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SOUTHEASTERN WISCONSIN REGIONAL PLANNING CO

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MEMORANDUM REPORT NO. 197

DES PLAINES NG COMMISSION

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RESOLUTION NO. 2010-09

RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION ENDORSING THE URBAN TRANSPORTATION PLANNING PROCESS IN SOUTHEASTERN WISCONSIN, REAFFIRMING AND AMENDING THE ADOPTED YEAR 2035 REGIONAL TRANSPORTATION PLAN, AND REAFFIRMING THE 2009-2012 TRANSPORTATION IMPROVEMENT PROGRAM FOR SOUTHEASTERN WISCONSIN AS AMENDED TO DATE

WHEREAS, the Southeastern Wisconsin Regional Planning Commission is charged with the responsibility of carrying out a long-range comprehensive planning program for the seven counties in the Southeastern Wisconsin Region and, as a part of that program, is presently engaged in a continuing, comprehensive, and cooperative areawide land use-transportation planning process pursuant to the provisions of the Federal Aid Highway Act of 1962 and the Federal Urban Mass Transportation Act of 1964, as amended; and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission has been designated by the Governor of the State of Wisconsin as the official cooperative, comprehensive, continuing areawide transportation planning agency (Metropolitan Planning Organization, or MPO) under the rules and regulations promulgated by the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration, with respect to the Kenosha, Milwaukee, Racine, and Wisconsin portion of the Round Lake Beach urbanized areas, such rules and regulations being found in the Federal Register, dated Wednesday, February 14, 2007; and

WHEREAS, the aforesaid rules and regulations promulgated by the U.S. Department of Transportation Federal Highway Administration and Federal Transit Administration, require that the MPO shall develop and update a regional transportation plan and transportation improvement program (TIP) in cooperation with State and local officials, transit operators, and other affected agencies and individuals; and

WHEREAS, by Resolution 2006-11, the Southeastern Wisconsin Regional Planning Commission adopted the design year 2035 regional transportation plan documented in SEWRPC Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035* and by Resolution 2007-12 amended the year 2035 regional transportation plan; and

WHEREAS, by Resolution 2009-03 the Southeastern Wisconsin Regional Planning Commission prepared in cooperation with concerned State and local official officials, transit operators and other interested parties and adopted, *A Transportation Improvement Program for Southeastern Wisconsin: 2009-2012*, identifying transportation improvements recommended for advancement during the period 2009-2012, providing for a staging of improvements over the period 2009-2012 consistent with the regional transportation system plan, including estimates of costs and revenues for the period 2009-2012, and relating the improvements recommended in the program to the adopted transportation plan for the Region, and amended this transportation improvement program to date as needed; and

WHEREAS, the Advisory Committee on Regional Transportation System Planning approved the reaffirmation and amendment of the year 2035 regional transportation plan at its meeting held on April 26, 2010; and

WHEREAS, the transportation improvement program and the year 2035 regional transportation system plan as amended have been determined to conform with both the eight hour ozone standard and the redesignation and maintenance State of Wisconsin implementation plan for the eight hour ozone standard and with the $PM_{2.5}$ standard for the achievement of national air quality standards, as required by the Federal Clean Air Act Amendments of 1990;

NOW, THEREFORE, BE IT RESOLVED:

<u>FIRST</u>: That in accordance with 23 CFR 450.334(a), the Southeastern Wisconsin Regional Planning Commission hereby certifies that the regional transportation planning process is addressing the issues of the metropolitan planning area, and is being conducted in accordance with all applicable Federal laws, regulations, and requirements, including:

1. 223 U.S.C. 134 and 49 U.S.C. 5303, and this subpart;

RESOLUTION NO. 2010-09

- 2. In non-attainment and maintenance areas, Sections 174 and 176 (c) and (d) of the Clean Air Act as amended (42 U.S.C. 7504, 7506 (c) and (d)) and 40 CFR part 93;
- Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21; 3.
- 4. 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
- Sections 1101(b) of the SAFETEA-LU (Pub. L. 109-59) and 49 CFR Part 26 regarding the involvement of 5. disadvantaged business enterprises in USDOT funded projects:
- 6. 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
- 7. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR Parts 27, 37, and 38;
- The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in 8. programs or activities receiving Federal financial assistance;
- 9 Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
- 10. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR 27 regarding discrimination against individuals with disabilities.

SECOND: That the design year 2035 regional transportation plan, being a part of the master plan for the physical development of the Region and set forth in SEWRPC Planning Report No. 49, A Regional Transportation System Plan for Southeastern Wisconsin: 2035, published in June 2006, and amended on June 20, 2007, hereby is reaffirmed and amended as set forth in SEWRPC Memorandum Report No. 197, Review, Update, and Reaffirmation of the Year 2035 Regional Transportation Plan.

THIRD: That the document entitled, A Transportation Improvement Program for Southeastern Wisconsin: 2009-2012, as amended to date be, and hereby is, endorsed as the transportation improvement program for the seven-county Southeastern Wisconsin Region.

FOURTH: That, in order to obviate the need to reconsider the transportation improvement program in the event that the air quality conformity findings for the new regional transportation system plan and the TIP lapse, a revised program of projects would then be comprised of the projects identified in Appendix A of the aforereferenced document identified as "Exempt," as well as those projects that have either: 1) completed the NEPA process at such time as the air quality conformity finding lapses, or 2) are identified in the Code of Federal Regulations (Table 3, 40 CFR 51.462).

The foregoing resolution, upon motion duly made and seconded, was regularly adopted at the meeting of the Southeastern Wisconsin Regional Planning Commission held on the 16th day of June 2010, the vote being: Ayes 13, Nays 0.

avie E. Stroik, Chairman

ATTES eth R. Yunker, Deputy Secretary

MEMORANDUM REPORT NO. 197

REVIEW, UPDATE, AND REAFFIRMATION OF THE YEAR 2035 REGIONAL TRANSPORTATION PLAN

Prepared by the

Southeastern Wisconsin Regional Planning Commission

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June 2010

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Chapter 1

INTRODUCTION

INTRODUCTION

The year 2035 regional transportation system plan was adopted by the Regional Planning Commission in June 2006, and was the result of a major review and reevaluation of the year 2020 regional transportation plan. This major review and reevaluation was timed to utilize the data which becomes available at the beginning of each decade, including at that time the year 2000 U.S. Census of population, year 2000 regional aerial photography, year 2000 regional land use inventory, and year 2000-2002 regional travel surveys. The major reevaluation included preparation of new and extended (from the year 2020 to the year 2035) population and employment forecasts, and a new and extended regional land use plan. Major review and reevaluation of the regional transportation plan is typically conducted every 10 years as new population, employment, land use, and travel data is only available every 10 years.

A new census of population, aerial photography, land use data, and travel surveys will be available following the year 2010, again permitting a major review and reevaluation of the regional transportation plan to be initiated in 2011 and completed in the year 2015. Much of the new data to support this major review and planning effort will not be available until the year 2012 or 2013.

Even though a major review and reevaluation of regional forecasts and plans is about to be initiated, there is a need to conduct an interim review and update of the regional transportation plan. This interim review and update, to be completed in 2010, will include an assessment of the implementation to date of the regional transportation plan, a review of the forecasts underlying the plan, and a monitoring of transportation system performance. The review will also examine whether it remains reasonable for the recommendations in the year 2035 to be accomplished over the next 30 years, given the implementation of the plan to date and available and anticipated

funding. The review and update may be expected to provide amendments to the adopted year 2035 plan, and recommendations to be considered in the major plan review and reevaluation to be initiated in 2011.

This interim review and update will be documented in the following chapters of this report:

- Chapter 2, "Year 2035 Regional Transportation Plan"
- Chapter 3, "Review of Year 2035 Plan Forecasts"
- Chapter 4, "Review of Transportation System Performance"
- Chapter 5, "Review of Implementation to Date of Year 2035 Regional Transportation Plan"
- Chapter 6, "Update of Year 2035 Regional Transportation Plan"
- Chapter 7, "Summary and Conclusions"

Chapter 2

YEAR 2035 REGIONAL TRANSPORTATION PLAN

INTRODUCTION

The year 2035 regional transportation plan for the seven-county Southeastern Wisconsin Region was completed and adopted by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) in June, 2006. The year 2035 regional transportation plan was developed under the guidance of the Advisory Committee on Regional Transportation Planning, which unanimously approved the plan in May, 2006. The Advisory Committee included representatives of the seven counties and 147 municipalities of the Region, and representatives from the Wisconsin Departments of Transportation and Natural Resources. In addition, representatives from the U.S. Department of Transportation and the U.S. Environmental Protection Agency served on the Committee as nonvoting members. The Advisory Committee was responsible for proposing to the Commission, after careful study and evaluation, a recommended regional transportation system plan. The Advisory Committee structure was intended to promote intergovernmental and interagency coordination, and to serve as direct liaisons between the Commission planning effort and the local and State governments that will be responsible for implementing the recommended plans.

The process for the development of the year 2035 regional transportation plan began by considering the forecast growth of the Region to the year 2035 in terms of employment, population and households. Trends in land use development, travel, and transportation system development were reviewed, as well as the implementation to date of the previous regional transportation plan. A guiding vision, principles, and goals and objectives for transportation in the Region were then defined. Land use pattern alternatives were considered and a preliminary recommended year 2035 regional land use plan was developed. Regional transportation plan alternatives were then prepared and evaluated, and a preliminary recommended year 2035 regional transportation plan was proposed. Public comment on the preliminary recommended plan was considered and a final year 2035 regional transportation plan development process, extensive efforts were made to inform and obtain input from the public, in order to shape plan alternatives and the preliminary and final

recommended plans. These efforts included four series of public meetings and hearings throughout Southeastern Wisconsin; a series of newsletters and summary brochures prepared throughout the study process; and the Commission website, <u>www.sewrpc.org</u>, containing comprehensive information regarding the study, including notifications of meetings, draft plan materials, and Advisory Committee rosters, agendas, and minutes. The website also provided the opportunity to submit comments on the plans. 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.

YEAR 2035 REGIONAL TRANSPORTATION PLAN

The development of the year 2035 regional transportation system plan for Southeastern Wisconsin was guided by the following vision for the transportation system of Southeastern Wisconsin:

A multimodal transportation system with high quality public transit, bicycle and pedestrian, and arterial street and highway elements which add to the quality of life of Region residents and support and promote expansion of the Region's economy, by providing for convenient, efficient, and safe travel by each mode, while protecting the quality of the Region's natural environment, minimizing disruption of both the natural and manmade environment, and serving to support implementation of the regional land use plan, while minimizing the capital and annual operating costs of the transportation system.

The development of each plan element of the recommended regional transportation system plan for the year 2035—public transit, bicycle and pedestrian, travel demand management, transportation system management, and arterial streets and highways—built upon the previous regional transportation plan, which had a design year of 2020, recognizing the successful implementation of approximately 15 to 20 percent of each element of the year 2020 plan since the adoption of that plan in 1997.

The recommended year 2035 regional transportation system plan was designed to serve, and to be consistent with, the year 2035 regional land use plan. Future needs for public transit, street and highway, and other transportation improvements considered in the regional transportation planning process were derived from the projected travel based upon the regional land use plan. In addition, the consistency of the regional transportation and land use plans was evaluated by comparing the accessibility provided under the recommended transportation plan and the location of improvements proposed under the recommended transportation plan to the location of land use development and redevelopment proposed under the land use plan.

The process for the development of the recommended year 2035 regional transportation plan began with consideration and development of the travel demand management, transportation systems management, bicycle

and pedestrian, and public transit elements of the plan. Arterial street and highway improvement and expansion was then considered only to address the residual highway traffic volumes and attendant traffic congestion which could not be expected to be alleviated by travel demand management, transportation systems management, bicycle and pedestrian facilities, and public transit.

Discussed in the remainder of this chapter are the public transit, bicycle and pedestrian facilities, transportation systems management, travel demand management, and arterial street and highway elements of the year 2035 regional transportation plan.

PUBLIC TRANSIT ELEMENT

The public transit element of the plan envisioned significant improvement and expansion of public transit in Southeastern Wisconsin, including development within the Region of a rapid transit and express transit system, improvement of existing local bus service, and the integration of local bus service with the recommended rapid and express transit services. Map 1 displays the transit system proposals for each of the three transit system components. 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 (see Table 1).

The recommended expansion of public transit was considered essential in Southeastern Wisconsin for many reasons:

- Public transit is essential to provide an alternative mode of travel in heavily traveled corridors within and between the Region's urban areas, and in the Region's densely developed urban communities and activity centers. It is not desirable, and not possible, in the most heavily traveled corridors, dense urban areas, or the largest and densest activity centers of the Region to accommodate all travel by automobile with respect to both demand for street traffic carrying capacity and parking. To attract travel to public transit, service must be available throughout the day and evening at convenient service frequencies, and at competitive and attractive travel speeds.
- Public transit also supports and encourages higher development density and infill land use development and redevelopment, which results in efficiencies for the overall transportation system and other public infrastructure and services.
- Public transit also contributes to efficiency in the transportation system, including reduced air pollution and energy consumption.



Source: SEWRPC.

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Table 1

			Planned	Increment
Average Weekday Transit	Eviating 2005 ^a	Recommended	Numebor	Percent
Service Unaracteristics	Existing 2005	Plan 2035	number	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 ^b	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

PUBLIC TRANSIT ELEMENT OF FINAL RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

^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.

- Public transit permits choice in transportation, enhancing the Region's quality of life and economy. A portion of the Region's population and businesses would prefer to have public transit alternatives available and to travel by public transit. High quality public transit helps provide a high quality of life and contributes to the maintenance and enhancement of the Region's economy.
- Public transit is essential in the Region to meet the travel needs of persons unable to use personal automobile transportation. In the year 2000, approximately 80,000 households, or 11 percent of the Region's households, did not have a personal vehicle available and were dependent upon public transit for travel. The accessibility of this portion of the Region's population to the metropolitan area—jobs, health care, shopping and education—is almost entirely dependent upon the extent to which public transit is available, and is reasonably fast, convenient, and affordable.

Rapid Transit Service

The recommended rapid transit service was to 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 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.

The recommended rapid transit service also included 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 was recommended as measured by daily vehiclemiles 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 was to 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 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.

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 was also recommended. Service would be provided on weekdays, and during weekday evenings, Saturdays, and Sundays. An approximately 59 percent increase in local bus service was 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. The recommended frequency of local bus service is shown in Table 2.

Paratransit Service

Paratransit service was 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

Table 2

FREQUENCY OF LOCAL BUS SERVICE UNDER THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

	Average Weekday Headways on Local Bus Service (minutes)		
Area	Morning and Afternoon Peak Periods	Midday Off-Peak Period	Evening Off-Peak Period
Within Milwaukee County Central Milwaukee County	5-15	10-20	15-20
Remainder of Milwaukee County	15-20	20-30	20-60
Outside Milwaukee County	15-30	30-60	30-60

Source: SEWRPC.

and on the same days as the fixed-route transit service, be provided to eligible persons on a "next-day" tripreservations 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 oneway trip for curb-to-curb service.

Upgrading to Rail Transit or Bus Guideways

Rapid and express transit service was recommended to initially be provided with buses. This bus service would ultimately be upgraded to commuter rail for rapid transit service and to bus guideway or light rail for express transit service. Map 2 displays six potential future commuter rail lines and six potential future bus guideway/light rail lines within Southeastern Wisconsin. Public transit cannot offer convenient accessibility to metropolitan area services for those without an automobile, offer an attractive alternative in heavily traveled corridors and dense urban activity centers, or provide a true choice for travel if it is caught in traffic congestion and its travel times are not comparable to those of automobile travel. Upgrading to exclusive guideway transit may also be expected to promote higher density land development and redevelopment at and around the stations of the exclusive guideway transit facilities, promoting implementation of the regional land use plan.

There were two efforts underway in Southeastern Wisconsin at the time of regional plan adoption considering upgrading to fixed guideway transit. Milwaukee County, the City of Milwaukee, and the Wisconsin Center District were conducting the Milwaukee connector study which was evaluating a streetcar line in the central portion of the City of Milwaukee, and an express bus transit line in Milwaukee County. This effort remains underway. The other was a study of a commuter rail line connecting the Kenosha, Racine, and Milwaukee areas. The study has been completed, and, based upon recommendations by an Intergovernmental Partnership and the Southeastern Wisconsin Regional Transit Authority, the regional plan was amended to include this commuter rail line.



Source: SEWRPC.

Figure 1



Source: SEWRPC.

Summary and Conclusions—Public Transit

The recommended expansion of public transit in Southeastern Wisconsin would represent a near doubling of transit service in Southeastern Wisconsin by the year 2035. As shown in Figure 1, this would entail about a 2.3 percent annual increase in transit service to the year 2035, less than the level of 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 2005.

Implementation of this recommended expansion was envisioned in the year 2035 plan to 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 had historically funded 40 to 45 percent of transit operating costs, and had increased funding to address inflation in the cost of providing public transit, and to provide for transit improvement and expansion. State transit funding to the Milwaukee County Transit System increased by 29 percent from 1995 to 2000 and by 70 percent for all other transit systems in the Region, but only by 7 percent between 2000 and 2005 for the Milwaukee County Transit System and by 12 percent for all other transit systems. An annual 4 to 5 percent increase was envisioned in the plan to be essential to address rising costs, including inflation and real increases in fuel costs, and to support system improvement and expansion.

Implementation of the recommended expansion of public transit in Southeastern Wisconsin was also envisioned in the 2035 plan to be dependent upon attaining dedicated local funding for public transit. In the absence of dedicated local funding, the recommended expansion may not be expected to be implemented, and continued reductions in transit service may be expected. The local share of funding of public transit in Southeastern Wisconsin is provided through county or municipal budgets, and represents about 15 percent of the total operating costs and 20 percent of total capital costs of public transit. Thus, the local share of funding public transit is largely provided by property taxes, and public transit must annually compete with mandated services and projects. Increasingly, due to the constraints in property tax based funding, counties and municipalities have found it difficult to provide funding to address transit needs, and to respond to shortfalls in Federal and State funding. Most public transit systems nationwide have dedicated local funding, typically a sales tax of 0.25 to 1.0 percent. A sales tax provides funding which should increase with inflation and area growth, thereby addressing funding needs attendant to inflation in the costs of providing public transit and transit system expansion. A regional transit authority was also envisioned in the 2035 plan to assist in implementing the recommended transit system expansion. A number of the proposed transit services extend across city and county boundaries. A regional transit authority could assist in the implementation of these proposed services.

BICYCLE AND PEDESTRIAN FACILITY ELEMENT

The bicycle and pedestrian facility element of the recommended plan was 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 envisioned that as the surface arterial street system of about 3,300 miles in the Region was resurfaced and reconstructed segment-by-segment, the provision of accommodation for bicycle travel would 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 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.

It was also recommended 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 would be 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 is shown on Map 3, and includes 575 miles of off-street bicycle paths with 147 miles of surface arterial and 83 miles

of nonarterial connections. Approximately 203 miles of the planned 575 miles of off-street bicycle paths were in existence in 2005 during the preparation of the plan. Also shown on Map 3 is the surface arterial street and highway system within the Region proposed to be provided with bicycle accommodation.

The pedestrian facilities portion of the recommended bicycle and pedestrian facilities plan element was envisioned as a policy plan, rather than a system plan. It recommended 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 included the provision of sidewalks in the urban portions of the Region.

TRANSPORTATION SYSTEMS MANAGEMENT

The transportation systems management element of the recommended year 2035 regional transportation plan included 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 included 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 were envisioned to 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 2006 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



Source: SEWRPC.

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 were identified as 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 2006 there were 120 freeway on-ramps currently in the Milwaukee area equipped with ramp-meters. Buses and high-occupancy vehicles received preferential access at 62 of the 120 on-ramp-meter locations. It was 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 would 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 was 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 were controlled in a "pre-timed" mode, operating during specified peak traffic hours of the weekday at specified release rates of vehicles. Others were 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 was 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 was 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 was envisioned as an integral part of providing an efficient street and highway system. By providing information on current travel conditions, motorists could choose travel routes which were more efficient for their travel, and the result is a more efficient transportation system. Advisory information measures included permanent variable message signs (VMS), the WisDOT website, and provision of information to the media. WisDOT used 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 2006 there were 23 permanent VMS located on the freeway system, primarily in the Milwaukee area, and 13 on surface arterials which connected with the freeway system primarily located in western Milwaukee County. It was 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 provided 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 was recommended that WisDOT continue to enhance and expand the information provided on its website and to the media, and consider deployment of a regional 511 traveler information system which would allow 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 were identified as essential to incident management, as well as freeway operational control and advisory information. Other incident management measures recommended were 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 provided 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. There were in 2006 83 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 was 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 2006 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 was 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 2006, freeway service patrols operated in a limited role on the Milwaukee County freeway system and on IH 94 in Kenosha, Racine, and Waukesha Counties. In each of these four counties, service patrols operated during weekday peak traffic periods. In Milwaukee County service patrols also operated all day during weekdays, and in Kenosha and Racine Counties, 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 was 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 2006 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 was 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, has served 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 was recommended that the TIME program continue to be operated and sponsored by WisDOT.

Ramp closure devices were deployed in 2006 on IH 94 in Kenosha, Racine, 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 was 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 was 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 part of a coordinated signal system in 2006. It was recommended that Commission staff work with State and local government to document existing and planned arterial street and highway system traffic signals and traffic signal systems, and develop recommendations for improvement and expansion of coordinated signal systems.

It was 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 proposed 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.

It was 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.

Access management was 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. It was proposed 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.

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 2006 had an initiative to construct a SummerFest shuttle bus parking management and guidance system. This initiative would provide static and dynamic signing indicating the location of parking structures and the availability of parking in those structures for a number of parking structures in the central business district (CBD) which are near SummerFest shuttle bus routes. This recommended measure supported the City of Milwaukee initiative and proposed expansion of parking management and guidance systems to incorporate all of the Milwaukee CBD at all times of the year.

Regional Transportation Operations Program

It was also recommended that WisDOT, in cooperation with SEWRPC and all transportation system operators in the Region, work to prepare a Regional Transportation Operation Program (RTOP). It was envisioned that the

RTOP would program high priority short-range (three to five year) operational improvement projects for implementation, in part based upon the transportation systems management recommendations in the regional transportation system plan.

TRAVEL DEMAND MANAGEMENT ELEMENT

The travel demand management measures included in the recommended year 2035 regional transportation plan included 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 were 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 consisted 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 62 of the 120 metered freeway on-ramp locations within the Milwaukee area. The recommended travel demand management measure recommended 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 would 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 was 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 was preferential carpool and vanpool parking. This recommended measure was voluntary and proposed 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 carpooling and the resultant more efficient use of the Region's transportation system, a network of park-ride lots are recommended to facilitate carpooling. Map 4 shows the recommended system of park-ride lots including existing park-ride lots and those recommended to be served by public transit. 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 consisted of three travel demand management measures: annual transit pass programs, monthly or weekly pass programs, and vanpool programs.

The Milwaukee County Transit System had 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 was envisioned to 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 would 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 allowed 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.



Source: SEWRPC.

The third proposed travel demand management measure within the transit pricing category was 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. 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. The Milwaukee County Transit System vanpool program required one end of the work trip to be in Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha Counties, and that one end of the work trip was outside the regular Milwaukee County Transit System service area.

Personal Vehicle Pricing

The recommended personal vehicle pricing group of travel demand management measures proposed 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 consisted 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 encouraged 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 was 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 was 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 was 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.

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 was recommended, and was 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 totaled 3,637 route-miles. Approximately 88 percent, or 3,189 of these route-miles, were recommended to be resurfaced and reconstructed to their same capacity. Approximately 360 route-miles, or less than 10 percent of the total recommended year 2035 arterial street and highway system, were recommended for widening upon reconstruction to provide additional through traffic lanes, including 127 miles of freeways. The remaining 88 route-miles, or about 2 percent of the total arterial street mileage, were proposed new arterial facilities. Thus, the plan recommendations envisioned over the next 30 years 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 5 displays the recommended year 2035 regional transportation plan arterial street preservation, improvement, and expansion by county. Highway improvements were recommended to address 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 municipal government prior to implementation. The preliminary engineering and environmental studies would consider alternatives and impacts,



FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN KENOSHA 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 WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE



Source: SEWRPC.

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

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

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 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 through the provision 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.

 Sufficient right-ofway should be reserved along STH 158 from CTH H to STH 31 to accommodate its ultimate improvement to six travellanes.

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





Map 5 (continued)

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

ARTERIAL STREET OR HIGHWAY



NUMBER OF TRAFFIC LANES FOR NEW

4 OR WIDENED AND /OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

HALF NEW

MICHIGAN

EXISTING

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

1. Each proposed arterial street and highway improvement and expansion, and, as well, preservation project, would need to undergo preliminary engineering and environmental studies by the responsible State, county, or municipal government prior to implementation. The preliminary engineering and environmental studies will consider alternatives and impacts, and final decisions as to whether and how a plan and project will proceed to implementation. Wile 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-it, various options of rebuil to modern design standards, compromises to rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering endemains. Only at the conclusion of preliminary engineering be made as to how the freeway would be reconstructed.

3. The plan also provides further recommendations with respect to half freeway 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 the combination of selected half interchanges into one full interchange - for example, STH 100 and S. 124th Street with IH 43; and
- 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.





FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN OZAUKEE COUNTY: 2035 RECOMMENDED REGIONAL TRANSPORTATION SYSTEM PLAN
Map 5 (continued)



EXISTING

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

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Map 5 (continued)

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



4

FREEWAY INTERCHANGE NEW

> HALF NEW EXISTING

RESERVE RIGHT-OFWAY TO ACCOMMODATE FUTURE IMPROVEMENT (POTENTIAL NEW INTERCHANGE)

FUNCTIONAL IMPROVEMENTS TO THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WASHINGTON 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 TRAFFIC LANES FOR NEW OR WIDENED AND /OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

EXISTING

THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

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

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-asis, various options of rebuild to modern design standards, compromises to rebuilding unth 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. Subsequent to the completion of the regional transportation plan update and reevaluation, more detailed analyses will be conducted with the Washington County jurisdictional highway system planning advisory committee addressing STH 60 in the Village of Jackson and potentially considering various alternatives including do-nothing, restrict parking, widen with additional lanes, construct bypass, and improve/construct parallel arterials.



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



THE FOLLOWING NOTES SUPPLEMENT THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

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

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 Marguette interchanges and IH 43 between the Michell 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-asis, various options of rebuild to modern design standards, compromises to rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering, alternatives will additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary would a determination be made as to how the freeway would be reconstructed.

 The plan also provides further recommendations with respect to half freeway 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 for example, STH 100 and S. 124th Street with IH 43; 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 analyses 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. 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), would 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 the existing number of lanes. Only at the conclusion of the preliminary engineering would a determination be made as to how the freeway would be reconstructed.

SUMMARY AND CONCLUSIONS

The year 2035 regional transportation system plan was designed to address the projected growth in population, households, and employment (and attendant travel), and to serve, be consistent with, and promote implementation of, the year 2035 regional land use plan. The regional transportation plan provided the vision for the needed improvement and expansion of the transportation system to serve the Region through the year 2035. The potential of more efficient land use and expanded public transit, systems management, bicycle and pedestrian facilities, and demand management was considered first to alleviate traffic congestion. Arterial street and highway improvements were only then considered to address any residual congestion. Each element of the regional transportation plan was considered to be of equal priority, and each element needed to be implemented to provide a comprehensive, multi-modal, balanced, high quality transportation system in Southeastern Wisconsin. Implementation of the year 2035 regional transportation system plan was envisioned as necessary to avoid a doubling of traffic congestion over the next 30 years and embodied the following vision for transportation system improvement and development within the Region to the year 2035:

- Public transit service in the Region would double from 69,000 to 137,300 vehicle-miles of service on an average weekday, including the development of true rapid and express transit systems;
- Consideration would be given through corridor studies to the upgrading of bus rapid transit service to commuter rail service and of express bus transit service to bus guideway or light rail service;
- Bicycle accommodation would be considered and implemented as the 3,600-mile surface arterial street and highway system is resurfaced, reconstructed, and newly constructed through such means as bicycle lanes, widened outside travel lanes, paved and widened shoulders, and separate parallel bicycle paths;

ESTIMATED AVERAGE ANNUAL TRANSPORTATION SYSTEM CAPITAL AND OPERATION AND MAINTENANCE COSTS IN THE REGION OVER THE PERIOD 2006-2035: NO-BUILD AND RECOMMENDED PLANS^a

	Average Annual Cost: 2006-2035				
	No-Build Plan				
Cost Element	(millions of dollars)	(millions of dollars)	Percent Increase		
System Element Costs					
Arterial Streets and Highways					
Construction	322	379	18		
Operation and Maintenance	58	67	16		
Subtotal	380	446	17		
Public Transit					
Construction and Equipment	19	32	68		
Operation and Maintenance	119	197	66		
Subtotal	138	229	66		
Total	518	675	30		

^aAll costs expressed in constant year 2005 dollars.

Source: SEWRPC.

- A system of 575 miles of off-street bicycle/pedestrian paths would be developed primarily within natural resource and utility corridors to provide reasonably direct connections between the Region's urbanized and small urban areas;
- Efforts to operate and manage the existing arterial street and highway system as efficiently as possible, obtaining the maximum capacity from that system would be continued and expanded, including expansion of the existing freeway traffic management system and expansion of existing surface arterial street and highway management efforts;
- Efforts to encourage reductions in personal and vehicular travel would be continued and expanded, including expansion of the existing number of park-ride lots within the Region, provision of exclusive high-occupancy bypass lanes at freeway on-ramps, provision of surface arterial street and highway express bus reserved lanes, and provision of transit signal priority systems;
- Widening with additional lanes to provide additional traffic carrying capacity would be considered on 360 miles of the existing 3,500 miles of arterial streets and highways in the Region, including 127 miles of freeways; and

• Construction of new arterial streets and highways would be considered consisting of about 88 miles of the planned year 2035 arterial street and highway system in the Region.

The year 2035 plan was estimated to represent about a 30 percent increase in cost compared to a "no-build" plan, and about a 10 percent increase compared to the current expenditures on transportation in the Region, as shown in Table 3. The costs of the plan as well were estimated to be about 10 percent greater than existing and anticipated revenues. The public transit element of the plan represented about 58 percent of the increase in transportation system costs attendant to the plan, and the highway element represented about 42 percent of the increase.

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Chapter 3

REVIEW OF YEAR 2035 PLAN FORECASTS

INTRODUCTION

In this chapter the forecasts prepared under the year 2035 regional transportation plan are reviewed for their continued validity, including demographic and economic forecasts of population, households, and employment; and travel, traffic, and related forecasts including regional vehicle-miles of travel, transit system ridership, and personal vehicle availability.

DEMOGRAPHIC AND ECONOMIC FORECASTS

Figures 2 through 4 document for the Region and each of the seven counties the historic growth and change in population, employment, and households over the last 30 to 50 years through the year 2000, the base year for the development of the demographic and economic forecasts for the year 2035 regional transportation plan. Also shown are the population, household, and employment forecasts for the year 2035 upon which the year 2035 regional transportation plan is based, the plan being specifically based on the intermediate growth projection. And, also shown are the trends in the growth and change in population, households, and employment in the seven county Region and in each of the seven counties from the year 2000 through the year 2008. Tables 4 through 6 specifically compare year 2008 estimated actual population, households, and employment to the 2008 forecasts for the Region and each of the seven counties. Comparison of estimated current year 2008 population, household, and employment levels to forecast (intermediate growth) levels indicate that the forecasts remain valid for long-range planning at both regional and county levels. Estimates of population, households, and employment have been closely following forecasts with estimates at the regional and county levels generally being within 1 to 2 percent of forecasts. An economic downturn has been experienced in the Region since 2008. The implications of the downturn on the plan forecasts will be reviewed over the next few years.

Figure 2



ACTUAL AND PROJECTED REGIONAL AND COUNTY EMPLOYMENT LEVELS: 1970-2035

Figure 3



Figure 4



ACTUAL AND PROJECTED REGIONAL AND COUNTY HOUSEHOLD LEVELS: 1950-2035

ACTUAL AND PROJECTED NUMBER OF AVAILABLE JOBS BY COUNTY: 2008

		Projected 2008 Jobs			
County	Estimated 2008 Jobs	High-Growth Scenario	Intermediate-Growth Scenario	Low-Growth Scenario	
Kenosha	75.800	75,000	74,300	72,600	
Milwaukee	606,800	605,800	596,200	586,500	
Ozaukee	53,500	54,000	53,100	52,200	
Racine	93,500	95,700	94,500	92,700	
Walworth	55,200	56,600	56,000	54,800	
Washington	67,100	67,400	66,300	65,200	
Waukesha	283,300	286,800	279,900	277,600	
Region	1,235,200	1,241,300	1,220,300	1,201,600	

Source: SEWRPC.

Table 5

ACTUAL AND PROJECTED POPULATION LEVELS BY COUNTY: 2008

		Projected 2008 Population			
County	2008	High-Growth	Intermediate-Growth	Low-Growth	
	Population	Scenario	Scenario	Scenario	
Kenosha	162,100	169,100	162,700	157,900	
Milwaukee	938,500	972,300	950,700	924,800	
Ozaukee	87,000	91,600	87,500	85,300	
Racine	196,300	202,100	193,900	190,400	
Walworth	101,300	105,000	102,500	98,600	
Washington	130,500	134,100	129,100	124,900	
Waukesha	382,700	402,200	385,900	375,800	
Region	1,998,400	2,076,400	2,012,300	1,957,700	

Source: SEWRPC.

Table 6

ACTUAL AND PROJECTED HOUSEHOLD LEVELS BY COUNTY: 2008

		Projected 2008 Households			
County	2008	High-Growth	Intermediate-Growth	Low-Growth	
	Households	Scenario	Scenario	Scenario	
Kenosha	63,400	64,500	62,100	60,200	
Milwaukee	389,800	399,400	390,600	380,000	
Ozaukee	34,600	35,200	33,700	32,800	
Racine	77,000	77,400	74,200	72,800	
Walworth	40,000	40,400	39,400	37,900	
Washington	51,600	51,500	49,500	48,000	
Waukesha	150,800	154,500	148,200	144,300	
Region	807,200	822,900	797,700	776,000	

Source: SEWRPC.

PERSONAL-USE VEHICLE AVAILABILITY IN THE REGION

County	1963	1972	2001	2008
Kenosha Milwaukee Ozaukee Racine Walworth Washington Waukesha	37,240 316,350 16,780 52,040 22,220 18,340 69,390	51,100 392,000 28,030 73,350 33,450 30,390 114,450	102,210 548,540 60,830 131,310 69,500 87,820 266,150	118,260 551,170 68,160 144,890 85,080 101,970 304,070
Total	532,360	722,770	1,266,270	1,373,600

Figure 6

Source: SEWRPC.



Figure 5

Source: SEWRPC.

PERSONAL-USE VEHICLE AND COMMERCIAL TRUCK AVAILABILITY FORECASTS

The number of personal-use vehicles—that is, automobiles, trucks, and vans used by residents of the Region for personal transportation-in 2008 totaled about 1,373,600 (see Table 7). Over the past 40 years, there has been a generally steady, long-term trend of continued increase in the number of personal-use vehicles available to residents of the Region. The average annual rate of growth in personal-use vehicle availability within the Region from 1963 through 2008 was 2.1 percent.

The number of persons per personal-use vehicle within the Region was estimated to be 1.45 in 2008, as shown in Figure 5. The number of persons per personal-use vehicle has been relatively stable for over a decade, with minor fluctuations up and down annually. The forecast under the year 2035 plan of the number of persons per personaluse vehicle expected long term stability as well. The forecast of total personal-use vehicle availability developed under the long-range regional transportation system plan, is shown in Figure 6, along with historic annual

County	1963	1972	2001	2008
Kenosha Milwaukee Ozaukee Racine Walworth Washington Waukasha	4,370 25,910 2,270 5,670 4,190 3,210 7,780	4,490 26,710 2,550 6,460 4,840 4,080 10,280	10,130 46,070 6,020 13,510 9,150 9,270 30,240	11,260 48,270 6,540 14,960 11,310 10,800 33,660
Total	53,400	59,410	124,390	136,800

COMMERCIAL TRUCK AVAILABILITY IN THE REGION

Source: SEWRPC.



Source: SEWRPC.

personal-use vehicle availability. The year 2008 forecast personal-use vehicle availability level was 1,313,600 under the year 2035 regional transportation system plan. The estimated 2008 regional personal-use vehicle availability level of 1,373,600 was 60,000 vehicles, or about 4.6 percent, higher than the personal-use vehicle availability level envisioned under the adopted regional transportation system plan.

The number of commercial and municipal trucks available in the Region during 2008 totaled about 136,800 or about 5,800 or 4.4 percent greater than the forecast level of 131,000 in 2008 envisioned under the year 2035 regional transportation plan (see Table 8 and Figure 7).

PUBLIC TRANSIT RIDERSHIP FORECASTS

Public transit service was provided in the Region in 2008 through 10 intracounty systems and five intercounty systems. Table 9 shows the total reported revenue ridership for each public transit system in the Region. Figure 8 shows the long term trend in public transit ridership in the Region. Between 2001 and 2004 public transit ridership declined by about 15 to 20 percent, but since 2004 ridership has remained somewhat stable with annual fluctuations. Ridership in 2008 was slightly below year 2035 regional transportation plan forecasts for 2008, with estimated 2008 ridership of 40.4 million linked passenger trips per weekday, which was 2.5 million trips, or 5.8 percent, less than the 2008 forecast of 42.9 million trips.

REPORTED PUBLIC TRANSIT REVENUE RIDERSHIP

	Revenue Passengers ^a					
Transit Services	1963	1972	1991	2001	2008	Percent change 2001-2008
Bus Systems						
Intracounty						
City of Kenosha	1,876,000	503,000	1,128,000	1,805,200	1,579,300	-12.5
Milwaukee County	88,546,000	52,141,000	53,025,000	52,333,400	44,287,300	-15.4
City of Racine	2,907,000	526,000	1,829,000	1,437,200	1,211,100	-15.7
City of Waukesha	451,000	227,000	434,000	633,900	680,200	7.3
Subtotal	93,780,000	53,397,000	56,416,000	56,209,700	47,757,900	-15.0
Intercounty						
Kenosha-Racine-						
Milwaukee Counties	230,000 ^b	153,000	82,000	81,400	82,100	0.9
Ozaukee-Milwaukee Counties	127,000	64,000		91,600	126,800	38.4
Washington-Milwaukee Counties				67,500	111,400	65.0
Waukesha-Milwaukee Counties	534,000 ^b	240,000	290,000	612,200	718,100	7.5
Western Kenosha County					6,200	
Subtotal	891,000	457,000	372,000	852,700	1,044,600	22.5
Total Bus Systems	94,671,000	53,854,000	56,788,000	57,062,400	48,802,500	-14.5
Shared-Ride Taxi Systems - Intracounty						
City of Hartford			8,000	20,800	20,300	-2.4
Ozaukee County				57,300	75,100	31.19
City of Port Washington				23,200	20,200	-12.9
Washington County				52,300	98,000	87.4
City of West Bend				134,400	119,400	-11.2
City of Whitewater			38,000	19,700	29,000	47.2
Subtotal			46,000	307,700	362,000	17.6
Region Total	94,671,000	53,854,000	56,834,000	57,370,100	49,164,500	- 14.3

^a The ridership figures shown in this table reflect transit revenue passengers as reported to the Wisconsin Department of Transportation by each transit operator. Since 1978, the annual revenue ridership figures reported to the State by the urban bus systems have included transfer trips made by passengers using a transit pass instead of a transfer slip to transfer between bus routes. The bus ridership figures shown here are somewhat higher than the estimates of linked transit passenger trips reported in Figure 8. Linked passenger trips approximate the number of one-way trips made on the transit system between specific origins and destinations with transit passengers being counted only once for each origin and destination. Transfers between bus routes are not counted as they are a continuation of a single trip. By way of comparison with the transit revenue passengers shown in this table, the Commission estimated the total annual linked transit passenger trips in the Region at about 40,365,000 in 2008, about 46,465,000 in 2001, and about 48,350,000 in 1991.

Source: SEWRPC.

Figure 8



HISTORICAL ANNUAL TREND IN TRAVEL BY PUBLIC TRANSIT IN THE REGION

⁸LINKED TRANSIT PASSENGER TRIPS APPROXIMATE THE NUMBER OF ONE-WAY TRIPS MADE ON THE TRANSIT SYSTEM BETWEEN SPECIFIC ORIGINS AND DESTINATIONS. PASSENGERS ARE COUNTED ONLY ONCE FOR EACH ORIGINAND DESTINATION. AND TRANSFERS BETWEEN ROUTES ARE NOT COUNTED AS THEY ARE A CONTINUATION OF A SINGLE TRIP. THE ANNUAL LINKED TRANSIT PASSENGER FIGURES REPRESENTED IN THIS GRAPH DIFFER SOMEWHAT FROM THE ANNUAL REVENUE RIDERSHIP FIGURES REPORTED TO THE VISCONSIN DEPARTMENT OF TRANSPORTATION BY THE PUBLIC TRANSIT OPERATORS IN THE REGION AS SHOWN IN TABLE 9. THE RIDERSHIP SHOWN IN TABLE 9 FOR THE URBAN BUS SYSTEMS FOR 1991 AND SUBSEQUENT YEARS INCLUDES A LIMITED NUMBER OF PASSENGERS THAT USED A TRANSIT PASS INSTEAD OF TRANSFER SETWEEN BUS ROUTES. CONSEQUENTLY, THE BUS RIDERSHIP FIGURES SHOWN IN TABLE 9 FOR 1991, 2007, AND 2008 ARE SOMEWHAT HIGHER THAN THE ESTIMATES OF LINKED TRANSFER SLIP TO TRANSFER BETWEEN BUS ROUTES.

Source: SEWRPC.

VEHICLE-MILES OF TRAVEL FORECASTS

Table 10 presents the historic and forecast future (under the year 2035 plan) average annual growth rate in vehicle-miles of travel in the Southeastern Wisconsin Region. Table 11 presents historic and forecast future levels in vehicle-miles of travel in the Region. The average annual growth rate in vehicle-miles of travel in the Region has declined over the past 40 years, and is forecast under the year 2035 regional transportation plan to continue to decline.

The base year for the year 2035 plan forecasts of vehicle-miles of travel was 2001, the year of the regional travel and traffic inventories conducted as part of the 2035 plan. Estimates of regional vehicle-miles of travel are prepared approximately every 5 to 10 years using traffic counts conducted by the Wisconsin Department of Transportation (WisDOT). WisDOT conducts traffic counts in about one-third of the Region's counties on an

Table 11

AVERAGE ANNUAL GROWTH RATE OF AVERAGE WEEKDAY VEHICLE-MILES OF TRAVEL IN SOUTHEASTERN WISCONSIN

	Time Period	Annual Growth Rate
Historic	1960's	4.9
	1970's	2.7
	1980's	2.6
	1990's	1.9
	2000-2007	1.5
Forecast	2007-2020	1.0
	2020-2035	0.6

ARTERIAL VEHICLE-MILES OF TRAVEL WITHIN
THE REGION ON AN AVERAGE WEEKDAY

	Year	Vehicle-Miles of Travel (millions)
	1963	13.1
Estimated Historic	1972	20.1
	1991	33.1
	2001	39.7
	2005	42.2
Faraaat	2005	42.1
Forecast	2035	54.0

Source: SEWRPC.

Source: SEWRPC.

annual basis. The latest regional vehicle-miles of travel estimate is for the year 2005, using WisDOT traffic counts in the Region for the years 2004, 2005, and 2006. Forecast year 2005 vehicle-miles of travel in the Region under the year 2035 regional transportation plan totaled 42.1 million arterial system vehicle-miles of travel on an average weekday, only approximately 0.1 million vehicle-miles, or 0.2 percent less than estimated Region arterial vehicle-miles of travel on an average weekday in 2005.

SUMMARY AND CONCLUSIONS

Review of forecasts attendant to the year 2035 regional transportation plan including population, households, employment, vehicle availability, public transit ridership, and vehicle miles-of-travel indicate that these forecasts remain valid for long range transportation planning.

Chapter 4

REVIEW OF TRANSPORTATION SYSTEM PERFORMANCE

INTRODUCTION

In this chapter the current performance of the transportation system is assessed and is compared to historic system performance, as data permits. Transportation system performance is reviewed with respect to pavement condition, bridge condition, traffic congestion, traffic crash history, arterial highway and transit travel time, and transportation system air pollutant emissions.

PAVEMENT AND BRIDGE CONDITION

The assessment of existing pavement condition in Southeastern Wisconsin is typically accomplished through one of two pavement evaluation techniques. The *Pavement Surface Evaluation and Rating (PASER)* technique is used for county and municipal roads. The PASER system is a rating system which employs visual inspection techniques to assess pavement condition. Pavement ratings range from 1 (which is a failed roadway that needs total reconstruction) to 10 (which is a pavement in excellent condition and typically reflects new construction). In general, the rating system is such that those pavements rated 8 through 10 require little to no maintenance; a rating of 7 indicates a pavement that requires routine maintenance such as crack filling; ratings of 5 or 6 indicate a pavement where preservative treatments such as sealcoating or overlays are considered; ratings of 1 or 2 indicate a pavement which is severely deteriorated and requires reconstruction. In Southeastern Wisconsin the PASER system is used by County and local governments to evaluate the condition of the roads under their jurisdiction every two years as required under State Statute. Map 6 documents the pavement condition of the county and local arterial streets and highways in the Region under the PASER system for the year 2008 and Map 7 presents pavement condition for 2006. Pavement condition of the county and local arterial street system in the Region remained about the same between 2006 and 2008, as shown in Table 12.



Source: Wisconsin Department of Transportation and SEWRPC.



Source: Wisconsin Department of Transportation and SEWRPC.

	2006		20		
PASER Pavement Rating	Local and County Arterial Mileage	Percent of Total	Local and County Arterial Mileage	Percent of Total	Percent of Change
1 and 2	132	5.7	81	3.5	-38.6
3 and 4	233	10.2	212	9.2	-9.0
5 and 6	431	18.8	561	24.5	30.2
7	376	16.4	423	18.4	12.5
8, 9, and 10	907	39.5	846	36.9	-6.7
No Rating	215	9.4	171	7.5	-20.5
Total	2,294	100.0	2,294	100.0	

LOCAL AND COUNTY STREET AND HIGHWAY MILEAGE BY PASER PAVEMENT RATING COMPARISON: 2006 AND 2008

Source: Wisconsin Department of Transportation and SEWRPC.

The Wisconsin Department of Transportation (WisDOT) uses the International Roughness Index (IRI) to assess pavement condition and the quality of riding comfort of state highways, including Interstate Highways, United States Highways, and State Highways. WisDOT uses special equipment which physically measures the profile of a roadway along the traveled way. The IRI is measured on a scale of 0 to 12, with pavements with a 0 to 2.5 rating having no ride problems, a 2.5 to 2.75 rating having minor ride problems, a 2.75 to 3.0 having moderate ride problems, and greater than 3.0 having severe ride problems. Map 8 documents the IRI rating of the arterial streets and highways in the Region under State jurisdiction for the year 2009, and Map 9 presents the IRI ratings for 2006. Pavement condition of state highways in the Region remained about the same between 2006 and 2009, as shown in Table 13.

WisDOT also maintains an assessment of the sufficiency of the bridge structures within Southeastern Wisconsin. Bridge sufficiency ratings are calculated using four separate factors to obtain a numeric value which, when combined, provide the overall sufficiency rating. The four factors are (1) structural adequacy and safety; (2) serviceability and functional obsolescence (including consideration of number of lanes, average daily traffic, approach roadway width, and bridge roadway width); (3) essentiality for public use; and (4) special reductions. Bridge structure sufficiency ratings range from 0 to 100, with 0 being a failing structure and 100 being a structure in perfect condition. Generally, the structure sufficiency ratings relate to need, and Federal funding eligibility, for rehabilitation and replacement. A bridge structure is not eligible for Federal funds for rehabilitation if its sufficiency rating is between 80 and 100. A bridge structure is eligible for Federal funds for rehabilitation of the bridge structure if its sufficiency rating is between 50 and 79. A bridge structure must have a sufficiency rating



Source: Wisconsin Department of Transportation and SEWRPC.



Source: Wisconsin Department of Transportation and SEWRPC.

	2006		20		
International Roughness Index	State Trunk Highway Mileage	Percent of Total	State Trunk Highway Mileage	Percent of Total	Percent Change
0.00 to 2.50	916	74.2	883	71.4	-3.6
2.50 to 2.75	76	6.2	89	7.2	17.1
2.75 to 3.00	61	4.9	64	5.2	4.9
3.00 to 12.00	161	13.0	176	14.2	9.3
No Rating	20	1.6	25	2.0	25.0
Total	1,234	100.0	1,237	100.0	0.2

STATE TRUNK HIGHWAY PAVEMENT CONDITION: 2006 and 2009

Source: Wisconsin Department of Transportation and SEWRPC.

less than 50 to be eligible to receive Federal funds to replace the bridge structure. Table 14 displays the number of bridge structures in Southeastern Wisconsin within each of the above mentioned ranges of sufficiency rating for the years 2010 and 2006. Map 10 displays the 2010 sufficiency ratings for bridge structures in Southeastern Wisconsin. Some improvement in bridge sufficiency is apparent over the last few years.

TRAFFIC CONGESTION

Traffic congestion on the arterial street and highway system may be categorized as moderate, severe, or extreme with each level described by travel speed, operating conditions, and level of service, as shown in Table 15. Freeway system traffic congestion can be further described and quantified. 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 on the freeway system identifies for each segment of the freeway system the number of hours of congestion experienced on an average weekday at each level of congestion: extreme, severe, and moderate.

Assessment of Historic and Existing Traffic Congestion

The recurring existing and historic traffic congestion on the arterial street and highway system was estimated during the preparation of the year 2035 regional transportation plan, and is documented in Chapter III, "Inventory of Transportation Facilities and Services," of SEWRPC Planning Report No. 49. Table 16 and Map 11 present the existing level of traffic congestion experienced in the year 2005 on the arterial street and highway system, and

SUFFICIENCY RATINGS FOR BRIDGE STRUCTURES LOCATED WITHIN SOUTHEASTERN WISCONSIN: 2006 AND 2010

Sufficiency Rating ^a	2006 Number of Bridges	2010 Number of Bridges
Less than 50.0	98	68
50.0 to 79.9	520	506
80.0 to 100.0	1,244	1,313
Total	1,862	1,887

^a Sufficiency ratings for bridges ranges from 0 to 100 and are used to determine the eligibility of Federal funding for improvement of a particular bridge. A bridge is eligible for rehabilitation when its sufficiency rating is less than 80 and is eligible for replacement funding when its sufficiency rating is less than 50. A bridge is not eligible for Federal funding when its sufficiency rating is from 80 to 100.

Source: Wisconsin Department of Transportation and SEWRPC.

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 17 and Figure 9 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 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.

Table 18, Figure 10, and Map 12 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.



Source: Wisconsin Department of Transportation and SEWRPC.

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	С	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 1 free-		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 t		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	Severe E 33 to 40 percent of S free-flow speed a		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.

Congestion On Designated Truck Routes And National Highway System

Table 19 and Map 13 present the existing level of traffic congestion experienced on designated truck routes and the National Highway System in the year 2005 and compared to the congestion level experience in 2001. 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 operators 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.

VEHICLE TRAFFIC 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.¹ The number of reported crashes for 2006, 2007, and 2008 are shown in Table 20 by county, by freeway and non-freeway, and by crash severity.

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. Map 14 displays the location of these 422 crashes during 2006, 2007, and 2008 which resulted in a fatality. 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.

Transit Crashes and Passenger Injuries

Table 21 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 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, the rate decreased to 2,792 passenger injuries per 100,000,000 revenue miles, or a decrease of about 3 percent between 2006 and 2008.

¹A reportable crash is any crash resulting in: 1) an injury to or death of any person; 2) damage to governmentowned, 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.

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

2001

				Over Design Capacity					
	Unde Design	r or At Capacity	Moc Cong	Moderate Congestion		Severe Congestion		Extreme Congestion	
County	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Total Mileage
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

				Over Design Capacity					
	Unde Design	er or At Capacity	Moderate Congestion		Severe Congestion		Extreme Congestion		
County	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Total Mileage
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 11



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

Source: Wisconsin Department of Transportation and SEWRPC

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

	Arterial Street and Highway Mileage						
Traffic Congestion	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 9 TRAFFIC CONGESTION ON THE



Source: SEWRPC.

ARTERIAL HIGHWAY AND TRANSIT TRAVEL TIMES

Map 15 compares the year 2001 and 2005 estimated peak hour travel speeds for selected freeway and surface arterial street segments. Map 16 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.

Map 17 presents the ratio of total overall transit travel time to and 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

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

	Highest Level	Miles of Cong	jested Freeways	Average Hours of Congestion on an Average Weekday				
	of Hourly	-						
	Congestion		Percent of					
Year	Experienced	Number	Freeway System	Extreme	Severe	Moderate	Total	
	Extreme	29	10.7	1.2	2.7	3.7	7.6	
2005	Severe	23	8.5		1.2	2.3	3.5	
2005	Moderate	16	6.0			2.2	2.2	
	Total	68	25.2					
	Extreme	24	8.9	1.4	3.3	4.4	9.1	
2001	Severe	18	6.7		1.5	2.5	4.0	
2001	Moderate	22	8.1			2.1	2.1	
	Total	64	23.7					
	Extreme	11	4.4	1.0	2.1	3.1	6.2	
1001	Severe	12	4.8		1.1	2.9	4.0	
1991	Moderate	23	9.1			2.3	2.3	
	Total	46	18.3					
	Extreme							
1070	Severe	2	1.2		1.0	3.0	4.0	
1972	Moderate	7	4.3			2.8	2.8	
	Total	9	5.5					

Source: SEWRPC.

Figure 10

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



MODERATE CONGESTION - FREEWAY SEGMENT EXPERIENCES FOR AT LEAST ONE HOUR IN EACH DIRECTION ON AN AVERAGE WEEKDAY AVERAGE TRAVEL SPEEDS OF ONE TO TWO MILES PER HOUR BELOW THE FREE-FLOW SPEED, AND SUBSTANTIAL RESTRICTIONS ON THE ABILITY TO MANEUVER AND CHANGE LANES.

SEVERE CONGESTION - FREEWAY SEGMENT EXPERIENCES FOR AT LEAST ONE HOUR IN EACH DIRECTION ON AN AVERAGE WEEKDAY AVERAGE TRAVEL SPEEDS UP TO 10 MILES PER HOUR BELOW THE FREE-FLOW SPEED WITH VIRTUALLY NO ABILITY TO MANEUVERAND CHANGE LANES.

EXTREME CONGESTION - FREEWAY SEGMENT EXPERIENCES FOR AT LEAST ONE HOUR IN EACH DIRECTION ON AN AVERAGE WEEKDAY AVERAGE TRAVEL SPEEDS WHICH ARE TYPICALLY 20 TO 30 MILES PER HOUR OR LESS WITH BREAKDOWNS IN TRAFFIC FLOWAND STOP-AND-GO, BUMPER-TO-BUMPER TRAFFIC.

Source: SEWRPC.

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.

TRANSPORTATION AIR POLLUTANT EMISSIONS

Table 22 presents the estimated transportation system air pollutant emissions and motor fuel consumption within Southeastern Wisconsin for the years 2001 and 2010. Estimated air pollutant emissions have declined for all pollutants, and particularly volatile organic

Map 12

HISTORIC TRAFFIC CONGESTION ON THE SOUTHEASTERN WISCONSIN FREEWAY SYSTEM





MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION		ESTIMATED HOURS OF CONGESTION	ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL				
	EXPERIENCED	WEEKDAY	EXTREME	SEVERE	MODERATE		
Ĺ	-	NO CONGESTION	-		-		
Ĺ	MODERATE	1	-	-	1		
İ.	MODERATE	3	-		3		
	SEVERE	3	-	1	2		
1	SEVERE	4	-	1	3		
	SEVERE	4		2	2		
1	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.





2005



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

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

Source: Wisconsin Department of Transportation and SEWRPC.

compounds and nitrogen oxides due to cleaner, more efficient vehicles, with the exception being carbon dioxide emissions and ammonia which are estimated to have increased from 2001 to 2010 as fuel consumption has increased over these years.

PARK-RIDE FACILITIES AND TRANSIT STATIONS

Of the 55 existing park-ride lots and transit stations, 40 were served by transit service and 15 were not served by transit and were used exclusively by carpoolers (see Map 18). Eight of the 55 park-ride lots and transit stations were shared-use facilities that were not specifically constructed to serve as a park-ride lot, such as a parking lot at a private retail business or a municipal parking lot or garage.

Table 23 provides data on both the number of parking spaces available and the number of parking spaces used on an average weekday in 2008 at all park-ride lots and transit stations by patrons of freeway flyer bus service and carpoolers. The total number of spaces available at park-ride lots in the Region was 8,115 in 2008, including 7,255 at park-ride lots served by transit, and 860 at the lots not served by transit.

Of the 7,255 spaces available at the 40 park-ride lots served by transit, 2,904 spaces were used on an average weekday during 2008, a utilization rate of about 40 percent. Of the 860 spaces available at the lots not served by transit, 503 spaces were utilized during 2008, a utilization rate of about 59 percent. Five lots had utilization rates of 100 percent or higher indicating they were at or over their design capacity.

TRANSIT SERVICE RELIABILITY

In 2010, the average age of revenue vehicles operated by transit operators in the Region was 10.2 years, compared to 6.5 years in 2006. The average annual number of transit service calls for revenue vehicles within the Region

Map 13

IGESTION ON DESIGNATED TRUCK ROUTES AND 2001

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Source: Wisconsin Department of Transportation and SEWRPC

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CONGESTION ON DESIGNATED TRUCK ROUTES AND THE NATIONAL HIGHWAY SYSTEM IN THE REGION: YEARS 2001 AND 2005
STREET AND HIGHWAY CRASHES BY COUNTY AND BY LOCAL OR STATE JURISDICTION IN SOUTHEASTERN WISCONSIN: 2006, 2007, AND 2008

	Crashes ^a											
	Cou Loc	nty High al Stree	ways and ts/Roads	Non- Unite	Freeway	State and Highwavs	Inte	erstate ar erstate Fr	nd Non- reewavs		Total	
County	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, and including 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 and Safety Laboratory, University of Wisconsin and SEWRPC.

Map 14

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



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



COUNTY: 2006, 2007, AND 2008 CRASH YEAR 0 2006 2007

Map 14 (continued)

HIGHWAYS IN MILWAUKEE



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

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



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

Map 14 (continued)





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

Map 14 (continued)

AFAYE TUR PRING PRAIR SUGAR CREET DELAVAN 14 LYONS_ BLOOMFIELD Eg SHA

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

CRASH YEAR

- 0 2006
- 2007
- 2008 •

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





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

Map 14 (continued)



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

- 2008

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



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

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

^aIncludes crashes resulting in property damage.

Source: SEWRPC.

increased from 6,455 in 2006 to 8,092 in 2008, or an increase of about 25 percent. Over the same period of time, the average revenue vehicle-miles travelled between service calls decreased from 3,305 in 2006 to 2,513, or a decrease of about 24 percent. A service call being defined as any repair made to a revenue vehicle correcting a mechanical failure that either prevents the vehicle from completing a scheduled revenue trip or from starting its next scheduled revenue trip because actual movement is limited, because of safety concerns, or because of transit operator policy.

SUMMARY AND CONCLUSIONS

This review of transportation system performance indicates little change in pavement and bridge condition (2008 and 2010 compared to 2006), traffic congestion (2005 compared to 2001), vehicle traffic crashes and fatalities (2008 compared to 2006), arterial street and highway travel speeds and times (2005 compared to 2001), and transit travel times (2008 compared to 2005). Some reduction in all air pollutant emissions is estimated (from 2001 to 2010) particularly for ozone-related emissions, with the exception being an increase in greenhouse gas-related emissions and ammonia.



Source: Wisconsin Department of Transportation and SEWRPC.

Map 16

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





Map 17

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



ESTIMATED SOUTHEASTERN WISCONSIN REGION TRANSPORTATION SYSTEM AIR POLLUTANT EMISSION AND FUEL CONSUMPTION: YEARS 2001 AND 2010

Estimated Air Pollutant Emissions (Tons per Hot Summer Weekday)								Estimated Fuel					
Year	Volatile Organic Compounds ^a	Nitrogen Oxides ^a	Carbon Monoxide	Carbon Dioxide	Fine Particulate Matter	Sulfur Dioxide	Ammonia	Butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Consumption (Gallons per Average Weekday)
Year 2001	50.03	114.23	592.48	18,050	1.77	2.77	4.84	0.20	0.43	0.03	1.40	0.63	1,805,000
Year 2010	27.30	60.92	358.29	18,500	1.18	0.51	5.62	0.09	0.20	0.01	0.66	0.30	1,865,000

^aEstimated 1990 emissions were 154.6 tons of volatile organic compounds and 136.3 tons of nitrogen oxides. Estimated 1999 emissions were 61.3 tons of volatile organic compounds and 118.0 tons of nitrogen oxides.

Source: SEWRPC.



Source: SEWRPC

AVERAGE WEEKDAY USE OF PARK-RIDE LOTS AND TRANSIT STATIONS: 2008

		Served by	Not convod		Available	Autos Parked on	Percent of
Number ^a	Location	Transit	hy Transit	Shared Lise	Parking	Weekday: 2008	Spaces
	Konooba County	Transit	by manan	Shared Use	Opaces	Weekudy. 2000	USEU
1	Matra Station (Kanasha)	v		v	145	b	b
1		^		^	145		
	Ozaukee County						
2	STH 57 and CTH H (Fredonia)	×			60	16	27
2	IH 43 and STH 32 CTH H (Port Washington)	X			50	30	60
3	Wal Mart (Saukville)	×		Y	50	50 b	ь
-	III 42 and CTH V (Grafton)	×		~	95	49	56
5	IH 43 and CTH C (Grafton)	×			65	40	140
0		^			65	91	140
	Milwaukaa Coupty						
7	STH 100 and N. 85th Street (Milwaukee)		Y		100	b	b
0	Kohl's (Prown Door)	×	~	v	120	69	52
0	Brown Door (Biver Hille)	×		~	360	100	22
9	W. Cood Hope Dood (Milwoukee)	×			125	100	20
10	Timmer Field (Milweykee)	×			135	41	30
11	North Chardele)	X			140	59	42
12	North Shore (Glendale)	×			195	92	47
13	W. Watertown Plank Road (Wauwatosa)	X			240	91	38
14	State Fair Park (Milwaukee)	X			285	147	52
15	Milwaukee Amtrak Station	X			240	"	
16	Milwaukee County Transit System	×		V	с	b	b
47	National Avenue and H 42/04 (Milwarkee)	X	v	×		140	
17	National Avenue and IH 43/94 (Milwaukee)	N/	~		160	142	89
18	W. Holt Avenue (Milwaukee)	X			235	100	43
19	Whithali (Hales Corners)	X			360	213	59
20	W. Loomis Road (Greenfield)	X			410	101	25
21	Southridge (Greendale)	X		х	170	81	48
22	W. College Avenue (Milwaukee)	X			650	314	48
23	Mitchell Airport Amtrak Station (Milwaukee)	X			300	150	50
24	W. Ryan Road (Oak Creek)	Х			305	176	58
	Racine County					h	ь
25	Racine Metro Transit Center (Racine)	Х			120		"
26	IH 94 and STH 20 (Ives Grove)		Х		75	69	92
27	IH 94 and STH 11 (Mount Pleasant)		Х		60	37	62
28	Sturtevant Amtrak Station (Sturtevant)	Х			180	^D	^D
	Walworth County						
29	East Troy Municipal Airport (East Troy)		Х		40	8	20
30	USH 12 and STH 67 (Elkhorn)		Х		40	18	45
31	USH 12 and CTH P (Genoa City)		Х		40	10	25
	Washington County						
32	USH 41 and STH 33 (Allenton)		Х		35	56	160
33	USH 41 and CTH K (Addison)		Х		50	19	38
34	USH 45 and Paradise Drive (West Bend) ^a	Х			100	82	82
35	Washington County Fair Park (Polk)	Х		Х	100	23	23
36	STH 60 and CTH P (Jackson)		Х		30	41	137
37	Pioneer Road and Mayfield Road (Richfield)	Х			30	48	160
38	USH 41 and Lannon Road (Germantown)	Х			100	105	105
	Waukesha County						
39	Pilgrim Road (Menomonee Falls)	Х			70	56	80
40	STH 67 and Lang Road (Oconomowoc)		Х		35	5	14 ^b
41	Collins Street Parking Lot (Oconomowoc)	Х		Х	^c	^b	^b
42	STH 16 and CTH P (Oconomowoc)	Х			45	18	40
43	STH 16 and CTH C (Nashotah)	Х			60	11	18
44	STH 16 and STH 83 (Chenequa)		Х		35	9	26
45	STH 67 and CTH DR (Summit)	Х			100	37	37
46	IH 94 and CTH C (Delafield)		х		30	25	83
47	IH 94 and STH 83 (Delafield)	Х			200	91	46
48	IH 94 and CTH G/CTH SS (Pewaukee)	х			245	66	27
49	IH 94 and CTH F (Pewaukee)	-	х		85	39	46
50	Goerke's Corners (Brookfield)	х			315	262	83
51	Waukesha Metro Transit				510		
	Downtown Transit Center (Waukesha)	х		х	495 ^c	^b	^b
52	IH 43 and Moorland Road (New Berlin)	x			175	30	17
53	IH 43 and CTH Y (New Berlin)		х		45	25	56
54	IH 43 and STH 164 (Big Bend)	х			145	64	44
55	IH 43 and STH 83 (Mukwonago)	x			165	93	56
	Total				8 115	3 407	42
		_	_	-	0,110	0,101	-74

^aSee Map 18.

^bData not available.

°Parking available within larger public lot or structure.

Source: Wisconsin Department of Transportation and SEWRPC.

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Chapter 5

REVIEW OF IMPLEMENTATION TO DATE OF YEAR 2035 REGIONAL TRANSPORTATION PLAN

INTRODUCTION

This chapter reviews the implementation to date of the year 2035 regional transportation plan. The plan was adopted by the Commission in June, 2006, and, therefore, implementation is measured from that date. In evaluating the implementation to date of the plan, it must be recognized that the plan is an ambitious long-range plan extending over about 30 years, and any implementation over the first three and one-half years of this period will necessarily be limited. Also, the extent of plan implementation which has occurred in this very short term has been affected by the economic downturn beginning in 2008, and the lingering effects of the economic downturn beginning in 2001. The review of plan implementation is presented in the chapter by plan element: public transit, bicycle and pedestrian facilities, transportation system management, travel demand management, and, arterial streets and highways.

PUBLIC TRANSIT

The regional plan proposed the significant expansion of public transit, a doubling of transit service by the year 2035. The plan recognized that this expansion would require State legislation to create local dedicated transit funding and a regional transit authority, and a renewal of adequate annual State financial assistance to transit. As such action typically only occurs as part of a State biennial budget, the plan assumed no expansion may occur until 2008 upon passage of the State 2007-2009 biennial budget in mid-2007, the first budget following plan adoption. In the 2009-2011 State budget, Governor Doyle proposed a regional transit authority (RTA) with a 0.5 percent sales tax local dedicated funding, but the State Legislature rejected his proposal, and it was not included in the adopted budget. The budget did create a multi-county commuter rail authority with vehicle rental fee dedicated funding. Another attempt was made to pass RTA legislation in April of 2010 during the regular session

Average Weekday Revenue Vehicle Miles ^a					
Service Type	2006	2007	2008		
Fixed-Route (Bus)	66,600	65,600	62,800		
Demand-Response (Shared Ride Taxi)	7,700	8,400	9,800		
Total	74,300	74,000	72,600		

PUBLIC TRANSIT VEHICLE-MILES OF SERVICE: YEARS 2006 TO 2008

^aService for the general public.

Source: SEWRPC.

of the Wisconsin State legislature. The legislation came very close to passing, but was not adopted into State law. However, efforts to ultimately pass transit funding legislation will continue and may be expected to be enacted in future legislative sessions. Without such legislation, the expansion of public transit service recommended in the regional plan may not be expected to be implemented, and transit service is likely to continue to decline.

As shown in Table 24, the amount of transit service in Southeastern Wisconsin has declined from the time of plan adoption in 2006 to 2008, including a decrease of almost 6 percent in fixed-route bus service. However, demand-responsive service has increased over the period by 27 percent, so that the total amount of decrease is 2 percent. The amount of increase envisioned by 2008 in the recommended plan was 2 percent.

The regional plan also recommended that public transit fare increases not exceed the rate of general price inflation. Table 25 shows the fares for the Region's transit systems for the years 2006 through 2010 and for the years 2000 to 2005 as fare increases are not made every year. Fare increases over the last few years and several years have exceeded general inflation of about 7 percent from 2006 to 2009 and 20 percent from 2000 to 2009.

Progress has been made in implementing fixed guideway transit. The Milwaukee downtown connector study is nearing completion. The study evaluated a wide range of alternatives including express buses, guided electric powered buses, and streetcars. Two proposed projects are proceeding towards implementation: an express bus line, and a starter streetcar line. Through the Milwaukee downtown connector study, the City of Milwaukee has completed planning for a downtown streetcar line, with three potential routes for the line being evaluated. In a March 2009 split of \$91.5 million in Interstate Cost Estimate (ICE) funding, \$54.9 million was provided to implement the streetcar line. The City of Milwaukee, as the potential transit operator of the streetcar line and having completed corridor planning examining transit alternatives, and concluding that they will be implementing the streetcar alternative, has requested that the regional plan be amended to include the recommended streetcar

FARES CHARGED ON THE PUBLIC BUS SYSTEMS IN THE REGION: 2000-2010

						Year					
Fare Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
City of Kenosha Area Transit System											
Base Adult Cash Fare	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.25	\$1.25
Monthly Pass	\$22.00	\$22.00	\$22.00	\$22.00	\$28.00	\$28.00	\$28.00	\$28.00	\$28.00	\$34.00	\$34.00
Western Kenosha County Transit											
Base Adult Cash Fare								\$2.00-\$3.00	\$2.00-\$3.00	\$2.00-\$3.00	\$2.00-\$3.00
11-Ride Punch Card								\$20.00	\$20.00	\$20.00	\$20.00
Monthly Pass								\$10.00	\$10.00	\$10.00	\$10.00
Kenosha-Racine-Milwaukee Commuter Bus											
Base Adult Cash Fare	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.00-\$4.00	\$1.25-\$4.25	\$1.25-\$4.25	\$1.25-\$4.25
Book of 10 Tickets	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$9.00-\$36.00	\$11.25-\$38.25	\$11.25-\$38.25	\$11.25-\$38.25
Milwaukee County Transit System											
Base Adult Cash Fare	\$1.35	\$1.50	\$1.50	\$1.50	\$1.75	\$1.75	\$1.75	\$1.75	\$2.00	\$2.00	\$2.25
Freeway Flyer Cash Fare	\$1.60	\$1.80	\$1.80	\$1.80	\$2.05	\$2.05	\$2.25	\$2.25	\$2.75	\$3.00	\$3.25
Weekly Pass	\$10.50	\$11.00	\$12.00	\$12.00	\$13.00	\$13.00	\$14.00	\$16.00	\$16.00	\$16.50	\$17.50
Upass	\$31.00	\$33.00	\$35.00	\$35.00	\$38.00	\$38.00	\$38.00	\$41.00	\$41.00	\$42.00	\$45.00
MCTS Commuter Value Pass (employee portion)	\$15.00	\$16.00	\$17.00	\$17.00	\$19.00	\$19.00	\$25.67	\$29.50	\$29.50	\$30.50	\$32.50
Ozaukee County Express Bus											
Base Adult Cash Fare	\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$3.00	\$3.00	\$3.25
City of Racine Belle Urban System											
Base Adult Cash Fare	\$1.00	\$1.00	\$1.00	\$1.25	\$1.25	\$1.25	\$1.25	\$1.50	\$1.50	\$1.50	\$1.50
Monthly Pass	\$30.00	\$30.00	\$30.00	\$40.00	\$40.00	\$40.00	\$40.00	\$50.00	\$50.00	\$50.00	\$50.00
Washington County Commuter Express											
Base Adult Cash Fare	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$3.25	\$3.25	\$3.25	\$3.25
Book of 10 Tickets	\$21.25	\$21.25	\$21.25	\$21.25	\$21.25	\$21.25	\$21.25	\$27.50	\$27.50	\$27.50	\$27.50
City of Waukesha Metro Transit System											
Base Adult Cash Fare	\$1.00	\$1.00	\$1.25	\$1.25	\$1.25	\$1.50	\$1.50	\$1.75	\$1.75	\$2.00	\$2.00
Monthly Pass	\$24.00	\$24.00	\$38.00	\$38.00	\$38.00	\$38.00	\$38.00	\$40.00	\$40.00	\$44.00	\$44.00
Waukesha County Transit System											
Base Adult Cash Fare	\$1.00-\$2.50	\$1.00-2.50	\$1.00-2.50	\$2.25-2.75	\$2.25-2.75	\$2.50-3.00	\$2.50-3.00	\$2.50-3.00	\$2.75-\$3.25	\$3.25-\$4.00	\$3.25-\$4.00
Book of 10 Tickets	\$9.00-\$22.50	\$9.00-\$22.50	\$9.00-\$22.50	\$20.25-\$24.75	\$20.25-\$24.75	\$22.50-\$27.00	\$22.50-\$27.00	\$22.50-\$27.00	\$24.75-\$29.25	\$29.25-\$36.00	\$29.25-\$36.00

Source: SEWRPC.

line. Milwaukee County expects to use the remaining \$36.6 million in ICE funds to implement express transit service through the creation of a bus rapid transit line, and potentially apply for Federal Transit Administration funds for additional bus rapid transit lines in the County.

In January 2010, the State of Wisconsin received \$810 million in Federal Railroad Administration American Recovery and Reinvestment Act of 2009 High Speed Rail (FRA ARRA HSR) funds for the implementation of new high speed service between Madison and Milwaukee with stations in Brookfield, Oconomowoc, and Watertown. The new service is expected to begin in 2013 with a maximum speed of 79 mph. A maximum speed of 110 mph is expected following improvements to the existing rail lines that are planned to be completed in 2016. An additional \$12 million in FRA ARRA HSR funds was received by the State for improvements to the current Hiawatha Amtrak service line between Chicago and Milwaukee. In addition, \$1 million in FRA ARRA HSR funds were received for the conduct of a study of potential new high speed rail service between Madison and Minneapolis.

BICYCLE AND PEDESTRIAN FACILITIES

Accommodation of Bicycles on the Arterial Street and Highway System

The regional plan envisioned that as each segment of the surface arterial street system of about 3,600 miles in the Region was constructed, resurfaced, and reconstructed, the provision of accommodation for bicycle travel would be considered and implemented—if feasible—through bicycle lanes, widened outside travel lanes widened shoulders, or separate bicycle paths. Wisconsin State Statutes and Federal policy require that bicycle accommodations be provided in all new highway construction and reconstruction projects funded with State or Federal funds, unless it is demonstrated that such accommodation is prohibitive.

On arterial streets and highways with a rural cross-section, bicycles may be accommodated with a four-foot paved shoulder and six-foot gravel shoulder on a two traffic-lane facility, and with an eight-foot paved shoulder on a four-traffic lane facility. On arterial streets with an urban cross section, bicycles may be accommodated with bicycle lanes five to six feet in width, or with a widened outside lane of 14 feet. Accommodations may also be provided on urban and rural arterials with parallel, physically separate paths of eight to 12 feet in width (five to six feet for one-way paths) and 10 feet of separation from the travel lanes. Map 19 identifies those arterial streets and highways which provided bicycle accommodations through paved shoulders, bicycle lanes, or separate paths in 2009. The mileage of arterial streets and highways that provided bicycle accommodations through paved shoulders, bicycle lanes, or separate paths increased from about 633 miles in 2004 to about 650 miles in 2009, or about a 3 percent increase. Data is not available to identify those urban arterials with outside lanes of 14 feet in width which also accommodate bicycles.



Source: SEWRPC

Off-Street Bicycle Path System

The plan also recommended that a system of off-street bicycle paths be provided between the Kenosha, Milwaukee, and Racine urbanized areas, and between all the cities and villages within the Region with a population of 5,000 or more. Some on-street bicycle connections would be required to connect segments of this system of off-street paths. Map 20 shows the proposed system of off-street bicycle facilities, which includes 575 miles of off-street bicycle paths. Approximately 203 miles of the planned 575 miles of off-street bicycle paths existed in 2006, and another 35 miles of the planned paths have since been constructed.

The City of Milwaukee is nearing completion of a bicycle plan that recommends a broad range of measures to improve conditions for bicycling in Milwaukee. This plan will help to implement the recommendations of the regional plan's bicycle and pedestrian element.

During 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. These segments are shown on Map 20. 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.

TRANSPORTATION SYSTEMS MANAGEMENT

Recommended transportation system management measures include freeway traffic management, surface arterial management, and major activity center parking guidance.



Source: SEWRPC.

Freeway Traffic Management

Expansion of freeway traffic management was envisioned as being implemented as the freeway system was reconstructed segment-by-segment. The following measures have been implemented since the regional transportation plan was adopted:

- Maintenance of Traffic Operations Center in operation on a 365 days a year, 24 hours per day basis
- Expansion of ramp-meters from 120 to 127 locations (See Map 21 and Table 26)
- Expansion of freeway variable message signs from 21 to 25 locations (See Map 22 and Table 27)
- Implementation of 511 regional travel information system
- Expansion of freeway closed-circuit television cameras from 83 to 103 locations
- Continuation of Traffic Incident Management Enhancement Program (TIME)
- Expansion of deployment of ramp closure devices to Ozaukee and Washington Counties
- Expansion of freeway service patrols in Milwaukee County to weekday evenings, and in Kenosha and Racine Counties to weekday midday and early evenings

Surface Arterial Street and Highway Traffic Management

Implementation includes the following:

- Expansion of variable message signs from 13 to 16 locations (See Map 23 and Table 28)
- Expansion of closed-circuit television cameras from 13 to 16 locations.
- Expansion of signal coordination and interconnection through seven funded FHWA Congestion Mitigation and Air Quality Improvement Program (CMAQ) projects

Major Activity City Parking Management and Guidance

The City of Milwaukee is about to enter the implementation and installation phase of the envisioned central business district parking structure guidance system. The system will provide motorists with real-time information about available parking in the downtown area through signs located throughout the central business district, freeway dynamic message signs, a website, and a telephone line. A data source will also be available to allow real-time parking information applications to be created for mobile devices or websites.

TRAVEL DEMAND MANAGEMENT

Implementation to date includes the following:

• Two park-ride lots of the 26 additional park-ride lots proposed under the 2035 plan have been provided to encourage transit use and carpooling (See Map 24). A third recommended park-ride lot has been implemented on a temporary basis, and engineering studies are underway for a permanent site.

- Vanpool programs have expanded from 20 vanpools operated by the Milwaukee County Transit System with another eight vanpools to be operated by Waukesha County.
- Internet trip planners are provided by the Milwaukee County and City of Racine transit systems and will soon be available for the City of Waukesha transit system.
- Automatic vehicle location systems are now used by the Milwaukee County, City of Waukesha, City of Racine, and Western Kenosha County transit systems and will soon be provided on Ozaukee and Washington County transit systems. Milwaukee County Transit System is pursuing Federal funds to initiate "next bus" information signing at bus stops.
- In 2009, Milwaukee County Transit System equipped all buses with bike racks. While not a specific recommendation of the year 2035 regional transportation system plan, the installation of the bike racks on buses in Milwaukee County would promote the use of transit and bicycle modes of transportation.
- Detailed site-specific neighborhood plans encouraging higher density, mixed use, transit-oriented development were prepared for the neighborhoods surrounding the nine KRM commuter rail stations. With the exception of one community, the plans have been endorsed by each community, with each community indicating that they will incorporate the plans into their comprehensive plans, should commuter rail proceed to implementation.

ARTERIAL STREETS AND HIGHWAYS

The arterial street and highway element of the recommended year 2035 regional transportation plan totaled 3,637 route-miles. Approximately 88 percent, or 3,189 of these route-miles, were recommended to be resurfaced and reconstructed to their same capacity. Approximately 360 route-miles—less than 10 percent of the total recommended year 2035 arterial street and highway system—were recommended for widening to provide additional through traffic lanes, including 127 miles of freeways. The remaining 88 route-miles—about 2 percent of the total arterial street mileage—were proposed new arterial facilities. Over the next 30 years, the plan envisioned capacity expansion of about 12 percent of the total arterial system and about a 10 percent expansion in added lane miles of arterials.

Since the completion and adoption of the regional transportation plan in 2006, approximately eight miles of planned new arterial facilities, and 15 miles of arterial facilities planned to be widened to carry additional traffic lanes have been constructed and are open to traffic (See Map 25). These 23 miles of arterial facilities represent about 5 percent of the total planned new and widened arterial facilities under the regional plan. Under construction are an additional five miles of the new Burlington bypass facility planned to be open to traffic in late 2010, and 30 miles of reconstruction of IH 94 with additional traffic lanes between the Mitchell Interchange in Milwaukee County and the Wisconsin-Illinois State line planned to be open to traffic in 2016.



Source: Wisconsin Department of Transportation and SEWRPC.

LOCATION OF RAMP METERS ON THE EXISTING FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2010

Reference Number ^a	Ramp Meter Location
IH 94 East-West Corridor	
1	Westbound at CTH SS ^c
2	Eastbound at CTH SS [°]
3	Westbound at CTH G
4	Eastbound at CTH G
5	Westbound at CTH T
6	Eastbound at CTH T (Grandview Boulevard)
/	Eastbound at STH 164 / CTH J
8	
9	Eastbound at LISH 19
11	Eastbound at Parker Poad
12	Westhound at CTH O (Moorland Road)
13	CTH O (Moorland Road) Southbound to Eastbound IH 94
14	CTH O (Moorland Road) Northbound to Eastbound III 94
15	Westbound at STH 100 (S 108 th Street)
16	Eastbound at STH 100 (S. 108 th Street)
17	Westbound at STH 181 (N. 84 th Street)
18	Eastbound at STH 181 (N. 84 th Street)
19	Westbound at N. 70 th Street
20	Eastbound at N. 68 th Street
21	Westbound at Hawley Road
22	Eastbound at Hawley Road
23	Eastbound at Mitchell Boulevard
24	Westbound at Mitchell Boulevard
25	USH 41 Southbound to Westbound IH 94
26	USH 41 Southbound to Eastbound IH 94
27	STH 341 Northbound to Eastbound IH 94
28	STH 341 Northbound to Westbound IH 94
29	Westbound at N. 35 th Street
30	Eastbound at N. 35" Street
31	Westbound at N. 28" Street
32	Eastbound at N. 25" Street
33	Westbound N. 1/" Street"
34	Westbound at W. Tory Hill Street and N. TT Street
36	Northbound/Southbound at N. 2 nd Street and W. Clybourn Avenue ^b
1H 94 South Corridor	
37	Northbound at S. 9 th Street and Walker Street
38	Southbound at S. 9 th Street and Mineral Street
39	Northbound at S. 6 th Street and Mineral Street
40	Southbound at Lapham Boulevard
41	Northbound at Lapham Boulevard
42	Southbound at Becher Street
43	Northbound at Becher Street
44	Southbound at Holt Avenue
45	Northbound at Holt Avenue
46	Southbound at W. Howard Avenue
47	Northbound at W. Howard Avenue
48	Westbound CTH Y (W. Layton Avenue) to Northbound IH 94
49	Eastbound CTHY (W. Layton Avenue) to Northbound IH 94
50	Southbound at S. 20" Street, south of CTH Y (W. Layton Avenue)
51	STH 119 Westbound to Northbound IH 94
52	Southbound at CTH ZZ (W. College Avenue)
53	Northbound at CTH ZZ (W. College Avenue)
54	Southbound at CTH BB (W. Kawson Avenue)
00 56	Easthound CTH BR (W. Rawson Avenue) to Northbound IH 94
47 48 49 50 51 52 53 54 55 56	Northbound at W. Howard Avenue Westbound CTH Y (W. Layton Avenue) to Northbound IH 94 Eastbound CTH Y (W. Layton Avenue) to Northbound IH 94 Southbound at S. 20 th Street, south of CTH Y (W. Layton Avenue) STH 119 Westbound to Northbound IH 94 Southbound at CTH ZZ (W. College Avenue) Northbound at CTH ZZ (W. College Avenue) Southbound at CTH BB (W. College Avenue) Southbound at CTH BB (W. Rawson Avenue) Westbound CTH BB (W. Rawson Avenue) to Northbound IH 94 Eastbound CTH BB (W. Rawson Avenue) to Northbound IH 94

Table 26 (continued)

Reference Number ^a	Ramp Meter Location
IH 94 South Corridor continued	
57	Southbound at STH 100 (W. Ryan Road)
58	Northbound at STH 100 (W. Ryan Road)
IH 43 North Corridor	
59	Southbound at CTH C (Pioneer Road)
60	Southbound at STH 57/167 (Mequon Road)
61	Southbound at Milwaukee—Ozaukee County Line Road
62	Eastbound STH 100 (W. Brown Deer Road) to Southbound IH 43
63	Westbound STH 100 (W. Brown Deer Road) to Southbound IH 43
64	Southbound at CTH PP (W. Good Hope Road)
65	Southbound at W. Silver Spring Drive
66	Southbound at W. Hampton Avenue
67	Southbound at Green Bay Avenue
68	Southbound at N. 9" Street and W. Abert Place
69	Northbound at Atkinson Avenue
70	Southbound at W. Keefe Avenue
71	Southbound at W. Locust Street
72	Northbound at W. Locust Street
73	Southbound at W. North Avenue
74	Northbound at W. North Avenue
75	Southbound at W. Fond du Lac Avenue (W. McKinley Avenue) ^b
76	Northbound at W. Fond du Lac Avenue
77	Northbound at W. Highland Avenue and W. Kilbourn Avenue ^b
78	Southbound at W. Wisconsin Avenue ^b
IH 43 South Corridor	
79	Northbound at STH 100 (S. 108 th Street)
IH 894 Corridor	
80	Eastbound STH 59 (W. Greenfield Avenue) to Northbound IH 894
81	Westbound STH 59 (W. Greenfield Avenue) to Northbound IH 894
82	Southbound at STH 59 (W. Greenfield Avenue)
83	Northbound at W. Lincoln Avenue
84	Southbound at W. National Avenue
85	Northbound at W. National Avenue
86	Northbound at CTH NN (W. Oklahoma Avenue)
87	Northbound at W. Beloit Road
88	Southbound at W. Beloit Road
89	Westbound at S. 84 th Street
90	Eastbound at STH 24 (W. Forest Home Avenue)
91	Eastbound at CTH U (S. 76 th Street)
92	Westbound at S. 60 th Street
93	Eastbound at S. 60 th Street
94	Westbound at STH 36 (S. Loomis Road)
95	Eastbound at STH 36 (S. Loomis Road)
96	Southbound WIS 241 (S. 27 th Street) to Westbound IH 894
97	Northbound WIS 241 (S. 27 th Street) to Westbound IH 894
98	Eastbound at WIS 241 (S. 27 th Street)
USH 45 Corridor	
99	Southbound at Lannon Road
100	Southbound at CTH Q (Washington—Waukesha County Line Road)
101	Northbound at Pilgrim Road
102	Southbound at Pilgrim Road
103	Southbound at STH 74 (Main Street)
104	Northbound at STH 74 (Main Street)
105	Northbound at N. 124 th Street (Waukesha—Milwaukee County Line)
106	Southbound at N. 124 th Street (Waukesha—Milwaukee County Line)
107	Northbound STH 145 to Northbound USH 45°
108	Westbound CTH PP (W. Good Hope Road) to Southbound USH 45
109	Southbound from STH 145 to USH 45 ^c
110	Northbound at CTH PP (W. Good Hope Road)

Table 26 (continued)

Reference Number ^a	Ramp Meter Location
USH 45 Corridorcontinued	
111	Eastbound CTH PP (W. Good Hope Road) to Southbound USH 45
112	Northbound at USH 41 (W. Appleton Avenue)
113	Southbound at STH 175 (W. Appleton Avenue)
114	Southbound at CTH E (W. Silver Spring Drive)
115	Northbound at CTH E (W. Silver Spring Drive)
116	Southbound at CTH EE (W. Hampton Avenue)
117	Northbound at CTH EE (W. Hampton Avenue)
118	Southbound at STH 190 (W. Capitol Drive)
119	Northbound at STH 190 (W. Capitol Drive)
120	Southbound at W. Burleigh Street
121	Northbound at W. Burleigh Street
122	Southbound at W. North Avenue
123	Northbound at W. North Avenue
124	Southbound at Watertown Plank Road
125	Northbound at Watertown Plank Road
126	Southbound at N. 97 th Street and W. Wisconsin Avenue
127	Northbound at W. Wisconsin Avenue

^aSee Map 21.

^bRamp Meter added after 2004.

^cExists as Data Collection Site, but does not have active Ramp Meter.

Source: Wisconsin Department of Transportation and SEWRPC.

SUMMARY AND CONCLUSIONS

Only about three and one-half years have passed since the completion and adoption of the regional transportation plan, representing about 10 percent of the plan's 30 year planning period. Some implementation of each element of the plan's recommendations has occurred:

Public Transit--Since adoption of the regional transportation plan in 2006, the amount of transit service has declined by about 2 percent and transit fares have increased by amounts greater than general price inflation. The plan envisioned transit service increases beginning in 2008 at an annual rate of about 2 percent through the year 2035, and transit fare increases at the general rate of price inflation. It was recognized, however, that these plan recommendations may only occur upon achieving State legislation for dedicated funding and a regional transit authority. State legislation was enacted in mid-2009 creating a commuter rail authority with dedicated local funding, and State legislation for a regional transit authority with dedicated local funding will be considered in February, 2010. In addition, three transit guideway projects continue to proceed towards implementation: the KRM commuter rail line, Milwaukee County express bus line, and City of Milwaukee streetcar line.



Source: Wisconsin Department of Transportation and SEWRPC.

LOCATIONS OF VARIABLE MESSAGE SIGNS AND CLOSED-CIRCUIT TELEVISION CAMERAS ON THE EXISTING FREEWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2010

Reference Number ^a	Variable Message Sign Locations
1	IH 94 eastbound at STH 16
2	IH 94 eastbound at Brookfield Road
3	IH 94 westbound at Calhoun Road ^b
4	IH 94 eastbound at Elm Grove Road
5	IH 94 eastbound at S. 89 th Street
6	IH 94 eastbound at N. 30 th Street ^b
7	IH 94 westbound at N. 22 nd Street
8	IH 43 and IH 94 northbound at Kinnickinnic River
9	IH 43 and IH 94 southbound at Oklahoma Avenue
10	IH 94 northbound at CTH ZZ (W. College Avenue)
11	IH 94 northbound at W. Drexel Avenue ⁵
12	IH 94 northbound at CTH G
13	IH 94 northbound at CTH C ^d
14	IH 43 southbound at Ozaukee—Milwaukee County Line Road
15	IH 43 southbound at W. Locust Street
16	IH 43 northbound at W. Walnut Street ^b
17	IH 43 northbound at CTH T (W. Beloit Road)
18	IH 894 and USH 45 southbound at STH 59 (W. Greenfield Avenue)
19	IH 894 and USH 45 northbound at Cleveland Avenue
20	IH43 and IH 894 eastbound at S. 72 nd Street
21	IH43 and IH 894 westbound at STH 36 (W. Loomis Road)
22	USH 41 and USH 45 southbound at STH 145
23	USH 45 southbound at W. Burleigh Street
24	USH 41 southbound at W. Cherry Street
25	STH 119 westbound at Mitchell Airport
Poforonco Numbor ^a	Closed Circuit Television Camera Locations

Reference Number ^a	Closed-Circuit Television Camera Locations
1	IH 94 at STH 67 [▷]
2	IH 94 at STH 83 ^b
3	IH 94 at CTH SS ^b
4	IH 94 at CTH F ^b
5	IH 94 at Springdale Road
6	IH 94 at USH 18 (Blue Mound Road)
7	IH 94 at Calhoun Road
8	IH 94 at CTH O (Moorland Road)
9	IH 94 at Sunnyslope Road
10	IH 94 at S. 121 st . Street
11	IH 94 at STH 100 (N. 108 th Street)
12	IH 94 at IH 894 and USH 45 (Zoo Interchange)
13	IH 94 at S. 92 nd Street
14	IH 94 at S. 76 th Street
15	IH 94 at Hawley Road
16	IH 94 at Mitchell Boulevard
17	IH 94 at N. 35 th Street
18	IH 94 at N. 30 th Street
19	IH 94 at N. 20 th Street ^c
20	IH 94 at N. 13 ^{III} Street ^C
21	IH 794 at N 7 ^u Street (James Lovell Boulevard) ⁰
22	IH 794 at N. 2 ^{no} Street
23	IH 794 at Lincoln Memorial Drive (Lake Interchange) ⁰
24	IH 794 at Daniel W. Hoan bridge
25	IH 794 at south end of Daniel W. Hoan bridge ^v
26	IH 794 at S Carferry Drive ^o
27	IH 94 and IH 43 at STH 59 (W. National Avenue)
28	IH 94 and IH 43 at W. Mitchell Street
29	IH 94 and IH 43 at STH 38 (Chase Avenue)

Table 27 (continued)

Reference Number ^a	Closed-Circuit Television Camera Locations
30	IH 94 and IH 43 at W. Oklaboma Avenue
31	IF 94 and IF 43 at W. Holt Street
32	III 04 and III 43 at W. Howard Avenue
33	III 94 and III 43 at W. Plainfield Avenue
34	III 04 at CTH V (W. I auton Avenue)
35	III 94 at STH 110 (Airport Interchange)
26	III 94 at 5TH 73 (Milport interchange)
27	III 94 at CTIT 22 (W. College Avenue)
39	III 64 at C STEI 100 (W. Rawson Avenue)
20	III 94 at South Tou (W. Kyair Koau)
59	
40	
41	III 04 at STH 20 (Machington Ayanua)
42	IH 94 at STH 20 (Washington Avenue)
45	III 94 at STH 142 (Burlington Bood)
44	H Q4 at STH 142 (bullinguit Rodu)
45	[H 04 at STH 165 (104th Street)]
40	[11] 34 at STI 163 and STI 57 (Maguan Boad) ^b
47	III 43 at STH 107 (MIG STH 57 (Mequili Koda)
40	III 43 at STH 100 (W. Diowil Deel Rodu)
49	III 43 at 0 Th PP (W. Good hope Road)
50	III 43 at W. Daphine Rodu
51	In 45 at W. Silver Spillig Drive
52	III 43 at W. nampton Avenue
55	
55	III 43 at W. Rece Avenue
55	
57	III 43 at W. Diowin Subel
59	
50	
60	III 45 at W. State Street ^D
61	III 43 at W. Silace Street
62	II 43 at W. Wells Street ^b
63	II 43 at W. Wisconsin Avenue
64	IH 43 at CTHY (S. Bacine Avenue) ^b
65	IH 43 at S Moorland Road ^b
66	IH 43 at S Sunnyslope Road ^b
67	IH 43 at S 124 th Street ^b
68	IH 43 at S 116 th Street ^b
69	IH 43 at STH 100 (S 108 th Street)
70	IH 894 and USH 45 at STH 59 (W. Greenfield Avenue)
71	IH 894 and USH 45 at W. Lincoln Avenue
72	IH 894 and USH 45 at CTH NN (W. Oklahoma Avenue)
73	IH 894 and USH 45 at CTH T (W. Beloit Road)
74	IH 894 and USH 45 at Cold spring Road
75	IH 894 and IH 43 at CTH N (S. 92 nd Street)
76	IH 894 and IH 43 at S. 84 th Street
77	IH 894 and IH 43 at CTH U (S. 76 th Street)
78	IH 894 and IH 43 at S. 60 th Street
79	IH 894 and IH 43 at STH 36 (W. Loomis Road)
80	IH 894 and IH 43 at S. 35 th Street ^b
81	IH 894 and IH 43 at USH 41 (S. 27 th Street)
82	IH 894 and IH 43 at 20 th Street
83	USH 41 and USH 45 at STH 167 (Lannon Road) ^b
84	USH 41 and USH 45 at CTH Q (Washington—Waukesha County Line Road)
85	USH 41 and USH 45 at CTH YY (Pilgrim Road)
86	USH 41 and USH 45 at Leon Road ^b
87	USH 41 and USH 45 at Waukesha—Milwaukee County Line (W. 124 th Street)

Table 27 (continued)

Reference Number ^a	Closed-Circuit Television Camera Locations
88	USH 41 and USH 45 at STH 145
89	USH 41 and USH 45 at CTH PP (W. Good Hope Road)
90	USH 45 and STH 100 at USH 41 (W. Appleton Avenue)
91	USH 45 at CTH E (W. Silver Spring Drive)
92	USH 45 at STH 190 (W. Capitol Drive)
93	USH 45 at W. Burleigh Road
94	USH 45 at W. Center Street
95	USH 45 at W. North Avenue
96	USH 45 at STH 100 (Mayfair Road)
97	USH 45 at Watertown Plank Road
98	USH 45 at USH 18 (Bluemound Road)
99	IH 43 and IH 94 at Mitchell Interchange
100	USH 41 at USH 18 (Bluemound Road)
101	STH 341 at Stadium
102	STH 341 at STH 59 (W. National Avenue)
103	Wisconsin Department of Transportation Traffic Operations Center ^e

^aSee Map 22.

^bLocation added after 2004.

^cLocation updated after 2004.

^dLocation currently inactive, will be restored with completion of IH 94 North South Project.

^eLocation no longer active after 2004.

Source: Wisconsin Department of Transportation and SEWRPC.

- <u>Bicycle and Pedestrian Facilities</u>--Of the 372 additional proposed miles of the recommended 575-mile off-street bicycle and pedestrian path system, 35 miles have been constructed since 2006. Also, with respect to recommended accommodation of bicycle travel on the regional arterial street system, WisDOT and FHWA now require such consideration during preliminary engineering conducted for State, county, and local arterial construction and reconstruction using Federal funds.
- <u>Transportation Systems Management</u>--Implementation includes for freeway traffic management the expansion of freeway ramp-meters, variable message signs and closed circuit television cameras, and installation of a 511 travel information system. Other implementation includes additional traffic signal interconnection and coordination.
- <u>Travel Demand Management</u>--Implementation includes expansion of park-ride lots, vanpool programs, transit system internet trip planners, and automatic bus location systems, and development of site specific transit-oriented development neighborhood plans for the nine KRM commuter rail station areas.
- <u>Arterial Streets and Highways</u>--About 23 miles, or 5 percent of the plan recommended 448 miles of arterial capacity expansion have been completed and are open to traffic. With respect to freeway reconstruction, there are four major freeway-to-freeway interchanges in Southeastern Wisconsin: the



Source: Wisconsin Department of Transportation and SEWRPC.

LOCATIONS OF VARIABLE MESSAGE SIGNS AND CLOSED-CIRCUIT TELEVISION CAMERAS ON THE EXISTING STANDARD ARTERIAL STREET AND HIGHWAY SYSTEM IN SOUTHEASTERN WISCONSIN: 2010

Reference Number ^a	Variable Message Sign Locations
1	USH 18 (E. Moreland Road) eastbound at IH 94 (Goerke's Corners)
2	STH 59 (W. National Avenue) westbound at Miller Park Way ^c
3	STH 59(W. National Avenue) eastbound at Miller Park Way ^c
4	Miller Park Way northbound at STH 59 (W. National Avenue)
5	W. Canal Street westbound at N. 25 th Street ^b
6	STH 145 (N. 124 th Street) southbound at W. Bradley Road
7	CTH PP (W. Good Hope Road) westbound at USH 41/45
8	STH 175 (W. Appleton Avenue) eastbound at STH 100 ^c
9	STH 190 (W. Capitol Drive) eastbound at N. 124 th Street
10	STH 100 southbound at W. Walnut Street ^c
11	USH 18 (W. Bluemound Road) eastbound at 114 th Street
12	STH 59 (W. Greenfield Avenue) eastbound at 111 th Street
13	STH 100 northbound at W. Lapham Street ^c
14	STH 100 northbound at Edgerton Avenue
15	Mitchell International Airport at Airport Parking Ramp Exit ^D
16	Mitchell International Airport at Airport Drop-off Exit ^b

Reference Number ^a	Closed-Circuit Television Camera Locations
1	USH 18 (W. Bluemound Road) at CTH Y (Barker Road)
2	USH 18 (W. Bluemound Road) at Calhoun Road
3	USH 18 (W. Bluemound Road) at CTH O (Moorland Road)
4	STH 181 (S. 84 th Street) at STH 59 (W. Greenfield Avenue)
5	STH 100 (N. 108 th Street) at CTH E (W. Silver Spring Drive)
6	STH 100 (N. 108 th Street) at CTH EE (W. Hampton Avenue)
7	STH 100 (N. 108 th Street) at STH 190 (W. Capitol Drive)
8	STH 100 (N. 108 th Street) at W. Burleigh Road
9	STH 100 (N. 108 th Street) at W. North Avenue
10	STH 100 (N. 108 th Street) at Watertown Plank Road
11	STH 100 (N. 108 th Street) at USH 18 (W. Bluemound Road)
12	STH 100 (S. 108 th Street) at STH 59 (W. Greenfield Avenue)
13	STH 100 (S. 108 th Street) at W. Lincoln Avenue
14	USH 794 (Lake Parkway) at E. Layton Avenue [□]
15	USH 119 at USH 38 (S. Howell Avenue) ^D
16	USH 38 (S. Howell Avenue)at Airport Tunnel [®]

^aSee Map 23.

^bLocation added after 2004.

^cLocation currently not operational.

Source: Wisconsin Department of Transportation and SEWRPC.

• Marquette, Zoo, Mitchell, and Hale interchanges. The largest and most complicated, the Marquette Interchange, has been reconstructed. The Zoo Interchange is nearing completion of preliminary engineering. The Mitchell Interchange is being reconstructed as part of the reconstruction to be completed in 2016 of 30 miles of IH 94 between the Mitchell Interchange and the Wisconsin-Illinois State line.

While much of the year 2035 plan recommendations remain to be accomplished, significant implementation has occurred in a relatively short time period of the last three and one-half years.



Source: SEWRPC


Source: SEWRPC.

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Chapter 6

UPDATE OF YEAR 2035 REGIONAL TRANSPORTATION PLAN

INTRODUCTION

The review of the year 2035 regional transportation plan documented in the previous chapters of this report indicates that the plan largely remains valid today, four years following its adoption. This review includes an assessment of the continued validity of the plan forecasts, an evaluation of transportation system performance, and an assessment of the implementation of the plan to date.

The next section of this chapter presents potential amendments to the year 2035 regional transportation plan. This includes amendments which have been identified in Walworth and Washington County jurisdictional highway system planning efforts, as well as additional potential amendments requested by municipalities since plan adoption in 2006.

The next section of this chapter assesses the potential to accomplish the plan within the remaining 25 years of the plan's design period. The section presents updated costs and revenues attendant to the plan, assesses the consistency of these expected costs and revenues, and considers whether the year 2035 plan may be expected to be implemented by 2035 within the financial constraints of existing available resources.

The final section of this chapter presents the updated and amended year 2035 transportation plan.

RECOMMENDED AMENDMENTS TO YEAR 2035 REGIONAL TRANSPORTATION PLAN

This section of the chapter presents recommended amendments to the regional transportation plan.

Walworth and Washington County Jurisdictional Highway System Plan Amendments

A proposed set of amendments in Washington and Walworth Counties are a result of the jurisdictional highway system planning efforts in those counties. In Washington County, this planning effort has been completed with the new county jurisdictional highway system plan adopted by Washington County and the Southeastern Wisconsin Regional Planning Commission. In Walworth County, a preliminary Walworth County jurisdictional highway system plan has been recommended by the Advisory Committee to the planning effort. The Advisory Committee on Regional Transportation Planning unanimously recommended amending the year 2035 regional transportation plan to include these amendments. These jurisdictional highway system planning amendments are as follows (see Maps 26 and 27):

Washington County

- Add widening from two to four traffic lanes of STH 60 between CTH F and Industrial Drive, and add reserving right-of-way for STH 60 between Industrial Drive and a point 1,000 feet east of Jackson Drive to accommodate possible future widening to four lanes beyond the design year 2035 of the plan in the Village of Jackson;
- Add Wildwood Road between the planned extension of Schuster Drive and CTH D as planned arterial;
- Remove Rockfield Road between STH 145 and Pleasant View Drive as planned arterial;
- Modify alignment of planned extension of Kettle View Drive between CTH H and STH 28;
- Add extension of Kettle View Drive between STH 28 and USH 45;
- Add reserving of right-of-way for 18th Avenue between Paradise Drive and Decorah Road to accommodate possible future widening to four lanes beyond the design year of the plan in the City of West Bend;
- Add CTH C between STH 60 and CTH Z as planned arterial, and remove Scenic Road between STH 60 and CTH Z as planned arterial;
- Add reserving right-of-way for USH 41 between USH 41/45 split and STH 60 to accommodate possible future widening to six lanes beyond the design year of the plan;
- Modify alignment of planned extension of Kettle View Drive between STH 33 and Schuster Drive; and

Map 26



REGIONAL TRANSPORTATION PLAN CHANGES RECOMMENDED IN THE YEAR 2035 WASHINGTON COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN

REGIONAL TRANSPORTATION PLAN CHANGES RECOMMENDED IN THE YEAR 2035 WALWORTH COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN



Source: SEWRPC

• Add reserving right-of-way for USH 45 between USH 41/45 split and STH 60 to accommodate possible future widening to six lanes beyond the design year of the plan.

Walworth County

- Remove planned extension of Foundry Road between Madison Street and Walworth Street, and add Madison Street between Foundry Road and Badger Parkway, and Badger Parkway between Madison Street and Walworth Street as planned arterials in the Village of Darien;
- Modify alignment of the planned Elkhorn "inner" ring road between Voss Road and STH 11 at East Market Street;
- Add extension of an Elkhorn "outer" ring road between the planned Elkhorn "inner" ring road and CTH H, and add reserving of right-of-way for the extension of the Elkhorn "outer" ring road between CTH H and STH 11 at Plank Road to accommodate possible future improvement beyond the design year of the plan;
- Add new east-west arterial between Main Street and Tratt Street along the Jefferson County line, and remove the planned extension of Indian Mound Parkway between Main Street and Tratt Street in the City of Whitewater;
- Add extension of Indian Mound Parkway between Walworth Street and STH 59 in the City of Whitewater;
- Add Starin Road between Tratt Street and Fremont Street as planned arterial; and add extension of Starin Road between Fremont Street and Newcomb Street (STH 59) in the City of Whitewater;
- Remove widening of STH 50 from two to four traffic lanes between Lake View Drive and STH 120 in the City of Lake Geneva;
- Add Bowers Road and CTH N between IH 43 and STH 20 as planned arterials;
- Remove CTH ES between CTH A and CTH D as planned arterial;
- Remove Town Line Road between STH 20 and CTH J as planned arterial;
- Remove Sharon-Darien Town Line Road between CTH X and USH 14 as planned arterial;
- Remove South Road and Mill Road between STH 50 and STH 36 as planned arterials;

- Add CTH O between USH 12 and STH 11 as planned arterial;
- Remove Briggs Road between STH 11 and Hazel Ridge Road, Hazel Ridge Road between Briggs Road and Granville road, Granville Road between Hazel Ridge Road and Sugar Creek Road, Sugar Creek Road between Granville Road and Cobbie Road, and Cobbie Road between Sugar Creek Road and CTH H as planned arterials; and
- Remove planned realignment of CTH P north of CTH A.

ADDITIONAL PROPOSED AMENDMENTS TO YEAR 2035 REGIONAL TRANSPORTATION PLAN

Additional proposed amendments to the year 2035 regional transportation plan are a result of suggestions by members of the Advisory Committee and by representatives from local and county governments. These proposed amendments are discussed below.

Transit Plan Element Refinement

A number of refinements were recommended unanimously by the Advisory Committee on Regional Transportation Planning for the transit plan element:

- Minor modification of the planned express bus routes to reflect the alignments of the bus rapid transit routes currently being considered in Milwaukee County;
- Minor modification of the potential light rail/streetcar/bus guideway routes to reflect the streetcar routes being considered in studies underway in the City of Milwaukee; and
- Inclusion of the planned Chicago-Milwaukee-Madison high-speed rail line which recently received Federal funding as part of the Midwest Regional Rail Initiative.
- Addition of a park-and-ride lot in Ozaukee County at the interchange of IH 43 and Mequon Road.

Also recommended by the Advisory Committee was the addition to the plan of the proposed downtown streetcar line in the City of Milwaukee. The streetcar line had been shown as a potential guideway line under the plan.

Maps 28 and 29 display the transit plan element with these refinements.



Source: SEWRPC.

Map 29



Source: SEWRPC.

Reconsider the Recommendation to Widen from Six to Eight Lanes the 19 Miles of IH 94 and IH 43 Freeways in the City of Milwaukee

The City of Milwaukee asked to consider an amendment to the year 2035 plan, remove the recommendation to widen from six to eight lanes (as part of reconstruction) the portions of IH 94 between the Zoo and Marquette Interchanges in the City of Milwaukee, and of IH 43 between the Mitchell Interchange and Silver Spring Drive in the City of Milwaukee. Under this possible amendment, the regional transportation plan would continue to recommend that during the preliminary engineering for the reconstruction of these freeway segments, alternatives which would not provide additional traffic lanes would be evaluated, along with alternatives which would provide additional traffic lanes. If the preliminary engineering concluded that additional traffic lanes not be provided, the plan would not be changed. If the preliminary engineering concluded that these freeway segments should be widened, then the regional plan would be updated to include the additional lanes.

This issue was considered during both the development of the regional freeway system reconstruction plan (completed in 2003) and the year 2035 regional transportation plan (completed in 2006). In both planning efforts, an evaluation was completed of the implications of the proposed widening of these 19 miles of freeway, and of the alternative of not widening the 19 miles of freeway.

The widening from six to eight lanes of the 19 miles of freeway in the City of Milwaukee was the most controversial recommendation of the regional freeway system reconstruction plan that was completed in 2003. The City of Milwaukee Common Council and Mayor passed a resolution that formally opposed the widening to eight lanes, but indicated support for rebuilding the freeway system to modern design standards during reconstruction and for providing additional traffic lanes on the other 108 miles of freeway proposed to be widened. With respect to Milwaukee County, no official position on the regional freeway system reconstruction plan recommendations was provided since the legislative and executive branches of County government could not reach agreement. However, the actions of the Milwaukee County Board of Supervisors and the Milwaukee County Executive may be interpreted to indicate agreement also on rebuilding the freeway system to modern design standards and providing additional traffic lanes on 108 of the 127 miles of freeway proposed for widening, and opposition by the County Board to the proposed widening of the 19 miles of freeway including IH 94 from the Marquette to the Zoo Interchange and IH 43 from the Mitchell Interchange to Silver Spring Drive.

The Regional Planning Commission staff recommendation to the Advisory Committee for the freeway system reconstruction plan was that these 19 miles of freeway widening not be included in the final plan, but rather be addressed as an alternative as the Wisconsin Department of Transportation (WisDOT) conducts preliminary engineering and environmental assessments attendant to the reconstruction of these 19 miles of freeway. If the preliminary engineering and environmental assessment concluded that some or all of these 19 miles of freeway should be widened from six to eight traffic lanes, the regional transportation plan would be amended by the

Commission at that time. The Commission staff made this recommendation given the opposition by the City of Milwaukee and the Milwaukee County Board, and further given that traffic analyses indicated that operations on the remainder of the freeway system would not be significantly affected by not widening these 19 miles of freeway. Finally, the Commission staff recommendation recognized that the widening could still be considered as an alternative in preliminary engineering, where the impacts could be reviewed in greater detail. On a split vote, the Advisory Committee for the regional freeway system reconstruction study—an Advisory Committee which largely consisted of the Region's elected officials appointed on a population proportional basis—rejected the Commission staff recommendation and determined to place the 19 miles of freeway widening in the final recommendations of the regional freeway reconstruction plan. The Advisory Committee almost unanimously supported rebuilding the freeway system to modern design standards and rebuilding the remaining 108 miles of freeway with additional lanes. The Regional Planning Commission accepted the Advisory Committee recommendations.

During the development of the year 2035 regional transportation plan, the Commission's Advisory Committee on Regional Transportation Planning—which largely consisted of technical staff for State, County, and local units of government appointed on a population proportional basis—revisited in 2006 this issue of widening the 19 miles of freeway in the City of Milwaukee. After discussing the matter at two meetings, the Advisory Committee voted 18-to-3 to recommend the 19 miles of widening remain in the regional transportation plan, with the condition that the maps showing the recommended functional improvements to the arterial street and highway system include text stating that no plan recommendation—specifically calling out the recommended 127 miles of freeway widening, and in particular, the 19 miles in the City of Milwaukee—proceeds directly to implementation and that alternatives should be considered during preliminary engineering (with and without additional lanes), and that a final decision as to whether a project will proceed to implementation—and specifically whether the reconstruction of these 19 miles of freeway would include widening with additional lanes—will be made at the conclusion of preliminary engineering. The Advisory Committee ultimately unanimously approved the final recommended year 2035 regional transportation plan in May, 2006. The Regional Planning Commission in June, 2006, accepted the Advisory Committee's recommendation.

Table 29 summarizes the costs and benefits broadly defined of widening upon reconstruction of the 19 miles of freeway in the City of Milwaukee from six to eight traffic lanes, specifically on IH 94 between the Marquette and the Zoo Interchanges and on IH 43 between the Mitchell Interchange and Silver Spring Drive. The data presented in Table 29 indicate that the cost of constructing the additional lanes represents an estimated 20 percent increase in the cost of reconstruction these 19 miles of freeway, and the additional lanes can largely be built within the existing right-of-way. The additional lanes would provide a 33 percent increase in traffic carrying capacity, and would reduce traffic congestion and the attendant diversion of freeway traffic to surface arterial streets and congestion on those surface streets. Also, traffic safety would be improved on these 19 miles of freeway.

Table 29

COSTS AND BENEFITS OF WIDENING 19 MILES OF FREEWAY FROM SIX TO EIGHT LANES—IH 94 BETWEEN MARQUETTE AND ZOO INTERCHANGES AND IH 43 BETWEEN MITCHELL INTERCHANGE AND SILVER SPRING DRIVE

Construction Cost

Additional cost of \$268 million for widening. (Represents 20 percent increase in estimated cost of reconstruction of these 19 miles of freeway to modern design standards without widening.)

Right-of-Way Acquisition^a

21 residences 3 commercial buildings (Additional lanes can largely be built within the existing right-of-way.)

Traffic Carrying Capacity

Widening IH 94 and IH 43 from six to eight lanes will expand traffic carrying capacity by 33 percent.

Traffic Congestion^b

IH 94 between Marquette and Zoo Interchanges Year 2035 Average Weekday Hours of Congestion

	<u>Total</u>	Extreme	Severe	Moderate
With No Added Lanes	16	4	5	7
With Added Lanes	13	2	5	6

IH 43 between Mitchell and Marquette Interchanges Year 2035 Average Weekday Hours of Congestion

	<u>Total</u>	<u>Extreme</u>	<u>Severe</u>	Moderate
With No Added Lanes	13	2	5	6
With Added Lanes	4		2	2

IH 94 between Marquette and Silver Spring Drive Year 2035 Average Weekday Hours of Congestion

	<u>Total</u>	<u>Extreme</u>	<u>Severe</u>	Moderate
With No Added Lanes	8	2	4	5
With Added Lanes	4		2	2

Table 29 (continued)

	Travel Times					
	Year 2035 Peak Hour Travel	Time (minutes)				
		With Added Lanes	<u>Without</u> Added Lanes			
	IH 94 – between Marquette and Zoo Interchanges (Free flow travel time of 6 minutes)	14	19			
	IH 43 – between Mitchell and Marquette Interchanges (Free flow travel time of 6 minutes)	9	14			
	IH 43 – between Marquette Interchange and Silver Spring Drive (Free flow travel time of 6 minutes)	10	13			
	Additional Traffic on Surface Streets ^c					
	Wisconsin Avenue – 1,000 to 5,000 v	ehicles per weel	day			
	Greenfield Avenue – 1,000 to 3,000 v	ehicles per weel	day			
	• St. Paul Avenue – 200 to 1,000 vehicl	les per weekday				
	Lisbon Avenue – 200 to 2,000 vehicle	es per weekday				
	• 27 th Street – 1,000 to 4,000 vehicles per weekday					
	• Fond du Lac Avenue – 2,000 to 4,000 per weekday					
	Capitol Drive – 1,000 to 4,000 vehicles per weekday					
	 National Avenue – 2,000 to 3,500 vehicles per weekday 					
	Forest Home Avenue – 1,000 to 3,000	0 vehicles per w	eekday			
	Howell Avenue – 1,000 to 2,000 vehic	cles per weekda	/			
	 Lincoln Memorial Drive – 1,000 to 3,000 vehicles per weekday 					
	Port Washington Road – 1,000 to 3,00	00 vehicles per v	veekday			
	• 43 rd Street – 1,000 to 3,000 vehicles p	per weekday				
	• Bluemound Road – 1,000 to 3,000 ve	hicles per week	lay			
	North Avenue – 1,000 to 2,000 vehicle	es per weekday				
	Traffic Safety					
The widening of IH 94 and IH 43 from six to eight lanes as part of freeway reconstruction will provide traffic safety improvement by reducing traffic congestion. Rear-end accident rates are five to 15 times higher on congested freeways, as compared to uncongested freeways. The most extremely congested freeways experience the highest rear-end crash rates. On these freeway segments, rear-end accidents represent 70 percent of all accidents.						
	Air Pollutant Emissions and Motor Fuel Consumption and Impacts on Air Quality					
	Almost no difference between alternatives. S lanes—more will be on freeways with added la Transportation generated ozone-related air pol to decline by the year 2035 by about 70 perce traffic, due primarily to more stringent standard	Similar levels of anes and more w llutant emissions ent (along with m ls for new motor	vehicle traffic expected with or without a ill be on parallel surface arterials without ne have been declining, and are projected to lost other pollutant emissions), even with ir vehicles.	additional ew lanes. continue acreasing		

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Land Use Impacts

No major impact on land use decentralization or centralization expected, as future year 2020 traffic congestion with additional lanes will only be modestly less than current traffic congestion, and transportation is one of many possible causes, and is not considered a principal or significant cause of land use decentralization.

Induced Travel

No significant additional travel is expected to be induced by additional freeway lanes, as future year traffic congestion with additional lanes may be expected to be only modestly less than current levels of traffic congestion.

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

^bExtreme traffic congestion is characterized by stop-and-go bumper-to-bumper traffic operating at speeds of 20 to 30 miles per hour or less. Severe congestion is characterized by traffic operating at speeds of 5 to 15 miles per hour below free-flow speed and no gaps in traffic for lane changing. Moderate traffic congestion is characterized by traffic operating at speeds of 1 to 5 miles per hour below free-flow speed and substantial restrictions on ability to change lanes.

^cThe forecast additional traffic on surface streets would be expected during periods of extreme and severe congestion on the freeway system.

Source: SEWRPC.

The 19 miles of freeway are relatively unique among the 270 miles of freeway in the Region and the 127 total miles proposed for widening in the regional freeway reconstruction plan in that along much of these 19 miles, densely populated residential neighborhoods are located immediately adjacent to the freeways. The concern and opposition to these 19 miles of freeway widening is attendant to the perceived negative impacts on the neighborhoods immediately adjacent to the freeways. The Commission staff proposal to the regional freeway system plan Advisory Committee was one of recognizing the strong opposition from the City of Milwaukee and the strongly split opinion within Milwaukee County, and was based on a recognition that the decision of whether to include the widening in the regional plan could be made after the completion of more detailed preliminary engineering and environmental assessment studies which would more precisely define the impacts on the neighborhoods adjacent to the 19 miles of freeway.

These 19 miles of freeway are also relatively unique in that they serve radial corridors leading to and from the Milwaukee central business district, and thus are corridors which can be well served by public transit. The

regional plan recommends substantial improvement and expansion of public transit, including express and rapid transit bus facilities and services in these corridors. Also, the plan recommends the potential development of exclusive guideway express and rapid transit facilities in these corridors, which would provide a transit alternative unaffected by traffic congestion. Although forecast transit ridership on these transit facilities would not be expected to significantly abate forecast freeway traffic congestion, transit alternatives on fixed guideways could provide an alternative in the corridors unaffected by congestion.

Lastly, the regional plan recommends transportation systems management measures, intended to improve the operation of the street and highway system and ameliorate the effects of congestion. Recommended freeway traffic management measures include operational control, advisory information, and systems management. Recommended surface arterial management measures include coordinated traffic signal systems, arterial intersection improvements, access management, and arterial operational control and advisory information. If the now recommended additional lanes on these 19 miles of freeway were removed from the plan, the highest priority should be placed on the implementation of these measures on the 19 miles of freeway and the affected surface arterial alternative routes.

The Advisory Committee on Regional Transportation Planning again considered the City of Milwaukee's request to remove the recommended freeway widening from these 19 miles of freeway in the recommended plan. The request failed, with six members in favor of the amendment to remove the widening, and 10 against.

Reconsider the Recommendation to Reserve Right-of-Way to Accommodate a Future Improvement along W. College Avenue (CTH ZZ) between S. 27th Street (STH 241) and S. 51st Street

Milwaukee County and the City of Franklin requested that consideration be given to changing the plan recommendation to "reserve right-of-way" on W. College Avenue (CTH ZZ) between S. 27th Street (STH 241) and S. 51st Street to a recommendation of "widen to four traffic lanes." The design capacity of this segment of W. College Avenue is 14,000 vehicles per average weekday, with a current year 2008 traffic volume of approximately 11,000 vehicles per average weekday on the segment of between S. 27th Street and S. 35th Street, and between 6,500 and 7,500 vehicles per average weekday on the segment between S. 35th Street and S. 51st Street. The forecast year 2035 average weekday traffic volume is approximately 14,000 vehicles per average weekday traffic volume is approximately 14,000 vehicles per average weekday on the segment between 9,000 and 11,000 vehicles per average weekday on the segment of S. 51st Street. Thus, forecast traffic volumes approach, but do not exceed, the design capacity of the segment of W. College Avenue between S. 35th Street and S. 51st Street by 2035. However, forecast traffic volumes would reach the design capacity of the segment of W. College Avenue between S. 27th Street and S. 35th Street by 2035.

Therefore, it is recommended that the regional transportation plan be amended to recommend widening from two to four traffic lanes of W. College Avenue between S. 27th Street and S. 35th Street. It is further recommended that the plan continue to recommend the reservation of right-of-way along W. College Avenue between S. 35th Street and S. 51st Street to accommodate possible future improvement of the facility beyond the design year of the plan. As Milwaukee County is now undertaking reconstruction of this stretch of W. College Avenue, and because this reconstruction may be expected to have a service life well beyond 25 years, it may be appropriate to consider reconstruction alternatives which would provide the potential for conversion to four traffic lanes in the future.

Reconsider the Planned Jurisdiction of STH 83 in the Village of Chenequa and the Town of Merton

The Village of Chenequa has asked that the portion of STH 83 located in the Village of Chenequa and the Town of Merton be designated a county trunk highway. As this is an amendment related to the jurisdiction of this arterial rather than a functional improvement, this potential change will be considered during the upcoming preparation of a jurisdictional highway system plan for Waukesha County.

Public Comment

The Commission held a public informational meeting on March 30, 2010 for this review and update of the year 2035 regional transportation plan, which drew 11 attendees. The public comment period was from March 12 to April 12, 2010, during which one member of the public submitted a comment. This comment is summarized below, along with a response from Commission staff.

Comment

• The year 2035 regional transportation plan should not recommend any highway capacity expansion, and its recommendations for public transit and bicycle and pedestrian facilities should be significantly expanded, along with achieving a more efficient transit- and pedestrian-oriented land use pattern, with the goal of achieving a significant reduction in vehicle-miles of travel. The comment further suggested that these comments relate more to the major reevaluation of regional land use and transportation plans to be initiated in 2011.

Response

The 2035 regional transportation plan considered how much future traffic congestion could first be alleviated through more efficient land use, expanded public transit, bicycle and pedestrian facilities, and travel demand management measures. The plan recommended a doubling of public transit service, and consideration of development of systems of exclusive guideway transit facilities. The plan also recommended the development of a 575-mile system of bicycle paths and the ultimate development of the

entire arterial street and highway system with bicycle accommodation. Only then were highway improvements—including freeway widening—considered to address any residual congestion. The plan included about a 10 percent expansion in arterial system lane-miles.

The major review and reevaluation of the regional land use and transportation plans will be initiated in 2011. It is expected that during this planning, alternative land use and transportation scenarios as suggested in the comment will be examined and evaluated.

Commission staff also organized a March 18, 2010, meeting of representatives from Federal and State resource agencies and the U.S. and Wisconsin Departments of Transportation, in order to directly involve those agencies in the review process. Staff from the Federal Highway Administration (FHWA), WisDOT, the Wisconsin Department of Natural Resources, and the U.S. Environmental Protection Agency (EPA) attended the meeting. Attendees had the opportunity to ask questions and suggest changes to the report. Only one substantive suggestion was made. The EPA representative suggested that, during the next major long-range planning effort, the air pollutant emissions analysis include an analysis of diesel particulate pollution emissions, since diesel vehicles are a small share of total traffic, but a large source of mobile source emissions. Commission staff agreed and stated that this analysis would be conducted during the next major review and update to the regional transportation plan.

COMPARISON OF ESTIMATED COSTS AND POTENTIAL REVENUES ATTENDANT TO THE YEAR 2035 REGIONAL TRANSPORTATION PLAN AS AMENDED

The Commission in 2005 compared the costs of implementing the proposed year 2035 regional transportation plan to projected available revenues. The conclusion reached at that time was that plan costs exceeded the costs of a "do-nothing (or make no improvements or expansion) plan" by about 30 percent and that estimated available revenues would reasonably meet plan costs.

Public transit in Southeastern Wisconsin is uniquely funded compared to other metropolitan areas of similar size. Public transit in Southeastern Wisconsin is heavily dependent on State and Federal funding and lacks a local dedicated funding source which in most metropolitan areas provides the bulk of transit funding.

Since the completion of the plan, State and Federal funding of public transit have not been sufficient to provide for transit system improvement and expansion. Moreover, in some years, State and Federal funding have not been sufficient to address inflationary increases in the cost of providing public transit, and service reductions and transit fare increases exceeding the general rate of price inflation have occurred. State legislation for a regional commuter rail authority and local dedicated funding for commuter rail was recently enacted. However, the creation of a regional transit authority (RTA) and enactment of local dedicated funding for all public transit has not occurred. Attempts were made to pass RTA legislation in June of 2009 (during preparation of the 2009-2011 Wisconsin State budget) and in April of 2010 (during the regular session of the Wisconsin State legislature). In each case, the legislation came very close to passing, but was not adopted into State law. However, efforts to ultimately pass transit funding legislation for Southeastern Wisconsin will continue and may be expected to be enacted in legislative sessions in the near future.

Tables 30 and 31 compare current estimated plan costs to estimated existing and anticipated revenues. Table 30 presents the costs and revenues in year 2009 constant dollars. Table 31 presents the costs and revenues in year-of-expenditure dollars, with costs inflated at 2.8 percent annually, and revenues projected to increase annually at approximately 2 to 3 percent based on recent five- to ten-year historic trends.

The comparison of costs and revenues indicates that in both current year and year-of-expenditure dollars, the capital and operating costs of both the highway and transit elements of the plan are reasonably consistent with existing and anticipated revenues. The anticipated existing available transit revenues include the attainment within the next few years (as proposed in recent and current regional transit authority legislation) of the ultimate provision of a regional transit authority funded by a dedicated 0.5 percent sales tax. Such authority and dedicated funding would be adequate to fully implement the transit element of the regional plan.

Therefore, it is recommended that the year 2035 regional transportation plan, with the amendments as set forth in the previous section of this chapter, remain the vision plan and "financially-constrained" plan for the regional transportation system for Southeastern Wisconsin, with that vision being attained with the creation of a regional transit authority and dedicated local transit funding. The remainder of this chapter describes the year 2035 plan, as modified by the amendments set forth in the previous section of this chapter.

UPDATED AND AMENDED YEAR 2035 TRANSPORTATION PLAN

The development of the year 2035 regional transportation system plan for Southeastern Wisconsin was guided by the following vision for the transportation system of Southeastern Wisconsin:

A multimodal transportation system with high quality public transit, bicycle and pedestrian, and arterial street and highway elements which add to the quality of life of Region residents and support and promote expansion of the Region's economy, by providing for convenient, efficient, and safe travel by each mode, while protecting the quality of the Region's natural environment, minimizing disruption of both the natural and manmade environment, and serving to support implementation of the regional land use plan, while minimizing the capital and annual operating costs of the transportation system.

Table 30

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 Operating Subtotal	\$566 77 \$643
Transit System Capital Operating ^d	\$42 239
Subtotal	\$281
Total	\$924
Transportation System Revenues (average annual 2010-2035 expressed as millions of dollars) ^c Highway Capital Federal/State/Local Highway Operating	\$569
State/Local Transit Capital Federal Local Subtotal	\$64 \$23 19 \$42
Transit Operating Federal State Local Subtotal	\$31 123 129 \$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 project 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 cost of preservation of surface arterials is \$174 million per year and of planned widening and new construction of 284 miles of surface arterials is about \$60 million per year. 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 30 (continued)

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.

Appendix A to this report includes additional cost and revenue detailed data.

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

Source: SEWRPC

The recommended year 2035 regional transportation system plan was designed to serve, and to be consistent with, the year 2035 regional land use plan. Future needs for public transit, street and highway, and other transportation improvements considered in the regional transportation planning process were derived from the projected travel based upon the regional land use plan. In addition, the consistency of the regional transportation and land use plans was evaluated by comparing the accessibility provided under the recommended transportation plan and the location of improvements proposed under the recommended transportation plan to the location of land use development and redevelopment proposed under the land use plan.

The process for the development of the recommended year 2035 regional transportation plan began with consideration and development of the travel demand management, transportation systems management, bicycle and pedestrian, and public transit elements of the plan. Arterial street and highway improvement and expansion was then considered only to address the residual highway traffic volumes and attendant traffic congestion which could not be expected to be alleviated by travel demand management, transportation systems management, bicycle and pedestrian facilities, and public transit.

Discussed in the remainder of this chapter are the public transit, bicycle and pedestrian facilities, transportation systems management, travel demand management, and arterial street and highway elements of the year 2035 regional transportation plan.

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, a rapid transit and express transit system, improvement of existing local bus service, and the integration of local bus service with the recommended rapid and express transit services. Map 30 displays the transit system proposals for each of the three transit system components. Altogether, service on the regional transit system would be increased from

Table 31

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 Operating Subtotal	\$836 <u>115</u> \$951
Transit System Capital Operating ^c	\$62 372
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 Local Subtotal	\$31 31 \$62
Transit Operating Federal State Local Subtotal	\$41 191 152 \$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 project 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 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 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.

Appendix A to this report includes additional cost and revenue detailed data.

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

Source: SEWRPC



Source: SEWRPC.

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Table 32

			Planned	Increment
Average Weekday Transit		Recommended	-	Percent
Service Characteristics	Existing 2005 ^a	Plan 2035	Number	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 ^b	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

PUBLIC TRANSIT ELEMENT OF THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

^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.

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 (see Table 32).

The recommended expansion of public transit is essential in Southeastern Wisconsin for many reasons:

 Public transit is essential to provide an alternative mode of travel in heavily traveled corridors within and between the Region's urban areas, and in the Region's densely developed urban communities and activity centers. It is not desirable, and not possible, in the most heavily traveled corridors, dense urban areas, or the largest and densest activity centers of the Region to accommodate all travel by automobile with respect to both demand for street traffic carrying capacity and parking. To attract travel to public transit, service must be available throughout the day and evening at convenient service frequencies, and at competitive and attractive travel speeds.

- Public transit also supports and encourages higher development density and infill land use development and redevelopment, which results in efficiencies for the overall transportation system and other public infrastructure and services.
- Public transit also contributes to efficiency in the transportation system, including reduced air pollution and energy consumption.
- Public transit permits choice in transportation, enhancing the Region's quality of life and economy. A portion of the Region's population and businesses would prefer to have public transit alternatives available and to travel by public transit. High quality public transit helps provide a high quality of life and contributes to the maintenance and enhancement of the Region's economy.
- Public transit is essential in the Region to meet the travel needs of persons unable to use personal automobile transportation. In the year 2000, approximately 80,000 households, or 11 percent of the Region's households, did not have a personal vehicle available and were dependent upon public transit for travel. The accessibility of this portion of the Region's population to the metropolitan area—jobs, health care, shopping and education—is almost entirely dependent upon the extent to which public transit is available, and is reasonably fast, convenient, and affordable.

High-Speed Rail

The recommended high-speed rail line between Chicago, Milwaukee, and Madison will be developed and overseen by WisDOT, which recently received Federal funding for the project as part of the Midwest Regional Rail Initiative. Improvements would be made to the existing Hiawatha Amtrak service between Milwaukee and Chicago, and new service would be established between Madison and Milwaukee, with trains reaching maximum speeds of 110 miles per hour.

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 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.

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 vehiclemiles 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 routes. Stops would typically be spaced about one-quarter mile apart. It is 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.

Table 33

FREQUENCY OF LOCAL BUS SERVICE UNDER THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN

	Average Weekday Headways on Local Bus Service (minutes)		
Area	Morning and Afternoon Peak Periods	Midday Off-Peak Period	Evening Off-Peak Period
Within Milwaukee County			
Central Milwaukee County	5-15	10-20	15-20
Remainder of Milwaukee County	15-20	20-30	20-60
Outside Milwaukee County	15-30	30-60	30-60

Source: SEWRPC.

- 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 was 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. The recommended frequency of local bus service is shown in Table 33.

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 for rapid transit service and to bus guideway or light rail for express transit service. Map 31 displays six potential future commuter rail lines and six potential future bus guideway/light rail lines within Southeastern Wisconsin. Public transit cannot offer convenient accessibility to metropolitan area services for those without an automobile, offer an attractive alternative in heavily traveled corridors and dense urban activity centers, or provide a true choice for travel if it is caught in traffic congestion and its travel times are not comparable to those of automobile travel. Upgrading to exclusive guideway transit may also be expected to promote higher density land development and redevelopment at and around the stations of the exclusive guideway transit facilities, promoting implementation of the regional land use plan.

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 examining transit alternatives, and concluding that they will be implementing the streetcar alternative, has applied for Federal funding for the streetcar project, to advance it to preliminary 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.

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

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 CON-CEPTUAL. CORRIDOR STUDIES WOULD BE CON-DUCTED 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 ENGI-NEERING. 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.

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Figure 11



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 11, 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. In the absence of dedicated local funding, a continued decline in transit service may be expected to occur. The local share of funding of public transit in Southeastern Wisconsin is provided through county or municipal budgets, and represents about 15 percent of the total operating costs and 20 percent of total capital costs of public transit. Thus, the local share of funding public transit is largely provided by property taxes, and public transit must annually compete with mandated services and projects. Increasingly, due to the constraints in property tax based funding, counties and municipalities have found it difficult to provide funding to address transit needs, and to respond to shortfalls in Federal and State funding. Most public transit systems nationwide have dedicated local funding. A sales tax of 0.25 to 1.0 percent, and are not nearly as dependent upon Federal and State funding. A sales tax provides funding which should increase with inflation and area growth, thereby addressing funding needs attendant to inflation in the costs of providing public transit and transit system expansion.

A regional transit authority could also assist in implementing the recommended transit system expansion. A number of the proposed transit services extend across city and county boundaries. A regional transit authority could assist in the implementation of these proposed services.

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 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 is shown on Map 32, and includes 586 miles of off-street bicycle paths with 147 miles of surface arterial and 83



^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. These segments are shown on Map 20. 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. The updated County plan will be used to amend the regional transportation 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.

Source: SEWRPC.

miles of nonarterial connections. Approximately 238 miles of the planned 586 miles of off-street bicycle paths were in existence in 2010 during preparation of the plan update. Also shown on Map 32 is the surface arterial street and highway system within the Region proposed to be provided with bicycle accommodation.

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.

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

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 is 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 are 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 includes 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 is 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, has served 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 part of a coordinated signal system in 2006. This measure recommends that Commission staff work with State and local government to document existing and planned arterial street and highway system traffic signals and traffic signal systems, and develop recommendations for improvement and expansion of coordinated signal systems.

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.

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.

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.

Advisory information should also be provided to motorists concerning the surface arterial street and highway network in the Region. It is 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 Program

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 Program (RTOP). The RTOP would program high priority short-range (three to five year) operational improvement projects for implementation, in part based upon the transportation systems management recommendations in the regional transportation system plan.

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 in the year 2035 plan: highoccupancy 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 carpooling and the resultant more efficient use of the Region's transportation system, a network of park-ride lots are recommended to facilitate carpooling. Map 33 shows the recommended system of park-ride lots including existing park-ride lots and those recommended to be served by public transit. 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.



Source: SEWRPC

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.

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 to date, 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, are proposed new arterial facilities. Thus, the plan recommends over the next 30 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 34 displays the recommended year 2035 regional transportation plan arterial street preservation, improvement, and expansion by county. The recommended improvements address 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 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), would 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 the existing number of lanes. Only at the conclusion of the preliminary engineering would a determination be made as to how the freeway would be reconstructed.

Map 34



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

ARTERIAL STREET OR HIGHWAY

NEW

4

- WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY
- RESERVE RIGHT-OF-WAY TO ACCOMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)
- RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY
 - 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 stretes) 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 constructed.

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-wayshould be reserved along CTH K from IH 94 to STH 31 to accommodate its ultimate improvement to six travel lanes.



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

ARTERIAL STREET OR HIGHWAY



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, attermatives will be considered, including rebuild as;, various options of rebuild to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding would a determination be made as to how the freeway would be reconstructed.

3. The plan also provides further recommendations with respect to freeway halfinterchanges. 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;

R 23 I

–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 anes, and alternatives with frontage roads.





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



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

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

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

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 lanes, and rebuilding with additional lanes, and rebuilding with additional lanes, and rebuilding with additional desting 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





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



ARTERIAL STREET OR HIGHWAY



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 stute, county, or municipal governmental 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 contry 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, atternatives will be considered, including rebuild as-is, various options of rebuild to modern design standards, compromises to rebuilding 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.

 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 enginneering the improvement of connection between adjacen 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 vVillage of Big Bend and potentially considering various alternatives, including do-nothing, restrict parking, widen with additioanl lanes, construct bypass, and imiprove/construct parallel arterials. (This page intentionally left blank)

APPENDIX

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Appendix A

REGIONAL TRANSPORTATION PLAN ESTIMATED COSTS AND ATTENDANT REVENUES

INTRODUCTION

Tables 30 and 31 of this report--and repeated as Table A-1 and A-2 of this appendix--present a comparison of the estimated costs of the implementation of the regional transportation plan, and the estimated revenues available to fund plan implementation. This appendix provides detail attendant to those estimated costs and revenues.

PLAN COSTS

A principal element of the plan cost is the construction, or capital, cost of the major projects in the plan. Major projects for the arterial street and highway system are defined as projects of higher cost. These major projects include all freeway system reconstruction as shown on Table A-3 and new surface arterial construction and existing surface arterial reconstruction of four or more miles in length, as shown in Table A-4.

Major projects for transit include guideway transit projects. Two are included in the regional transportation plan, the Kenosha-Racine-Milwaukee (KRM) commuter rail and the City of Milwaukee streetcar. The KRM project costs and revenues are identified in a detailed corridor transit alternatives analysis and Federal "new starts application." The estimated construction cost is \$233 million in constant year 2009 dollars and \$283 million in year of expenditure dollars (to be completed in year 2016). Approximately 60 percent would be funded with Federal Transit Administration discretionary new fixed guideway transit starts funding, 6 percent with Federal Highway Administration Congestion Mitigation – Air Quality Improvement Program funding, 16 percent with State funding, and 18 percent with local Southeastern Regional Transit Authority funding. The streetcar project costs and revenues are identified in a corridor alternatives analysis. The estimated construction cost is \$96 million in constant year 2009 dollars and \$102 million in year of expenditure dollars (to be completed in 2013). Approximately 83 percent would be funded with Federal funding (57 percent of total cost with Federal Interstate Cost Estimate funding and 26 percent of total cost with Federal Transit Administration discretionary funding) and 17 percent with City of Milwaukee funding.

PLAN REVENUES

The estimate of revenues available for plan implementation is based upon an assessment of existing and historic funding levels, and assessment of potential funding sources. Tables A-5 and A-6 present the estimates of revenue and the basis for those estimates.

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 Operating	\$566 77 \$643
Transit System Capital Operating ^d	\$42 239
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 Local Subtotal	\$23 19 \$42
Transit Operating Federal State Local	\$31 123 129
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 vear, 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 A-1 (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.

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 Operating	\$836 115 \$951
Transit System Capital Operating ^c	\$62 372
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 Local Subtotal	\$31 31 \$62
Transit Operating Federal State Local	\$41 191 152 \$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 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 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 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 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.

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

			Es	timated Cost	Estimated
Period			Year 200	9 Year of	Funding Year of
Completed			Constan	t Expenditure	Expenditure
And Open to Traffic	Facility	Limits of Project	Dollars (millions) (millions)	(millions)
2010 to 2015	IH 94 North/South Freeway ^a	Howard Ave./27 th St. to Illinois State Line	\$ 1,150.2	2 \$ 1,238.9	
	CTH P Interchange		17.1	19.1	
	Subtotal		\$ 1,167.3	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	3 121.3	
	IH 894	Hale Interchange to Mitchell Interchange	147.0) 194.6	
	Subtotal		\$ 1,713.2	2 \$ 2,109.6	\$ 1,988.8
2021 to 2025	IH 43	Silver Spring Dr. to STH 60	\$ 387.1	l \$ 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 \$ 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	3 297.6	
	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	5 167.2	
	USH 41	Stadium Interchange to Lisbon Ave.	60.6	5 107.2	
	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	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 A-3 (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.

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 Oollars) ^b	(ا ۲ Exp	Cost Millions Year of Denditure 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	СТН Ү	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 Phylis 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.

^cThe 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.

ESTIMATE OF YEAR 2035 PLAN ARTERIAL STREET AND HIGHWAY REVENUES

Federal and State Capital Funding

Assessment of Historic Statewide Funding

- Major Highway Development
 - o 2009 \$323 million
 - o 2004-2009 6.5 percent annual increase
 - o 1994-2009 4.9 percent annual increase
- State Highway Rehabilitation
 - 2009 \$690 million
 - o 2004-2009 5.0 percent annual increase
 - o 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
 - o 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

	2009 Constant	Year of Expenditure
	Dollar Funding	Average Annual Increase
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 A-5 (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 1

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

Option 2

1,485 x .27 = 401 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 vear 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)

<u>Local</u>

Assessment of Historic Funding

• \$32 million annually

Conclusion - 2035 Plan

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

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 A-6 (continued)

Estimate of Annual Increase in Funding for Year of Expenditure Revenues

<u>Federal</u>

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.