	Widen from two to four traffic lanes		
2020			CTH KE realignment	CTH K to 800 feet north	Construct two lanes on new alignment		
2020a			IH 94	CTH P Interchange	Construct new interchange		
2020	Waukesha	Expansion	Lake Drive extension	Blue Dalhia Road to STH 67	Construct two lanes on new alignment		
2020			Town Line Road extension	Weyer Road to STH 190	Construct two lanes on new alignment		
2020a			Waukesha west bypass	CTH X to Sunset Drive	Construct four lanes on new alignment		
2020			Widening	Calhoun Road	CTH ES to Cleveland Avenue	Widen from two to four traffic lanes	
2020		Calhoun Road		North Avenue to CTH K	Widen from two to four traffic lanes		
2020a		CTH F		USH 18 (Moreland Boulevard) to IH 94	Widen from four to six traffic lanes		
2020		CTH L		CTH Y to CTH O	Widen from two to four traffic lanes		
2020		CTH P		CTH Z to STH 16	Widen from two to four traffic lanes		
2020		CTH Q		Colgate Road to CTH V	Widen from two to four traffic lanes		
2020a		CTH TT		Sunset Drive (CTH D) to USH 18	Widen from two to four traffic lanes		
2020a		CTH TT (Meadowbrook Road)		Northview Road to IH 94	Widen from two to four traffic lanes		
2020a		CTH TT (Meadowbrook Road)		Northview Road to USH 18	Widen from two to four traffic lanes		
2020a		CTH VV (Silver Spring Drive)		CTH Y (Lannon Road) to Marcy Road	Widen from two to four traffic lanes		
2020		CTH X		STH 59 to CTH H	Widen from two to four traffic lanes		
2020		CTH Y		CTH L to College Avenue	Widen from two to four traffic lanes		
2020		CTH Y		North Avenue to STH 190	Widen from two to four traffic lanes		
2020		CTH Y		North Avenue to USH 18	Widen from two to four traffic lanes		
2020		CTH Y		STH 59/164 to CTH I	Widen from two to four traffic lanes		
2020		CTH Y (Racine Avenue)		Hickory Trail to CTH I	Widen from two to four traffic lanes		
2020		IH 43		STH 60 to Milwaukee County Line	Widen from four to six traffic lanes		
2020		Pilgrim Road		North Avenue to USH 18	Widen from two to four traffic lanes		
2020		Pilgrim Road		Lisbon Road to North Avenue	Widen from two to four traffic lanes		
2020		Racine Avenue		Downing Drive to STH 59/164	Widen from two to four traffic lanes		
2020		Springdale Road		STH 190 (Capitol Drive) to CTH JJ	Widen from two to four traffic lanes		
2020a		Sunset Drive		Tenny Avenue to STH 59/164	Widen from two to four traffic lanes		
2020		St. Paul Avenue		Moreland Boulevard to Harris Highland Drive	Widen from two to four traffic lanes		
2020a		STH 164		IH 43 to Edgewood Avenue	Widen from two to four traffic lanes		
2020		STH 164		Howard Lane to CTH Q (Washington County Line)	Widen from two to four traffic lanes		
2020a		STH 190		CTH Y to Brookfield Road	Widen from four to six traffic lanes		
2020		STH 67		CTH DR to USH 18	Widen from two to four traffic lanes		
2020a		STH 67		IH 94 to CTH B	Widen from two/four to four/six traffic lanes		
2020a		STH 83		Point north of CTH NN to CTH X	Widen from two to four traffic lanes		
2020a		STH 83		Bay View Road to CTH NN	Widen from two to four traffic lanes		
2020a		STH 83		USH 18 (High Meadow Lane) to CTH DE	Widen from two to four traffic lanes		
2020		STH 83		Mariner Drive to STH 16	Widen from two to four traffic lanes		
2030		Kenosha		Widening	30th Avenue	27th Street to CTH E	Widen from two to four traffic lanes
2030					CTH C	East Frontage Road to 104th Street	Widen from two to four traffic lanes
2030					CTH C	104th Avenue to CTH H	Widen from two to four traffic lanes
2030					CTH H	CTH C to STH 50	Widen from two to four traffic lanes
2030			STH 158 (52nd Street)		IH 94 to 95th Street	Widen from two/four to six traffic lanes	
2030	STH 165		STH 31 to CTH EZ		Widen from two to four traffic lanes		
2030	STH 165 (104th Street)		IH 94 to Prairie Springs Park		Widen from two to four traffic lanes		
2030	STH 50		IH 94/USH 41 to 39th Avenue		Widen from four to six traffic lanes		
2030	STH 83	128th Street to STH 50	Widen from two to four traffic lanes				

Table 20 (continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description	
2030	Milwaukee	Widening	IH 43	Marquette Interchange to Silver Spring Drive	Widen from six to eight traffic lanes	
2030			IH 43	Silver Spring Drive to STH 60	Widen from four to six traffic lanes	
2030			IH 43	Waukesha County Line to Hale Interchange	Widen from four to six traffic lanes	
2030			IH 43/IH 94	Howard Avenue to Marquette Interchange	Widen from six to eight traffic lanes	
2030			IH 94	70th Street to Marquette Interchange	Widen from six to eight traffic lanes	
2030			IH 94	Zoo Interchange to Stadium Interchange	Widen from six to eight traffic lanes	
2030			IH 94/USH 41/STH 341	Stadium Interchange	Interchange reconstruction and modernization	
2030			STH 241 (27th Street)	Rawson Avenue to Drexel Avenue	Widen from four to six traffic lanes	
2030			STH 241 (27th Street)	Racine County Line to Drexel Avenue	Widen from four to six traffic lanes	
2030			STH 32	County Line Road to STH 100	Widen from two to four traffic lanes	
2030			USH 45	Zoo Interchange to North Interchange	Widen from six to eight traffic lanes	
2030			Whitnall Avenue	Nicholson Avenue to Packard Avenue	Widen from two to four traffic lanes	
2030			Ozaukee	Expansion	Maple Road extension	Cedar Creek to Rose Street
2030	Walters Street extension	CTH LL to Grant Street			Construct two lanes on new alignment	
2030	Widening	Columbia Road		Bridge Street to Chateau Drive	Widen from two to four traffic lanes	
2030		STH 167		Washington County Line to Wauwatosa Road	Widen from two to four traffic lanes	
2030		STH 181		STH 167 to CTH C	Widen from two to four traffic lanes	
2030		STH 181		CTH C to Bridge Street	Widen from two to four traffic lanes	
2030a		STH 33		Progress Drive to CTH O	Widen from two to four traffic lanes	
2030a		STH 33		CTH I to Progress Drive	Widen from two to four traffic lanes	
2030a		STH 60		STH 181 to 12th Avenue	Widen from two to four traffic lanes	
2030		STH 20		STH 20 to CTH C	Construct two lanes on new alignment	
2030	Racine	Expansion	90th Street extension	STH 20 to CTH C	Construct two lanes on new alignment	
2030			CTH MM/Rapids Drive	Rivershore Drive to Rapids Court	Construct two lanes on new alignment	
2030			Five Mile Road extension	Dublin Court to Sunshine Lane extended	Construct two lanes on new alignment	
2030		Widening	Five Mile Road extension	North Point Drive to Erie Street	Construct two lanes on new alignment	
2030			CTH C	CTH H to Airline Road	Widen from two to four traffic lanes	
2030			STH 20	IH 94/USH 41 to Oakes Road	Widen from four to six traffic lanes	
2030	Walworth	Expansion	STH 32	STH 31 to Milwaukee County Line	Widen from two to four traffic lanes	
2030			W. Main Drive	Buena Park Road to Rivermoor Road	Widen from two to four traffic lanes	
2030			Deere Road extension	Deere Road to STH 11	Construct two lanes on new alignment	
2030			E Market Street extension	STH 11 to STH 67	Construct two lanes on new alignment	
2030			Indian Mound Parkway extension	Indian Mound Parkway to STH 59	Construct two lanes on new alignment	
2030			New Facility	STH 67 to STH 11	Construct two lanes on new alignment	
2030			Starin Road Extension	Fremont Street to Newcomb Street	Construct two lanes on new alignment	
2030			USH 12	CTH P Interchange	Construct new interchange	
2030			USH 12	CTH A Interchange	Construct new interchange	
2030			USH 12	CTH H Interchange	Construct new interchange	
2030		USH 12	CTH S Interchange	Construct new interchange		
2030		USH 12	CTH H to Illinois State Line	Construct four lanes on new alignment		
2030		USH 12	Howard Road to STH 67 Interchange	Construct four lanes on new alignment		
2030	USH 12	STH 67 Interchange	Construct new interchange			
2030	USH 12	STH 89 Interchange	Construct new interchange			
2030	Widening	W Market Street extension	STH 11 to CTH H	Construct two lanes on new alignment		
2030		STH 59	STH 89 to Whitewater Street	Widen from two to four traffic lanes		
2030		STH 89	Willis Ray Road to STH 59	Widen from two to four traffic lanes		
2030		USH 12	Cold Spring Road to Howard Road	Widen from two to four traffic lanes		
2030	Washington	Expansion	Division Road extension	Main Street to Freistadt Road	Construct two lanes on new alignment	
2030			Kettleview Road extension	STH 33 to Schuster Drive	Construct two lanes on new alignment	
2030			Monroe Avenue extension	Monroe Avenue to Pond Road	Construct two lanes on new alignment	
2030			North River Road extension	North River Road to STH 144	Construct two lanes on new alignment	
2030			Trenton Road extension	STH 33 to Maple Road	Construct two lanes on new alignment	
2030			Wacker Drive extension	Lee Road to Monroe Avenue	Construct two lanes on new alignment	
2030			Waterford Road extension	Powder Hill Road to Pioneer Road	Construct two lanes on new alignment	
2030			Wilson Avenue extension	Monroe Avenue to Lincoln Avenue	Construct two lanes on new alignment	
2030			Widening	Decorah Road	7th Avenue to Indiana Avenue	Widen from two to four traffic lanes
2030				Main Street	Decorah Street to Walnut Street	Widen from two to four traffic lanes
2030		STH 167		Fond Du Lac Avenue to Ozaukee County Line	Widen from two to four traffic lanes	
2030a		STH 33		STH 144 to Meadowlark Ct.	Widen from two to four traffic lanes	
2030		STH 60		Ridgeway Drive to Maple Road	Widen from two to four traffic lanes	
2030		STH 60		Independence Avenue to Existing four lane section	Widen from two to four traffic lanes	
2030		USH 41/USH 45		Waukesha County Line to Richfield Interchange	Widen from six to eight traffic lanes	

Table 20 (continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2030	Waukesha	Expansion	Campus Drive	STH 83 to CTH K	Construct two lanes on new alignment
2030			IH 94	Calhoun Road Interchange	Construct new interchange
2030			Oconomowoc Parkway	CTH BB (Concord Road) to Oconomowoc Parkway	Construct two lanes on new alignment
2030		Widening	Oconomowoc Parkway	STH 16 to CTH BB	Construct two lanes on new alignment
2030			Sunnyslope Road extension	CTH HH to CTH L	Construct two lanes on new alignment
2030a			Calhoun Road	Cleveland Avenue to STH 59	Widen from two to four traffic lanes
2030a			CTH D	Calhoun Road to Milwaukee County Line	Widen from two to four traffic lanes
2030			CTH D	STH 59/164 to Calhoun Road	Widen from two to four traffic lanes
2030			CTH K	CTH Y to Calhoun Road	Widen from two to four traffic lanes
2030			CTH K (Lisbon Road)	Calhoun Road to Hampton Road	Widen from two to four traffic lanes
2030			CTH T	Golf Road to CTH SS	Widen from two to four traffic lanes
2030			Hampton Road	Lisbon Road to 132nd Street	Widen from two to four traffic lanes
2030			IH 94	STH 67 to CTH SS	Widen from four to six traffic lanes
2030			IH 94	STH 16 to Milwaukee County Line	Widen from six to eight traffic lanes
2030			Moorland Road	CTH L to Grange Avenue	Widen from two to four traffic lanes
2030			North Avenue	Lilly Road to 124th Street	Widen from two to four traffic lanes
2030			North Avenue	Barker Road to 147th Street	Widen from two to four traffic lanes
2030a			STH 190	STH 16 to CTH Y (Brookfield Road)	Widen from four to six traffic lanes
2030			STH 59	STH 83 to St. Paul Avenue	Widen from two to four traffic lanes
2030a			STH 83	Phylis Parkway to USH 18	Widen from two to four traffic lanes
2030	USH 41/USH 45	North Interchange to Washington County Line	Widen from six to eight traffic lanes		
2035	Kenosha	Expansion	85th Street extension	Sheridan Road to 7th Avenue	Construct two lanes on new alignment
2035			CTH F extension	CTH O to 89th Street	Construct two lanes on new alignment
2035			CTH ML extension	79th Avenue to STH 31	Construct two lanes on new alignment
2035		Widening	104th Avenue	STH 50 to STH 158	Widen from two to four traffic lanes
2035			Roosevelt Road	39th Avenue to 63rd Street	Widen from two to four traffic lanes
2035	Milwaukee	Widening	STH 32	128th Street to CTH T	Widen from two to four traffic lanes
2035			124th Street	North Avenue to Watertown Plank Road	Widen from two to four traffic lanes
2035			IH 43/IH 94	Marquette Interchange	Interchange reconstruction and widening
2035			Mill Road	Fond du Lac Avenue to 91st Street	Widen from two to four traffic lanes
2035			Port Washington Road	Bender Road to Daphne Road	Widen from two to four traffic lanes
2035	Ozaukee	Expansion	Cedar Creek Road	CTH O to East Cedar Creek Road	Construct two lanes on new alignment
2035			Cold Springs Road extension	CTH O to CTH W	Construct two lanes on new alignment
2035			E. Cedar Creek Road	East River Road to CTH W	Construct two lanes on new alignment
2035	Racine	Widening	IH 43	STH 60 to STH 57	Widen from four to six traffic lanes
2035		Expansion	CTH K extension	Britton Road to 108th Street	Construct two lanes on new alignment
2035			CTH H	STH 38 to Five Mile Road	Widen from two to four traffic lanes
2035		Widening	Five Mile Road	CTH H to Proposed STH 38	Widen from two to four traffic lanes
2035			Four Mile Road	STH 31 to STH 32	Widen from two to four traffic lanes
2035	Three Mile Road		STH 32 to CTH G	Widen from two to four traffic lanes	
2035	Walworth	Expansion	CTH DD extension	CTH DD to STH 11	Construct two lanes on new alignment
2035			New East-West Arterial	Main Street to Tratt Street	Construct two lanes on new alignment
2035			Outer Ring Road	CTH H to Inner Ring Road	Construct two lanes on new alignment
2035	Washington	Expansion	CTH H extension	USH 45 to relocated USH 45	Construct two lanes on new alignment
2035			Jefferson Street extension	North River Road to Trenton Road	Construct two lanes on new alignment
2035			Kettleview Road extension	STH 28 to USH 45	Construct two lanes on new alignment
2035			Kettleview Road extension	CTH H to STH 28	Construct two lanes on new alignment
2035			Schuster Drive extension	Schuster Drive to Beaver Dam Road	Construct two lanes on new alignment
2035			STH 28 extension	USH 45 to relocated USH 45	Construct two lanes on new alignment
2035			Taylor Road extension	Pond Road to STH 60	Construct two lanes on new alignment
2035			USH 45 relocation	Sandy Ridge Road to STH 28	Construct two lanes on new alignment
2035			Waterford Road realignment	Taylor Road to North Shore Drive	Construct two lanes on new alignment
2035a			Widening	STH 164	CTH Q to STH 167
2035	Waukesha	Expansion	124th Street extension	Watertown Plank Road to 124th Street (STH 59)	Construct two lanes on new alignment
2035		Widening	Old Orchard Road	Brown Deer Road to Washington County Line	Widen from two to four traffic lanes

Source: SEWRPC.

Table 21

**IMPLEMENTATION SCHEDULE FOR THE ARTERIAL STREET AND HIGHWAY ELEMENT
CAPACITY IMPROVEMENT AND EXPANSION: 2012, 2020, 2030, and 2035**

Southeastern Wisconsin Region	Proposed Incremental Arterial System Improvement and Expansion Route Miles				
	2012	2020	2030	2035	Total
State Trunk Highway	9	131	114	27	281
County and Local Trunk Highway	10	63	47	24	144
Total Regional Arterial System	19	194	161	51	425

Source: SEWRPC.

Table 22

**AVERAGE ANNUAL COSTS AND REVENUES ASSOCIATED WITH THE YEAR 2035
REGIONAL TRANSPORTATION SYSTEM PLAN^a IN 2009 CONSTANT DOLLARS: 2010 THROUGH 2035^b**

Cost or Revenue Item	2035 Plan
Transportation System Cost (average annual 2010-2035 expressed as millions of dollars) ^c	
Arterial Street and Highway System	
Capital.....	\$566
Operating.....	77
Subtotal	\$643
Transit System	
Capital.....	\$42
Operating ^d	239
Subtotal	\$281
Total	\$924
Transportation System Revenues (average annual 2010-2035 expressed as millions of dollars) ^c	
Highway Capital	
Federal/State/Local	\$569
Highway Operating	
State/Local.....	\$64
Transit Capital	
Federal.....	\$23
Local	19
Subtotal	\$42
Transit Operating	
Federal.....	\$31
State	123
Local	129
Subtotal	\$283
Total	\$958

^aThe costs and revenues associated with the Kenosha-Racine-Milwaukee commuter rail service have not been included in this analysis, but rather, are set forth in Chapter Eight (“Local Financial Commitment”) of the Request to Initiate Preliminary Engineering for the proposed Kenosha-Racine-Milwaukee (KRM) Commuter Rail Project. The costs and revenues of the City of Milwaukee streetcar line have not been included in this analysis, but rather are set forth in the “Locally Preferred Alternative for Streetcar Summary Report.”

^bAll cost and revenue figures in this table are expressed in constant 2009 dollars.

^cThe estimated arterial street and highway system and transit system costs include all capital costs and operating and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system such as arterial street resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under the plan. Freeway system capital costs include the estimated cost to rebuild the existing freeway system to modern design standards estimated at \$6.1 billion or \$235 million per year, the estimated incremental cost to rebuild 127 miles of the freeway system with additional lanes at \$1.316 million or \$51 million per year, the estimated cost of three new freeway interchanges and the conversion of two half interchanges to full interchanges at \$136 million, and the estimated cost of the extension of the USH 12 freeway from Elkhorn to Whitewater at \$240 million. Surface arterial capital costs include the costs of the estimated necessary resurfacing and reconstruction of the 3,083 miles of surface arterials which will require preservation of capacity over the plan design period, the estimated costs of reconstruction and widening with additional traffic lanes of about 214 miles of surface arterials, and the estimated costs of new construction of 68 miles of surface arterials. The estimated costs of resurfacing and reconstruction are based on the estimated lifecycle of existing surface arterials, and includes reconstruction of about 30 percent of surface arterials, two resurfacings of about 25 percent of surface arterials, and one resurfacing of about 45 percent of surface arterials. Unit costs for surface arterial resurfacing, reconstruction, widening, and new construction vary by cross-section from \$0.3 to \$10 million per mile (rural or urban, divided or undivided, and number of traffic lanes) and are based upon actual project costs over the past several years. The estimated capital cost of surface arterials is \$234 million per year, including \$174 million for preservation (resurfacing and reconstruction) and \$60 million for new arterials and arterials reconstructed with additional traffic lanes. The major arterial capacity expansion projects presented in Table A-4 represent about 33 percent or \$20.6 million of the total \$60 million annual cost of planned surface arterial capacity expansion. Transit system capital costs include preservation of the existing transit system including bus replacement on a 12 to 15 year schedule and replacement of fixed facilities, and costs of system improvement and expansion including needed additional buses and facility expansion.

Table 22 (continued)

Highway system operating (and maintenance) costs are based on estimated actual state and local highway system operating costs and verified by application of estimated unit lane-mile costs. Planned highway system operating costs are increased from estimated existing costs based on the proposed increase in the plan in arterial highway system lane-miles. Transit system operating (and maintenance) costs are based on existing estimated actual costs, and unit costs based on service vehicle-miles and vehicle-hours. Planned transit system operating costs are increased from existing system operating costs based on the planned increase in transit service vehicle-miles and vehicle-hours.

Highway Federal, state, and local capital and operating revenues are based on estimated Federal, state, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historic expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State continuing its program of funding approximately 40 percent of transit operating costs. Transit local capital and operating revenues are based upon the attainment in the next few years of the recent and current legislation proposing a regional transit authority and a source of local dedicated funding.

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

Source: SEWRPC.

Table 23

**AVERAGE ANNUAL COSTS AND REVENUES ASSOCIATED WITH THE YEAR 2035
REGIONAL TRANSPORTATION SYSTEM PLAN^a BASED ON YEAR OF EXPENDITURE: 2010 THROUGH 2035**

Cost or Revenue Item	2035 Plan
Transportation System Cost (average annual 2010-2035 expressed as millions of dollars) ^b	
Arterial Street and Highway System	
Capital	\$836
Operating	115
Subtotal	\$951
Transit System	
Capital	\$62
Operating ^c	372
Subtotal	\$434
Total	\$1,385
Transportation System Revenues (average annual 2010-2035 expressed as millions of dollars) ^b	
Highway Capital	
Federal/State/Local	\$862
Highway Operating	
State/Local	\$86
Transit Capital	
Federal	\$31
Local	31
Subtotal	\$62
Transit Operating	
Federal	\$41
State	191
Local	152
Subtotal	\$384
Total	\$1,394

^aThe costs and revenues associated with the Kenosha-Racine-Milwaukee commuter rail service have not been included in this analysis, but rather, are set forth in Chapter Eight ("Local Financial Commitment") of the Request to Initiate Preliminary Engineering for the proposed Kenosha-Racine-Milwaukee (KRM) Commuter Rail Project. The costs and revenues of the City of Milwaukee streetcar line have not been included in this analysis, but rather are set forth in the "Locally Preferred Alternative for Streetcar Summary Report."

^bThe estimated arterial street and highway system and transit system costs include all capital costs and operating and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system such as arterial street resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under the plan. Freeway system capital costs include the estimated cost to rebuild the existing freeway system to modern design standards, the estimated incremental cost to rebuild 127 miles of the freeway system with additional lanes, the estimated cost of three new freeway interchanges and the conversion of two half interchanges to full interchanges, and the estimated cost of the extension of the USH 12 freeway from Elkhorn to Whitewater. Surface arterial capital costs include the costs of the estimated necessary resurfacing and reconstruction of the 3,083 miles of surface arterials which will require preservation of capacity over the plan design period, the estimated costs of reconstruction and widening with additional traffic lanes of about 214 miles of surface arterials, and the estimated costs of new construction of 68 miles of surface arterials. The capital cost of the plan was based on equal annual expenditures of funds, in constant dollars, over the 26-year period. The operating costs for both the arterial street and highway system were based on equally increasing annual costs, in constant dollars, over the 26-year period. The conversion of year 2009 constant dollar cost to year of expenditure cost is based upon a price inflation of 2.8 percent.

Highway Federal, state, and local capital and operating revenues are based on estimated Federal, state, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historic expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State continuing its program of funding approximately 40 percent of transit operating costs. Transit local capital and operating revenues are based upon the attainment in the next few years of the recent and current legislation proposing a regional transit authority and a source of local dedicated funding.

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

Source: SEWRPC.

Table 24

**ESTIMATE OF YEAR 2035 PLAN
ARTERIAL STREET AND HIGHWAY REVENUES**

Federal and State Capital Funding

Assessment of Historic Statewide Funding

- Major Highway Development
 - 2009 - \$323 million
 - 2004-2009 – 6.5 percent annual increase
 - 1994-2009 – 4.9 percent annual increase

- State Highway Rehabilitation
 - 2009 - \$690 million
 - 2004-2009 – 5.0 percent annual increase
 - 1994-2009 – 4.1 percent annual increase

- Local Roads and Bridges
 - 2009 - \$176 million
 - 2004-2009 – 3.0 percent annual decrease
 - 1994-2009 – 1.6 percent annual increase

- Southeastern Wisconsin Freeway Rehabilitation
 - 2009-2011 State budget provides an annual \$310 million
 - 2004-2009 – 20 percent annual increase
 - 2002-2009 – 23 percent annual increase

The 2001 Wisconsin Act 109 resulted in the requirement for the funding of the rehabilitation of all freeways in Southeastern Wisconsin be funded under this source of funds.

Source: Wisconsin Department of Transportation Budget Trends – 2008

Conclusion – 2035 Plan

	<u>2009 Constant</u> <u>Dollar</u> <u>Funding</u>	Year of Expenditure <u>Average Annual</u> <u>Increase</u>
Major Highway Development	\$320	3 percent
State Highway Development	\$680	3 percent
Local Roads and Bridges	\$175	1.6 percent
Southeastern Wisconsin Freeway Rehabilitation	<u>\$310</u>	2.8 percent
Total	\$1,485	- -

Table 24 (continued)

Southeastern Wisconsin Share of State Revenues

Southeastern Wisconsin represents approximately 35 percent of the State in population, employment, income, and assessed value, and about 30 percent of vehicle-miles of travel. In the years after freeway system construction, and before freeway system reconstruction, Southeastern Wisconsin received about 25 to 30 percent of all State highway system revenues. To estimate Southeastern Wisconsin's share of State revenues, Option 1 allocates all Southeast Freeway Rehabilitation funds to Southeast Wisconsin and 27 percent of all other funds to Southeastern Wisconsin. Option 2 allocates 27 percent of all funds to Southeastern Wisconsin.

Option 1

$$\$310 + .27 (\$1,175) = \$627 \text{ million}$$

Option 2

$$\$1,485 \times .27 = \$401 \text{ million}$$

Conclusion

- \$514 million Federal and State annual highway revenue in 2009 constant dollars--Average of Options 1 and 2 (2.8 percent annual increase year of expenditure)

Local Capital

- Estimate of annual revenue based upon local arterial highway annual expenditure - \$42 million (2 percent annual increase year of expenditure)

Local Transportation Aids (Capital)

- Estimate of annual general transportation aids attendant to estimated local highway capital expenditure - \$13 million (2.7 percent annual increase year of expenditure)

Operating and Maintenance Funding

State

Assessment of Historic Funding

- \$32 million annually

Conclusion – 2035 Plan

- \$32 million annually (2 percent annual increase year of expenditure)

Local

Assessment of Historic Funding

- \$32 million annually

Conclusion – 2035 Plan

- \$32 million annually (2 percent annual increase year of expenditure)

Table 25

**ESTIMATE OF YEAR 2035 PLAN
TRANSIT REVENUES (FIXED ROUTE BUS SYSTEMS)**

Estimate of Year 2009 Constant Dollar Annual Funding

Federal

Assessment of Historic Funding

- Operating - \$26.9 million (2008)
\$26.0 million - (2004-2008)
- Capital - \$13.0 million (2001-2008)

Assessment of Funding Sources

- Milwaukee Section 5307 formula funds - \$21.5 million (2009)
- Racine and Kenosha 5307 operating funds - \$4.8 million (2009)
- Other – Earmarks, FHWA CMAQ, JARC - \$20 million
(Assessment of other funds considers potential funds which could be obtained if improvement and expansion of transit service was being pursued)
- Planned increase in bus miles of service and ridership could result in additional \$12.0 million of FTA formula by 2035

Conclusion^a

- \$28.0 million operating
- \$ 23.0 million capital

State

Assessment of Historic Operating Funding

- 40.4 percent of total operating cost (2008)
- 40.9 percent of total operating cost (2001-2008)

Conclusion - 2035 Plan

- 40 percent of total operating cost

Local

Assessment of Operating Funding

- \$129.0 million (Local dedicated funding source of 0.5 percent sales tax and RTA)

Conclusion – 2035 Plan^b

- \$129.0 million operating

Assessment of Capital Funding

- \$19.0 million (Local dedicated funding source of 0.5 percent sales tax and RTA)

Conclusion – 2035 Plan^c

- \$19.0 million capital

^a Based on historic funding it is estimated that there would be \$25 million operating and \$20 million capital.

^b Based on historic funding it is estimated that there would be \$30 million operating.

^c Based on historic funding it is estimated that there would be \$5 million capital.

Table 25 (continued)

Estimate of Annual Increase in Funding for Year of Expenditure Revenues

Federal

Assessment of Historic Funding

FTA Section 5307 Milwaukee Area

- 2.6 percent annual increase (1999-2009)
- 2.6 percent annual increase (2004-2009)

FTA Section 5307 Kenosha and Racine

- 9.5 percent annual increase (2001-2009)
- 9.5 percent annual increase (2004-2009)

Conclusion

- 2.0 percent annual increase

State

Assessment of Historic Operating Funding

- 40.4 percent of total operating cost (2008)
- 40.9 percent of total operating cost (2001-2008)

Conclusion

- 40 percent of total operating cost

Local

Assessment of Historic Funding

- 3.7 percent annual increase (2001-2008 operating)
- 3.7 percent annual increase (2004-2008 operating)
- 2.6 percent annual increase (2002-2008 sales tax collections for five counties)

Conclusion

- 1.5 percent annual increase

Source: SEWRPC.

transportation system performance are then reviewed to assess the effectiveness of the implemented strategies/plan recommendations. The trend in the performance measures indicate the changes over time in traffic congestion, travel time, and traffic safety and the effectiveness of the implemented strategies/recommendations in addressing congestion given the changes in economic and demographic conditions, and travel. The most recent trend in regional transportation system performance is documented in an earlier section of this report. Also, Chapter 4 of SEWRPC Memorandum Report No. 197, included this assessment of transportation system performance and the effectiveness of implemented strategies/recommendations. The congestion performance measures evaluated to assess system performance and implemented action effectiveness included the following:

- The extent of arterial street and highway system peak hour traffic congestion by level of congestion – moderate, severe, or extreme – is determined. In addition, the number of hours of congestion by level of congestion – moderate, severe, or extreme – on each segment of the freeway system is determined. This allows a direct comparison between the extent of existing and historic traffic congestion and assists in an assessment of the effectiveness of the implemented actions recommended in the regional transportation plan to affect causes of recurring traffic congestion.
- Peak hour travel times and speeds are reviewed on selected surface arterial street and highway segments and on the freeway system in Southeastern Wisconsin. This allows for a direct comparison to historic speed data and assist in identifying the extent and duration of recurring traffic congestion. This data is displayed by segment and through travel time contour maps from selected key locations; and
- The most recent three year traffic crash history which is available is collected by county. This data allows for the computation of average crash rates by county and for identification of those segments of the arterial street and highway system which exceed the average crash rate for the county in which they are located. A comparison between existing and historic crash rates by county is made. This data allows for an assessment of the effectiveness of the implemented actions recommended in the regional transportation plan to increase traffic safety and address a key cause of nonrecurring traffic congestion.

Beginning with the regional transportation plan reappraisal to be completed in 2014, the Commission will assess the effectiveness of individual implemented strategies/plan recommendations including selected systems management, public transit, and arterial street and highway actions.

SUMMARY AND CONCLUSIONS

This memorandum has described how the Federally required congestion management process for Southeastern Wisconsin has been incorporated into the year 2035 regional transportation plan, the regional transportation plan reappraisal, and the regional transportation operations plan. The congestion management process in Southeastern Wisconsin includes the following elements: the definition of congestion management objectives and performance measures (identified in the regional transportation plan and plan reappraisal); assessment of historic and existing traffic congestion and congestion trends (identified in the regional transportation plan and plan reappraisal); development, evaluation, and recommendation of actions to address existing and probable future traffic congestion (identified in the regional transportation plan, updated in the plan reappraisal and refined for systems management actions in the regional transportation operations plan); identification of an implementation schedule and implementation responsibilities, and possible funding sources for each recommended action (identified in the regional transportation plan, and updated in the plan reappraisal and air quality conformity assessment, and for transportation systems management measures identified in the regional transportation operations plan); and an assessment of the effectiveness of recommended actions (identified in the plan reappraisal).

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