COMMUNITY ASSISTANCE
PLANNING REPORT NO. 21

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A TRANSPORTATION SYSTEMS MANAGEMENT PLAN FOR THE KENOSHA, MILWAUKEE, AND RACINE URBANIZED AREAS IN SOUTHEASTERN WISCONSIN 1978

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On the cover, a bus enters IH 94 westbound at N. 13th Street and W. Clybourn Street in Milwaukee using the exclusive bus ramp. Photo courtesy of Mr. Ronald Sonntag, Freeway Operations Supervisor, Wisconsin Department of Transportation, Division of Highways, District 9 Office.

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A TRANSPORTATION SYSTEMS MANAGEMENT PLAN FOR THE KENOSHA, MILWAUKEE, AND RACINE URBANIZED AREAS IN SOUTHEASTERN WISCONSIN: 1978

Prepared by the
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December 1977

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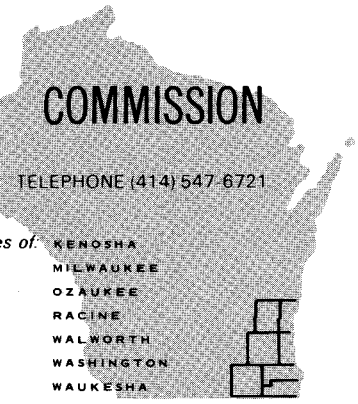

December 19, 1977

To: The Local Units of Government in the Kenosha, Milwaukee, and Racine Urbanized Areas

As part of its comprehensive regional planning effort, the Commission has long been concerned with finding ways to more effectively utilize existing transportation facilities to accommodate travel demand. Late in 1975, the U. S. Department of Transportation set forth new regulations which require metropolitan transportation planning organizations, such as the Commission, to more formally address this matter by preparing transportation systems management plans for all of the large urbanized areas in the Nation. Thus, the ongoing areawide transportation planning process must develop both the familiar long-range transportation facility development element, as well as a short-range transportation systems management element. These two elements are to be implemented through the preparation of an annual areawide transportation improvement program. The plan set forth in this document represents the Commission's first effort at preparing a formal transportation systems management plan element.

The Commission views the transportation systems management plan as a document which brings together within the context of a long-range plan those traffic engineering and transit improvement activities that flow from the local perspective of transportation system management needs, and those traffic engineering and transit improvement activities that flow from an areawide perspective of transportation system management needs. Thus there is a direct relationship between the short-range transportation systems management plan element and the long-range transportation facility development plan element, a relationship that may well be unique to southeastern Wisconsin. Many of the recommended transportation systems management plan element actions set forth in this document were derived directly from the new long-range regional transportation plan. Important among these activities are the recommended freeway operational control system to optimize use of the freeway system for both automobile and transit travel, special design studies to effect better transitions between current freeway "stub-ends" and the surface arterial street system, the construction of fringe area park-ride lots, the restructuring of downtown Milwaukee parking rates, and the establishment of express bus lanes on arterial streets. Thus, the short-range element and the long-range element of the regional transportation plan are consistent and fully coordinated.

Implementation of the management actions recommended in this plan document should lead to a safer and more efficient regional transportation system. Some of the actions recommended herein are experimental in nature and will require very careful development and monitoring over the ensuing years. To the extent that these actions are indeed successful in modifying transportation demand and more effectively using the existing transportation system capacity, it may obviate the need to commit additional capital to transportation system development. It should not be expected, however, that transportation system management actions will eliminate the need for additional capital investment in transportation facilities, for the Region by and large already has done a good job of effectively and efficiently utilizing its existing transportation system.

As is true of all the Commission's work, the regional transportation systems management plan is advisory to the local, state, and federal units and agencies of government concerned. In its continuing role of acting as a center for the coordination of transportation planning plan implementation activities within the Region, the Commission stands ready to work with the various units and agencies of government in implementing the recommendations contained herein.

Respectfully submitted,

K. W. Bauer
Executive Director

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MANAGEMENT SUMMARY

A TRANSPORTATION SYSTEMS MANAGEMENT PLAN FOR THE KENOSHA, MILWAUKEE, AND RACINE URBANIZED AREAS IN SOUTHEASTERN WISCONSIN: 1978

A transportation systems management plan (TSM) examines the current operations and management of the transportation systems, including highway and public mass transit, in a region and proposes ways to enhance the efficiency of those systems. This 1978 TSM identifies projects in the Kenosha, Milwaukee, and Racine urbanized areas and in the rural areas of the Southeastern Wisconsin Region.

The TSM recommends the implementation of 223 projects at a total cost of $200,967,700. The recommendations consist of eight projects at a cost of $3,397,200 in the Kenosha urbanized area, 164 projects at a cost of $189,603,200 in the Milwaukee urbanized area, 13 projects at a cost of $5,598,000 in the Racine urbanized area, 32 projects at a cost of $2,034,300 in rural areas of the Region, and six projects of a region-wide scope at a cost of $335,000. Projects recommended in the TSM were derived from two sources: (1) almost 95 percent of the projects (by number)—mostly of a minor highway improvement, traffic operations, and transit service nature—were proposed by individual transportation implementing agencies throughout the Region; and (2) just over 5 percent of the projects were initially proposed by the Regional Planning Commission and reworked and reshaped at a series of intergovernmental meetings among the major transportation implementing agencies.

The individual TSM projects are grouped in 24 categories of TSM actions which are presented in approximate priority order. Exhibit A (which is repeated as Table 30 in Chapter IX) depicts in summary fashion the detailed TSM recommendations including implementing agency responsibilities, suggested sources of funding, and implementation schedule.

It is quite difficult, in some cases, to determine what portion of a particular project or category of projects contributes to more efficient operation of the highway system in the Region as compared to what portion contributes to more efficient operation of the transit systems. This difficulty primarily reflects the fact that the only mode of intraregional public mass transit in the Region is the motor coach which, of course, operates over the public street and highway system. Nevertheless, with the help of some simplifying assumptions, it is possible to derive a rough estimate of the portion of the TSM-recommended expenditures primarily aimed at highways—about 11 percent, or approximately $23.2 million—and of the portion targeted to mass transit—about 89 percent, or approximately $177.7 million. Some of this apparent imbalance is due to the way in which information is gathered for the TSM plan and the concurrent transportation improvement program (TIP). For example, the entire operating deficits of the five public mass transit operators in the Region are included in the TSM, instead of just that part of those deficits directly attributable to efforts to improve transit service and increase internal management efficiency, simply because the breakdown of such efforts was not available. However, even considering this, the TSM has a heavy emphasis on mass transit.

While the costs of the TSM recommendations are large, it must be remembered that a good deal of the TSM is a catalog of actions which currently are being and for many years have been continually implemented in the Region. There are, however, a number of new initiatives which have partially or totally grown out of the TSM planning process, the most important of which are the recommendation for a detailed planning study of a freeway control system for the Milwaukee urbanized area, the recommendation for examining alternatives to improve the efficiency of the "stub end" freeways in Milwaukee County, and the recommendation for a series of other planning studies ranging from arterial street and highway studies and a study of downtown parking rate structure to a taxi fare and regulation study and preparation of a regional transportation contingency plan to deal with a sudden energy emergency, among others.

In addition, the TSM presents a blueprint for a comprehensive ongoing short-range multimodal transportation planning process, and documents some important benchmark work for the implementation of that planning process including:

Exhibit A

SUMMARY OF TSM RECOMMENDATIONS

TSM Action	Project Type and Quantity	Lead Agency	Source of Federal Funds	Total Project Costs Costs in 1978 TIP Annual Element or Overall Work Program (if different from total) (in $1,000)	Recommended Implementation
Freeway Control System	Continued Implementation (2) and	WisDOT	Identified in TIP	351.0	Continued Implementation
	Prospectus/Detailed Planning Study (1)	SEWRPC with WisDOT	FAI/FAP	525.0 (Prospectus and Study)	Prospectus initiated as soon as possible; completed by 12/31/78; study to follow immediately
Stub End Freeway Treatments	Implementation (1), Design Study (1) and	Milwaukee County and WisDOT	Identified in TIP	527.0/27.0	Continued Implementation
	Design and/or Planning Studies	Milwaukee County/ SEWRPC	FAI/FAP	None identified	Studies be initiated by 7/1/78
Improved Transit Service	Continued Implementation (18)	Various	Identified in TIP	168,940.8/39,707.8	Continued Implementation
Traffic Signing, Pavement Marking, and Signalization	Continued Implementation (83)	Various	Identified in TIP	7,413.3/5,363.3	Continued Implementation
Park-and-Ride Lots with Express Transit Service and Park-and-Pool Lots	Continued Implementation (16)	Milwaukee County and WisDOT	Identified in TIP	7,129.0/3,304.0	Continued Implementation
Transit Route Evaluation	Planning Study (1)	Milwaukee County	Identified in OWP	250.0	(Milwaukee) Study design be completed by 2/28/78; first updated transit development program completed 2/28/79
Spot Street and Highway Improvements	Continued Implementation (70)	Various	Identified in TIP	13,924.5/7,218.1	Continued Implementation
UBUS/UPARK	Continued Implementation	Milwaukee County/ UWM	Included under improved transit service	Included under No. 3 above	Continued Implementation
Arterial Studies	Prospectus/Planning and Design Study (1)	WisDOT or SEWRPC	FHWA PL/UMTA Section 9	20.0 (Prospectus only)	Prospectus initiated as soon as possible; completed by 7/1/78; studies to follow
Downtown Shuttle Services	Continued Implementation	Milwaukee County	Included under improved transit service	Included under No. 3 above	Continued Implementation
Transit Shelters	Continued Implementation (3)	Milwaukee County, Kenosha, and Shorewood	Identified in TIP	749.4/373.4	Continued Implementation
Carpool and Vanpool Promotion	Expanded Implementation (2)	Milwaukee County and WisDOT	Identified in TIP	265.0/215.0	Continued Implementation
Pedestrian and Bicycle Provisions	Continued Implementation (7)	Various	Identified in TIP	472.5/422.5	Continued Implementation
Miscellaneous Low-Capital Actions	Continued Implementation (4)	Various	Identified in TIP	55.2	Continued Implementation
Major Transit Generator Study	Prospectus/Planning Study (1)	Milwaukee County	UMTA Section 9	15.0 (Prospectus only)	Prospectus initiated as soon as possible; completed by 12/31/78; study to follow
Bus Stop Location Study	Continued Implementation (1) and	City of Milwaukee and	Identified in TIP and	155.0	Continued implementation and study to be initiated as soon as possible and completed by 12/31/78
	Planning Study (1)	Milwaukee County	UMTA Section 9		
Downtown Parking Rate Structure Study	Planning Study (1)	City of Milwaukee DPW	Local Funds	15.0	Study initiated as soon as possible with first report completed by 12/31/78
Taxi Fare and Regulation Study	Planning Study (1)	City of Milwaukee DCD	UMTA Section 9	25.0	Study initiated as soon as possible and completed by 12/31/78
Exclusive Bus Lanes	Design Study	Milwaukee County	None Identified	--	Implementation upon adoption of Milwaukee Downtown Transportation Center Study; others as part of Arterial Studies (arterial studies above)
Commuter-Impacted Permit Parking	Continued Implementation (1)	City of Milwaukee DPW	Local Funds	10.0	Continued Implementation
Community Assistance Traffic Engineering and Transit Planning	Planning Assistance Program (2)	SEWRPC/City of Milwaukee	FHWA PL/UMTA Section 9	105.0	Initiated as soon as possible
Work Time Rescheduling Study	Prospectus/Planning Study (1)	SEWRPC	Identified in OWP	10.0	Prospectus initiated as soon as possible; to be completed by 9/30/78; study to follow
Energy Emergency Contingency Plan	Prospectus for Planning Study (1)	SEWRPC	Identified in OWP	10.0	Prospectus initiated as soon as possible; to be completed by 9/30/78; study to follow
Weekend and Special Event Traffic Planning	Prospectus for Planning Study	SEWRPC with WisDOT	Postponed until 1979	--	Postponed until 1979
Total				200,967.7/58,177.3	

Source: SEWRPC.

the development of objectives, principles, and measures of effectiveness; a presentation of a concise description of the existing transportation system in the Region; a chronicle of some recent TSM actions in the Region; an identification of problems and deficiencies in the transportation system; and the preliminary design of a TSM evaluation methodology.

In conclusion, while admittedly a first effort, the recommendations of this TSM plan include a wide variety of planning, design, construction, and operations/management activities which will heavily involve all major and many minor transportation implementing agencies in southeastern Wisconsin, and represent an ambitious agenda of transportation systems management actions for the Region in 1978 and beyond.

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Chapter I

INTRODUCTION

Since its formation, one of the primary missions of the Southeastern Wisconsin Regional Planning Commission has been to plan for and promote the development of a transportation system for the Southeastern Wisconsin Region which provides for the necessary interregional and intraregional transport of people and goods at minimum cost. In fact, the first major work program of the Commission actually directed toward the preparation of a framework of advisory plans for the physical development of the Region was the regional land use-transportation study initiated in January 1963. That study was completed in December 1966 with the adoption by the Commission of a regional land use plan and a regional transportation plan (highway and transit) for southeastern Wisconsin. The findings and recommendations of the study were documented in SEWRPC Planning Report No. 7, The Regional Land Use-Transportation Study, Volume 1, Inventory Findings—1963; Volume 2, Forecasts and Alternative Plans—1990; and Volume 3, Recommended Regional Land Use-Transportation Plans—1990.

Subsequent to adoption of these long-range regional land use and transportation plans, the Commission, in cooperation with the constituent County Boards of Supervisors, prepared jurisdictional highway system plans for all seven counties in the Region.[1] These jurisdictional highway system plans, as well as the regional land use and transportation plans, have been formally adopted by the respective seven County Boards, as well as by the Regional Planning Commission and the Wisconsin Department of Transportation.

In addition to these arterial street and highway facility plans, the Commission has assisted in the preparation of, and has adopted, the Milwaukee area transit plan,[2] the Racine area transit development program,[3] and the Kenosha transit development program.[4] These plans and programs have also been adopted by the appropriate implementing units of government, including Milwaukee County, the City of Racine, and the City of Kenosha, respectively. In addition, Milwaukee County has prepared a transit development program which sets forth recommended capital and operating improvements for transit service within Milwaukee County.[5]

At the present time, the Commission has just completed a major review, reevaluation, and revision of the adopted regional land use plan and regional transportation plan. The findings and

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[1] *See SEWRPC Planning Report No. 11, A Jurisdictional Highway System Plan for Milwaukee County, formally adopted by the Commission on June 4, 1970; SEWRPC Planning Report No. 15, A Jurisdictional Highway System Plan for Walworth County, formally adopted by the Commission on March 1, 1974; SEWRPC Planning Report No. 17, A Jurisdictional Highway System Plan for Ozaukee County, formally adopted by the Commission on March 7, 1974; SEWRPC Planning Report No. 18, A Jurisdictional Highway System Plan for Waukesha County, formally adopted by the Commission on June 5, 1975; SEWRPC Planning Report No. 22, A Jurisdictional Highway System Plan for Racine County, formally adopted by the Commission on December 4, 1975; SEWRPC Planning Report No. 23, A Jurisdictional Highway System Plan for Washington County, formally adopted by the Commission on September 11, 1975; and SEWRPC Planning Report No. 24, A Jurisdictional Highway System Plan for Kenosha County, formally adopted by the Commission on September 11, 1975.*

[2] *See Milwaukee Area Transit Plan prepared by the Milwaukee County Expressway and Transportation Commission in cooperation with the Southeastern Wisconsin Regional Planning Commission and formally adopted by the Commission on March 2, 1972.*

[3] *See SEWRPC Community Assistance Planning Report No. 3, Racine Area Transit Development Program: 1975-1979, formally adopted by the Commission on September 12, 1974.*

[4] *See SEWRPC Community Assistance Planning Report No. 7, Kenosha Area Transit Development Program: 1976-1980.*

[5] *See Milwaukee Area Transit Development Program, prepared by the Transportation Division of the Milwaukee County Department of Public Works, December 1974.*

recommendations of this review, reevaluation, and revision are documented in SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin—2000; Volume 1, Inventory Findings; and Volume 2, Alternative and Recommended Plans. The Commission has also just completed a study of the transportation needs of the elderly and the handicapped, and has proposed a plan for meeting those needs.[6]

These past and present transportation planning efforts have been integrated by the Commission into an ongoing multimodal transportation planning work program which the Commission believes meets both the letter and the spirit of the requirement in the 1962 Highway Act for "a continuing, comprehensive transportation planning process carried out cooperatively by states and local communities," the so-called "3-C" process.

CURRENT FEDERAL TRANSPORTATION PLANNING REQUIREMENTS

In recent years there has been increasing concern expressed at both the local and national levels over the negative impacts of certain proposed transportation facilities, including community disruption and energy consumption, and over the large and increasing dollar costs of new facility construction. These concerns manifested themselves in the National Mass Transportation Assistance Act of 1974. This legislation, among other things, required the preparation for each urbanized area, in addition to the long-range transportation system plan, of a short-range "Transportation Systems Management" (TSM) plan for improving the operational efficiency of existing transportation facilities.

On September 17, 1975, the Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) jointly promulgated final transportation planning regulations which implemented the legislative mandate through a variety of specific requirements. While the entire text of the regulations is contained in Appendix A, a number of the more significant requirements are enumerated below:

1. The Governor of each state must designate a Metropolitan Planning Organization (MPO) for each urbanized area. The MPO will be responsible for carrying out the federally required urban transportation planning process for the urbanized area by providing a forum for cooperative decisionmaking by principal elected officials of general purpose local governments.

2. The MPO, the state, and publicly owned operators of mass transportation services must negotiate agreement(s) specifying responsibilities for carrying out transportation planning within the urbanized area.

3. The MPO must prepare and submit an annual work program specifying, within a multiyear framework, the federally funded transportation planning activities to be carried out during the next year, together with an identification of the responsible agencies.

4. The MPO must prepare and maintain current a transportation plan consisting of a short-range (TSM) and a long-range element. The short-range element is to focus on maximizing the efficiency of the existing system through management and operational improvements to address short-range needs, while the long-range element is to identify new transportation policies and facilities to address long-range needs.

5. The MPO must prepare annually a Transportation Improvement Program (TIP) which, at a minimum, specifies all federally funded transportation projects to be undertaken in the urbanized area in the next year (Annual Element) and the next three to five years, and which is intended to implement both the short-range and long-range plans.

The following actions have been taken in accordance with the foregoing federal requirements:

1. On December 27, 1973, Governor Patrick Lucey designated the Regional Planning Commission as the MPO for the Kenosha, Milwaukee, and Racine urbanized areas in southeastern Wisconsin for short-range plan and transportation improvement program preparation purposes. The Commission has served as the long-range planning agency since 1963.

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[6] *See SEWRPC Planning Report No. 31, A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin.*

2. As of December 1977, the Commission has negotiated and executed agreements specifying an allocation of public transportation planning responsibilities with the State and with all five publicly owned operators of mass transportation services in the three urbanized areas: Milwaukee, Ozaukee, and Waukesha Counties and the Cities of Kenosha and Racine (Appendix B).

3. The Commission has prepared, submitted, had approved, and received funding under annual Overall Work Programs for calendar 1976 and 1977 and has prepared, submitted, and had approved an annual Overall Work Program for 1978, under which work will commence on January 1, 1978.

4. On December 19, 1977, the Commission adopted long-range regional land use and transportation plans and a TSM plan for the three urbanized areas (which this report documents). A regional elderly and handicapped transportation plan is in the final stages of preparation.

5. The Commission has prepared and adopted two interim Transportation Improvement Programs (TIP's) and prepared and, on December 19, 1977, adopted a Transportation Improvement Program for the Kenosha, Milwaukee, and Racine Urbanized Areas in Southeastern Wisconsin: 1978-1982 coincident with adoption of the regional land use and transportation plans, TSM plan, and elderly and handicapped transportation plan.

Thus, as of December 1977, the Regional Planning Commission believes itself to be in total conformance with the UMTA-FHWA joint transportation planning regulations, both in letter and in spirit.

THE REGIONAL PLANNING COMMISSION

The Regional Planning Commission does not prepare advisory plans, however, solely or even primarily to satisfy federal requirements. The Southeastern Wisconsin Regional Planning Commission was created in August 1960, pursuant to the provisions of Section 66.945 of the Wisconsin Statutes, to serve and assist the local, state, and federal units of government in solving areawide problems and in planning for the more orderly and more economic development of southeastern Wisconsin. The Commission's role is entirely advisory, and participation by local units of government in its work is on a voluntary, cooperative basis. The Commission is composed of 21 citizen members, three from each county in the Region, who serve without pay. One Commissioner from each county is appointed to the Commission by the county board, one by the Governor from a list certified to him by the county board, and one by the Governor on his own motion.

The powers, duties, and functions of the Commission and the qualifications of the Commissioners are carefully set forth in the state enabling legislation. The Commission is authorized to employ a staff and to appoint advisory committees to assist it in the execution of its responsibilities. Basic funds necessary to support Commission operations are provided by the member counties, with the budget apportioned among the seven counties on the basis of relative equalized property valuation. The Commission is authorized to request and accept aid in any form from all levels and agencies of government to accomplish its objectives, and is authorized to deal directly with the state and federal governments for this purpose. The organizational structure of the Commission and its relationship to the constituent units and agencies of government comprising or operating within the Region is shown in Figure 1.

THE REGIONAL PLANNING CONCEPT IN SOUTHEASTERN WISCONSIN

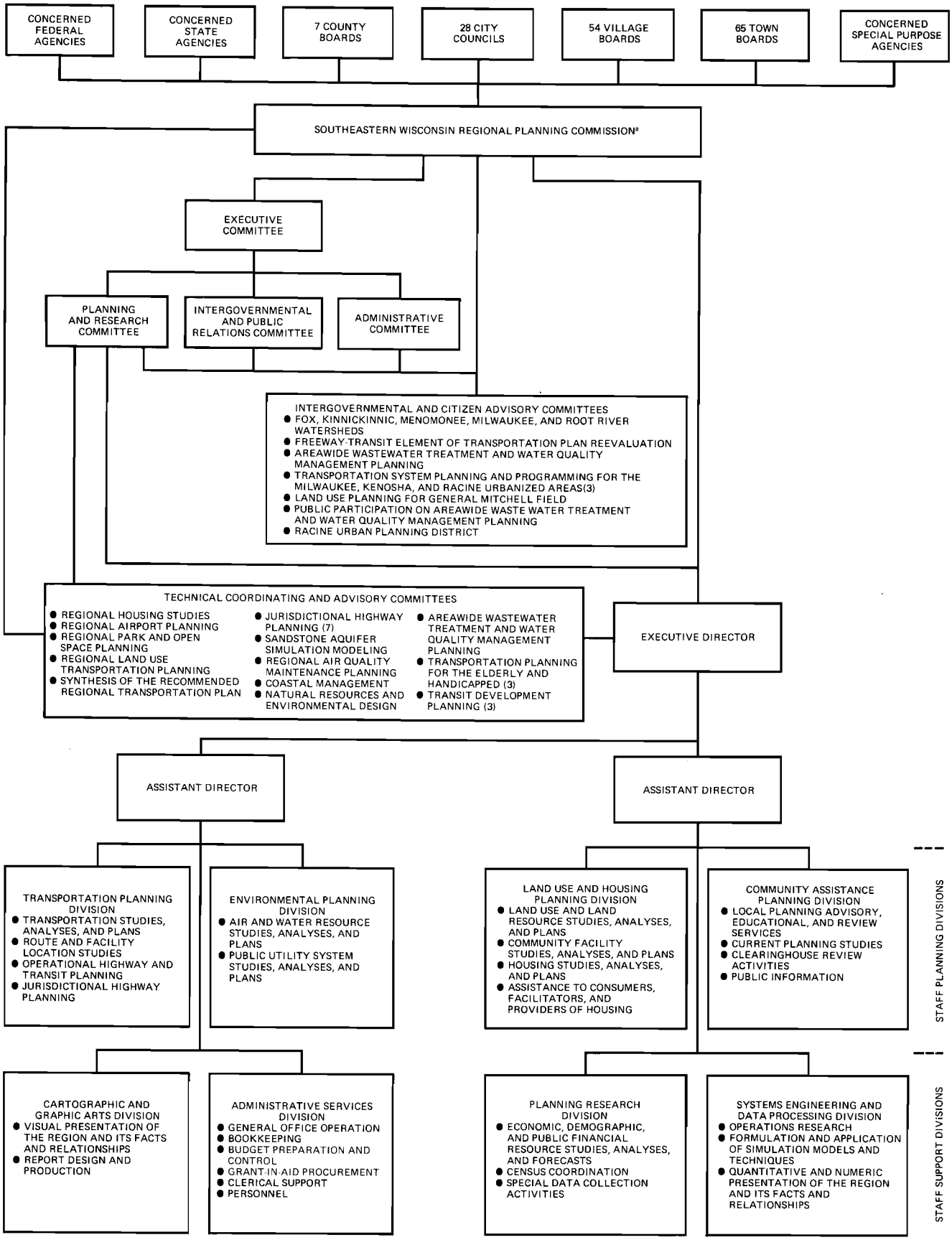
Regional planning, as conceived by the Commission, is not a substitute for, but a supplement to, local, state, and federal planning. Its objective is to assist the various levels and units of government in finding cooperative solutions to areawide developmental and environmental problems which cannot be properly resolved within the framework of a single municipality or county. As such, regional planning has three principal functions:

1. Inventory—the collection, analysis, and dissemination of basic planning and engineering data on a uniform, areawide basis so that, in light of such data, the various levels and agencies of government and private investors operating within the Region can better make decisions concerning community development.

2. Plan Design—the preparation of a framework of long-range plans for the physical development of the Region, these plans being limited to functional elements having areawide

Figure 1

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION: ORGANIZATIONAL STRUCTURE



[a]THE COMMISSION IS COMPOSED OF 21 CITIZEN MEMBERS, THREE FROM EACH COUNTY, WHO SERVE WITHOUT PAY.

Source: SEWRPC.

significance. To this end, the Commission is charged by law with the function and duty of "making and adopting a master plan for the physical development of the Region." The permissible scope and content of this plan, as outlined in the enabling legislation, extend to all phases of regional development, implicitly emphasizing preparation of alternative spatial designs for land use and for supporting transportation and utility facilities.

3. Plan Implementation—promotion of plan implementation through provision of a center to coordinate the planning and plan implementation activities of the various levels and agencies of government in the Region and through the introduction of information on areawide problems, recommended solutions to these problems, and alternatives thereto into the existing decisionmaking process.

The work of the Commission, therefore, is seen as a continuing planning processs providing outputs of value to the making of development decisions by public and private agencies and to the preparation of plans and plan implementation programs at the local, state, and federal levels. Commission work emphasizes close cooperation between the governmental agencies and private enterprise responsible for the development and maintenance of land uses in the Region and for the design, construction, operation, and maintenance of the supporting public facilities. All Commission work programs are intended to be carried out within the context of a continuing overall planning program which provides for periodic reevaluation of the plans produced and for the extension of planning information and advice necessary to convert the plans into action programs at the local, regional, state, and federal levels.

THE REGION

The Southeastern Wisconsin Planning Region, as shown on Map 1, is composed of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties. Exclusive of Lake Michigan, these seven counties have a total area of 2,689 square miles, or about 5 percent of the total land and inland water area of Wisconsin, and a total resident population of about 1.8 million people. About 40 percent of the state population lives in these seven counties, which contain three of the seven and one-half standard metropolitan statistical areas in Wisconsin. The Region contains about half the tangible wealth in Wisconsin, as measured by equalized assessed property valuation, and represents the greatest wealth producing area of the State, with about 38 percent of the state's labor force employed within the Region. The Region contains 154 local units of government, exclusive of school and other special purpose districts, and encompasses all or parts of 11 major watersheds.

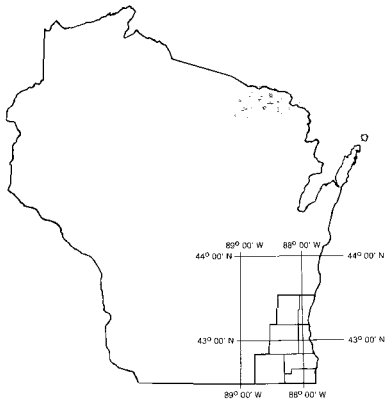
THE TRANSPORTATION SYSTEMS MANAGEMENT CONCEPT

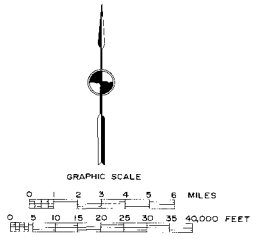
Transportation systems management planning is not new in southeastern Wisconsin. Organizations and agencies which provide transportation facilities and services within the Region have always performed a certain amount of planning for the management and operation of the facilities and services they provide. The Regional Planning Commission interprets the federal requirements for a TSM plan element as desiring to build upon the solid base of traffic and transit management and operations planning which already exists, expanding it in functional scope and depth and across jurisdictional, geographic, or modal dividing lines as appropriate. It is from this perspective that the Commission views the following federal definition of TSM:

> Automobiles, public transit, taxis, pedestrians, and bicycles should be considered as elements of one single urban transportation system. The objective of urban transportation systems management is to coordinate these individual elements through operating, regulatory and service policies so as to achieve maximum efficiency and productivity for the system as a whole.
>
> Controlling the flow of traffic, influencing the volume, pattern and mix of traffic, and giving priority to buses and other high-occupancy vehicles may be the single most effective set of measures to improve the efficiency and productivity of both mass transportation service and the entire urban transportation system. However, other actions can also be effective. Mass transit efficiency can be increased through internal management actions, such as more flexible routing, dispatching and scheduling of transit vehicles. Urban transportation system efficiency can be increased by the provision of para-transit services, incentives for carpools, and greater off-peak use of transportation facilities. Conflicts between

Map 1

THE SOUTHEASTERN WISCONSIN REGION





Source: SEWRPC.

pedestrians and vehicles can be reduced by developing explicit and coordinated policy to balance competing claims on street space. Economic or other disincentives can be introduced to discourage low-occupancy auto use, reduce traffic in congested areas, and persuade commuters to shift to mass transit; the quality of public transit service can be improved to compensate for any reductions in auto accessibility.[7]

To implement this notion of TSM, the federal regulations suggest four types of action:

1. Actions to Ensure the Efficient Use of Existing Road Space

   Actions to be considered under this heading consist of those actions which can increase the efficient use of existing arterial street and highway system capacity, involve relatively low capital investment, can be implemented in a relatively short period of time, and have little or no potentially adverse impact on the environment. This category includes: 1) actions to improve traffic operations such as channelization of traffic, use of one-way streets, improved traffic signalization, freeway ramp metering, and use of reversible traffic lanes; 2) preferential treatment for public transit and other high occupancy vehicles, such as the provision of reserved lanes for buses, preferential access to freeways for buses, and preferential treatment at signals and at parking facilities for high occupancy vehicles; 3) management and control of parking through elimination of on-street parking during peak traffic flow periods, regulation of number and pricing of both public and private parking facilities, favored parking by short-term users over long-term users, and provision of fringe area parking to facilitate transfer to transit and other high occupancy vehicles; 4) efforts to reduce the impact of peak period travel through changes in work schedules and fare structures, which encourage off-peak use of transportation facilities. Appropriate consideration must be given under this category of actions to the provision of facilities for use by pedestrians and bicycles, including pedestrian malls, bicycle paths and lanes, and storage areas for bicycles.

2. Actions to Reduce Vehicle Use in Congested Areas

   Actions to be considered under this heading include encouragement of carpooling; limitation of automobile access to specific geographic subareas; establishment of "auto free zones," closure of selected streets to vehicular or through traffic, and restriction on truck delivery during peak traffic flow periods.

3. Actions to Improve Transit Service

   Actions to be considered under this heading include the improvement of collection and distribution services, including route deviation and demand provision of shuttle transit service in high activity centers, use of paratransit services, institution of transit fare policies to encourage transit use, simplified fare collection systems, provision of shelters, comfort stations, and other passenger amenities; and improved passenger information systems and services.

4. Actions to Increase Internal Transit Management Efficiency

   Actions to be considered under this heading include improved transit marketing programs, institution of cost accounting and other management techniques, improved maintenance policies to increase equipment reliability, and improved operation surveillance and communications techniques.

The purpose of the transportation systems management element is to combine these areas of action into a continuing, comprehensive, and cooperative areawide program which will serve to maximize the use of existing transportation facilities, a program which is, however, consistent with the long-range transportation plan for the area.

GEOGRAPHIC AREAS

The federal rules and regulations specify that the areawide transportation planning process must at a minimum cover the urbanized area and that area likely to become urbanized in the period covered by the long-range element of the transportation plan. There are three urbanized areas within the Southeastern Wisconsin Regional Planning area: 1) Milwaukee, 2) Racine, and 3) Kenosha. The boundaries of the urbanized areas are delineated

[7] *Federal Register, September 17, 1975, page 42979.*

by the U. S. Bureau of the Census to represent areas actually devoted to intensive urban uses and contiguous to the large central cities which form the core of each urbanized area—and are intended to represent an area which functions as the "true" city—as opposed to the "artificial" cities represented by civil division boundaries. The urbanized areas within the Region are shown on Map 2. In recognition of the highly diffused, pervasive influence of the forces of urbanization operating within the Region, the long-range transportation plan element prepared by the Commission geographically includes the entire seven-county planning region.

A second type of urban area has been delineated within the Region for highway aid system identification. These urban areas as delineated pursuant to federal guidelines by the Wisconsin Department of Transportation in cooperation with the Southeastern Wisconsin Regional Planning Commission are shown on Map 3. These areas have been approved by the Federal Highway Administration for the purpose of administering federal highway funds. The boundaries of these urban areas do not necessarily coincide with the boundaries of the U. S. Bureau of the Census defined urbanized areas. Rather, the areas encompassed by these urban boundaries are generally somewhat larger than the urbanized areas, have been delineated so as to "smooth out" irregularities in the boundaries of the urbanized areas, maintain administrative continuity of certain highway aid routes, and encompass fringe areas having residential, commercial, industrial, and/or national defense significance. For the remainder of this report, it is this second definition of "urban area" that is referred to.

The federal rules and regulations further provide that, where the jurisdiction of the areawide transportation planning agency includes more than one urbanized area, it is optional whether a separate transportation improvement program—and by implication a separate transportation systems management element—is to be developed for each urbanized area or one combined program is to be developed for all of the urbanized areas. In any case, however, the rules and regulations require that the funding required for projects in urbanized areas over 200,000 population must be separately identified.

The long-range element of the areawide transportation plan, consistent with the Commission's statutory responsibilities, will continue to encompass the entire seven-county planning Region. The transportation systems management plan element has been prepared only for the urban areas of the Region as defined for federal highway aid administration purposes and separately for each such urban area—Milwaukee, Racine, and Kenosha. The transportation improvement program has been prepared only for these urban areas and, like the transportation systems management element, separately for each urban area. In addition to the three improvement programs for the urban planning areas of the Region, an improvement program including all projects proposed within the rural areas of the Region has been prepared and will be transmitted by the Commission to the Wisconsin Department of Transportation and for informational purposes only to the U. S. Department of Transportation.

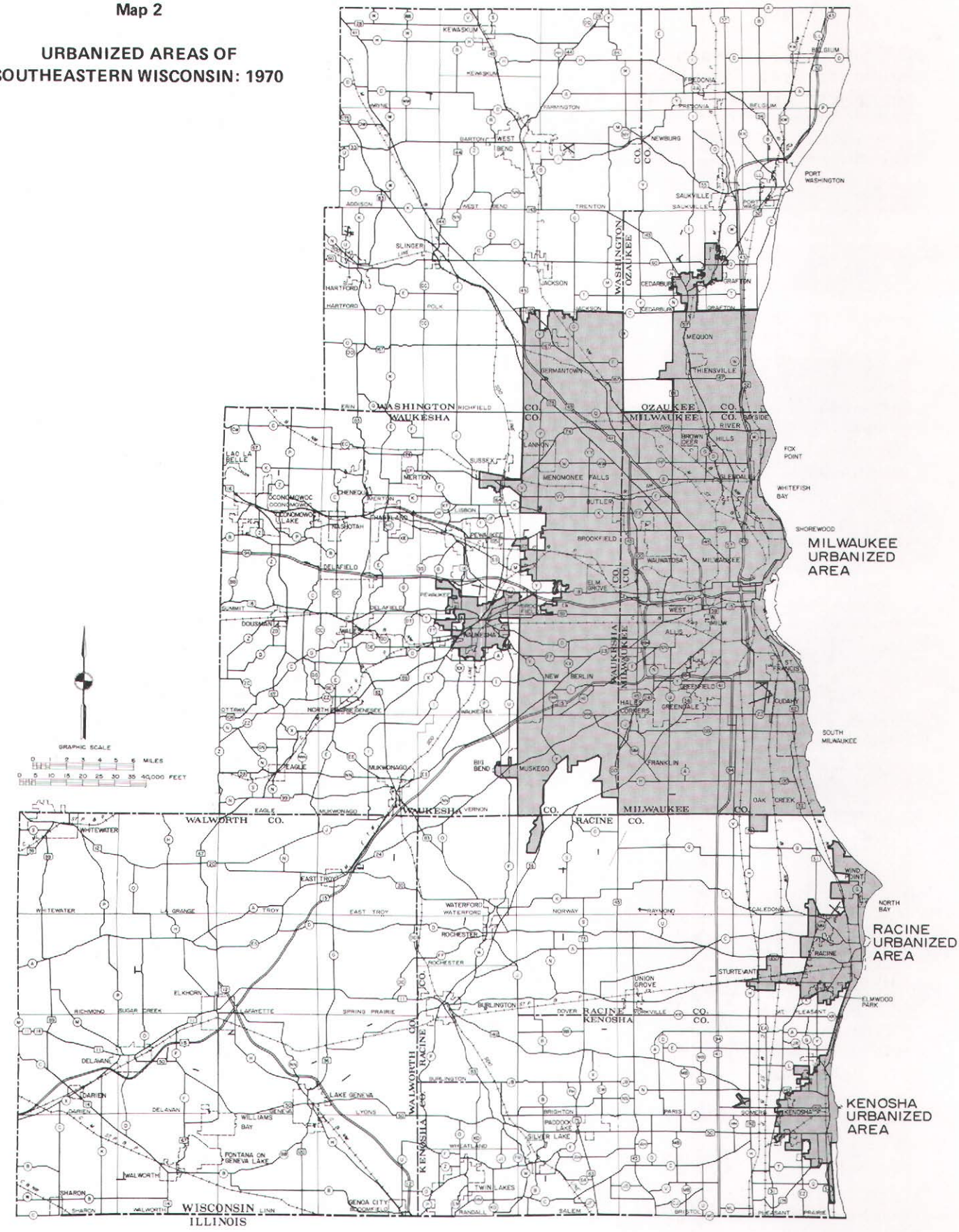
ORGANIZATIONAL STRUCTURE

As already noted, the determination to develop separate transportation systems management elements and transportation improvement programs for the Milwaukee, Racine, and Kenosha urban areas has important implications for the organizational structure used to accomplish the necessary planning work. Heretofore, the advisory committee structure created by the Commission to deal with transportation-related problems has either been structured to include representation from the entire seven-county Region or, in the case of the jurisdictional highway planning programs, to include representation from individual counties. Beyond this typical historic committee structure, separate committees for each of the three urban areas (Milwaukee, Racine, and Kenosha) of the Region were created to prepare transit development programs, but the area of Committee interest and involvement was limited to the improvement of local transit facilities and services.

Three new intergovernmental coordinating and advisory committees have now been created, one each for the Milwaukee, Racine, and Kenosha short-range urban transportation planning areas. Complete membership lists are provided in Appendix C. These three committees replace the previously created transit development program committees for the three urban areas and are meant to serve as the federally-required forums for cooperative decisionmaking in their respective urban areas. In addition, the new technical intergovernmental coordinating and advisory committee created for the Milwaukee urban area replaces the Technical and Intergovernmental Coordinating and

Map 2

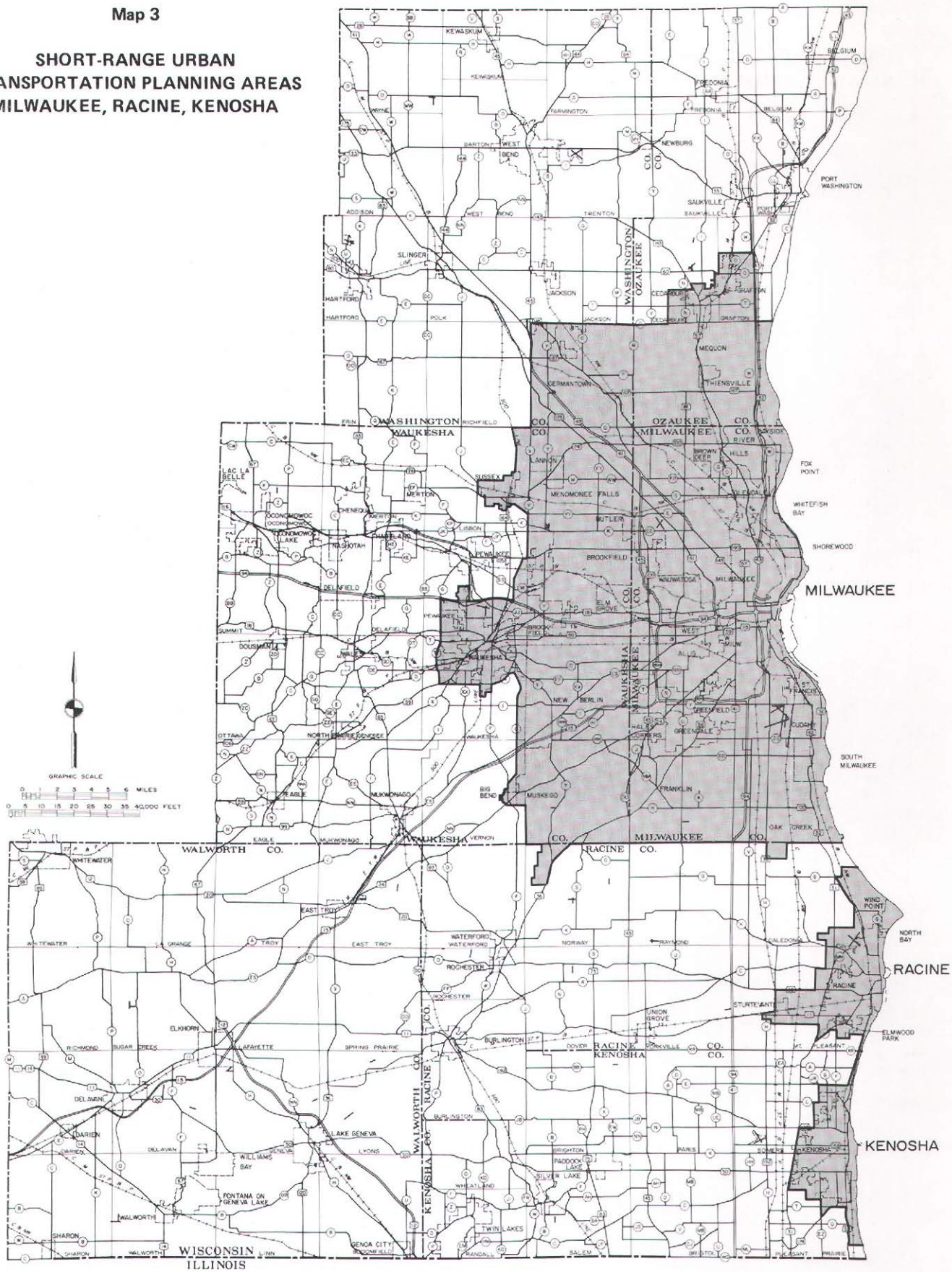
URBANIZED AREAS OF SOUTHEASTERN WISCONSIN: 1970



Source: U. S. Bureau of the Census.

Map 3

SHORT-RANGE URBAN TRANSPORTATION PLANNING AREAS MILWAUKEE, RACINE, KENOSHA



Source: Wisconsin Department of Transportation.

Advisory Committee on Jurisdictional Highway Planning for Milwaukee County. This is logical since: 1) all of Milwaukee County is within the Milwaukee urbanized area and 2) jurisdictional highway planning for Milwaukee County would be one of the responsibilities of the new committee.

The Technical and Intergovernmental Coordinating and Advisory Committees on Jurisdictional Highway Planning for the other six counties will be maintained because large areas of those counties lie outside the urbanized areas, therefore outside the responsibility of the three new committees. As a result these committees will continue to be required to promote project implementation for those parts of the adopted jurisdictional highway system plans beyond the urbanized area boundaries, since this is part of the long-range plan element and, as such, represents projects to be considered for inclusion by the Wisconsin Department of Transportation in the regional transportation improvement program.

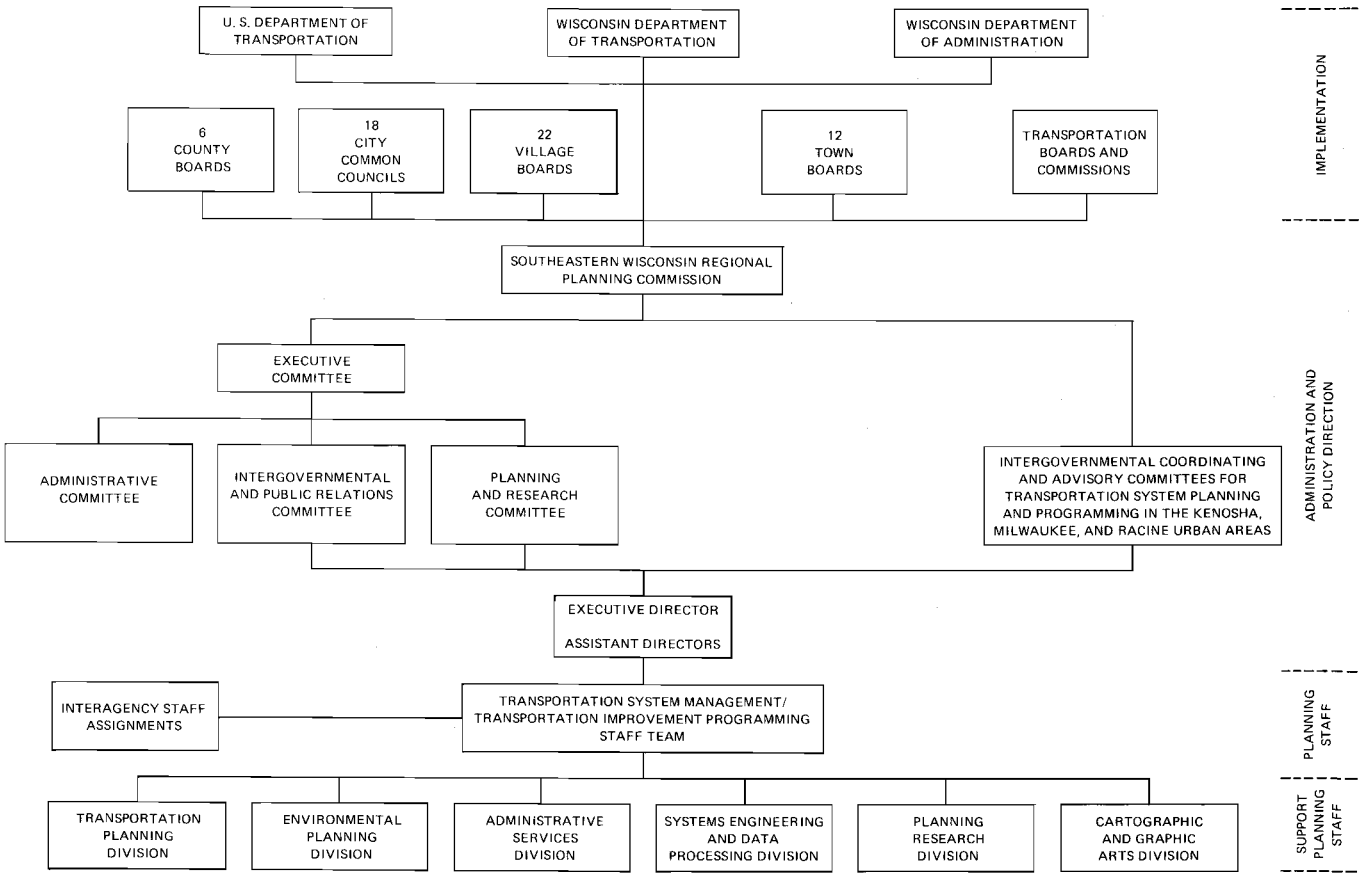
The basic organizational structure for the TSM planning effort, as presented in Figure 2, consists of a specially-organized TSM/TIP team, composed of both SEWRPC staff and interagency staff assignments from the Wisconsin Department of Transportation, reporting to the Executive Director of the Commission who, in turn, reports to the Commission. The TSM/TIP team receives direct and indirect support from six divisions—transportation planning, environmental planning, systems engineering and data processing, cartographic and graphic arts, administrative services, and planning research—of the Commission staff. In addition, major technical input to the TSM plan preparation was provided by virtually all units of local government having transportation implementation responsibilities within the three urban areas.

SCHEME OF PRESENTATION

This TSM document is presented in nine chapters. After this introductory chapter, Chapter Two,

Figure 2

ORGANIZATIONAL STRUCTURE FOR TRANSPORTATION SYSTEMS MANAGEMENT PLANNING IN SOUTHEASTERN WISCONSIN



Source: SEWRPC.

"Basic Principles and Concepts," presents a detailed discussion of the role of TSM planning in regional transportation planning, emphasizing an integrated relationship with the long-range transportation system plan and the TIP, and outlines a TSM planning process consistent with this role.

Chapter Three, "Objectives, Principles and Measures of Effectiveness," collates and distills objectives, principles, and standards, or measures of effectiveness, from the long-range transportation plan and goals and objectives from other planning efforts and studies, and develops a set of objectives, principles, and measures of effectiveness for TSM consistent with these previous efforts.

Chapter Four, "The Regional Transportation System," describes transportation facilities and services presently operating in the Region, depicts travel habits and patterns of the regional population, and summarizes forecasts of future travel patterns.

Chapter Five, "Recent Transportation Systems Management Actions in Southeastern Wisconsin (A History of TSM Efforts)," presents a history of selected TSM-type actions and efforts recently implemented in the Region.

Chapter Six, "Problems and Deficiencies in the Existing Regional Transportation System," collates and categorizes transportation system problems and deficiencies identified by transportation implementing agencies and identifies common transportation problems and deficiencies of areawide and regionwide significance.

Chapter Seven, "Alternative TSM Strategies," identifies alternative TSM strategies aimed at alleviating previously identified transportation system problems from previous planning studies and efforts, and develops new strategies.

Chapter Eight, "Evaluation of TSM Actions," develops a methodology for evaluating systematic alternative TSM strategies.

Chapter Nine, "A TSM Plan and Program for Southeastern Wisconsin," presents a plan consisting of actions and efforts derived from promising TSM strategies, TSM efforts and actions identified by transportation implementing agencies, and TSM-related planning studies either previously proposed by transportation planning and implementing agencies or newly proposed as a result of the evaluation of alternative TSM strategies. The recommended implementation program breaks down the recommended TSM actions, efforts, and planning studies into specific projects, presents an implementation schedule specifying appropriate financing and/or implementing agency or agencies, and identifies as an activity the preparation of a detailed plan for revising, updating, and further developing the TSM plan.

It must be recognized that the initial TSM documented in this report represents a first effort. While the outline represents an ambitious structure for preparation of a highly refined TSM, it was not possible for reasons of time constraints and state of the art to produce the ultimate document on the first iteration. The Commission has, however, made a philosophical and resource commitment to make this and each succeeding annual TSM document the best possible report within the limitations of time and planning state of the art.

Chapter II

BASIC PRINCIPLES AND CONCEPTS

INTRODUCTION

Transportation planning should consist of a comprehensive examination of problems, procedures, and options which relate to the provision of an efficient and effective transportation service throughout a region with a maximum of positive and a minimum of negative impacts. Such a process should be specifically directed to the provision of relevant information for the making of well considered decisions on the proper course of action to be taken to improve the transportation system. The transportation planning process should also present a comprehensive integrated view of transportation which considers improvements in the management and operation of existing facilities and the provision of new facilities. Thus, the decisions which transportation planning should support must influence the near-term future as well as the far-term.

Under such a viewpoint, the distinction between transportation systems management (TSM) planning, which focuses on managerial and operational improvements in transportation, and long-range transportation planning, which has traditionally focused primarily on facilities needs over a 20-25 year planning horizon, is an artificial one, since both procedures may be addressing the same problems. Rather, what is needed is an integrated, single process that simultaneously considers both managerial and operational improvements and facilities additions over a wide span of time. Such a single process may be used to produce multiple products—i.e., a transportation systems management plan, a long-range plan, jurisdictional plans, and corridor and subarea plans. Each of these products, however, would be produced essentially by a single overall process.

This chapter describes how such an overall planning process should be conducted in southeastern Wisconsin with particular focus on the process as it would be used to develop an integrated short-range transportation plan. In many ways the previous planning efforts of the Regional Planning Commission have provided a sound base for the development of an integrated short-range transportation plan. The chapter includes a general discussion of the characteristics of such a process followed by a description of how the process would be conducted.

BASIC PRINCIPLES

Before describing the planning process, it is useful to describe in general terms what the characteristics of a short-range transportation planning process should be. These characteristics should serve as general principles to be followed in the shaping of plans and for the conduct of the planning process. These basic principles are, in many ways, similar to the principles that have guided the preparation of the long-range plan. However, it should be recognized that the principles manifest themselves in different ways in short-range planning than in long-range planning. The basic principles for short-range plan development are as follows:

1. The planning process should focus on decisionmaking and should have as its general purpose the provision of highly relevant information for the careful consideration of alternatives, leading to a selection of a proper course of action for various time frames.

2. It must be recognized that the proposed transportation plan should constitute an integrated system. It is not possible through the analysis of individual actions alone to assure such a system and thus it is essential to examine how the individual actions interact and fit together into an integrated system.

3. The planning process needs to consider land use activities as well as transportation. The interaction between land use and transportation is well known and should be explicitly considered. To the extent that it is possible, transportation actions should be used to complement land use development and redevelopment plans which specifically relate to the needs of the Region and of the individual communities that comprise the Region.

4. The planning process needs to be concerned not only with end states but also with the

steps necessary to reach the end states. There is a need to consider the entire time span between the present and the long-range future. Thus, there should be a concern about the sequence in which projects are implemented and their staging. Furthermore, it should be recognized that the transportation planning process is an iterative process, alternating between systems level and project level planning. Thus, the output of a planning effort at one level will serve as input to the next cycle of planning activities at the other level.

5. The planning process should provide a well-working transportation system at all points in time. While certain improvements can be expected to effectively solve transportation problems in the long run, there is a need to consider a wide range of interim measures that deal with the problem in the short run.

6. The planning process should deal specifically with the uncertainty associated with the implementation of plans. Uncertainty exists in future energy supplies, growth patterns, funding, and in the public acceptability of proposed actions. This uncertainty should be explicitly dealt with in the planning process. Hence, the plans produced by the process should be flexible and adaptive and recognize the feasibility problems that may be involved in implementing certain types of actions.

7. The options that should be considered in a short-range planning process should be based upon specific statements of transportation objectives and relate directly to identified problems and deficiencies. These actions should not only involve changes in procedures and policies for the operation and management of the transportation system but should, as necessary, include system expansion and new technologies consistent with the long-range plan. Furthermore, there should be room in the process for experimentation and demonstration of innovative options as well as conventional options.

8. In developing a short-range plan that considers facilities as well as operational and managerial improvements, a fundamental principle that should be followed is that major investments in new facilities will take place only after it has been demonstrated that operational improvements have not or cannot provide an acceptable quality of service or have failed to adequately address transportation problems and deficiencies.

9. Evaluation of options should relate to the particular level at which they function. Some options such as ride pooling, transit information services, and work rescheduling affect an entire urbanized area. Other options such as intersection redesign and transit shelters have a primary effect in a limited local area. Still other options have primary effects at an urbanized subarea level, freeway corridor level, arterial corridor level, or at a regional level. Each option should be evaluated at the level where it has its major impact (in comparison to other options at the same level) and at the next higher level to check for system consistency. Some examples of different TSM strategies and their level of primary effect are given in Table 1.

10. It must be recognized that certain objectives and measures of effectiveness may be in conflict, requiring resolution through compromise. Meaningful plan evaluation can take place only through a comprehensive analysis of each of the alternatives against measures of effectiveness. Criteria for evaluation should include measures of changes in mobility, impact, and costs and the evaluation process should identify the tradeoffs between these factors in the selection of a course of action.

11. Finally, the transportation planning process should provide a forum for constructive debate on the shape and form of the transportation system. Such debate should be well structured so as to lead to decisions that recognize the diverse interests of the residents of the Region.

SHORT-RANGE TRANSPORTATION PLANNING PROCESS

Based upon the preceding principles, an overall process for short-range transportation planning has been developed and is shown in Figures 3 and 4. The basic process to be followed is one of using the background information of previous planning efforts and regional objectives to define problems and deficiencies. Based upon these problem state-

Table 1

EXAMPLES OF TSM STRATEGIES BY LEVEL OF PRIMARY EFFECTS

Regional Level

- -Freeway projects
- -Intercity and suburban transit service
- -Major regulatory changes

Urbanized Area Level

- -Areawide ride sharing programs
- -Transit marketing
- -Transit information services—signs, maps, and telephone number
- -Work rescheduling
- -Congestion pricing
- -Transit fare policies
- -Improved transit management

Urbanized Subarea Level

- -Computerized signals
- -Parking pricing policy changes
- -Parking supply regulation
- -Truck restriction
- -Auto restricted zones

Freeway Corridor Level

- -Centralized control system including ramp metering priority access for HOV, monitoring/accident clearance system
- -Priority lanes for HOV
- -Park and ride facilities
- -Reversible lanes
- -Safety improvements

Arterial Corridor Level

- -Bus lanes/streets
- -Signal preemption by buses
- -Removal of on-street parking
- -One-way streets
- -Transit service improvements
- -Safety improvements

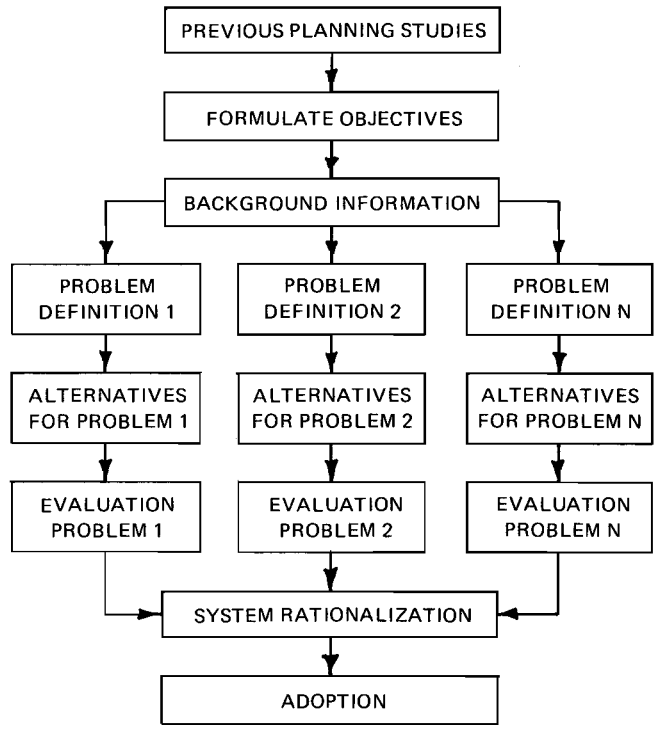
Local/Spot Improvements

- -Improved signalization
- -Transit shelters
- -Channelization

Source: SEWRPC.

Figure 3

OVERALL SHORT-RANGE TRANSPORTATION PLANNING PROCESS



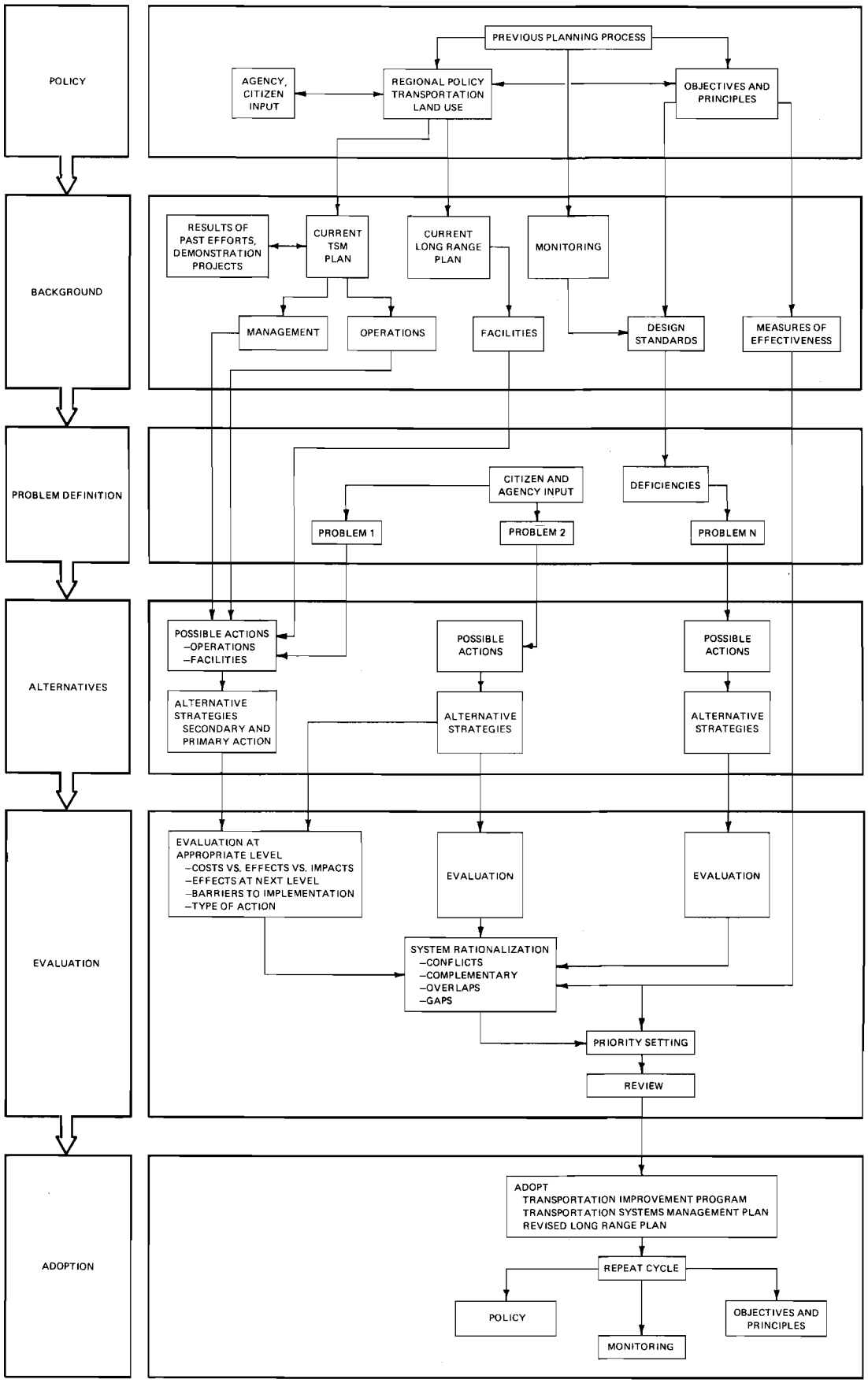
Source: SEWRPC.

ments, a series of studies would take place which would involve the examination of alternative actions that could be managerial, operational, or facilities improvements to deal with the problem. Following the selection of appropriate actions to take in response to particular problems, these actions could then be combined into a rational regional system.

The process indicated in the figures is meant to be a continuous process. That is, it is expected that a number of studies involving problem solving activities will be going on at the same time. Certain problems may have obvious solutions which can be easily implemented while other problems may require a lengthy and complex analysis which may require an extended period of time. As each of these studies takes place, there should be an internal evaluation of alternative strategies as well as an evaluation of their consistency with the long-range plan and regional policies. As results become known, they should be incorporated into the current version of the short-range plan. It is expected that the short-range plan would have to be updated on a frequent basis (probably annually) as projects are implemented and additional analyses are completed.

Figure 4

SHORT-RANGE TRANSPORTATION PLANNING PROCESS



Source: SEWRPC.

It should be pointed out that the proposed process will involve the participation of a wide variety of agencies as well as the general public. In many cases, implementation agencies in the Region will take the lead in performing the analysis of problems and the development of proposed solutions. Each of the major steps in the planning process will be explained below.

Formulate Regional Transportation Objectives

Perhaps one of the most critical phases of an overall planning process is to develop explicit statements of regional objectives. These statements should relate to both transportation and land use and their purpose should be to set forth some basic ground rules for plan development and choice. These statements would be used to guide the planning process by defining the types of approaches that should be taken to deal with particular transportation problems. There should be a very close relationship between the objectives, principles, and measures of effectiveness and the policy statements that have evolved out of previous planning efforts. Transportation planning is an iterative process and it is important that the findings and recommendations of previous studies be used as a point of departure for subsequent planning. Objectives, principles, standards, and policies which have been developed in previous long-range planning efforts may have to be modified for the purposes of short-range planning. These modifications should lead to statements that are more specific with respect to measurement of local area effects and also better facilitate the evaluation of operational and managerial options.

The development of objectives, measures of effectiveness, and policy should involve interaction with relevant implementation agencies, elected officials, and private citizens. In order to develop such statements, a process is needed that facilitates constructive input by technical personnel, elected officials, and interested citizens. It is expected that such a process would involve staff preparation of draft statements; review and modifications by technical and citizen advisory committees and by the intergovernmental coordinating and advisory committees; and formal adoption by the Planning Commission and involved governmental agencies.

Background Information

The next step in the process is to compile information on previous planning efforts and system performance as an input to developing a short-range transportation plan. These previous efforts would include the current TSM plan and its recommended operational and management improvements and the current long-range plan which would include both facilities and operational improvements. Other background information would include the results of past efforts, demonstration projects, and system monitoring information. From the objectives and principles, design standards and measures of effectiveness would be developed. The first type would specify target levels of service and performance of the transportation system and also provide some general specifications while the second type would be used to judge the relative performance of alternative options.

Problem Definition

Following the compilation of background information, problem definition can take place. There are two basic sources of problem definition statements. The first of these would be directly from other public agencies and private citizens and the second would be from deficiencies identified in the monitoring activity. A large number of problems may be identified for analysis at this stage. These statements would then be categorized by level and carefully combined to assure that a minimum amount of overlap would exist in the statements. Each problem would then be separately analyzed through a sequence of steps involving identification of alternative actions, combinations of alternatives into strategies, and evaluation. This sequence of steps could be performed by the Regional Planning Commission, or by the relevant implementation agency depending upon the type of problem to be analyzed or the stage in implementation.

It should be noted that each problem might be analyzed a number of times in increasing level of detail as projects move towards implementation. Initially, a general feasibility study might take place and might examine a broad range of functionally different alternatives. This would be followed by a planning study (for example, a study of alternative means to relieve freeway congestion). This would be followed by a developmental design study (i.e., for the above example this might be a design of a freeway control system with ramp metering) and then followed by detailed design (preparation of plans and specifications of the ramp meter system), and finally implementation. Thus, actions which are recommended out of each iteration of the short-range planning process can range from specific project implementation actions to general studies of overall problems.

Alternatives

A series of alternative actions can be identified that relate to each of the problems. These actions which are derived from the TSM and long-range plans could include managerial, operational, and facilities improvements. The actions in turn can be combined into alternate strategies for dealing with the problem.

Evaluation

Each of the alternative strategies would then be evaluated at the level at which the problem has been identified (in comparison to other potential projects) and at the next higher level to check for system consistency. Evaluation would be based upon the relative costs of the alternatives, their levels of effectiveness, and their impacts on the community and environment. Project evaluation should proceed by looking at the tradeoffs between costs, impacts, and mobility; projects selected should produce gains in mobility and impact that outweigh any negative impacts and costs.

It is also expected that different evaluation procedures and measures would be used at different project levels. For example, an evaluation of environmental effects may require an implementation agency to prepare either an environmental impact statement, negative declaration, or statement of nonmajor action. The technique used would depend upon the level at which the project would occur as well as on the nature of the project. Table 2 indicates the types of tools that are currently available or could be developed for each of the general evaluation categories for each of the different project levels. Each of these tools would in turn produce values for the measures of performance as defined from objectives, principles, and standards.

The evaluation process would also produce information on the sequence of steps that would be used to deal with a particular problem. It is expected that operational improvements in the management of a transportation facility would be implemented and tested prior to any major investment in new facilities. Only if and after it has been demonstrated that these improvements cannot fully solve the problems they are meant to alleviate would new facilities be implemented. In many cases, alternative operational strategies can be implemented sequentially. The evaluation process should be such as to identify the sequences for implementation.

System Rationalization

Following the evaluation of alternative strategies in relationship to individual problem statements, a system rationalization effort would take place. The purpose of this effort would be to insure that the individual recommended projects fit together to form a cohesive, rational, and efficient transportation system. System rationalization should consider conflicts between projects, complementary interaction between projects, and overlaps and gaps between projects. Such an activity would be performed by the Regional Planning Commission and would have to be based upon regional transportation policies and the framework provided by the long-range plan. The Regional Planning Commission would also develop and be actively involved in setting priorities for project implementation. Following its completion the overall short-

Table 2

USE OF TOOLS AT DIFFERENT PROJECT LEVELS

Tools	Costs		Feasibility and Design		Impacts										
					Environmental			Community		Mobility Changes					
Project Level	Statistical Cost Estimates	Engineering Cost Estimates	Technical Feasibility	Technical Design	Environmental Impact Statement	Negative Declaration	Not a Major Action	Advisory Committee	Public Hearing Information Meeting	Regional Simulation	Focusing	Windowing	Micro Assignment	Capacity Analysis	Indirect Effects
Regional	*		*	*	*			*	*	*					
Urbanized Area	*		*	*	+	--		*	*	*					+
Urbanized Subarea	*	*	*	*	+	+		+	+		+	+			
Freeway Corridor	*	*	*	*	+	+	--	--	+		*		+		
Arterial Corridor		*	*	*	--	*	+	--	--			*	+		
Local		*	*	*		--	*	--	--				+	*	

* = *Most likely technique;* + = *Likely technique;* -- = *Possible use.*

Source: SEWRPC.

range plan would be reviewed by relevant agencies and citizens with possible revision and iteration to previous steps. It is important that there be an active local involvement throughout the process. The preparation of specific information on the relative effectiveness of each project is essential in order for an involvement process to be effective.

Adoption

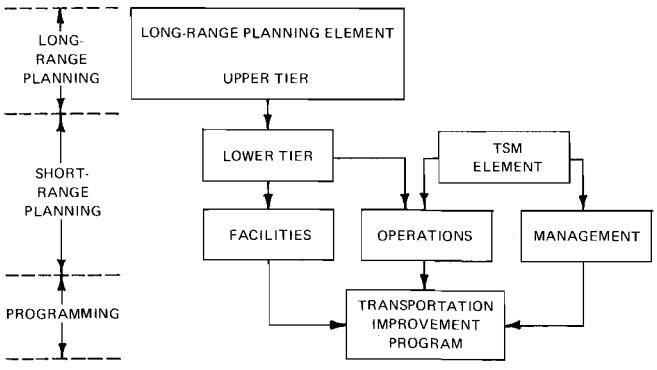
The final phase of the process would be adoption of the plan and movement towards implementation. Projects recommended in the planning process would be included in the transportation improvement program (TIP) for implementation.

RELATIONSHIP TO OTHER PLANNING ELEMENTS

The planning process described above is highly related to other planning elements. This relationship is shown in Figure 5. The short-range planning process in essence combines TSM planning with short-range facilities planning as developed from the long-range plan to produce a TIP. What has been proposed is a single process that has multiple products. The long-range plan and the transportation systems management plan both serve as an input to the process described earlier in this chapter, and are in turn affected by the output of the process as it is iterated over time. Concurrent activity at SEWRPC in the reevaluation of the long-range transportation plan will result in a two-tier plan that not only looks at the long-range structure of the transportation system in the year 2000 but also looks at its structure at an intermediate point (1985). This approach interfaces easily and directly with the short-range process described in this chapter by providing a sound analysis of transportation problems and suggestions at their appropriate level for their solution by both operational improvements and additional facilities. Such suggestions deal directly with staging questions of long-range transportation plan projects and can be used as a basis for further detail and sequencing in short-range planning.

Figure 5

RELATIONSHIP BETWEEN TRANSPORTATION PLANNING ELEMENTS



Source: SEWRPC.

The concept of a transportation system management plan is inherent in the short-range planning process as described. Operational and managerial improvements are to be considered as problem solutions and would be implemented prior to any facility construction under all but the most unusual circumstances.

The planning process described also has a direct relationship to the preparation of the transportation improvement program (TIP) element since one of the major outputs of the short-range planning program is the TIP. The process also relates to other ongoing SEWRPC planning activities such as the preparation of an elderly and handicapped transportation plan, and participation in the East Side area transit improvement study. Each of these can be viewed as problem solving activities, as indicated in the center of the diagram, and will have a direct effect in subsequent short-range planning efforts and TIP documents.

AGENCY RESPONSIBILITIES

In order to implement the process as described above there is a need to define agency responsibilities and activities. As an initial step towards this, a matrix of responsibilities has been defined as shown in Table 3. This matrix shows the different activities in the process and the different agencies that will be involved. The table has been provided for illustrative purposes and there is a need to further define the specific roles each agency would perform.

Table 3

ILLUSTRATIVE EXAMPLE OF MATRIX OF RESPONSIBILITIES FOR SHORT-RANGE PLANNING ACTIVITIES

Activity	Federal Agencies	Wisconsin Department of Transportation	County Government	Municipal Government	Transit Operators	SEWRPC	Citizens
Formulate Policy	R	R	R	R	R	P	R
Monitoring		D	D	D	D	P	
Problem Definition		S	S	S	S	P	S
Analysis and Evaluation Regional Level		R	R	R	R	P	R
Urbanized Area		S	S	S	S	P	R
Urbanized Subarea		R	S	P	S	P or S	R
Freeway Corridor		P	S or P	R	R	S	R
Arterial Corridor			R	P	S or P	S	R
Local Area				P	P	R	R
System Rationalization	R	R	R	R	R	P	R
Priority Setting	R	S	S	S	S	P	R
Adoption	R	A	A	A	A	A	R

Code: *P = Preparation* *S = Participate in study*
R = Review *A = Adoption*
D = Provide data

Source: SEWRPC.

Chapter III

OBJECTIVES, PRINCIPLES, AND MEASURES OF EFFECTIVENESS

INTRODUCTION

The formulation of objectives is an essential task to be undertaken before plans can be prepared and subsequently evaluated. The defined objectives guide the preparation of alternative plans and, when converted to specific measures of plan effectiveness, provide the structure for comparing and selecting from among the alternatives. Because planning objectives provide this logical basis for plan synthesis and specific guidance for plan selection, the formulation of objectives is a crucial step in the planning process.

It is important to recognize that the formulation of objectives essentially involves a formal definition of the needs which alternative plans should aim to satisfy. Thus, the defined objectives explicitly reflect an underlying value system for the residents of the area for which the planning is conducted. The diverse and often conflicting nature of personal values concerning transportation in the seven-county Southeastern Wisconsin Region complicates this problem of objective formulation and makes it one of the most difficult tasks in the transportation planning process.

As a result of the recognition of the value system implications inherent in any set of planning objectives, the Commission, since its inception, has provided for the involvement of interested and knowledgeable public officials, technicians, and private citizens in the regional planning process. This participation by elected or appointed public officials and by citizen leaders in the regional planning process, including the formulation of objectives, is implicit in the structure and organization of the Southeastern Wisconsin Regional Planning Commission. Moreover, through its establishment of advisory committees to assist the Commission and its staff in the conduct of the regional planning program, the Commission has provided an even broader opportunity for the active participation of public officials and private interest groups in the regional planning process.

The use of advisory committees has been, and still appears to be, the most practical and effective procedure available for involving public officials, technicians, and citizen leaders in the regional planning process and for openly arriving at decisions and action programs which can shape the future development and present management of the Region's transportation system. Only by combining the accumulated knowledge, experience, views and values of the various advisory committee members concerning the Region's transportation system can a meaningful expression of the desired direction, magnitude, and quality of the future development and current management of that system be obtained.

The advisory committee structure established by the Commission for the preparation of this transportation systems management plan has been described earlier in this report. One of the major tasks of this committee in the transportation systems management effort was to assist in the formulation of transportation systems management objectives and supporting planning principles and criteria for measurement.

The formulation of the transportation systems management objectives was based upon an analysis of the transportation system objectives adopted for the reevaluation of the long-range regional land use and transportation plan[1] and a review of objectives adopted for previous short-range transportation planning efforts in southeastern Wisconsin at the county and local level. The analysis of the transportation systems objectives adopted for the land use-transportation plan reevaluation indicated that the transportation systems management objectives should be substantially identical to the adopted long-range transportation system objectives. This conclusion of a strong parallel between transportation systems management and long-range transportation objectives was based on the reasoning that planning objectives essentially serve to define formally the basic needs which transportation facilities and services should satisfy, such as personal mobility,

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[1] *"Objectives, Principles and Standards," A Regional Land Use and Transportation Plan for Southeastern Wisconin-2000, Volume Two, Chapter II, forth coming.*

economic efficiency, environmental quality, and public safety. And, as a consequence, the planning objectives of meeting these basic needs should not be expected to change with the length of time of the planning process. However, it was also noted in the analysis of the adopted objectives that the length of the planning period may be expected to influence significantly the importance of, and constraints on the attainment of, certain objectives, as well as the type of transportation strategies which will probably best meet the objectives within that planning time frame.

The review of transportation planning objectives adopted for previous short-range-oriented transportation planning efforts conducted within southeastern Wisconsin also indicated that the adopted long-range transportation systems objectives did seek to meet the same needs addressed by the short-range planning objectives. The planning efforts principally reviewed included the Racine, Kenosha, and Milwaukee transit development programs; the Milwaukee area transit plan; the UWM/East Side-North Shore transit improvement study; and municipal TOPICS plans (Traffic Operations Programs to Increase Capacity and Safety).[2]

BASIC CONCEPTS AND DEFINITIONS

The term "objective" is subject to a wide range of interpretations and application and is closely linked to other terms often used in planning work which are equally subject to a wide range of interpretation and application. The following definitions have been adopted in previous SEWRPC planning efforts in order to provide a common frame of reference:

1. Objective: a goal or end toward the attainment of which plans and policies are directed.
2. Princple: a fundamental, primary, or generally accepted tenet used to support objectives and prepare standards and plans.
3. Standard: a criterion used as a basis of comparison to determine the adequacy of plan proposals to attain objectives. (Because of the nature of transportation systems management planning, all of the transportation systems management standards have been established as comparative, and not absolute, measures. That is, the standards as defined serve as comparative measures of the effectiveness for alternative plan proposals and are not stated as minimum, maximum, or desirable values. Consequently, the terms "measure of effectiveness" and "standard" will be used interchangeably throughout the remainder of this report in reference to criteria used on a comparative basis to establish the relative ability of plan proposals to attain objectives.)
4. Plan: a design which seeks to achieve agreed-upon objectives.
5. Policy: a rule or course of action used to ensure plan implementation.
6. Program: a coordinated series of policies and actions to carry out a plan.

Although this chapter deals with only the terms "objective," "principle," and "standard" or "measure of effectiveness," an understanding of the interrelationship between the foregoing definitions and the basic concepts which they represent is essential for the following discussion of objectives, principles, and measures of effectiveness.

OBJECTIVES

In order to be useful in the transportation systems management planning process, objectives must be sound logically, stated clearly, and derived from local values. Moreover, objectives must be related in a demonstrable and measurable way to alternative transportation strategies to facilitate objective

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[2] *Current analysis and research conducted on transportation system management methodology, as discussed in the Transportation Research Board's publication, Special Report Number 172, Transportation System Management, supports the identification of transportation system management objectives for southeastern Wisconsin which are substantially identical to SEWRPC's adopted long-range transportation objectives.*

tests of, and intelligent selection from among, alternative plans depending upon which best meets the agreed-upon objectives. Specific objectives which can be directly related to system plans and can be at least crudely quantified were postulated for transportation systems management. The quantification of objectives for alternative plan design, evaluation, and selection were facilitated by complementing each specific objective with a set of quantifiable measures of plan effectiveness. These measures are, in turn, directly relatable to a planning principle which supports the chosen objective.

The specific objectives adopted for transportation systems management are concerned with providing to the Region and its component parts a balanced, flexible transportation system which will facilitate travel within the Region at a high level of safety and aesthetic quality, while minimizing costs—particularly capital costs—and lessening disruptive effects on communities and the natural resource base. The following objectives have been adopted by the Commission after careful review and recommendations from the respective Intergovernmental Coordinating and Advisory Committees for Transportation System Planning and Programming:

1. An integrated transportation system which, through its location, capacity, design, and management will effectively serve existing regional land use patterns, meeting and managing the current and anticipated travel demand generated by existing and proposed land uses.

2. A flexible, balanced transportation system which will provide the appropriate types of transportation needed by all residents of the various subareas of the Region at an adequate level of service, and which will permit ready adaptation to both changes in travel demand and in transportation technology, including travel modes and transportation management.

3. The facilitation of the movement of people and goods between component parts of the Region.

4. The reduction of accident exposure and the provision of increased travel safety.

5. A transportation system which is economical and efficient, satisfying all other objectives at the lowest possible capital and total costs.

6. Minimization of disruption of existing neighborhood and community development, including adverse effects upon the property tax base, and minimization of the deterioration and/or destruction of the natural resource base.

7. A transportation system with a high aesthetic quality whose major facilities will possess the proper visual relation to the land and cityscape.

These transportation systems management objectives are nearly identical to those adopted under the regional land use-transportation reevaluation. The major difference, the aim of minimizing capital costs, results from the shorter time frame and management emphasis of transportation systems management planning.

PRINCIPLES AND STANDARDS

Complementing each of the foregoing specific land use and transportation development objectives are a planning principle and a set of measures of plan effectiveness. These are set forth in Table 4. Each set of effectiveness measures is directly relatable to the planning principle, as well as to the objective, and serves to facilitate application of the objectives in plan design, test, and evaluation. The planning principle, moreover, supports each specific objective by asserting its validity. The planning principles adopted by the Commission for use in the transportation systems management planning process are virtually identical to those adopted under the reevaluation of the initial land use-transportation plan.

The measures of effectiveness adopted by the Commission for use in the transportation systems management planning process represent the first time such criteria were employed by the Commission to evaluate alternative plans. Previously, planning standards were used in alternative plan design and evaluation. The use of planning standards implies that planning objectives can be represented by measures which can be expressed in terms of specific maximum, minimum, or desirable values. However, it was determined that specific desirable, maximum, or minimum values could not be logically established for most criteria defined for the quantitative measurement of the achievement of transportation systems management objectives. Consequently, it was decided that the criteria defined to measure each transpor-

tation systems management objective were to be developed and used as comparative, and not absolute, measures of the effectiveness of plans to attain stated objectives, and were to be termed measures of effectiveness and not standards. Knowledge of these measures of effectiveness for each objective was also used to guide the design of the transportation systems management plan, in addition to plan evaluation.

The measures of effectiveness identified for each planning objective are intended to include all relevant and important measures which would indicate the attainment of the objective, while limiting the measures included to those which can be quantified without unreasonable effort and keeping the entire set of measures to a level which can be worked with and comprehended in the plan evaluation process. The method by which the attainment of measures of effectiveness by alternative transportation systems management plans is to be displayed for use in the conduct of plan evaluation is also shown in Table 4.

OVERRIDING CONSIDERATIONS

In application of the planning measures of effectiveness and in preparation of the TSM plans, several overriding considerations must be recognized. First, the TSM plan must be consistent with the long-range regional land use-transportation plans. Actions recommended in the transportation systems management plan should not conflict with the adopted long-range plan, but should be consistent with that plan. Transportation systems management recommendations should be designed to reduce the severity of current problems and deficiencies addressed by major transportation systems development in the adopted long-range plan, but not proposed to be implemented until much later in the future.

Second, it must be recognized that a transportation systems management plan may result in an unequal allocation of its desirable and undesirable consequences among the component parts of the Region. This distribution of plan benefits and costs among meaningful subdivisions of the Region—such as geographic subareas, or users of a particular mode or route of travel—may have important implications for plan selection, adoption, and implementation and, as a consequence, should be explicitly considered in the transportation systems management plan evaluation process.

Third, it must be recognized that, when taken together, the recommended TSM improvements must constitute for the Region an integrated system. It is not possible from an application of the measures of effectiveness alone, however, to assure such a system since the measures cannot be used to fully determine the effect of individual transportation actions on each other, on relevant subsystems, or on the system as a whole. Comprehensive engineering judgmental analysis possibly but not necessarily used in conjunction with limited quantitative support will be required to adjust the proposed facilities and policies of the transportation systems management plan.

Fourth, it must be recognized that certain objectives and their measures of effectiveness may be in conflict, requiring resolution through compromise, and that meaningful plan evaluation can only take place through a comprehensive assessment of each of the competing TSM actions against all of the measures of effectiveness.

Table 4

TRANSPORTATION SYSTEMS MANAGEMENT OBJECTIVES, PRINCIPLES, AND MEASURES OF EFFECTIVENESS

OBJECTIVE NO. 1

An integrated transportation system which, through its location, capacity, design, and management, will effectively serve the existing regional land use pattern and promote the implementation of the regional land use plan, meeting and managing the current and anticipated travel demand generated by the existing and proposed land uses.

PRINCIPLE

An integrated regional transportation system serves to freely interconnect the various land use activities within the Region, thereby providing the attribute of accessibility essential to the support of these activities. Through its effect on accessibility, the regional transportation system can be used to induce development in desired locations.

Table 4 (continued)

Measures of Effectivensss

1. Change in the number of employment opportunities as represented by the number of jobs available to residents of the Region within 30 minutes travel time by automobile and transit.

2. Change in the number of shopping opportunities as represented by the number of major retail service centers available to residents of the Region within 30 minutes travel time by automobile and transit.

3. Change in the number of health care opportunities as represented by the number of medical centers, hospitals, and medical clinics available to residents of the Region within 30 minutes travel time by automobile and transit.

4. Change in the number of recreational opportunities as represented by the number of major parks and outdoor recreation areas available to residents of the Region within 40 minutes travel time by automobile and transit.

5. Change in the number of educational opportunities as represented by the number of vocational schools, colleges, and universities available to residents of the Region within 30 minutes travel time by automobile and transit.

6. Change in the number of scheduled air transport airports available to residents of the Region within 40 minutes by automobile and transit.

Display Methodology for Measures of Effectiveness

This measure would be displayed for each alternative plan through six sets of two maps, one set for each measure. One of the two maps provided for each measure would display accessibility by auto and the other would indicate accessibility by transit. The maps would indicate the change in opportunities available to each subarea of the Region by color coding.

OBJECTIVE NO. 2

A flexible balanced transportation system which will provide the appropriate types of transportation needed by all residents of the various subareas of the Region at an adequate level of service, and which will permit ready adaptation to both changes in travel demand and transportation technology, including travel modes and transportation management.

PRINCIPLE

A flexible, balanced regional transportation system, consisting of highway and mass transit transportation and terminal facilities for the movement of people and goods, is necessary to provide an adequate level of transportation service to all segments of the population, to support essential economic and social activities, and to achieve economy and efficiency in the provision of transportation service, and be so located and designed as to be readily adaptable to changes in transportation technology of travel modes and traffic management. The highway component supplies transportation service primarily for passenger movements utilizing automobiles, taxicabs, and buses and for goods movements utilizing trucks and buses. The mass transit component supplies transportation service for those passenger movements utilizing buses, vans, and taxicabs, and particularly for that segment of the population which cannot or does not utilize automobiles regularly including, but not limited to, the handicapped, the elderly, and the isolated rural populations where specialized transportation service is required. In addition, the mass transit component supplies additional passenger transportation system capacity which can alleviate peak loadings on highway facilities and assist in reducing the demand for land necessary for parking facilities at major land use activities.

Measures of Effectiveness

1. Change in the number of residents of the urbanized areas of the Region served by mass transit and paratransit.

2. Change in transit ridership level and proportion in the urbanized areas of the Region.

3. Estimation of the change in the transportation system's ability to adapt to changes in travel demand and transportation technology.

Table 4 (continued)

Display Methodology for Measures of Effectiveness

1. This measure would indicate with a color-coded map the change in the number of people considered to be served by mass transit and paratransit.

2. This measure would be developed and displayed according to the level of its influence—corridor, subarea, or area. It would be displayed by trip purpose and indicate transit ridership changes, or transit proportion of total travel changes, with a color-coded map, considering either trips originating from subareas of the Region, or trips traveling between subareas.

3. This measure would require a subjective description of the flexibility of the actions taken, in terms of options foreclosed or investment loss if travel demand changes, future key variables (such as energy or population) change, or transportation technology changes.

OBJECTIVE NO. 3

The facilitation of the movement of people and goods between component parts of the Region.

PRINCIPLE

To support the everyday activities of business, shopping, and social intercourse, a transportation system which provides for reasonably fast, convenient travel is essential. Furthermore, congestion increases the cost of transportation, including the cost of the journey to work, which is necessarily reflected in higher production costs and thereby adversely affects the relative market advantages of businesses and industries within the Region.

Measures of Effectiveness

1. Change in average trip time.

2. Change in the number of miles of arterial streets with a volume-to-capacity ratio of 1.1 or greater.

Display Methodology for Measures of Effectiveness

1. This measure would be displayed at the appropriate level—facility, corridor, subarea, or area—depending upon the action evaluated. It would be displayed by a color-coded map of arterial streets and highways indicating change in travel time or speed over specific facilities in the arterial street and highway system. If the action taken was areawide, a summary of average trip time (total and by mode of travel) and average trip speed by type of facility (freeway, expressway, standard divided and undivided arterial and primary, secondary, and tertiary mass transit) would be provided.

2. This measure indicates severe congestion and consequent travel time problems. It should be displayed by a color-coded map indicating existing congested facilities, those facilities which remain congested after the TSM action, those facilities which were no longer congested as a result of the TSM action, and changes in the congestion of other facilities.

OBJECTIVE NO. 4

The reduction of accident exposure and the provision of increased travel safety.

PRINCIPLE

Accidents take a heavy toll in life, property damage, and human suffering; contribute substantially to overall transportation costs; and increase public costs for police and welfare services; therefore, every attempt should be made to reduce both the incidence and severity of accidents.

Table 4 (continued)

Measures of Effectiveness

1. Change in the number of accidents.

2. Change in the number of miles of arterial streets with a volume-to-capacity ratio of 0.91 or greater.

Display Methodology for Measures of Effectiveness

1. This measure would identify the change in the number of accidents—fatalities, injuries, property damage, and total.

2. This measure would require a color-coded map indicating streets which had a volume-to-capacity ratio of over 0.91, streets which remained at a volume-to-capacity ratio of over 0.91, streets which had their volume-to-capacity ratio reduced below 0.91, and streets with volume-to-capacity ratio increasing to over 0.91. It would be done only at the appropriate level—facility, corridor, subarea, or area.

OBJECTIVE NO. 5

A transportation system which is economical and efficient, satisfying all other objectives at the lowest possible capital and total costs.

PRINCIPLE

The total resources of the Region are limited, and any undue investment in transportation facilities and services must occur at the expense of other public and private investment; therefore, total transportation costs should be minimized for the desired level of service.

Measures of Effectiveness

1. Change in total and local transportation system public operating, capital, and total costs.[a]

2. Change in user out-of-pocket cost.

3. Change in transportation system energy consumption.

Display Methodology for Measures of Effectiveness

All three measures would be displayed by a summary table reflecting the impact of the action at the proper level—facility, corridor, subarea, or area. The second measure would also be displayed with a color-coded map indicating changes in user costs for travel between the various subareas of the Region.

OBJECTIVE NO. 6

Minimization of disruption of existing neighborhood and community development, including adverse effects upon the property tax base and minimization of the deterioration and/or destruction of the natural resource base.

PRINCIPLE

The social and economic costs attendant to the disruption and dislocation of homes, businesses, industries, and communication and utility facilities as well as the adverse effects on the natural resource base can be minimized through the proper location and design of transportation facilities and terminals.

Table 4 (continued)

Measures of Effectiveness

1. Change in number of residents exposed to harmful, as well as annoying, noise levels.

2. Change in transportation system emissions—carbon monoxide, nitrogen oxides, hydrocarbons, and particulates.

3. Estimation of disruption caused, forestalled, or prevented, including dislocation by type of unit, neighborhood penetration, and land consumption by type of land.

Display Methodology for Measures of Effectiveness

Each of these measures would be displayed by a summary table of estimates and a color-coded map indicating changes in subareas of the Region.

OBJECTIVE NO. 7

A transportation system with a high aesthetic quality whose major facilities will possess the proper visual relation to the land and cityscape.

PRINCIPLE

Beauty in the physical environment is conducive to the physical and mental health and well-being of people, and, as major features of the land and cityscape, transportation facilities have a significant impact on the attractiveness of the total environment.

Measures of Effectiveness

1. Estimation of aesthetic impacts including buildings, features, and vistas destroyed.

Display Methodology for Measures of Effectiveness

A statement listing and describing the aesthetic impacts of the TSM actions would be provided.

[a] *The costs assessed by this measure of effectiveness are not total costs, but total public costs. The user time and accident cost savings necessary to convert public costs to total costs have not been included because these cost elements have been considered under Objectives 3, Travel Movement, and 4, Travel Safety.*

Source: SEWRPC.

Chapter IV

THE REGIONAL TRANSPORTATION SYSTEM

INTRODUCTION

Transportation planning can be conducted in a rational manner only when there is a basic understanding of existing transportation facilities and services and current travel habits and patterns. Knowledge of the supply of existing transportation facilities and services is essential to an assessment of current levels of travel efficiency and accessibility. And when combined with an evaluation of system utilization, information concerning the characteristics of existing facilities permits the identification of deficiencies and excess capacity in the existing transportation system, and consequently, achieves an important step toward plan synthesis.

Knowledge of travel habits and patterns is also essential to the transportation planning process. One of the central concepts underlying any transportation study is that travel is an orderly, regular, and measurable occurrence, evidenced by recognizable travel patterns. Information concerning current travel patterns is a prerequisite to an understanding of travel behavior which may be expected to occur under changes in facilities and services, and therefore, to intelligent planning for travel requirements.

This chapter presents a brief description of the configuration, capacity, and utilization of the existing transportation system of the Region. A short discussion of existing travel behavior within the Region is also included. Existing land use within the Region is also summarized. The information presented in this chapter on transportation facilities and services and travel habits and patterns is drawn primarily from the comprehensive reinventories of the factors affecting transportation system development and use in southeastern Wisconsin conducted by the Commission in 1972 as a part of its reevaluation and revision of the adopted long-range regional land use and transportation plans. More recent data are cited whenever available.

EXISTING LAND USE

Less than 20 percent of the total area of southeastern Wisconsin was devoted to urban land uses in 1970, as indicated by the regional land use reinventory conducted in 1970. The spatial distribution of land uses in the Region in 1970 is shown in a generalized manner on Map 4.

As indicated in Table 5, agricultural land was the largest single type of land use in the Region in

Table 5

DISTRIBUTION OF LAND USE IN THE REGION BY COUNTY: 1970

County	Major Land Use Category																	
	Residential[a]		Commercial		Industrial[b]		Transportation[c]		Governmental[d]		Recreation		Agriculture		Open Lands[e]		Total	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Kenosha	13,477	7.5	504	0.3	811	0.5	8,927	5.0	1,324	0.7	2,672	1.5	113,930	64.0	36,455	20.5	178,100	100.0
Milwaukee	45,632	29.4	2,875	1.9	4,899	3.2	35,431	22.9	7,490	4.8	9,924	6.4	28,607	18.4	20,206	13.0	155,064	100.0
Ozaukee	12,321	8.2	330	0.2	444	0.3	8,054	5.4	940	0.6	1,657	1.1	100,491	67.0	25,776	17.2	150,013	100.0
Racine	16,625	7.6	575	0.3	1,099	0.5	12,442	5.7	1,744	0.8	2,585	1.2	147,207	67.7	35,284	16.2	217,561	100.0
Walworth	13,408	3.6	593	0.2	827	0.2	12,020	3.3	1,192	0.3	4,275	1.2	261,744	70.8	75,923	20.4	369,982	100.0
Washington	11,525	4.1	299	0.1	434	0.2	11,286	4.1	919	0.3	1,664	0.6	186,466	66.9	66,141	23.7	278,734	100.0
Waukesha	43,278	11.6	1,341	0.4	1,525	0.4	21,247	5.7	3,009	0.8	6,219	1.7	201,676	54.3	93,351	25.1	371,646	100.0
Region	156,266	9.1	6,517	0.4	10,039	0.6	109,407	6.3	16,618	1.0	28,996	1.7	1,040,121	60.4	353,136	20.5	1,721,100	100.0

[a] *Includes all residential areas, developed and under development.*

[b] *Includes all manufacturing, wholesaling, and storage.*

[c] *Includes off-street parking areas of more than 10 spaces.*

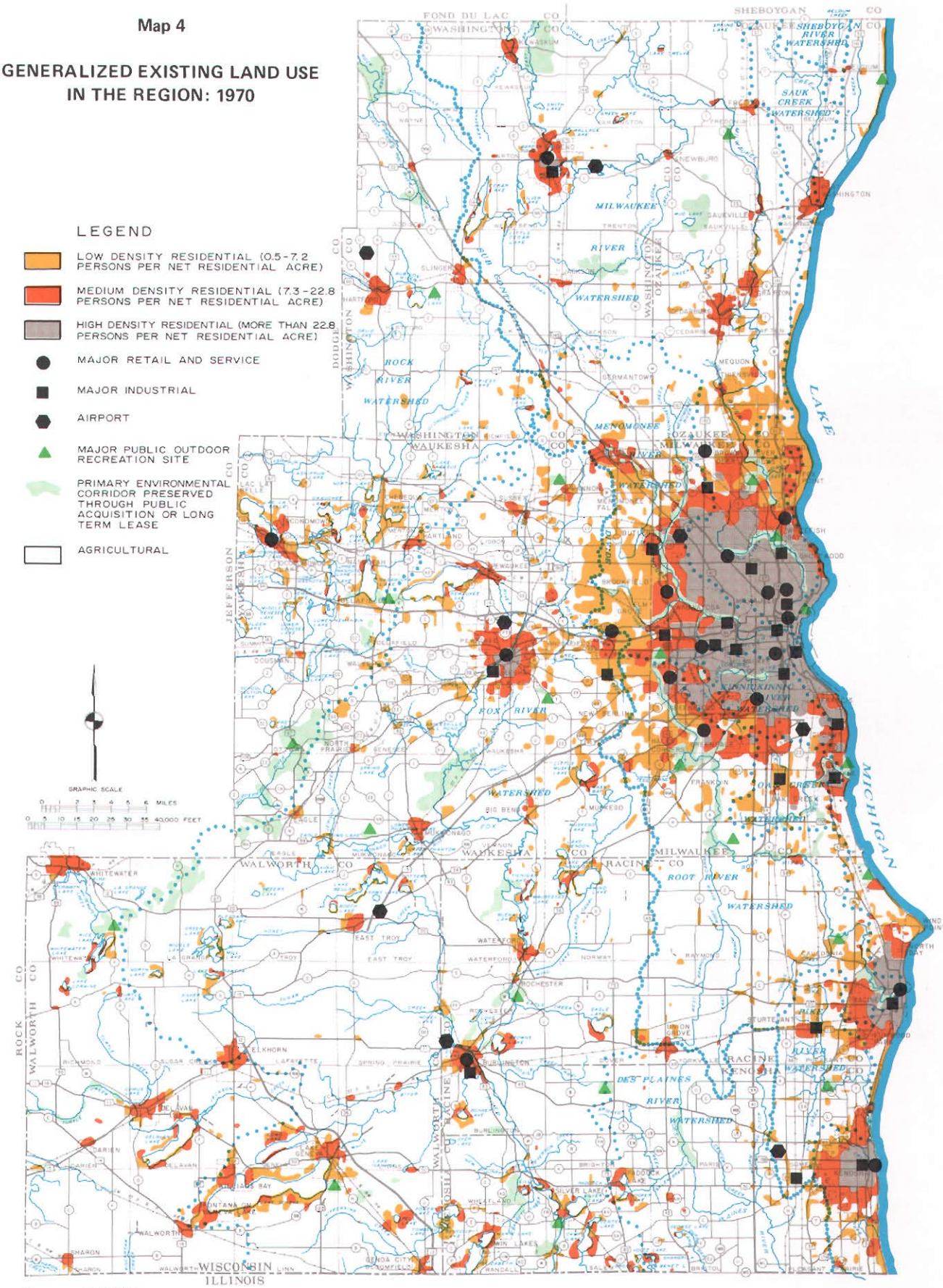
[d] *Includes institutional land uses.*

[e] *Includes woodlands, quarries, water and wetlands, as well as unused and other open lands.*

Source: SEWRPC.

Map 4

GENERALIZED EXISTING LAND USE IN THE REGION: 1970



Source: SEWRPC.

1970, occupying 1,040,121 acres, or 60 percent of the total area of the Region. The next largest land use category was open lands, consisting of woodlands, water and wetlands, and unused lands[1] totaling 353,136 acres, or 21 percent of the Region. Accordingly, 1,393,257 acres of land, representing 81 percent of the total area of the Region, were devoted to nonurban land uses—agricultural and open land—in 1970.

For regional planning purposes, urban land has been defined as lands devoted to residential, commercial, industrial, governmental and institutional, transportation, and recreational uses. As further indicated in Table 5, residential land use occupied the greatest area of the urban land uses in the Region, accounting for 156,266 acres, or 9 percent of the total area of the Region. A close second were transportation, communication, and utilities uses, which accounted for 109,407 acres, or 6 percent of the total area. The proportional importance of this category reflects the vast areas of land devoted to airports, parking lots, and rights-of-way for streets and highways, railroads, and utility lines in 1970. A very small area and proportion of land was devoted to urban economic activities within the Region in 1970. The total land area devoted to commercial, manufacturing, and wholesaling functions within the Region amounted to only 16,556 acres, or 1 percent of the total area of the Region, yet this small area provided the basis for more than 81 percent of the jobs in southeastern Wisconsin in 1970.

Of the total amount of urban land use in the Region in 1970, approximately one-third was within Milwaukee County, as shown in Map 4 and Table 5. Only one other county accounted for more than 10 percent of the Region's urban land uses, Waukesha County, with about 23 percent of the Region's total urban land. Over two-thirds of Milwaukee County's total land area was devoted to urban land uses. In each of the remaining six counties of the Region, urban land uses accounted for less than 20 percent of their total land area. In 1970, Milwaukee County accounted for over 29 percent of the Region's total residential land use, 12 of the 19 major regional retail and service centers, 15 of the 23 major regional industrial centers, seven of the 23 major regional public outdoor recreation sites, over 44 percent of the Region's governmental and institutional land use, and over 32 percent of the Region's land devoted to transportation, communication, and utilities.

[1] *Unused lands are lands which are neither developed, cropped, tilled, grazed, or used as a place of storage.*

SUPPLY OF STREETS AND HIGHWAYS

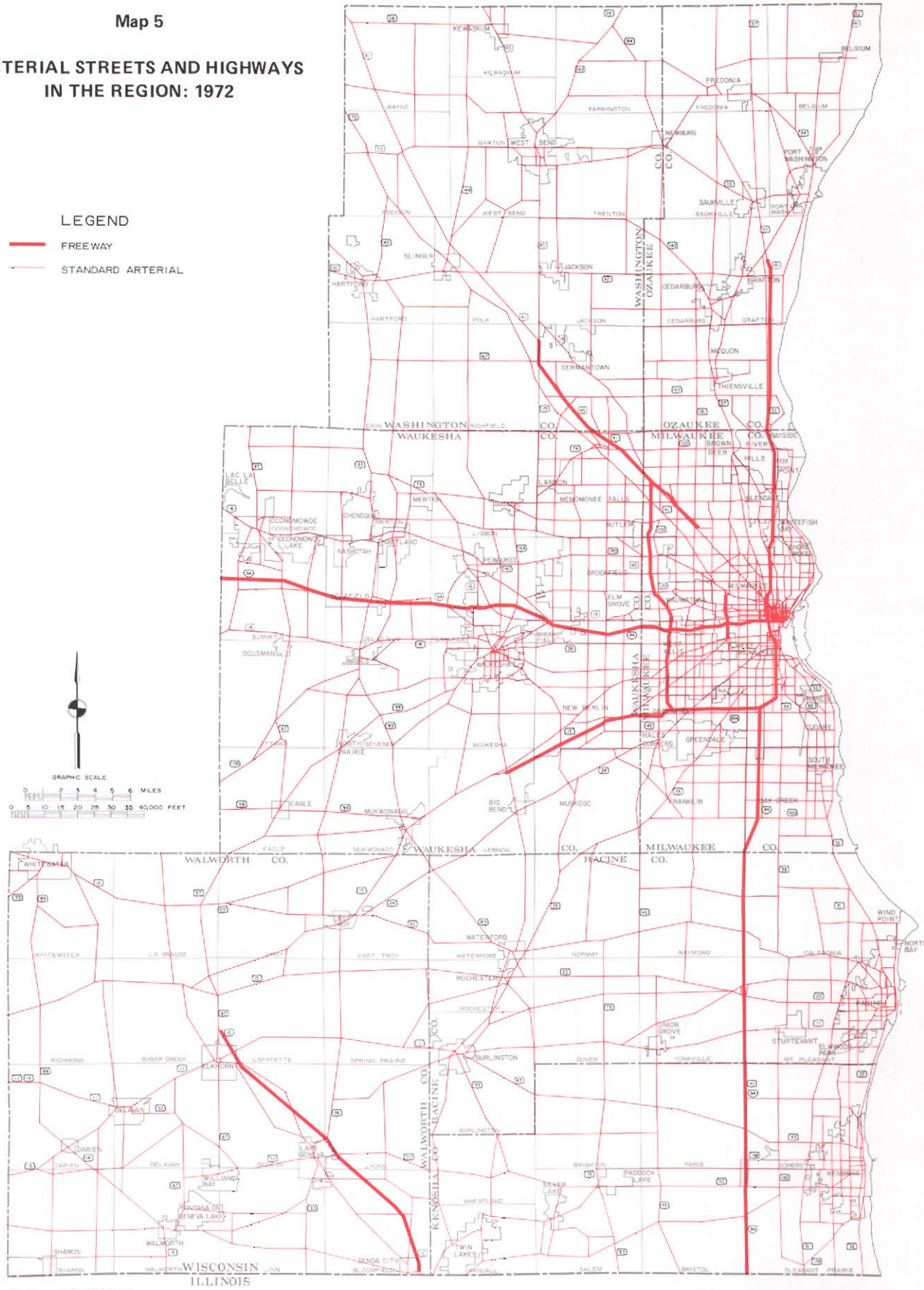
The total street and highway system of the Region in 1972 was composed of 9,710 miles, of which 3,010 miles, or 31 percent, were classified by primary function as arterials and 6,700 miles, or 69 percent, were classified as collector and land access streets (see Map 5 and Table 6). The functional classification of streets and highways as arterials, collectors, and land access streets according to the primary function which they provide is essential to sound street system design and management, because two of the many functions of streets and highways—namely, providing for free traffic movement and providing access to abutting land—are basically incompatible. Functional classification of streets and highways defines the primary service which particular streets should render and, as a consequence, permits minimization of the conflict between the traffic movement and land access functions of the street and highway system.

Arterials are intended to consist of those streets and highways of the Region which serve the movement of heavy volumes of through traffic between major subareas of the Region, between such subareas and points outside the Region, and through the Region. It is desired that the designated arterials together form an integrated areawide system planned, located, and designed to properly carry the required traffic loadings, incorporate directness of routing, and minimize duplication of service. Freeways, expressways, certain parkways and standard arterial streets and highways are all types of facilities having design characteristics typical of arterial streets and highways.[2] As shown

[2] *A freeway is defined as a divided arterial highway with full control of access and grade separations at all intersections. An expressway is defined as a divided arterial highway with full or partial control of access and grade separations at some, but not necessarily all, intersections. A parkway is defined as an arterial highway provided for noncommercial traffic with full or partial control of access and usually located within a ribbon of park-like development. The term parkway as defined here should not be confused with park roads or drives which are not intended to serve as arterials. Standard arterial streets and highways may be defined as arterials with intersections at grade with no control of access; that is, with direct access to abutting property.*

Map 5

ARTERIAL STREETS AND HIGHWAYS IN THE REGION: 1972



Source: SEWRPC.

Table 6

DISTRIBUTION OF STREET AND HIGHWAY MILEAGE IN THE REGION BY TYPE OF FACILITY AND COUNTY: 1972

County	Mileage by Type of Facility: 1972					
	Arterial			Collector and Minor Streets	Total[a]	Arterial Miles as Percent of Total
	Freeways and Expressway	Other	Total			
Kenosha	12.0	267.7	279.7	593.4	873.1	32.0
Milwaukee	64.5	669.7	734.2	1,851.7	2,585.9	28.4
Ozaukee	13.0	237.3	250.3	466.7	717.0	34.9
Racine	12.0	337.4	349.4	728.0	1,077.4	32.4
Walworth	19.1	389.1	408.2	846.9	1,305.1	31.3
Washington	28.5	310.7	339.2	821.1	1,160.3	29.2
Waukesha	46.4	602.1	648.5	1,342.5	1,991.0	32.6
Region	195.5	2,814.0	3,009.5	6,700.3	9,709.8	31.0
Percent of Total	6.3	90.2	100.0	68.2	100.0	--

[a] *Total street and highway mileage does not include private streets and roads or roads in public park and institution lands.*

Source: SEWRPC.

in Table 6, freeways and expressways in 1972 comprised less than 7 percent of the approximately 3,010 miles of arterial streets and highways. From 1972 to 1976, the miles of freeways in the Region have increased 32 percent from 173 to 228 miles with the addition of 17.2 miles of the North-South Freeway, 27.8 miles of the Rock Freeway, 6.5 miles of the Bay Freeway, 1.0 miles of the West Bend Freeway, 0.8 miles of USH 41, and 1.6 miles of USH 16.

Collector streets are intended to consist of those streets and highways which serve primarily as connections between the arterial system and the local land access streets. In addition to collecting and distributing traffic from and to land access streets, collector streets may also be required to provide a secondary function of access to abutting property. Land access streets are intended to exclusively serve as a means of access to abutting property. As a consequence, collector and local streets are usually built to standard cross sections as determined by demands of storm water drainage, utility location, snow removal, emergency access, and maintenance rather than by the demands of traffic. Existing and anticipated traffic volumes are, however, a critical factor in the location, design, and management of arterials.

The arterial system identified through an application of the foregoing functional considerations is, therefore, the system to which both long- and short-range transportation planning efforts including transportation system management efforts must be primarily directed. The identification and delineation of this arterial system is, consequently, a prerequisite to any highway transportation system planning. The Regional Planning Commission first conducted a functional classification of all existing streets and highways in the Region in 1963. Utilizing functional identification at the municipal level and subsequent consolidation and review at county and state levels as well as by appropriate SEWRPC advisory committees, the resulting functional designation represented the combined experience and judgment of the public officials most familiar with the total street and highway system. It also connoted a consensus at the municipal, county, and state levels of government concerning the intended functions of the component parts of the existing total street and highway system. This identification of the arterial, collector, and land access facilities has been further intensively reviewed, updated, and refined since 1963 as part of the Commission county jurisdictional highway planning programs, resulting in a sound, highly refined, functional

classification of the streets and highways of the Region, as summarized in Map 5 and Table 6.

Classification of the elements of the regional street and highway system according to jurisdiction and federal aid eligibility also has important implications for transportation planning, as well as for plan implementation.

Jurisdictional Classification

Jurisdictional classification establishes which level of government—state, county, or local—has or should have responsibility for the design, construction, maintenance, and operation of each segment of the total street and highway system. Jurisdictional classification is intended to group into subsystems all streets and highways serving similar functions and providing similar levels of service; thus, jurisdictional classification should be related to the functional classification of the street and highway system. Jurisdictional classification should, moreover, result in the assignment of responsibility for each subsystem to the appropriate level of government having the greatest basic interest in, as well as the staff and fiscal resources to properly design, construct, maintain, and operate the functional types of facilities involved.

Plans based upon specific criteria for the functional subclassification of the total arterial street and highway system into state, county, and local trunk highways were developed by the Commission in cooperation with federal, state, and local units and agencies of government concerned under individual county jurisdictional highway planning programs. The state trunk highway system was defined as including all those routes within the Region which are intended to provide the highest level of traffic mobility, that is which are intended to provide the highest operating speeds, experience the lowest degree of traffic congestion, serve trips of the longest lengths, provide the minimum degree of land access service, and have regional or interregional continuity. The county trunk highway system was defined as including all those routes which are intended to provide an intermediate level of traffic mobility and land access and which have intercommunity system continuity. The local trunk system was defined as including all those routes which are intended to provide the lowest level of arterial traffic mobility and the highest degree of arterial land access service, and which possess intracommunity system continuity.

The existing jurisdictional highway systems within the Region, however, have been the result of a long evolutionary process influenced by many complex political, administrative, financial, and engineering considerations and constraints. Consequently, the current jurisdictional classification has not always related properly to the street and highway function provided. The jurisdictional highway systems as they existed within the Region in 1972 are shown on Map 6. The state trunk highway system in 1972 was composed entirely of streets and highways functionally classified as arterials. The county trunk highway systems, however, included both arterial and nonarterial facilities. In addition, the county trunk highway systems had become fragmented, at least in parts of the Region and, consequently, were in some areas no longer able to perform well as a continuous subsystem, primarily because of the removal of segments from the system within many villages and cities.

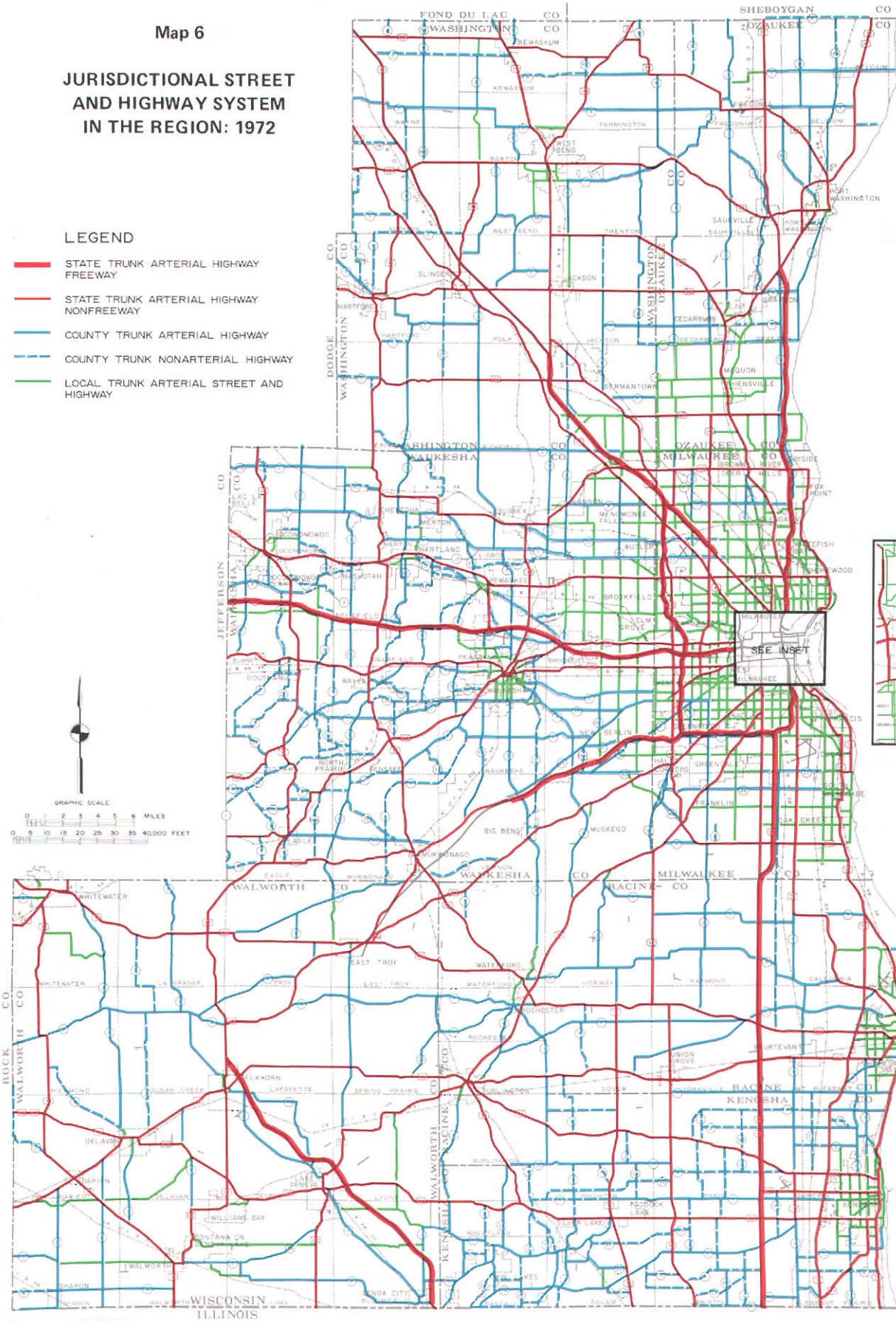
Table 7 indicates the mileage of each jurisdictional subsystem within the Region as it existed in 1972. About 1,259 miles, or 13 percent of the total street and highway system, were on the state trunk highway and connecting street system. About 1,435 miles, or 15 percent, were on the county trunk highway system, while the remaining 7,016 miles, or 72 percent, were under the jurisdiction of the cities, villages, and towns. Functionally, all 1,259 miles of state trunk highways were classified as arterials, while 998 miles, or 70 percent of the county trunk highways, and 752 miles, or 11 percent of the local streets and highways, were classified as arterials. The remaining 437 miles of county trunk highways and 6,264 miles of local streets and roads were classified as collector and land access streets.

Federal Aid Classification

The total street and highway system of the Region can be further classified in terms of the federal aid systems which underlie the arterial street and highway system. Four federal aid systems for streets and highways were in existence as of September 1974: the federal aid interstate system, the federal aid primary system and its extension into urban areas, the federal aid secondary system, and the federal aid urban system. The classification of the street and highway system by federal aid system, as it existed in 1974, is shown on Map 7 and is summarized in Table 8. About 1,204 miles of state trunk highways, or about 96 percent of all state trunk highways within the Region, were included in a federal aid system; about 909 miles of county trunk highways, or about 62 percent of all county trunk highways, were included in a federal aid system; and about 748 miles of local

Map 6

JURISDICTIONAL STREET AND HIGHWAY SYSTEM IN THE REGION: 1972



Source: SEWRPC.

Table 7

DISTRIBUTION OF STREET AND HIGHWAY MILEAGE IN THE REGION BY JURISDICTION AND COUNTY: 1972

County	Existing Arterial (miles)							Existing Nonarterial (miles)			Total Miles
	State Trunk Highway		Frontage Roads and Ramps	Connecting Streets	County Trunk Highway	Local Trunk Highway	Total	County Trunk Highway	Local Trunk Highway	Total	
	Freeway	Nonfreeway									
Kenosha	12.0	99.4	7.4	12.0	127.4	28.9	279.7	138.4	455.0	593.4	880.5
Milwaukee . . .	63.8	96.6	61.5	93.2	68.9	411.7	734.2	6.7	1,845.0	1,851.7	2,647.4
Ozaukee	10.8	79.9	3.2	8.0	103.4	48.2	250.3	17.1	449.6	466.7	720.2
Racine	12.0	125.7	6.0	18.6	135.5	57.6	349.4	17.2	710.8	728.0	1,083.4
Walworth. . . .	19.1	157.3	3.8	13.8	167.7	49.4	408.2	25.1	871.8	896.9	1,308.9
Washington . .	6.8	172.4	5.6	8.1	127.2	24.7	339.2	62.7	758.4	821.1	1,165.9
Waukesha . . .	37.8	193.7	21.7	18.0	267.9	132.0	648.5	169.5	1,173.0	1,342.5	2,012.7
Region	162.3	925.0	109.2	171.7	998.0	752.5	3,009.5[a]	436.7[a]	6,263.6	6,700.3	9,819.0

[a] *The total mileage of arterial streets and highways as classified by jurisdiction does not include ramp and frontage roads attendant to the freeway system which are the responsibility of the State of Wisconsin but which are not considered within the mileage of the state trunk highway system.*

Source: SEWRPC.

arterial streets and highways, or about 10 percent of the total arterial street mileage, were included in a federal aid system.

Generally, only those streets and highways in the Region which were on a federal aid system were eligible to receive federal funds in partial support of needed improvements.[3] Ideally, federal funds should be available for the improvement of all streets and highways which, together, comprise the arterial system, since these facilities serve not only intracommunity travel, but also intercommunity, intercounty, interregional, and interstate travel. Certain misalignments exist, however, and the existing federal aid systems in the Region were not fully congruent with the existing regional arterial street and highway system in 1974. This incongruence may be attributed in part to the location of federal aid routes on the alignment of existing nonarterial facilities that are proposed for future arterial designation and use in the adopted regional transportation plan (145 miles); in part to the location of federal aid routes on the alignment of proposed, but as yet unconstructed, arterial facilities included in the adopted regional transportation plan (226 miles); and in part to misalignments in which federal aid routes are located on existing facilities which were neither existing nor proposed arterials (91 miles).

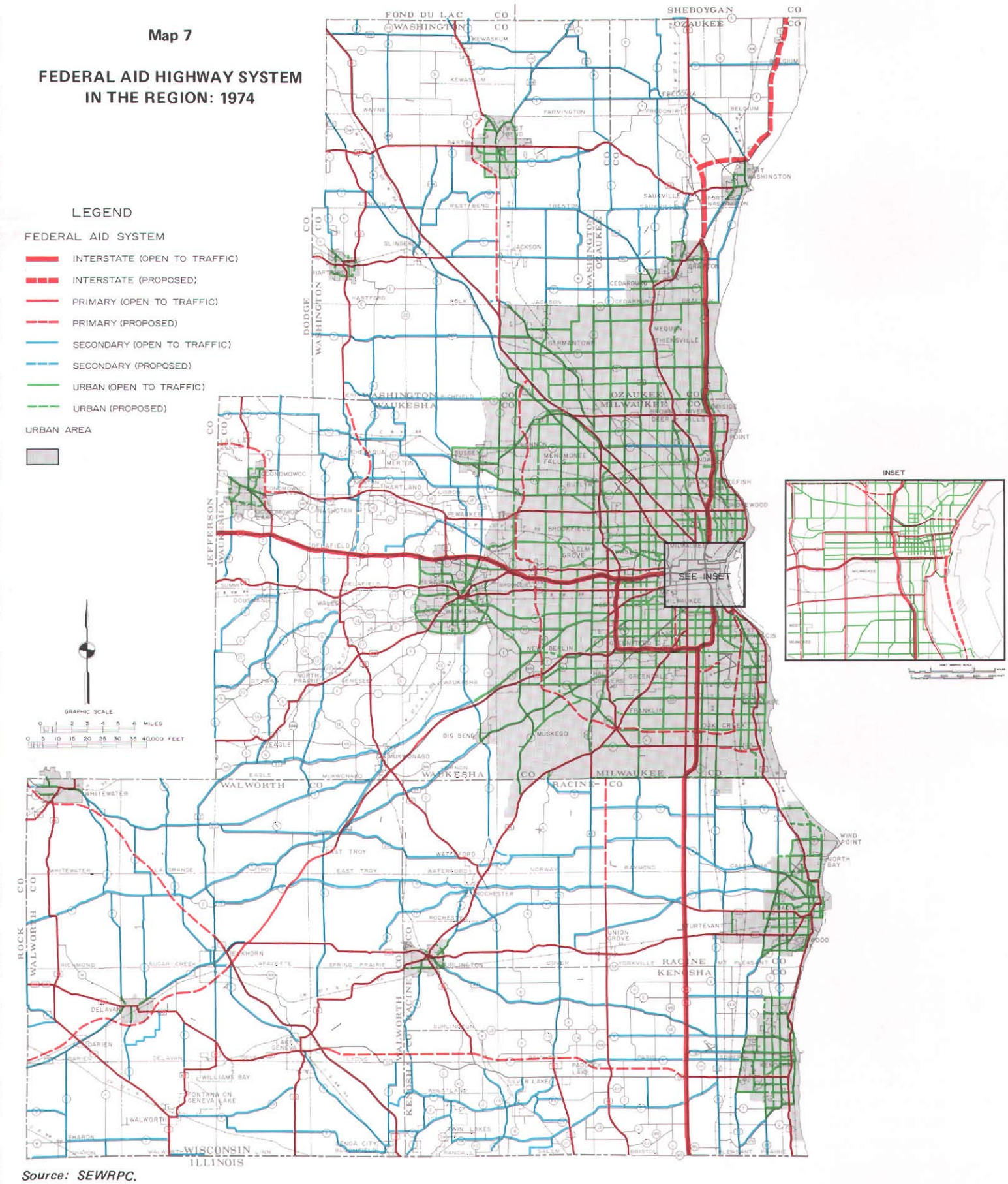
Arterial System Utilization

The utilization of the existing arterial street and highway system measured in terms of average weekday traffic volume for each system segment was last comprehensively determined in 1972 as part of the Commission long-range land use-transportation plan reevaluation. In order to obtain complete data for the entire arterial network in 1972, the regular counting programs conducted by the Wisconsin Department of Transportation and by the City and County of Milwaukee had to be extensively supplemented by counts taken by other local municipalities, as well as by the Commission itself. As shown on Map 8 and presented in Table 9, arterial streets and highways were most heavily utilized in the urban areas of the Region in 1972. Milwaukee County alone accounted for 54 percent of the over 20.1 million vehicle miles of travel which occurred on the regional arterial street and highway system on an average weekday in 1972.

[3] *Exceptions to the general rule exist which permit federal funds to be spent for improvements of facilities which are not on a federal aid system. Those improvements include, but are not limited to, replacement of bridges and elimination of high hazard locations and roadside obstacles.*

Map 7

FEDERAL AID HIGHWAY SYSTEM IN THE REGION: 1974



Source: SEWRPC.

Table 8

DISTRIBUTION OF STREET AND HIGHWAY MILEAGE IN THE REGION BY FEDERAL AID SYSTEM CLASSIFICATION, ARTERIAL STATUS, AND COUNTY: 1974

Status	County	Federal Aid														Nonfederal Aid				
		Federal Aid Interstate (miles)	Federal Aid Primary (miles)				Federal Aid Secondary (miles)				Federal Aid Urban (miles)									
		State Trunk Highway	State Trunk Highway	County Trunk Highway	Local Street	Total	State Trunk Highway	County Trunk Highway	Local Street	Total	State Trunk Highway	County Trunk Highway	Local Street	Total	Total	State Trunk Highway[a]	County Trunk Highway	Local Street	Total	Total Mileage[b]
On Existing Arterials	Kenosha	12.07	39.09	--	--	39.09	40.92	60.98	--	101.90	13.13	11.58	22.29	47.00	200.06	18.18	54.84	6.61	79.63	279.69
	Milwaukee	44.69	153.91	--	--	153.91	--	5.39	--	5.39	52.71	63.51	382.36	498.58	702.57	2.70	--	28.94	31.64	734.21
	Ozaukee	9.90	34.48	--	--	34.48	21.17	49.49	0.20	70.86	15.42	20.98	44.55	80.95	196.18	17.80	32.87	3.43	54.10	250.29
	Racine	12.02	92.40	--	--	92.40	39.52	99.33	--	138.85	12.38	12.87	50.13	75.38	318.65	--	23.30	7.47	30.77	349.42
	Walworth	--	155.77	--	--	155.77	28.53	153.48	10.06	192.07	3.10	0.50	2.52	6.12	353.96	4.60	13.72	35.91	54.23	408.19
	Washington	--	86.15	--	--	86.15	75.88	78.84	--	154.72	17.29	13.12	17.58	47.99	288.86	8.00	35.24	7.10	50.34	339.20
	Waukesha	24.66	141.14	--	--	141.14	47.61	107.21	6.84	161.66	29.76	105.15	101.82	236.73	564.19	4.70	55.54	24.07	84.31	648.50
	Total	103.34	702.94	--	--	702.94	253.63	554.72	17.10	825.45	143.79	227.71	621.25	992.75	2,624.48	55.98	215.51	113.53	385.02	3,009.50
On Existing Streets—Proposed Arterials	Kenosha	--	--	--	--	--	--	12.95	--	12.95	--	0.56	9.36	9.92	22.87	--	--	--	--	22.87
	Milwaukee	--	--	--	--	--	--	--	--	--	--	9.54	--	9.54	9.54	--	--	--	--	9.54
	Ozaukee	--	--	--	--	--	--	0.40	--	0.40	--	2.53	24.08	26.61	27.01	--	--	--	--	27.01
	Racine	--	--	--	--	--	--	--	--	--	--	--	10.78	10.78	10.78	--	--	--	--	10.78
	Walworth	--	--	--	--	--	--	--	--	--	--	--	1.35	1.35	1.35	--	--	--	--	1.35
	Washington	--	--	--	--	--	--	13.95	--	13.95	--	1.06	28.48	29.54	43.49	--	--	--	--	43.49
	Waukesha	--	--	--	--	--	--	10.10	--	10.10	--	--	19.93	19.93	30.03	--	--	--	--	30.03
	Total	--	--	--	--	--	--	37.40	--	37.40	--	13.69	93.98	107.67	145.07	--	--	--	--	145.07
On Existing Streets—Nonarterials (misalignments)	Kenosha	--	--	--	--	--	--	25.59	3.02	28.61	--	--	--	--	28.61	--	100.74	458.32	559.06	587.67
	Milwaukee	--	--		--	--	--	--	--	--	--	--	--	--	--	--	4.29	1,866.82	1,871.71	1,871.11
	Ozaukee	--	--		--	--	--	--	7.69	7.69	--	--	--	--	7.69	--	13.34	435.76	449.10	456.79
	Racine	--	--	--	--	--	--	7.82	--	7.82	--	--	--	--	7.82	--	9.80	710.90	720.70	728.52
	Walworth	--	--	--	--	--	--	25.10	3.42	28.52	--	--	--	--	28.52	--	14.28	890.18	904.46	932.98
	Washington	--	--	--	--	--	--	10.04	--	10.04	--	--	--	--	10.04	--	38.61	751.95	790.56	800.60
	Waukesha	--	--	--	--	--	--	6.60	1.68	8.28	--	--	--	--	8.28	--	165.91	1,254.98	1,420.89	1,429.17
	Total	--	--	--	--	--	--	75.15	15.81	90.96	--	--	--	--	90.96	--	346.97	6,368.91	6,715.88	6,806.84
Subtotal—Existing Facilities	Kenosha	12.07	39.09	--	--	39.09	40.92	99.52	3.02	143.46	13.13	12.14	31.65	56.92	251.54	18.18	155.58	464.93	638.69	890.23
	Milwaukee	44.69	153.91	--	--	153.91	--	5.39	--	5.39	52.71	73.05	382.36	508.12	712.11	2.70	4.29	1,895.76	1,902.75	2,614.86
	Ozaukee	9.90	34.48	--	--	34.48	21.17	49.89	7.89	78.95	15.42	23.51	68.63	107.56	230.89	17.80	46.21	439.19	503.20	734.09
	Racine	12.02	92.40	--	--	92.40	39.52	107.15	--	146.67	12.38	12.87	60.91	86.16	337.25	--	33.10	718.37	751.47	1,088.72
	Walworth	--	155.77	--	--	155.77	28.53	178.58	13.48	220.59	3.10	0.50	3.87	7.47	383.83	4.60	28.00	926.09	958.69	1,342.52
	Washington	--	86.15	--	--	86.15	75.88	102.83	--	178.71	17.29	14.18	46.06	77.53	342.39	8.00	73.85	759.05	840.90	1,183.29
	Waukesha	24.66	141.14	--	--	141.14	47.61	123.91	8.52	180.04	29.76	105.15	121.75	256.66	602.50	4.70	221.45	1,279.05	1,505.20	2,107.70
	Total	103.34	702.94	--	--	702.94	253.63	667.27	32.91	953.81	143.79	241.40	715.23	1,100.42	2,860.51	55.98	562.48	6,482.44	7,100.90	9,961.41
On Proposed Arterials	Kenosha	--	18.18	--	--	18.18	--	--	--	--	--	--	3.65	3.65	21.83	--	--	--	--	21.83
	Milwaukee	--	32.12	--	--	32.12	--	--	--	--	--	--	20.76	20.76	52.88	--	--	--	--	52.88
	Ozaukee	17.20	--	--	--	--	--	--	--	--	--	--	4.55	4.55	21.75	--	--	--	--	21.75
	Racine	--	6.89	--	--	6.89	--	2.27	--	2.27	--	--	9.85	9.85	19.01	--	--	--	--	19.01
	Walworth	--	31.78	--	--	31.78	--	--	0.53	0.53	--	--	0.76	0.76	33.07	--	--	--	--	33.07
	Washington	--	14.02	--	--	14.02	0.78	--	0.78	--	--	--	7.20	7.20	22.00	--	--	--	--	22.00
	Waukesha	--	37.88	--	--	37.88	3.89	--	--	3.89	--	--	14.02	14.02	55.79	--	--	--	--	55.79
	Total	17.20	140.87	--	--	140.87	4.67	2.27	0.53	7.47	--	--	60.79	60.79	226.33	--	--	--	--	226.33
Total	Kenosha	12.07	57.27	--	--	57.27	40.92	99.52	3.02	143.46	13.13	12.14	35.30	60.57	273.37	18.18	155.58	464.93	638.69	912.06
	Milwaukee	44.69	186.03	--	--	186.03	--	5.39	--	5.39	52.71	73.05	403.12	528.88	764.99	2.70	4.29	1,895.76	1,902.75	2,667.74
	Ozaukee	27.10	34.48	--	--	34.48	21.17	49.89	7.89	78.95	15.48	23.51	73.18	112.11	252.64	17.70	46.21	439.19	503.20	755.84
	Racine	12.02	99.29	--	--	99.29	39.52	109.42	--	148.94	12.38	12.87	70.76	96.01	356.26	--	33.10	718.37	751.47	1,107.73
	Walworth	--	187.55	--	--	187.55	28.53	178.58	14.01	221.12	3.10	0.50	4.63	8.23	416.90	4.60	28.00	926.09	958.69	1,375.59
	Washington	--	100.17	--	--	100.17	76.66	102.83	--	179.49	17.29	14.18	53.26	84.73	364.39	8.00	73.85	759.05	840.90	1,205.29
	Waukesha	24.66	179.02	--	--	179.02	51.50	123.91	8.52	183.93	29.76	105.15	135.77	270.68	658.29	4.70	221.45	1,279.05	1,505.20	2,163.49
	Total	120.54	843.81	--	--	843.81	258.30	669.54	33.44	961.28	143.79	241.40	776.02	1,161.21	3,086.84	55.88	562.48	6,482.44	7,100.90	10,187.74

[a] *Represents the traveled portion of a federal aid route in those cases where the officially designated federal aid route is on a new alignment.*

[b] *The total mileage of arterial streets and highways as classified by jurisdiction does not include ramp and frontage roads attendant to the freeway system which are the responsibility of the State of Wisconsin, but which are not considered within the mileage of the state trunk highway system and which are not included in federal aid mileage.*

Source: SEWRPC.

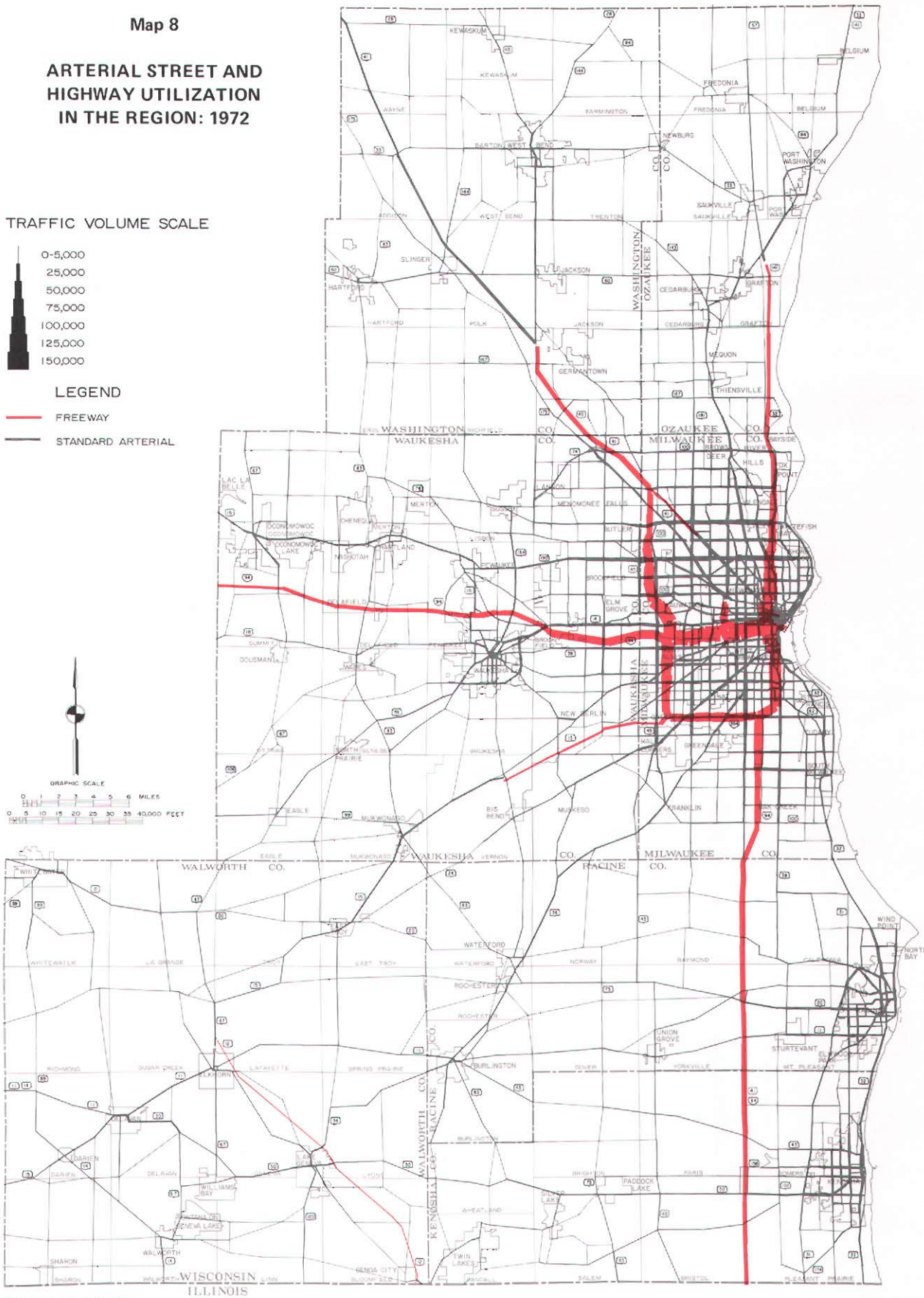
Freeways and expressways, while comprising less than 7 percent of the arterial street and highway mileage in 1972, carried approximately 31 percent of the total arterial vehicle miles of travel. As measured by traffic count sampling programs conducted by the Wisconsin Department of Transportation and the City of Milwaukee, travel on freeways and expressways in the Milwaukee urbanized area has increased from 1972 to 1976 as shown on Map 9 and in Table 10. Smaller increases in travel on standard arterial streets and highways have also occurred in the Milwaukee urbanized area over the same time period, as shown in Table 10.

Relationship of System Utilization to Capacity

Each designated arterial street and highway segment within the Region in 1972 was defined in terms of its capacity, that is, the maximum number of vehicles which could pass a given point on the

Map 8

ARTERIAL STREET AND HIGHWAY UTILIZATION IN THE REGION: 1972



Source: SEWRPC.

Table 9

ARTERIAL VEHICLE MILES OF TRAVEL IN THE REGION ON AN AVERAGE WEEKDAY BY COUNTY: 1972

County	1972 Average Weekday Vehicle Miles of Travel (in thousands)		
	Freeway and Expressway	Other Arterials	Total
Kenosha	382	1,046	1,428
Milwaukee . . .	3,977	6,718	10,695
Ozaukee	223	627	850
Racine.	415	1,398	1,813
Walworth. . . .	56	817	873
Washington . .	190	961	1,151
Waukesha. . . .	970	2,344	3,314
Region	6,213	13,911	20,124

Source: SEWRPC.

facility within 24 hours under existing roadway and desirable operating conditions. Careful attention was given in that study to the determination of this capacity including review and approval by appropriate technical advisory committees. The 24-hour design capacity of each street and highway segment was established by first determining its peak hour design capacity, or the maximum number of vehicles which could pass a given point on the facility within the peak hour and then converting that value to a 24-hour capacity. The peak hour design capacity of freeways and expressways was defined as a function of the segment's pavement width, modified by factors representing the percentage of trucks in the total traffic flow, the directional imbalance in the traffic flow, and the location of the segment with respect to the intensity of urban development. The peak hour design capacity of standard arterial streets and highways was defined as a function of the segment's intersection approach pavement width, the peak hour factor, or duration of peak traffic flow

Table 10

CHANGES IN AVERAGE ANNUAL WEEKDAY TRAVEL AT 21 FREEWAY LOCATIONS AND 25 ARTERIAL STREET LOCATIONS WITHIN MILWAUKEE COUNTY: 1972 to 1976

Freeway	Location	Vehicles per Average Weekday		
		1972	1976	Percent Change
IH 94	At N. 92nd Street	98,749	102,518	3.8
IH 94	At Cemetery Access Road	107,162	105,034	- 2.0
IH 94	At N. 26th Street	111,027	101,805	- 8.3
IH 94	At W. Scott Street	100,165	110,038	9.9
IH 94	At W. Waterford Avenue	67,171	76,499	13.9
IH 94	At W. Grange Avenue	60,515	69,105	14.2
IH 894	At W. Cleveland Avenue	67,849	76,632	12.9
IH 894	At S. 68th Street	54,004	66,738	23.6
IH 794	At N. 5th Street	58,532	60,609	3.5
USH 41	At W. Vliet Street	49,197	46,656	- 5.2
IH 43	At W. Wells Street	98,141	101,082	3.0
IH 43	At W. Vine Street	102,398	108,177	5.6
IH 43	At W. Capitol Drive	72,704	81,017	11.4
IH 43	At W. Calumet Road	36,597	41,096	12.3
USH 45	At W. Wisconsin Avenue	81,843	91,922	12.3
USH 45	At W. Center Street	75,000	79,537	6.0
USH 145	At N. 84th Street	16,512	16,189	- 2.0
Park Freeway	At N. 8th Street	26,525	34,000	28.2
STH 15	At S. 124th Street	11,258	16,764	28.9
USH 45	At W. Florist Avenue	40,017	48,017	21.8

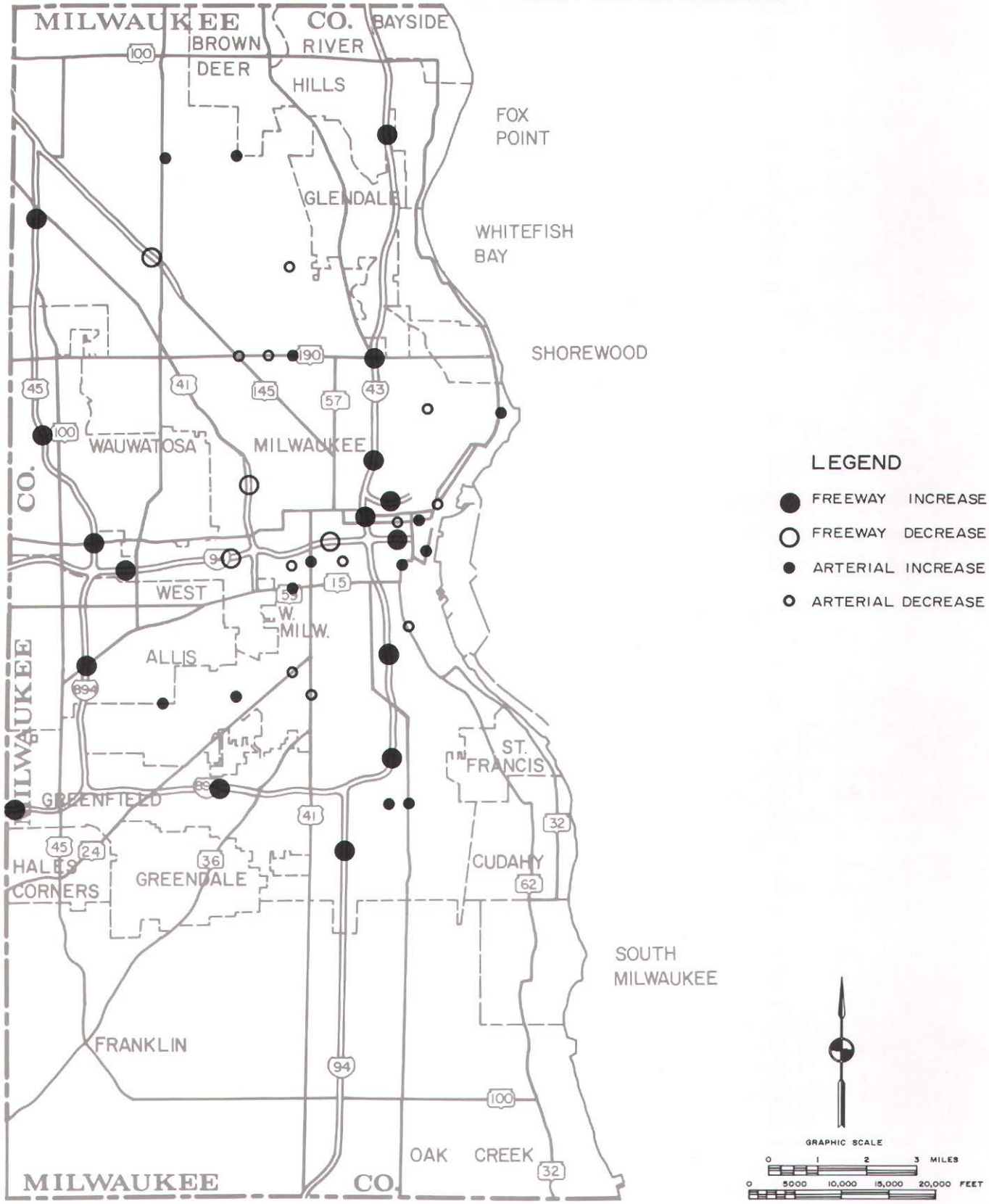
Table 10 (continued)

Arterial Street Location	Vehicles per Average Weekday		
	1972	1976	Percent Change
N. Holton Street Viaduct			
North of Bridge	11,367	10,809	- 4.9
Wisconsin Avenue Viaduct			
Center of Viaduct	16,348	19,686	20.4
16th Street Viaduct			
North of Ramp	12,628	12,496	- 1.0
S. 76th Street			
South of W. Oklahoma Avenue	20,088	21,345	6.3
W. Fond du Lac Avenue			
North of W. Capitol Drive	23,915	22,556	- 5.7
E. Capitol Drive			
West of N. Humboldt Avenue	25,278	25,017	- 1.0
N. Prospect Avenue			
North of E. Juneau Avenue	25,221	24,739	- 1.9
Kilbourn Avenue Bridge			
East End of Bridge	11,671	11,044	- 5.4
6th Street Viaduct			
North of W. Florida	11,975	13,038	8.9
27th Street Viaduct			
South of W. St. Paul Avenue	21,000	22,236	5.9
35th Street Viaduct			
North End of Viaduct	20,946	17,563	- 16.2
W. Forest Home Avenue			
West of S. 35th Street	18,225	17,592	- 3.5
N. 75th Street			
South of W. Good Hope Road	19,080	27,113	42.1
N. Teutonia Avenue			
South of W. Sheridan Avenue	15,344	13,868	- 9.6
S. Howell Avenue			
South of East/West Layton Avenue	22,350	24,171	8.1
S. Kinnickinnic Avenue			
South of E. Maple Street	17,016	15,708	- 7.7
W. Oklahoma Avenue			
West of S. 60th Street	16,894	17,125	1.4
W. Capitol Drive			
West of N. 31st Street	43,412	44,640	2.8
S. 27th Street			
South of W. Morgan Avenue	36,134	36,036	- 0.3
W. Good Hope Road			
East of N. 43rd Street	12,754	21,320	67.2
N. Lake Drive			
North of E. Kenwood Boulevard	13,489	13,976	3.6
W. National Avenue			
West of S. 35th Street	16,018	16,748	4.6
W. Layton Avenue			
West of S. Howell Avenue	27,695	31,098	12.3
Water Street Bridge	11,111	11,757	5.8
W. Silver Spring Drive			
West of N. 68th Street	27,471	27,261	- 0.8

Source: SEWRPC.

Map 9

CHANGES IN FREEWAY AND STANDARD ARTERIAL STREET AND HIGHWAY AVERAGE ANNUAL WEEKDAY TRAFFIC: 1972 to 1976



Source: SEWRPC.

within the peak hour, and the load factor, or proportion of traffic signal cycles during the peak which are considered to be fully utilized. This capacity is further refined to reflect specific intersection conditions such as the location of the intersection with respect to the intensity of urban development, the directional imbalance in the traffic flow, the intersection approach gradient, the percentage of right and left turning vehicle movements, the percentage of trucks in the total traffic flow, the provision for parking along the street or highway, and the percentage of the traffic signal cycle which was allocated to the green phase.

The peak hour capacities were converted to a 24-hour capacity under the assumption that 10 percent of the daily travel on a standard arterial street and highway occurred within the peak hour, and 8 percent of the daily travel on freeways and expressways occurred within the peak hour.

Comparisons of the average weekday traffic utilizing particular sections of the arterial system, with the capacity of these sections referred to as volume-capacity (V/C) ratios, are a useful means of identifying and quantifying existing and probable near future conditions of traffic congestion. The deficiencies in the transportation system identified through this analysis and others will be discussed explicitly in Chapter VI of this report, "Transportation System Problems and Deficiencies."

The volume/capacity ratios in 1972 for each segment of the arterial network are shown on Map 10 and summarized in Table 11. In order to facilitate their presentation and subsequent analysis, the V/C ratios have been grouped into three categories: under capacity, V/C = 0.90 or less; at capacity, V/C = 0.91 to 1.10; and over capacity, V/C = 1.11 or more. The significance of these ranges of volume-to-capacity ratios is that those facilities operating under design capacity provide fully adequate

Table 11

VOLUME-TO-CAPACITY RATIOS FOR THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION BY COUNTY: 1972

	1972						
	V/C Range[a] 00.0-0.90		V/C Range[a] 0.91-1.10		V/C Range[a] Above 1.10		
County	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Total Mileage
Kenosha	250.4	87.2	14.7	5.1	22.0	7.7	287.1
Milwaukee . . .	662.9	83.3	71.8	9.0	61.0	7.7	795.7
Ozaukee	237.9	93.8	10.1	4.0	5.5	2.2	253.5
Racine.	316.0	88.9	19.1	5.4	20.3	5.7	355.4
Walworth. . . .	404.5	98.2	2.7	0.7	4.8	1.1	412.0
Washington . .	326.0	94.6	9.7	2.8	9.1	2.6	344.8
Waukesha. . . .	603.5	90.0	23.8	3.6	42.9	6.4	670.2
Region	2,801.2	89.8	151.9	4.9	165.6	5.3	3,118.7[b]

[a] *The significance of the volume-to-capacity ratio of the ranges used is:*

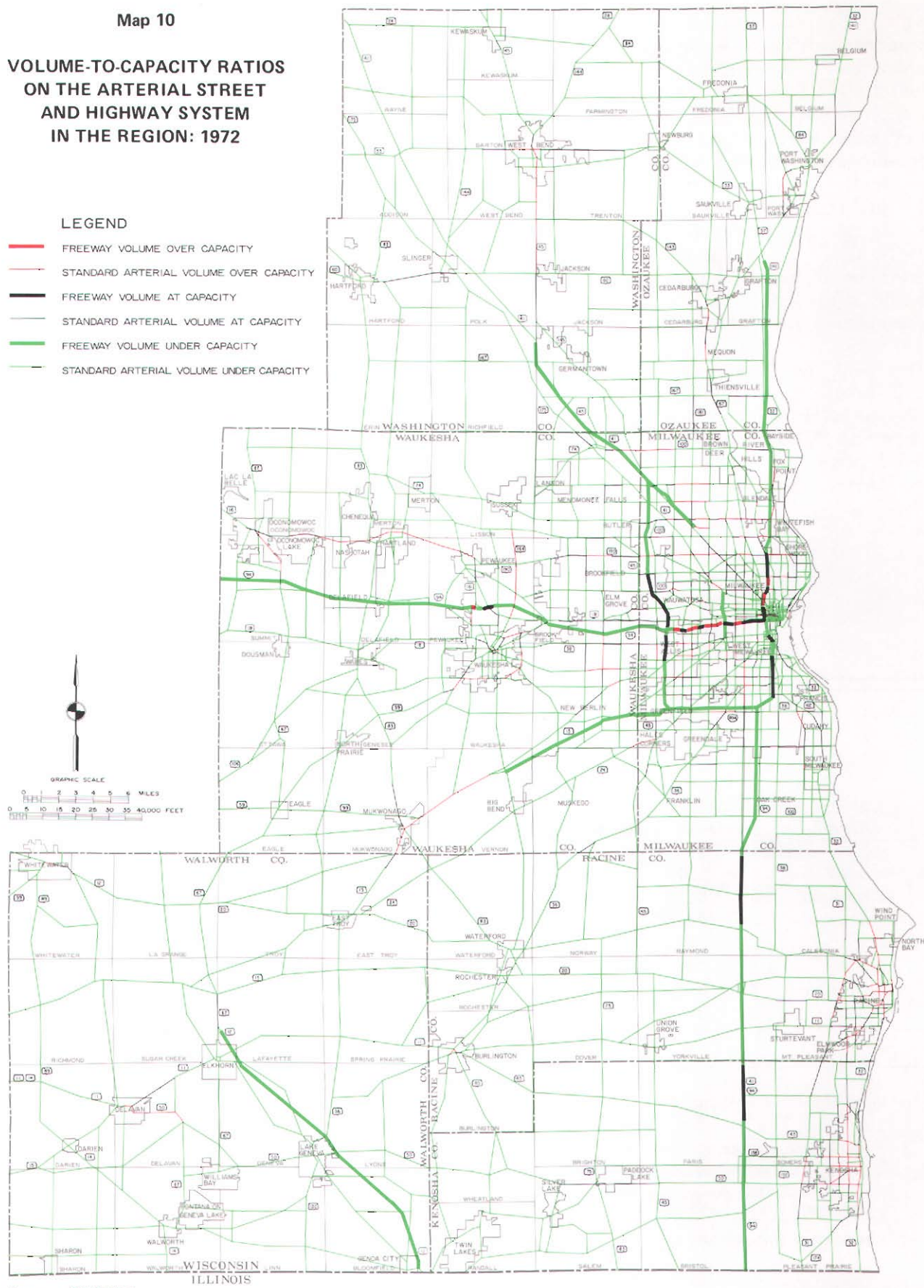
0.00-0.90 - Under design capacity, fully adequate and safest operational level.
0.91-1.10 - At design capacity but still adequate.
Over 1.10 - Over design capacity, congested at times.

[b] *Includes freeway and expressway ramps.*

Source: SEWRPC.

Map 10

VOLUME-TO-CAPACITY RATIOS ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE REGION: 1972



Source: SEWRPC.

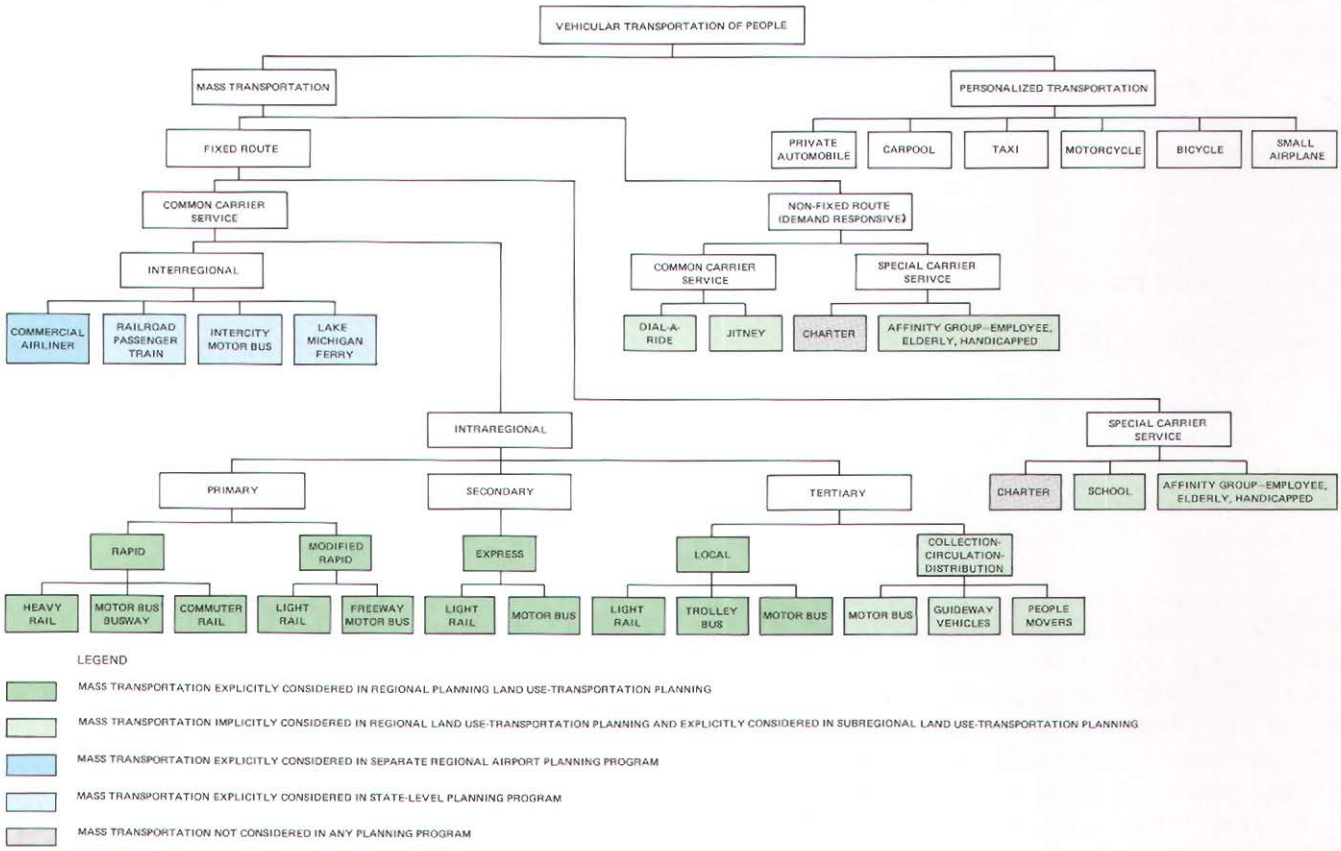
service having stable flow and few restrictions on operating speed; those facilities operating at design capacity provide adequate service having stable flow, higher volume, and more restrictions on speed and lane changing, while experiencing restricted traffic flow at times; and those facilities operating over design capacity experience traffic congestion at times approaching unstable flow, with little freedom to maneuver. As shown on Map 10, most of the arterial system mileage within the Region operating at or over design capacity in 1972 was located in the intensely developed urbanized areas. Eighty-seven percent of the arterial street and highway mileage within the Region which was operating at or over design capacity in 1972 was located within the Milwaukee, Racine, and Kenosha urbanized areas. Moreover, as summarized in Table 11, over 16 percent of Milwaukee County's arterial mileage was operating at or over design capacity in 1972, while none of the three still primarily rural counties—Ozaukee, Walworth, and Washington—had over 6 percent of its arterial mileage operating at or over design capacity.

SUPPLY AND USE OF MASS TRANSIT

The other major element of the regional transportation system is public mass transportation. Some form of mass transportation is essential to the provision of a balanced transportation system in any urbanized area, not only to meet the needs of that segment of the population unable to command direct use of personalized transportation, but also to provide an alternative, more efficient mode of travel for certain types of trips within and between urbanized areas. As shown in Figure 6, mass transportation can be classified as fixed route or nonfixed route service according to whether service is provided on regular schedules over prescribed routes or on a demand responsive basis. Mass transportation can also be further divided into common carrier and special carrier service, according to whether service is provided to the general public or limited to special subgroups of the general public. Thus, mass transportation can be divided for analysis purposes into four basic types: fixed route common carrier, fixed

Figure 6

CLASSIFICATION OF MASS TRANSPORTATION



Source: SEWRPC.

route special carrier, nonfixed route common carrier, and nonfixed route special carrier service. With the exception of nonfixed route common carrier service, all of these types of services were provided in 1976 in at least one of the urbanized areas of the Region.

Fixed route common carrier service comprised by far the largest and most heavily utilized form of mass transportation service operating in southeastern Wisconsin in 1976. Fixed route common carrier mass transportation service may be further subdivided into interregional service which provides service across regional boundaries to meet external travel demand and intraregional service which provides service within the Region to meet internal travel demand.

Interregional fixed route common carrier service includes commercial air travel, railway passenger train service, ferry service across Lake Michigan, and intercity bus service. Since interregional commercial air travel is explicitly considered by the Commission under a separate comprehensive regional airport system planning program, and interregional train, bus, and cross-lake ferry service is considered by the Wisconsin Department of Transportation under a separate statewide planning program; interregional fixed route common carrier service will not be analyzed as part of the transportation system management planning effort except as its associated terminal facilities may comprise major trip generators for the intraregional transit system and the arterial street and highway system. The types of mass transportation service provided in 1976 in the three urbanized areas of the Region—Milwaukee, Racine, and Kenosha—will be discussed in the following paragraphs.

Milwaukee Urbanized Area

In the Milwaukee urbanized area in 1976, fixed route common carrier service, fixed route special carrier service, and nonfixed route special carrier service were provided. Fixed route common carrier service was operated at primary, secondary, and tertiary levels in 1976, as shown on Map 11.

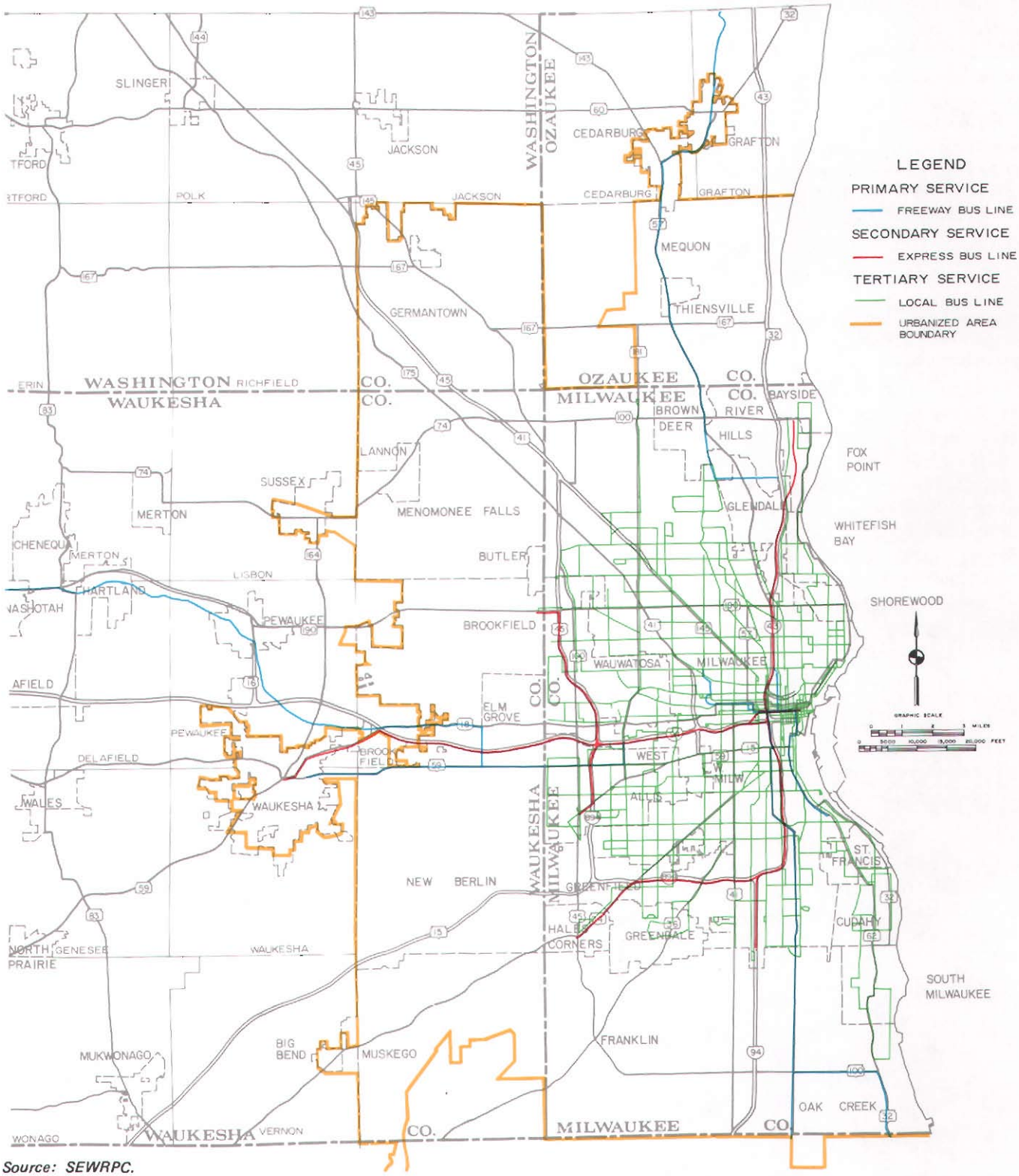
Primary service, by definition, joins the major regional activity centers—commercial, industrial, institutional, and recreational—to each other and to the various residential communities comprising the Region. Characterized by relatively high operating speeds and relatively low accessibility, primary transit service can be provided in a rapid form through exclusive, fully grade separated rights-of-way or in a modified rapid form through operation in mixed traffic on freeways, or on exclusive, but not fully grade separated rights-of-way. Primary service in the Milwaukee urbanized area in 1976 consisted of the modified rapid transit "Freeway Flyer" motor bus service provided by the Milwaukee County Transit System, the county-owned but privately managed principal transit operator in the Milwaukee urbanized area and by Wisconsin Coach Lines, Inc., a privately owned transit operator. Initiated in 1964, the modified rapid transit service operated over freeways in Milwaukee County in 1976 and was composed of 10 routes, with 221 weekday vehicle trips. The service was used by 937,600 revenue passengers annually, or about 3,600 per average weekday. The base freeway flyer fare on the Milwaukee County Transit System in 1976 was 60 cents; the Wisconsin Coach Lines primary service bus fare was distance-related.

Secondary service in the Milwaukee urbanized area in 1976, also shown on Map 8, was composed of seven express bus routes, three operated by the Milwaukee County Transit System and four operated by Wisconsin Coach Lines, Inc. The secondary level of intraregional common carrier fixed route service, by definition, consists of express service, that is, service provided over arterial streets with stops located only at intersecting transit routes and major traffic generators, generally no less than 1,200 feet apart. The secondary mass transportation system may provide a "feeder" service to the primary system, as well as make available greater access from subregional areas than does primary service, with somewhat lower operating speeds. An average of 304 weekday vehicle trips was made on the Milwaukee County Transit System express routes, and approximately 50 vehicle trips on each weekday were made on the Wisconsin Coach Lines bus service. The Milwaukee County express bus fare, equal to the regular fare, has been 50 cents since May 15, 1976; the Wisconsin Coach Lines express bus fare in late 1976 was distance-related.

Tertiary transit service also was provided in the Milwaukee urbanized area in 1976 as shown on Map 11. The tertiary level of fixed route common carrier transit service, by definition, provides two basic functions: local service and collection-circulation-distribution service. Both are characterized by a high degree of accessibility and relatively low operating speeds. Local service is provided primarily over arterial and collector streets with

Map 11

INTRAREGIONAL MASS TRANSPORTATION SERVICE IN THE MILWAUKEE URBANIZED AREA



Source: SEWRPC.

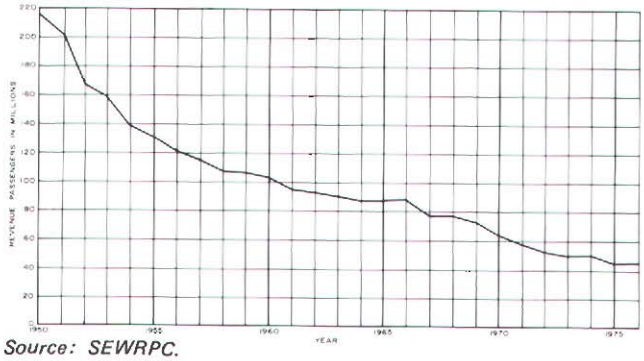
stops for passenger pickup and discharge located no more than 1,200 feet apart. Collection-circulation-distribution service is provided for the movement of passengers within major activity centers. Thirty-five local service routes were operated by the Milwaukee County Transit System with approximately 5,100 weekday vehicle trips in the Milwaukee urbanized area in 1976. This service was used by an estimated 44,302,100 annual revenue passengers (includes secondary service and school trip passengers), or about 163,000 per average weekday. Only one tertiary service route in the Milwaukee urbanized area served other than a local service function in 1976, the shuttle service in the Milwaukee central business district (CBD), which provided a collection-circulation-distribution function. Local tertiary service bus fare has been 50 cents since May 15, 1976, and the shuttle service fare was 10 cents. Historic trends in ridership in the Milwaukee urbanized area are shown in Figure 7. Local tertiary service also was provided through two bus routes in the City of Waukesha by Wisconsin Coach Lines, Inc., until service was discontinued on June 1, 1976.

Special carrier fixed route service in the Milwaukee urbanized area was provided in 1976 by the Milwaukee County Transit System and Waukesha Coach Lines, Inc., to selected public and private grade, junior high, and high schools and by the Milwaukee County Transit System to the University of Wisconsin-Milwaukee. The "UBUS" special carrier fixed route service provided to the University of Wisconsin-Milwaukee carried an annual 363,400 revenue passengers, or about 2,300 per average weekday.

Special carrier service on nonfixed routes was provided to the elderly and handicapped in the Milwaukee urbanized area in 1976 by over 35 private and public agencies. An estimated 800,000 trips by elderly and handicapped individuals were made in special carrier service vehicles in 1976.

Figure 7

FIXED ROUTE INTRAREGIONAL MASS TRANSIT REVENUE PASSENGERS IN THE MILWAUKEE URBANIZED AREA: 1950-1976



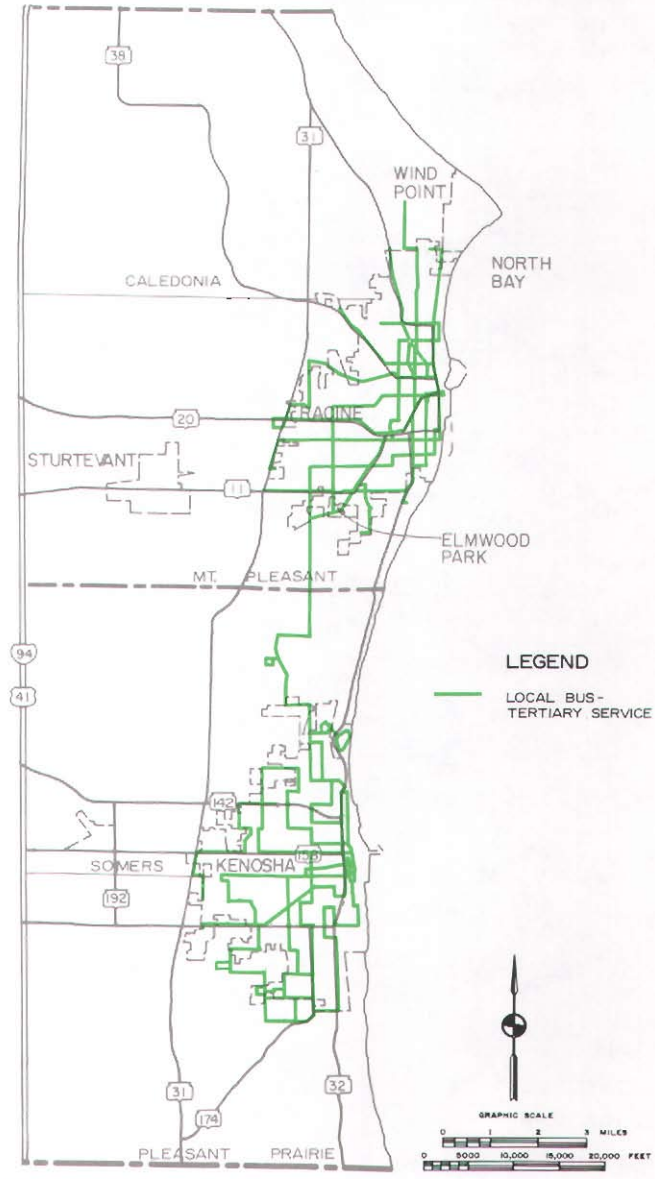
Source: SEWRPC.

Racine Urbanized Area

In the Racine urbanized area in 1976, publicly owned and privately managed tertiary fixed route common carrier service was provided by the Racine Transit Commission, as shown on Map 12. The system was composed of eight routes in 1976 on which approximately 400 weekday vehicle trips were made. Approximately 990,200 revenue

Map 12

INTRAREGIONAL MASS TRANSPORTATION SERVICE IN THE RACINE AND KENOSHA URBANIZED AREAS



Source: SEWRPC.

passengers were carried in 1976, or about 3,200 per average weekday, at a fare of 25 cents. Historic trends in ridership in the Racine urbanized area are shown in Figure 8. Special carrier fixed route service was provided by the Racine Transit Commission in 1976 on one route between the City of Racine and the University of Wisconsin-Parkside. Approximately 13,300 revenue passengers, or about 170 per average weekday, were carried at a fare of 50 cents. Special carrier nonfixed route service was provided by nine agencies to the Racine urbanized area elderly and handicapped population and carried an estimated 450,000 individuals in 1976.

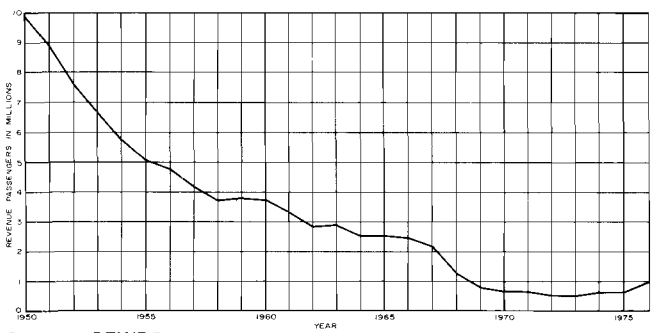
Kenosha Urbanized Area

In the Kenosha urbanized area in 1976, publicly owned and managed tertiary fixed route common carrier service was provided by the Kenosha Transit-Parking Commission, as shown on Map 12. The system was comprised of five routes in 1976 on which 170 weekday vehicle trips were made. Approximately 973,400 revenue passengers were carried in 1976, or about 3,600 per average weekday at a fare of 25 cents (includes school trip passengers). Historic trends in ridership in the Kenosha urbanized area are shown in Figure 9.

Special carrier fixed route service in 1976 was provided for trips primarily to junior and senior high schools on five routes by the Kenosha Transit Parking Commission and by the University of Wisconsin-Parkside for circulation and distribution trips within the campus or the University of Wisconsin-Parkside. Three public agencies provided special carrier nonfixed route service to the Racine urbanized elderly and handicapped population in 1976. An estimated 100,000 individuals utilized this special carrier service in 1976.

Figure 8

FIXED ROUTE INTRAREGIONAL MASS TRANSIT REVENUE PASSENGERS IN THE RACINE URBANIZED AREA: 1950-1976



Source: SEWRPC.

TRAVEL HABITS AND PATTERNS

Knowledge of current travel habits and patterns, along with an understanding of the existing transportation system is essential to an assessment of present levels of transportation efficiency and the possible impact of actions taken to increase efficiency. In the remainder of this chapter characteristics of existing travel in the Southeastern Wisconsin Region will be discussed, including quantity, location, purpose, and mode of travel. This information on travel habits and patterns has been obtained from the travel inventory conducted in 1972 as a part of the land use and transportation plan reevaluation, the last major origin-destination survey conducted in the Southeastern Wisconsin Region.

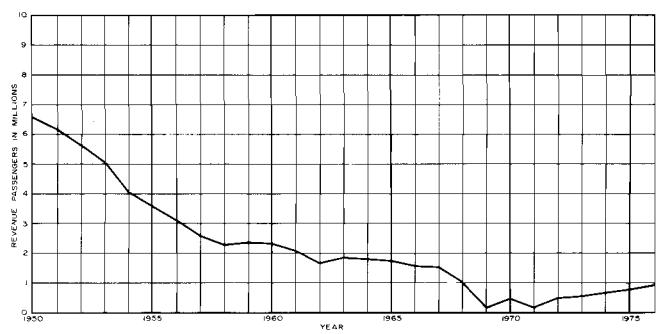
Quantity of Travel

In 1972, 4.68 million person trips[4] were made within the Region on an average weekday, as indicated by travel inventory findings. Of these 4.68 million person trips, 96 percent or 4.50 million trips were internal trips, that is, trips having both origin and destination within the Region. Thus, an average number of 2.5 internal trips was made on an average weekday in 1972 by each of the 1.8 million persons residing in the Region. The remaining 0.18 million person trips made within

[4] *A person trip is defined as a one-way journey between a point of origin and a point of destination by a person five years of age or over traveling as an auto driver or as a passenger in an auto, taxi, truck, motorcycle, school bus, or other mass transit carrier. To be considered, the trip must have been at least the equivalent of one full city block in length.*

Figure 9

FIXED ROUTE INTRAREGIONAL MASS TRANSIT REVENUE PASSENGERS IN THE KENOSHA URBANIZED AREA: 1950-1976



Source: SEWRPC.

the Region on an average weekday consisted of external trips, which included trips made into, out of, and through the Region.

The remaining discussion of regional transportation patterns focuses entirely on internal trips, because they represent the great majority of weekday travel within the Region and are more closely associated with the resident population of the Region and the characteristics of that population.

Purposes of Travel

Analysis of the purposes of internal person trips, as summarized in Table 12, indicated that home-oriented travel accounted for a large proportion, 41 percent, of internal person travel. Second in importance of all trip purpose categories were trips to work which comprised over 16 percent of the total trips in 1972.

Mode of Travel

The automobile accounted for the large majority of travel within the Region in 1972 as shown in Table 13. Auto driver trips alone comprised 64 percent of total internal person trips, while auto passenger trips accounted for an additional 27 percent of total trips in 1972. Of the remaining 9 percent, mass transit accounted for about 4 percent as did school bus, and the remaining 1 percent consisted of motorcycle, taxi, and truck trips. Mass transit, however, was more heavily utilized as a mode of travel in the central busines districts of the Region's urbanized areas in 1972, accounting for over 21 percent of the internal person trips to the Milwaukee CBD, over 7 percent of the trips to the Racine CBD, and about 6 percent of the trips to the Kenosha CBD.

Vehicle Trips

The 4.5 million internal person trips in 1972 represented 3.3 million vehicle trips by automobile, truck, and taxi. Approximately 88 percent of these vehicle trips were made by automobile or taxi and only 12 percent were made by trucks.

Weekend Travel

Weekend travel surveys conducted in 1972 indicated that total daily and peak hour travel demands were generally less than those occurring on average weekdays in 1972. However, certain facilities, primarily those providing access to recreational facilities within the Region and those serving major travel demands through the Region, did experience maximum volume loadings during weekends and on holidays. Because of the small number of, and character of, the few routes which had peaked on weekends, it was determined that transportation facilities should continue to be designed basically to serve weekday travel demands.

Time Patterns of Internal Person Travel

The amount of internal person travel on any weekday in 1972 as indicated by travel inventory findings did not deviate by more than 6 percent from the average weekday, except Friday, which had internal person trip volumes 9 percent above the average. These daily variations, as shown in Figure 10, were a result of increased shopping, personal business, and social-recreation trips on Fridays.

Table 12

DISTRIBUTION OF AVERAGE WEEKDAY INTERNAL PERSON TRIPS IN THE REGION BY TRIP PURPOSE AT DESTINATION: 1972

Trip Purpose at Destination	Person Trips 1972 Number	Person Trips 1972 Percent of Total
Home	1,836,200	40.8
Work	740,800	16.4
Personal Business	654,900	14.5
School	220,000	4.9
Social-Recreation	508,100	11.3
Shopping	544,900	12.1
Total	4,504,900	100.0

Source: SEWRPC.

Table 13

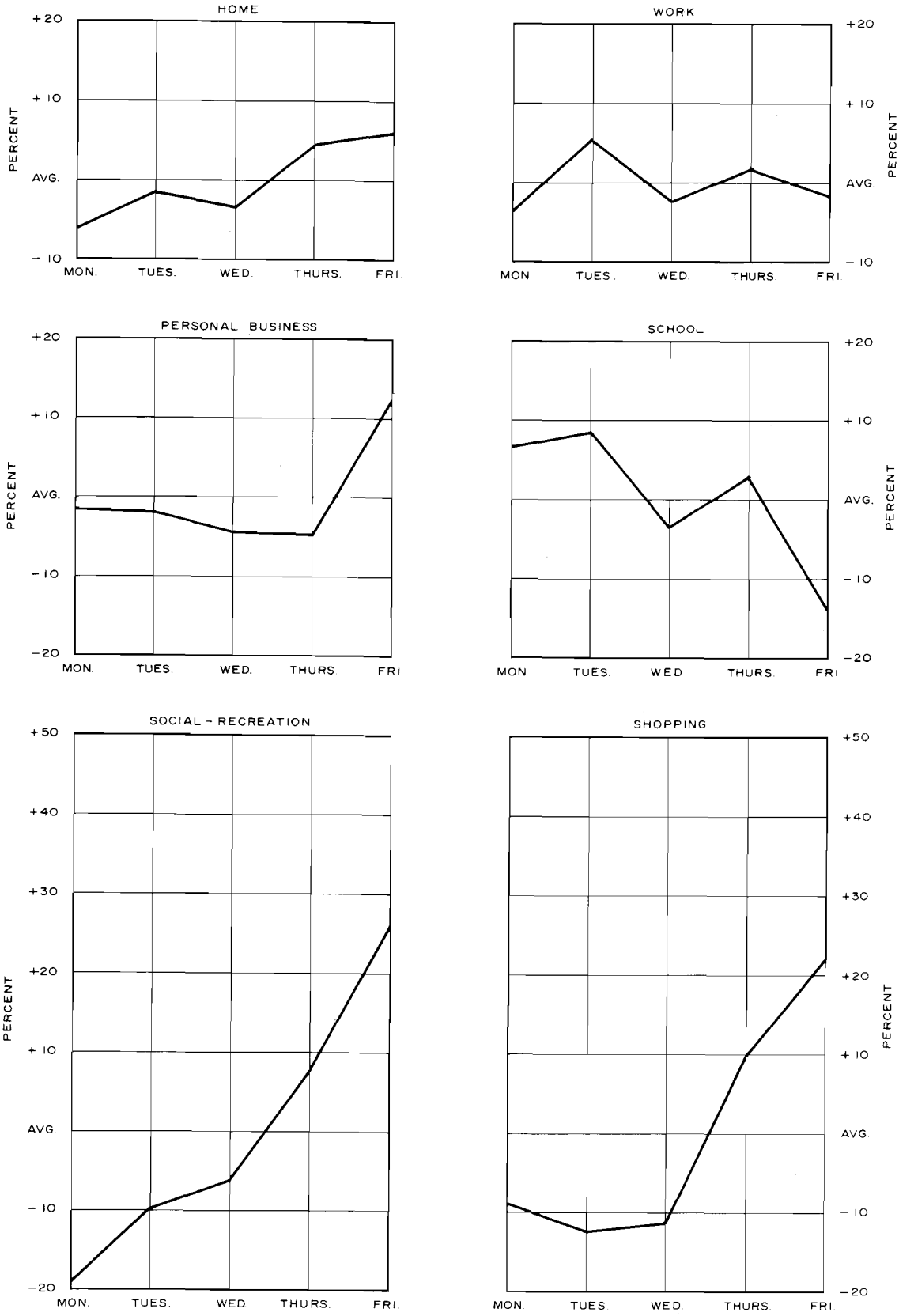
DISTRIBUTION OF AVERAGE WEEKDAY INTERNAL PERSON TRIPS IN THE REGION BY MODE OF TRAVEL: 1972

Mode of Travel	Person Trips 1972 Number	Person Trips 1972 Percent of Total
Auto Driver	2,897,000	64.3
Auto Passenger	1,227,400	27.2
Mass Transit	186,200	4.1
School Bus	173,800	3.9
Other	20,500	0.5
Total	4,504,900	100.0

Source: SEWRPC.

Figure 10

DAILY VARIATION OF AVERAGE WEEKDAY
INTERNAL PERSON TRIPS IN THE REGION
BY TRIP PURPOSE: 1972



Source: SEWRPC.

The patterns formed by the hourly distribution of travel by trip purpose in southeastern Wisconsin in 1972 are shown in Figure 11. The patterns show the relative inactivity of the early morning hours followed by a sharp peak centered around 7 A.M., as trips to work and school began. Trips for shopping, personal business, and social-recreation began during the later morning hours and continued fairly evenly until midafternoon. The afternoon peak period beginning at 3 P.M. was larger and more sustained than the morning peak, and was characterized predominantly by trips to return home. The sharp decline in person trip activity from the afternoon peak was slowed in the early evening hours, as trips for shopping and social-recreational purposes reached their maximum hourly volumes for the day.

The 1972 hourly distributional patterns of internal person trips by mode of travel are shown in Figure 12. The largest hourly volumes of 1972 auto driver, school bus, and mass transit passenger trips occurred during the morning and afternoon peak periods, while the largest hourly volumes for auto, truck, and taxi passengers combined occurred in the hour beginning at 7:00 P.M. Within each hour of the day, auto driver trips outnumbered trips by all other modes combined.

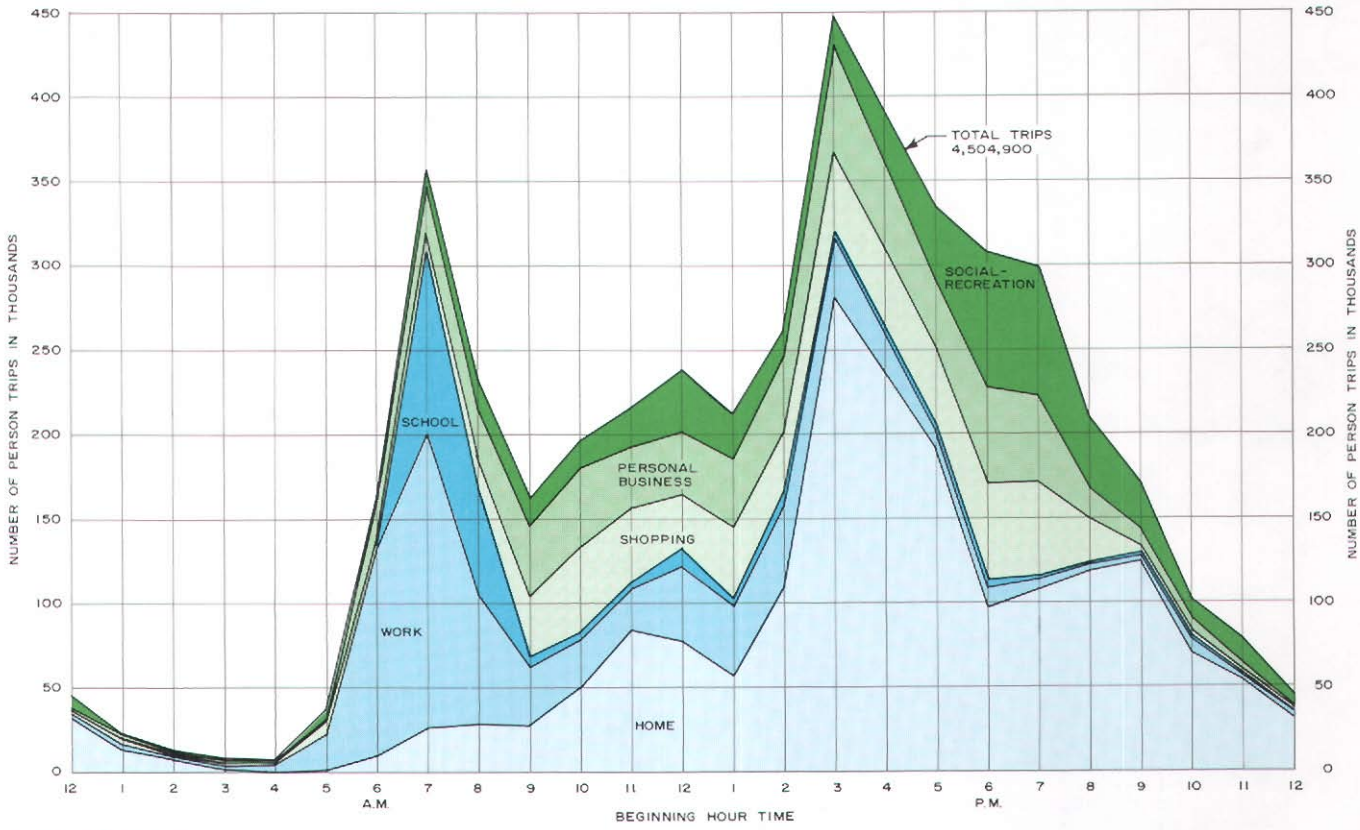
Location of Travel

The number of internal person trips per household on an average weekday varied widely by subarea of the Region in 1972, as shown on Map 13. The lowest rates of person trip production were found in the central areas of the larger cities and in certain portions of the rural areas, where the average number of trips per household was usually less than four. The highest rates were found in the suburban and rural urban fringe areas, where the number of trips per household averaged twelve or more.

The amount of travel attracted to subareas of the Region also varied widely within the Region in

Figure 11

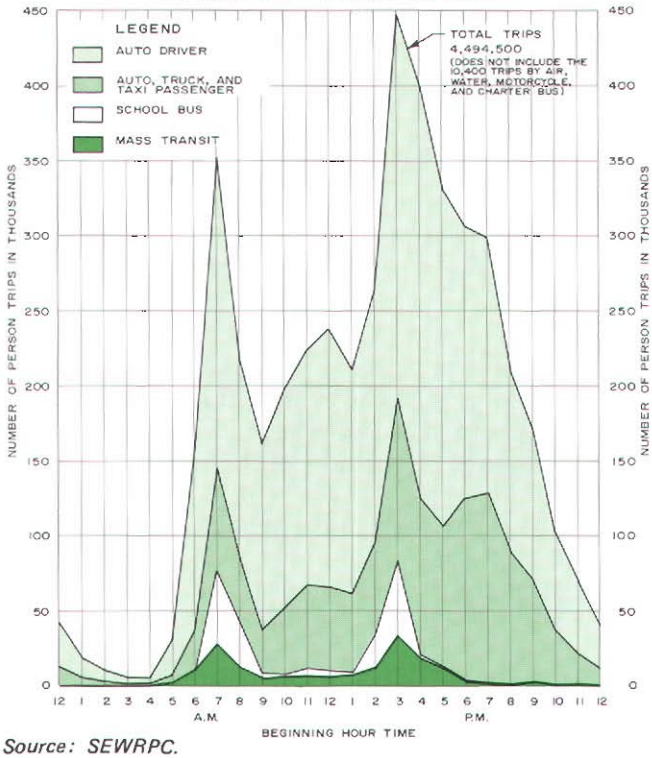
HOURLY VARIATION OF AVERAGE WEEKDAY INTERNAL PERSON TRIPS IN THE REGION BY TRIP PURPOSE AT DESTINATION: 1972



Source: SEWRPC.

Figure 12

HOURLY VARIATION OF AVERAGE WEEKDAY INTERNAL PERSON TRIPS IN THE REGION BY MODE OF TRAVEL: 1972



Source: SEWRPC.

1972. Map 14 shows the spatial distribution of internal person trip destinations within the Region on an average weekday in 1972. The highest concentrations of internal person trip destinations occurred in the intensely developed central business districts and major industrial and commercial areas of the larger cities in the Region. Significant concentrations of person trip destinations, however, also were found in many smaller communities.

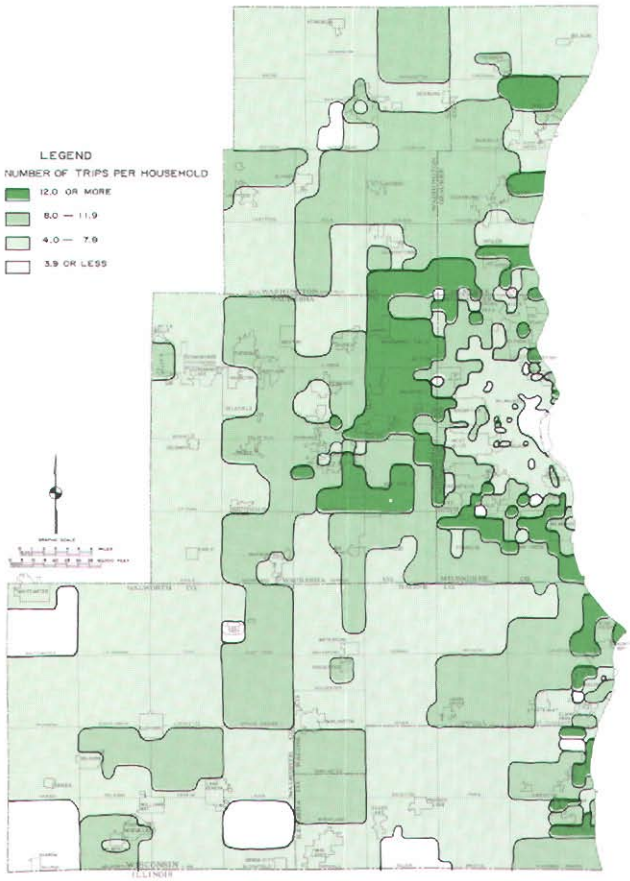
SUMMARY

Transportation planning can be conducted in a rational manner only when there is a basic understanding of existing transportation facilities and services and current travel habits and patterns. This chapter has documented the status and use of existing regional transportation facilities and services—the arterial street system and the mass transportation system—and travel behavior as last measured in the travel inventories conducted in 1972.

A number of the inventory findings discussed have particular significance for regional transportation system management planning. These include:

Map 13

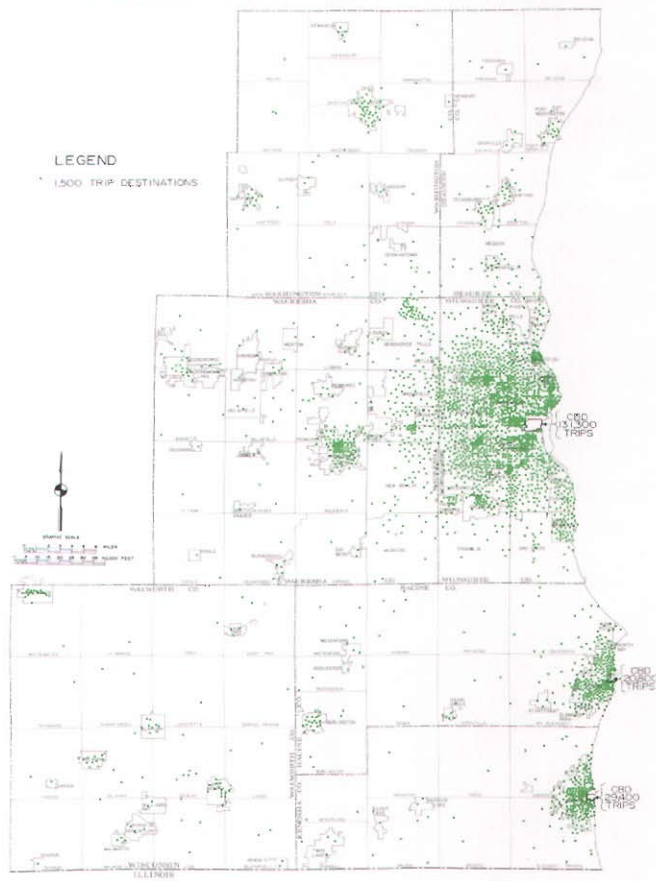
AVERAGE WEEKDAY INTERNAL PERSON TRIPS PER HOUSEHOLD IN THE REGION: 1972



Source: SEWRPC.

Map 14

AVERAGE WEEKDAY INTERNAL PERSON TRIP DESTINATIONS IN THE REGION: 1972



Source: SEWRPC.

- As of 1972, there were approximately 9,710 route miles of streets and highways of all types—arterials, collectors, and land access facilities—open to traffic within the Region, of which about 3,010 route miles, or 31 percent, were functioning as arterial streets and highways. Of the arterial mileage, about 195 miles, or less than 7 percent, consisted of freeways and expressways. From 1972 to 1976, the number of miles of freeways in the Region have increased 32 percent, from 173 miles to 228 miles.

- Approximately 20 million vehicle miles of travel were found to occur on the arterial street and highway system of the Region on an average weekday in 1972. Most of this arterial utilization occurred within the intensely urbanized areas of the Region, with Milwaukee County accounting for over 54 percent of the total vehicle miles of travel and exhibiting by far the most intensive use of the arterial system. Increased travel on the arterial system from 1972 to 1976 in Milwaukee County, particularly on freeway facilities, also was found.

- Approximately 318 miles, or about 10 percent of the total arterial street and highway system within the Region, were found to be operating either at or over design capacity in 1972. Most of the congested arterial streets and highways were located within the intensely urbanized areas of the Region.

- Intraregional tertiary, or local, mass transportation service within the Region was provided only in the Kenosha, Milwaukee, and Racine urbanized areas in 1976. Secondary and primary intraregional service was provided only in the Milwaukee urbanized area. The Milwaukee mass transit operation was by far the dominant operation, accounting for over 95 percent of the revenue passengers carried within the Region.

- On an average weekday in 1972, nearly 4.7 million person trips were made within the Region. Nearly all of these person trips, or more than 95 percent, were made by residents of the Region within the Region.

- The hourly distributional patterns of internal person trips indicated that approximately 32 percent of daily travel within the Region occurred in the two morning and two afternoon peak hours of the day in 1972. Of these peak hour movements, trips to and from work comprised 44 percent of the total in 1972. These findings indicate that one of the primary transportation problems within the Region is meeting the peak demand of the journey to and from work.

- Approximately 80 percent of total internal person trips within the Region on an average weekday in both 1963 and 1972 consisted of trips to or from place of residence. Trips to and from work accounted for 33 percent of all internal person trips made within the Region on an average weekday in 1972, and were second in importance of all trip purposes.

Chapter V

RECENT TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS IN SOUTHEASTERN WISCONSIN

INTRODUCTION

Throughout the Region, local public agencies with transportation systems management responsibilities have had a long history of implementing management actions intended to increase the "people moving" efficiency of the existing transportation system of the Region. Management actions encompass a wide variety of activities which include transportation system monitoring and evaluation as well as the planning, design, and implementation of projects, programs, and policies intended to make more efficient use of the automobile, mass transit, taxi, pedestrian, and bicycle elements of the transportation system as a whole.

This chapter presents a descriptive review of the types of transportation systems management actions that have been recently implemented in southeastern Wisconsin. In presenting a review of these actions, they have been grouped under four general categories: (1) actions to ensure the efficient use of existing road space; (2) actions to reduce vehicle use in congested areas; (3) actions to improve transit service; and (4) actions to increase internal transit management efficiency.

ACTIONS TO ENSURE THE EFFICIENT USE OF EXISTING ROAD SPACE

General Traffic Operations Improvements

To ensure the efficient use of existing road space, many traffic operations improvements have been made throughout the Region to better manage and control the flow of vehicles through congested intersections. These improvements have included: improved pavement marking, signing and lighting, addition of left-turn and right-turn lanes, improved intersection turning radii, channelization of traffic flow, installation of removal of traffic control devices, better signalization and progressive timing of traffic signals, elimination of parking, and use of one-way streets.

In addition to the many intersections in southeastern Wisconsin where one or more of the aforementioned types of improvements have been made, traffic flow through nearly all signalized intersections in the Region was generally improved in 1975 when a state law was changed to allow right turns on red and left turns on red from a one-way street on to a one-way street at all signalized intersections unless expressly prohibited.

Traffic Operations Improvements—City of Milwaukee

Through the Department of Public Works of the City of Milwaukee, approximately 1,500 traffic counts are taken annually. These include mass transit, pedestrian, bicycle, truck, and turning movement counts. These traffic counts are used to keep abreast of changing traffic patterns within the City. In addition, investigations resulting from approximately 1,000 traffic complaints and/or recommendations made annually by local elected officials, citizens, and technical staff personnel lead to identification of geometric design and traffic control deficiencies which limit the efficient use of the local arterial system. This information, along with ongoing accident surveillance, are used to make additions, modifications, or deletions in traffic control.

The following types of traffic operations improvements have been and are continuing to be implemented in the City of Milwaukee to correct identified deficiencies:

1. CHANNELIZATION OF TRAFFIC—Based on a 1971 TOPICS study,[1] the City of Milwaukee has since channelized and/or eliminated jogs at 15 intersections in the City. Traffic signal installations and/or modifications have also been made as warranted at these intersections.

2. ONE-WAY STREETS—One-way arterial streets have been created within and contiguous to the downtown Milwaukee central business district (CBD). One-way arterial streets also have been created to expedite traffic flow at freeway ramps.

[1] *See Traffic Operations Program to Increase Capacity and Safety (TOPICS): Study Report, prepared by the City of Milwaukee Bureau of Engineers and Bureau of Traffic Engineering and Electrical Services, March 1971.*

3. IMPROVED SIGNALIZATION AND PROGRESSIVE TIMING OF TRAFFIC SIGNALS—Retiming of traffic control signals is an ongoing Citywide program. Changes are directly related to measured changes in traffic patterns and volumes. Over 90 percent of the City of Milwaukee traffic signals are presently interconnected, with the remainder to be interconnected within the next few years. Each year traffic signal modifications are made at approximately 30 intersections. New traffic signals are installed at between six and 10 intersections per year with local funds, and traffic signals at approximately six intersections per year are removed from the signal system because changes in traffic patterns cause the intersections no longer to meet minimum criteria for signalization.

4. IDENTIFICATION AND SURVEILLANCE OF HIGH ACCIDENT FREQUENCY LOCATIONS—A program of high accident frequency location identification is an ongoing responsibility of the Bureau of Traffic Engineering. As of 1977, 770 high frequency accident locations have been identified and recommendations for corrective action have been made for 500 locations, and of those recommendations for corrective action, those for 400 locations have been implemented. This continuing accident identification and surveillance program also is used to determine locations warranting channelization and reconstruction.

5. PEAK HOUR PARKING RESTRICTIONS—Study and implementation of peak hour parking restrictions on major arterial streets to increase capacity has been an ongoing City of Milwaukee, Bureau of Traffic Engineering, program.

6. TURNING RESTRICTIONS—Fulltime and parttime turning restrictions into and off of major arterial streets have been implemented and are also being studied on a continuing basis.

7. OTHER TRAFFIC CONTROL IMPROVEMENTS—The Pleasant Street and Wisconsin Avenue bridges and their approaches crossing the Milwaukee River have recently been replaced. Both of these structures were identified in the 1970 City of Milwaukee TOPICS report as the cause of delays, congestion, and accidents. In addition, the reconstruction and/or resurfacing of roadway sections on approximately 20 arterials varying in length from one-eighth of a mile to one mile, including the modification of traffic control and street lighting facilities, have been completed or are presently being planned.

Traffic Operations Improvement—Milwaukee County

Milwaukee County has also utilized a variety of relatively low cost transportation system management actions to improve traffic operations. Among them have been improvements in:

1. PAVEMENT MARKING—The revised pavement marking standards identified in the 1972 edition of the Wisconsin Manual for Traffic Control Devices were put into effect on Milwaukee County trunk highways prior to the January 1, 1974, compliance date. Where warranted, Milwaukee County trunk highways are marked to promote the smooth and efficient flow of traffic.

2. COUNTY TRUNK HIGHWAY CONSTRUCTION AND RESURFACING AND INTERSECTION RECONSTRUCTION—In reconstructing intersections or reconstructing or resurfacing entire sections of the Milwaukee County trunk highway system, left-turn lanes, right-turn lanes, and other channelization devices are utilized, where appropriate, to maintain and improve operational efficiency. A total of 1.98 miles of county trunk highway and one major intersection were reconstructed in 1974; 1.74 miles and four major intersections in 1975; and 2.44 miles and three major intersections in 1976. The reconstruction of 0.82 mile of county trunk highway began in 1977 and is planned for completion in 1978. Also completed in 1977 were 2.5 miles of resurfacing and lane widening at two intersections. (A detailed listing of recent county trunk highway construction is included as Table 14).

3. SIGNALIZATION—Since 1973, 21 signalized intersections have been installed, rebuilt, or modified to the standards set forth in the Wisconsin Manual of Traffic Control Devices. Four signal installations were made in 1977. Also during 1977, flashing red beacons were installed at a problem intersection, with

Table 14

MILWAUKEE COUNTY HIGHWAY CONSTRUCTION, RESURFACING, AND LANE WIDENING PROJECTS: 1974-1977

Year	Construction
1974	Good Hope Road (CTH PP) N. 76th Street to N. 91st Street Two 40 foot FC to FC x 9 inch nonreinforced concrete pavements with 28 foot median. 1.04 miles N. 91st Street to N. 107th Street Same as N. 76th Street to N. 91st Street. 0.94 miles
1975	Oklahoma Avenue (CTH NN) S. 76th Street to S. 93rd Street Two 36 foot FC to FC x 9 foot nonreinforced concrete pavements with 24 foot median. 1.06 miles Beloit Road (CTH T) W. Oklahoma Avenue to S. 95th Street Two 33 foot FC to FC x 9 inch nonreinforced concrete pavements with 20 foot median. 0.49 miles S. 92nd Street (CTH N) W. Beloit Road to W. Oklahoma Avenue Two 34 foot FC to FC x 9 inch nonreinforced concrete pavements with 22 foot median. 0.20 miles
1976	Hampton Avenue (CTH EE) N. 92nd Street to N. Lovers Lane Road Two 33 foot FC to FC x 9 inch nonreinforced concrete pavements with 20 foot median. 1.20 miles Mill Road (CTH S) N. 64th Street to N. 77th Street Two 33 foot FC to FC x 9 inch nonreinforced concrete pavements with 22 foot median. 0.85 miles Beloit Road (CTH T) S. 95th Street to S. 100th Street Two 33 foot FC to FC x 9 inch nonreinforced concrete pavements with 20 foot median. 0.39 miles
1977	Mill Road (CTH S) N. 43rd Street to N. 56th Street Two 33 foot FC to FC x 9 inch nonreinforced concrete pavements with 22 foot median. 0.82 miles

Year	Resurfacing
1977	N. 107th Street Brown Deer Road-N. County Line 0.9 miles E. Layton Avenue Railroad west of Pennsylvania-Barland Avenue. 0.6 miles W. College Avenue S. 13th Street to Howell Avenue 0.6 miles E. College Avenue S. 14th Street to S. 11th Street 0.4 miles

Year	Lane Widening at Intersections
1977	Port Washington Road at Calumet Road N/A Layton Avenue at Whitnall Avenue N/A

NOTE: FC indicates Face of Curb.
N/A indicates data not available.

Source: Milwaukee County Department of Public Works, Division of Transportation.

plans to construct left-turn lanes during 1978, and two signalized intersections were modified with the addition of left-turn arrows, 12-inch signal faces, and mast arms. (A detailed listing of recent signalization projects is included as Table 15.) Approximately 4.5 miles of signal interconnect have been installed in four separate signal systems—three connecting with the City of Milwaukee signals and one with Wisconsin Department of Transportation, Division of Highways signals—providing for better signal timing and progression.

4. PARKING RESTRICTIONS—Where continuing study indicates that vehicles parked

Table 15

MAJOR MILWAUKEE COUNTY TRUNK HIGHWAY INTERSECTION SIGNALIZATION PROJECTS FALL 1973-SPRING 1977

Year	Location of Project
1973	W. Silver Spring Drive (CTH E) and N. 124th Street
1973	N. Port Washington Road (CTH W) and W. Bradley Road
1974	E. College Avenue (CTH ZZ) and S. Pennsylvania Avenue
1974	E. College Avenue (CTH ZZ) and S. Barland Road
1974	W. Good Hope Road (CTH PP) and N. 91st Street (CTH F)
1974	W. Wisconsin Avenue and Pleasant View Road
1976	W. Oklahoma Avenue (CTH NN) and W. Beloit Road (CTH T)
1976	S. 92nd Street (CTH N) and W. Beloit Road (CTH T)
1976	S. 92nd Street (CTH N) and W. Oklahoma Avenue (CTH NN)
1976	W. Oklahoma Avenue (CTH NN) and S. 84th Street
1976	E. Layton Avenue (CTH Y) and S. Pennsylvania Avenue
1976	E. Layton Avenue (CTH Y) and S. Whitnall Avenue
1976	E. Layton Avenue (CTH Y) and S. Barland Road
1976	E. Layton Avenue (CTH Y) and S. Packard Avenue
1976	W. Hampton Avenue (CTH EE) and N. 107th Street
1976	W. Hampton Avenue (CTH EE) and N. 103rd Street
1976	W. Mill Road (CTH S) and N. 64th Steet
1976	W. Watertown Plank Road and Curative Road
1977	N. Port Washington Road (CTH W) and W. Calumet Road
1977	E. Layton Avenue (CTH Y) and S. Pine Avenue
1977	N. Port Washington Road (CTH W) and Dean Road
1977	S. 76th Street (CTH U) and Parkview Road

Source: Milwaukee County Department of Public Works, Division of Transportation.

on roads under the County's jurisdiction hinder the safe and efficient movement of traffic, parking is prohibited or restricted to facilitate traffic movement.

5. ISSUING CONSTRUCTION PERMITS—During 1976, a policy was established to review applications for permits to perform work in county trunk highway rights-of-way. The purpose of this policy was to guarantee safe and efficient control of traffic in and near construction areas in accordance with the Wisconsin Manual for Traffic Control Devices. Requests for permits for work along bus routes are given special attention.

6. TRAFFIC ENGINEERING—Milwaukee County conducts an ongoing program of traffic engineering studies. This program includes: a continuous traffic counting program on county trunk highways; preparation of an annual accident spot map on county trunk highways; design and implementation of signing and pavement marking improvements at problem areas on the county trunk highway system; preparation of collision diagrams at problem intersections to identify deficiencies and assist in designing improvements; an annual program to estimate vehicle mileage traveled on the freeway system; and speed limit studies on sections of the county trunk system. In addition, spot studies are undertaken at problem locations identified by citizens, elected officials, or through analysis of accident records.

Traffic Operations Improvements by Other Agencies

At least two other significant traffic operations improvements—one in the Milwaukee urbanized area and the other in the Racine urbanized area—also have been implemented to better manage and control the flow of vehicles.

1. RAMP METERING—In the Milwaukee urbanized area, during the period from 1969 through 1977, traffic signal ramp meters by the Wisconsin Department of Transportation have been installed at 11 freeway on-ramps to IH 94 and nine on-ramps to IH 43, as indicated in Table 16. The ramp meter signals operate on pre-set signal intervals, which vary by time of day and are designed to break up groups or platoons of vehicles which otherwise might attempt to enter the freeway via one ramp and poten-

Table 16

LOCATION OF RAMP-METERING SIGNALS ON FREEWAYS IN MILWAUKEE COUNTY

Freeway Interchange	Ramp
IH 94 and N. 7th and W. Clybourn Streets	Westbound on-ramp
IH 94 and N. 13th Street	Westbound on-ramp
IH 94 and N. 17th Street	Westbound on-ramp
IH 94 and N. 28th Street	Westbound on-ramp
IH 94 and N. Hawley Road	Westbound on-ramp
IH 94 and N. 70th Street	Westbound on-ramp
IH 94 and N. 84th Street	Westbound on-ramp
IH 94 and N. 35th Street	Eastbound on-ramp
IH 94 and N. Hawley Road	Eastbound on-ramp
IH 94 and N. 68th Street	Eastbound on-ramp
IH 94 and N. 84th Street	Eastbound on-ramp
IH 43 and N. 9th and W. Albert Streets	Southbound on-ramp
IH 43 and W. Keefe Avenue	Southbound on-ramp
IH 43 and W. Locust Street	Southbound on-ramp
IH 43 and W. North Avenue	Southbound on-ramp
IH 43 and W. Hampton Avenue	Southbound on-ramp
IH 43 and W. North Avenue	Northbound on-ramp
IH 43 and W. Locust Street	Northbound on-ramp
IH 43 and W. Holt Avenue	Northbound on-ramp
IH 43 and W. Howard Avenue	Northbound on-ramp

Source: Wisconsin Department of Transportation, Division of Highways.

tially cause backups and spot congestion on the freeway main line.

2. RACINE TRAFFIC CONTROL SYSTEM—In the Racine urbanized area, the City of Racine recently received a Federal Highway Administration demonstration grant to install a citywide centrally controlled traffic signal system. The city is in the initial stages of implementing this system.

Preferential Treatment for Transit Vehicles

Preferential treatment for local transit buses has been provided in the Milwaukee, Racine, and Kenosha urbanized areas through special signing of a number of intersections that exempt buses from posted turning restrictions. In the Milwaukee urbanized area an exclusive bus ramp has been constructed at the 13th and Clybourn Street entrance ramp to the westbound lane of IH 94. This ramp allows buses to enter the East-West Freeway at this heavily-used entrance ramp by bypassing waiting vehicles at the ramp-metering signal during peak periods of congestion. Similar exclusive bus access ramps have also been incorporated in the construction of park-ride lots at the interchanges of College Avenue and IH 94 and Watertown Plank Road and USH 45. Also, the northbound on-ramp to IH 43 at N. 7th Street and W. North Avenue has had a lane designed for preferential bus access through special signing and pavement marking.

W. Wisconsin Avenue in the central business district presently carries 14 regular mass transit routes and nine freeway flyer routes resulting in 105 buses using the street during the morning peak hour and 115 buses during the evening peak hour. All stops within this section of W. Wisconsin Avenue are midblock. The extreme right lane of Wisconsin Avenue, especially during the peak hours, is used by buses and right-turning vehicles. The large number of moving and loading buses in this lane results in essentially a bus-only lane without any need for specific legislation or the posting of signs. A draft downtown transportation center study recently completed by Milwaukee County calls for the ultimate conversion of at least part of Wisconsin Avenue in the downtown area into a transit and pedestrian mall.

In addition, preferential signal timing sequence and special traffic control equipment has and is being installed where feasible for mass transit regular or detour routes.

Provisions for Pedestrians and Bicycles

Special provisions have been made, especially in urban areas throughout the Region, for pedestrian and bicycle traffic. Actions which have recently been widely implemented include: (1) installation of bicycle racks and other bicycle storage facilities; (2) construction of bicycle paths and pedestrian walkways; (3) improved signing and signalization at school and pedestrian crossings; and (4) construction of intersection curb cuts for the handicapped.

Certain other actions to aid pedestrians and bicyclists have been taken by individual communities. A semipedestrian mall has been constructed within the Mitchell Street shopping district in the City of Milwaukee and a full pedestrian mall has been constructed in the downtown area of the City of Kenosha.

Southport Mall: In creating Southport Mall in the downtown area of the City of Kenosha, three blocks of 6th Avenue were completely closed to north-south vehicular traffic. Two intersections, 57th and 58th streets, which allow vehicular traffic to cross through the mall in an east-west direction, were specially signalized to discourage through traffic and favor the pedestrian. This was done

by installing traffic-activated signals which always return to and dwell on the pedestrian "walk" indication when a vehicle is not present. No buttons have to be pushed by the pedestrian to get a "walk" indication. At these two intersections, the flow of pedestrian traffic is primary and vehicular traffic is secondary.

The development of Southport Mall was completed in 1975. The total cost of constructing the mall was $469,000. Funding for this project was entirely from local sources. The City of Kenosha contributed $132,000, and the remaining $337,000 was obtained through a special assessment of the downtown merchants in the area. The new downtown Kenosha pedestrian mall includes: attractive landscaping, a bus comfort station and waiting rooms, a bus shelter, new sodium vapor lighting, benches, bicycle racks, a fountain, and exposed aggregate paved walkways for pedestrians.

In conjunction with the development of Southport Mall the following additional noncapital intensive improvements were also made in the immediate area: (1) construction of off-street parking lots; (2) designation of 56th Street and 6th Avenue "A" as one-way streets; (3) widening of 8th Avenue between 57th and 58th Streets; (4) elimination of angle parking along the west side of 8th Avenue, substituting parallel parking; (5) removal of traffic signals at the intersection of 6th Avenue and 59th Street (the one-way street designations now require only stop sign traffic control); (6) removal of all stop signs at the intersection of 7th Avenue and 59th Place (the one-way street designation eliminated any potential "points of conflict," thus removing the need for stop signs); and (7) upgrading and replacement of the fluorecent street lighting with sodium vapor lighting (this improvement was made throughout both the uptown and downtown business district).

Bicycles: In the City of Milwaukee, bicycle counts are taken in conjunction with all manual traffic counts throughout the City. These counts, along with bicycle accident data, are used to determine the need for bicycle facilities on the local street system.

Bicycle routes have been established within the UWM area and connecting the UWM campus with the City's Central Business District. In addition, the Milwaukee County Park System maintains 76 miles of marked bicycle way of which 25 miles are on exclusive bicycle paths, 23 miles on park drives, and the remainder are on local streets. While primarily targeted to recreation users, segments of the bikeway system (notably along the old Chicago and North Western Railroad right-of-way) facilitate through bicycle travel for other than recreational purposes.

Public bicycle racks have also been installed at a number of City of Milwaukee public buildings. All catch basin covers in the streets of the City of St. Francis in the Milwaukee urbanized area have been turned perpendicular to the curb to prevent bicycle wheels from getting caught between the grates.

Pedestrian Protection: Throughout Milwaukee County special signals, pavement markings, and signing near schools and other pedestrian generators have been installed for pedestrian protection. These installations as indicated in Table 17 are generally done in response to either citizen/public official requests or problems detected by accident analyses.

Management and Control of Parking

Recent actions to manage and control parking which have been widely implemented in urban areas throughout the Region include: (1) elimination of on-street parking during peak periods of travel demand (where warranted); (2) construction of off-street parking lots; (3) posting of parking

TAble 17

RECENT PEDESTRIAN PROTECTION PROJECTS IN MILWAUKEE COUNTY TRUNK HIGHWAYS

Year	Location of Project
1974-1977	N. Port Washington Road (CTH W) and W. Dean Road
1973	W. Silver Spring Drive (CTH E) and N. 76th Street
1973	W. Good Hope Road (CTH PP) and N. 43rd Street
1975	S. 76th Street (CTH U), north of W. High Street
1977	N. Port Washington Road (CTH W) and W. Calumet Road
1977	S. 76th Street (CTH U) and Parkview Road
1977	N. Port Washington Road (CTH W) and W. Green Tree Road

Source: Milwaukee County Department of Public Works, Division of Transportation.

restrictions/meters both on and off street to favor short-term and discourage long-term parking; and (4) strict enforcement of parking restrictions, including the posting of tow-away zones.

In addition to these widely implemented parking management and control measures, certain others have been recently implemented to ensure the efficient use of existing road space in the Milwaukee urbanized area. Fringe parking lots for carpoolers and transit riders have been constructed at 11 locations, as indicated in Table 18.

In several areas of the City of Milwaukee, exclusive of the central business district, traffic generators such as universities, hospitals, and industrial sites have contributed to severe local traffic congestion and heavy parking demand.

Residential area traffic management plans have been implemented and others are being studied for possible implementation to eliminate unnecessary through traffic. These traffic management plans include one-way streets, dead-ending or cul-de-sacing streets, and installing traffic diverters at intersections to discourage the infiltration of arterial traffic onto local streets. These projects are being implemented with both federal and local funding. Recently, five areas have been the target of such plans:

1. Midtown.
2. Kilbourntown.
3. East Side Area bounded by N. Holton Street, N. Humboldt Avenue, E. Meinecke Avenue and E. Locust Street.
4. A. O. Smith Area bounded by W. Hopkins Street, N. 27th Street, and W. Capitol Drive.
5. UWM Area bounded by N. Maryland Avenue, N. Downer Avenue, Kenwood Boulevard, and E. Locust Street.

Minimum all-day parking rates in the City of Milwaukee-owned off-street parking facilities are set to ensure the availability of space to short-term parkers. The location and charges of all City-owned parking facilities are also regulated by the City of Milwaukee. Hourly restrictions are imposed along all on-street locations either by sign or meter in areas of heavy parking demand to promote turnover and discourage all-day commuter parking.

Table 18

FRINGE PARKING LOTS SERVING THE MILWAUKEE URBANIZED AREA

Parking Lot Location
IH 43 and W. Silver Spring Drive
IH 43 and W. Brown Deer Road
IH 94 and W. College Avenue
USH 45 and W. Watertown Plank Road
STH 67 and Delafield Road
IH 94 and USH 18 (Goerke's Corners)
STH 57 at the Ozaukee County branch of the Milwaukee Area Technical College
IH 43 and STH 57 (carpool lot)
STH 15 and CTH F (carpool lot)
STH 15 and CTH Y (carpool lot)
STH 164 and IH 94 (carpool lot)

Source: SEWRPC.

A significant effort is also being made by the City of Milwaukee to reduce long-term commuter parking in residential areas adjacent to major traffic generators. A local ordinance was adopted in 1975 which allows residents to park without being ticketed for not complying with the posted parking restrictions. With this new ordinance and at the request of residents living in commuter parking impacted areas adjacent to major traffic generators, the City has posted these impacted areas with restricted parking limits to discourage long-term commuter parking in residential areas.

The largest continuing effort by the City of Milwaukee to reduce long-term commuter parking in a residential area adjacent to a major traffic generator is in an approximately 144-square-block residential area adjacent to the University of Wisconsin-Milwaukee (UWM). The strategy being used is to greatly reduce the available number of all-day parking spaces in the neighborhoods surrounding UWM. This is being accomplished by restricting on-street parking in the commuter impacted residential areas to short-term use or eliminating it altogether.

To reduce the impact of these widespread parking changes on University commuters, two satellite parking facilities have been made available with shuttle bus service to the campus. In addition eight new or modified public bus routes (this "UBUS" service is discussed in detail later in this chapter)

were created to provide direct (no transfer) bus service to UWM. The current one-way fare of $0.35 for this service also is subsidized by the University to encourage transit use. Five of the routes have parking available at points along the route for park-and-ride commuting to the campus.

Work Schedule Changes

Either staggered or flexible work hours have been put into effect for both public and private employees in specific areas of several communities where traffic and transit congestion has been caused by large numbers of employees starting and quitting work at the same time. The most prevalent use of changing work schedules to reduce traffic congestion has been in the Milwaukee urbanized area. Six communities including the Village of Bayside and the Cities of Oak Creek, Wauwatosa, South Milwaukee, West Allis, and Milwaukee have implemented changes in work schedules. In the City of Milwaukee specifically, four major employers—the City, the County, the State, and Northwestern Mutual Life Insurance Company—all of which are located in the downtown central business district, have implemented changes in their employees' work schedules to reduce traffic congestion.

ACTIONS TO REDUCE VEHICLE USE IN CONGESTED AREAS

Encouragement of Carpools

The Milwaukee Metropolitan Area Carpooling Program (MMAC) was developed to reduce vehicle use in the Milwaukee urbanized area. The program began on April 29, 1975, as a 12-month $300,000 federally funded demonstration project. Of the total project costs, $270,000 (90 percent) was provided by the Federal Highway Administration and $30,000 (10 percent) was provided by Milwaukee County. The funds were used not only to develop, implement, and extensively promote the carpool program but also to conduct a project evaluation study to determine its success. The findings of this study indicated that during this brief demonstration period the following dramatic results were achieved:[2]

1. 35,086 (7 percent) of the total employed persons in the four-county Milwaukee Metropolitan area began carpooling during the demonstration period.
2. 15,424 new carpools were formed, resulting in an annual reduction of 47,557,440 vehicle miles of travel. These new carpools accounted for 40 percent of the total estimated number of carpools in existence at the end of the program year.
3. 11,094 vehicles were removed from the road because of these new carpools. This number of vehicles represents 43 percent of the total vehicle reduction attributable to all carpools during the program year.
4. Assuming an average of 13 miles per gallon, the decrease in vehicle miles of travel resulted in a saving of 15,243 gallons of fuel per day; 76,215 gallons per week; or 3,658,320 gallons per year. Assuming an average per gallon cost of $0.55, this resulted in an annual savings of $2,012,160.
5. The total expenditure for the MMACP was approximately $230,000 which, if divided into the annual savings of $2,012,160, yielded a benefit-cost ratio of 9 to 1 for the program.

ACTIONS TO IMPROVE TRANSIT SERVICE

The Kenosha Parking-Transit Commission

On February 12, 1971, privately owned and operated bus service, which had been available in the Kenosha urbanized area since 1903, was discontinued. This action came after years of steady declines in ridership and revenues and increasing operating deficits. Less than four months later, in May 1971, the Kenosha Common Council created a seven-member Parking-Transit Commission as the policymaking body for a city-owned bus system. Following the acquisition of necessary capital equipment from Pathfinder City Transit Lines, the previous private operator, the receipt of federal emergency employment assistance funds, and the official transfer of the common carrier certificate, the City of Kenosha, on September 7, 1971, began City-owned and operated local bus service. This marked the beginning of a number of significant actions taken by the City not only to restore but to improve transit service in the area.

Starting with 10 leased buses in 1971, the City immediately restored bus service on the five routes which had previously been served by the private operator. Although initial levels of service on these five routes were comparable to the private operator's, the fares were reduced from a high of

[2] *See SEWRPC Technical Report No. 20, Carpooling in the Metropolitan Milwaukee Area, March 1977.*

$0.40 per ride in 1969 to $0.25 per ride and one free transfer.

By 1974—following completion of the first of two five-year transit development program (TDP) reports in October 1973[3]—the City applied for and received a federal capital assistance grant from the Urban Mass Transportation Administration (UMTA) of approximately $2.0 million. These funds were used to purchase:

1. 24 new 45-passenger air conditioned diesel transit buses;
2. 1 supervisory vehicle;
3. 24 electric locked-type registering fare boxes;
4. 26 two-way radios;
5. a spare diesel engine, maintenance tools, and related equipment;
6. an automatic bus washer and the installation of a water main;
7. an automatic vacuum cleaning system (including installation);
8. 550 bus stop signs (including installation); and
9. a bus-storage garage and maintenance facility (including design and construction).

In addition to these recent capital acquisitions, the City of Kenosha has taken a more aggressive attitude toward marketing and promoting mass transit in the City. A $1,000 marketing budget in 1974 was increased to an average of $5,400 per year from 1975 through 1977. These funds have been used for radio and newspaper promotional campaigns, and the printing of bus schedules and route maps. Telephone information service also is available through the Kenosha Transit Commission office Monday through Friday, between the hours of 8:00 A.M. and 5:00 P.M.

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[3]*See Interim Kenosha Transit Development Program, Kenosha Parking-Transit Commission and SEWRPC Community Assistance Planning Report No. 7, Kenosha Area Transit Development Program: 1976-1980.*

At the present time, the Kenosha Transit Commission operates five city bus routes. Bus service is provided on these routes from 6:00 A.M. to 8:00 P.M. Monday through Thursday and on Saturday, and from 6:00 A.M. to 9:00 P.M. Fridays. Buses on all five routes operate on 60-minute headways, except for weekday peak hours from 6:00 A.M. to 8:00 A.M. and 3:00 P.M. to 5:00 P.M., when headways are reduced to 30 minutes.

Special efforts have also been made to provide improved public transportation services for the elderly and handicapped. Elderly and handicapped people with a picture identification card issued by the Kenosha Transit Commission can ride the public bus system at a $0.10 fare weekdays (except between the hours of 6:00-8:00 A.M. and 2:30-5:00 P.M.) and all day Saturdays. This elderly and handicapped half-fare program has been in effect since July 1975. To date, an estimated 4,500 elderly and handicapped identification cards have been issued. A total of 100,414 trips were made on the public bus system by elderly and handicapped people in 1976. In addition, the alignments of several bus routes have been changed to provide more direct service to concentrations of trip origins and destinations of elderly and handicapped people, bus shelters are being provided at major boarding locations, and an outreach effort has been made to elderly and handicapped people to acquaint them with available public transportation services.

The Kenosha Transit Commission also is cooperating with the Kenosha Achievement Center in a program of instructing mentally and physically handicapped people who come to the Achievement Center for sheltered employment and vocational rehabilitation on how to use the public bus system. About 20 persons are currently participating in this program and even though they must travel to the Achievement Center during the bus system's peak hours of service, they are allowed to ride at the reduced $0.10 fare.

The actions taken by the City of Kenosha to restore and improve transit service in the community have reversed the historic trend of continual declines in transit ridership. Each year since the Kenosha Transit Commission assumed operation of the local bus system in 1971, there has been an increase in the number of revenue passengers carried on the bus system. Table 19 shows the trends in ridership, total vehicle miles, and hours of public bus service in Kenosha since 1955.

Table 19

MASS TRANSIT REVENUE PASSENGERS, VEHICLE MILES, AND VEHICLE HOURS IN THE KENOSHA URBAN PLANNING DISTRICT BY YEAR: 1955-1977

Company	Year	Revenue Passengers	Vehicle Miles	Vehicle Hours
Kenosha Motor Coach	1955	3,611,172	882,222	83,358
Kenosha Motor Coach	1956	3,116,863	854,063	80,947
Kenosha Motor Coach	1957	2,597,727	821,786	76,974
Kenosha Motor Coach	1958	2,295,930	780,633	73,710
Kenosha Motor Coach	1959	2,340,322	760,379	71,576
Kenosha Motor Coach	1960	2,077,064	770,055	72,027
Kenosha Motor Coach	1961	2,077,064	766,286	71,561
Kenosha Motor Coach[a]	1962	1,978,135	776,948	72,480
Lakeshore Transit, Inc.	1963	1,884,416	764,158	70,775
Lakeshore Transit, Inc.	1964	1,834,120	707,152	64,134
Lakeshore Transit, Inc.	1965	1,749,836	657,267	58,196
Lakeshore Transit, Inc.	1966	1,586,755	615,742	55,818
Lakeshore Transit, Inc.	1967	1,527,553	610,963	55,122
Lakeshore Transit, Inc.	1968	1,055,509	424,415	40,901
Pathfinder City Transit Lines[b]	1969	175,771	146,607	12,798
Pathfinder City Transit Lines	1970	472,839	381,466	28,725
Kenosha Parking-Transit Commission[c]	1971	187,545	155,525	14,348
Kenosha Parking-Transit Commission	1972	503,170	309,870	32,272
Kenosha Parking-Transit Commission	1973	572,771	319,590	29,496
Kenosha Parking-Transit Commission	1974	687,871	335,044	30,921
Kenosha Parking-Transit Commission	1975	766,767	441,665	31,110
Kenosha Parking-Transit Commission	1976	973,391	591,165	N/A[e]
Kenosha Parking-Transit Commission	1977[d]	1,000,000	590,000	50,000

[a] *Lakeshore Transit, Inc., assumed operations on October 8, 1963. Totals for both are included in the 1962 figures.*

[b] *Pathfinder City Transit Lines assumed operations on August 4, 1969. Figures for Lakeshore Transit, Inc., for 1969 were not available.*

[c] *Kenosha Parking-Transit Commission assumed operations on September 7, 1971. Totals for both are included in the 1971 figures.*

[d] *1977 figures are estimates.*

[e] *N/A indicates data not available.*

Source: Wisconsin Public Service Commission and SEWRPC.

The Belle Urban System

Action to improve transit service in the Racine urbanized area began on August 7, 1973. On that date, after less than a year of subsidizing the privately owned Flash City Transit Company, the Common Council of the City of Racine adopted a resolution calling for a study to prepare a transit development program (TDP).[4] This study was to be the basis for future actions by the City regarding continued and improved transit service to the

[4] *See SEWRPC Community Assistance Planning Report No. 3, Racine Area Transit Development Program.*

community. As such, the study was to address: the need for transit service; future service levels, operating policies, ownership and management; and the capital improvements required to maintain and improve transit service within the Racine urbanized area. For approximately one year while the TDP was being completed, the City continued to subsidize the operating deficits of the private transit operator.

After completing and adopting the Racine transit development program in June 1974, a number of significant actions were taken by the City to improve transit service. The City purchased the bus system from the Flash City Transit System and retained a private management firm, Taylor Enterprises, Inc., to operate the bus system. A new City employee also was hired to perform the liaison function between the City and the management firm.

A completely new route system was initiated. The previous 10-route system with each route radiating outward from a downtown central business district transfer point, was replaced by a nine-route cross-town system, eliminating the large one-day loops of the old system. Total system route miles were increased from the previous 85 to over 120 route miles and service was extended beyond the Racine City limits to the Town of Caledonia and the University of Wisconsin-Parkside campus.

Hours of bus service operation were increased to from 5:30 A.M. to 7:00 P.M. Monday through Friday and 7:00 A.M. to 6:00 P.M. on Saturdays and bus headways were reduced from 40 minutes to a maximum of 30 minutes. Transit fares also were reduced from an adult fare of $0.40 per ride and $0.10 extra for a transfer to a flat $0.25 per ride for persons over five years of age with free transfers issued upon payment of the fare and good for one hour.

In 1975 the City of Racine applied for and received a federal capital assistance grant from UMTA for approximately $2.3 million. These funds were used to purchase:

1. 25 new 45-passenger, air conditioned diesel transit buses;
2. 29 registering lock-vault fare boxes;
3. 26 two-way mobile radios;
4. 1 radio base unit;
5. 1 supervisory vehicle;
6. a bus garage storage facility (including design and construction);
7. 935 bus stop signs (including installation); and
8. maintenance equipment and parts.

A second federal capital assistance grant from UMTA for approximately $120,000 to purchase 20 bus passenger waiting shelters was applied for and received in 1976. These bus shelters are currently in order.

Immediately after acquiring the transit system in 1975, the City of Racine hired Palmquist Creative Services, a public relations firm to develop a transit marketing program. To improve the image of transit and encourage its use, the firm has since designed: a transit system logo and name—The Bus (Belle Urban System); an attractive new color scheme for the buses, and new bus schedules and route maps. The firm has also prepared transit advertisements for use on the radio and in local newspapers. An average of approximately $8,000 per year has been budgeted for transit marketing since 1975 when the City purchased the bus system.

The actions taken by the City of Racine to restore and improve transit service in the community have reversed the historic trend of continued declines in transit ridership. Each year since the City of Racine assumed ownership of the local bus system in 1975, there has been an increase in the number of annual revenue passengers carried on the bus system. Table 20 shows the trends in ridership, total vehicle miles, and hours for public bus service in Racine since 1955.

Special efforts have also been made to provide improved public transportation services for elderly and handicapped people. A half-fare program of $0.10 per ride for elderly and handicapped people has been in effect weekdays (except between the peak hours of 6:00-9:00 A.M. and 3:00-6:00 P.M.) and all day Saturdays since October 1, 1975. Approximately 2,700 elderly and 200 handicapped identification cards have been issued to date.

In addition to the elderly and handicapped half-fare program on the public bus system, the City of Racine participates along with a number of other public agencies in what they believe to be the most effective and coordinated nonrestrictive agency

Table 20

RACINE URBAN MASS TRANSIT REVENUE PASSENGERS, VEHICLE MILES, AND HOURS: 1955-1977

Company	Year	Revenue Passengers	Vehicle Miles	Vehicle Hours
Racine Motor Coach Lines	1955	5,042,766	1,293,599	123,884
Racine Motor Coach Lines	1956	4,859,396	1,213,297	119,529
Racine Motor Coach Lines	1957	4,216,861	1,197,411	113,729
Racine Motor Coach Lines	1958	3,742,134	1,172,041	109,878
Racine Motor Coach Lines	1959	3,834,700	1,176,298	110,461
Racine Motor Coach Lines	1960	3,744,495	1,166,414	109,549
Racine Motor Coach Lines	1961	3,370,481	1,113,398	105,100
Racine Motor Coach Lines[a]	1962	3,356,809	1,150,452	106,191
Lakeshore Transit Company, Inc.	1963	2,901,986	1,099,783	95,931
Lakeshore Transit Company, Inc.	1964	2,568,126	1,023,758	85,988
Lakeshore Transit Company, Inc.	1965	2,535,138	971,953	82,863
Lakeshore Transit Company, Inc.	1966	2,470,766	943,553	79,632
Lakeshore Transit Company, Inc.	1967	2,169,883	914,553	N/A[b]
Flash City Transit Company[c]	1968	1,281,820	650,550	54,102
Flash City Transit Company	1969	824,985	559,650	45,210
Flash City Transit Company	1970	686,513	530,250	42,375
Flash City Transit Company	1971	657,973	536,522	43,815
Flash City Transit Company	1972	525,681	461,644	35,580
Flash City Transit Company	1973	530,477	416,835	37,260
Flash City Transit Company	1974	649,700	N/A[b]	N/A[b]
The Belle Urban System[d]	1975	631,903	428,891	36,995
The Belle Urban System	1976	1,003,459	731,400	68,597
The Belle Urban System	1977[e]	1,450,000	1,000,000	80,000

[a] *Lakeshore Transit Company, Inc. took over operations October 19, 1962.*

[b] *N/A indicates data not available.*

[c] *Flash City Transit Company took over operations June 10, 1968.*

[d] *The Belle Urban System took over operations on July 1, 1975.*

[e] *1977 figures are estimates.*

Source: Wisconsin Public Service Commission and SEWRPC.

transportation program for elderly and handicapped persons in the State of Wisconsin. Lincoln Lutheran Specialized Transportation is the central coordinator for this program and is currently jointly funded by the City of Racine, the Southeastern Wisconsin Area Agency on Aging, Lincoln Lutheran, the Racine Community Development Disabilities Services Board, and Society's Assets, Inc. Transportation is provided weekdays from 8:00 A.M. to 4:00 P.M. and serves all of Racine County. The total specialized transportation program budget for 1977 is $55,000. Last year an estimated 17,000 elderly and handicapped one-way person trips were served.

The Milwaukee County Transit System

Milwaukee Area Transit Plan: Actions by Milwaukee County to improve local transit service in the Milwaukee urbanized area began in 1973. During that year, the Milwaukee County Board

of Supervisors adopted the Milwaukee area transit plan as an amendment to the transit system component of the adopted regional transportation plan.[5] This plan identified the need for 39 park-ride facilities in the Milwaukee area to support a transit system which would continue to rely on the conventional motor bus as the primary transit vehicle. To date, Milwaukee County has participated in the design and construction of four park-ride stations: Northshore (Silver Spring Drive and North-South Freeway—IH 43), Brown Deer (Brown Deer Road and North-South Freeway, IH 43), College Avenue (College Avenue and North-South Freeway, IH 94), and Watertown Plank Road (Watertown Plank Road and Zoo Freeway, USH 45). Each day nine Freeway Flyer routes provide service to approximately 3,200 commuters currently utilizing eight previously existing privately owned (generally shopping center parking lots) and four publicly owned park-ride lots.

Six additional publicly owned park-ride facilities are in various stages of planning, design, and construction:

1. Holt-Morgan (Holt Avenue and North-South Freeway, IH 94).

2. Whitnall Interchange (Interchange of Rock Freeway, STH 15 and IH 894).

3. 76th Street (S. 76th Street and Airport Freeway, IH 894).

4. National Avenue (W. National Avenue and Zoo Freeway, IH 894).

5. State Fair (S. 84th Street and East-West Freeway, IH 94).

6. Good Hope (Good Hope Road and Zoo Freeway, USH 45).

System Acquisition and Improvement: The Milwaukee area transit plan also recommended the expansion and upgrading of local transit service. In support of this recommendation, the County Board subsequently directed that a transit development program (TDP) be developed as the initial step in acquiring the physical operating assets of the then financially troubled privately owned Milwaukee and Suburban Transport Corporation.[6]

While the Milwaukee County transit development program was being prepared, bus service within the County continued to be provided by the Milwaukee and Suburban Transport Corporation. As transit system operating costs continued to increase during this period, adult fares were raised, eventually to $0.60 per ride and service was cut back. The higher transit fare was especially hard on captive elderly bus riders with low fixed incomes. Consequently, in May 1973, Milwaukee County initiated a program to subsidize bus fares for senior citizens. As a result, bus fares for people 65 years of age and over, at all times except 6:00 A.M. to 9:00 A.M. and 3:00 P.M. to 6:00 P.M. Monday through Friday, were reduced to one-half the regular adult fare. In 1974, Milwaukee County further acted to expand this half-fare program to include disabled people covered by the federal Medicare program.

With the completion of the Milwaukee County transit development program in December 1974, and its adoption in the spring of 1975, the Milwaukee County Board of Supervisors proceeded with actions to restore and improve transit service in the County. On May 18, 1975, the County Board initiated a direct public subsidy to the Milwaukee and Suburban Transport Corporation which reduced the regular adult fare from $0.60 to $0.50 per ride and $0.25 per ride for elderly and handicapped people. Shortly thereafter, on July 1, 1975, the County condemned the physical assets of Milwaukee and Suburban Transport Corporation and assumed public ownership of the local bus system. A private nonprofit management firm, Milwaukee Transport Services, Inc., was hired to manage the operation of the newly acquired bus system, and the seven-member Milwaukee County Transit Board was created to establish policy and direct transit system operations.

Upon assuming ownership of the local transit system, Milwaukee County began operations by maintaining levels of local bus service that had been provided by the private operator at the time

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[5] *See Milwaukee Area Transit Plan, prepared by the Milwaukee County Expressway and Transportation Commission in cooperation with SEWRPC.*

[6] *See Milwaukee Area Transit Development Program, prepared by the Transportation Division of the Milwaukee County Department of Public Works, December 1974.*

of the public takeover. Since then, the number of transit routes has increased from 52 to 58, and round trip route miles are up from 1,029 to 1,157 (12.4 percent) on the average weekday.

Local bus service (excluding Freeway Flyer and schoolday-only service) in Milwaukee currently consists of 29 crosstown bus routes, which form a grid pattern over the transit service area. Sixteen of the crosstown routes terminate in, pass through, or otherwise service the central business district. Seven other bus routes provide "feeder" service to the crosstown lines. The system is designed so that no passenger has to transfer more than once to get to the central business district. Many of the crosstown and feeder routes have branches at one or both ends of the route, allowing service to be provided to outlying areas of lower density population. Buses operate about 20 hours per day on many of the major local service routes. Service begins on most routes at 5:00 A.M. and runs to 1:00 A.M. A few routes have bus service until 2:00 A.M.

The regular adult bus fare has been maintained at $0.50 per ride since County takeover. Ten bus tickets or a weekly pass good for unlimited rides from 5:00 A.M. Sunday to 5:00 A.M. the following Sunday can be purchased for $5.00 at 212 locations throughout the County. One-hour transfers are issued free, upon request at time of payment of a cash or ticket fare.

Since acquisition, two significant actions have been taken to liberalize the Transit System's fare policy. First, the Milwaukee County Transit Board adopted a transfer policy which allows the transfer to be used on any bus in any direction and at any bus stop. The effect was to make the transfer a one-hour pass. The second fare policy change made by the Transit Board was to eliminate all zone fares.

The Milwaukee County Transit System also provides a Freeway Flyer service that originally began in March 1964 with the establishment of a route between the Mayfair Shopping Center in the City of Wauwatosa and the Milwaukee central business district. At the present time, nine Freeway Flyer routes are in operation. The routes operate from outlying shopping center parking lots and four publicly constructed park-ride lots where transit users may park their automobiles free and ride the bus nonstop to the central business district. The adult fare for the Freeway Flyer is $0.60 per ride.

In addition to the 29 major local service routes, seven "feeder" routes, one express route, and nine Freeway Flyer routes, the County also operates seven local service schoolday-only routes and five special service routes. Four special service routes are part of a comprehensive university-oriented bus service, and the other is a downtown shuttle bus service, both of which will be described in more detail later. These 58 total routes constitute the present publicly owned Milwaukee County Transit System.

Since acquiring the local transit system from the Milwaukee and Suburban Transport Corporation, Milwaukee County has applied for two federal capital assistance grants from the Urban Mass Transportation Administration. The first grant for approximately $19 million was used to acquire the physical assets of the private transit system and also to purchase the following new equipment:

1. 535 two-way mobile radios;
2. 1 radio base station;
3. 5 supervisory vehicles;
4. 1 radio;
5. 80 bus shelters; and
6. 100 new wheelchair lift-equipped 47-passenger air-conditioned diesel transit buses.

The second grant application for approximately $500,000 was submitted for UMTA approval in May 1977. When approved, these funds will be used to prepare a comprehensive plan for the Kinnickinnic operating station and design and construct a new bus operator's facility there. The grant also proposes the purchase of five additional supervisory vehicles.

The actions taken by Milwaukee to restore and improve transit service in the community have reserved the historic trend of continued declines in transit ridership. Each year since Milwaukee County assumed ownership of the local bus system in July 1975, there has been an increase in the number of annual revenue passengers carried on the bus system. Table 21 shows the trends in ridership total vehicle miles and hours for public bus service in Milwaukee County since 1955.

Special efforts have also been made to provide improved public transportation services for elderly

Table 21

MILWAUKEE MASS TRANSIT STATISTICS: 1955-1977

Company	Year	Revenue Passengers	Vehicle Miles	Vehicle Hours
Milwaukee and Suburban Transport Corporation. . . .	1955	129,927,957	30,752,990	2,880,358
Milwaukee and Suburban Transport Corporation. . . .	1956	119,691,002	28,559,036	2,658,196
Milwaukee and Suburban Transport Corporation. . . .	1957	117,305,841	28,226,807	2,607,916
Milwaukee and Suburban Transport Corporation. . . .	1958	106,256,108	20,063,991	2,454,313
Milwaukee and Suburban Transport Corporation. . . .	1959	106,011,862	26,335,458	2,423,958
Milwaukee and Suburban Transport Corporation. . . .	1960	103,173,297	26,108,879	2,401,839
Milwaukee and Suburban Transport Corporation. . . .	1961	95,266,000	25,178,202	2,308,000
Milwaukee and Suburban Transport Corporation. . . .	1962	93,074,137	24,667,131	2,059,504
Milwaukee and Suburban Transport Corporation. . . .	1963	88,546,607	24,279,327	2,205,794
Milwaukee and Suburban Transport Corporation. . . .	1964	86,432,338	23,798,852	2,155,088
Milwaukee and Suburban Transport Corporation. . . .	1965	86,615,891	23,400,431	2,118,701
Milwaukee and Suburban Transport Corporation. . . .	1966	87,635,000	22,249,000	2,121,000
Milwaukee and Suburban Transport Corporation. . . .	1967[a]	76,351,000	21,254,000	1,943,000
Milwaukee and Suburban Transport Corporation. . . .	1968	76,371,000	22,014,000	2,004,000
Milwaukee and Suburban Transport Corporation. . . .	1969	71,481,482	21,527,346	1,917,742
Milwaukee and Suburban Transport Corporation. . . .	1970	63,041,293	20,878,441	1,883,079
Milwaukee and Suburban Transport Corporation. . . .	1971	57,486,806	19,981,612	1,740,148
Milwaukee and Suburban Transport Corporation. . . .	1972	52,140,620	18,883,675	1,630,192
Milwaukee and Suburban Transport Corporation. . . .	1973	49,269,002	17,976,054	1,545,767
Milwaukee and Suburban Transport Corporation. . . .	1974	48,738,704	17,705,349	1,511,153
Milwaukee County Transit System[b]	1975	44,262,455	17,083,067	1,448,956
Milwaukee County Transit System	1976	45,800,859	17,708,520	1,480,958
Milwaukee County Transit System	1977[c]	46,700,000[c]	18,300,000[c]	1,525,000[c]

[a] *Strike and civil disorders curtailed service for part of year.*

[b] *Milwaukee County began operation on July 1, 1975.*

[c] *Estimates.*

Source: Wisconsin Public Service Commission and SEWRPC.

and handicapped people. The off-peak half-fare program for elderly and handicapped people results in an estimated 75,000 rides per week made on the Milwaukee County Transit System by elderly and handicapped persons. Three other significant actions have also been taken recently by Milwaukee County to improve public transportation services for the elderly and the handicapped. In January 1976, the Milwaukee County Transit Board approved the prospectus prepared by SEWRPC for a regional elderly and handicapped transportation needs study and plan design and agreed to provide half of the 20 percent local funding required for this approximately $241,500 UMTA funded study. This study which began on August 1, 1976, is scheduled to be completed in early 1978. In September 1976, the Milwaukee County Transit Board directed that the entrance doors of all buses be retrofitted with special assist grab rails and that the front seats on the buses display priority seating signs for elderly and handicapped people. In early October 1977, the Milwaukee County Transit Board ordered

[7] *See Prospectus for a Regional Elderly and Handicapped Transportation Needs Study and Plan Design, SEWRPC, January 1976.*

100 wheelchair lift-equipped 47-passenger air conditioned diesel buses, with delivery anticipated to begin in spring 1978.

UBUS Demonstration Project: This demonstration project consisted of the provision of user-oriented urban bus service (UBUS) to the campus of the University of Wisconsin-Milwaukee (UWM), a major trip generator, along a set of bus routes serving a large portion of the Milwaukee metropolitan area.

Two general types of services were provided: integrated services, in which existing local bus routes were extended to the campus and exclusive services, in which new special routes were developed and operated for the use of only University students, faculty, and staff. In addition to these two general types of services, the routes differed in such characteristics as the provision of park-and-ride facilities, the provision of partial or full express service, the hours of operation, and the general routing pattern. During the fall 1974 semester (September-December 1974) four routes were operated at $0.25 fare: Capitol Drive as an integrated route and Silver Spring Drive, Oklahoma Avenue, and North Avenue as exclusive use routes. For the spring 1975 semester (January-May 1975), a number of changes were made. These included a fare increase to $0.35, the addition of evening service on the Oklahoma and Silver Spring routes, and the addition of a special express service (the Streaker) from the end of Oklahoma Avenue to the campus. On February 10, 1975, an additional set of changes was made. The North Avenue route, which had previously operated as an exclusive route, was dropped, and two new integrated routes which involved the extension of existing bus routes to the campus began operations (North and Burleigh integrated routes). By coupling these service variations with data collection and monitoring efforts, it was possible to judge the effectiveness of the various changes made in the system and to test the potential for user-oriented transit service to major trip generators.

The overall goal of the UBUS project was to evaluate the effectiveness of high quality, user-oriented transit service to major trip generators and to determine to what degree such service could attract new riders away from their automobiles and at the same time minimize the adverse effects upon existing transit service. The specific project objectives were to:

1. Reduce urban vehicle travel.
2. Reduce urban highway and parking facility requirements in the UWM area.
3. Attract enough students, faculty, and staff from areas of concentration to make these routes worthy of integration into the regular bus service in order to facilitate general public transit service.
4. Provide an efficient and reliable transit service as an alternative to the private automobile and to improve the overall campus/community environment by easing local traffic and parking congestion.
5. Develop procedures for future demonstration projects and service experiments.

The project was funded from three sources: the Wisconsin Department of Transportation (WisDOT) through its demonstration project funds administered by the project applicant, Milwaukee County; the Urban Mass Transportation Administration (UMTA) of the U. S. Department of Transportation through technical study funds administered by the Southeastern Wisconsin Regional Planning Commission (SEWRPC), and by the University of Wisconsin-Milwaukee (UWM). The budgeted amounts for each of these agencies were $262,436—WisDOT; $20,000—UWTA; and $215,460—UWM. These funds supported the project in three major categories: (1) the operation of the service, (2) marketing efforts connected with the service, and (3) technical studies used to evaluate the overall success of the UBUS program.

A comprehensive analysis of the UBUS program which included on-board surveys, parking studies, and community impact analyses produced the following:

1. During the course of the UBUS demonstration project, a total of 644,288 trips were made on the UBUS by an average of 4,230 persons per day. This rate of ridership was higher than 19 of the 21 urban bus systems in the State of Wisconsin, only exceeded by the transit systems in Madison and Milwaukee. Of the routes operated, the Oklahoma Avenue route carried 39 percent of the passengers followed by the North Avenue exclusive route, 24 percent; the Silver Spring exclusive route, 19 percent; and the Capitol Drive integrated route, 18 percent.

2. The UBUS project has resulted in major shifts in travel patterns to the University. Transit riding to the University has nearly doubled from 12.3 percent to 21.3 percent of the trips to UWM while automobile use has dropped from 70.1 percent to 61.0 percent of the trips.

3. Approximately three-fifths of the UBUS riders were new users of transit attracted away from their automobiles. Rates of diversion from regular bus routes were: 49 percent on the Capitol Drive and Burleigh routes, 44 percent on the North Avenue route, 43 percent on the Oklahoma route, 28 percent on the Silver Spring route, and 14 percent on the Streaker service.

4. The on-board surveys, overall travel surveys, and parking studies all indicated that the UBUS was responsible for eliminating approximately 1,000 automobiles from the UWM area, with attendant reduced parking demand.

5. UBUS usage has resulted in an estimated savings of 219,000 gallons of gasoline, 2,635,000 vehicle miles of travel, and $303,025 in user costs for persons attracted away from their automobiles. Additional savings from the program included reduced parking costs, time savings, accident cost savings, and savings by persons diverted from regular transit.

Virtually all of the UBUS project has now been integrated into the regular Milwaukee County Transit System, including the inauguration of two additional routes operating from close-in parking lots (UPARK) with continued financial support from UWM, and new routes are being added almost every semester.

Downtown Shuttlebug Demonstration Project: This project consisted of demonstrating the benefits of a well planned, dependable, low-fare special transit service in downtown Milwaukee. The project was designed to increase transit usage and to reduce automobile usage to and within the downtown area. An increase in general mobility within the downtown area was expected to result in a greater use of downtown facilities.

The route of the shuttle service was designed to serve the Wisconsin Avenue corridor in downtown Milwaukee. Along this corridor is the urbanized area's largest concentration of multistoried office buildings. These buildings house hundreds of firms and agencies which employ many thousands of people engaged in financial, legal, commercial, industrial, educational, and governmental occupations.

Service was provided by specially marked buses that stopped at specially marked stops. The service operated between 9:30 A.M. and 4:00 P.M. Monday through Saturday, with six-minute headways. The fare structure was $0.10 with the regular transit service bus pass honored as fare during the latter portion of the project. The effectiveness of the program was measured by analyzing service adjustments, service characteristics, ridership counts, and surveys.

The general goal of the shuttle bus project was to demonstrate the effectiveness of dependable low-fare special transit service in an area of high-density major trip generators, and to determine the effect the shuttle service would have on existing transit service and automobile usage to and within the downtown area.

In addition, the demonstration project intended to incrementally meet the three state statutory objectives and four demonstration objectives. The three statutory objectives are as follows:

1. To reduce urban vehicular travel.

2. To meet total urban transportation needs at a minimum cost.

3. To reduce urban highway and parking facility requirements.

The specific objectives of the demonstration were intended to:

1. Increase overall transit trips to the downtown area by offering an inexpensive, convenient downtown distribution system to complement line-haul services.

2. Minimize the use of automobiles for short, intracentral business district trips and thus help alleviate downtown congestion.

3. Reduce downtown parking requirements, maximize the efficiency of existing parking facilities, and encourage use of fringe central business district parking.

4. Improve internal mobility within the downtown area by connecting large building trip generators with retail shopping street and mall developments.

In addition to meet the specific objectives of the program, the demonstration project supported the concepts of using minibuses for shuttle services and establishing a free fare zone as proposed in the following:

1. The Milwaukee County transit development program approved by the County Board on December 9, 1974, recommended that 30 new air conditioned 24-passenger buses be acquired in 1976 for a downtown shuttle operation.

2. The long-range Milwaukee area transit plan approved by the County Board in May 1973, recommended a free transit zone within the downtown area.

The project was funded from three sources: Wisconsin Department of Transportation (WisDOT) demonstration project funds authorized under sec. 85.06 Wis. Stats.; Milwaukee County; and the Metropolitan Milwaukee Association of Commerce (MMAC). The budgeted amounts for each of these agencies were $392,951—WisDOT; $23,661—County; and $20,000—MMAC. The County and MMAC funds constituted the 10 percent local share for the demonstration. These funds supported the project in four major categories: (1) operation; (2) administration, (3) data collection and technical assistance; and (4) marketing.

Technical assistance for project activities was provided by the Milwaukee County Department of Public Works, Transportation Division; the MMAC; Milwaukee Transport Services, Inc. (MTS); the Wisconsin Department of Transportation; and the City of Milwaukee—Bureau of Traffic Engineering and Electrical Services, City Engineer's Office, and the Department of City Development. MTS handled the operation of the service; MMAC handled the marketing of the program; and the Milwaukee County Department of Public Works, Administration Division, handled the accounting elements of the project.

A comprehensive analysis of the shuttle bus program through on-board surveys, pedestrian surveys, merchant surveys, and project studies produced the following findings:

1. The average per passenger cost for providing the shuttle bus service was $0.47 for weekdays and $0.99 for Saturdays.

2. The shuttle service provided the downtown area with an inexpensive, convenient service that connected most of the major traffic generators in the Wisconsin Avenue corridor and served an annual ridership of 560,993.

3. One-third to one-half of the persons in the downtown area have ridden the shuttle bus; the most likely market for potential riders is among downtown employees.

The downtown Shuttlebug has now been integrated into the regular Milwaukee County Transit System, with continued financial support from the Metropolitan Milwaukee Association of Commerce.

Bus Stop Sign Demonstration: Milwaukee County is currently engaged in a state demonstration program to develop, design, and demonstrate improved bus stop signs for the Milwaukee County Transit System.

The purpose of the bus stop informational sign demonstration is to improve the quality and quantity of information provided on Milwaukee County Transit System bus stop signs.

The objectives of the demonstration are to:

1. Improve accessibility to the transit system.

2. Improve identity of bus stops and related route information.

3. Develop bus stop information suitable for systemwide implementation.

4. Develop a community awareness and pride for the transit system.

5. Increase ridership on the transit system.

The Wisconsin Department of Transportation is funding 90 percent of the demonstration under the provisions of the state's Urban Mass Transit Demonstration Program. Milwaukee County is funding the remaining 10 percent. The total project cost is $79,871.

The demonstration will be completed in early 1978, with a final report developed in mid-1978.

Milwaukee Transit Facility Requirements Study: Milwaukee County is currently examining the present plant and facilities of the Milwaukee County Transit System with the dual objective of maximizing the operational efficiency of the existing system and identifying future plant and facility requirements. Completion of this $87,000 study is expected in late 1977.

Downtown Transportation Center Study: Milwaukee County is currently conducting, with UMTA and Wisconsin Department of Transportation financial assistance, a $44,000 study of the feasibility of a downtown multimodel transportation center. This study will make recommendations for increasing the efficiency of transit service to the largest trip generator in the State of Wisconsin. On direction of the Transit Board, the final report will be available early in 1978.

UWM/East Side-Northshore Transit Improvement Study: Milwaukee County is currently conducting, with UMTA and Wisconsin Department of Transportation financial assistance, a $130,000 study of possible transit improvements on the East Side of the City of Milwaukee and Villages of Shorewood and Whitefish Bay. Operating through a citizens' task force and an interdisciplinary interagency technical team, this study will attempt to refine current regional and county transit plans for the study area, which includes the University of Wisconsin-Milwaukee campus, the second largest trip generator in southeastern Wisconsin (outside of downtown Milwaukee). The result will be a series of improvement recommendations, relying heavily on managing the existing transportation system, with modifications to maximize system efficiency while minimizing detrimental impacts on the area. It is anticipated that the study will be completed early in 1978.

Waukesha/Ozaukee County Transit Services

Wisconsin Coach Lines, Inc., a privately owned and operated transit company, until 1975, had been providing commuter bus service between the City of Milwaukee downtown central business district and parts of Waukesha and Ozaukee Counties since 1951 and 1963, respectively. In 1975, Wisconsin Coach Lines, Inc., found it necessary to consider eliminating this commuter service because of the increasing operating deficits that were being incurred on these routes. Before doing so, the private operator appealed to both Waukesha and Ozaukee Counties for public financial assistance to subsidize the operating deficits of these commuter routes. Both counties have since determined that there is a continuing need for this commuter bus service and have budgeted public funds to maintain and improve the service.

The Ozaukee County commuter bus service, named the "Whiz of Oz," is currently provided by Wisconsin Coach Lines-Ozaukee, a private nonprofit subsidiary of Wisconsin Coach Lines, Inc. Two buses make six round trips per day, Monday through Friday, between the City of Port Washington in Ozaukee County and the City of Milwaukee downtown central business district in Milwaukee County. These fares for this bus service vary based on trip origin and destination and range from a low of $0.75 per ride to a high of $2.05 per ride. A transfer arrangement has been developed so that University of Wisconsin-Milwaukee students who commute by a Wisconsin Coach Lines-Ozaukee bus can transfer free to the Milwaukee County Transit System to complete their trip to the University, the so-called "U-Zaukee Connection." The additional cost of the trip is totally subsidized by UWM. Elderly people 65 years of age or older and people meeting the UMTA definition of handicapped can ride the Whiz of Oz service for one-half the regular adult fare.

The Waukesha County commuter bus service is currently provided by Wisconsin Coach Lines-Waukesha, a private nonprofit subsidiary of Wisconsin Coach Lines, Inc. Eight buses make 18 round trips per day Monday through Friday between the Cities of Oconomowoc or Waukesha in Waukesha County and the City of Milwaukee downtown central business district in Milwaukee County. The fares for this bus service vary based on trip origin and destination and range from a low of $0.75 per ride to a high of $2.05 per ride. The same transfer arrangement has been instituted that allows University of Wisconsin-Milwaukee students to transfer free from the Wisconsin Coach Lines-Waukesha bus system to the Milwaukee County Transit System to complete their trip to the University. The additional cost of the trip is again totally subsidized by UWM. Elderly persons 65 years of age or older and persons meeting the UMTA definition of handicapped can ride the Waukesha County commuter bus service for one-half the regular adult fare.

Recently, Waukesha County and Milwaukee County negotiated an intersystem transfer agreement, whereby purchasers of 10-ticket commuter books on the Waukesha service may purchase, at

the same time, 10 Milwaukee County Transit System bus tickets for $2.00. The 10 tickets normally cost $5.00 and the two counties have agreed to each subsidize half of the $0.30 per ticket discount.

Milwaukee County Transit System

Because the Milwaukee County Transit System is by far the largest transit system in the Region, internal transit management efficiency is of a continuing interest. Several actions were taken during 1977 to improve the internal transit management efficiency of the Milwaukee County Transit System:

1. Operators' Manual: At the present time, the only general instruction book available to bus operators is a photocopy of an instruction book published in 1951. The book is both out of date and out of print. A new manual is currently being developed. The new manual will be of the "how-to-do-it" type and will include: complete instructions for the safe operation of a transit vehicle; instructions pertaining to the operation of communications equipment aboard transit vehicles; and a complete listing of regulations pertaining to transit operations.

2. Supervisors' Procedure Manual: At the present time, there are no written documents describing the duties and procedures of route supervisors. Since the route supervisors are responsible for the safe and on-time operation of the transit system, a manual is being developed outlining the duties and procedures of route supervisors, including the special duties of security supervisors. In addition, since new communications equipment has become a part of the transit system in 1977, some procedures pertaining to route supervision have changed. Thus, it is an appropriate time to develop this new manual. The manual will be published early in 1978 and will outline the duties and procedures of the route supervisors, including the special duties of security supervisors.

3. Training Program for Station Clerks: Regular station clerks are chosen for their jobs from and eligibility list of extra station clerks. A training program was necessary to teach extra clerk applicants the proper procedures to enable them to qualify for the clerk position. A training program to teach extra clerk applicants the proper procedures to enable them to qualify for the position will be implemented by the end of 1977.

4. Transportation Department Management Study: A study of the organizational structure of the Transportation Department will be partially completed in 1977. The study resulted in requests for additional staff in the Department in 1978. These positions, however, were not funded in the 1978 budget. The management functions at each of the operating stations will be reviewed during 1978.

5. Improved Information Systems: Various projects currently are underway to improve the information flow to the general public. New bus stop signs are being designed under a demonstration project from the Wisconsin Department of Transportation, and a new system route map has been designed during 1977. Still needed are improvements in the design of a public timetable and in the telephone information system.

6. Vehicle Modifications: A study of potential vehicle modifications was conducted during 1977 to determine modifications that would increase operating efficiency and decrease maintenance costs. Three recommendations from that study will be implemented during 1978. They are: (1) installation of hydraulic governors on VH transmissions on all buses; (2) installation of vapor temperature controllers on all GMC TDH 5300 series buses; and (3) installation of individual fluorescent lighting ballast on all GMC TDH 5300 series buses.

7. Cashiers' Equipment: A review of equipment replacement needs to improve the efficiency of the Cashier's Division was conducted in 1977. The study revealed that a new ventilator system and miscellaneous equipment are needed at an estimated cost of $4,500. The fareboxes presently in use on the buses date back to the mid-1920's, and the locks are wearing out. A locksmith has given up trying to repair them and the work is presently being done by the cashier, who is approaching retirement.

   Present operations are using 1,083 fareboxes with 112 in storage. The fareboxes in storage

are not usable in their present condition and will have to be modified in the event that the transportation operation is expanded. In addition, paper money is not readily accepted by the present fareboxes. The long-range solution to the problem would be to replace the present fare collection system with a new one. A study of this problem should be conducted during 1978.

8. Printing Operations: Paper fare forms constitute a major portion of the transit system's fare structure (presently over 40 percent of passenger revenue). These forms as well as transfers, public timetables, and various forms for internal use are produced in the Milwaukee Transit System's own Printing Division. The security control and flexibility of form design and production schedules made possible by in-house printing of fare forms are essential to the efficient operation of the transit system.

Presently, the Printing Division is operating with many major pieces of equipment that are over 50 years old. A review of printing operations during 1977 revealed that the equipment is plagued with frequent breakdowns, and parts are difficult to obtain and often must be tailor-made. This results in delays which require frequent overtime as well as the added expense of having work done on the outside in order to maintain schedules. This condition is expected to worsen as the equipment becomes increasingly more unreliable. A program of gradual replacement of printing equipment was recommended to upgrade the efficiency of the printing department and avoid the consequence of a major breakdown. Specifically, the following new equipment should be acquired:

Item	Estimated Ratio of Productivity Over Present Equipment	Estimated Cost (in dollars)
Transfer Press	3 to 1	100,000
Ticket and Pass Press	1.5 to 1	38,000
Paper-cutter (computerized type to replace outdated manual type)	2 to 1	26,000
Folder (present equipment outdated and too small)	4 to 1	10,500

Source: Milwaukee County Transit System.

9. Personnel Functions: The Personnel Department expanded its responsibilities considerably during 1977, which resulted in an increase in the overall efficiency of the personnel functions of the transit system. These expanded responsibilities, plus measures to further increase its efficiency in future years, are set forth below:

a. An affirmative action program was developed and implemented in January 1977.

b. A discrimination case file was developed and the responsibility for case handling was placed in the Personnel Department effective in January 1977.

c. The development of an effective wage and salary administration program to include position descriptions, employee performance appraisals, and wage studies was begun during 1977. Completion is anticipated in mid-1978.

d. A salary kardex system was implemented and all personnel forms including the employment application were reviewed. The review resulted in a new employment application form and an improved bus operator and other position selection procedure.

e. A review of current employment testing procedures was undertaken and completed by the Personnel Department.

f. The Department has developed a historical summary (1935 to present) concerning contract negotiations. In addition, a complete fringe benefit study and wage rate survey covering 12 major transit companies has been completed in preparation for future contract negotiations.

g. A new training and testing program for extra clerks in the transportation Department was developed by the Personnel Department in 1977.

h. The Personnel Department has assumed personnel-related responsibilities that were, in the past, assigned to other departments. Testing of applicants for equipment and plant positions is now conducted by the Personnel Department. The Department also assumed responsibility of preparing most employee "transaction notices" (employee status, promotion, etc.) that were formerly handled by individual departments.

10. Employee Relations: The employee relations program of the Transit System was expanded during 1977. HI-LITES, a newsletter issued to all employees, has been increased in size with increased emphasis on both Transit System and employee-related information. A study revealed that lack of a handbook covering such areas as company policy, pension plan, medical insurance, and employee services led to an absence of continuity in disseminating information about these areas. Accordingly, a new employee handbook was developed in 1977 for issuance to all employees. Revisions to the pension plan booklet will require additional study time.

11. Personnel Policy Manual: A study revealed that a lack of general knowledge among some management employees led to inconsistencies in administering some company policies. Consequently, a personnel policy manual was developed during 1977. The purpose of the manual is to provide department heads and selected supervisory personnel with a systematic and consistent approach to administering transit system policies and practices. It was designed as a fundamental communication tool for members of management to help clarify transit system policy. For example, employment procedures, employee fringe benefits, and payroll procedures are outlined in the manual. Additional man hours are required for research, development, and implementation of additional policies.

12. Personnel Record Keeping System: A review of the current personnel record keeping system revealed that the Personnel Department needs a formal personnel record-keeping system to assure compliance with government regulations regarding record retention.

13. Improved Transit Communications: As previously noted, the Transit System purchased and installed two-way radios in all of its buses during 1977. The radios have the capability to provide a rest-time monitoring and control capability, and procedures are currently being developed to implement a systemwide communications and surveillance capability.

14. Project Fare: The Transit System accounting and information system modification to provide for the collection and reporting of financial data and other information as required under Section 15 of the Urban Mass Transportation Act of 1964 as amended (Project FARE) was substantially completed during 1977.

15. Marketing Department: A Marketing Department was created during 1977. A marketing program is being developed to integrate all phases of transit marketing including such market research activities as service evaluation and development and user and nonuser surveys; public and community relations activities including driver/customer relations; and promotion and advertising activities including enhanced image informational services, and promotional fares.

Other Public Transit Operators

Although the scale of operations provided or subsidized by the other four public transit operators in the three urbanized areas does not lend itself to a detailed recital of internal management improvements which have been implemented recently, generally the systems have continually pursued improved personnel and training procedures, refined accounting and cash handling systems, including implementation of applicable

Project FARE procedures, enhanced systems monitoring and communications, and upgraded marketing programs including rider information systems.

SUMMARY AND CONCLUSION

Throughout southeastern Wisconsin, public agencies with transportation implementation and operation responsibilities have had a long history of implementing transportation systems management actions. This chapter has identified and discussed a wide variety of these actions which have been recently implemented for both the highway and transit systems. It should be apparent from the discussion that much has been and is currently being done to manage the transportation systems in the Region effectively and efficiently.

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Chapter VI

PROBLEMS AND DEFICIENCIES IN THE EXISTING REGIONAL TRANSPORTATION SYSTEM

INTRODUCTION

This chapter identifies some of the problems and deficiencies in the existing regional transportation system which currently limit the efficient use of the automobile, mass transit, taxi, bicycle, and pedestrian elements of the transportation system. Deficiencies represent inadequacies in the transportation system's ability to effectively accommodate current travel demand, particularly during peak periods of traffic congestion. The deficiencies identified herein are based primarily on information provided by local public agencies from throughout the Region which have transportation systems management responsibilities. These agencies include: local operators of publicly owned transit systems; village, town, city, and county departments of transportation, traffic engineering and/or public works; the Wisconsin Department of Transportation; and the Southeastern Wisconsin Regional Planning Commission. These agencies all devote financial and staff resources on a continuing basis to the task of monitoring and evaluating how well the existing transportation system is meeting the mobility needs of the Region. Consequently, they are a valuable source of information on the nature and severity of existing transportation system deficiencies as well as the effect these deficiencies have on the efficient use of the transportation system.

EFFICIENT USE OF EXISTING ROAD SPACE AND VEHICLE USE IN CONGESTED AREAS

Roadway and Intersection Capacity

Map 10 and Table 11 in Chapter IV identify the distribution of arterial segments that were operating at or over their design capacities in 1972 when the Regional Planning Commission reinventoried travel on the Region's arterial street and highway system. As shown, most of the arterial system mileage operating at congestion levels in 1972 was located in the intensely developed urban areas of the Region. In fact, of the arterial street and highway system mileage operating at or over design capacity in the Region in 1972, 87 percent was located within the three urbanized areas of Milwaukee, Racine, and Kenosha.

Some local actions, as described in Chapter V, have taken place since 1972 to reduce or eliminate some of the more critical capacity constraints affecting the Region's arterial streets and highways. At the same time, however, available data indicate that the existing freeway system has become more congested. In addition, congestion still exists on many of the arterial street and highway links found to be at or over capacity in 1972, and local transportation implementing agencies have identified other segments of the arterial street and highway system that have become congested since that time. Map 15 identifies 32 specific locations in the Region where the arterial street and highway system was operating at or over capacity in 1972 and where local transportation implementing agencies have identified specific capacity-related problems for correction in 1978. Local transportation implementing agencies throughout the Region also have indicated that high volumes of turning movements, vehicle-pedestrian conflict, and high volumes of cross traffic limit the capacity of certain intersections during peak periods of travel demand.

Deteriorating Bridges and Roadways

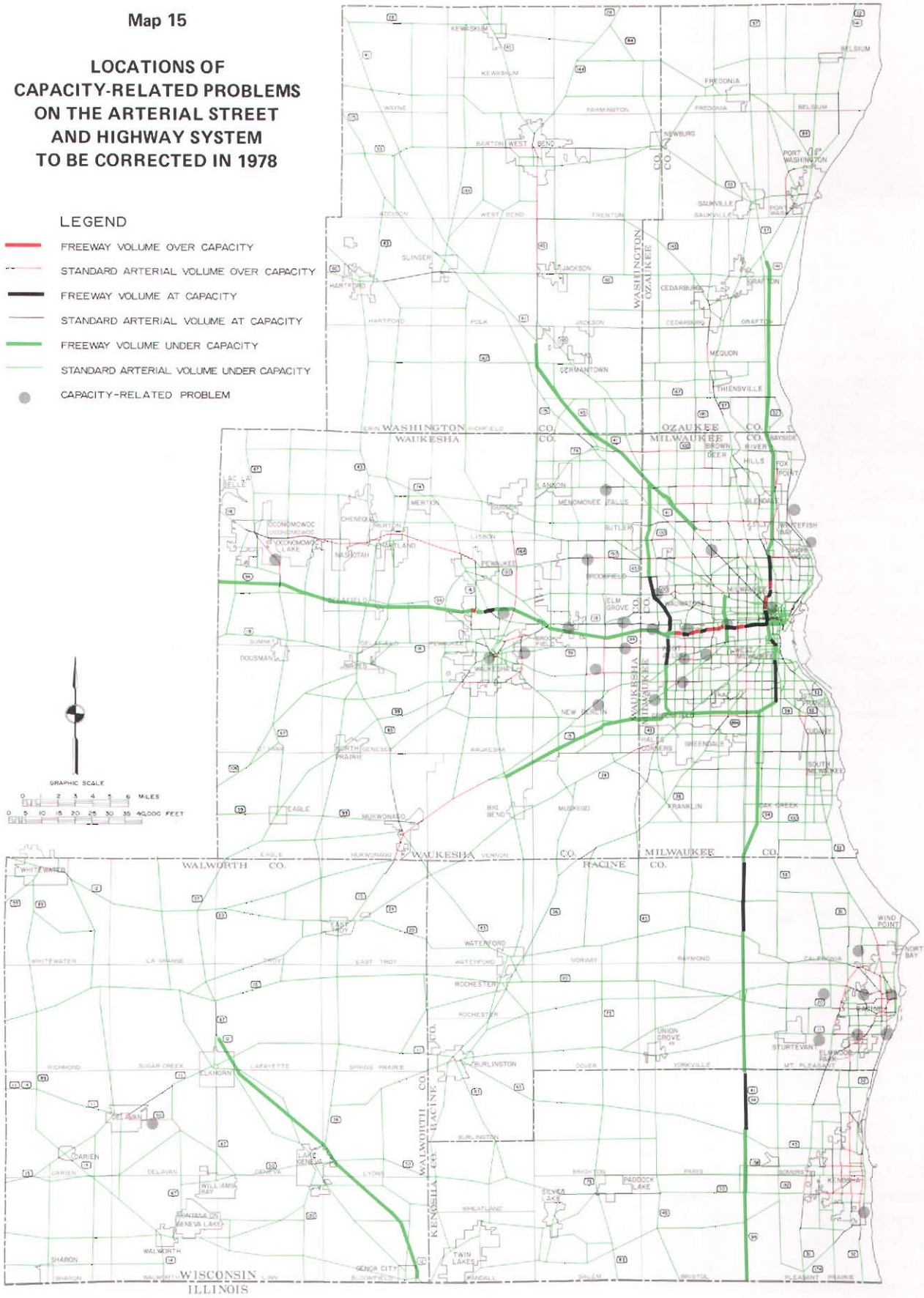
A number of important bridges within the Milwaukee urbanized area need repair or replacement including: the 27th Street viaduct, the War Memorial bridge, the Locust Street bridge, the Layton Avenue bridge (over the Chicago and North Western Railroad tracks), all located in Milwaukee County and the Wisconsin Avenue bridge in the City of Waukesha. Deteriorating roadways have also been identified as a problem by local transportation implementing agencies in some cases resulting in posted vehicle weight restrictions and reduced speed limits.

On-Street Parking

Parallel parking is still permitted on some heavily traveled arterial streets and highways which have been found to be operating at or over their desired design capacities based on the 1972 reinventory of existing travel conducted by the Regional Planning Commission. Examples of locations where parking is still permitted during peak hours on congested arterial streets and highways include:

Map 15

LOCATIONS OF CAPACITY-RELATED PROBLEMS ON THE ARTERIAL STREET AND HIGHWAY SYSTEM TO BE CORRECTED IN 1978



Source: SEWRPC.

1. N. East Avenue between W. Wisconsin Avenue and W. Main Street—Waukesha

2. White Rock Avenue between E. Main Street and E. Moreland Boulevard—Waukesha

3. W. Lincoln Avenue between S. 27th Street and S. 35th Street—Milwaukee

4. S. Kinnickinnic Avenue from E. Lincoln Avenue south—Milwaukee

5. E. and W. Silver Spring Drive for its entire length—Milwaukee County

6. W. North Avenue between N. 1st Street and N. 7th Street—Milwaukee

Off-Street Parking

Lack of adequate off-street parking at certain major trip generators contributes to traffic congestion and overflow commuter parking in adjacent residential neighborhoods. The City of Milwaukee, for example, has identified the following seven commuter impacted parking areas:

1. St. Luke's Hospital Area (S. 29th Street and W. Oklahoma Avenue)

2. N. 44th Street and W. North Avenue Area

3. Harley-Davidson Corporation Area (N. 37th Street and W. Juneau Avenue)

4. Harnischfeger Corporation Area (S. 44th Street and W. National Avenue)

5. A. O. Smith Corporation Area (W. Hopkins Street and N. 27th Street)

6. Washington High School Area (N. Sherman Boulevard and W. Wright Street)

7. University of Wisconsin-Milwaukee Area (N. Maryland Avenue and E. Kenwood Boulevard)

Safety Problems

Lack of lighting on some routes, poor visibility of pavement marking during wet weather on others, and still others with obstructions near to the traveled roadway have been identified by local transportation implementing agencies as existing problems that contribute to increased accidents.

Stub-End Freeways

Major segments of the freeway system have not been completed. In three locations on the Milwaukee County freeway system at the north and south termini of the Stadium Freeway and at the south terminus of the recently opened Hoan Bridge, "stub-ends" connect to local streets which were not designed to accommodate large traffic volumes resulting in congested local streets and inefficient use of the freeway investment.

Inefficient Use of the Automobile

Although average automobile occupancy rates for trips to and from the central business district in the City of Milwaukee have increased gradually since 1970 from 1.30 persons per auto to 1.43 persons per auto in 1976, traffic congestion along some routes especially during peak periods of travel demand suggest a continued need for further increases in auto occupancy rates, particularly for work-related trips.

PUBLIC MASS TRANSIT SERVICE

Mass transit represents a potentially much more energy-efficient transportation resource that now is substantially underutilized. If a greater share of the Region's present and forecast future travel demand could be induced to use mass transit, mass transit could very effectively serve to reduce traffic congestion and pollution, particularly during peak periods of travel demand in the Milwaukee, Racine, and Kenosha urbanized areas. However, the current quality and level of bus service provided by mass transit systems in the Region limit mass transit's ability to effectively compete with the private automobile for a major share of the Region's travel demand for a number of reasons, including:

Increasing Transit Operating Deficits—Average daily vehicle productivities (passengers served per vehicle operating hour) are well below the 45- to 53-passenger capacities of the present bus fleets in the Region. Costs of labor, equipment, fuel, tires, parts, and other expenditures have been increasing rapidly and, while ridership has also been increasing, this has not been sufficient to keep the gap between revenues and expenditures from widening.

Transit Travel Times—Making trips by transit on the Region's tertiary bus routes (local bus routes) typically requires at least twice as much travel time as the same trip by automobile.

Transit Service Area—Extensive portions of the Milwaukee urbanized area and smaller amounts of the Kenosha and Racine urbanized areas are unserved by local mass transit. Additional areas within the existing transit service areas of these public transit systems are provided with only minimal levels of bus service.

Supply and Distribution of Bus Passenger Waiting Accommodations—Many bus stop boarding locations are unpaved and muddy and/or become snow packed and slippery during inclement weather.

Transit Marketing—Little recognition has been given to the ability of an aggressive marketing program to improve transit's image and attract additional ridership. Insufficient marketing funds have been budgeted in the past for transit user information dissemination through improved route maps, bus schedules, and bus stop signing; telephone answering services and other types of advertising and promotional campaigns; and for the development and implementation of integrated marketing programs.

Transit Service Scheduling—Scheduling and long headways between buses on some transit routes discourage transit use among current and potential transit users alike.

Transit Security—The concern for personal security on buses operating on some transit routes deters transit use.

Transit System Facilities and Equipment—Transit facilities and equipment necessary to provide adequate bus service in the Racine and Kenosha urbanized areas have recently been substantially updated through the acquisition of entirely new bus fleets and the construction of more modern vehicle storage and maintenance facilities. The Milwaukee County Transit System, however, has begun only very recently to update its transit equipment and facilities, as indicated below:

1. Bus Operators' Buildings—The recently completed draft of the Milwaukee County Transit System (MCTS) facilities utilization study has recommended that new bus operators' buildings be constructed at the Kinnickinnic and the Fond du Lac stations to replace old structures that are difficult and expensive to maintain.

2. Fleet Replacement—The average age of the present MCTS 523 vehicle bus fleet is 15 years, and 100 buses over 20 years old are in daily operation.

3. Office Space Allocations—Existing, finished office space at the MCTS headquarters building is close to capacity.

4. Shop and Garage Equipment—Many new tools, much new machinery, and other equipment are needed at both the Cold Spring Shops (central maintenance facility) and at the operating garages.

5. Service Vehicles—The majority of the 21 existing MCTS service vehicles are old and badly in need of replacement. Only five of these vehicles are less than 10 years old.

6. Spare Units—Existing vehicles presently are affected by a serious shortage of such major spare parts as transmissions and alternators. This shortage handicaps maintenance personnel and creates inefficient maintenance practices.

7. Building Improvements—Many areas in the various MCTS shop and garage buildings are in immediate need of repair or improvement. Some of these areas—pavements, lighting, heating systems, washroom and locker room facilities—may adversely affect health, safety, efficiency, and maintainability.

8. Vehicle Modification—Various improvements could be made to the existing MCTS fleet to increase operating efficiency and decrease maintenance costs.

Elderly and Handicapped Transportation Services—Continuing special efforts must be made to provide improved public transportation services to the elderly and handicapped—especially those with semiambulatory capabilities and persons confined to wheelchairs. It should be noted that to this end, the Regional Planning Commission is in the final stages of completing a regional elderly and handicapped transportation needs study and plan design which can serve as a framework for development of these special efforts.

Taxi Service

The taxicab also is an important provider of public transportation in southeastern Wisconsin. Twenty-four taxicab firms currently provide taxicab service in the Region. These taxicab firms serve urban subareas of the Region where the taxicab is the only form of public transportation. To carless persons (i.e., the young, poor, elderly, and handicapped) residing in these urban subareas, the taxicab represents an important source of mobility.

Until just recently, state and federal programs designed to improve public transportation had overlooked the contributions that private taxi operators can make toward achieving a more efficient transportation system. Now, state and federal funds are available for certain types of shared ride taxi services to subsidize operating deficits and to purchase new capital equipment. In addition, a change in an existing state law now exempts taxicabs from state motor fuel taxes.

Even with these recent actions to publicly subsidize taxicab companies, problems continue to affect the efficient use of the taxicab. According to a recently completed study by the Wisconsin Department of Transportation, almost 45 percent of a typical taxi firm's vehicle miles consist of travel with no paying customers (deadhead travel time). Consequently, taxicab vehicle productivities are quite low and range between two and four passengers served per vehicle hour.

Hourly vehicle operating costs have also increased significantly within the last few years due to general price inflation. Labor costs in this labor-intensive industry, fuel, equipment and maintenance costs, and taxes have all been affected by inflation. In addition, insurance is becoming more difficult to obtain and premiums have sharply increased. Some taxicab firms are being forced to obtain insurance coverage under the State of Wisconsin's assigned risk plan because insurance companies are refusing to write policies.

Increasing taxicab operating costs have resulted in higher fares to maintain profitability. Higher fares have produced continuing declines in ridership. Efforts must be made to stabilize the taxicab industry as an important source of public transportation, especially in small urban and rural areas of the Region where low densities cannot support public bus systems.

INTERNAL TRANSIT MANAGEMENT EFFICIENCY

The Milwaukee County Transit System is, by far, the largest and most extensive bus system in the Region. As such, its management responsibilities necessarily are more broad and complex than the much smaller Racine and Kenosha transit systems and the transit operations subsidized by Waukesha and Ozaukee Counties. Following is a description of the internal transit management deficiencies that exist in the Milwaukee County Transit System. To differing degrees, the other transit operators also experience many of the same internal management deficiencies.

Internal Training Programs

As the transit system in the Milwaukee area was permitted to deteriorate under private ownership, several important training programs were either gradually curtailed or completely eliminated as economy measures. Consequently, training manuals, training films, and follow-up procedures are all considered to be out of date or inadequate by modern day standards. Some job classifications have no manual pertaining to job procedures or regulations. The lack of proper training courses and procedural manuals has, in some instances, led to confusion and improper procedures being followed by bus operators and other employees.

Instructor's Manual

At the present time, a manual for instructors is not available. Instructors are responsible for the training and retraining of bus operators. A manual is needed to outline instruction procedures and to enable instructors to improve and revise their teaching techniques in order to train student operator trainees more effectively.

Platform Instructor's Training

A complete training program for platform instructors should be developed and implemented. The program should train the instructors in the best teaching methods for instructing and motivating new student operator trainees.

Station Procedure Manual

At the present time, no written document exists outlining procedures to be followed in each of the operating bus stations. A station procedure manual is needed to define the duties and work procedures of the station clerks.

Equipment Department Training

A study is needed to determine the optimum approach for implementing a formal employee training program for new employees and for promoting present employees working the maintenance facilities. There is a critical need for implementation of parts of such a program in the very near future. One item that will be needed shortly is a training course for maintenance employees in the care of air conditioning units and other new or improved items on new buses.

Develop or Select Training Films

New training films are necessary for the existing and proposed training courses. Present films are out of date.

Follow-up New Driver Instruction

Follow-up instructors are responsible for periodically checking up on new drivers. There is a need for additional follow-up instructors to make sure that periodic checks are done on a regular basis.

Operator Retraining

A review of operator retraining programs is necessary to ascertain the most effective methods to instruct bus operators found to be experiencing operating problems or not following prescribed procedures.

Operator Sensitivity and Public Relations Training

The transit operator is the primary contact between the transit system and the general public. It is important that the operator maintain good relations with his riders at all times. A continuing operator sensitivity and public relations training program is needed.

Traffic Checking Staff

The present traffic checking staff is inadequate in size to accommodate an increasing demand for passenger counts and running-time checks which are needed to conduct planning studies. When detailed route analysis studies begin in 1978, that demand will increase further.

Transit Operations

Various aspects of the actual operation of the Milwaukee County Transit System can be improved to enhance the efficiency of operation:

Radio Maintenance

A two-way radio system was installed on the transit fleet late in 1977. During 1978, the maintenance of the radio equipment will be covered by warranty. After the first year, the radios will have to be maintained by the transit system or by a maintenance contractor. Since the transit system does not, at present, have any equipment or qualified personnel to repair the radio equipment, a study is needed to determine which method of maintaining the radios is the most efficient for Milwaukee County.

Supervisory Staff

The route supervisory staff is responsible for keeping the buses on time and is usually the first transit supervisory staff to arrive at the scene of emergencies. With the addition of two-way radios, a possible need is anticipated for additional street supervisors. Because of increased student riding, additional route supervisors may be needed to assist in loading and on-time operation. The attendant behavioral problems associated with student riding also may necessitate additional security force.

The route supervisor force should be so constituted, trained, assigned, and scheduled as to permit maximum flexibility in meeting all Department needs for route supervision, dispatching, securing, and relief supervision.

Operator's Route-Fare Booklet

At present, the primary means of communication between the Transportation Department and the individual operators is through notices posted on bulletin boards in operating stations. This method has proven inadequate, as operators often do not remember reading the notice or do not take the time to read the notice. One solution is to provide each operator with a loose-leaf booklet that contains descriptions and maps of all the routes, a complete fare tariff, and a section for notices of special events and temporary detours. The booklet would be designed to be easily updated by insertion as necessary of new pages. The use of such a system would require each operator to have a "mailbox" in the operating station. Such requirements should be kept in mind during the design phase of new operators' buildings.

Operators' Time Paddles

Bus operators' time paddles are used to denote scheduled time points for the operator. This system needs to be reviewed, as the paddles are printed on ditto copies and fade as they age and are difficult to read because of their size and lack of space for explanation of directions.

Purchasing and Storeroom

A study is needed of the modernization, expansion, and reorganization needs of the purchasing and storeroom areas. This study should emphasize increasing efficiency and reducing parts shortages. This study should also address itself to the potential use of computer technology for improving inventory control.

Research and Development

Present planning functions of the Milwaukee County Transit System are divided between the Milwaukee County Department of Public Works (DPW) staff and the staff of Milwaukee Transport Services, Inc. (MTS). The research and development staff of MTS is responsible for the investigation and analysis of day-to-day service improvement requests, for recommending route and service changes, for assistance and technical support of special projects, for input into the long-range planning process, for review and development of internal operating procedures and management techniques, and for input into the development and maintenance of a short-range transit improvement program and transportation systems management plan. The staff is composed of two research analysts and is attached to the Executive Department of MTS. Because of the minimal size of this staff, it is not possible for the research and development staff to promptly and satisfactorily fulfill all of its responsibilities. A detailed study should be made of the best means of providing needed research and development services, assigning responsibilities between the Milwaukee County Department of Public Works and the Milwaukee County Transit System in the most effective manner. Preliminary investigations indicate:

Additional staff members are required at MTS to carry out certain research and planning functions related to the operation of the system. A minimum of two additional planners or analysts appears to be needed. Also needed is some technical support staff including a secretary and a draftsman.

The MITRE Corporation has developed a Run Cutting and Scheduling computer package (RUCUS) to aid in the making of schedules and in run cutting. Some transit systems have reported cost savings using the RUCUS package. A study of the feasibility of using the RUCUS package for the Milwaukee County Transit System is needed.

A Transit Development Program (TDP) was prepared by Milwaukee County staff and published in December 1974. Since its publication, several recommendations contained in the TDP have been implemented; however, the TDP has not been updated and kept current since its publication. An updated Transit Development Program with a three- to five-year time frame is needed.

Accounting

The Accounting Department of Milwaukee Transport Services, Inc., is responsible for the bookkeeping, financial control, auditing, systems and procedures, and the printing activities of the Transit System. Certain procedures of that Department require improvement.

FARE Reporting System

A standardized reporting system for financial and operating statistics (FARE system) was implemented on November 1, 1977. Several problems with that system need to be studied further in 1978. There is a need to develop and implement new forms for the financial and statistical reporting system. Another problem area resulting from FARE is the still unknown cost of complying with federal passenger counting requirements for statistical purposes. The problem is further complicated by the fact that what is mandated by the federal Urban Mass Transportation Administration for FARE (unlinked passenger trips) will not be acceptable to the Wisconsin Department of Transportation (which asks for linked passenger trips).

Systems Study

Improved technology, reduced costs, and expanded programs have increased the potential usefulness of computer equipment for providing operations and management staff with better information faster to improve operating and management decisionmaking and control. The computer could be a useful aid for all accounting procedures, payroll, parts inven-

tory and control, storage of records for the Claims Department, scheduling and runcutting (RUCUS), fleet maintenance records, planning (UTPS), schedule information retrieval, and a management information system. A study to undertake a thorough review of the potential uses, benefits, and costs of employing computer facilities for the above listed operations is needed.

Maintenance

The Equipment and Plant Department of Milwaukee Transport Services, Inc., is responsible for the maintenance of all rolling stock, buildings, and bus stops within the Transit System. Certain procedures of that Department require improvement:

Shop and Garage Tool Needs

The tools and other equipment used by maintenance personnel are in generally poor condition. Many pieces of equipment are over 50 years old, and replacement parts for these tools are difficult or impossible to locate. Many of the tools also are outmoded for the functions they are performing; numerous tools on the market could be used to improve the efficiency, quality, and safety of the maintenance function.

A study in 1977 determined which tools and equipment were most critically needed by the Department. These items were submitted for inclusion in the 1978 budget. This action, however, does not eliminate the need for a complete study of tool and equipment replacement needs in the Department. This study would first provide for the systematic identification and inventorying of all tools, machinery, and other equipment used in the shops and garages. The inventory would include the age, function, and description of all concerned items. The study would also provide a list of all additional tools and equipment needed by the Department to improve the quality or increase the efficiency of the work being performed. Finally, the study would establish the needs of the Department in a priority order and recommend a capital funding program for tools and equipment.

Service Vehicle Replacement

The majority of the service vehicles used by the Transit System are in poor condition and are expensive to maintain and operate. A study of service vehicle requirements was completed during 1977, and an acquisition plan for vehicle replacements and additions has been developed. The plan is set forth in Table 22 (funds for 1978 vehicle acquisitions are in the 1978 Transit System budget).

Spare Units

Complete spare engine cradle assemblies would eliminate the need to do engine overhauls with the engine in the chassis. Engine overhauls could then be done on the bench in a production-line fashion and would shorten the time a bus is in the shop for an overhaul. The 1978 budget includes monies to purchase two engine cradle assemblies and all attendant accessories. The acquisition of the engine cradle assemblies will improve the efficiency and quality of the maintenance of engines.

Cold Spring Shops Reorganization

The current shop organization and operation has evolved from many years of economic cutbacks and a reduction in activities as a result of the shrinkage of the transit system's fleet size. With the planned increase in fleet size in coming years, there will be a corresponding increase in activities in the shop. In addition, plans are now being formulated for a new shop building. A comprehensive study of the shop organization is needed to thoroughly cover the following areas:

1. Reorganization of the shop supervision
2. Establishment of a separate brake department
3. Examination of general inspection procedures
4. Examination of manpower requirements
5. Preparation of a layout for a new shop
6. Examination of printing department manpower and equipment needs
7. Establishment of a production control function and the improvement of material flow in the unit repair areas
8. Examination of department responsibilities

Work Standards and Methods

The Equipment and Plant Department has no established set of work standards. Foremen have no way to evaluate how well a man is

Table 22

SERVICE VEHICLE REPLACEMENT PLAN: 1978-1981

Year	Vehicle Purchased	Vehicle Replaced	Use	Age at Replacement
1978	Bucket or Platform Truck	No. 306 Ladder Truck	Electrical Maintenance	26
	3 Ton Flatbed Truck	No. 99 1½ Ton Truck	Garage Supply	18
1979	Combination Dump and Snow Removal Truck	No. 52 7½ Ton Dump Truck	Salt Spreader— Kinnickinnic Avenue Station	33
	Combination Dump and Snow Removal Truck	No. 56 7½ Ton Dump Truck	Fond du Lac Avenue Station	33
	Wreck Truck.	No. 60 2½ Ton Wrecker	Back-up Wrecker Cold Spring Shop	32
	¾ Ton Pick-Up Truck.	No. 100 Scout Pick-Up	Garage Supply	17
	¾ Ton Pick-Up Truck.	No. 104 Jeep Pick-Up	Garage Service— Kinnickinnic Avenue Station	15
	1½ Ton Utility Truck.	No. 101 1½ Ton Utility Truck	Bus Stop Sign Maintenance	14
	1 Ton 4-Wheel Drive Truck . . .	No. J1 ½-Ton Jeep	Snow Removal- Cold Spring Shop	28
1980	Combination Dump and Snow Removal Truck	No. 78 7½ Ton Dump with Plow	Sanding and Plowing Cold Spring Shop	32
	Combination Dump and Snow Removal Truck	No. 90 7½ Ton Dump	Salt Spreader— Cold Spring Shop	32
	Combination Dump and Snow Removal Truck	No. 95 7½ Ton Dump	Plant Maintenance Dump	29
	2½ Ton Step Van	No. 98 3½ Ton Panel	Cashiers Division Truck	20
	Front End Loader	No. T21 Tractor Loader	Plant Maintenance	28
1981	Shop Tractor	No. 91 7½ Ton Dump	Shop Bus Mover— Cold Spring Shop	33
	Wrecker Truck	No. 96 3½ Ton Wrecker	Wrecker— Fond du Lac Station	30
	¾ Ton Pick-Up	New	Shop Pick-Up— Cold Spring Shop	--
	¾ Ton Pick-Up	New	Plant Maintenance Pick-Up	--
	3 Ton Flatbed Truck with Post Digger	New	Sign Maintenance	--

Source: Milwaukee County Transit System.

producing on a job. Some existing work methods could be inefficient or outmoded. A solution to the problem of inadequate work standards and methods would improve efficiency by means of including the establishment of a work-study program, the setting of time standards for maintenance jobs, a manpower evaluation, and the design and implementation of new cost-saving work methods.

Risk Management

Several studies and actions within the Claim Department would result in its increased operating efficiency:

Staff

The Claim Department is understaffed with investigators and adjustors. Time studies since August 1, 1977, indicate that the field

men are working from six to 10 hours overtime each week and the backlog is increasing.

Safety Program

While the Milwaukee County Transit System and its predecessors have always had an above average safety record and have won many safety awards because of that record, there has been a substantial increase in the number of industrial accidents during 1977. More emphasis on safety could be established by a systemwide safety program.

PEDESTRIANS

Pedestrian travel is the most fundamental of transportation modes. Virtually every trip begins and ends as a pedestrian. Yet the safety and convenience of pedestrian travel often is overlooked in the development of an efficient regional transportation system.

In urban area central business districts and along routes near other important traffic generators such as schools and major shopping, medical, recreational, and employment facilities, both vehicle and pedestrian congestion usually exists simultaneously. The mixing of pedestrians and vehicular traffic at these major traffic generators during peak periods of travel demand can present serious safety problems for pedestrians.

Pedestrian safety, especially in the vicinity of major traffic generators in urban areas, is a problem recognized by local units of government throughout the Region. Vehicle turning movements often conflict with pedestrian street crossings. The recent provision to allow right turns on red has compounded this problem. Traffic control devices and/or signal timings that promote the efficient flow of traffic, not pedestrians, can make it unsafe for pedestrians to cross some streets in the Region.

BICYCLES

Local units of government within the Region indicate that the bicycle as a mode of transportation for both recreation and commuting has increased in popularity. A principal reason is a rekindled interest in physical fitness, preserving the environment, and conserving energy. The bicycle can be a practical and energy-efficient transportation mode for reasonably short trips. The average trip length for auto travel in the Region is less than 5.5 miles. However, the existing regional transportation system limits a more widespread use of the bicycle for safe recreation and commuter travel. There is shortage of safe continuous bike routes, lanes, and/or paths linking commuter origins with major travel destinations. As a result many bicyclists must travel the existing street system in mixed traffic. Most major travel destinations do not have adequate bicycle storage facilities to protect bikes from adverse weather and vandalism and do not have adequate locker and shower facilities for bicycle commuters.

REGIONAL AIR QUALITY DEFICIENCIES

At the present time there are six pollutant species for which federal and state air quality standards have been promulgated: particulate matter, sulfur oxides (measured as sulfur dioxide), carbon monoxide, nitrogen dioxide, hydrocarbons, and photochemical oxidants. The latter four are the pollutants attributed in a major way to the operations of the transportation system.

A primary standard has been promulgated for each pollutant which specifies the maximum concentration of the pollutant that should be permitted to occur in the ambient air in order to protect human health. A secondary standard has also been promulgated for each pollutant which specifies the maximum concentration of the pollutant that should be permitted to occur in the ambient air in order to protect animal and plant life and property from damage. Together, attainment of the primary and secondary standards are deemed essential to the protection of the public health, safety, and welfare from known or reasonably anticipated adverse effects of a particular air pollutant.

The national ambient air quality standards for all six pollutants are set forth in summary form in Table 23. These standards were developed on the basis of experimental and observational data which recognized that each pollutant, due to its particular chemical composition and physical characteristics, produces a different response at varying levels of concentration in the organism into which it may be introduced.

The following sections provide a brief description of each of the four pollutant species resulting in some major part from transportation system operations for which federal and state standards have been established. In addition, the results

Table 23

SUMMARY OF NATIONAL AMBIENT AIR QUALITY STANDARDS ISSUED APRIL 30, 1971, AND REVISED SEPTEMBER 14, 1973

Pollutant	Period of Measurement or Calculation	Concentration (Weight of Pollutant per Cubic Meter of Ambient Air Corrected to 25°C and 760 mm of Hg)	
		Primary Standard	Secondary Standard
Particulate Matter (PM)	Annual (Geometric Mean) 24 hour	75 μg 260 μg[a]	60 μg 150 μg[a]
The primary sources of particulate matter are industrial processes, power generation, and space heating. The primary and secondary standards have been exceeded in the Region.			
Sulfur Oxides (SO_x) (measured as sulfur dioxide)	Annual (Arithmetic Mean) 24 hour 3 hour	80 μg (0.03 ppm) 365 μg (0.14 ppm)[a] --	-- -- 1,300 μg (0.5 ppm)[a]
The primary sources of sulfur oxides are industrial processes, power generation, and space heating. The ambient primary air quality standard has been exceeded in the Region.			
Carbon Monoxide (CO)	8 hour 1 hour	10 mg (9 ppm)[a] 40 mg (35 ppm)[a]	Same as Primary Same as Primary
The primary source of carbon monoxide is gasoline-powered motor vehicles. The 8 hour primary air quality standard has been exceeded in the Region.			
Hydrocarbons (HC) (nonmethane measured as methane)	3 hour (6 A.M. to 9 A.M.)	160 μg (0.24 ppm)[a]	Same as Primary
The primary source of hydrocarbons is gasoline-powered motor vehicles. No hydrocarbon measurements have been made in the Region to date to indicate whether the primary air quality standard has been exceeded.			
Nitrogen Dioxide (NO_2)	Annual (Arithmetic Mean)	100 μg (0.05 ppm)	Same as Primary
The primary sources of nitrogen dioxide are gasoline-powered motor vehicles, industrial processes, and space heating. The primary air quality standard has been exceeded in the Region.			
Photochemical Oxidants (O_x) (measured as ozone)	1 hour	160 μg (0.08 ppm)[a]	Same as Primary
The primary sources of pollutants which contribute toward the formation of ozone are gasoline-powered motor vehicles and industrial processes. The primary air quality standard has been exceeded in the Region.			

[a] *Concentration not to be exceeded more than once per year.*

Source: Code of Federal Regulations Title 40, Part 50, 1973.

of 1976 field monitoring activities for three of the four pollutant species and 1975 results for hydrocarbon emissions are provided.

Carbon Monoxide

Carbon monoxide is a toxic pollutant because it combines with the hemoglobin of the blood in such a manner as to reduce the oxygen-carrying ability of the bloodstream. Exposure to excessive levels of carbon monoxide may aggravate coronary vascular disease and may cause headaches, impaired reactions, and death. The air quality standards for carbon monoxide are measured in milligrams per cubic meter rather than micrograms per cubic meter as for the other pollutants. Two standards have been established, one for an eight-hour average (10 milligrams per cubic meter) and a second for a one-hour average (40 milligrams per cubic meter). In the case of this pollutant specie the primary and secondary standards are identical.

A summary of the available carbon monoxide air quality monitoring data for 1976 is presented in Table 24 for both the one-hour and eight-hour standards. In 1976, there were seven monitoring sites sampling for carbon monoxide. The highest one-hour average carbon monoxide concentration in the Region during 1976 was recorded at the station located at 7528 W. Appleton Avenue in the City of Milwaukee. The maximum concentration recorded at this site, however, 22.2 $\mu g/m^3$, is just over half of the ambient air quality standard of 40 $\mu g/m^3$.

Several exceedances in the eight-hour carbon monoxide standard of 10.0 $\mu g/m^3$ were recorded in 1976. The highest maximum eight-hour concentration occurred in the City of Milwaukee in 1976 at the Appleton Avenue site. Of the seven operational monitoring sites during 1976, three stations in Milwaukee County exceeded the eight-hour standard, while the sites in Racine and Waukesha Counties were only marginally below the standard. A continuing problem with eight-hour average carbon monoxide concentrations exists within the Region.

Nitrogen Dioxide, Hydrocarbons, and Photochemical Oxidants

Nitrogen Dioxide Concentrations: Oxides of nitrogen may react in the atmosphere to form nitric acid, which may cause or contribute to respiratory disorders and which is harmful to plant life. Nitrogen dioxide exerts its primary toxic effect on the lungs. Oxides of nitrogen may also react with sodium potassium or other metals

Table 24

SUMMARY OF CARBON MONOXIDE AIR QUALITY MONITORING DATA: 1976

Monitoring Site	Highest 1-Hour Average[a]	Highest 8-Hour Average[a]
Milwaukee County		
606 W. Kilbourn Avenue	9.2	6.3
1225 S. Carferry Drive	12.3	12.0
3401 S. 39th Street	7.3	4.0
3716 W. Wisconsin Avenue	13.3	10.2
7528 W. Appleton Avenue	22.2	13.7
2114 E. Kenwood Boulevard	--	--
9722 W. Watertown Plank Road	--	--
Racine County		
1601 Washington Avenue	19.9	9.9
Waukesha County		
726 N. Grand Avenue	19.5	9.7

[a] *Concentration measured in $\mu g/m^3$, micrograms per cubic meter.*

Source: Wisconsin Department of Natural Resources.

to form soluble nitrates which, when washed out of the atmosphere by rain, may contribute to the fertility of surface waters and thereby to surface water pollution. Absorption of ultraviolet light energy by nitrogen dioxide results in its dissociation into nitric oxide and free oxygen atoms. These oxygen atoms react with the atmospheric oxygen to form ozone. A small portion of the oxygen atoms and ozone reacts also with certain hydrocarbons to form radical intermediates and various chemical compounds. In a very complex manner, the free radical intermediates and ozone react with the nitric oxide produced initially. One result of these reactions is the very rapid oxidation of the nitric oxide to nitrogen dioxide and an increased concentration of ozone. Hydrocarbons, through photochemical reaction in the atmosphere as described above, contribute to the formation of "smog" of which ozone is a component. Ozone is a lung and eye irritant and may act to suppress the capacity of the body to combat infection. Eye irritation is one of the most frequent air pollution complaints. Ozone may also attack and deteriorate certain materials such as rubber.

The primary and secondary ambient air quality standards for nitrogen dioxide are identical at 100 micrograms per cubic meter on an average annual basis. At the present time this standard is

under review by the U. S. Environmental Protection Agency and may be revised in the near future in order to relate the standard more closely to the atmospheric processes which produce ozone.

Table 25 lists the nitrogen dioxide monitoring sites, all in the City of Milwaukee, and summarizes the data for 1976. It may be seen from Table 25 that the highest annual value reported, 60.8 $\mu g/m^3$ at 3716 W. Wisconsin Avenue, is well below the standard of 100 $\mu g/m^3$ on an annual basis. Since the monitoring sites are all located in areas of high nitrogen dioxide emissions, particularly from motor vehicles, it is plausible that these data are representative of the maximum nitrogen dioxide concentrations in southeastern Wisconsin.

Hydrocarbon Concentrations: There is only a limited amount of air quality monitoring data on regional hydrocarbon levels available to date. Under a special contract with the DNR, Washington State University collected data on average 6 A.M. to 9 A.M. hydrocarbon concentrations at the Kenosha Airport between August 4 and September 30, 1975. Of the 58 monitoring days, 43 registered exceedances of the hydrocarbon standard of 160 $\mu g/m^3$ (0.24 ppm). The highest three-hour (6 A.M. to 9 A.M.) average recorded was about 553 $\mu g/m^3$ (0.83 ppm) total nonmethane hydrocarbons measured on September 10, 1975, and the second highest was 420 $\mu g/m^3$ (0.63 ppm) measured on August 21, 1975. The highest and second highest average total nonmethane hydrocarbon levels are approximately 250 and 150 percent above the established standard, respectively.

The DNR also operated a hydrocarbon monitoring station at 3716 W. Wisconsin Avenue in the City of Milwaukee from August 1 to 19, 1975, sampling on 13 days. Of the 13 days monitored, all measured exceedances of the 6 A.M. to 9 A.M. standard. The highest recorded three-hour total nonmethane hydrocarbon average was 509 $\mu g/m^3$ (0.763 ppm), and the second highest value was 389 $\mu g/m^3$ (0.584 ppm). These values are about 200 and 150 percent above the standard, respectively. Although limited in quantity and spatial distribution, the available hydrocarbon air quality monitoring data indicates that numerous violations of the 6 A.M. to 9 A.M. hydrocarbon standard are occurring over a broad area in the Region.

Photochemical Oxidant Concentrations: In 1976, there were 10 stationary monitoring sites in the Region sampling for ozone, the measure of photochemical oxidants. Table 26 lists these monitoring sites along with the highest monitored one-hour ozone levels recorded at each site in 1976. Because not all monitoring sites were sampled continuously or even on the same days during the year due to equipment maintenance and repair requirements, a direct comparison of ozone concentrations between the various sites or for the same site is not possible. Certain observations, however, can be made for the regional oxidant problem.

First, the highest one-hour ozone concentration monitored in southeastern Wisconsin was 0.290 parts per million (ppm) which occurred in Milwaukee County—a level approximately 3.5 times the standard of 0.08 ppm.

Table 25

1976 NITROGEN DIOXIDE AIR QUALITY MONITORING DATA

Monitoring Site	Number of Samples	Maximum[a] 24-Hour Level	Annual Average[a]	Standard Deviation
City of Milwaukee				
1225 S. Carferry Drive	44	93	45.2	20.1
7528 W. Appleton Avenue. . . .	46	199	50.4	27.5
3716 W. Wisconsin Avenue . . .	56	148	60.8	26.7
711 W. Wells Street	52	237	59.6	32.9

[a] *Concentration measured in $\mu g/m^3$ micrograms per cubic meter.*

Source: Wisconsin Department of Natural Resources.

Table 26

HIGHEST ONE-HOUR MONITORED OXIDANT CONCENTRATIONS IN THE REGION: 1976

Monitoring Site	Civil Division	Maximum Oxidant Concentration (in ppm)
Kenosha County		
8518 22nd Avenue	Kenosha	0.271
Milwaukee County		
2114 E. Kenwood Boulevard . .	Milwaukee	0.290
1225 S. Carferry Drive	Milwaukee	0.214
3716 W. Wisconsin Avenue . . .	Milwaukee	0.195
3401 S. 39th Street	Milwaukee	0.197
7528 W. Appleton Avenue . . .	Milwaukee	0.146
606 W. Kilbourn Avenue	Milwaukee	0.218
Ozaukee County		
Highways C and Q	Grafton	0.238
Racine County		
1603 Washington Avenue	Racine	0.232
Waukesha County		
726 N. Grand Avenue	Waukesha	0.108

Source: Wisconsin Department of Natural Resources.

Second, the lowest maximum one-hour oxidant concentration over the period of record was 0.108 ppm, or about 1.25 times the standard, monitored in the City of Waukesha.

Finally, the data demonstrate that high maximum ozone concentrations also occur outside of the heavily populated area of the City of Milwaukee. In 1976, for example, with the exception of the station at 2114 E. Kenwood Boulevard in the City of Milwaukee, monitoring sites in Kenosha, Racine, and Ozaukee Counties each experienced a higher one-hour maximum than any of the sites in Milwaukee County. The fact that Waukesha County recorded relatively low maximum ozone levels indicates that there is a pronounced and rapid decline in oxidant levels in an inland direction from Lake Michigan.

Thus, a number of air quality problems appear to exist in southeastern Wisconsin, and transportation systems management appears to be one potentially valuable approach to alleviating some of these air quality problems. In an attempt to assess this potential, the Regional Planning Commission has applied for a grant from the U. S. Environmental Protection Agency (US EPA) to evaluate the impact of TSM actions on air quality in the Region.

SUMMARY

This chapter has identified some of the deficiencies in the existing regional transportation system which currently limit or prevent a more efficient use of the automobile, mass transit, taxi, bicycle, and pedestrian elements of the transportation system. The deficiencies were based primarily on information provided by local public agencies from throughout the Region having transportation system management responsibilities. Six general categories of existing transportation system deficiencies were identified: 1) deficiencies in the use of existing road space; 2) local public transportation service deficiencies; 3) deficiencies in internal transit management efficiency; 4) pedestrian-related existing transportation system deficiencies; 5) bicycle-related existing transportation system deficiencies; and 6) regional air quality deficiencies. Under each of these general categories, a number of specific deficiencies were presented and discussed.

In conclusion, it should be noted that, while the transportation systems in the Region are generally operated and managed quite efficiently, there are a number of problems and deficiencies which appear to be responsive to TSM-type solutions. Chapter VII develops some alternative solutions to the problems and deficiencies identified in this chapter.

Chapter VII

ALTERNATIVE TRANSPORTATION SYSTEM MANAGEMENT STRATEGIES

INTRODUCTION

In the design phase of the transportation systems management planning process, alternative transportation systems management strategies are developed to better satisfy transportation systems management objectives, while meeting overriding considerations of systems integration and consistency. The design process is based upon a previous determination and subsequent analysis of the current inability of the existing transportation system to satisfactorily attain desired objectives; that is, upon the identification of deficiencies in the existing transportation system, alternative transportation systems management strategies are then formulated in an attempt to overcome these deficiencies and thus better meet the objectives.

The formulation of transportation systems management strategies may take place at two separate, but related, levels. At the one level the process is focused primarily on resolving spot or local area problems. At the other level the process is focused primarily on resolving areawide and corridor problems. The localized element of the transportation systems management plan formulation consists of compiling transportation systems management actions which local transportation systems operating agencies—municipalities, counties, and the State of Wisconsin—intend to implement within the next five years. The actions to be conducted by these units of government may include actions to preserve and ensure efficient use of existing road space, actions to reduce vehicle use in congested areas, actions to preserve and improve transit service, and actions to improve internal management efficiency. The 208 actions proposed to be implemented by local agencies are discussed in more detail in Chapter IX, "A Transportation Systems Management Plan for Southeastern Wisconsin." Typical actions to preserve and ensure efficient use of road space included highway reconstruction, pavement marking programs, street intersection channelization, freeway ramp metering, and bicycle path construction. Continuation of carpooling programs and initiation of vanpooling programs were among actions proposed to reduce vehicle use in congested areas. Actions proposed to preserve and improve transit service included transit service preservation proposals, continuation of bus shelter construction programs, and extension of transit service to the elderly and handicapped. Typical actions intended to increase transit management efficiency included preservation and improvement of transit operations surveillance and improvement of transit office and maintenance facilities.

These actions proposed to be implemented within the next five years by local governments were reviewed for redundancy and conflicts. Those actions which did not conflict and were not duplicative were included in the transportation systems management plan. The areawide element of the transportation systems management design process—which is concerned with corridor, subarea, and areawide problems and their resolution—is discussed in the following paragraphs.

THE TRANSPORTATION SYSTEMS MANAGEMENT DESIGN PROCESS

The transportation systems management design process at the local level as well as the areawide level should consist of three steps: transportation problem identification, formulation of transportation systems management strategies to meet these problems, and determination of relationships among strategies. In the transportation systems management plan, this design process was applied explicitly only to problems of areawide influence and not necessarily to local or spot problems.

TRANSPORTATION PROBLEM IDENTIFICATION

The first step in the transportation systems management plan design process was the identification of transportation problems and deficiencies in the urbanized areas of southeastern Wisconsin. The identified areawide problems and deficiencies, as described in Chapter VI of this report, can be grouped under six areas of required actions:

1. Actions to more efficiently utilize existing road space.

2. Actions to more efficiently provide public transit service.

3. Actions to improve internal public transit management.

4. Actions to more efficiently utilize motor fuel.

5. Actions to reduce transportation air pollution emissions.

6. Actions to improve the efficiency of bicycle and pedestrian movements.

It should also be noted that most of these problems also were addressed by the local spot improvements discussed earlier.

TRANSPORTATION SYSTEMS MANAGEMENT PLAN DESIGN ACTIONS

The next phase in the transportation systems management design process was the development of transportation systems management actions to alleviate the six identified problems and deficiencies in transportation in southeastern Wisconsin. The development of actions was based on an understanding of the characteristics of the regional transportation system, the dimensions of the identified problem areas, and the expected implications of the transportation systems management actions required to meet the problems. The long-range transportation plan provided an overall framework within which the transportation systems management actions were formulated. Previous short-range, subregional transportation planning efforts which addressed transportation systems management type actions also were employed in the development of the transportation systems management plan. The design process moreover utilized the experience and judgment of the public officials most familiar with the regional transportation system. State, county, and municipal elected and appointed technical officials on regional intergovernmental and informal technical advisory committees were directly involved in the generation and evaluation of transportation systems management actions.

It is interesting to note that during the design process considerable public discussion of the TSM alternatives took place, as evidenced by a number of pieces in the local electronic and print media. Appendix F presents a selected set of newspaper clippings which indicate the magnitude and direction of this mostly favorable discussion.

Actions to Improve Use of Existing Road Space

Transportation systems management actions to improve the use of existing road space included actions at the level of the urbanized area, urbanized subarea, and freeway-arterial corridor influencing or impact, as shown in Table 27. Actions which would affect the entire urbanized area included a freeway control system, work time rescheduling, and a carpool promotion program. A major transit generator study, downtown parking rate reversal, weekend and special event traffic planning, downtown public transit shuttle service, expanded direct bus service and remote parking and shuttle bus service to the University of Wisconsin-Milwaukee (UBUS and UPARK), and commuter-impacted permit parking were among the subarea actions proposed. Actions at the freeway-arterial street corridor influence included arterial corridor studies, exclusive bus lanes, stud-end freeway treatments, and fringe park-and-ride and park-and-pool lots. It should be noted that many of the locally initiated actions proposed as a part of the transportation systems management plan did seek to preserve and improve the efficient use of existing road space. Among the actions were intersection channelization, traffic signal interconnection and central control, pavement marking, street sign improvement, street reconstruction, street lighting, and bridge replacement and reconstruction. Another local action proposed was staff assistance by the Southeastern Wisconsin Regional Planning Commission in traffic engineering and transit planning to all communities within the Region requesting aid. In the following paragraphs the characteristics and implications of each of these actions are summarized.

Freeway Control System: Under this action the current planning and design studies and the program for installing ramp meters would be expanded to establish a freeway control system. All freeway ramps within a defined area would be signalized and coordinated with a real time monitoring of the volumes on relevant segments of the freeway system. Vehicles would be allowed to enter the system from the signalized ramps when system volume/capacity relationships were at or below certain predefined levels. A real time monitoring and control system would be used to provide dynamic adjustment of entry rates according to predetermined operating policies. The usual policy employed with this type of metering is to achieve free flow conditions. The system, as proposed, could also include monitoring equipment for

Table 27

TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS AND THE TRANSPORTATION PROBLEMS WHICH THEY SEEK TO REDUCE IN SOUTHEASTERN WISCONSIN

TSM Action	Inefficient Use of Road Space	Inefficient Public Transit Service	Inefficient Public Transit Management	Transportation Energy Use	Transportation Air Pollution Emission	Bicycle Movement
Freeway Control System	P					
Work Time Rescheduling	P			s	s	
Carpool and Vanpool Protection	P			s	s	
Major Transit Generator Study	P	s		s	s	
Downtown Parking Rate Structure	P			s	s	
Weekend and Special Event Traffic Planning	P					
Downtown Shuttle Service	P	s				
UBUS/UPARK	P	s		s	s	
Commuter-Impacted Permit Parking	P					
Arterial Studies	P	s				
Exclusive Bus Lanes	P	s				
Stub-End Freeway Treatments	P					
Park-and-Ride and Park-and Pool Lots	P	s				
Community Traffic and Transit Assistance	P	s				
Transit Route Evaluation	s	P		s	s	
Transit Fare Policies		P				
Taxi Fare and Regulation	s	P				
Transit Security		P				
Bus Stop Location		P				
Transit Shelter and Benches		P				
Transit Management			P			
Transit Marketing	s		P			
Transit Communication and Monitoring			P			
Energy Emergency Contingency Planning				P		
Pedestrian and Bicycle Commuting Provisions						P

P = Primary problem target.
s = Secondary problem target.

Source: SEWRPC.

incident management and clearance. Changeable message signs and other driver information aids could also be incorporated as part of this action. Preferential treatment for high occupancy vehicles, buses, and carpools should be considered in developing control strategies.

Work Time Rescheduling: Flexible working hours, staggered working hours, and a four-day work week would be explored under this action. Special consideration would be given to the Milwaukee area's current blue-collar/white-collar work time schedule and its existing work time staggering effect.

Carpool and Vanpool Promotion: This action entails continued support, promotion, and expansion of the existing carpool program in the four-county Milwaukee Metropolitan area, including the exploration of preferential parking for carpools. Also included under this action would be vanpool promotion activities.

Major Transit Generator Study: Actual major and potential transit generators such as industrial parks, other large employers, universities, and others will be identified under this action, building on the base of information assembled in the Milwaukee Area Carpool Program. A variety of potential transit, paratransit, and pooling options will be considered for application to each generator, depending on unique characteristics. Among the options to be considered are route deviation, scheduled transit, express transit, vanpooling with preferential parking, and subscription taxi or transit. It is anticipated that this action will lead to a number of demonstration projects throughout the area.

Downtown Public Parking Rate Structure: The reversal of traditional hourly parking rates in congested areas such as the Milwaukee central business district, would be explored under this action. Under such an arrangement each additional hour of parking would cost more than the preceding hour. The objective would be to encourage short-term parking for shopping or business and discourage long-term parking by commuters. Also, study would be made of other facets of the downtown parking rate structure including supply-demand relationships. In the examination of parking rate structure, special attention will be given to transit ridership impacts.

Weekend and Special Event Traffic Planning: Actions to better accommodate the special travel demands generated on weekends—the Friday outbound and Sunday inbound travel—and by special events—sports, concerts, State Fair, Summerfest—would be considered under this transportation systems management option. Possible strategies include temporary one-way streets, transit vehicle priority measures, manual signal control, use of freeway shoulders where possible, special travel information programs, and use of large parking areas such as those at County Stadium, State Fair Park and other facilities along with bus shuttle service to special events.

Downtown Bus Shuttle Services: Continued operation and expansion of shuttle service where it exists and investigation of it in appropriate areas where it does not currently operate would be the objective of this transportation systems management action.

UBUS/UPARK: Continued provision and expansion of the highly successful special carrier bus service to the University of Wisconsin-Milwaukee (UBUS) which currently provides direct service to the UWM campus on 10 bus routes, together with the UPARK program which provides shuttle bus service from two remote parking lots, would constitute this action.

Commuter-Impacted Permit Parking: This action would continue and expand the current City of Milwaukee program of managing and controlling the influx of private cars into designated commuter-impacted zones, exempting residents of such areas from certain parking restrictions through the issuance of permits.

Arterial Studies: Problems on major surface arterials will be identified, and a number of possible solutions explored in this action. Increased parking prohibitions and special tow-away enforcement for particular arterial streets would be studied on a case-by-case basis; appropriate consideration would be given to the establishment of exclusive bus lanes during all or part of the day. Traffic signals on particular routes which cross jurisdictional boundaries would be examined and progressively timed, if necessary, in order that the green phase is always available to advancing traffic. As a consequence, travel time and delay on the routes could generally be reduced. Buses would be equipped with either active (driver-actuated) or passive (self-actuating) traffic signal preemption devices which would lengthen the green signal cycle on the street on which the bus is traveling to allow the bus to pass through the intersection while minimizing disruption to the cross-flow of traffic.

Exclusive Bus Lanes: A study will be made in this action of exclusive bus lanes on arterial streets as contained in the regional land use-transportation plan. Essentially, this study will focus on the central business districts of the Region first and then will consider exclusive bus lanes recommended in other areas. Outside the Milwaukee CBD, the study of exclusive bus lanes will be integrated with arterial studies.

Stub-End Freeway Treatments: Suggestions for redesign of the "temporary" ends of certain freeway segments in Milwaukee were advanced in the new long-range regional transportation system plan. This action will prepare and evaluate detailed design alternatives. Providing for a more efficient flow and increased safety in these problem areas is the objective of this action.

Park-and-Ride and Park-and-Pool Lots with Express Transit Service: Continued implementation of park-and-ride and pool-and-ride lots in coordination with the continued provision and expansion of express transit service, including the nine highly successful Milwaukee Freeway Flyer routes and the Waukesha-Milwaukee and Ozaukee-Milwaukee (Whiz of Oz) services, is the objective of this action.

Community Assistance Traffic Engineering and Transit Planning: Staff assistance under this action would be made available by the Regional Planning Commission to those communities within the Region that request help with traffic engineering, transit planning, and other transportation planning problems. In smaller communities, the effort would concentrate on the provision of problem-oriented technical assistance while in larger communities,

which may possess trained traffic engineering and transit planning staffs, the focus would be on the application of new and developing techniques for traffic and transit modeling and problem solving. Within the City of Milwaukee, financial support would be provided to City in-house staff for work on continuing short-range transportation systems management planning.

Actions to Improve Public Transit Service

Transportation systems management actions proposed to improve public transit service were primarily of an areawide influence. The transit improvement actions consisted of public transit route evaluation, a transit fare policies and collection study, taxi fare and regulation modification, transit security measures, an evaluation of bus stop locations, and transit shelter and bench construction. Many of the actions proposed to ensure efficient use of roadway space can also be viewed as comprising actions to improve transit service, as shown in Table 27. A number of the actions proposed to be implemented by local units of government related to the improvement of transit service and were included in the transportation systems management plan. These local actions included extension of transit service to the elderly and handicapped and preservation and general improvement of existing public transit service. In the following sections, the characteristics and implications of the proposed major actions to improve transit service will be summarized.

Transit Route Evaluation: Maintaining and/or expanding current transit routes and providing new transit services would be assessed under this action.

Transit Fare Policies and Collection: This action would involve a comprehensive study of the transit fare structure in each urbanized area's transit system, including an examination of an elderly and handicapped pass, a weekend pass, a distance-related/no barrier fare, and system-to-system transfers.

Taxi Fare and Regulation: Shared taxi rides and a zone-based fare would be examined under this action.

Transit Security: This transportation systems management action would explore enhanced transit security measures.

Bus Stop Location: A comprehensive study of the location of bus stops in each urbanized area's transit system would be undertaken, including a view of the length of stop required for safe bus operation, an investigation of the accommodation of wheelchair lift-equipped buses (in Milwaukee), and a quest for new or more appropriate stop locations. The current bus stop sign demonstration program could also lead to a new system of signs for the Milwaukee system; implementation of the system could be included in this action.

Transit Shelters and Benches: Shelters would be provided for weather protection, and/or benches would be provided for seating at transit stops under this action.

Actions to Increase Internal Transit Management Efficiency

A third areawide transportation problem defined to exist in southeastern Wisconsin was the need to improve internal public transit management efficiency. Actions proposed to increase management efficiency included the study and implementation of strategies to improve transit management, development of a transit marketing program, and expanding current transit communications and monitoring. Local actions intended to be implemented in an attempt to increase transit management efficiency include improved office and maintenance facilities.

Transit Management: Strategies to increase the efficiency of internal transit system management and operations would be investigated under this action. Typical strategies would consider adding formal training programs for all levels of staff, and computerizing existing accounting procedures and operations analysis. A change of current maintenance policies may also be implemented.

Transit Marketing: A marketing program would be developed under this action, including all phases of the marketing of transit: making the public aware of various transit services, developing a favorable transit image, determining the factors which affect transit usage and their importance, promoting and monitoring transit use, and making better use of information services such as improved telephone information services, better route maps, schedules, and bus stop signs.

Transit Communication and Monitoring: Achieving a real-time exchange of information about transit vehicle emergencies and schedule maintenance is the objective of this action. Two-way radio and on-street checkers are two possible means of providing such a monitoring capability.

Inefficient Use of Energy by Transportation

A third problem area defined was the dependence of transportation in southeastern Wisconsin on petroleum-based fuel consumption. The proposed action with a significant effect on energy use in view of potential supply uncertainty was energy emergency contingency planning. Several actions proposed for improving other problems, as shown in Table 27, also served to reduce the dependence of transportation in southeastern Wisconsin on petroleum-based motor fuels.

Energy Emergency Contingency Plan: While in the long run it may be possible for more stringent automobile fuel efficiency requirements, generally increased energy conservation, and travel behavior changes to alleviate some or all of the transportation problems of the "energy crisis," it appears prudent to give some thought to how southeastern Wisconsin could respond to the transportation problems resulting from a sudden severe energy shortage, such as might be caused by a resumption of the Arab oil embargo. An energy emergency contingency plan prepared to examine effects of an unexpected energy shortage would be conducted under this action. The energy planning would include the identification of emergency transit routes and ride-pooling sites, planning of emergency organized hitch-hiking programs, investigating the potential for emergency work hours and work day staggering to spread out transit peaks, planning for the use of private buses and trucks as emergency jitneys, and contingency planning for the emergency distribution of food, fuel, and other goods, among others.

Actions to Reduce Transportation Air Pollution Emissions

No specific actions were suggested for the reduction of transportation air pollution emissions in southeastern Wisconsin. However, several of the actions proposed to target other defined problem areas did also significantly address the problem of transportation consequences of air pollution, as shown in Table 27.

Actions to Improve Bicycle and Pedestrian Movement

Another problem defined for southeastern Wisconsin was the inefficiency of bicycle and pedestrian movements. Actions proposed to reduce this problem include an areawide study of bicycle commuting provisions and locally initiated actions of pedestrian and bicycle path and trail construction.

Pedestrian and Bicycle Provisions: Provisions for bicycle commuting such as exclusive lanes, route designations, bike storage facilities and locker and shower facilities at work places would be investigated under this action. For pedestrians, possible provisions include special signalization, signing, and crosswalk marking and sidewalk and overpass and underpass construction.

RELATIONSHIPS AMONG PROPOSED TRANSPORTATION SYSTEM MANAGEMENT ACTIONS

Consideration of the interactions among the proposed transportation system management actions is necessary to avoid duplication of and conflicts between implemented actions, thereby maximizing positive impacts and minimizing negative impacts of the transportation systems management plan. The relationships among transportation systems management actions can be grouped into four categories: independent, conflicting, supportive, or parallel.

Actions which are independent are considered to have no appreciable interaction. Actions may be independent because they impact different widely separated subareas of an urbanized area or because the specific variables they appreciably impact are not common. Independent actions may be used together in a system plan.

Actions which are in conflict are considered to produce greater negative impacts and/or reduced positive impacts when used together. Consequently, conflicting actions should be viewed as alternatives in the development of a transportation systems management plan.

Supportive actions are considered to produce greater positive impacts and/or reduced negative impacts when applied together than when used individually. Thus, supportive actions should be recommended for implementation in a transportation system management plan as a combined strategy. As an example, an action with both substantial desirable and undesirable impacts should be combined, if possible, with supportive actions which would reduce the major action's negative consequences. Another opportunity for establishing a transportation systems management strategy would be combining actions which would have

greater positive impacts when used together than the sum of their impacts would be if each action was used alone.

Parallel actions are considered to consist of actions which draw from the same potential markets for change. That is, their major positive and/or negative impacts are identical. If used together, their total positive impacts will not be significantly greater than if the action with the larger beneficial impact was used alone. Total negative impacts will also not be substantially reduced from the larger negative impact of the two actions, when that action was used individually. Thus, actions which are parallel should be reviewed as alternatives in transportation systems management plan design.

As a result of identifying the interactions among proposed TSM actions and of considering these interactions in formulating a TSM plan, alternative packages of coordinated actions would be identified. These packages, together with other individual independent actions, would be expected to effectively address the transportation system deficiencies in southeastern Wisconsin. As indicated in Table 28, about one-half of the proposed actions were considered to be independent. None of the actions was considered to be parallel or conflicting.

Table 28

INTERACTIONS AMONG TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS CONFLICTING, INDEPENDENT, PARALLEL, AND SUPPORTIVE

TSM Action	Independent Action	Supportive Actions	
		Freeway Corridor Congestion	Downtown or Other Subarea Congestion
Freeway Control System		*	
Work Time Rescheduling			*
Carpool and Vanpool Promotion		*	
Major Transit Generator Study		*	*
Downtown Parking Rate Structure			*
Weekend and Special Event Traffic Planning	*		
Downtown Shuttle Service			*
UBUS/UPARK			*
Commuter-Impacted Permit Parking			*
Arterial Corridor Studies		*	
Exclusive Bus Lanes		*	
Stub-End Freeway Treatments	*		
Park-and-Ride and Park-and-Pool Lots		*	
Community Traffic and Transit Assistance	*		
Transit Route Evaluation		*	
Transit Fare Policies	*		
Taxi Fare and Regulation			*
Transit Security	*		
Bus Stop Location	*		
Transit Shelter and Benches	*		
Transit Management	*		
Transit Marketing		*	*
Transit Communication and Monitoring	*		
Energy Emergency Contingency Planning	*		
Pedestrian and Bicycle Commuting Provisions	*		

** = Belongs to the defined category.*

a = None of the proposed actions is considered to be in conflict.

Source: SEWRPC.

Supportive actions have been combined for formulation of two strategies: a freeway corridor congestion reduction strategy and a downtown street congestion strategy. The supportive actions for the freeway corridor action derive from two sources. One is the desire to reduce the possible negative impacts of the freeway control system on arterial street and highway congestion by concurrently implementing arterial corridor improvements, exclusive bus lanes, and systemwide transit route evaluation. The other interest in defining supportive actions for the freeway control system is to maximize its positive impacts. Consequently, carpool promotion, fringe parking expansion, and vanpooling and other transit options have been defined as secondary actions to be implemented concurrently with the freeway corridor action to encourage utilization of the proposed high-occupancy vehicle preferential treatment. A downtown street congestion reduction strategy has also been identified. Incentives to utilize public transit, disincentives for the use of automobile, and improved public transit service are all included as parts of this coordinated congestion reduction scheme.

SUMMARY

The design phase of the transportation systems management process is intended to identify alternative transportation systems management actions and coordinated strategies which would attempt to meet identified transportation deficiencies, as well as improve overall planning objective attainment in southeastern Wisconsin.

The design of transportation alternatives for this transportation system management plan was derived from two sources. One basis for the design of the plan was locally initiated actions in response to local or spot problems. These actions included actions to preserve and ensure efficient use of road space, actions to reduce vehicle use in congested areas, actions to preserve and improve public transit service, and actions to improve internal public transit management efficiency.

Actions from these four categories also were proposed as alternatives in the second design source for the transportation systems management plan. This basis for design was areawide and corridor problems and deficiencies in southeastern Wisconsin. Six deficiencies were identified as part of the transportation systems management planning effort, including the need to more efficiently utilize existing road space, more efficiently provide public transit service, improve internal public transit management, more efficiently utilize motor fuel, reduce transportation air pollution emissions, and improve the efficiency of bicycle and pedestrian movement.

Twenty-five transportation system management actions were developed to improve these problems. Many of the actions addressed more than one problem. Most of the actions did not interact appreciably, and consequently could be implemented independently. Two combinations of a number of the remaining 14 proposed actions were recommended to be concurrently implemented as coordinated strategies. The identification of such strategies—freeway and downtown congestion reduction—served to increase the potential of enlarging the desirable impacts of the combined actions while reducing their individual undesirable impacts.

Chapter VIII

EVALUATION OF TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS

INTRODUCTION

Chapter II of this report described an overall process for short-range transportation planning which results in a transportation systems management (TSM) plan and transportation improvement program documents. This process involves identification of objectives, principles, and measures of effectiveness as set forth in Chapter III; use of information on the existing transportation system and on the characteristics of travel in the Region together with information on previous transportation systems management activities as described in Chapter IV and V; identification of existing transportation systems problems and deficiencies as described in Chapter VI; and development of alternative transportation systems management strategies as described in Chapter VII. The final stage in the process is evaluation of the alternative strategies and the integration of these strategies into a rational transportation systems management plan.

Many of the actions described in the previous sections of this report have been analyzed in detail by the responsible implementation agencies and are at a stage where they can be implemented. In these cases evaluation has taken place as part of studies undertaken by the Regional Planning Commission or by the implementation agencies themselves. In other cases general strategies have been identified that appear to offer promise for dealing with current transportation problems. These actions are specified at various levels of detail and will require specific studies to assess their feasibility and to evaluate if and how they should be implemented. The types of actions that are proposed include planning studies, designs studies, and continued implementation. These actions are proposed to be carried out by different lead agencies as appropriate to the particular problems and needs being addressed.

The specific process used for evaluation in each of the planning and design studies will differ somewhat depending upon the type of project and its level of effect. Nonetheless, it is important that the studies be conducted in a consistent manner and that a common procedure be used for the evaluation of the alternatives. This chapter is intended to describe such a procedure and to indicate how it can be applied in future short-range planning activities.

The overall process to be used for the evaluation of alternative actions in a short-range planning process should involve five major steps: 1) Project Categorization, 2) Forecast of Impacts, 3) Selection, 4) Examination of Higher Level Effects, and 5) System Rationalization. Steps 1, 4, and 5 would be performed in all cases on an annual basis by the Regional Planning Commission while Steps 2 and 3 would be performed by either an implementation agency or by the Commission over an appropriate period of time, depending upon type and level of the project. Each of these steps in the process is briefly described below.

PROJECT CATEGORIZATION

The first step in the process is to categorize each proposed project in the general problem area to which it responds and the level at which it occurs. An example of such a categorization for some of the actions considered in the 1978 transportation systems management plan is given in Table 29. The categorization of projects into problem area and level is important since the type of evaluation measures to be used, the forecasting procedures to be used, and the lead agency in the evaluation will vary depending upon level and problem type. It is expected that problems which occur at the local or urbanized subarea level will be analyzed by agencies at that jurisdictional level, while problems of an urbanized area or regional level will be analyzed by agencies with broader jurisdiction. Thus, the task of project categorization also would include the designation of a lead agency for the particular study.

FORECAST OF IMPACTS

Once a problem has been categorized and a lead agency has been designated, analysis can take place that will lead to forecasts of the impacts of different alternatives. Three major types of effects should be analyzed for every potential project: its effects on mobility, that is, how it leads to

Table 29

CLASSIFICATION OF TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS BY PROBLEM AREA AND LEVEL OF ACTION

Problem Area	Action
Inefficient Use of Existing Highway Space	At Regional Level
	Continued Carpool Promotion
	Community Assistance Traffic Engineering and Transit Planning
	Work Time Rescheduling
	At Urbanized Area Level
	Transit Route Evaluation
	Weekend and Special Event Traffic Planning
	Noncapital Actions
	At Urbanized Subarea Level
	Major Transit Generator Study
	Downtown Parking Rate Structure
	Downtown Shuttle Service
	Commuter-Impacted Permit Parking
	UBUS/UPARK Expansion
	Traffic Signing, Marking, and Signalization
	At Freeway Corridor Level
	Freeway Control System
	Stub-End Freeway Treatments
	Fringe Parking with Express Transit
	At Arterial Corridor Level
	Exclusive Bus Lanes
	Arterial Corridor Studies
	Street Reconstruction and Resurfacing
	Street Lighting
	At Local Area Level
	Bus Stop Location
	Transit Shelters
	Intersection Improvement and Reconstruction
	Bridge Reconstruction
Improved Public Transportation Service	At Urbanized Area Level
	Transit Route Evaluation
	Transit Fare Policies and Collection
	Taxi Fare and Regulation
	Transit Security
	Elderly and Handicapped Services
	New Equipment Purchases
	New Facilities
Internal Transit Management and Efficiency	At Urbanized Area Level
	Transit Management
	Transit Marketing
	Transit Communications and Monitoring
Energy	At Regional Level
	Energy Emergency Contingency Plan
Air Pollution	Actions are included in other problem areas
Bicycle and Pedestrian Movement	Bicycle Commuting Provisions

Source: SEWRPC.

a change in the quality of transportation services; the impacts of the project, that is, how it affects the community and the natural resource base and environment; and the costs of the project. These three types of effects should be analyzed for all projects regardless of level or type of project. The specific procedures used to forecast these effects and the manner in which they are measured will vary, however, by project level and type. For example, a study of a freeway control system may require preparation of a formal environmental impact statement, extensive analysis of effects on user travel characteristics, and detailed cost estimates. On the other hand, studies of local intersection improvements might be limited to capacity analysis, negative declaration of impact and a simple cost estimate. Studies of managerial improvements may involve qualitative description of their ultimate effects on the quality of services and other impacts and more specific information on the costs and efficiencies associated with the innovations. Some guidance of this type of analysis procedure for each of the categories of effect by project level is given in Table 3 of Chapter II. Subsequent short-range planning activities will be aimed at providing more definitive information on the nature of analysis procedures and measures of performance.

SELECTION

Following the forecast of the effects of the different proposed projects, a process of selection of the proper cost of action can take place. This selection process should involve a careful examination of the differences between alternative courses of action with respect to their individual effects on mobility, impacts, and costs. The starting point in such an examination is to develop an evaluation matrix in which the alternative projects are arrayed against specific measures of effectiveness, as identified in Chapter III. This matrix can be reduced in size by eliminating alternatives which are dominated by other alternatives and by eliminating criteria which show no significant difference between the alternatives. The specific differences in costs and impacts between the alternatives can then be identified and, based upon these differences of cost and impact, a selection of the best course of action can take place. It is expected that in many cases the process of selection will involve participation by other agencies as well as the general public.

EXAMINATION OF HIGHER LEVEL EFFECTS

In order to develop consistency between levels of the transportation system, projects should not only be evaluated at the level at which they have their primary effect, but at other levels as well. Thus, there is a need to conduct an analysis of the interface between the projects at different levels to assure that a consistent sytem is proposed. For example, it is important that improvements that are proposed at intersections be consistent with improvements in arterials.

SYSTEM RATIONALIZATION

The final step in the process to be performed by the Commission is to combine the projects which are developed from separate problem solving activities into a rational, cohesive, and efficient regional transportation system plan.

This effort would involve a classification of projects as discussed in Chapter VII into one of four categories: independent actions which can be implemented without any adverse effects on other proposed projects; actions that are in conflict with each other—the implementation of one action would have a negative effect on the implementation of another action; complementary actions or those which serve to enhance other actions—for example, transit park and ride facilities would be complementary to a freeway control system which provided priority access for buses; or parallel actions which address the same problem and more than one of which would not be implemented at the same time—for example, both a reserved transit lane in the predominant direction on a street or highway and a contra-flow reserved lane would not be implemented together. Actions of the second and fourth kinds could then be arrayed in a decision tree format to provide a basis for determination of which should be included in the short-range transportation plan.

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Chapter IX

A TRANSPORTATION SYSTEMS MANAGEMENT PLAN AND RECOMMENDED IMPLEMENTATION PROGRAM FOR SOUTHEASTERN WISCONSIN

INTRODUCTION

The final results of the efforts documented in the first eight chapters of this report are: (1) a set of recommended transportation systems management (TSM) actions listed in approximate priority order; and (2) a set of detailed implementation recommendations including a timetable, recommended implementing agencies, cost estimates, and suggested sources of funding.

As was explained in Chapter VII, the recommended TSM actions contained in this plan are drawn from two major sources. One source is a series of specific projects which were proposed by individual transportation implementing agencies within the Region. These projects were reviewed by the Regional Planning Commission, found to be generally consistent with and supportive of the objectives as outlined in Chapter III, and thus were included in both the TSM plan and in the 1978-1982 Transportation Improvement Program (TIP). The second source was an analysis of areawide needs as described in Chapter VII. In this chapter, projects from both sources are merged together under 24 types of recommended TSM actions, which are listed in approximate priority order.

The priority order is only approximate for two reasons: (1) projects in the TSM plan are candidates for funding under a wide variety of different local, state, and federal funding programs, and an individual project from a lower approximate priority TSM action could conceivably be implemented before or even instead of a project from a higher priority action, if there is funding available to implement the project from the lower priority and no funding for the project with the higher priority; (2) some of the 24 types of TSM actions contain a large number of projects and the approximate priority is not meant to imply that all projects listed under any one TSM action necessarily have a higher absolute priority than any projects from lower priority actions.

DEFINITIONS

Following are definitions of terms used in the TSM recommendations:

1. Prospectus: A prospectus is a study design describing in detail the need for a study and the necessary scope, content, and main divisions of the work required to be undertaken along with the techniques to be applied in the execution of the work and recommending the most effective method for establishing, organizing, and accomplishing the work; the roles and responsibilities of the various levels and units of government concerned; and a time schedule, budget, and sources of funding for the work.

2. Planning Study: A planning study explores alternative actions for the resolution of a problem, develops a preliminary design for the most cost-effective action, assesses impacts and local acceptance, and develops cost and general feasibility data.

3. Design Study: A design study, depending upon the complexity of the project concerned, either prepares preliminary engineering plans which further refine and detail the results of a planning study for use in the making of a policy decision on a project, or prepares final construction plans and specifications for use in actual implementation (including the review, where appropriate, of applicable state statutes and local ordinances).

4. Continued Implementation: Continued implementation means to maintain a transportation policy, facility improvement, or service already in effect while seeking opportunities to enhance the efficiency of the policy, facility, or service and/or expand it, as appropriate.

RECOMMENDED TSM ACTIONS IN APPROXIMATE PRIORITY ORDER

1. Freeway Control System
   It is recommended that two projects aimed at continuing implementation of the limited-purpose ramp-metering program of the Wisconsin Department of Transportation in the Milwaukee Urbanized Area be completed

as identified in the 1978-1982 TIP, and presented in Appendix D-1 (page 152). It is further recommended that a prospectus be prepared for a planning study of the implementation of an areawide comprehensive freeway control system as described briefly in Chapter VII, and that, after completion of the prospectus, the planning study be mounted. It is recommended that work on the prospectus for the planning study begin immediately and be completed by December 31, 1978; that it be prepared by the Regional Planning Commission on a contract basis with the Wisconsin Department of Transportation (WisDOT) which will also work closely with the Commission on preparation of the prospectus; that the prospectus be prepared at an estimated cost of $25,000; that 80 percent, or $20,000, be funded out of Federal Highway Administration Federal Aid Interstate and Primary Highway funds and 20 percent, or $5,000, be funded by WisDOT.

2. Stub-End Freeway Treatments

It is recommended that two projects aimed at utilizing to better advantage the so-called "stub-ends" of uncompleted freeways in Milwaukee County and smoothing out the flow of traffic onto and off of the completed portions of freeways be completed as identified in the 1978-1982 TIP and presented in Appendix D-2 (page 152).

It is further recommended that planning and design studies be conducted for each of the existing "stub-end" freeways in Milwaukee County consistent with the recommendations of the new year 2000 regional transportation plan. The scope of such studies could range from detailed physical design of freeway ramp and surface street modifications to subarea multimodal transportation planning studies of alternative improved transportation facilities and services in the area of influence of the "stub-ends" and the uncompleted freeways. It is recommended that the planning and/or design studies for the "stub-end" freeways be initiated as soon as possible but in no case later than July 1, 1978, with the completion date depending on the nature and complexity of the individual studies; that the Milwaukee County Expressway and Transportation Commission assume responsibility for the design studies in close cooperation with WisDOT while the Regional Planning Commission will assume responsibility for the planning studies; that the individual studies have detailed work plans and cost estimates prepared as the first step; and that funding be drawn from existing Federal Aid Interstate and Federal Aid Primary project accounts with appropriate state and local match as preliminary engineering activities.

3. Improved Transit Service

It is recommended that 19 projects aimed at continued implementation and improvement of transit service in the three urbanized areas of the Region be completed as identified in the 1978-1982 TIP and presented in Appendices D-3, D-12, and D-15 (pages 153-154, 177 and 180). These projects include upgrading of current transit facilities and equipment, acquisition of new transit facilities and equipment, and operations of fixed route and specialized transit services. Under these broad projects, public and private nonprofit transit operators in the Region will be providing improved transit service to elderly and handicapped people; better transit communications and monitoring, security and fare policies and collection procedures; expanded transit marketing programs including public information services; and more efficient internal transit management practices. A proposed 1978 internal transit management plan for the Milwaukee County Transit System, the largest transit operator in the Region, is indicative of the efforts to be pursued in the latter regard, and is presented, for informational purposes, in Appendix E.

4. Traffic Signing, Pavement Marking, and Signalization

It is recommended that 86 projects aimed at improving and enhancing the efficiency of highway traffic flow, including buses, in the three urbanized areas and rural portions of the Region, through continued implementation, improvement, and expansion of traffic signing, pavement marking, and signalization be completed as identified in the 1978-1982 TIP and presented in Appendices D-4, D-13, D-16, and D-19 (pages 155-162, 178-179, 180, 182-184).

5. Park-and-Ride Lots with Express Transit Service and Park-and-Pool Lots
It is recommended that 13 projects aimed at increasing the attractiveness of transit service and ride-sharing throughout the Region through the continued implementation and provision of new park-and-ride lots with express transit service and park-and-pool lots be completed as identified in the 1978-1982 TIP and presented in Appendices D-5 and D-20 (pages 163-164 and 185).

6. Transit Route Evaluation
It is recommended that each public transit operator in the Region mount an ongoing design study of routes and schedules; these studies would periodically recommend such changes in routes and schedules as the studies might indicate necessary or desirable. It is further recommended that, drawing from this analysis and evaluation and the ongoing internal management evaluation identified under Item No. 3 above, each transit operator maintain and periodically update a five-year program of proposed operations and service modifications and improvements and facility and equipment replacement, improvements, and expansion.

It is recommended that work on the study design for the Milwaukee County Transit System Transit Development Program (TDP) be completed as soon as possible but no later than February 28, 1978, and that the TDP update itself be completed no later than February 28, 1979; that Milwaukee County have primary responsibility for the work (either through the Transit System, the Department of Public Works, or a consultant); that the presently identified budget of $250,000 be confirmed or modified as a result of the study design; and that the funds be provided, as indicated in the 1977 and 1978 Regional Planning Commission Overall Work Programs: 80 percent, or $200,000, by UMTA Section 9 and 20 percent, or $50,000, by Milwaukee County.

It is further recommended that the other four public transit operators in the Region commit themselves to periodic updates of their five-year transit development programs, possibly with technical assistance from the Regional Planning Commission through its proposed engineering and transit planning program (Item No. 21 below).

7. Spot Street and Highway Improvements
It is recommended that 71 projects aimed at continued implementation and improvement of streets and highways at various locations throughout the Region to promote the efficient flow of auto, truck, and bus traffic through the improvement, reconditioning, and reconstruction of intersections, bridges, and the streets and highways themselves including channelization, resurfacing, and the provision of street lighting be completed as identified in the 1978-1982 TIP and presented in Appendices D-6, D-14, and D-21 (pages 165-173, 179, and 186-187).

8. UBUS/UPARK
It is recommended that implementation of the highly successful UBUS/UPARK program at the University of Wisconsin-Milwaukee be continued, improved, and expanded as deemed appropriate, and that under the Major Transit Generator Study (Item No. 15 below) additional opportunities be explored for the implementation of similar services.

9. Arterial Studies
It is recommended that a prospectus be prepared for a planning study of major intercommunity arterials of the Region, which would explore a number of possible improvements in arterial street and highway efficiency, as briefly described in Chapter VII, and that, after completion of a satisfactory prospectus, the planning studies be mounted.

It is recommended that work on the prospectus be initiated immediately, and be completed no later than July 1, 1978; that the Wisconsin Department of Transportation prepare the prospectus with assistance from the Regional Planning Commission and the City of Milwaukee; that the prospectus be prepared at an estimated cost not to exceed $20,000 and that 40 percent or $8,000 be funded out of FHWA PL funds, 40 percent or $8,000 be funded out of UMTA Section 9 funds, and 20 percent or $4,000 be funded by the Wisconsin Department of Transportation.

10. Downtown Shuttle Services
It is recommended that implementation of the Downtown Shuttlebug in Milwaukee be continued, improved, and expanded as

deemed appropriate and as funds are available and that, under the Transit Route Evaluation (Item No. 6 above), additional opportunities be explored for the implementation of similar services in other parts of the Milwaukee urbanized area and in the other two urbanized areas of the Region.

11. Transit Shelters and Benches
It is recommended that three projects aimed at the provision of transit shelters in the Region be completed as identified in the 1978-1982 TIP and presented in Appendices D-7 and D-17 (pages 173 and 181). It is further recommended that other transit operators, municipalities, and private concerns (where suitable locations abut their property) consider the provision of transit shelters and benches which would increase the comfort of transit patrons and promote increased transit use.

12. Carpool and Vanpool Promotion
It is recommended that two projects aimed at promoting carpools and vanpools in the Region in an effort to decrease congestion, air pollution, and fuel consumption be completed as identified in the 1978-1982 TIP and presented in Appendix D-8 (page 174).

13. Pedestrian and Bicycle Provisions
It is recommended that seven projects aimed at increasing the ease and safety of pedestrian and bicycle travel in the Region be completed as identified in the 1978-1982 TIP and presented in Appendix D-9 (page 175). It is further recommended that employers and units of government consider the provision of appropriate incentives to the use of bicycle and pedestrian modes as briefly described in Chapter VII.

14. Miscellaneous Low-Capital Actions
It is recommended that four low-capital projects aimed generally at enhancing the efficiency of the existing transportation system in the Region be completed as identified in the 1978-1982 TIP and presented in Appendices D-10 and D-18 (pages 176 and 181). It is further recommended that other units of government consider similar low-capital actions.

15. Major Transit Generator Study
It is recommended that a prospectus be prepared for a planning study of major transit generators which would test and evaluate the potential applicability of a variety of innovative transit, paratransit, and ride-sharing services, as briefly described in Chapter VII and that, after completion of a satisfactory prospectus, the major transit generator planning study be mounted.

It is recommended that work on the prospectus be initiated as soon as possible and that it be completed by December 31, 1978; that Milwaukee County have primary responsibility for preparing the prospectus; that the prospectus be prepared at an estimated cost not to exceed $15,000; and that 80 percent or $12,000 be funded out of UMTA Section 9 funds and 20 percent or $3,000 be funded by Milwaukee County.

16. Bus Stop Location Study
It is recommended that the bus stop paving program of the City of Milwaukee be completed as identified in the 1978-1982 TIP and presented in Appendix D-11 (page 176). It is further recommended that a planning study be mounted to analyze and evaluate the location and design of bus stops and the implementation of new bus stop signs as briefly described in Chapter VII.

It is recommended that work on the study be initiated as soon as possible and be completed by December 31, 1978; that Milwaukee County have primary responsibility for conducting the study with the active involvement of the City of Milwaukee and other municipalities; that the study be done for an estimated cost not to exceed $25,000; and that 80 percent or $20,000 be funded out of UMTA Section 9 funds and 20 percent or $5,000 be funded by Milwaukee County.

17. Downtown Parking Rate Structure Study
It is recommended that a planning study be mounted to analyze and evaluate the parking rate structure in Downtown Milwaukee, as briefly described in Chapter VII.

It is recommended that the planning study be initiated as soon as possible and that, although it should be made an ongoing activity, the first report be completed by December 31, 1978; that the City of Milwaukee Department of Public Works prepare the study; and that it be funded with City funds.

18. Taxi Fare and Regulation Study

It is recommended that a planning study be mounted to analyze and evaluate the present taxi fare and regulation structure in the City of Milwaukee, paying close attention to the potential for innovative fare/regulation policies such as shared-ride and zone fare. Similar studies for the remainder of the Region will be recommended when the City study is completed as a model.

It is recommended that the planning study be initiated as soon as possible and that the study be completed by December 31, 1978; that the City of Milwaukee Department of City Development conduct the study; that the study be accomplished for an estimated cost not to exceed $25,000; and that 80 percent or $20,000 be funded out of UMTA Section 9 funds and 20 percent or $5,000 be funded by the City of Milwaukee.

19. Exclusive Bus Lanes

It is recommended that design studies be mounted for the exclusive bus lanes recommended in the year 2000 regional transportation plan as a part of the arterial studies (Item No. 9 above).

It is recognized that the Milwaukee County Transit System downtown transportation center study, the draft of which contains detailed recommendations for the implementation of exclusive bus lanes in Downtown Milwaukee, is currently receiving policy consideration by Milwaukee County and, therefore, detailed implementation recommendations must await final revision (if necessary) and adoption of that study plan report.

20. Commuter-Impacted Permit Parking

It is recommended that the successful commuter-impacted parking permit program of the City of Milwaukee be maintained and expanded as deemed appropriate. It is further recommended that other municipalities experiencing similar situations of traffic and parking congestion explore the potential for managing and controlling the influx of private cars into designated commuter-impacted zones through the issuance of permits to the residents of those areas, exempting them from certain parking restrictions.

21. Community Assistance Traffic Engineering and Transit Planning

It is recommended that a program of technical assistance of and support of local transportation implementing agencies be undertaken, as briefly described in Chapter VII.

It is further recommended that the program be implemented in two parts, one part as described in Chapter VII for areas outside the City of Milwaukee, and the second part for the City itself as described in Exhibit 1.

It is recommended that both parts of the planning assistance program be initiated as soon as possible and be conducted annually on an ongoing basis; that the Regional Planning Commission be responsible for the out-City part of the planning assistance program in close cooperation with WisDOT and that the City of Milwaukee be responsible for the in-City part; that the out-City part of the planning assistance program be undertaken at an estimated cost not to exceed $30,000 for 1978 and that the in-City part be undertaken at an estimated cost not to exceed $75,000 for 1978; and that 40 percent or $42,000 of the total cost of both parts of the planning assistance program be funded out of FHWA PL funds; that 40 percent or $42,000 of the total cost of both parts be funded by UMTA Section 9 funds; that 20 percent of the cost of the out-City part of the Planning program or $6,000 be funded by the Regional Planning Commission; and that 20 percent of the cost of the in-City part of the program or $15,000 be funded by the City of Milwaukee.

22. Work Time Rescheduling

It is recommended that a prospectus be prepared for a planning study to analyze and evaluate the impact of various work time rescheduling schemes, as briefly described in Chapter VII, and that, after completion of a satisfactory prospectus, the work time rescheduling planning study be begun.

The Regional Planning Commission will assume responsibility for preparation of the prospectus; work should begin immediately and be completed by September 30, 1978, with funding drawn from the continuing land use and transportation study.

Exhibit 1

TRANSPORTATION SYSTEMS MANAGEMENT
COMMUNITY ASSISTANCE TRAFFIC ENGINEERING AND TRANSIT PLANNING
CITY OF MILWAUKEE

Additional funds are needed by the urbanized area's largest city, Milwaukee, to finance an expansion and systematic approach to ongoing TSM activities presently undertaken on a fragmented and individual basis and to undertake design and planning studies of TSM activities for which manpower has not been locally funded. The additional funds would be used to establish full-time engineering positions in the Bureau of Traffic Engineering and the Bureau of Engineers with full-time responsibilities for TSM activities at an estimated total annual cost of $75,000.

Transportation Systems Management Activities would include providing liaison and coordination of TSM projects among various City agencies, SEWRPC, and other governmental agencies including such activities as meeting attendance, report preparation, project review and implementation, and the development of an ongoing TSM program. Personnel would also represent City of Milwaukee and assist SEWRPC in preparation of annual TSM plan for the Milwaukee urbanized area.

Specific duties to be performed under various TSM projects:

1. Review of other agency reports concerning proposed projects.
2. Determination of areawide impacts and effects of various TSM projects.
3. Preparation of study reports and proposals for existing and proposed TSM projects.
4. Traffic analysis and flow determination.
5. Geometric design and plan preparation for various TSM-type street projects.
6. Promotion of TSM activities to business and community groups including an outreach program where necessary.

The types of TSM projects in the City of Milwaukee are identified in the body of the report and include:

1. Establishment of a computer assisted traffic signal timing strategy.
2. Participation in other TSM planning and design studies including freeway control system study, stud-end freeway treatments studies, transit route evaluation, arterial studies, bus stop location study, work time rescheduling study, and the energy emergency contingency plan preparation.
3. Downtown public parking rate structure study.
4. Taxi fare and regulation study (not funded under this program).

Source: City of Milwaukee Department of Public Works.

23. Energy Emergency Contingency Plan
It is recommended that a prospectus be prepared for a planning study to analyze and evaluate alternative potential responses of the Region to an energy emergency, as briefly described in Chapter VII, and that, after completion of a satisfactory prospectus, the energy emergency planning study be mounted.

The Regional Planning Commission will assume responsibility for preparation of the prospectus; work will begin immediately and be completed by September 30, 1978, with funding drawn from the continuing land use and transportation study.

24. Weekend and Special Event Traffic Planning
It is recommended that in 1979, or earlier if resources become available, a prospectus be prepared for a planning study to analyze and evaluate potential traffic management and transit initiatives to cope with the special demands of weekends and special events, as briefly described in Chapter VII, and that, after completion of a satisfactory prospectus, the weekend and special event traffic planning study be mounted.

CONTINUING TSM PLANNING

In recognition of the need for continuing and ongoing coordination of the planning, design, and implementation work described in the 24 TSM actions, the Regional Planning Commission is committed to the monitoring of TSM implementation and the coordination of ongoing TSM planning. To that end, and as continued implementation of the TSM planning process outlined in this report, (specifically in Chapters I, II, III, VII, and VIII), the Commission will immediately begin preparation of a prospectus for an ongoing TSM planning effort as an integrated part of its overall transportation planning work program.

SUMMARY

The detailed recommendations contained in this chapter call for the implementation of 223 projects, as summarized in Table 30. The 223 projects include 32 continued implementation projects listed in Table 31, costing $5,322,500, and aimed at alleviating specific problems on portions of the arterial street and highway system which was identified as operating at or over capacity in 1972, as described in Chapter VI. A total of 180 other continuing implementation projects contained in the TSM plan at an estimated cost of $194,635,200 are targeted to more general transportation problems on the highway and transit systems of the Region. In addition, the TSM plan calls for 11 specific planning studies at a cost of $1,010,000 to analyze and evaluate alternative potential courses of TSM action for the future as well as making a more generalized recommendation for planning and/or design studies at a cost to be determined in the "stub-end" freeway areas of Milwaukee County.

The total cost of the 223 projects is $200,967,700 with $58,177,300 expected to be spent on 188 projects either during calendar year 1978 (for transit projects) or prior to October 1, 1979 (for highway projects) to correspond to the annual element of the 1978-1982 Transportation Improvement Program. A detailed breakdown of expenditures by area of the Region is presented in Table 32.

The TSM recommendations, which include a wide variety of planning, design, construction, and operations/management activities, will heavily involve all large and many small transportation implementing agencies in southeastern Wisconsin, and represent an ambitious agenda of transportation systems management actions for the Region in 1978 and beyond.

Table 30

SUMMARY OF TSM RECOMMENDATIONS

TSM Action	Project Type and Quantity	Lead Agency	Source of Federal Funds	Total Project Costs Costs in 1978 TIP Annual Element or Overall Work Program (if different from total) (in $1,000)	Recommended Implementation
Freeway Control System	Continued Implementation (2) and	WisDOT	Identified in TIP	351.0	Continued Implementation
	Prospectus/Detailed Planning Study (1)	SEWRPC with WisDOT	FAI/FAP	525.0 (Prospectus and Study)	Prospectus initiated as soon as possible; completed by 12/31/78; study to follow immediately
Stub End Freeway Treatments	Implementation (1), Design Study (1) and	Milwaukee County and WisDOT	Identified in TIP	527.0/27.0	Continued Implementation
	Design and/or Planning Studies	Milwaukee County/ SEWRPC	FAI/FAP	None identified	Studies be initiated by 7/1/78
Improved Transit Service	Continued Implementation (18)	Various	Identified in TIP	168,940.8/39,707.8	Continued Implementation
Traffic Signing, Pavement Marking, and Signalization	Continued Implementation (83)	Various	Identified in TIP	7,413.3/5,363.3	Continued Implementation
Park-and-Ride Lots with Express Transit Service and Park-and-Pool Lots	Continued Implementation (16)	Milwaukee County and WisDOT	Identified in TIP	7,129.0/3,304.0	Continued Implementation
Transit Route Evaluation	Planning Study (1)	Milwaukee County	Identified in OWP	250.0	(Milwaukee) Study design be completed by 2/28/78; first updated transit development program completed 2/28/79
Spot Street and Highway Improvements	Continued Implementation (70)	Various	Identified in TIP	13,924.5/7,218.1	Continued Implementation
UBUS/UPARK	Continued Implementation	Milwaukee County/ UWM	Included under improved transit service	Included under No. 3 above	Continued Implementation
Arterial Studies	Prospectus/Planning and Design Study (1)	WisDOT or SEWRPC	FHWA PL/UMTA Section 9	20.0 (Prospectus only)	Prospectus initiated as soon as possible; completed by 7/1/78; studies to follow
Downtown Shuttle Services	Continued Implementation	Milwaukee County	Included under improved transit service	Included under No. 3 above	Continued Implementation
Transit Shelters	Continued Implementation (3)	Milwaukee County, Kenosha, and Shorewood	Identified in TIP	749.4/373.4	Continued Implementation
Carpool and Vanpool Promotion	Expanded Implementation (2)	Milwaukee County and WisDOT	Identified in TIP	265.0/215.0	Continued Implementation
Pedestrian and Bicycle Provisions	Continued Implementation (7)	Various	Identified in TIP	472.5/422.5	Continued Implementation
Miscellaneous Low-Capital Actions	Continued Implementation (4)	Various	Identified in TIP	55.2	Continued Implementation
Major Transit Generator Study	Prospectus/Planning Study (1)	Milwaukee County	UMTA Section 9	15.0 (Prospectus only)	Prospectus initiated as soon as possible; completed by 12/31/78; study to follow
Bus Stop Location Study	Continued Implementation (1) and	City of Milwaukee and	Identified in TIP and UMTA Section 9	155.0	Continued implementation and study to be initiated as soon as possible and completed by 12/31/78
	Planning Study (1)	Milwaukee County			
Downtown Parking Rate Structure Study	Planning Study (1)	City of Milwaukee DPW	Local Funds	15.0	Study initiated as soon as possible with first report completed by 12/31/78
Taxi Fare and Regulation Study	Planning Study (1)	City of Milwaukee DCD	UMTA Section 9	25.0	Study initiated as soon as possible and completed by 12/31/78
Exclusive Bus Lanes	Design Study	Milwaukee County	None Identified	--	Implementation upon adoption of Milwaukee Downtown Transportation Center Study; others as part of Arterial Studies (arterial studies above)
Commuter-Impacted Permit Parking	Continued Implementation (1)	City of Milwaukee DPW	Local Funds	10.0	Continued Implementation
Community Assistance Traffic Engineering and Transit Planning	Planning Assistance Program (2)	SEWRPC/City of Milwaukee	FHWA PL/UMTA Section 9	105.0	Initiated as soon as possible
Work Time Rescheduling Study	Prospectus/Planning Study (1)	SEWRPC	Identified in OWP	10.0	Prospectus initiated as soon as possible; to be completed by 9/30/78; study to follow
Energy Emergency Contingency Plan	Prospectus for Planning Study (1)	SEWRPC	Identified in OWP	10.0	Prospectus initiated as soon as possible; to be completed by 9/30/78; study to follow
Weekend and Special Event Traffic Planning	Prospectus for Planning Study	SEWRPC with WisDOT	Postponed until 1979	--	Postponed until 1979
Total				200,967.7/58,177.3	

Source: SEWRPC.

Table 31

TSM PROJECTS AIMED AT ALLEVIATING DEFICIENCIES ON PORTIONS OF THE REGIONAL ARTERIAL HIGHWAY SYSTEM WHICH WERE OPERATING AT OR OVER CAPACITY IN 1972

Project	Implementing Agency	Total Project Cost
Milwaukee Urbanized Area		
Install traffic signals at various locations along Moorland Road in the City of New Berlin	City of New Berlin	$ 50,000
Install freeway ramp controls on the East-West Freeway (IH 94) at various locations between west county line and Marquette Interchange	Wisconsin Department of Transportation	175,000
Freeway ramp study North-South Freeway (IH 43) between Winnebago and W. North Avenue	Wisconsin Department of Transportation	2,000
Install signals and construct turn lanes Bluemound Road at N. 124th Street	City of Wauwatosa	210,000
Interconnect traffic signals on N. 76th Street between W. National Avenue and W. Greenfield Avenue	City of West Allis	20,000
Interconnect traffic signals on W. Greenfield Avenue between N. 68th Street and N. 77th Street	City of West Allis	30,000
Improve pavement marking at three locations on N. Lake Drive	Village of Whitefish Bay	3,000
Centralized traffic signal control system demonstration project.	City of Waukesha	1,600,000
Revise traffic signals USH 18 at Elm Grove Road	Wisconsin Department of Transportation	20,000
Install traffic signals STH 190 at Calhoun Road	Wisconsin Department of Transportation	10,000
Install traffic signals USH 18 at N. 124th Street	Wisconsin Department of Transportation	30,000
Install traffic signals USH 18 at Brookfield Road	Wisconsin Department of Transportation	25,000
Resurface and channelize 7.3 miles of East and West bound lanes of W. Capitol Drive between N. 107th Street and the Milwaukee River	City of Milwaukee	2,000,000
Replace bridge on Harwood Avenue over the Menomonee River	City of Wauwatosa	30,000
Construct left turn lanes on W. North Avenue between N. 104th Street and 116th Street	City of Wauwatosa	100,000
Upgrade intersection S. 60th Street at W. Walker Street	City of West Allis	313,600
Install lighting on W. Oklahoma Avenue between S. 93rd Street and S. 116th Street	City of West Allis	14,000
Eliminate road hazard at three locations on N. Lake Drive	Village of Whitefish Bay	8,900
Reconstruct CTH A at STH 59	Waukesha County	300,000
Construct left turn lane CTH F at CTH FT	Waukesha County	5,000
Reconstruct CTH YY at Chateau Drive	Village of Menomonee Falls	15,000
Reconstruct W. National Avenue at Coffee Road	City of New Berlin	12,000

Table 31 (continued)

Project	Implementing Agency	Total Project Cost
Racine Urbanized Area		
Install traffic signals STH 32 at Durand Road	Wisconsin Department of Transportation	$ 20,000
Install traffic signals STH 20 at Emmertsen Road	Wisconsin Department of Transportation	30,000
Install traffic signals STH 11 at Kentucky Street	Wisconsin Department of Transportation	25,000
Install traffic signals STH 11 at STH 31	Wisconsin Department of Transportation	20,000
Recondition traffic signals STH 38 at Rapids Drive	Wisconsin Department of Transportation	40,000
Reconstruct West Boulevard at Kinzie and Ozborne	City of Racine	85,000
Reconstruct Kinzie Avenue at Chicago Street	City of Racine	54,000
Kenosha Urbanized Area		
Install traffic signals STH 32 (Sheridan Road) at 85th and 91st Streets	City of Kenosha	20,000
Rural Area		
Install traffic signals STH 50 at Wright Street in the City of Delavan	Wisconsin Department of Transportation	30,000
Install traffic signals STH 67 at Thackeray Terrace in the City of Oconomowoc	Wisconsin Department of Transportation	25,000
	Total	$5,322,500

Source: SEWRPC.

Table 32

RECOMMENDED TSM EXPENDITURES AND PROJECTS BY AREA

TSM Action	Kenosha Urbanized Area	Milwaukee Urbanized Area	Racine Urbanized Area	Rural Area	Regional Projects	Total
Freeway Control System		876.0(4)				876.0(4)
Stub-End Freeway Treatments		527.0(2)/ 27.0(2)				527.0(2)/ 27.0(2)
Improved Transit Service	3,257.0(4)/ 747.0(3)	161,441.8(13)/ 38,051.8(13)	4,242.0(2)/ 909.0(2)			168,940.8(19)/ 39,707.8(18)
Traffic Signing, Pavement Marking, and Signalization	60.0(2)	5,302.0(56)/ 3,527.0(50)	1,217.0(9)/ 1,122.0(5)	834.3(19)/ 654.3(16)		7,413.3(86)/ 5,363.3(73)
Park-and-Ride and Park-and-Pool with Express Transit		7,104.0(12)/ 3,279.0(7)		25.0(1)		7,129.0(13)/ 3,304.0(8)
Transit Route Evaluation		250.0(1)				250.0(1)
Spot Street and Highway Improvements		12,610.5(57)/ 6,353.1(45)	139.0(2)/ 85.0(1)	1,175.0(12)/ 780.0(10)		13,924.5(71)/ 7,218.1
UBUS/UPARK		Under No. 3 above.				--
Arterial Studies					Prospectus 20.0(1) and Studies	20.0(1)
Downtown Shuttle Services		Under No. 3 above.				--
Transit Shelters	80.0(1)	669.4(2)/ 293.4(1)				749.4(3)/ 373.4(2)
Carpool and Vanpool Promotion					265.0(2)/ 215.0(2)	265.0(2)/ 215.0(2)
Pedestrian and Bicycle Provisions		472.5(7)/ 422.5(7)				472.5(7)/ 422.5(7)
Miscellaneous Low-Capital Actions	0.2(1)	55.0(3)				55.2(4)
Major Transit Generator Study		Prospectus 15.0(1) and Study				15.0(1)
Bus Stop Location Study		130.0(1) and Study 25.0(1)				155.0(2)
Downtown Parking Rate Structure Study		15.0(1)				15.0(1)
Taxi Fare and Regulation Study		25.0(1)				25.0(1)
Exclusive Bus Lanes						--
Commuter-Impacted Permit Parking		10.0(1)				10.0(1)
Community Assistance Traffic Engineering and Transit Planning		75.0(1)			30.0(1)	105.0(2)
Work Time Rescheduling Study					Prospectus 10.0(1) and Study	10.0(1)
Energy Emergency Contingency Plan					Prospectus 10.0(1) and Study	10.0(1)
Weekend and Special Event Traffic Planning		Postponed Until 1979				
	3,397.2(8)/ 887.2(7)	189,603.2(164)/ 53,429.8(140)	5,598.0(13)/ 2,116.0(8)	2,034.3(32)/ 1,459.3(27)	335.0(6)/ 285.0(6)	200,967.7(223)/ 58,177.3(188)

NOTE: All costs are in $1,000's. Some items have two costs separated by a line. The upper figure represents the total recommendations of the TSM plan, while the lower number represents the portion of those recommendations to be implemented as part of the annual element of the 1978-1982 Transportation Improvement Program. Where only one cost is shown, all recommendations are part of the annual element. Figures in parentheses are numbers of projects.

Source: SEWRPC.

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APPENDICES

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federal register

WEDNESDAY, SEPTEMBER 17, 1975

PART II:

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Urban Mass Transportation Administration

■

TRANSPORTATION IMPROVEMENT PROGRAM

Title 23—Highways

CHAPTER I—FEDERAL HIGHWAY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

PART 450—PLANNING ASSISTANCE AND STANDARDS

Urban Transportation Planning

The purpose of this document is to issue final regulations implementing certain provisions of title 23, U.S.C., and the Urban Mass Transportation Act of 1964, as amended, 49 U.S.C. 1601, et seq. (UMT Act), governing urban transportation planning under the Federal Highway Administration and the Urban Mass Transportation Administration programs.

In the November 8, 1974, edition of the FEDERAL REGISTER (39 FR 39660), the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA) published a notice of proposed rulemaking (the "notice") to add a new Part 450, Subpart A, to 23 CFR, Chapter I, and a new Part 613, Subpart B, to 49 CFR, Chapter VI.

The public was invited to participate in this rulemaking through submission of written comments. Over 120 interested groups and individuals provided comments, including the House Committee on Public Works and Transportation, the Senate Committee on Public Works, the American Public Transit Association, the American Association of State Highway and Transportation Officials, State departments of transportation, cities, and a number of metropolitan planning organizations. In arriving at the final regulations set forth below, FHWA and UMTA have given consideration to all comments received in response to the notice of proposed rulemaking insofar as they related to matters within the scope of that notice. Review of the comments received indicated the desirability of making changes in the regulations as originally proposed. In view of the interest expressed in these regulations, except for editorial revisions, those sections of these final regulations which have been revised or were the subject of major interest are discussed in this commentary.

Since the publication of the notice of these proposed rules, Congress has enacted the National Mass Transportation Assistance Act of 1974 (Pub. L. 93-503, 88 Stat. 1565), which amended the UMT Act to add among other matters a new formula grant program under which both capital and operating assistance may be provided, and to make the "3-C" planning process described in 23 U.S.C. 134 applicable to all UMTA-assisted capital and operating projects. While the enactment of Pub. L. 93-503 did require some modification of these regulations, these changes were essentially technical in nature, and, where made, do not represent any overall substantive change except for the addition of the Transportation Systems Management (TSM) element (discussed *infra*).

In response to the notice, some concern was expressed that the role of the Metropolitan Planning Organization (MPO) in the planning and programing process tended to impinge on State and local authority. It was intended that the MPO provide a forum for cooperative decisionmaking by principal elected officials of general purpose local government; accordingly, the definition of the MPO has been modified to clarify this intent. It is not intended to preclude the State and publicly owned operators from acting through this forum.

A few comments addressed the Governor's designation of these organizations. The Department recognizes that institutional arrangements are at different stages of evolution in the various urbanized areas; accordingly, considerable flexibility will be afforded by FHWA and UMTA in the administration of § 450.106. We note in this connection that while it is encouraged, nothing in the regulations requires that the MPO and the A-95 agency be the same. Further, designations made under § 450.106 may be changed when appropriate, consistent with the provisions of that section.

A number of comments on the geographic scope of the urban transportation planning process indicated concern that the regulation could be interpreted to encourage coverage of rural areas. The intent is that the planning process extend to urban and urbanizing areas; consistent with that intent, the regulation has been revised to allow each urbanized area mixiumum flexibility in determining the geographic scope of the urban transportation planning process.

Several comments were directed to the failure of § 450.112 to reflect the tripartite nature of the planning process, i.e., the involvement in the process of State government, local government, and publicly owned operators of mass transportation services as specified in the section on "Agreements." For this reason, § 450.112 has been revised to stipulate that the MPO, in cooperation with the State and with publicly owned operators of mass transportation services, is responsible for carrying out the urban transportation planning process.

Section 450.116 has been revised to provide greater detail regarding the components of the transportation plan. The transportation plan includes the TSM and the long-range elements. The TSM element was initially referenced in § 450.120 of the proposed regulation. It is designed to meet the short-range transportation needs of urban areas through efficient use of existing facilities. A joint issuance appended to these regulations provides additional advisory information on the scope and objectives of the TSM element.

Notice is given that the inclusion in the Transportation Improvement Program (TIP) of projects recommended from the TSM element will be a condition of UMTA program approvals. The TSM element and the programing for its implementation in the TIP supports the requirement to improve the efficiency of mass transportation service pursuant to section 5(d)(2) of the UMT Act (49 U.S.C. 1604(d)(2)) and is deemed to be the program of actions referred to in the expression of intent described in Section F of the Capital and Operating Assistance Formula Grants and the Interim Guidelines and Procedures (40 FR 2534, January 13, 1975).

The target date envisioned for the development of the TSM element and the programing for its implementation is March 30, 1976.

Section 450.120 of the regulation has been reorganized to group the general planning activities, first, and the activities of a technical nature, second. In response to comments and to statutory requirements, planning process elements were added to cover energy conservation, consideration of existing private mass transportation services, coordination with air quality planning and with planning for the transportation needs of the elderly and handicapped.

A number of comments addressed the criteria for Federal determinations under the "Certification" section. In response, § 450.122 has been simplified to indicate that certification will be based on compliance with the requirements in this subpart and that the determination will be made by UMTA and FHWA acting jointly. The certification determination is a Federal evaluation of the planning process.

A further clarification in § 450.122 pertains to the lapsing of certification. The Department intends that a negative planning finding be a deliberate determination and not the result of an administrative oversight. Accordingly, the planning certification will remain in effect until a new determination is made.

These regulations unify the individual planning requirements of FHWA and UMTA and supersede the foliowing operating procedures: FHWA Policy and Procedure Memorandums 50-9 and 50-11, Instructional Memorandums 50-3-71 and 50-4-68; Sections D and F of the Capital and Operating Assistance Formula Grants; Interim Guidelines and Procedures (40 FR 2534, January 13, 1975); and the Urban Mass Transportation Planning Requirements Guide as contained in Appendix 2 of the UMTA External Operating Manual (UMTA Order 1000.2, dated August 22, 1972).

In consideration of the foregoing, and under the authority of 23 U.S.C. 104(f)(3), 134, and 315, and sections 3, 4(a), and 5 of the UMT Act (49 U.S.C. 1602, 1603(a), and 1604), and the delegation of authority by the Secretary of Transportation at 49 CFR 1.48(b) and 1.50(f), Chapter I of title 23 and Chapter VI of title 49 of the Code of Federal Regulations are hereby amended by adding a new Part 450, Subpart A as set forth below.

Effective date: These regulations take effect on October 17, 1975.

Issued on: Septmber 11, 1975.

L. P. LAMM,
Executive Director,
Federal Highway Administration.

ROBERT E. PATRICELLI,
Urban Mass Transportation
Administrator.

Subpart A of Part 450 is added as set forth below:

Subpart A—Urban Transportation Planning

Sec.
450.100 Purpose.
450.102 Applicability.
450.104 Definitions.
450.106 Metropolitan Planning Organization: designation.
450.108 Metropolitan Planning Organization: agreements.
450.110 Metropolitan Planning Organization: geographic scope.
450.112 Metropolitan Planning Organization: responsibilities.
450.114 Urban transportation planning process: planning work programs.
450.116 Urban transportation planning process: transportation plan.
450.118 Urban transportation planning process: transportation improvement program.
450.120 Urban transportation planning process: elements.
450.122 Urban transportation planning process: certification.

Appendix: Advisory Information on Development of Transportation Systems Management Elements.

AUTHORITY: 23 U.S.C. 104(f)(3), 134, and 315; Sections 3, 4(a), and 5 of the Urban Mass Transportation Act of 1964, as amended, (UMT Act) (49 U.S.C. 1602, 1603(a), and 1604); and 49 CFR 1.48(b) and 1.50(f).

Subpart A—Urban Transportation Planning

§ 450.100 Purpose.

The purpose of this subpart is to implement 23 U.S.C. 134, and Sections 3(a)(2), 4(a), 5(g)(1), and 5(l) of the Urban Mass Transportation Act of 1964, as amended, (49 U.S.C. 1602(a)(2), 1603(a), and 1604(g)(1) and (l)), which require that each urbanized area, as a condition to the receipt of Federal capital or operating assistance, have a continuing, cooperative, and comprehensive transportation planning process that results in plans and programs consistent with the comprehensively planned development of the urbanized area.

§ 450.102 Applicability.

The provisions of this subpart are applicable to the transportation planning process in urbanized areas. Certification under this subpart shall be a prerequisite for program approvals in urbanized areas pursuant to 23 U.S.C. 105(d) and 134(a), section 5(g) of the UMT Act (49 U.S.C. 1604(g)), and Subpart C of this part.

§ 450.104 Definitions.

(a) Except as otherwise provided, terms defined in 23 U.S.C. 101(a) are used in this subpart as so defined.

(b) As used in this subpart:

"Governor" means the Governor of any one of the fifty States, and includes the Mayor of the District of Columbia.

"Metropolitan Planning Organization (MPO)" means that organization designated by the Governor as being responsible, together with the State, for carrying out the provisions of 23 U.S.C. 134, as provided in 23 U.S.C. 104(f)(3), and capable of meeting the requirements of sections 3(a)(2) and (e)(1), 4(a), and 5(g)(1) and (l) of the UMT Act (49 U.S.C. 1602(a)(2) and (e)(1), 1603(a), and 1604(g)(1) and (l)). This organization is the forum for cooperative decisionmaking by principal elected officials of general purpose local government.

§ 450.106 Metropolitan Planning Organization: designations.

(a) The Governor of each State shall designate the Metropolitan Planning Organization (MPO). To the extent possible, only one MPO shall be designated for each urbanized area or group of contiguous urbanized areas.

(b) Funds authorized by 23 U.S.C. 104(f) shall be made available by the State to the MPO, as required by 23 U.S.C. 104(f)(3). To the extent possible, the MPO shall be eligible to receive planning funds authorized by section 9 of the UMT Act of 1964, as amended, (49 U.S.C. 1607a).

(c) To the extent possible, the MPO designated by the Governor shall be established under specific State legislation, State enabling legislation, or by Interstate compact, with authority to carry out metropolitan transportation planning, and should perform the functions required by the Office of Management and Budget (OMB) Circular A-95 "Evaluation, Review, Coordination of Federal Assistance Programs and Projects" November 13, 1973, as amended.

(d) Principal elected officials of general purpose local government within the jurisdiction of the MPO shall have adequate representation on the MPO.

(e) Nothing herein shall be deemed to prohibit the MPO from utilizing, through contractual agreements, the staff resources of other local agencies to carry out selected elements of the planning process.

(f) An MPO designated under the provisions of this section shall remain designated until the Governor designates another MPO under the provisions of this section.

§ 450.108 Metropolitan Planning Organization: agreements.

(a) The responsibilities for cooperatively carrying out transportation planning and programing shall be clearly identified in an agreement or memorandum of understanding between the State and the MPO.

(b) Where the MPO is different from the A-95 agency, there shall be an agreement between the two organizations which prescribes the means by which their activities will be coordinated, as required by Part IV of OMB Circular A-95. This agreement shall specify how transportation planning and programing will be part of the comprehensively planned development of the urbanized area.

(c) There shall be an agreement between the MPO and publicly owned operators of mass transportation services which specifies cooperative procedures for carrying out transportation planning and programing as required by this subpart.

(d) To the extent possible, there shall be one cooperative agreement containing the understandings required by this section among the State, MPO, publicly owned operators of mass transportation services and, where necessary, the A-95 agency.

§ 450.110 Metropolitan Planning Organization: geographic scope.

The transportation planning process shall, as a minimum, cover the urbanized area and the area likely to be urbanized in the period covered by the long-range element of the transportation plan described in § 450.116 of this subpart.

§ 450.112 Metropolitan Planning Organization: responsibilities.

(a) The MPO in cooperation with the State, and in cooperation with publicly owned operators of mass transportation services, shall be responsible for carrying out the urban transportation planning process specified in § 450.120 and shall develop the planning work programs, transportation plan, and transportation improvement program specified in §§ 450.114 through 450.118 of this subpart. The MPO shall be the forum for cooperative decisionmaking by principal elected officials of general purpose local government.

(b) The MPO shall annually endorse the plans and programs required by §§ 450.114 through 450.118 of this subpart.

§ 450.114 Urban transportation planning process: planning work programs.

(a) The urban transportation planning process shall include the development of a prospectus and a unified planning work program.

(b) The prospectus shall establish a multiyear framework within which the unified planning work program is accomplished and shall include:

(1) A summary of the planning program including discussion of the important transportation issues facing the area;

(2) A general description of the status and anticipated accomplishments of each of the elements specified in § 450.120 of this subpart;

(3) A description of the procedures to be used in carrying out each element specified in § 450.120 of this subpart;

(4) A description of the functional responsibilities of each participating agency; and

(5) Copies of agreements specified in § 450.108 of this subpart.

(c) The unified planning work program shall: (1) Annually describe all urban transportation and transportation-related planning activities anticipated within the area during the next 1- or 2-year period regardless of funding sources; and (2) Document work to be performed with planning assistance provided under section 9 of the UMT Act (49 U.S.C. 1607a) and 23 U.S.C. 104(f) and 307(c).

(d) The prospectus and the unified planning work program may be combined in a single document. Arrange-

ments may be made to further combine these documents with work program requirements of other Federal sources of physical planning funds (e.g., Department of Housing and Urban Development, Environmental Protection Agency, and Department of the Interior).

§ 450.116 Urban transportation planning process: transportation plan.

(a) The urban transportation planning process shall include the development of a transportation plan consisting of a transportation systems management element and a long-range element. The transportation plan shall be reviewed annually to confirm its validity and its consistency with current transportation and land use conditions.

(b) The transportation systems management element of the transportation plan shall:

(1) Provide for the short-range transportation needs of the urbanized area by making efficient use of existing transportation resources and providing for the movement of people in an efficient manner; and

(2) Identify traffic engineering, public transportation, regulatory, pricing, management, operational and other improvements to the existing urban transportation system not including new transportation facilities or major changes in existing facilities.

(c) The long-range element of the transportation plan shall:

(1) Provide for the long-range transportation needs of the urbanized area; and

(2) Identify new transportation policies and transportation facilities or major changes in existing facilities by location and modes to be implemented.

(d) The transportation plan shall be consistent with the area's comprehensive long-range land use plan, urban development objectives, and the area's overall social, economic, environmental, system performance and energy conservation goals and objectives.

§ 450.118 Urban transportation planning process: transportation improvement program.

(a) The urban transportation planning process shall include development of a transportation improvement program including an annual element as prescribed in Subpart C of this part.

(b) The program shall be a staged multiyear program of transportation improvement projects consistent with the transportation plan developed under § 450.116 of this subpart.

§ 450.120 Urban transportation planning process: elements.

(a) The urban transportation planning process shall:

(1) Provide for the consideration of social, economic, and environmental effects, in support of the requirements of 23 U.S.C. 109(h), and sections 5(h)(2) and 14 of the UMT Act (49 U.S.C. 1604 (h)(2) and 1610);

(2) Be coordinated with air quality planning conducted pursuant to 42 U.S.C. 1857 (Clean Air Act);

(3) Include provisions to ensure involvement of the public;

(4) Be consistent with Title VI of the Civil Rights Act of 1964 and the Title VI assurance executed by each State under 23 U.S.C. 324 and 29 U.S.C. 794, which ensure that no person shall on the grounds of race, color, sex, national origin, or physical handicap be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination under any program receiving Federal assistance from the Department of Transportation;

(5) Include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons pursuant to section 16 of the UMT Act (49 U.S.C. 1612) and section 165(b) of the Federal-Aid Highway Act of 1973, as amended;

(6) Provide for the consideration of energy conservation;

(7) Include consideration of existing private mass transportation services; and

(8) Include the following technical activities to the degree appropriate for the size of the metropolitan area and the complexity of its transportation problems:

(i) An analysis of existing conditions of travel, transportation facilities, and systems management;

(ii) An evaluation of alternative transportation systems management improvements to make more efficient use of existing transportation resources and the development of the transportation systems management element of the transportation plan.

(iii) Projections of urban area economic, demographic, and land use activities consistent with urban development goals and the development of potential transportation demands based on these levels of activity;

(iv) Analysis of alternative transportation investments to meet areawide needs for new transportation facilities and the development of the long-range element of the transportation plan;

(v) Refinement of the transportation plan through the conduct of corridor, transit technology, and staging studies; and subarea, feasibility, location, legislative, fiscal, functional classification, and institutional studies;

(vi) Monitoring and reporting of urban development and transportation indicators and a regular program of reappraisal of the transportation plan; and

(vii) Implementation programing which merges the results of plan refinement of the long-range element and the improvements recommended in the transportation systems management element of the transportation plan to produce a transportation improvement program as specified in Subpart C of this part.

(b) The urban transportation planning process shall include preparation of technical reports to assure documentation of the development, refinement, and reappraisal of the transportation plan.

§ 450.122 Urban transportation planning process: certification.

(a) The Federal Highway and Urban Mass Transportation Administrators jointly will review and evaluate annually the transportation planning process in each urbanized area to determine if the process meets the requirements of this subpart.

(b) If, upon the review and evaluation conducted under paragraph (a) of this section, the Administrators jointly determine that the transportation planning process in an urbanized area meets or substantially meets the requirements of this subpart, they may take one of the following actions, as appropriate:

(1) Certify the transportation planning process; or

(2) Certify the transportation planning process subject to one of the following conditions:

(i) That certain specified corrective actions be taken; or

(ii) That the process is a basis for approval of only those categories of programs or projects that the Administrators may jointly detremine and that certain specified corrective actions be taken.

(c) The State and the MPO shall be notified of the actions taken under paragraph (b) of this section.

(d) A certification under paragraph (b) of this section will remain in effect until a new certification determination is made.

APPENDIX

ADVISORY INFORMATION ON DEVELOPMENT OF TRANSPORTATION SYSTEMS MANAGEMENT ELEMENTS UNDER UMTA AND FHWA JOINT REGULATIONS, 23 CFR PART 450, SUBPARTS A AND C, AND 49 CFR PART 613, SUBPARTS A AND B

1. *Purpose.* The preamble to the National Mass Transportation Assistance Act of 1974 states that efficient, economical and convenient mass transportation is a vital public service essential to the health and welfare of urban areas. The resources provided by the Act are intended to assist communities in preserving and revitalizing their mass transit systems. An essential part of this goal is to improve the efficiency of transit service—not only to achieve greater economies of operation, but also to help contribute to the wider national objectives of energy conservation, improved air quality, and increased social and environmental amenity. The 1974 Act provides additional resources to enable localities to improve the efficiency of transit operations.

Similarly, Section 135 of title 23 declares it to be in the national interest that there should be a continuing program within urban areas "designed to reduce traffic congestion and to facilitate the flow of traffic." Improvements which "directly facilitate and control traffic flow" are made eligible projects for Urban Extension and Urban System funds.

Pursuant to the planning requirements established for urbanized areas in title 23 and the Urban Mass Transportation Act of 1964, as amended, UMTA and FHWA have jointly issued regulations (23 CFR Part 450 and 49 CFR Part 613) that require the urban transportation planning process to develop (1) a Plan containing a Transportation System Management (TSM) element, and (2) a Transportation Improvement Program (TIP) for each urbanized area.

The purposes of these supplementary guidelines is to jointly provide additional definitions and explanation of the intent and scope of the Transportation Systems Management requirements specified in the joint

planning regulations. Each Administration (i.e., UMTA and FHWA) will be using its own regulations or policy mechanisms to specify further conditions in order to meet their requirements for approval of programs or projects under their jurisdiction.

2. *Introduction.* Automobiles, public transit, taxis, pedestrians, and bicycles should be considered as elements of one single urban transportation system. The objective of urban transportation system management is to coordinate these individual elements through operating, regulatory and service policies so as to achieve maximum efficiency and productivity for the system as a whole.

Controlling the flow of traffic, influencing the volume, pattern and mix of traffic, and giving priority to buses and other high-occupancy vehicles may be the single most effective set of measures to improve the efficiency and productivity of both mass transportation service and the entire urban transportation system. However, other actions can also be effective. Mass transit efficiency can be increased through internal management actions, such as more flexible routing, dispatching and scheduling of transit vehicles. Urban transportation system efficiency can be increased by the provision of para-transit services, incentives for carpools, and greater off-peak use of transportation facilities. Conflicts between pedestrians and vehicles can be reduced by developing explicit and coordinated policy to balance competing claims on street space. Economic or other disincentives can be introduced to discourage low-occupancy auto use, reduce traffic in congested areas, and persuade commuters to shift to mass transit; the quality of public transit service can be improved to compensate for any reductions in auto accessibility.

3. *Planning requirement.* The UMTA and FHWA do not intend to prescribe efficiency standards or the particular measures that an urbanized area must adopt to meet the requirement to develop a Transportation Systems Management element. Formulation of an overall policy strategy, assessment of candidate measures, and selection, programing and implementation of actions are clearly a local responsibility to be carried out as part of continuing transportation planning and implementation process. In accordance with the joint regulations, the Metropolitan Planning Organization (MPO) in each urbanized area in cooperation with the State and in cooperation with publicly-owned operators of mass transportation services is responsible for the development and periodic updating of the Transportation Systems Management element.

The plan should set forth the underlying goals and policy objectives and the strategy selected to accomplish them. Since the plan will have official status as a product of the areawide planning process, once it is endorsed by the MPO, it should represent agreement on the part of those agencies identified as responsible for carrying out each action. The programing for implementation of Transportation Systems Management projects in the annual element of the Transportation Improvement Program represents a commitment for carrying out each action.

4. *Actions to be considered.* The following major categories of action should be considered for inclusion in the Transportation Systems Management element. While the feasibility of and need for individual actions may differ with the size of an urbanized area or the extent of its congestion, all categories of actions should be considered. It is expected that some actions in each category will be appropriate for any urbanized area.

a. *Actions to ensure the efficient use of existing road space through*

(1) Traffic operations improvements to manage and control the flow of motor vehicles, such as:
- Channelization of traffic
- One-way streets
- Better signalization and progessive timing of traffic signals
- Computerized traffic control
- Metering access to freeways
- Reversible traffic lanes
- Other traffic engineering improvements

(2) Preferential treatment for transit and other high-occupancy vehicles, such as:
- Reserved or preferential lanes on freeways and city streets
- Exclusive lanes to bypass congested points
- Exclusive lanes at toll plazas with provision for no-stop toll collection
- Conversion of selected downtown streets to exclusive bus use
- Exclusive access ramps to freeways
- Bus preemption of traffic signals
- Strict enforcement of reserved transit rights-of-way
- Special turning lanes or exemption of buses from turning restrictions

(3) Appropriate provision for pedestrians and bicycles, such as:
- Bicycle paths and exclusive lanes
- Pedestrian malls and other means of separating pedestrian and vehicular traffic
- Secure and convenient storage areas for bicycles
- Other bicycle facilitation measures

(4) Management and control of parking through:
- Elimination of on-street parking, especially during peak periods
- Regulation of the number and price of public and private parking spaces
- Favoring parking by short-term users over all-day commuters
- Provision of fringe and transportation corridor parking to facilitate transfer to transit and other high-occupancy vehicles
- Strict enforcement of parking restrictions

(5) Changes in work schedules, fare structure and automobile tolls to reduce peak-period travel and to encourage off-peak use of transportation facilities and transit services, such as:
- Staggered work hours
- Flexible work hours
- Reduced transit fares for off-peak transit users
- Increased peak-hour commuter tolls on bridges and access routes to the city

b. *Actions to reduce vehicle use in congested areas through:*
- Encouragement of carpooling and other forms of ride sharing
- Diversion, exclusion and metering of automobile access to specific areas
- Area licenses, parking surcharges and other forms of congestion pricing
- Establishment of car-free zones and closure of selected streets to vehicular traffic or to through traffic
- Restrictions on downtown truck delivery during peak hours

c. *Actions to improve transit service, through:*
- Provision of better collection, distribution and internal circulation services (including route-deviation and demand-responsive services) within low-density areas
- Greater flexibility and responsiveness in routing, scheduling and dispatching of transit vehicles
- Provision of express bus services in coordination with local collection and distribution services
- Provision of extensive park-and-ride services from fringe and transportation corridor parking areas
- Provision of shuttle transit services from CBD fringe parking areas to downtown activity centers
- Encouragement of jitneys and other flexible paratransit services and their integration in the metropolitan public transportation system.
- Simplified fare collection systems and policies
- Provision of shelters and other passenger amenities
- Better passenger information systems and services

d. *Actions to increase internal transit management efficiency, such as:*
- Improve marketing
- Developing cost accounting and other management tools to improve decisionmaking
- Establishing maintenance policies that assure greater equipment reliability
- Using surveillance and communications technology to develop real time monitoring and control capability

5. *Planning assistance.* Development of the program is an eligible activity for inclusion in the Unified Work Program for transportation planning in any urbanized area. It can be assisted with UMTA and FHWA planning funds. In addition, Management Improvement planning studies can be included in the Unified Work Program or funded by special UMTA grants. Some localities may wish to propose amendments to ongoing work programs in order to accelerate development of the Plan. Such requests will be given priority consideration. It is expected that there will be relatively continuous work activity relating to this requirement; some feasibility studies will take longer than others, some actions will become feasible only after others have been defined, completed actions will have to be evaluated, and the program must be periodically updated as the effects of other developments influence the feasibility of various actions.

6. *Technical Assistance.* Substantial amounts of technical material are available concerning possible strategies and the actions that should be considered for inclusion in local programs. Further research and a number of demonstrations are underway which can be expected to contribute additional data to assist in evaluating the feasibility and planning the implementation of some actions. The FHWA and UMTA intend to maintain surveillance over these developments and provide timely and useful documentation to assist localities in meeting this requirement.

7. *Implementation Assistance.* Implementation of actions in the local program may be eligible for assistance with UMTA Sections 3 and 5 funds and Federal-aid highway funds (Urban Systems, Urban Extension, Primary and Interstate).

[FR Doc.75-24696 Filed 9-16-75;8:45 am]

PART 450—PLANNING ASSISTANCE AND STANDARDS

Transportation Improvement Program

The purpose of this document is to issue final regulations which implement certain provisions of title 23, U.S.C., and the Urban Mass Transportation Act of 1964, as amended, 49 U.S.C. 1601, et seq. (UMT Act), governing the planning and programing of urban transportation improvements under the Federal Highway Administration and Urban Mass Transportation Administration programs.

In the November 8, 1974, edition of the FEDERAL REGISTER (39 FR 39665), the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA) published a notice of proposed rulemaking to add a new Part 450, Subpart C, to 23 CFR Chapter I and a new Part 613, Subpart A, to 49 CFR Chapter VI.

The public was invited to participate in this rulemaking through submission of written comments. Nearly 90 interested groups and individuals provided comments including the House Committee on Public Works and Transportation, the Senate Committee on Public Works, the American Public Transit Association, the American Association of State Highway and Transportation Officials, State departments of transportation, cities, and a number of Metropolitan Planning Organizations (MPOs).

In the preparation of the final regulations as set forth below, FHWA and UMTA have given consideration to all comments received in response to the notice of proposed rulemaking insofar as they related to matters within the scope of the notice. Review of the comments received indicated the desirability of making changes in the regulations as originally proposed. Most of these changes are clarifications rather than substantive alterations. However, in view of the interest expressed in these regulations, each section of these final regulations which have been revised or which was the subject of major interest is discussed in this commentary.

As a general matter, it should be stated that the Transportation Improvement Program (TIP) must, as a minimum, encompass the urbanized area and may cover a larger area at the discretion of the State and the MPO. Where the MPO jurisdiction includes more than one urbanized area, a single TIP covering all urbanized areas included should be developed. The boundaries of urbanized areas are those established and approved pursuant to 23 U.S.C. 101(a), and the implementing regulations under 23 CFR, Part 470, Subpart B.

Since the publication of the notice of these proposed rules, Congress has enacted the National Mass Transportation Assistance Act of 1974 (Pub. L. 93-503), which amended the UMT Act, to add, among other matters, a new formula grant program under which both capital and operating assistance may be provided, and to make the "3-C" planning process described in 23 U.S.C. 134 applicable to all UMTA-assisted capital and operating projects. While the enactment of Pub. L. 93-503 did require some modification of these regulations, these changes were essentially technical in nature and, where made, do not represent any overall substantive change except for the addition of the Transportation System Management (TSM) element (discussed infra).

One of the most persistent issues raised in the comments was with regard to the role of the MPO in the planning process as described in these regulations. Some respondents felt that the role of the MPO in the development of the TIP tended to impinge on State and local authority as mandated under State and local statute. The MPO provides a forum for cooperative decisionmaking by principal elected officials of general purpose local government. This is not intended to preclude the State or publicly owned operators from acting through this forum. Accordingly, the definition of the MPO has been modified to clarify this intent.

Several respondents urged that the proposed effective date of these regulations, July 1, 1975, be delayed to allow more time for preparation of the program. We agree that such a delay is desirable; consequently, the effective date has been changed to January 1, 1976, and § 450.302 of the regulations has been changed accordingly.

A number of comments were addressed to § 450.324 (Selection of Projects for Implementation) which permits proposed Interstate System and urban extension projects for which substantial commitment of Federal funding has been made to be included in the Statewide program of projects under 23 U.S.C. 105 without having first been included in the annual element. A number of commentators apparently were of the opinion that the provision would permit such projects to be exempted from the requirements of 23 U.S.C. 134(a). This was not the intent. All projects programed for implementation in urbanized areas must be subject to the provisions of 23 U.S.C. 134 and indeed projects included in the annual element under the provisions of these regulations are presumed to have met the requirements of 23 U.S.C. 134. In order to convey properly this concept, the regulations have been revised by eliminating all references to the term "substantial commitment." Section 450.324 has been redesignated as § 450.318. In addition, the language has been revised to indicate clearly that all projects subject to these regulations and included by the State in the Statewide program of projects under 23 U.S.C. 105 should be drawn from the annual element.

A mechanism has been provided, however, for the State to request program approval for Interstate or urban extension projects for highway transportation improvements which have already received Federal approval for right-of-way acquisition or Federal approval of physical construction or implementation where right-of-way acquisition was not previously federally funded, and which have not been included in the annual element endorsed by the MPO. The regulations require the State to submit the views of the MPO and to show how the project meets the requirements of 23 U.S.C. 134. Where the issue is the substitution of a nonhighway public mass transportation project in lieu of an Interstate highway segment as permitted under 23 U.S.C. 103(e)(4), the Federal Highway Administrator will consult with the Urban Mass Transportation Administrator prior to taking any program action on the Interstate project.

The TIP required under this subpart consists of projects recommended from the TSM element and the long-range element of the transportation plan required under Subpart A of Part 450.

Notice is given that the inclusion in the TIP of projects recommended from the TSM element is a condition of UMTA program approvals. The TSM element and the programing for its implementation in the TIP supports the requirement to improve the efficiency of mass transportation services pursuant to Section 5(d)(2) of the UMT Act (49 U.S.C. 1604(d)(2)) and is deemed to be the program of actions referred to in the expression of intent described in Section F of the Capital and Operating Assistance Formula Grants, and the Interim Guidelines and Procedures (40 FR 2534, January 13, 1975).

The target date envisioned for the development of the TSM element and the programing for its implementation is March 30, 1976.

Section 450.316(a) of the proposed regulations provided that "proposed urban system projects shall be initiated by the individual elected officials of the general purpose local government" in whose jurisdiction the project is located. Several commentators suggested that this requirement was too restrictive. We agree; accordingly, § 450.316(a) has been revised to allow project initiation by any local official of jurisdictions which have authority over highway projects and renumbered § 450.310(a). Many comments focused on the desirability of including nonfederally funded projects in the TIP. This feature is now incorporated in § 450.312(a)(2) of these regulations. To enable a comprehensive review of the projects proposed for Federal support and to evaluate properly their relative impact on the remainder of the urban transportation system, it is necessary that projects not federally aided recommended from the TSM element also be included in the program. However, FHWA and UMTA approval of such locally sponsored and funded non-Federal transportation projects is not required.

Related to the issue discussed in the preceding paragraph, several comments questioned the need to include individual projects proposed for Federal assistance which were not of regional impact in the program. We agree that such detail is not necessary. Consequently, § 450.312(c) of the final regulations has been revised to permit grouping of projects considered not to be of appropriate scale for individual inclusion in the program according to functional classification, geographic area, and work type.

Section 450.312 of the proposed regulations required the submission of documentation relating to the adequacy and reliability of the transportation planning process in the metropolitan area. As was suggested by several respondents, this material should be available as part of the ongoing process during the annual certification determination required for all urbanized areas. As such, the requirement for this material to be submitted during the development of the TIP was seen as a duplication of effort. We have, therefore, removed the planning support documentation section as it appeared in

the proposed regulations and the Urban Transportation Planning regulations have been modified to incorporate the essence of this section.

UMTA has required a Transit Development Program (TDP) as a condition of a positive planning determination for the capital assistance programs it administers. The TDP was defined as a fully documented result of an analysis of existing conditions of the public transportation system. It included the description of justified capital and operational improvements placed in priority over a 3- to 5-year period.

As a consequence of these regulations, a separate TDP submission will no longer be required. However, the development of recommended improvements which previously constituted the TDP will now be incorporated as a part of the new TSM element of the transportation plan required under 23 CFR 450, Subpart A. The priorities and implementation staging aspect of the TDP will appear in the TIP as described in these regulations. Further, it is our intention that the TSM element contain highway and public transportation improvements, effectively integrating the development of Traffic Operations Programs to Increase Capacity and Safety (TOPICS) and transit development study results through an overall systems approach to managing the urban transportation system to make efficient use of existing resources. The appendix to Part 450, Subpart A, title 23 CFR, published today in the FEDERAL REGISTER provides advisory information on the scope and objectives of the TSM element.

The definition of "transportation improvements projects" has been deleted from the regulation. It was provided in the proposed regulation for illustrative purposes only. Numerous comments misconstrued the definition as requiring mandatory inclusion of the projects listed therein in the TIP; this was not the intent. The projects listed were examples of the types of activities which may be included in a TIP at the discretion of the participants in the programing process. Additionally, several comments suggested that projects involving changes in levels of transit service and programs for transit route revisions are generally too detailed to be reflected in a regional program. Clearly, there is no intent to suggest that day-to-day changes in transit operations are appropriate items for inclusion in the TIP; rather, the participants should consider including only those major revisions to transit operations which effect, among other objectives, the achievement of transportation systems management goals pursuant to 23 CFR 450.116.

In general, we view transportation improvement projects as including, but not necessarily limited to: engineering related to the acquisition or construction of transportation facilities; acquisition of rights-of-way, construction, and reconstruction of highways, busways, and fixed guideways; fringe parking facilities; major street improvements; transit rolling stock acquisitions; TOPICS projects; bicycle and pedestrian facilities; major revisions in levels of transit service and transit route structures; initiation of exclusive and preferential bus and carpool lanes; staggered work hours; measures to encourage carpooling; regulation of parking supply and costs; and projects to meet the special needs of the elderly and handicapped.

Section 450.312(d) of this regulation addresses the consistency of the total cost of the projects contained in the annual element with Federal funds available to the urbanized areas during that program period. For 23 U.S.C. 104(b)(3) (Urban extensions of Federal-Aid Primary and Secondary Systems) and 23 U.S.C. 104(b)(5) (Interstate System) funds, the Federal share for projects in the annual element should be a best estimate of funds expected to be available. Programs may total more or less than the estimated funds where the participants determine this is essential to effective program implementation, i.e., to account for schedule slippage and lack of precision in estimates of project costs.

The Federal share for projects in the annual element in areas of over 200,000 population and proposed for funding under 104(b)(6), (Federal-aid urban system) should approximate the amounts allocated to the urbanized area pursuant to 23 U.S.C. 150. Projects may total more or less than the allocated amount where the participants determine such action is essential to effective program implementation. In other areas the best estimate of urban system funds expected to be available should be used.

The Federal share of the projects in the annual element and proposed for funding under the UMTA formula grant program (Section 5 of the UMT Act, 49 U.S.C. 1604) shall not exceed the total Federal funds which will be available to the urbanized area during the program year. Projects may total less, but not more, than the amount available under the Section 5 program at the discretion of the participants.

The Federal share of the projects in the annual element funded under Section 3 of the UMT Act (49 U.S.C. 1602) and 23 U.S.C. 103(e)(4) (Interstate transfer) should be consistent with the estimate of funds reasonably expected to be available.

Section 450.316(b) of this regulation requires that recommended transportation systems management projects be included in the TIP. Such projects include those authorized under 23 U.S.C. 135 (TOPICS) and Section 5(d)(2) of the UMT Act (49 U.S.C. 1604(d)(2)) (improvement of efficiency of mass transit services). Pursuant to these statutes, the Department of Transportation feels that the implementation of these projects should be given priority in the development of the TIP.

Sections 450.306 and 450.312 of this subpart refer to projects recommended for implementation from the TSM element of the transportation plan. The term "transportation systems management" did not appear in the proposed urban transportation planning regulation, 23 CFR, Subpart A; however, the term is incorporated into the final issuance of that regulation and will describe an element of the transportation plan resulting from the technical activity in § 450.116(b) which identifies improvements to make more efficient use of existing transportation resources (also see appendix to 23 CFR, Part 450, Subpart A).

Several comments questioned whether or not the joint approval by the Federal Highway and Urban Mass Transportation Administrators (in the proposed regulations at § 450.324(b)(1), in these final regulations at § 450.320(a)(1)) approval of Federal-aid urban system projects selected for implementation) is consistent with the provisions of Title 23, U.S.C. to the extent that the approval involves the Urban Mass Transportation Administrator. Section 121 of the Federal-Aid Highway Act of 1973 (Pub. L. 93-87) which amended section 142 of Title 23, U.S.C., authorized the Secretary of Transportation to approve, in addition to traditional urban system highway projects, certain nonhighway public mass transportation activities as projects on the Federal-aid urban system. These nonhighway public mass transportation projects contemplate such activities as the purchase of buses and the construction, reconstruction, and improvement of fixed rail facilities for urban areas—activities traditionally administered by the Urban Mass Transportation Administration. In consideration of the need of a comprehensive, coordinated and multimodal approach to the transportation problems of the urban areas (a need recognized in the basic legislation of both the Federal Highway and Urban Mass Transportation Administrations), and given the fact that projects under 23 U.S.C. 142, whether for highway or nonhighway public mass transportation projects, complement projects and activities carried out under the Urban Mass Transportation Act of 1964, as amended, the proposed regulation provided for joint approval of the Federal-aid urban system program.

To facilitate administration of the program § 450.320 of the regulation provides that the Federal-aid highway projects in the urban system portion of the Statewide program of projects (required under 23 U.S.C. 105) will be approved by the Federal Highway Administrator, while the nonhighway public mass transportation projects included in the program of projects will be approved by the Urban Mass Transportation Administrator.

Additionally, the Department has a decided interest that the flexibility in the use of Federal-aid urban system funds be exercised to the fullest, i.e., that local decisions as to the use of those funds for either highway or nonhighway public mass transportation projects be protected and fostered. Consequently, §450.318 provides that in any case where the statewide program of projects submitted pursuant to 23 U.S.C. 105 does not contain Federal-aid urban system nonhighway public transportation projects that were selected for implementation and in-

cluded in the annual element of the TIP through the local decisionmaking process, a statement describing the reasons for the noninclusion of those projects must accompany the statewide program of projects. In such instances, all elements in the program of projects related to the Federal-aid urban system will be jointly reviewed and approved by the Federal Highway and Urban Mass Transportation Administrators.

Section 450.320 clarifies the consequences of program approval with regard to statutory requirements.

In consideration of the foregoing, and under the authority of 23 U.S.C. 105, 134(a), and 135(b), and sections 3, 4(a) and 5 of the UMT Act (49 U.S.C. 1602, 1603(a), 1604), and the delegation of authority by the Secretary of Transportation at 49 CFR 1.48(b) and 1.50(f), Chapter I of Title 23 of the Code of Federal Regulations is amended by adding a new Part 450, Subpart C.

Effective date: These regulations take effect on October 17, 1975.

Issued on: September 11, 1975.

L. P. LAMM,
Executive Director,
Federal Highway Administration.

ROBERT E. PATRICELLI,
Urban Mass Transportation Administrator.

Subpart C of Part 450 is added to read as follows:

Subpart C—Transportation Improvement Program

Sec.
450.300 Purpose.
450.302 Applicability.
450.304 Definitions.
450.306 Transportation Improvement Program: general.
450.308 Transportation Improvement Program: content.
450.310 Annual element: project initiation.
450.312 Annual element: content.
450.314 Annual element: modification.
450.316 Action required by Metropolitan Planning Organization.
450.318 Selection of projects for implementation.
450.320 Program approval.

AUTHORITY: 23 U.S.C. 105, 134(a), and 135(b); sections 3, 4(a), and 5 of the Urban Mass Transportation Act of 1964, as amended, (49 U.S.C. 1602, 1603(a), and 1604); and 49 CFR 1.48(b) and 1.50(f)

Subpart C—Transportation Improvement Program

§ 450.300 Purpose.

The purpose of these regulations is to establish guidelines for the development, content, and processing of a cooperatively developed transportation improvement program in urbanized areas and to prescribe guidelines for the selection by implementing agencies of annual programs of projects to be advanced in urbanized areas.

§ 450.302 Applicability.

(a) After January 1, 1976, the regulations in this subpart shall be applicable to projects in or serving urbanized areas with funds made available under:

(1) 23 U.S.C. 104(b)(6) (urban systems projects);

(2) 23 U.S.C. 103(e)(4) (Interstate substitution projects);

(3) Sections 3 and 5 of the Urban Mass Transportation Act of 1964, as amended (UMT Act) (49 U.S.C. 1602 and 1604–UMTA capital and operating assistance projects);

(4) 23 U.S.C. 104(b)(3) (projects on urban extensions of primary and secondary systems), except as provided in this subpart;

(5) 23 U.S.C. 104(b)(5) (projects on the Interstate System), except as provided in this subpart.

(b) Projects under paragraphs (a) (4) and (5) of this section, which are included in the highway safety improvement program, may be excluded from the transportation improvement program at the option of the State.

§ 450.304 Definitions.

(a) Except as otherwise provided, terms defined in 23 U.S.C. 101(a) are used in this subpart as so defined.

(b) As used herein:

"Annual element" means a list of transportation improvement projects proposed for implementation during the first program year.

"Governor" means the Governor of any one of the fifty States, and includes the Mayor of the District of Columbia.

"Highway safety improvement program" means a program prepared by the State pursuant to 23 CFR, Part 655, Subpart E.

"Interstate substitution projects" means projects funded under 23 U.S.C. 103(e)(4) (Withdrawal of Interstate segments and substitution of nonhighway public mass transportation projects).

"Interstate System projects" means projects funded under 23 U.S.C. 104(b)(5).

"Metropolitan Planning Organization" means that organization designated by the Governor as being responsible, together with the State, for carrying out the provisions of 23 U.S.C. 134, as provided in 23 U.S.C. 104(f)(3), and capable of meeting the requirements of Sections 3(a)(2) and (e)(1), and 4(a), and 5(g)(1) and (l) of the UMT Act (49 U.S.C. 1602(a)(2) and (e)(l), 1603(a) and 1604(g)(1) and (1). This organzation is the forum for cooperative decisionmaking by principal elected officials of general purpose local government.

"Transportation Improvement Program" means a staged multiyear program of transportation improvements including an annual element.

§ 450.306 Transportation improvement program: general.

(a) The transportation improvement program shall be developed and updated annually under the direction of the Metropolitan Planning Organization (MPO) in cooperation with:

(1) State and local officials;

(2) Regional and local transit operators;

(3) Recipients authorized under section 5(b)(2) or (3) of the UMT Act (49 U.S.C. 1604(b))(2) or (3); and

(4) Other affected transportation and regional planning and implementing agencies.

(b) The transportation improvement program shall consist of improvement recommended from the transportation systems management and long-range elements of the transportation plan developed under § 450.116 of this part.

(c) The program shall cover a period of not less than 3 years, but may at local discretion cover up to 5 or more years.

§ 450.308 Transportation improvement program: content.

The transportation improvement program shall:

(a) Identify transportation improvements recommended for advancement during the program period;

(b) Indicate the area's priorities;

(c) Group improvements of similar urgency and anticipated staging into appropriate staging periods;

(d) Include realistic estimates of total costs and revenues for the program period; and

(e) Include a discussion of how improvements recommended from the long-range element and the transportation systems management element prepared pursuant to § 450.116 of this part were merged into the program.

§ 450.310 Annual element: project initiation.

Federally funded projects shall be initiated for inclusion in the annual element at all stages in the development of the transportation improvement for which program action is proposed. These projects shall be initiated as follows:

(a) Proposed urban system highway projects shall be initiated by local officials in whose jurisdiction the project is located.

(b) Proposed urban system nonhighway public mass transportation projects and Interstate substitution nonhighway public mass transportation projects shall be initiated by principal elected officials of general purpose local governments in consultation with local transit operating officials or by local transit operating officials.

(c) Proposed UMTA section 3 projects (49 U.S.C. 1602) shall be initiated by recipients authorized under section 5(b)(2) or (3) of the UMT Act (49 U.S.C. 1604(b)(2) or (3)), by local transit operating officials, or by principal elected officials of general purpose local governments in cooperation with local transit operating officials.

(d) Proposed UMTA section 5 projects (49 U.S.C. 1604) shall be initiated by recipients authorized under section 5(b)(2) or (3) of the UMT Act (49 U.S.C. 1604(b)(2) or (3)). Nothing in this subsection is intended to prohibit or discourage the initiation by such recipients of projects recommended by local transit operating officials or by principal elected officials of general purpose local governments in cooperation with local transit operating officials.

(e) Proposed urban extension and Interstate System projects shall be initiated by the State highway agency.

§ 450.312 Annual element: content.

(a) Except as provided in § 450.302 (b) of this subpart, the annual element shall contain:

(1) Projects initiated under § 450.310 and endorsed under § 450.316 of this subpart; and

(2) For informational purposes, all nonfederally funded projects recommended from the transportation systems management element.

(b) With respect to each project under paragraph (a) of this section the annual element shall include:

(1) Sufficient descriptive material (i.e., type of work, termini, length, etc.) to identify the project;

(2) Estimated total cost and the amount of Federal funds proposed to be obligated during the program year;

(3) Proposed source of Federal and non-Federal funds; and

(4) Identification of the recipient and State and local agencies responsible for carrying out the project.

(c) Projects proposed for Federal support that are not considered by the State and MPO to be of appropriate scale for individual inclusion in the annual element may be grouped by functional classification, geographic area, and work type.

(d) The annual element shall be reasonably consistent with the amount of Federal funds expected to be available to the area. Federal funds that have been allocated to the area pursuant to 23 U.S.C. 150 shall be identified.

(e) The total Federal share of projects included in the annual element and proposed for funding under section 5 of the UMT Act (49 U.S.C. 1604) may not exceed apportioned section 5 funds available to the urbanized area during the program year.

§ 450.314 Annual element: modification.

The annual element may be modified at any time consistent with the procedures established in this subpart for its development.

§ 450.316 Action required by the Metropolitan Planning Organization.

(a) The transportation improvement program, including the annual element, shall be endorsed annually by the MPO.

(b) The MPO shall submit the transportation improvement program including the annual element:

(1) To the Governor and the Urban Mass Transportation Administrator; and

(2) Through the State to the Federal Highway Administrator.

§ 450.318 Selection of projects for implementation.

(a) The projects proposed to be implemented with Federal assistance under sections 3 and 5 of the UMT Act (49 U.S.C. 1602 and 1604) shall be those contained in the annual element of the transportation improvement program submitted by the MPO to the Urban Mass Transportation Administrator.

(b) Upon receipt of the transportation improvement program, the State shall include in the statewide program of projects required under 23 U.S.C. 105:

(1) Those projects drawn from the annual element and proposed to be implemented with Federal assistance under 23 U.S.C. 104(b)(6) (Federal-aid urban system) and 103(e)(4) (Withdrawal of Interstate segments and substitution of public mass transportation projects), in which it concurs; provided, however, that in any case where the State does not concur in a nonhighway public mass transportation project, a statement describing the reasons for the nonconcurrence shall accompany the statewide program of projects; and

(2) Those projects drawn from the annual element and proposed to be implemented with Federal assistance under 23 U.S.C. 104(b)(3) (Extensions of the Federal-aid primary and secondary systems in urbanized areas) and 23 U.S.C. 104(b)(5) (Interstate System projects in urbanized areas); and

(3) Those projects not drawn from the annual element that are proposed to be implemented with Federal assistance under 23 U.S.C. 104(b)(3) (projects on urban extensions of primary and secondary systems) and 23 U.S.C. 104(b)(5) (projects on the Interstate System) provided that:

(i) Such project or projects were initiated pursuant to § 450.310(e) of this subpart; and

(ii) Such project or projects are for highway transportation improvements for which there has been a Federal authorization to acquire right-of-way or Federal approval of physical construction or implementation where right-of-way acquisition was not previously federally funded.

(c) For each project under paragraph (b)(3) of this section a statement shall accompany the statewide program of projects which shall:

(1) Include the views of the MPO; and

(2) Indicate how the requirements of 23 U.S.C. 134(a) have been met.

(d) The preparation and endorsement of the transportation improvement program and the selection of projects in accordance with these regulations will meet the requirements of 23 U.S.C. 105(d), 23 U.S.C. 134(a), and section 5(g)(2) of the UMT Act (49 U.S.C. 1604(g)(2)).

(e) The State shall notify the MPO of actions taken under paragraph (b) of this section.

§ 450.320 Program approval.

(a) Upon the determination by the Federal Highway Administrator and the Urban Mass Transportation Administrator that the transportation improvement program or portion thereof is in conformance with this subpart and that the area is under planning certification, programs of projects selected for implementation under § 450.318 of this subpart, will be considered for approval as follows:

(1) Federal-aid urban system projects included in the statewide program of projects under 23 U.S.C. 105 will be approved by:

(i) The Federal Highway Administrator with respect to highway projects;

(ii) The Urban Mass Transportation Administrator with respect to nonhighway public mass transportation projects; and

(iii) The Federal Highway Administrator and the Urban Mass Transportation Administrator jointly in any case where the statewide program of projects submitted pursuant to 23 U.S.C. 105 does not include all Federal-aid urban system nonhighway public mass transportation projects contained in the annual element.

(2) Interstate substitution nonhighway public mass transportation projects included in the statewide program of projects under 23 U.S.C. 105 will be approved by the Urban Mass Transportation Administrator.

(3) Projects proposed to be implemented under sections 3 and 5 of the UMT Act (49 U.S.C. 1602 and 1604) included in the annual element of the transportation improvement program will be approved by the Urban Mass Transportation Administrator after considering any comments received from the Governor within 30 days of the submittal required by § 450.316(b)(1) of this subpart.

(4) Federal-aid urban extension and Interstate projects included in the statewide program of projects under 23 U.S.C. 105 will be approved by the Federal Highway Administrator.

(b) Approvals by the Federal Highway Administrator or joint approvals by the Federal Highway Administrator and Urban Mass Transportation Administrator will be in accordance with the provisions of this subpart and with 23 CFR 630, Subpart A. Approvals granted under this section will constitute:

(1) The approval required under 23 U.S.C. 105; and

(2) A finding that the program is based on a continuing, comprehensive planning process carried on cooperatively by the States and local communities in accordance with the provisions of 23 U.S.C. 134.

(c) Approvals by the Urban Mass Transportation Administrator will be in accordance with the provisions of this subpart and with other applicable provisions of 49 CFR 613, Subpart B. These approvals will constitute:

(1) The approval required under section 5(g)(2) of the UMT Act (49 U.S.C. 1604(g)(2));

(2) A finding that the projects are based on a continuing comprehensive transportation planning process carried on in accordance with the provisions of sections 3(a)(2) or 5(g)(1) of the UMT Act (49 U.S.C. 1602(a)(2) or 1604(g)(1)), as applicable; and

(3) A finding that the projects are needed to carry out a program for a unified or officially coordinated urban transportation system in accordance with the provisions of sections 4(a) or 5(l) of the UMT Act (49 U.S.C. 1603(a) or 1604(l)), as applicable.

[FR Doc.75-24697 Filed 9-16-75;8:45 am]

Title 49—Transportation

CHAPTER VI—URBAN MASS TRANSPORTATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

PART 613—PLANNING ASSISTANCE AND STANDARDS

Urban Transportation Planning

The purpose of this document is to issue final regulations implementing certain provisions of Title 23, United States Code, and the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1601, et seq.), which govern urban transportation planning under the Federal Highway Administration (FHWA) and Urban Mass Transportation Administration (UMTA) programs.

In the November 8, 1974, edition of the FEDERAL REGISTER (39 FR 39660), FHWA and UMTA published a notice of proposed rulemaking to add a new Part 450, Subpart A, to 23 CFR, Chapter I, and a new Part 613, Subpart B, to 49 CFR, Chapter VI.

The final regulations are published in full under 23 CFR, Part 450, Subpart A. The purpose of the regulations published below is to incorporate 23 CFR, Part 450, Subpart A, into 49 CFR, Part 613, Subpart A. The original notice indicated that the Urban Transportation Planning regulations under 23 CFR, Part 450, Subpart A, were to be incorporated into 49 CFR, Part 613, Subpart B. For reasons of continuity, these regulations are published as being incorporated into 49 CFR, Part 613, Subpart A rather than Subpart B.

The preamble to the joint FHWA/UMTA regulations, Title 23, CFR Part 450, Subpart A, published at page 42976 of this edition of the FEDERAL REGISTER and to be incorporated by reference in 49 CFR, Part 613, Subpart A, is hereby incorporated as the preamble for the following regulations.

Pursuant to Sections 3, 4(a), and 5 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1603 (a) and 1604), and 23 U.S.C. 104(f)(3), 134, and 315, and the delegation of authority by the Secretary at 49 CFR 1.48 (b) and 1.50(f), Chapter VI of Title 49 of the Code of Federal Regulations is amended by adding a new Subchapter B, Part 613, Subpart A, as set forth below.

Effective date: These regulations take effect on October 17, 1975.

Issued on: September 11, 1975.

L. P. LAMM,
Executive Director,
Federal Highway Administration.
ROBERT E. PATRICELLI,
Urban Mass Transportation Administrator.

Subpart A of Part 613 is added as set forth below:

Subpart A—Urban Transportation Planning

Sec.
613.100 Urban transportation planning.

AUTHORITY: 23 U.S.C. 104(f)(3), 134, and 315; §§ 3, 4(a), and 5 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1603(a), and 1604); 49 CFR §§ 1.48(b) and 1.50(f).

Subpart A—Urban Transportation Planning

§ 613.100 Urban transportation planning.

The urban transportation planning regulations implementing 23 U.S.C. 134 and sections 3, 4(a), and 5(g)(1) and (*l*) of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1603(a) and 1604(g)(1) and (*l*)), which require comprehensive planning of transportation improvements which are set forth in 23 CFR Part 450, Subpart A, are incorporated into this subpart.

[FR Doc.75-24698 Filed 9-16-75;8:45 am]

PART 613—PLANNING ASSISTANCE AND STANDARDS

Transportation Improvement Program

The purpose of this document is to issue final regulations which implement certain provisions of title 23, United States Code, and the Urban Mass Transportation Act of 1964, as amended, 49 U.S.C. 1601, et seq., governing the planning and programing of urban transportation improvements under the Federal Highway Administration (FHWA) and Urban Mass Transportation Administration (UMTA) programs.

In the November 8, 1974, edition of the FEDERAL REGISTER (39 FR 39665), FHWA and UMTA published a notice of proposed rulemaking to add a new Part 450, Subpart C, to 23 CFR, Chapter I, and a new Part 613, Subpart A, to 49 CFR, Chapter VI.

The final regulations are published in full under 23 CFR, Part 450, Subpart C. The purpose of these regulations, published below, is to incorporate 23 CFR, Part 450, Subpart C, into 49 CFR, Part 613, Subpart B, and to set forth certain additional requirements applicable to the UMTA administered program. The original notice indicated that the Transportation Improvement Program regulations under 23 CFR, Part 450, Subpart C, were to be incorporated into 49 CFR, Part 613, Subpart A. For reasons of continuity, these regulations are published as being incorporated into 49 CFR, Part 613, Subpart B rather than Subpart A.

The preamble to the joint FHWA–UMTA regulations, Title 23 CFR, Part 450, Subpart C, published at page 42976 of this edition of the FEDERAL REGISTER, and to be incorporated by reference in 49 CFR Part 613, Subpart B, is hereby incorporated as the preamble for the following regulations.

Pursuant to sections 3, 4(a) and 5 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1603 (a), and 1604) and 23 U.S.C. 105, 134(a), and 135(b), and the delegation of authority by the Secretary at 49 CFR 1.48 (b) and 1.50(f), Chapter VI of Title 49 of the Code of Federal Regulations, is hereby amended by adding a new Subchapter B, Part 613, Subpart B, as set forth below.

Effective date: These regulations take effect on October 17, 1975.

Issued on: September 11, 1975.

ROBERT E. PATRICELLI,
Urban Mass Transportation Administrator.

L. P. LAMM,
Executive Director,
Federal Highway Administration.

Subpart B of Part 613 is added as set forth below:

Subpart B—Transportation Improvement Program

Sec.
613.200 Transportation Improvement Program.
613.202 Additional criteria for urban mass transportation Administrator's approvals under 23 CFR 450.320.

AUTHORITY: 23 U.S.C. 105, 134(a), and 135(b); §§ 3, 4(a), and 5 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1603(a), and 1604); and §§ 49 CFR 1.48(b) and 1.50(f).

Subpart B—Transportation Improvement Program

§ 613.200 Transportation Improvement Program.

The transportation improvement program regulations establishing guidelines for the development, content, and processing of a cooperatively developed transportation improvement program in urbanized areas and also prescribing guidelines for the selection, by implementing agencies, of annual programs of projects to be advanced in urbanized areas which are set forth in 23 CFR Part 450, Subpart C, are incorporated into this subpart.

§ 613.202 Additional criteria for urban mass transportation Administrator's approvals under 23 CFR 450.320.

(a) This section establishes certain additional criteria to be considered by the Urban Mass Transportation Administrator in his program approval pursuant to 23 CFR 450.320(a)(3) for all projects proposed for implementation with Federal assistance under sections 3 and 5 of the Urban Mass Transportation Act of 1964, as amended (23 U.S.C. 1602 and 1604), in urbanized areas having a population of 200,000 or more.

(b) After March 30, 1976, the Urban Mass Transportation Administrator will grant program approval for projects under paragraph (a) of this section only after he has determined that:

(i) The transportation plan developed pursuant to 23 CFR 450.116 contains a Transportation System Management (TSM) element; and

(ii) The annual element of the transportation improvement program developed pursuant to 23 CFR 450.118 contains projects drawn from the TSM element.

(c) After March 30, 1977, the Urban Mass Transportation Administrator will grant program approval for projects under paragraph (a) of this section only after he has determined that reasonable progress has been demonstrated in implementing previously programed projects.

[FR Doc.75-24699 Filed 9-16-75;8:45 am]

Appendix B

METROPOLITAN PLANNING ORGANIZATION TRANSIT OPERATOR AGREEMENTS

MILWAKEE COUNTY

AGREEMENT BETWEEN THE MILWAUKEE COUNTY TRANSIT BOARD AND
THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
RELATING TO MASS TRANSPORTATION PLANNING RESPONSIBILITIES

THIS COOPERATIVE AGREEMENT entered into this 21st day of December, 1977, by and between the Milwaukee County Transit Board (hereinafter referred to as MCTB) and the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as SEWRPC);

WITNESSETH

WHEREAS, the SEWRPC has been established under Section 66.945 of the Wisconsin Statutes and with the approval of the people of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in the State of Wisconsin, acting through their respective county boards of supervisors, to carry on comprehensive, areawide development planning to promote the physical, social, and economic well-being of the seven-county Southeastern Wisconsin Region and of the State of Wisconsin; and

WHEREAS, the SEWRPC has been designated as the official metropolitan transportation planning organization (MPO) for the Milwaukee urbanized area by the Governor of the State of Wisconsin on December 27, 1973, for the purposes of carrying out the provisions of Title 23, USC, Section 134 (federal aid highway planning requirements) and for meeting the requirements of Title 49, USC, Section 1603(a) (urban mass transportation requirements); and

WHEREAS, the SEWRPC has been certified by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, as meeting the federal transportation planning requirements for the Milwaukee urbanized area; and

WHEREAS, the SEWRPC is charged by State Statute with the function and duty of making and adopting a comprehensive plan for the physical development of the Region, and of certifying that plan to its constituent local units of government and concerned state and federal agencies; and

WHEREAS, the SEWRPC has been assigned federal grant application review responsibilities under Section 204 of the Demonstration Cities and Metropolitan Development Act and under Circular A-95 of the U. S. Office of Management and Budget, and is accordingly recognized as the metropolitan clearinghouse for the seven-county Southeastern Wisconsin Region; and

WHEREAS, Milwaukee County through the MCTB provides mass transportation services within Milwaukee County and has the authority to extend such mass transportation services to the remaining portions of the Milwaukee urbanized area lying within Ozaukee, Racine, Washington, and Waukesha Counties; and

WHEREAS, Milwaukee County is one of four designated recipients of federal transit operating aids under Section 5 of the Federal Urban Mass Transportation Act as Amended, the other three being Ozaukee, Washington, and Waukesha Counties; and

WHEREAS, the U. S. Department of Transportation has issued metropolitan transportation planning regulations dated September 17, 1975, which provide in part that a formal agreement be executed by and between metropolitan planning organizations and providers of publicly-owned mass transportation services, such agreement relating primarily to establishing clear lines of responsibility for planning activities.

NOW, THEREFORE, in recognition of the mutuality of their concerns, their common and diverse interests and capacities, the state and federal statutes and regulations applying to their respective work programs, and their mutual desire to coordinate effectively all mass transportation planning within Milwaukee County and thereby to avoid unnecessary duplication of effort and unnecessary expenditure of public funds, the MCTB and the SEWRPC have entered into the following agreements:

I. The geographic area for planning to be conducted by the MCTB under this agreement shall be Milwaukee County. For the SEWRPC the geographic area shall be Milwaukee County, the Milwaukee Urbanized Area, the Milwaukee Standard Metropolitan Statistical Area, or the seven-county Southeastern Wisconsin Region, as may be deemed to be appropriate by the SEWRPC or as may be required by state and/or federal laws and regulations.

II. The SEWRPC shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities:

A. Formulating, adopting, and maintaining current, long-range regional land use and transportation system plans, including transit system plans;

B. Formulating, adopting, and maintaining current a regional elderly and handicapped transportation plan;

C. Formulating and adopting an annual transportation systems management plan;

D. Formulating and adopting an annual transportation improvement program;

E. Formulating and adopting an annual overall work program identifying all transportation-related planning activities whether or not they are federally assisted;

F. Providing a forum for cooperative transportation planning and decision making;

G. Providing a mechanism for "passing through" federal transportation planning funds for use by MCTB and other local agencies;

H. Conducting ongoing transportation system monitoring and data gathering activities;

I. Collecting and collating data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof;

J. Conducting on an ad hoc and special contract basis subregional mass transportation planning studies as may be requested by the MCTB; and

K. Endorsing on an annual basis the long-range regional transportation system plan, the regional elderly and handicapped transportation plan, the short-range transportation systems management plan, and the transportation improvement program.

III. The MCTB shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities, all in accordance with the adopted long-range regional transportation system plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan developed by the SEWRPC:

A. Within the general category of short-range transportation system programming, capital investment planning, and grant administration:

1. Preparing and updating a five-year transit system development program, which program shall include, but not be limited to, transit system policies and service standards, transit service modifications and extensions, transit fares, and transit system capital facilities needs;

2. Preparing and submitting applications for state and federal mass transportation capital and operating assistance grants and administering approved grants;

3. Conducting preliminary engineering and final design studies relating to mass transportation capital facilities, including but not limited to transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock;

4. Conducting other special projects and studies found necessary to properly implement the recommendations contained in the long-range regional transportation plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan;

5. Formulating and executing agreements with other public or private agencies to provide mass transportation services in the Milwaukee urbanized area and the Milwaukee Standard Metropolitan Statistical Area;

6. Conducting and evaluating mass transportation demonstration projects and programs; and

7. Reviewing applications under Section 16(b)2 of the Urban Mass Transportation Act of 1964 as amended for assistance to private non-profit providers of transportation for the elderly and handicapped within Milwaukee County in the purchase of vehicles; which review shall determine consistency or lack thereof with the Milwaukee County portion of the regional elderly and handicapped transportation plan as prepared by the SEWRPC.

B. Within the general category of short-range transit system operational planning:

1. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, and other operating procedures in accord with the proposals contained in the five-year transit system development program;

2. Conducting detailed operational planning relating to transit vehicle assignments, transit stop locations, and transfer points and arrangements;

3. Conducting transit marketing planning, including but not limited to the conduct of market surveys, the design of user information materials, and the development of transit promotion programs;

4. Conducting transit management planning, including but not limited to activities related to personnel procedures and training programs, maintenance policies, fare collection and handling procedures, and accounting practices; and

5. Collecting data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof.

IV. The SEWRPC and the MCTB shall annually prepare and agree upon an annual transit planning work program for the succeeding calendar year. This program shall be directly inserted into the SEWRPC overall work program each July and shall thereby serve as the basis for obtaining required state and federal aids.

V. This agreement, effective January 1, 1978, shall continue for one year to and including December 31, 1978, and may be extended annually thereafter by the simple re-execution of the agreement on the signature page below. This agreement may also be amended from time-to-time as facts or circumstances warrant or as may be required by federal and/or state laws, administrative regulations, departmental orders, or guidelines having the full force and effect of the law.

IN WITNESS WHEREOF, the SEWRPC and the MCTB have executed this agreement as of the date first above written.

ATTESTING WITNESS
Deputy Secretary

SOUTHEASTERN WISCONSIN
REGIONAL PLANNING COMMISSION
By
Chairman

ATTESTING WITNESS

MILWAUKEE COUNTY TRANSIT BOARD
By
Chairman

Exhibit A

URBAN TRANSPORTATION REPORTING SYSTEM DATA REQUIREMENTS AND RESPONSIBLE AGENCIES

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Urban Demographic Data					
Socioeconomic Indicators					
Population	2	1978			
By Geographic Area			x		
Dwelling Units	2	1978			
By Geographic Area			x		
Employment	2	1978			
By Geographic Area			x		
By Central Business District (CBD)			x		
Passenger Vehicle Registration	2	1978			
By County					x
By Vehicle Type					x
Land Areas	2	1978			
By Geographic Area					
For CBD			x		
For Federal-Aid Urban System Boundaries			x		
			x		
Urban Transportation Planning Data					
Transportation System Supply Information					
Road Miles	2	1978			
By Functional Classification					x
By Geographic Area					x
By Number of Lanes Available in Peak Period					x
By One-Way or Two-Way Direction					x
Miles of Reversible Lanes	2	1978			x
Transit Revenue Vehicles Miles	2	1978			
By Mode				x	
Accessibility to Transit Service					
Land Area Within 1/4 Miles of Transit Services	2	1978			
By Number of Boardable Transit Vehicles Per 24-Hour Period			x		
By Geographic Area			x		

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Population, Dwelling Units Within 1/4 Mile of Transit Services	4	1980			
By Number of Boardable Transit Vehicles Per 24-Hour Period			x		
By Geographic Area			x		
Transportation System					
Utilization Indicators					
Vehicle Miles of Travel (VMT)	2	1978			
By Three Functional Classifications			x		
By Geographic Area			x		
Vehicle Type Distribution as a Percent of VMT	4	1980			
By Geographic Area			x		
By Five Vehicle Types			x		
By Two Functional Classes			x		
Passenger Occupancy	4	1980			
By Geographic Area			x		
By Vehicle Type			x		
By Two Functional Classes			x		
Number of Transit Revenue Passengers and Unlinked Transit Trips By Mode	2	1978		x	
Transit Equipment Information					
Revenue Vehicles By Mode	2	1978			
Total Number				x	
Age Distribution By Five Classes of Age				x	
Mean Age of Vehicles				x	
Transportation System Performance Measures					
Land Area and Dwelling Units Within Traveltime Contours (By Peak & Offpeak)					
For Auto and Transit	2	1978			
From a CBD Point			x		
For Auto	4	1980			
From the Major Non-CBD Employment Center			x		
From the Major Non-CBD Shopping Center			x		
From the Major Airport			x		

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Congestion Indicator					
Duration of Congestion	4	1980	x		
Characteristics of Traffic Approaching Downtown Area					
Total Number of Vehicles Crossing CBD Cordon	4	1980			
By Vehicle Type			x		
By Vehicle Occupancy			x		
Transit Characteristics of Linked Trips					
Number of Passenger Trips	4	1980			
By Trip Distance			x		
By Trip Time			x		
By Trip Purpose			x		
By Rider Characteristics					
Age Group			x		
Sex			x		
Income Group			x		
Whether Handicapped			x		
Automobile Availability			x		
Public Transportation System Financial and Operating Data					
Balance Sheet					
Assets	1	1978			
Cash and Cash Items				x	
Receivables				x	
Materials and Supplies Inventory				x	
Other Current Assets				x	
Work in Process				x	
Tangible Transit Operating Property				x	
Accumulated Depreciation					
Tangible Property Other than for Transit Operations					
Accumulated Depreciation				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Intangible Assets					
Accumulated Amortization				x	
Investments				x	
Special Funds				x	
Other Assets				x	
Liabilities	1	1978			
Trade Payables				x	
Accrued Payroll Liabilities				x	
Accrued Tax Liabilities				x	
Short-Term Debt				x	
Other Current Liabilities				x	
Advances Payable				x	
Long-Term Debt				x	
Estimated Liabilities				x	
Deferred Credits				x	
Capital	1	1978			
Public (Governmental) Entity Ownership				x	
Private Corporation Ownership				x	
Private Noncorporate Ownership				x	
Grants, Donations and Other Paid-In Capital				x	
Accumulated Earnings (Losses)				x	
Revenues					
Passenger Fares for Transit Service	1	1978			
Full Adult Fares[a]				x	
Senior Citizen Fares[a]				x	
Student Fares[a]				x	
Child Fares[a]				x	
Handicapped Rider Fares[a]				x	
Parking Lot Revenue[a]				x	
Other Primary Ride Fares[a]				x	
Special Transit Fares	1	1978			
Contract Fares for Postmen[b]				x	
Contract Fares for Policemen[b]				x	
Special Route Guarantees[b]				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies) SEWRPC	MCTB	Wis.DOT
Other Special Contract Transit Fares--State and Local Governmentb				x	
Other Special Contract Transit Fares--Other Sources[b]				x	
Non-Contract Special Service Fares[b]				x	
School Bus Service Revenues	1	1978		x	
Freight Tariffs	1	1978		x	
Charter Service Revenues	1	1978		x	
Auxiliary Transportation Revenues	1	1978			
Station Concessions[b]				x	
Vehicle Concessions[b]				x	
Advertising Services[b]				x	
Automotive Vehicle Ferriage[b]				x	
Other Auxiliary Transportation Revenues[b]				x	
Nontransportation Revenues	1	1978			
Sale of Maintenance Services[b]				x	
Rental of Revenue Vehicles[b]				x	
Rental of Buildings and Other Property[b]				x	
Investment Income[b]				x	
Parking Lot Revenue[b]				x	
Other Nontransportation Revenues[b]				x	
Taxes Levied Directly By Transit System	1	1978			
Property Tax Revenue[b]				x	
Sales Tax Revenue[b]				x	
Income Tax Revenue[b]				x	
Payroll Tax Revenue[b]				x	
Utility Tax Revenue[b]				x	
Other Tax Revenue[b]				x	
Local Cash Grants and Reimbursements	1	1978			
General Operating Assistance[a]				x	
Special Demonstration Project Assistance--Local Projects[a]				x	
Special Demonstration Project Assistance--Local Share for State Projects[a]				x	
Special Demonstration Project Assistance--Local Share for UMTA Projects[a]				x	
Reimbursement of Taxes Paid[b]				x	
Reimbursement of Interest Paid[b]				x	
Reimbursement of Transit System Maintenance Costs b				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Reimbursement of Snow Removal Costs[b]				x	
Reimbursement of Security Costs[b]				x	
Other Financial Assistance[b]				x	
Local Special Fare Assistance	1	1978			
Handicapped Citizen Fare Assistance[a]				x	
Senior Citizen Fare Assistance[a]				x	
Student Fare Assistance[a]				x	
Other Special Fare Assistance[a]				x	
State Cash Grants and Reimbursements	1	1978			
General Operating Assistance[a]				x	
Special Demonstration Project Assistance--State Projects[a]				x	
Special Demonstration Project Assistance--State Share for UMTA Projects[a]				x	
Reimbursement of Taxes Paid[b]				x	
Reimbursement of Interest Paid[b]				x	
Reimbursement of Transit System Maintenance Costs[b]				x	
Reimbursement of Security Costs[b]				x	
Other Financial Assistance[b]				x	
State Special Fare Assistance	1	1978			
Handicapped Citizen Fare Assistance[a]				x	
Senior Citizen Fare Assistance[a]				x	
Student Fare Assistance[a]				x	
Other Special Fare Assistance[a]				x	
Federal Cash Grants and Reimbursements	1	1978			
General Operating Assistance[a]				x	
Special Demonstration Project Assistance[a]				x	
Other Financial Assistance[a]				x	
Contributed Services	1	1978			
State and Local Government[b]				x	
Contra Account for Expense[b]				x	
Subsidy from other Sectors of Operations	1	1978			
Subsidy from Utility Rates[b]				x	
Subsidy from Bridge and Tunnel Tolls[b]				x	
Other Subsidies[b]				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Expenses[a] C.					
Labor	1	1978			
Operators' Salaries and Wages				x	
Other Salaries and Wages				x	
Fringe Benefits	1	1978			
FICA or Railroad Retirement[b]				x	
Pension Plans (Including Long-Term Disability Insurance)[b]				x	
Hospital, Medical and Surgical Plans[b]				x	
Dental Plans[b]				x	
Life Insurance Plans[b]				x	
Short-Term Disability Insurance Plans[b]				x	
Unemployment Insurance[b]				x	
Workmen's Compensation Insurance or Federal Employees Liability Act Contributions.[b]				x	
Sick Leave[b]				x	
Holiday (Including all Premiums Paid for Working on Holidays[b]				x	
Vacation[b]				x	
Other Paid Absence (Bereavement Pay, Military Pay, Jury Duty Pay, Etc)[b]				x	
Uniform and Work Clothing Allowances[b]				x	
Other Fringe Benefits[b]				x	
Distribution of Fringe Benefits[b]				x	
Services	1	1978			
Management Service Fees[a]				x	
Advertising Fees[a]				x	
Professional and Technical Services[a]				x	
Temporary Help[a]				x	
Contract Maintenance Services[a]				x	
Custodial Services[a]				x	
Security Services[a]				x	
Other Services[a]				x	
Materials and Supplies Consumed	1	1978			
Fuel and Lubricants				x	
Tires and Tubes				x	
Other Materials and Supplies				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Utilities	1	1978			
Propulsion Power[b]				x	
Utilities Other than Propulsion Power[b]				x	
Casualty and Liability Costs	1	1978			
Premiums for Physical Damage Insurance[b]				x	
Recoveries of Physical Damage Losses[b]				x	
Premiums for Public Liability and Property Damage Insurance[b]				x	
Payouts for Uninsured Public Liability and Property Damage Settlements[a]				x	
Provision for Uninsured Public Liability and Property Damage Settlements[b]				x	
Payouts for Insured Public Liability and Property Damage Settlements[a]				x	
Recoveries of Public Liability and Property Damage Settlements[b]				x	
Premiums for Other Corporate Insurances[b]				x	
Other Corporate Losses[b]				x	
Recoveries of Other Corporate Losses[b]				x	
Taxes	1	1978			
Federal Income Tax[b]				x	
State Income Tax[b]				x	
Property Tax[b]				x	
Vehicle Licensing and Registration Fees[b]				x	
Fuel and Lubricant Taxes[b]				x	
Electric Power Taxes[b]				x	
Other Taxes[b]				x	
Purchased Transportation Service	1	1978		x	
Miscellaneous Expense	1	1978			
Dues and Subscriptions[b]				x	
Travel and Meetings[b]				x	
Bridge, Tunnel and Highway Tolls[b]				x	
Entertainment Expense[b]				x	
Charitable Donations[b]				x	
Fines and Penalties[b]				x	
Bad Debt Expense[b]				x	
Advertising/Promotion Media[a]				x	
Other Miscellaneous Expense[b]				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Expense Transfers	1	1978			
Function Reclassifications [b]				x	
Expense Reclassifications [b]				x	
Capitalization of Nonoperating Costs [b]				x	
Interest Expense	1	1978			
Interest on Long-Term Debt Obligations (Net of Interest Capitalized) [b]				x	
Interest on Short-Term Debt Obligations [b]				x	
Leases and Rentals	1	1978			
Transit Way and Transit Way Structures and Equipment[a]				x	
Passenger Stations[a]				x	
Passenger Parking Facilities[a]				x	
Passenger Revenue Vehicles[a]				x	
Service Vehicles[a]				x	
Operating Yards or Stations[a]				x	
Engine Houses, Car Shops and Garages[a]				x	
Power Generation and Distribution Facilities[a]				x	
Revenue Vehicle Movement Control Facilities[a]				x	
Data Processing Facilities[a]				x	
Revenue Collection and Processing Facilities[a]				x	
Other General Administration Facilities[a]				x	
Depreciation and Amoritization	1	1978			
Transit Way and Transit Way Structures and Equipment[a]				x	
Passenger Stations[a]				x	
Passenger Parking Facilities[a]				x	
Passenger Revenue Vehicles[a]				x	
Service Vehicles[a]				x	
Operating Yards or Stations[a]				x	
Engine Houses, Car Shops and Garages[a]				x	
Power Generation and Distribution Facilities[a]				x	
Revenue Vehicle Movement Control Facilities[a]				x	
Data Processing Facilities[a]				x	
Revenue Collection and Processing Facilities[a]				x	
Other General Administration Facilities[a]				x	
Amortization of Intangibles[a]				x	

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Operating Data					
Time Periods	1	1978		x	
Facilities and Equipment	1	1978			
Miles of Roadway or Track				x	
Railway Classifications				x	
Bus Roadway Classifications				x	
Revenue Vehicle Inventory Classifications				x	
Number of Passenger Stations				x	
Employees	1	1978			
Transit Operating Personnel Classifications				x	
Employee Count Classifications				x	
Maintenance Performance and Fuel Consumption	1	1978			
Roadcalls for Mechanical Failure				x	
Roadcalls for Other Reasons				x	
Labor Hours for Inspection and Maintenance of Revenue Vehicles				x	
Fuel Power Consumption				x	
Number of Light Maintenance Facilities				x	
Safety	1	1978			
Collision Accident Classifications				x	
Noncollision Accident Classifications				x	
Injury and Damage Classifications				x	
Service Supplied and Vehicle Utilization	1	1978			
Average and Total Vehicles Operated				x	
Miles of Revenue Service				x	
Miles of Total Service				x	
Miles of Charter and School Bus Service				x	
Hours of Revenue Service				x	
Hours of Total Service				x	
Hours of Charter and School Bus Service				x	
Passenger Utilization	1	1978			
Unlinked Passenger Trips				x	
Passenger Miles			x		
Average Time Per Unlinked Trip			x		

Continued

Data Categories and Elements	Reporting Interval (Years)	Implementation Phase	Responsible Agency(ies)		
			SEWRPC	MCTB	Wis.DOT
Auxiliary Questionnaires and Subsidiary Schedules					
Operator's Wages Subsidiary Schedules	1	1979		x	
Fringe Benefits Subsidiary Schedule	1	1978		x	
Pension Plan Questionnaire[a,d]	1	1978		x	

a
Data at this level of detail is to be captured and made available to SEWRPC upon request; Reporting of this data to UMTA is considered voluntary.

b
The reporting of data at this level of detail to UMTA is considered voluntary.

c
Data for expenses will be reported using the elements required under reporting level C--operations, maintainance and general administration.

d
The amounts of pension plan assets, vested benefits, and unfunded pension liability are not required for the 1978 reporting period.

CITY OF KENOSHA

AGREEMENT BETWEEN THE CITY OF KENOSHA AND
THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
RELATING TO MASS TRANSPORTATION PLANNING RESPONSIBILITIES

THIS COOPERATIVE AGREEMENT entered into this 13th day of December, 1977, by and between the City of Kenosha (hereinafter referred to as the CITY) and the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as SEWRPC);

WITNESSETH

WHEREAS, the SEWRPC has been established under Section 66.945 of the Wisconsin Statutes and with the approval of the people of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in the State of Wisconsin, acting through their respective county boards of supervisors, to carry on comprehensive, areawide development planning to promote the physical, social, and economic well-being of the seven-county Southeastern Wisconsin Region and of the State of Wisconsin; and

WHEREAS, the SEWRPC has been designated as the official metropolitan transportation planning organization (MPO) for the Kenosha urbanized area by the Governor of the State of Wisconsin on December 27, 1973, for the purposes of carrying out the provisions of Title 23, USC, Section 134 (federal aid highway planning requirements) and for meeting the requirements of Title 49, USC, Section 1603(a) (urban mass transportation requirements); and

WHEREAS, the SEWRPC has been certified by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, as meeting the federal transportation planning requirements for the Kenosha urbanized area; and

WHEREAS, the SEWRPC is charged by State Statute with the function and duty of making and adopting a comprehensive plan for the physical development of the Region, and of certifying that plan to its constituent local units of government and concerned state and federal agencies; and

WHEREAS, the SEWRPC has been assigned federal grant application review responsibilities under Section 204 of the Demonstration Cities and Metropolitan Development Act and under Circular A-95 of the U. S. Office of Management and Budget, and is accordingly recognized as the metropolitan clearinghouse for the seven-county Southeastern Wisconsin Region; and

WHEREAS, the CITY provides mass transportation services within the Kenosha Planning District; and

WHEREAS, the CITY is the designated recipient in the Kenosha urbanized area of federal transit operating aids under Section 5 of the Federal Urban Mass Transportation Act as Amended; and

WHEREAS, the U. S. Department of Transportation has issued metropolitan transportation planning regulations dated September 17, 1975, which provide in part that a formal agreement be executed by and between metropolitan planning organizations and providers of publicly-owned mass transportation services, such agreement relating primarily to establishing clear lines of responsibility for planning activities.

NOW, THEREFORE, in recognition of the mutuality of their concerns, their common and diverse interests and capacities, the state and federal statutes and regulations applying to their respective work programs, and their mutual desire to coordinate effectively all mass transportation planning within the Kenosha Planning District and thereby to avoid unnecessary duplication of effort and unnecessary expenditure of public funds, the CITY and the SEWRPC have entered into the following agreements:

I. The geographic area for planning to be conducted by the CITY under this agreement shall be the Kenosha Planning District. For the SEWRPC the geographic area shall be the Kenosha Planning District, Kenosha County, or the seven-county Southeastern Wisconsin Region, as may be deemed to be appropriate by the SEWRPC or as may be required by state and/or federal laws and regulations.

II. The SEWRPC shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities:

A. Formulating, adopting, and maintaining current, long-range regional land use and transportation system plans, including transit system plans;

B. Formulating, adopting, and maintaining current a regional elderly and handicapped transportation plan;

C. Formulating and adopting an annual transportation systems management plan;

D. Formulating and adopting an annual transportation improvement program;

E. Formulating and adopting an annual overall work program identifying all transportation-related planning activities whether or not they are federally assisted;

F. Providing a forum for cooperative transportation planning and decision making;

G. Providing a mechanism for "passing through" federal transportation planning funds for use by the CITY and other local agencies;

H. Conducting ongoing transportation system monitoring and data gathering activities;

I. Collecting and collating data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof;

J. Conducting on an ad hoc and special contract basis subregional mass transportation planning studies as may be requested by the CITY and

K. Endorsing on an annual basis the long-range regional transportation system plan, the regional elderly and handicapped transportation plan, the short-range transportation systems management plan, and the transportation improvement program.

III. The CITY shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities, all in accordance with the adopted long-range regional transportation system plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan developed by the SEWRPC:

A. Within the general category of short-range transportation system programming, capital investment planning, and grant administration:

1. Preparing and updating a five-year transit system development program, which program shall include, but not be limited to, transit system policies and service standards, transit service modifications and extensions, transit fares, and transit system capital facilities needs;

2. Preparing and submitting applications for state and federal mass transportation capital and operating assistance grants and administering approved grants;

3. Conducting preliminary engineering and final design studies relating to mass transportation capital facilities, including but not limited to transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock;
4. Conducting other special projects and studies found necessary to properly implement the recommendations contained in the long-range regional transportation plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan;
5. Formulating and executing agreements with other public or private agencies to provide mass transportation services in the Kenosha Planning District;
6. Conducting and evaluating mass transportation demonstration projects and programs; and
7. Reviewing applications under Section 16(b)2 of the Urban Mass Transportation Act of 1964 as amended for assistance to private non-profit providers of transportation for the elderly and handicapped within the Kenosha Planning District in the purchase of vehicles; which review shall determine consistency or lack thereof with the Kenosha County portion of the regional elderly and handicapped transportation plan as prepared by the SEWRPC.

B. Within the general category of short-range transit system operational planning:
1. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, and other operating procedures in accord with the proposals contained in the annual five-year transit system development program;
2. Conducting detailed operational planning relating to transit vehicle assignments, transit stop locations, and transfer points and arrangements;
3. Conducting transit marketing planning, including but not limited to the conduct of market surveys, the design of user information materials, and the development of transit promotion programs;
4. Conducting transit management planning, including but not limited to activities related to personnel procedures and training programs, maintenance policies, fare collection and handling procedures, and accounting practices; and
5. Collecting data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof.

IV. The SEWRPC and the CITY shall annually prepare and agree upon an annual transit planning work program for the succeeding calendar year. This program shall be directly inserted into the SEWRPC overall work program each July and shall thereby serve as the basis for obtaining required state and federal aids.

V. This agreement, effective January 1, 1978, shall continue for one year to and including December 31, 1978, and may be extended annually thereafter by the simple re-execution of the agreement on the signature page below. This agreement may also be amended from time-to-time as facts or circumstances warrant or as may be required by federal and/or state laws, administrative regulations, departmental orders, or guidelines having the full force and effect of the law.

IN WITNESS WHEREOF, the SEWRPC and the CITY have executed this agreement as of the date first above written.

ATTESTING WITNESS
Deputy Secretary

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
By Chairman

ATTESTING WITNESS

CITY OF KENOSHA
BY Mayor

NOTE: Exhibit A to this agreement is substantially the same as Exhibit A of the agreement between SEWRPC and the Milwaukee County Transit Board set forth on pages 130 through 140, differing only in the details of the data-gathering required.

CITY OF RACINE

AGREEMENT BETWEEN THE CITY OF RACINE AND
THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
RELATING TO MASS TRANSPORTATION PLANNING RESPONSIBILITIES

THIS COOPERATIVE AGREEMENT entered into this 4th day of January, 1977, by and between the City of Racine (hereinafter referred to as the CITY) and the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as SEWRPC);

WITNESSETH

WHEREAS, the SEWRPC has been established under Section 66.945 of the Wisconsin Statutes and with the approval of the people of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in the State of Wisconsin, acting through their respective county boards of supervisors, to carry on comprehensive, areawide development planning to promote the physical, social, and economic well-being of the seven-county Southeastern Wisconsin Region and of the State of Wisconsin; and

WHEREAS, the SEWRPC has been designated as the official metropolitan transportation planning organization (MPO) for the Racine urbanized area by the Governor of the State of Wisconsin on December 27, 1973, for the purposes of carrying out the provisions of Title 23, USC, Section 134 (federal aid highway planning requirements) and for meeting the requirements of Title 49, USC, Section 1603(a) (urban mass transportation requirements); and

WHEREAS, the SEWRPC has been certified by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, as meeting the federal transportation planning requirements for the Racine urbanized area; and

WHEREAS, the SEWRPC is charged by State Statute with the function and duty of making and adopting a comprehensive plan for the physical development of the Region, and of certifying that plan to its constituent local units of government and concerned state and federal agencies; and

WHEREAS, the SEWRPC has been assigned federal grant application review responsibilities under Section 204 of the Demonstration Cities and Metropolitan Development Act and under Circular A-95 of the U. S. Office of Management and Budget, and is accordingly recognized as the metropolitan clearinghouse for the seven-county Southeastern Wisconsin Region; and

WHEREAS, the CITY provides mass transportation services within the Racine Urban Planning District; and

WHEREAS, the CITY is the designated recipient in the Racine urbanized area of federal transit operating aids under Section 5 of the Federal Urban Mass Transportation Act as Amended; and

WHEREAS, the U. S. Department of Transportation has issued metropolitan transportation planning regulations dated September 17, 1975, which provide in part that a formal agreement be executed by and between metropolitan planning organizations and providers of publicly-owned mass transportation services, such agreement relating primarily to establishing clear lines of responsibility for planning activities.

NOW, THEREFORE, in recognition of the mutuality of their concerns, their common and diverse interests and capacities, the state and federal statutes and regulations applying to their respective work programs, and their mutual desire to coordinate effectively all mass transportation planning within the Racine Urban Planning District and thereby to avoid unnecessary duplication of effort and unnecessary expenditure of public funds, the CITY and the SEWRPC have entered into the following agreements:

I. The geographic area for planning to be conducted by the CITY under this agreement shall be the Racine Urban Planning District. For the SEWRPC the geographic area shall be the Racine Urban Planning District, Racine County, or the seven-county Southeastern Wisconsin Region, as may be deemed to be appropriate by the SEWRPC or as may be required by state and/or federal laws and regulations.

II. The SEWRPC shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities:

A. Formulating, adopting, and maintaining current, long-range regional land use and transportation system plans, including transit system plans;

B. Formulating, adopting, and maintaining current a regional elderly and handicapped transportation plan;

C. Formulating and adopting an annual transportation systems management plan;

D. Formulating and adopting an annual transportation improvement program;

E. Formulating and adopting an annual overall work program identifying all transportation-related planning activities whether or not they are federally assisted;

F. Providing a forum for cooperative transportation planning and decision making;

G. Providing a mechanism for "passing through" federal transportation planning funds for use by the CITY and other local agencies;

H. Conducting ongoing transportation system monitoring and data gathering activities;

I. Collecting and collating data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof;

J. Conducting on an ad hoc and special contract basis subregional mass transportation planning studies as may be requested by the CITY and

K. Endorsing on an annual basis the long-range regional transportation system plan, the regional elderly and handicapped transportation plan, the short-range transportation systems management plan, and the transportation improvement program.

III. The CITY shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities, all in accordance with the adopted long-range regional transportation system plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan developed by the SEWRPC:

A. Within the general category of short-range transportation system programming, capital investment planning, and grant administration:

1. Preparing and updating a five-year transit system development program, which program shall include, but not be limited to, transit system policies and service standards, transit service modifications and extensions, transit fares, and transit system capital facilities needs;

2. Preparing and submitting applications for state and federal mass transportation capital and operating assistance grants and administering approved grants;

3. Conducting preliminary engineering and final design studies relating to mass transportation capital facilities, including but not limited to transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock;

4. Conducting other special projects and studies found necessary to properly implement the recommendations contained in the long-range regional transportation plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan;

5. Formulating and executing agreements with other public or private agencies to provide mass transportation services in the Racine Urban Planning District;

6. Conducting and evaluating mass transportation demonstration projects and programs; and

7. Reviewing applications under Section 16(b)2 of the Urban Mass Transportation Act of 1964 as amended for assistance to private non-profit providers of transportation for the elderly and handicapped within the Racine Urban Planning District in the purchase of vehicles; which review shall determine consistency or lack thereof with the Racine County portion of the regional elderly and handicapped transportation plan as prepared by the SEWRPC.

B. Within the general category of short-range transit system operational planning:

1. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, and other operating procedures in accord with the proposals contained in the annual five-year transit system development program;

2. Conducting detailed operational planning relating to transit vehicle assignments, transit stop locations, and transfer points and arrangements;

3. Conducting transit marketing planning, including but not limited to the conduct of market surveys, the design of user information materials, and the development of transit promotion programs;

4. Conducting transit management planning, including but not limited to activities related to personnel procedures and

training programs, maintenance policies, fare collection and handling procedures, and accounting practices; and

5. Collecting data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof.

IV. The SEWRPC and the CITY shall annually prepare and agree upon an annual transit planning work program for the succeeding calendar year. This program shall be directly inserted into the SEWRPC overall work program each July and shall thereby serve as the basis for obtaining required state and federal aids.

V. This agreement, effective January 1, 1978, shall continue for one year to and including December 31, 1978, and may be extended annually thereafter by the simple re-execution of the agreement on the signature page below. This agreement may also be amended from time-to-time as facts or circumstances warrant or as may be required by federal and/or state laws, administrative regulations, departmental orders, or guidelines having the full force and effect of the law.

IN WITNESS WHEREOF, the SEWRPC and the CITY have executed this agreement as of the date first above written.

ATTESTING WITNESS
Deputy Secretary

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
By Chairman

CITY OF RACINE
BY: MAYOR

Attest:
CITY CLERK

Countersigned:

Provision has been made to pay any liability that will accrue hereunder.

FINANCE DIRECTOR, Jerome J. Maller

APPROVED AS TO FORM:
CITY ATTORNEY

NOTE: Exhibit A to this agreement is substantially the same as Exhibit A of the agreement between SEWRPC and the Milwaukee County Transit Board set forth on pages 130 through 140, differing only in the details of the data-gathering required.

OZAUKEE COUNTY

AGREEMENT BETWEEN THE OZAUKEE COUNTY BOARD OF SUPERVISORS AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION RELATING TO MASS TRANSPORTATION PLANNING RESPONSIBILITIES

THIS COOPERATIVE AGREEMENT entered into this 13th day of February, 1978, by and between the Ozaukee County Board of Supervisors (hereinafter referred to as the COUNTY) and the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as SEWRPC);

WITNESSETH

WHEREAS, the SEWRPC has been established under Section 66.945 of the Wisconsin Statutes and with the approval of the people of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in the State of Wisconsin, acting through their respective county boards of supervisors, to carry on comprehensive, areawide development planning to promote the physical, social, and economic well-being of the seven-county Southeastern Wisconsin Region and of the State of Wisconsin; and

WHEREAS, the SEWRPC has been designated as the official metropolitan transportation planning organization (MPO) for the Milwaukee urbanized area by the Governor of the State of Wisconsin on December 27, 1973, for the purposes of carrying out the provisions of Title 23, USC, Section 134 (federal aid highway planning requirements) and for meeting the requirements of Title 49, USC, Section 1603(a) (urban mass transportation requirements); and

WHEREAS, the SEWRPC has been certified by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, as meeting the federal transportation planning requirements for the Milwaukee urbanized area; and

WHEREAS, the SEWRPC is charged by State Statute with the function and duty of making and adopting a comprehensive plan for the physical development of the Region, and of certifying that plan to its constituent local units of government and concerned state and federal agencies; and

WHEREAS, the SEWRPC has been assigned federal grant application review responsibilities under Section 204 of the Demonstration Cities and Metropolitan Development Act and under Circular A-95 of the U. S. Office of Management and Budget, and is accordingly recognized as the metropolitan clearinghouse for the seven-county Southeastern Wisconsin Region; and

WHEREAS, the COUNTY provides mass transportation services within Ozaukee County and between Ozaukee County and Milwaukee County; and

WHEREAS, the COUNTY is one of four designated recipients in the Milwaukee urbanized area of federal transit operating aids under Section 5 of the Federal Urban Mass Transportation Act as Amended, the other three being Milwaukee, Washington, and Waukesha Counties; and

WHEREAS, the U. S. Department of Transportation has issued metropolitan transportation planning regulations dated September 17, 1975, which provide in part that a formal agreement be executed by and between metropolitan planning organizations and providers of publicly-owned mass transportation services, such agreement relating primarily to establishing clear lines of responsibility for planning activities.

NOW, THEREFORE, in recognition of the mutuality of their concerns, their common and diverse interests and capacities, the state and federal statutes and regulations applying to their respective work programs, and their mutual desire to coordinate effectively all mass transportation planning within Ozaukee County and thereby to avoid unnecessary duplication of effort and unnecessary expenditure of public funds, the COUNTY and the SEWRPC have entered into the following agreements:

I. The geographic area for planning to be conducted by the COUNTY under this agreement shall be Ozaukee County. For the SEWRPC the geographic area shall be Ozaukee County, the Milwaukee Urbanized Area, the Milwaukee Standard Metropolitan Statistical Area, or the seven-county Southeastern Wisconsin Region, as may be deemed to be appropriate by the SEWRPC or as may be required by state and/or federal laws and regulations.

II. The SEWRPC shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities:

A. Formulating, adopting, and maintaining current, long-range regional land use and transportation system plans, including transit system plans;

B. Formulating, adopting, and maintaining current a regional elderly and handicapped transportation plan;

C. Formulating and adopting an annual transportation systems management plan;

D. Formulating and adopting an annual transportation improvement program;

E. Formulating and adopting an annual overall work program identifying all transportation-related planning activities whether or not they are federally assisted;

F. Providing a forum for cooperative transportation planning and decision making;

G. Providing a mechanism for "passing through" federal transportation planning funds for use by the COUNTY and other local agencies;

H. Conducting ongoing transportation system monitoring and data gathering activities;

I. Collecting and collating data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof;

J. Conducting on an ad hoc and special contract basis subregional mass transportation planning studies as may be requested by the COUNTY: and

K. Endorsing on an annual basis the long-range regional transportation system plan, the regional elderly and handicapped transportation plan, the short-range transportation systems management plan, and the transportation improvement program.

III. The COUNTY shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities, all in accordance with the adopted long-range regional transportation system plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan developed by the SEWRPC:

A. Within the general category of short-range transportation system programming, capital investment planning, and grant administration:

1. Preparing and updating a five-year transit system development program, which program shall include, but not be limited to, transit system policies and service standards, transit service modifications and extensions, transit fares, and transit system capital facilities needs;

2. Preparing and submitting applications for state and federal mass transportation capital and operating assistance grants and administering approved grants;

3. Conducting preliminary engineering and final design studies relating to mass transportation capital facilities, including but not limited to transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock;

4. Conducting other special projects and studies found necessary to properly implement the recommendations contained in the long-range regional transportation plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan;

5. Formulating and executing agreements with other public or private agencies to provide mass transportation services in the Milwaukee urbanized area and the Milwaukee Standard Metropolitan Statistical Area;

6. Conducting and evaluating mass transportation demonstration projects and programs; and

7. Reviewing applications under Section 16(b)2 of the Urban Mass Transportation Act of 1964 as amended for assistance to private non-profit providers of transportation for the elderly and handicapped within Ozaukee County in the purchase of vehicles; which review shall determine consistency or lack thereof with the Ozaukee County portion of the regional elderly and handicapped transportation plan as prepared by the SEWRPC.

B. Within the general category of short-range transit system operational planning:

1. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, and other operating procedures in accord with the proposals contained in the five-year transit system development program;

2. Conducting detailed operational planning relating to transit vehicle assignments, transit stop locations, and transfer points and arrangements;

3. Conducting transit marketing planning, including but not limited to the conduct of market surveys, the design of user information materials, and the development of transit promotion programs;

4. Conducting transit management planning, including but not limited to activities related to personnel procedures and training programs, maintenance policies, fare collection and handling procedures, and accounting practices; and

5. Collecting data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof.

IV. The SEWRPC and the COUNTY shall annually prepare and agree upon an annual transit planning work program for the succeeding calendar year. This program shall be directly inserted into the SEWRPC overall work program each July and shall thereby serve as the basis for obtaining required state and federal aids.

V. This agreement, effective January 1, 1978, shall continue for one year to and including December 31, 1978, and may be extended annually thereafter by the simple re-execution of the agreement on the signature page below. This agreement may also be amended from time-to-time as facts or circumstances warrant or as may be required by federal and/or state laws, administrative regulations, departmental orders, or guidelines having the full force and effect of the law.

IN WITNESS WHEREOF, the SEWRPC and the COUNTY have executed this agreement as of the date first above written.

ATTESTING WITNESS
Deputy Secretary

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
By
Chairman

ATTESTING WITNESS

OZAUKEE COUNTY BOARD OF SUPERVISORS
By
Chairman

NOTE: Exhibit A to this agreement is substantially the same as Exhibit A of the agreement between SEWRPC and the Milwaukee County Transit Board set forth on pages 130 through 140, differing only in the details of the data-gathering required.

WAUKESHA COUNTY

AGREEMENT BETWEEN THE WAUKESHA COUNTY BOARD OF SUPERVISORS AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION RELATING TO MASS TRANSPORTATION PLANNING RESPONSIBILITIES

THIS COOPERATIVE AGREEMENT entered into this 30th day of January, 1978, by and between the Waukesha County Board of Supervisors (hereinafter referred to as the COUNTY) and the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as SEWRPC);

WITNESSETH

WHEREAS, the SEWRPC has been established under Section 66.945 of the Wisconsin Statutes and with the approval of the people of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties in the State of Wisconsin, acting through their respective county boards of supervisors, to carry on comprehensive, areawide development planning to promote the physical, social, and economic well-being of the seven-county Southeastern Wisconsin Region and of the State of Wisconsin; and

WHEREAS, the SEWRPC has been designated as the official metropolitan transportation planning organization (MPO) for the Milwaukee urbanized area by the Governor of the State of Wisconsin on December 27, 1973, for the purposes of carrying out the provisions of Title 23, USC, Section 134 (federal aid highway planning requirements) and for meeting the requirements of Title 49, USC, Section 1603(a) (urban mass transportation requirements); and

WHEREAS, the SEWRPC has been certified by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, as meeting the federal transportation planning requirements for the Milwaukee urbanized area; and

WHEREAS, the SEWRPC is charged by State Statute with the function and duty of making and adopting a comprehensive plan for the physical development of the Region, and of certifying that plan to its constituent local units of government and concerned state and federal agencies; and

WHEREAS, the SEWRPC has been assigned federal grant application review responsibilities under Section 204 of the Demonstration Cities and Metropolitan Development Act and under Circular A-95 of the U. S. Office of Management and Budget, and is accordingly recognized as the metropolitan clearinghouse for the seven-county Southeastern Wisconsin Region; and

WHEREAS, the COUNTY provides mass transportation services within Waukesha County and between Waukesha County and Milwaukee County; and

WHEREAS, the COUNTY is one of four designated recipients in the Milwaukee urbanized area of federal transit operating aids under Section 5 of the Federal Urban Mass Transportation Act as Amended, the other three being Milwaukee, Ozaukee, and Washington Counties; and

WHEREAS, the U. S. Department of Transportation has issued metropolitan transportation planning regulations dated September 17, 1975, which provide in part that a formal agreement be executed by and between metropolitan planning organizations and providers of publicly-owned mass transportation services, such agreement relating primarily to establishing clear lines of responsibility for planning activities.

NOW, THEREFORE, in recognition of the mutuality of their concerns, their common and diverse interests and capacities, the state and federal statutes and regulations applying to their respective work programs, and their mutual desire to coordinate effectively all mass transportation planning within Waukesha County and thereby to avoid unnecessary duplication of effort and unnecessary expenditure of public funds, the COUNTY and the SEWRPC have entered into the following agreements:

I. The geographic area for planning to be conducted by the COUNTY under this agreement shall be Waukesha County. For the SEWRPC the geographic area shall be Waukesha County, the Milwaukee Urbanized Area, the Milwaukee Standard Metropolitan Statistical Area, or the seven-county Southeastern Wisconsin Region, as may be deemed to be appropriate by the SEWRPC or as may be required by state and/or federal laws and regulations.

II. The SEWRPC shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities:

A. Formulating, adopting, and maintaining current, long-range regional land use and transportation system plans, including transit system plans;

B. Formulating, adopting, and maintaining current a regional elderly and handicapped transportation plan;

C. Formulating and adopting an annual transportation systems management plan;

D. Formulating and adopting an annual transportation improvement program;

E. Formulating and adopting an annual overall work program identifying all transportation-related planning activities whether or not they are federally assisted;

F. Providing a forum for cooperative transportation planning and decision making;

G. Providing a mechanism for "passing through" federal transportation planning funds for use by the COUNTY and other local agencies;

H. Conducting ongoing transportation system monitoring and data gathering activities;

I. Collecting and collating data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof;

J. Conducting on an ad hoc and special contract basis subregional mass transportation planning studies as may be requested by the COUNTY: and

K. Endorsing on an annual basis the long-range regional transportation system plan, the regional elderly and handicapped transportation plan, the short-range transportation systems management plan, and the transportation improvement program.

III. The COUNTY shall be responsible for and shall be considered the lead agency in conducting the following mass transportation-related planning and programming activities, all in accordance with the adopted long-range regional transportation system plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan developed by the SEWRPC:

A. Within the general category of short-range transportation system programming, capital investment planning, and grant administration:

1. Preparing and updating a five-year transit system development program, which program shall include, but not be limited to, transit system policies and service standards, transit service modifications and extensions, transit fares, and transit system capital facilities needs;

2. Preparing and submitting applications for state and federal mass transportation capital and operating assistance grants and administering approved grants;
3. Conducting preliminary engineering and final design studies relating to mass transportation capital facilities, including but not limited to transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock;
4. Conducting other special projects and studies found necessary to properly implement the recommendations contained in the long-range regional transportation plan, the regional elderly and handicapped transportation plan, and the short-range transportation systems management plan;
5. Formulating and executing agreements with other public or private agencies to provide mass transportation services in the Milwaukee urbanized area and the Milwaukee Standard Metropolitan Statistical Area;
6. Conducting and evaluating mass transportation demonstration projects and programs; and
7. Reviewing applications under Section 16(b)2 of the Urban Mass Transportation Act of 1964 as amended for assistance to private non-profit providers of transportation for the elderly and handicapped within Waukesha County in the purchase of vehicles; which review shall determine consistency or lack thereof with the Waukesha County portion of the regional elderly and handicapped transportation plan as prepared by the SEWRPC.

B. Within the general category of short-range transit system operational planning:
1. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, and other operating procedures in accord with the proposals contained in the five-year transit system development program;
2. Conducting detailed operational planning relating to transit vehicle assignments, transit stop locations, and transfer points and arrangements;
3. Conducting transit marketing planning, including but not limited to the conduct of market surveys, the design of user information materials, and the development of transit promotion programs;
4. Conducting transit management planning, including but not limited to activities related to personnel procedures and training programs, maintenance policies, fare collection and handling procedures, and accounting practices; and
5. Collecting data to meet the requirements of Section 15 of the Urban Mass Transportation Act of 1964 as amended in accordance with the division of responsibilities set forth in Exhibit A attached hereto and made a part hereof.

IV. The SEWRPC and the COUNTY shall annually prepare and agree upon an annual transit planning work program for the succeeding calendar year. This program shall be directly inserted into the SEWRPC overall work program each July and shall thereby serve as the basis for obtaining required state and federal aids.

V. This agreement, effective January 1, 1978, shall continue for one year to and including December 31, 1978, and may be extended annually thereafter by the simple re-execution of the agreement on the signature page below. This agreement may also be amended from time-to-time as facts or circumstances warrant or as may be required by federal and/or state laws, administrative regulations, departmental orders, or guidelines having the full force and effect of the law.

IN WITNESS WHEREOF, the SEWRPC and the COUNTY have executed this agreement as of the date first above written.

ATTESTING WITNESS
Deputy Secretary

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
By Chairman

ATTESTING WITNESS

WAUKESHA COUNTY BOARD OF SUPERVISORS
By Chairman
Highway & Transportation Committee

NOTE: Exhibit A to this agreement is substantially the same as Exhibit A of the agreement between SEWRPC and the Milwaukee County Transit Board set forth on pages 130 through 140, differing only in the details of the data-gathering required.

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Appendix C

ADVISORY COMMITTEE MEMBERSHIPS

INTERGOVERNMENTAL COORDINATING AND ADVISORY COMMITTEE ON TRANSPORTATION SYSTEM PLANNING AND PROGRAMMING FOR THE KENOSHA URBANIZED AREA

George C. Berteau ..... Chairman, Southeastern Wisconsin Regional Planning Commission
Acting Chairman
Kurt W. Bauer ..... Executive Director, Southeastern Wisconsin Regional Planning Commission
Secretary
Thomas R. Clark ..... District Chief Planning Engineer, District 2, Division of Highways, Wisconsin Department of Transportation
Arne L. Gausmann ..... Director, Bureau of System Planning, Wisconsin Department of Transportation
John O. Hibbs ..... Division Administrator, Federal Highway Administration, U. S. Department of Transportation
Donald K. Holland ..... Director of Public Works, City of Kenosha
Edward A. Jenkins ..... Director, Department of Transportation, City of Kenosha
Francis J. Pitts ..... Chairman, Kenosha County Board of Supervisors
George A. Swier ..... County Highway Commission, Racine County
Theodore G. Weigle ..... Regional Representative, Urban Mass Transportation Administration, U. S. Department of Transportation

INTERGOVERNMENTAL COORDINATING AND ADVISORY COMMITTEE ON TRANSPORTATION SYSTEM PLANNING AND PROGRAMMING FOR THE RACINE URBANIZED AREA

George C. Berteau ..... Chairman, Southeastern Wisconsin Regional Planning Commission
Acting Chairman
Kurt W. Bauer ..... Executive Director, Southeastern Wisconsin Regional Planning Commission
Secretary
James J. Blazek ..... City Engineer, City of Racine
Thomas R. Clark ..... District Chief Planning Engineer, District 2, Division of Highways, Wisconsin Department of Transportation
Jon J. Dederich ..... Plan Commissioner, Village of Elmwood Park
Arne L. Gausmann ..... Director, Bureau of System Planning, Wisconsin Department of Transportation
John O. Hibbs ..... Division Administrator, Federal Highway Administration, U. S. Department of Transportation
Clair W. Jenn ..... Traffic Engineer, City of Racine
LeRoy H. Jerstad ..... President, Village of North Bay
Herman Nelson ..... Trustee, Village of Sturtevant
John Margis, Jr. ..... County Highway Commissioner, Racine County
Theodore G. Weigle ..... Regional Representative, Urban Mass Transportation Administration, U. S. Department of Transportation
Robert F. White ..... Town Supervisor, Town of Mt. Pleasant

INTERGOVERNMENTAL COORDINATING AND ADVISORY COMMITTEE ON TRANSPORTATION SYSTEM PLANNING AND PROGRAMMING FOR THE MILWAUKEE URBANIZED AREA

George C. Berteau, Acting Chairman — Chairman, Southeastern Wisconsin Regional Planning Commission
F. Thomas Ament — Chairman, Milwaukee County Board of Supervisors
Daniel F. Casey — County Supervisor, Milwaukee County
Vencil F. Demshar — County Highway Commissioner, Waukesha County
William R. Drew — Commissioner, Department of City Development, City of Milwaukee
Herbert A. Goetsch — Commissioner of Public Works, City of Milwaukee
Joseph M. Hutsteiner — County Supervisor, Milwaukee County
Edwin J. Laszewski, Jr. — City Engineer, City of Milwaukee
Thomas P. Leisle — Mayor, City of Mequon
J. William Little — Administrator, City of Wauwatosa
William E. Meaux — County Supervisor, Milwaukee County
Clarence Miller — Alderman, City of Milwaukee
Henry F. Mixter — President, Village of Whitefish Bay
Nick T. Paulos — Village Engineer, Village of Greendale
John E. Schumacher — City Engineer, City of West Allis
Emil M. Stanislawski — County Supervisor, Milwaukee County
Paul G. Vrakas — Mayor, City of Waukesha
Frank A. Wellstein — City Engineer, City of Oak Creek
Representative — Fiscal Liaison, City of Milwaukee
Representative (Vacant) — Local Government, Waukesha County

Ex Officio Members

Kurt W. Bauer, Secretary — Executive Director, Southeastern Wisconsin Regional Planning Commission
Craig Adams — Acting Director, Office of State Planning and Energy, Wisconsin Department of Administration
Robert W. Brannan — Deputy Director, Department of Public Works, Milwaukee County
Thomas J. Hart — Administrator, Division of Planning, Wisconsin Department of Transportation
John O. Hibbs — Division Administrator, Federal Highway Administration, U. S. Department of Transportation
Thomas R. Kinsey — District Engineer, District 2, Division of Highways, Wisconsin Department of Transportation
Harvey Shebesta — District Engineer, District 9, Division of Highways, Wisconsin Department of Transportation
Theodore G. Weigle — Regional Representative, Urban Mass Transportation Administration, U. S. Department of Transportation
Henry B. Wildschut — Director, Department of Public Works, Milwaukee County

Appendix D

RECOMMENDED TRANSPORTATION SYSTEM MANAGEMENT PROJECTS CONTAINED IN THE 1978-1982 TRANSPORTATION IMPROVEMENT PROGRAM

Appendix D is the list of projects comprising the locally recommended Transportation Systems Management actions for the Milwaukee, Racine, and Kenosha urbanized areas and the rural area of the Region. Rural area projects are listed for informational purposes only. Within each appendix projects are arranged in order by urbanized area and then by TSM action category: 1) Freeway Control System, 2) Stub-End Freeway Treatments, 3) Improved Transit Service, 4) Traffic Signing, Pavement Marking, and Signalization, 5) Park-and-Ride and Park-and-Pool with Express Transit, 6) Transit Route Evaluation, 7) Spot Street and Highway Improvements, 8) UBUS/UPARK, 9) Arterial Studies, 10) Downtown Shuttle Services, 11) Transit Shelters, 12) Carpool and Vanpool Promotion, 13) Pedestrian and Bicycle Provisions, 14) Miscellaneous Low-Capital Actions, 15) Major Transit Generator Study, 16) Bus Stop Location Study, 17) Downtown Parking Rate Structure Study, 18) Taxi Fare and Regulation Study, 19) Exclusive Bus Lanes, 20) Commuter-Impacted Permit Parking, 21) Community Assistance Traffic Engineering and Transit Planning, 22) Work Time Rescheduling Study, 23) Transit System Self-Regulation Study, 24) Energy Emergency Contingency Plan. Within urbanized area and TSM action category lists, projects are then grouped according to implementing agency. Thus, a particular project would be found by referring to the appropriate urbanized area or rural area, locating the appropriate TSM action category, and finally looking for the particular implementing agency.

EXPLANATION OF INFORMATION PRESENTED IN APPENDIX D THROUGH DESCRIPTION OF AN EXAMPLE OF TRANSPORTATION SYSTEM MANAGEMENT PROJECT

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OZAUKEE COUNTY OZAUKEE COUNTY CARPOOL PARKING LOT IH 43 & STH 32 CONSTRUCTION	OZKJHP	NONE	0.0	0.0	2.0	2.0	2.0	ON SYSTEM HIGHWAY PRESERVATION

Federal share of total project cost

State share of total project cost

Local share of total project cost

Total project cost

ACTION: The action taken on the project. Abbreviations include STR for structure, BRG for bridge, COND for condition, CANTI for cantilever, CHAN for channelization, REPL for replace, APP for approach.

LENGTH: The length of the project in miles. If a spot location improvement, or an areawide action, or an improvement at various locations, the length has been left blank.

TERMINI: The points of beginning and ending of a project. Same abbreviations as PROJECT NAME/LOCATION.

PROJECT NAME/LOCATION: The name of the project. Abbreviations used include: ST for street, RD for road, INT or INTCHG for interchange, INTER for intersection, SYS for system, CTH for county trunk highway, STH for state trunk highway, IH for interstate highway, FRWY for freeway, and LN for lane.

MUNICIPALITY: The municipality (city - /C, Village - /V, or town - /T) or county within which the project is located.

IMPLEMENTING AGENCY: The municipality (city - /C, village - /V, or town - /T), county, or state which will be responsible for the project.

TIP ANNUAL ELEMENT

This TIP Annual Element is the cost of the project occurring during 1-1-78 to 12-31-78 for UMTA funded projects and 1-1-78 to 9-30-79 for FHWA funded projects

PROJECT CATEGORY

Categories include on system highway preservation, on system highway improvement, on system highway expansion, transit preservation, transit improvement, transit expansion, off system highway construction, highway safety, environmental enhancement.

TYPE OF FEDERAL FUNDS

No federal funds - blank or NONE	Highway beautification fund - HBF
Interstate funds - FAI	Bridge replacement funds - BRF
Primary funds - FAP	Model bikeway funds - MBIC
Secondary funds - FAS	Safer off federal system - SOS
Urban system funds - FAU	UMTA, Sec. 3 funds - UMT3
Railway-highway grade crossing - RRG	UMTA, Sec. 5 funds - UMT5
Pavement marking funds - PM	UMTA, Sec. 16(B)1 funds - UMT 16(B)1
Roadside obstacle funds - RO	UMTA, Sec. 16(B)2 funds - UMT 16(B)2
High hazard location funds - HHL	Community development block grant - CDBG
Safety program funds - SAFE	Economic development admin. funds - EDA
Advance ROW acquisition funds - AAF	Traffic control demonstration funds - TCD
	Local public work funds - LPW

PLANNING SOURCE DOCUMENT: The regional or subregional planning report which provides the support for the project.

Kenosha County Jurisdictional Highway Plan	- KENJHP	Milwaukee County Transit Development Program	- MTDP
Milwaukee County Jurisdictional Highway Plan	- MILJHP	Racine City Transit Development Program	- RTDP
Ozaukee County Jurisdictional Highway Plan	- OZKJHP	Kenosha City Transit Development Program	- KDTP
Racine County Jurisdictional Highway Plan	- RACJHP	Waukesha City Transit Development Program	- WTDP
Walworth County Jurisdictional Highway Plan	- WALJHP	Milwaukee Area Transit Plan	- MATP
Washington County Jurisdictional Highway Plan	- WSHJHP	Preliminary Elderly & Handicapped Transportation Plan	- E&H
Waukesha County Jurisdictional Highway Plan	- WAUJHP		

Table D-1

MILWAUKEE URBAN AREA FREEWAY CONTROL SYSTEM

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN MILWAUKEE/C N-S FREEWAY MITCH INT-GOOD HOPE SURVEIL & CONT	MILJHP	FAI	158.4	17.6	.0	176.0	176.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE/C E-W FREEWAY WCL-MARQ INT RAMP CONTROL	MILJHP	FAI	157.5	17.5	.0	175.0	175.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAY CONTROL SYS URBANIZED AREAWIDE PROSPECTUS		FAI	20.0	5.0	.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAY CONTROL SYS URBANIZED AREAWIDE PLANNING STUDY		FAI	400.0	100.0	.0	500.0	500.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-2

MILWAUKEE URBAN AREA STUB-END FREEWAY TREATMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE COUNTY MILWAUKEE/C PARK FREEWAY MILW - VAN BUREN 0.20 MILES INTERIM RAMPS	MILJHP	FAP	350.0	150.0	25.0	525.0	25.0	ON SYSTEM HIGHWAY EXPANSION
STATE OF WISCONSIN MILWAUKEE/C N-S FREEWAY WINNEBAGO - NORTH RAMP STUDY	MILJHP	FAI	1.8	.2	.0	2.0	2.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-3

MILWAUKEE URBAN AREA IMPROVED TRANSIT SERVICE

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OZAUKEE COUNTY OZAUKEE COUNTY MASS TRANSIT OPERATING ASSISTANCE SERVICE SUBSIDY	MATP	UMT5	25.5	17.0	8.5	51.0	51.0	TRANSIT PRESERVATION
MILWAUKEE COUNTY MILWAUKEE COUNTY MASS TRANSIT OPERATING ASSISTANCE SERVICE SUBSIDY	MATP	UMT5	46100.0	30733.0	15367.0	92200.0	15100.0	TRANSIT PRESERVATION
MILWAUKEE COUNTY MILWAUKEE COUNTY 150 LARGE BUSES 45/50 PASSENGER PURCHASE	MTDP	UMT3	39494.4	.0	9873.6	49368.0	18513.0	TRANSIT PRESERVATION
MILWAUKEE COUNTY MILWAUKEE COUNTY 30 SMALL BUSES 15/30 PASSENGER PURCHASE	MTDP	UMT3	2073.5	.0	518.3	2591.8	2591.8	TRANSIT EXPANSION
MILWAUKEE COUNTY MILWAUKEE COUNTY 12 AUTOMOBILES ROUTE SUPERVISORS PURCHASE	MTDP	UMT3	113.8	.0	28.5	142.3	67.3	TRANSIT PRESERVATION
MILWAUKEE COUNTY MILWAUKEE COUNTY MAINT&STORAGE FACLTY TRANSIT SYSTEM IMPROVEMENT	MTDP	UMT3	11590.6	.0	2897.5	14488.1	488.1	TRANSIT PRESERVATION
MILWAUKEE COUNTY MILWAUKEE COUNTY WIS DOT E&H PROGRAM TRANS AID FOR E&H OPER ASSISTANCE		NONE	.0	450.6	45.0	495.6	495.6	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-3 (continued)

MILWAUKEE URBAN AREA IMPROVED TRANSIT SERVICE

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
WASHINGTON COUNTY WASHINGTON COUNTY E & H BUS CO.SAMARITAN HOME								
PURCHASE	E - H	UMT16(B)1	28.8	.0	7.2	36.0	36.0	TRANSIT EXPANSION
WAUKESHA COUNTY WAUKESHA COUNTY MASS TRANSIT OPERATING ASSISTANCE								
SERVICE SUBSIDY	MATP	UMT5	65.0	43.0	22.0	130.0	130.0	TRANSIT PRESERVATION
STATE OF WISCONSIN GRAFTON/V E & H VEHICLES 3 BUSSES								
PURCHASE	E - H	UMT16(B)2	40.8	10.2	.0	51.0	51.0	TRANSIT EXPANSION
STATE OF WISCONSIN WEST BEND/C 3 E&H VANS CITYWIDE								
PURCHASE	E - H	UMT16(B)2	21.6	5.4	.0	27.0	27.0	TRANSIT EXPANSION
STATE OF WISCONSIN WAUKESHA/C E & H VEHICLES 5-44 PASS BUSSES								
PURCHASE	E - H	UMT16(B)2	68.8	17.2	.0	86.0	86.0	TRANSIT EXPANSION
STATE OF WISCONSIN MILWAUKEE COUNTY UMTA 16(B)(2) PROG PRI NON-PROF AGEN								
VEHICLES/EQUIP		UMT16(B)2	1260.0	200.0	315.0	1775.0	415.0	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
BROWN DEER/V PAVEMENT MARKINGS VARIOUS LOCATIONS								
PAVEMENT MARK		PM	30.0	.0	.0	30.0	30.0	HIGHWAY SAFETY
FRANKLIN/C FRANKLIN/C PAVEMENT MARKINGS VARIOUS LOCATIONS								
PAVEMENT MARK		PM	11.0	.0	.0	11.0	11.0	HIGHWAY SAFETY
MILWAUKEE/C MILWAUKEE/C SIGNING PROJECT VARIOUS LOCATIONS								
REPLACEMENT		SOS	54.0	.0	6.0	60.0	60.0	OFF SYSTEM HIGHWAY CONSTRUCTION
MILWAUKEE/C MILWAUKEE/C PAVEMENT MARKINGS VARIOUS LOCATIONS								
PAVEMENT MARK		PM	150.0	.0	.0	150.0	150.0	HIGHWAY SAFETY
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS								
REVISE SIGNALS	MILJHP	NONE	.0	.0	90.0	90.0	90.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNS VARIOUS LOCATIONS								
INSTALLATION	MILJHP	NONE	.0	.0	135.0	135.0	135.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS								
INTERCON SIGNAL	MILJHP	NONE	.0	.0	25.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS UPGRADE SIGNALS	MILJHP	NONE	.0	.0	30.0	30.0	30.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS INSTALLATION	MILJHP	NONE	.0	.0	75.0	75.0	75.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C COMPUT TRAFF CONTROL CBD INSTALLATION	MILJHP	FAU	385.0	.0	165.0	550.0	50.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS INSTAL OR MODIF	MILJHP	FAU	70.0	.0	30.0	100.0	100.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C TRAFFIC SIGNALS VARIOUS LOCATIONS REPLACEMENT	MILJHP	FAU	35.0	.0	15.0	50.0	50.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C STREET NAME SIGNS VARIOUS LOCATIONS REPLACEMENT	MILJHP	FAU	525.0	.0	225.0	750.0	300.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C SILVER SPRING RD C&NW RR 0.00 MILES SIGNALS		RRG	40.5	.0	4.5	45.0	45.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OAK CREEK/C OAK CREEK/C PUETZ WEST OF PENN C & NW RR INSTALL SIGNALS	MILJHP	RRG	22.5	.0	2.5	25.0	25.0	HIGHWAY SAFETY
OAK CREEK/C OAK CREEK/C OAKWOOD WEST OF PENN C & NW RR INSTALL SIGNALS	MILJHP	RRG	22.5	.0	2.5	25.0	25.0	HIGHWAY SAFETY
OAK CREEK/C OAK CREEK/C FITZSIMMONS C & NW 'MAIN LINE' INSTALL SIGNALS		RRG	22.5	.0	2.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
OAK CREEK/C OAK CREEK/C OAKWOOD RD C & NW 'MAIN LINE' INSTALL SIGNALS	MILJHP	RRG	22.5	.0	2.5	25.0	25.0	HIGHWAY SAFETY
OAK CREEK/C OAK CREEK/C ELM RD C & NW 'NEW LINE' INSTALL SIGNALS		RRG	22.5	.0	2.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
OAK CREEK/C OAK CREEK/C FOREST HILL C & NW 'NEW LINE' INSTALL SIGNALS		RRG	22.5	.0	2.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
OAK CREEK/C OAK CREEK/C FOREST HILL CC & NW FRIGHT INSTAL SIGNALS		SOS	17.5	.0	7.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OAK CREEK/C OAK CREEK/C ELM RD AT C & NW FREIGHT INSTALL SIGNALS		SOS	17.5	.0	7.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
WAUWATOSA/C WAUWATOSA/C VIL SIGNALIZATION INSTALL SIGNALS	MILJHP	FAU	147.0	.0	63.0	210.0	.0	ON SYSTEM HIGHWAY PRESERVATION
WAUWATOSA/C WAUWATOSA/C BLUEMOUND RD AT 124TH SIGNALS&TURN LN	MILJHP	NONE	.0	.0	27.0	27.0	27.0	ON SYSTEM HIGHWAY PRESERVATION
WEST ALLIS/C WEST ALLIS/C ON & OFF FED AID SYS VARIOUS LOCATIONS PAVEMENT MARK		PM	63.0	.0	.0	63.0	63.0	HIGHWAY SAFETY
WEST ALLIS/C WEST ALLIS/C 76TH ST NATIONAL-GREENFIELD CONNECT SIGNALS	MILJHP	NONE	.0	.0	20.0	20.0	20.0	ON SYSTEM HIGHWAY PRESERVATION
WEST ALLIS/C WEST ALLIS/C GREENFIELD AV 77TH-68TH ST CONNECT SIGNALS	MILJHP	NONE	.0	.0	30.0	30.0	30.0	ON SYSTEM HIGHWAY PRESERVATION
WEST ALLIS/C WEST ALLIS/C ON&OFF FED AID SYS VARIOUS LOCATIONS PAVEMENT MARK		PM	1.0	.0	.0	1.0	1.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
WEST MILWAUKEE/V WEST MILWAUKEE/V CITY STREETS VARIOUS LOCATIONS PAVEMENT MARK		PM	1.0	.0	.0	1.0	1.0	ON SYSTEM HIGHWAY PRESERVATION
WHITEFISH BAY/V WHITEFISH BAY/V SILVER SPRING DR PORT WASH-LAKE DR 00.90 MILES SIGNAL INTERCON	MILJHP	FAU	8.5	.0	6.5	15.0	.0	ON SYSTEM HIGHWAY PRESERVATION
WHITEFISH BAY/V WHITEFISH BAY/V N LAKE DR 3 LOCATIONS PAVEMENT MARK	MILJHP	PM	3.0	.0	.0	3.0	3.0	HIGHWAY SAFETY
WAUKESHA COUNTY WAUKESHA COUNTY CTH A AT CTH F INSTALL SIGNALS	WAUJHP	SAFE	27.0	.0	3.0	30.0	30.0	HIGHWAY SAFETY
WAUKESHA COUNTY WAUKESHA COUNTY CTH T AT CTH TJ SIGNALS	WAUJHP	SAFE	27.0	.0	3.0	30.0	30.0	HIGHWAY SAFETY
WAUKESHA COUNTY WAUKESHA COUNTY CTH JJ AT SPRINGDALE RD SIGNALS	WAUJHP	SAFE	27.0	.0	3.0	30.0	30.0	HIGHWAY SAFETY
BROOKFIELD/C BROOKFIELD/C TRAFFIC SIGNS CITYWIDE SIGNS & MARKING	WAUJHP	NONE	.0	.0	6.0	6.0	6.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
BROOKFIELD/C BROOKFIELD/C NORTH AV AT CALHOUN RD								
TRAFFIC SIGNALS	WAUJHP	NONE	.0	.0	30.0	30.0	30.0	ON SYSTEM HIGHWAY PRESERVATION
MUSKEGO/C MUSKEGO/C TRAFFIC SIGNS TOWNWIDE								
UPGRADING	WAUJHP	NONE	.0	.0	5.0	5.0	5.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C MOORLAND RD VARIOUS INTERSECT								
INSTALL SIGNALS	WAUJHP	NONE	.0	.0	50.0	50.0	50.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C TRAFFC SIGNS & MARK CITYWIDE								
UPGRADE	WAUJHP	NONE	.0	.0	15.0	15.0	15.0	ON SYSTEM HIGHWAY PRESERVATION
WAUKESHA/C WAUKESHA/C CENTRAL CONTROL TRAFFIC SIGNAL SYS								
DEMONSTRATION	WAUJHP	TCD	1600.0	.0	.0	1600.0	1200.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE/C 107TH ST C&NW & CMSTP&P RR'S								
INSTALL GATES	MILJHP	RRG	49.5	.5	5.0	55.0	55.0	HIGHWAY SAFETY
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAYS INTERSTATE								
LIGHTING & SIGN	MILJHP	FAI	63.0	7.0	.0	70.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAYS OFF-INTERSTATE								
LIGHTING & SIGN	MILJHP	FAP	49.0	21.0	.0	70.0	.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY STH'S COUNTYWIDE								
LT TURN SIG	MILJHP	SAFE	180.0	20.0	.0	200.0	200.0	HIGHWAY SAFETY
STATE OF WISCONSIN OZAUKEE COUNTY IH 43 MILW-GRAFTON								
SIGN REFURBISH	OZKJHP	SAFE	22.5	2.5	.0	25.0	25.0	HIGHWAY SAFETY
STATE OF WISCONSIN MEQUON/C STH 167 MILW RD XING								
CANTI SIGNALS	OZKJHP	RRG	45.0	.0	5.0	50.0	50.0	HIGHWAY SAFETY
STATE OF WISCONSIN WASHINGTON COUNTY USH 41 COUNTYWIDE								
SIGN REFURBISH	WSHJHP	SAFE	18.0	2.0	.0	20.0	20.0	HIGHWAY SAFETY
STATE OF WISCONSIN ELM GROVE/V USH 18 AT ELM GROVE RD								
SIGNAL REVISION	WAUJHP	SAFE	18.0	2.0	.0	20.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN BROOKFIELD/C STH 190 AT CALHOUN RD								
INSTALL SIGNALS	WAUJHP	SAFE	9.0	1.0	.0	10.0	10.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-4 (continued)

MILWAUKEE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN MUKWONAGO/V STH 36 AT USH 45 & CTH OO								
INSTALL SIGNALS	WAUJHP	SAFE	36.0	4.0	.0	40.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN WAUKESHA COUNTY IH 94 W CO L - E CO L								
SIGN REFURBISH	WAUJHP	SAFE	67.5	7.5	.0	75.0	75.0	HIGHWAY SAFETY
STATE OF WISCONSIN ELM GROVE/V USH 18 AT 124TH ST								
INSTALL SIGNALS	WAUJHP	SAFE	27.0	3.0	.0	30.0	30.0	HIGHWAY SAFETY
STATE OF WISCONSIN NEW BERLIN/C SUNNYSLOPE RD AT CNW RR XING								
SIGNAL REVISION	WAUJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY
STATE OF WISCONSIN BROOKFIELD/C USH 18 AT BROOKFIELD RD								
INSTALL SIGNALS	WAUJHP	FAP	17.5	7.5	.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN NEW BERLIN/C CTH D (MOORLAND RD) CNW RR CROSSING								
CANTI SIGNALS	WAUJHP	RRG	45.0	.0	5.0	50.0	50.0	HIGHWAY SAFETY
STATE OF WISCONSIN SUSSEX/V STH 74 SOO LINE RR XING								
SIGNALS	WAUJHP	RRG	49.5	.0	5.5	55.0	55.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-5

MILWAUKEE URBAN AREA PARK-AND-RIDE AND PARK-AND-POOL WITH EXPRESS TRANSIT

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OZAUKEE COUNTY OZAUKEE COUNTY CARPOOL PARKING LOT IH 43 & STH 32								
CONSTRUCTION	CZKJHP	NONE	.0	.0	2.0	2.0	2.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE COUNTY MILWAUKEE/C N-S FREEWAY HOLT AV INTER								
FRINGE PARKING	MATP	FAI	447.3	49.7	.0	497.0	497.0	TRANSIT EXPANSION
MILWAUKEE COUNTY OAK CREEK/C N-S FREEWAY RYAN RD INTERCHANGE								
FRINGE PARKING	MATP	FAI	423.0	47.0	.0	470.0	.0	TRANSIT EXPANSION
MILWAUKEE COUNTY MILWAUKEE/C E-W FREEWAY STATE FAIR PARK								
FRINGE PARKING	MATP	FAI	580.5	57.5	7.0	645.0	645.0	TRANSIT EXPANSION
MILWAUKEE COUNTY GREENFIELD/C AIRPORT FREEWAY LOOMIS RD INTER								
FRINGE PARKING	MATP	FAI	486.0	54.0	.0	540.0	.0	TRANSIT EXPANSION
MILWAUKEE COUNTY GREENFIELD/C AIRPORT FREEWAY S 76TH ST INTER								
FRINGE PARKING	MATP	FAI	490.5	48.5	6.0	545.0	545.0	TRANSIT EXPANSION
MILWAUKEE COUNTY GREENFIELD/C ROCK FREEWAY WHITNALL INTERCHANGE								
FRINGE PARKING	MATP	FAP	350.0	132.0	18.0	500.0	500.0	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-5 (continued)

MILWAUKEE URBAN AREA PARK-AND-RIDE AND PARK-AND-POOL WITH EXPRESS TRANSIT

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE COUNTY WEST ALLIS/C ZOO FREEWAY NATIONAL AV INTER								
FRINGE PARKING	MATP	FAI	522.0	51.0	7.0	580.0	580.0	TRANSIT EXPANSION
MILWAUKEE COUNTY MILWAUKEE/C ZOO FREEWAY GOOD HOPE RD INTER								
FRINGE PARKING	MATP	FAP	357.0	132.0	21.0	510.0	510.0	TRANSIT EXPANSION
MILWAUKEE COUNTY MILWAUKEE/C N-S FREEWAY LOCUST ST INTER								
FRINGE PARKING	MATP	FAI	1737.0	193.0	.0	1930.0	.0	TRANSIT EXPANSION
MILWAUKEE COUNTY GLENDALE/C N-S FREEWAY SILVER SPRING INTER								
FRINGE PARKING	MATP	FAI	792.0	88.0	.0	880.0	.0	TRANSIT EXPANSION
WAUKESHA COUNTY NEW BERLIN/C COMMUTER PARKING LOT CTH O AND STH 15								
CONSTRUCTION		NONE	.0	.0	5.0	5.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OZAUKEE COUNTY OZAUKEE COUNTY CTH Q AT CTH W UPGRADE INTER	OZKJHP	NONE	.0	.0	10.0	10.0	10.0	ON SYSTEM HIGHWAY IMPROVEMENT
CEDARBURG/C CEDARBURG/C CITY STREETS CITYWIDE RECONDITION		NONE	.0	.0	100.0	100.0	50.0	OFF SYSTEM HIGHWAY CONSTRUCTION
MEQUON/C MEQUON/C CO LINE RD 60TH TO 68TH STS 0.50 MILES RECONDITION	OZKJHP	NONE	.0	.0	5.0	5.0	5.0	ON SYSTEM HIGHWAY PRESERVATION
MEQUON/C MEQUON/C STREET INTERSECTIONS CITYWIDE LIGHTING	OZKJHP	NONE	.0	.0	15.0	15.0	15.0	ON SYSTEM HIGHWAY PRESERVATION
MEQUON/C MEQUON/C RANGE LINE RD CO LN RD-DONGES BAY 1.00 MILES RECONDITION	OZKJHP	NONE	.0	.0	75.0	75.0	75.0	ON SYSTEM HIGHWAY PRESERVATION
THIENSVILLE/V THIENSVILLE/V VILLAGE STREETS VILLAGEWIDE LIGHTING	OZKJHP	NONE	.0	.0	18.0	18.0	18.0	ON SYSTEM HIGHWAY PRESERVATION
BROWN DEER/V BROWN DEER/V BROWN DEER &DEERWOOD INTERSECTION RECONSTRUCTION		NONE	.0	.0	163.0	163.0	163.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
FOX POINT/V FOX POINT/V PED BRIDGE BARNETT-BRIDGE LA 0.05 MILES RESTORE&REPAIR		NONE	.0	.0	96.0	96.0	96.0	ENVIRONMENTAL ENHANCEMENT
FOX POINT/V FOX POINT/V N LAKE DR C DEAN RD CHANNELIZATION	MILJHP	NONE	.0	.0	1.0	1.0	1.0	ON SYSTEM HIGHWAY PRESERVATION
HALES CORNERS/V HALES CORNERS/V GRANGE AVE NEW BERLIN RD INTER UPGRADE	MILJHP	FAU	35.7	.0	15.3	51.0	51.0	ON SYSTEM HIGHWAY IMPROVEMENT
MILWAUKEE/C MILWAUKEE/C W LISBON AV 40 - SHERMAN BL 0.30 MILES RESURF & CHAN	MILJHP	FAU	193.0	.0	83.0	276.0	276.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C E & W CAPITOL DR 107TH ST-MILWAUKEE R 7.30 MILES RESURF & CHAN	MILJHP	NONE	.0	1530.0	470.0	2000.0	2000.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C N 76TH ST CENTER - APPLETON 1.10 MILES RESURF & CHAN	MILJHP	FAU	462.0	.0	198.0	660.0	660.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C S CLEMENT AV OKLAHOMA - KK AV 0.40 MILES RESURF & CHAN	MILJHP	FAU	217.0	.0	93.0	310.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
OAK CREEK/C OAK CREEK/C ON FED AID SYSTEM VARIOUS LOCATIONS SAFETY IMP		HHL	218.0	.0	24.2	242.2	242.2	HIGHWAY SAFETY
RIVER HILLS/V RIVER HILLS/V RANGE LINE RD NORTH OF BRADLEY (2) SAFETY IMP	MILJHP	RO	12.0	.0	1.3	13.3	13.3	HIGHWAY SAFETY
SOUTH MILWAUKEE/C SOUTH MILWAUKEE/C CHICAGO AVE AT HAWTHORNE REALIGN INTRSCT		HHL	95.9	.0	41.1	137.0	17.0	HIGHWAY SAFETY
WAUWATOSA/C WAUWATOSA/C HARWOOD AV MENOMONEE RIVER BRIDGE REPLACE	MILJHP	FAU	21.0	.0	9.0	30.0	.0	ON SYSTEM HIGHWAY IMPROVEMENT
WAUWATOSA/C WAUWATOSA/C NORTH AV 116TH-104TH ST ADD LEFT LANES	MILJHP	FAU	70.0	.0	30.0	100.0	.0	ON SYSTEM HIGHWAY IMPROVEMENT
WEST ALLIS/C WEST ALLIS/C 60TH ST AT WALKER UPGRADE INTER	MILJHP	HHL	282.2	.0	31.4	313.6	313.6	HIGHWAY SAFETY
WEST ALLIS/C WEST ALLIS/C OKLAHOMA AV 116TH ST TO 93RD ST 1.40 MILES LIGHTING	MILJHP	FAU	9.8	.0	4.2	14.0	14.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
WHITEFISH BAY/V WHITEFISH BAY/V N LAKE DR 3 LOCATIONS								
ELIMINATE HAZRD	MILJHP	RO	8.0	.0	.9	8.9	8.9	HIGHWAY SAFETY
GERMANTOWN/V GERMANTOWN/V MEQUON RD AT WESTERN AV								
CONST TURN LN	WSHJHP	NONE	.0	.0	2.0	2.0	2.0	ON SYSTEM HIGHWAY PRESERVATION
GERMANTOWN/V GERMANTOWN/V VILLAGE STREETS VARIOUS LOCATIONS								
LIGHTING UNITS		NONE	.0	.0	13.0	13.0	13.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN WAUKESHA COUNTY STH 59 AT CTH A								
RECONSTRUCTION	WAUJHP	SAFE	270.0	.0	30.0	300.0	300.0	HIGHWAY SAFETY
WAUKESHA COUNTY WAUKESHA COUNTY CTH F AT CTH FT								
CONST TURN LN	WAUJHP	NONE	.0	.0	5.0	5.0	5.0	ON SYSTEM HIGHWAY PRESERVATION
WAUKESHA COUNTY WAUKESHA COUNTY COUNTY STREETS VARIOUS LOCATIONS								
SPOT IMPROVEMNT		NONE	.0	.0	125.0	125.0	125.0	ON SYSTEM HIGHWAY PRESERVATION
WAUKESHA COUNTY NEW BERLIN/C CTH ES AT CTH Y								
RECONSTRUCTION	WAUJHP	SAFE	225.0	.0	25.0	250.0	250.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
BROOKFIELD/C BROOKFIELD/C INTERSCTION LIGHTING CITYWIDE INSTALLATION	WAUJHP	NONE	.0	.0	28.0	28.0	28.0	ON SYSTEM HIGHWAY PRESERVATION
BROOKFIELD/C BROOKFIELD/C SAFETY IMPROVEMENTS CITYWIDE RECONSTRUCTION	WAUJHP	NONE	.0	.0	90.0	90.0	90.0	ON SYSTEM HIGHWAY PRESERVATION
BROOKFIELD/C BROOKFIELD/C LILLY RD AT BURLEIGH ST INTER RECONSTRUCTION		NONE	.0	.0	12.0	12.0	12.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V LILLY RD AT HAMPTON AV 0.20 MILES RECONSTRUCTION	WAUJHP	NONE	.0	.0	120.0	120.0	120.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH Q AT PILGRIM RD RECONSTRUCTION	WAUJHP	NONE	.0	.0	15.0	15.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH V AT SCHLEI DR RECONSTRUCTION	WAUJHP	NONE	.0	.0	10.0	10.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH YY (PILGRIM RD) AT RIDGEVIEW AV RECONSTRUCTION	WAUJHP	NONE	.0	.0	10.0	10.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH YY (PILGRIM RD) AT CHATEAU DR RECONSTRUCTION	WAUJHP	NONE	.0	.0	15.0	15.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH Y AT MENO AV RECONSTRUCTION	WAUJHP	NONE	.0	.0	15.0	15.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V CTH Y HIGHPOINT AV RECONSTRUCTION	WAUJHP	NONE	.0	.0	10.0	10.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MENOMONEE FALLS/V MENOMONEE FALLS/V MARCY RD VILLARD AV RECONSTRUCTION	WAUJHP	NONE	.0	.0	10.0	10.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MUSKEGO/C MUSKEGO/C SPOT IMPROVEMENTS CITYWIDE RECONSTRUCTION	WAUJHP	NONE	.0	.0	5.0	5.0	5.0	ON SYSTEM HIGHWAY PRESERVATION
MUSKEGO/C MUSKEGO/C LIGHTING UNITS MAJOR INTERSECTIONS INSTALLATION	WAUJHP	NONE	.0	.0	23.0	23.0	23.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C NATIONAL AV AT GLENGARRY RD RECONSTRUCTION	WAUJHP	NONE	.0	.0	15.0	15.0	15.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
NEW BERLIN/C NEW BERLIN/C 166TH ST RYERSON RD NORTHERLY 0.25 MILES CONSTRUCTION		NONE	.0	.0	25.0	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
NEW BERLIN/C NEW BERLIN/C SWARTZ RD BEEHEIM RD SLY RECONSTRUCTION		NONE	.0	.0	60.0	60.0	60.0	OFF SYSTEM HIGHWAY CONSTRUCTION
NEW BERLIN/C NEW BERLIN/C CALHOUN RD NATIONAL-BELOIT RDS RECONSTRUCTION	WAUJHP	NONE	.0	.0	25.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C BERES RD SPOT IMPROVEMENTS 0.10 MILES RECONSTRUCTION		NONE	.0	.0	10.0	10.0	10.0	OFF SYSTEM HIGHWAY CONSTRUCTION
NEW BERLIN/C NEW BERLIN/C GRANGE AV SPOT IMPROVEMENTS 0.1 MILES RECONSTRUCTION	WAUJHP	NONE	.0	.0	20.0	20.0	20.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C NATIONAL AV AT COFFEE RD RECONSTRUCTION	WAUJHP	NONE	.0	.0	12.0	12.0	12.0	ON SYSTEM HIGHWAY PRESERVATION
NEW BERLIN/C NEW BERLIN/C LIGHTING UNITS MAJOR INTERSECTIONS INSTALLATION		NONE	.0	.0	24.0	24.0	24.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN MILWAUKEE/C STH'S VARIOUS LOCATIONS LT TURN LANES	MILJHP	FAP	164.5	45.5	25.0	235.0	235.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY STH'S MILWAUKEE COUNTY TOPIC TYPE IMP	MILJHP	FAP	182.0	78.0	.0	260.0	260.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY STH'S MILWAUKEE COUNTY TOPIC TYPE IMP	MILJHP	RO	200.2	22.3	.0	222.5	222.5	HIGHWAY SAFETY
STATE OF WISCONSIN MILWAUKEE/C USH 145 68TH TO W CO LINE 5.00 MILES LIGHTING	MILJHP	FAP	350.0	150.0	.0	500.0	.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAYS INTERSTATE BRIDGES SAFETY IMPROVE	MILJHP	FAI	900.0	100.0	.0	1000.0	.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY FREEWAYS OFF INTERSTATE BRG SAFETY IMPROVE	MILJHP	FAP	2646.0	1134.0	.0	3780.0	20.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN BROOKFIELD/T USH 18 ACCESS SPRINGDALE-BARKER RD IMPROVEMENT	WAUJHP	SAFE	589.0	71.0	50.0	710.0	710.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-6 (continued)

MILWAUKEE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN WAUKESHA COUNTY IH 94 W CO L-E CO L SPOT IMPROVEMTS	WAUJHP	FAI	13.5	1.5	.0	15.0	15.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-7

MILWAUKEE URBAN AREA TRANSIT SHELTERS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE COUNTY MILWAUKEE COUNTY 80 BUS SHELTERS VARIOUS LOCATIONS INSTALLATION	MTDP	UMT3	474.7	.0	118.7	593.4	293.4	TRANSIT IMPROVEMENT
SHOREWOOD/V SHOREWOOD/V BUS SHELTERS VARIOUS LOCATIONS INSTALLATION	MATP	NONE	.0	.0	76.0	76.0	.0	TRANSIT IMPROVEMENT

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-8

MILWAUKEE URBAN AREA CARPOOL AND VANPOOL PROMOTION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE COUNTY MILWAUKEE COUNTY CARPOOL PROGRAM COUNTYWIDE CONTINUATION		FAU	202.5	.0	22.5	225.0	175.0	TRANSIT PRESERVATION
STATE OF WISCONSIN MILWAUKEE COUNTY VANPOOL PROGRAM COUNTYWIDE DEMONSTRATION		FAP	36.0	.0	4.0	40.0	40.0	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-9

MILWAUKEE URBAN AREA PEDESTRIAN AND BICYCLE PROVISIONS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
BROWN DEER/V BROWN DEER/V BEAVER CREEK BIKEWAY DEERWOOD-WEP CO ROW 0.30 MILES CONSTRUCTION		NONE	.0	.0	7.0	7.0	7.0	ENVIRONMENTAL ENHANCEMENT
FOX POINT/V FOX POINT/V PORT WASHINGTON RD IND CK RD-N VIL LIM 0.60 MILES PED & BIKE PATH		FAU	30.8	.0	13.2	44.0	44.0	ENVIRONMENTAL ENHANCEMENT
GLENDALE/C GLENDALE/C JEAN NICOLET RD HIGH SCH-GREEN TREE 0.40 MILES BIKE PATH		NONE	.0	.0	20.0	20.0	20.0	ENVIRONMENTAL ENHANCEMENT
GREENDALE/V GREENDALE/V SCOUT LAKE PED OVERPASS CONST OVERPASS	MILJHP	SAFE	130.9	28.1	46.5	205.5	205.5	HIGHWAY SAFETY
HALES CORNERS/V HALES CORNERS/V 116TH ST GRANGE TO EDGERTON 0.30 MILES BIKEWAY		MBIC	24.8	.0	6.2	31.0	31.0	ENVIRONMENTAL ENHANCEMENT
GERMANTOWN/V GERMANTOWN/V PILGRIM RD MEQUON RD SOUTHERLY 2.00 MILES RECOND&BIKE PTH	WSHJHP	NONE	.0	.0	15.0	15.0	15.0	ON SYSTEM HIGHWAY PRESERVATION
BROOKFIELD/C BROOKFIELD/C BIKEPATH SYSTEM CITYWIDE CONSTRUCTION		NONE	.0	.0	150.0	150.0	100.0	ENVIRONMENTAL ENHANCEMENT

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-10

MILWAUKEE URBAN AREA MISCELLANEOUS LOW-CAPITAL ACTIONS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MEQUON/C MEQUON/C ARTERIAL ST ACCESS CITYWIDE ZONING CHANGE	OZKJHP	NONE	.0	.0	.0	.0	.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C ACCIDENT STUDY CITYWIDE STUDY		NONE	.0	.0	30.0	30.0	30.0	ON SYSTEM HIGHWAY PRESERVATION
MILWAUKEE/C MILWAUKEE/C CITY STREETS VARIOUS LOCATIONS VEHICLE COUNTS	MILJHP	NONE	.0	.0	25.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-11

MILWAUKEE URBAN AREA BUS STOP LOCATION STUDY

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
MILWAUKEE COUNTY MILWAUKEE/C BUS STOP PAVING 400 LOCATIONS PAVING BUS STOP	MATP	SOS	91.0	.0	39.0	130.0	130.0	TRANSIT IMPROVEMENT

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-12

RACINE URBAN AREA IMPROVED TRANSIT SERVICE

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
RACINE/C RACINE/C TRANSIT SYSTEM SERVICE SUBSIDY OPERATIN ASSIST	RTDP	UMT5	2100.0	1400.0	700.0	4200.0	900.0	TRANSIT PRESERVATION
STATE OF WISCONSIN RACINE/C E & H VEHICLES ONE VAN PURCHASE	E - H	UMT16(B)2	33.6	8.4	.0	42.0	9.0	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-13

RACINE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
RACINE/C RACINE/C CENTRAL CONTROL TRAFFIC SIGNAL SYS DEMONSTRATION	RACJHP	TCD	1000.0	.0	.0	1000.0	1000.0	ON SYSTEM HIGHWAY PRESERVATION
RACINE/C RACINE/C TRAFFIC SIGNALS CITYWIDE UPGRADE	RACJHP	NONE	.0	.0	17.0	17.0	17.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN RACINE/C STH 32 AT DURAND RD INSTALL SIGNALS	RACJHP	SAFE	18.0	2.0	.0	20.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN RACINE/C STH 20 AT EMMERTSEN RD INSTALL SIGNALS	RACJHP	SAFE	27.0	3.0	.0	30.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN RACINE COUNTY STH 11 AT KENTUCKY ST INSTALL SIGNALS	RACJHP	SAFE	22.5	2.5	.0	25.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN RACINE COUNTY STH 32 6 MILE RD INSTALL SIGNALS	RACJHP	SAFE	22.5	2.5	.0	25.0	25.0	HIGHWAY SAFETY
STATE OF WISCONSIN RACINE COUNTY STH 11 AT STH 31 INSTALL SIGNALS	RACJHP	FAP	14.0	6.0	.0	20.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-13 (continued)

RACINE URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN RACINE/C STH 38 AT RAPIDS DR RECOND SIGNALS	RACJHP	FAU	28.0	12.0	.0	40.0	40.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN RACINE COUNTY 4 MILE RD CNW RR XING SIGNALS & GATES	RACJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-14

RACINE URBAN AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
RACINE/C RACINE/C WEST BL KINZIE & OSBORNE RECONSTRUCTION	RACJHP	NONE	.0	.0	85.0	85.0	85.0	ON SYSTEM HIGHWAY PRESERVATION
RACINE/C RACINE/C KINZIE AV AT CHICAGO ST RECONSTRUCTION		NONE	.0	.0	54.0	54.0	.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-15

KENOSHA URBAN AREA IMPROVED TRANSIT SERVICE

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA/C KENOSHA/C TRANSIT SYSTEM OPERATING ASSISTANCE SERVICE SUBSIDY	KTDP	UMT5	1250.0	833.0	417.0	2500.0	550.0	TRANSIT PRESERVATION
KENOSHA/C KENOSHA/C 12 BUSES/HANDI LIFTS TRANSIT SYSTEM INSTALL LIFTS	KTDP	UMT5	88.0	.0	22.0	110.0	110.0	TRANSIT IMPROVEMENT
KENOSHA/C KENOSHA/C 8 NEW BUSES TRANSIT SYSTEM PURCHASE	KTDP	UMT3	448.0	.0	112.0	560.0	.0	TRANSIT IMPROVEMENT
STATE OF WISCONSIN KENOSHA/C E & H VEHICLES 4 BUSSES PURCHASE	E - H	UMT16(B)2	69.6	15.2	2.2	87.0	87.0	TRANSIT EXPANSION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-16

KENOSHA URBAN AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA/C KENOSHA/C STH 32 (SHERIDAN RD) 85TH & 91ST STS INSTALL SIGNALS	KENJHP	NONE	.0	.0	20.0	20.0	20.0	ON SYSTEM HIGHWAY PRESERVATION
STATE OF WISCONSIN KENOSHA/C CTH EE CNW XING SIGNALS & GATES	KENJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-17

KENOSHA URBAN AREA TRANSIT SHELTERS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA/C KENOSHA/C 14 BUS SHELTERS VARIOUS LOCATIONS INSTALLATION	KTDP	UMT5	64.0	.0	16.0	80.0	80.0	TRANSIT IMPROVEMENT

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-18

KENOSHA URBAN AREA MISCELLANEOUS LOW-CAPITAL ACTIONS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA/C KENOSHA/C STH 32 (SHERIDAN RD) 56TH SOUTHERLY PARKNG RESTRICT	KENJHP	NONE	.0	.0	.2	.2	.2	ON SYSTEM HIGHWAY IMPROVEMENT

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-19

RURAL AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA COUNTY KENOSHA COUNTY SIGNING INVENTORY COUNTYWIDE								
ENGINEERING		NONE	.0	5.0	5.0	10.0	10.0	ON SYSTEM HIGHWAY PRESERVATION
OZAUKEE COUNTY OZAUKEE COUNTY LOCAL RDS COUNTYWIDE								
PAVEMENT MARK		PM	71.0	.0	.0	71.0	71.0	OFF SYSTEM HIGHWAY CONSTRUCTION
WALWORTH COUNTY WALWORTH COUNTY LOCAL ROADS COUNTYWIDE								
PAVEMENT MARK		PM	14.9	.0	1.6	16.5	16.5	OFF SYSTEM HIGHWAY CONSTRUCTION
STATE OF WISCONSIN KENOSHA COUNTY IH 94 RACINE & KENOSHA CO								
SIGN REFURBISH	KENJHP	SAFE	112.5	12.5	.0	125.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN KENOSHA COUNTY CTH C SOO LINE CROSSING								
SIGNALS & GATES	KENJHP	RRG	40.5	.0	4.5	45.0	45.0	HIGHWAY SAFETY
STATE OF WISCONSIN KENOSHA COUNTY CTH K SOO LINE CROSSING								
SIGNALS	KENJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY
STATE OF WISCONSIN OFF SYSTEM RR CROSSING SIGNALS								
ENGINEERING		RRG	2.7	.0	.3	3.0	3.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-19 (continued)

RURAL AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN RACINE COUNTY CTH C MILW RD XING(AMTRAK)								
SIGNALS & GATES	RACJHP	RRG	54.0	.0	6.0	60.0	60.0	HIGHWAY SAFETY
STATE OF WISCONSIN DELAVAN/C STH 50 WRIGHT ST								
INSTALL SIGNALS	WALJHP	SAFE	27.0	3.0	.0	30.0	30.0	HIGHWAY SAFETY
STATE OF WISCONSIN WALWORTH COUNTY USH 12 ILL LINE-ELKHORN								
SIGN REFURBISH	WALJHP	SAFE	27.0	3.0	.0	30.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN SHARON/V CTH C CNW RR CROSSING								
SIGNALS & GATES	WALJHP	RRG	36.3	.0	4.0	40.3	40.3	HIGHWAY SAFETY
STATE OF WISCONSIN WHITEWATER/C USH 12 MILW RD CROSSING								
CANTI SIGNALS	WALJHP	RRG	18.0	.0	2.0	20.0	20.0	HIGHWAY SAFETY
STATE OF WISCONSIN RICHFIELD/T CTH Q SOO LINE XING								
RR SIGNLS/GATES	WSHJHP	RRG	49.5	.0	5.5	55.0	55.0	HIGHWAY SAFETY
STATE OF WISCONSIN HARTFORD/C STH 83 MILW RD XING MAIN ST								
RR CANTI SIGNLS	WSHJHP	RRG	40.5	.0	4.5	45.0	45.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-19 (continued)

RURAL AREA TRAFFIC SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN KEWASKUM/V STH 28 CNW XING								
RR CANTI SIGNLS	WSHJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY
STATE OF WISCONSIN POLK/T SCENIC DR SOO&MILW RD RR XING								
RECON/RR SIGNLS		RRG	66.2	.0	7.3	73.5	73.5	OFF SYSTEM HIGHWAY CONSTRUCTION
STATE OF WISCONSIN OCONOMOWOC/C STH 67 AT THACKERAY TR								
INSTALL SIGNALS	WAUJHP	SAFE	22.5	2.5	.0	25.0	.0	HIGHWAY SAFETY
STATE OF WISCONSIN OCONOMOWOC/T REDDELIEN RD MILW RD XING								
RR SIGNLS/GATES		RRG	58.5	.0	6.5	65.0	65.0	OFF SYSTEM HIGHWAY CONSTRUCTION
STATE OF WISCONSIN WEST BEND/C STH 144 CNW RR XING								
SIGNAL REVISION	WSHJHP	RRG	36.0	.0	4.0	40.0	40.0	HIGHWAY SAFETY

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-20

RURAL AREA PARK-AND-RIDE AND PARK-AND-POOL WITH EXPRESS TRANSIT

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
STATE OF WISCONSIN WAUKESHA COUNTY STH 15 STH 83 PARKING LOT CONSTRUCTION	WAUJHP	NONE	.0	25.0	.0	25.0	25.0	ON SYSTEM HIGHWAY PRESERVATION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-21

RURAL AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA COUNTY KENOSHA COUNTY CTH JF CTH C-120TH ST 0.80 MILES RECONSTRUCTION		SAFE	76.5	.0	8.5	85.0	85.0	HIGHWAY SAFETY
KENOSHA COUNTY KENOSHA COUNTY CTH V 224TH ST-USH 45 2.50 MILES RECONDITION		SOS	17.5	.0	7.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
KENOSHA COUNTY KENOSHA COUNTY CTH AH STH 83-USH 45 2.50 MILES RECONSTRUCTION	KENJHP	SOS	59.5	.0	25.5	85.0	85.0	OFF SYSTEM HIGHWAY CONSTRUCTION
KENOSHA COUNTY KENOSHA COUNTY CTH HM ILL LINE-CTH Z 1.20 MILES RECONSTRUCTION	KENJHP	SOS	17.5	.0	7.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
KENOSHA COUNTY KENOSHA COUNTY CTH CJ USH 45-CTH MB 2.00 MILES RECONSTRUCTION		SOS	17.5	.0	7.5	25.0	25.0	OFF SYSTEM HIGHWAY CONSTRUCTION
KENOSHA COUNTY KENOSHA COUNTY CTH JI CTH F-LILY LAKE RD 2.00 MILES RECONSTRUCTION		SOS	17.5	.0	7.5	25.0	.0	OFF SYSTEM HIGHWAY CONSTRUCTION
KENOSHA COUNTY KENOSHA COUNTY CTH C CTH Z-CTH KD 1.50 MILES RECONSTRUCTION		NONE	.0	.0	60.0	60.0	60.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

Table D-21 (continued)

RURAL AREA SPOT STREET AND HIGHWAY IMPROVEMENTS

IMPLEMENTING AGENCY MUNICIPALITY PROJECT NAME/LOCATION TERMINI LENGTH ACTION	PLANNING DOCUMENT SOURCE	TYPE OF FEDERAL FUNDS	FEDERAL FUNDS	STATE FUNDS	LOCAL FUNDS	TOTAL PROJECT COST	TIP ANNUAL ELEMENT	PROJECT CATEGORY
KENOSHA COUNTY KENOSHA COUNTY CTH A CTH D-IH 94 3.20 MILES RECONSTRUCTION		NONE	.0	.0	150.0	150.0	150.0	OFF SYSTEM HIGHWAY CONSTRUCTION
OZAUKEE COUNTY SAUKVILLE/V CTH O (MAIN ST) CEDAR SAUK-MAIN ST 0.75 MILES RECONDITION	OZKJHP	NONE	.0	.0	50.0	50.0	50.0	ON SYSTEM HIGHWAY PRESERVATION
RACINE COUNTY RACINE COUNTY CTH KR USH 45-IH 94 5.00 MILES RESURF & SHLDRS	RACJHP	SOS	140.0	.0	60.0	200.0	200.0	OFF SYSTEM HIGHWAY CONSTRUCTION
RACINE COUNTY RACINE COUNTY COUNTY BUDGET HAZARDOUS LOCATION IMPROVEMENTS		NONE	.0	.0	195.0	195.0	75.0	OFF SYSTEM HIGHWAY CONSTRUCTION
WATERFORD/T WATERFORD/T TOWN RD AT FOX RIVER STR REPLACEMENT		SOS	175.0	.0	75.0	250.0	.0	OFF SYSTEM HIGHWAY CONSTRUCTION

NOTE-ALL COSTS AND FUNDS ARE IN $1000S.

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Appendix E

INTERNAL TRANSIT MANAGEMENT PLAN: 1978
MILWAUKEE COUNTY TRANSIT SYSTEM

INTERNAL TRANSIT MANAGEMENT EFFICIENCY MEASURES

Internal transit management efficiency is a continuous practice of the Milwaukee County Transit System. Numerous actions were taken during 1977 to improve internal efficiency, and other actions will be taken in the following years to accomplish the same. The following actions are discussed in this section:

Program	
M-1	Actions to improve internal training procedures
M-2	Actions to improve internal operating efficiency
M-4	Actions to improve research and development
M-5	Actions to improve maintenance procedures
M-6	Actions to improve accounting efficiency
M-7	Actions to improve the personnel function
M-8	Actions to improve risk management efficiency

M-1 INTERNAL TRAINING PROGRAMS

As the transit system in Milwaukee was on the decline under private ownership, several important training programs were either gradually curtailed or completely eliminated as economy measures. Training manuals, training films, and follow-up procedures are all considered to be out-of-date or inadequate by modern-day standards. Some job classifications have no manual pertaining to job procedures or regulations. For example, the only general instruction book available to bus operators is a photocopy of an instruction book published in 1951.

The lack of proper training courses and procedural manuals has, in some instances, led to confusion and improper procedures being followed by both bus operators and other employes. Accordingly, numerous programs are in the process of being implemented or are currently under study to be implemented in the near future.

Actions taken or planned for alleviating the above stated deficiency are set forth below:

Project M-1A Bus Operator's Manual and Training Course
This manual will be published early in 1978 and will include complete instructions for the safe operation of a transit vehicle, instructions pertaining to the operation of communications equipment aboard transit vehicles, station procedures, and a complete listing of regulations pertaining to transit operations. A review of the bus operator's training course will also occur during 1978.

Project M-1B Route Supervisor's Procedure Manual
This manual will be published early in 1978 and will outline the duties and procedures of the route supervisors, including the special duties of security supervisors.

Project M-1C Instructor's Manual and Training Course
The design of the manual will occur during 1978 for publication by 1979. The manual will outline instruction procedures and will enable instructors to improve and revise their teaching techniques in order to train student operator trainees more effectively. In conjunction with the development of the manual, a platform instructor's training course will be developed for implementation by 1979. The program will train the instructors in the best teaching methods for instructing and motivating new student operator trainees.

Project M-1D Training Program for Station Clerks
A training program to teach extra clerk applicants the proper procedures to enable them to qualify for the position will be implemented by the end of 1977.

Project M-1E Station Procedure Manual
A Station Procedure Manual will be designed for publication in 1979 that will define the duties and work procedures of station clerks, including reporting and record keeping with respect to worker's compensation claims.

Project M-1F Equipment and Plant Department Training Programs
At present, there is no formal training program for new and inexperienced mechanics. In addition, the new buses to be delivered in 1978 will have many types of equipment with which the Equipment and Plant Department have not worked previously. These new items will include air conditioning, touch-bar doors, V730 transmissions, kneeling front suspension, wheelchair lifts, and power steering.

There is a critical need for implementation of a formal maintenance training program early in 1978. To be effective, the program requires a Supervisor of Instruction and various instructional materials. Monies to begin implementation of the program are included in the 1978 budget.

Project M-1G Develop or Select Training Films
New training films will be necessary for the existing and proposed training courses. Concurrent with the design of the new training programs, new films will be developed to suit the transit system's own needs or commercial training films will be purchased.

Project M-1H Follow-up Instruction and Operator Re-Training Programs
A review of operator re-training programs will be undertaken during 1978 to ascertain the most effective methods to instruct bus operators found to be experiencing operating problems or not following prescribed procedures. In addition, a review of follow-up instruction will be undertaken during 1978 to determine the optimum number of follow-up instructors that are required in conjunction with the new training programs.

Project M-1I Bus Operator Sensitivity and Public Relations Training
A continuing bus operator sensitivity and public relations training program will be designed during 1978 and 1979 for implementation in 1979. Bus operator sensitivity and public relations will grow in importance as disabled and handicapped persons begin to ride the bus.

M-2 TRANSIT OPERATIONS

Various aspects of the actual operation of the Milwaukee County Transit System can be improved to enhance the efficiency of operation. Actions to enhance the efficiency of the Transportation Department are set forth below:

Project M-2A Two-Way Radios
The transit system installed two-way radios in its entire bus fleet during 1977. A study should be developed to determine proper communication procedures for the radios, including a code system for reporting emergencies, accidents, and traffic congestion. The use of a code system could appreciably shorten the length of radio calls, which would result in faster service.

Project M-2B Operator's Route-Fare Booklet
At present, the primary means of communication between the Transportation Department and its individual operators is through notices posted on bulletin boards in operating stations. This method has been proven inadequate, as operators are actually required to memorize up to 15 notices per month. A solution is to provide each operator with a loose-leaf booklet that contains descriptions and maps of all the routes, a complete fare tariff, and a section for notices of special events and temporary detours. The booklet could be designed to be easily updated by merely inserting a new page.

Project M-2C Transportation Department Management Study

A study of the organizational structure of the Transportation Department was partially completed in 1977. The study resulted in requests for additional staff in the Department in 1978. However, these positions were not funded in the 1978 budget. The management functions at each of the operating stations will be reviewed during 1978.

Project M-2D Review Operator's Time Paddles

Bus operator's time paddles are used to denote scheduled time points for the operator. This system needs to be reviewed, as the paddles are printed on a ditto copier and fade as they age and are difficult to read because of their size and lack of space for explanation of directions.

M-4 RESEARCH AND DEVELOPMENT

Planning is the preparation of guidance for future actions. Present planning functions of the Milwaukee County Transit System are divided between the Milwaukee County Department of Public Works staff and the staff of Milwaukee Transport Services, Inc. (MTS). The research and development staff of MTS, Inc. is responsible for the investigation and analysis of day-to-day service improvement requests, for recommending route and service changes, for assistance and technical support of special projects, for input into the long-range planning process, for review and development of internal operating procedures and management techniques, and for input into the development and maintenance of a short-range transit improvement program and transportation systems management plan. The staff is comprised of two planners and is attached to the Executive Department of MTS, Inc.

Project M-4A Establish Research and Development Department

Because of the minimal size of the R&D staff, it is not possible for the staff to timely and satisfactorily fulfill all of its responsibilities. Accordingly, a Research and Development Department should be created at MTS, Inc. to carry out all planning functions related to the responsibilities listed above. A minimum of two additional planners are necessary to carry out the department's functions. Also needed is a technical support staff for the department, including a secretary and a draftsman. The draftsman would also be available to assist other departments as needed.

Project M-4B Traffic Checking Study

An analysis is needed to determine the data requirements necessary to conduct short-range transit route analysis studies and the best method of compiling and storing the data for easy reference. This analysis would determine the size of the Traffic Checking staff and where it would be best suited within the organizational structure of MTS, Inc.

Project M-4C Route Analysis

The R&D staff continuously conducts route analyses to answer citizen suggestions and to evaluate the efficiency of the route and schedule structure of the transit system. Such studies may be used as input to updating the Milwaukee County Transit Development Program and as input to the transit system's annual Program of Projects.

Project M-4D RUCUS Study

The MITRE Corporation has developed a Run Cutting and Scheduling computer package (RUCUS) to aid in the making of schedules and in run cutting. Some transit systems have reported cost savings using the RUCUS package. A study as to the feasibility of using the RUCUS package for the Milwaukee County Transit System should be accomplished during 1978. This project is also related to a systems study (Project M-6B).

M-5 MAINTENANCE

The Equipment and Plant Department of Milwaukee Transport Services, Inc. is responsible for the maintenance of all rolling stock, buildings, and bus stops within the transit system. The following actions are recommended to improve the efficiency of the department:

Project M-5A Radio Maintenance

A two-way radio system was installed on the transit fleet late in 1977. During 1978, the maintenance of the radio equipment will be covered by warranty. After the first year, the radios will have to be maintained by the transit system or by a maintenance contractor. Since the transit system does not, at present, have any equipment or qualified personnel to repair the radio equipment, a study should be conducted during 1978 to determine which method of maintaining the radios is the most efficient for Milwaukee County to pursue. This study will require about 100 man hours in 1978.

Project M-5B Shop and Garage Tool Needs Study

The tools and other equipment used by the maintenance personnel are in poor condition. Many pieces of equipment are over fifty years old, and replacement parts for these tools are difficult or impossible to locate. Many of the tools are also outmoded for the functions they are performing, as there are numerous tools on the market which could be used to improve the efficiency, quality, and safety of the maintenance function.

A study in 1977 determined which tools and equipment were most critically needed by the department. These items were submitted for inclusion into the 1978 budget. This action, however, does not take away the need for a complete study of tool and equipment replacement needs in the department. This study should first provide for the systematic identification and inventorying of all tools, machinery, and other equipment used in the shops and garages. The inventory should include the age, function, and description of all concerned items. The study should also provide a list of all additional tools and equipment needed by the department to improve the quality or increase the efficiency of the work being performed. The final part of the study should set the needs of the department in a priority order and should create a capital funding program for tools and equipment. This study will require about 100 man hours in 1978.

Project M-5C Service Vehicle Replacement

The majority of the service vehicles used by the transit system are in poor condition and are expensive to maintain and operate. A study of service vehicle requirements was completed during 1977, and an acquisition plan for vehicle replacements and additions has been developed. The plan is set forth below (funds for 1978 vehicle acquisitions are in the 1978 budget):

Project M-5D Spare Units

Complete spare engine cradle assemblies would eliminate the need to do engine overhauls with the engine in the chassis. Engine overhauls could then be done on the bench in a production-line fashion and would shorten the time a bus is in the shop for an overhaul. The 1978 budget includes monies to purchase two engine cradle assemblies and all attendant accessories. The acquisition of the engine cradle assemblies will improve the efficiency and quality of the maintenance of engines.

Project M-5E Purchasing and Storeroom Study

The storerooms at the operating stations are generally disorganized and have inadequate inventories. A lack of parts is normally the main cause for buses being out of service. A study should be conducted for the modernization, expansion, and reorganization of the Purchasing and Storeroom areas. The study should emphasize increasing efficiency and cutting parts shortages. The study should also address itself to the utilization of the computer for improving inventory control (see Project M-6B).

Project M-5F Vehicle Modifications

A study of potential vehicle modifications was conducted during 1977 to determine modifications that would increase operating efficiency and decrease maintenance costs. Three recommendations from that study will be implemented during 1978. They are: 1) installation of hydraulic governors on VH transmissions on all buses; 2) installation of vapor temperature controllers on all GMC TDH 5300 series buses; and 3) installation of individual fluorescent lighting ballast on all GMC TDH 5300 series buses.

Project M-5G Cold Spring Shops Reorganization

The current shop organization and operation has evolved from many years of economic cutbacks and a reduction in activities as a result of the shrinkage of the transit system's fleet size. With the planned increase in fleet size in coming years, there will be a corresponding increase in activities in the shop. In

addition, plans are now being formulated for a new shop building. A comprehensive study of the shop organization should be made to thoroughly cover the following areas:

a. Reorganization of the shop supervisor
b. Establishment of a separate brake department
c. Examination of general inspection procedures
d. Examination of manpower requirements
e. Preparation of a layout for a new shop
f. Examination of printing department manpower and equipment needs (see Project M-6C)
g. Establishment of a production control function and the improvement of material flow in the unit repair areas
h. Examination of department responsibilities

Project M-5H Work Standards and Methods Improvement

The Equipment and Plant Department has no established set of work standards. Foremen have no way to evaluate how well a man is producing on a job. Some existing work methods could be inefficient or outmoded. A solution to this problem, which would improve efficiency, would include the establishment of a work-study program, the setting of time standards for maintenance jobs, a manpower evaluation, and the design and implementation of new cost-saving work methods.

M-6 ACCOUNTING

The Accounting Department of Milwaukee Transport Services, Inc. is responsible for bookkeeping, financial controls, auditing, systems and procedures, and the printing activities of the transit system. In addition, the department is responsible for the collection and counting of fares and the distribution of tickets and weekly passes. Actions taken or planned to improve the operating efficiency of the department are set forth below:

Project M-6A Implement FARE Reporting System

A standardized reporting system for financial and operating statistics (FARE system) was implemented on November 1, 1977. Several problems with that system need to be studied further in 1978. It is estimated that approximately 700 man hours are necessary to develop and implement new forms for the financial and statistical reporting system. Another problem area resulting from FARE is the as yet unknown cost of complying with the passenger counting requirements for statistical purposes. The problem is further complicated by the fact that what is mandated by UMTA for FARE (unlinked passenger trips) will not be acceptable to the Wisconsin Department of Transportation (which asks for linked passenger trips). A rough estimate of the continuing annual cost, beginning in 1978, of compliance with Federal and State passenger counting requirements is in the range of $30,000 to $35,000.

Project M-6B Systems Study

Improved technology, reduced costs, and expanded programs have increased the potential usefulness of computer equipment for providing operations and management staff with better information faster to improve operating and management decision making and control. The computer could be a useful aid for all accounting procedures, payroll, parts inventory and control, storage of records for the Claims Department, scheduling and run-cutting (RUCUS), fleet maintenance records, planning (UTPS), schedule information retrieval, and a management information system. A study to undertake a thorough review of the potential uses, benefits, and costs of employing computer facilities for the above listed operations is included in the 1978 budget at an estimated cost of $50,000.

Project M-6C Review Printing Operations

Paper fare forms constitute a major portion of the transit system's fare structure (presently over 40 percent of passenger revenue). These forms, as well as transfers, public timetables, and various forms for internal use, are produced in our own Printing Division. The security control and flexibility of form design and production schedules made possible by in-house printing of fare forms are essential to the efficient operation of the transit system.

Presently, the Printing Division is operating with many major pieces of equipment that are over 50 years old. A review of printing operations during 1977 revealed that the equipment is plagued with frequent breakdowns, and parts are difficult to obtain and often must be tailor-made. This results in delays which require frequent overtime, as well as the added expense of having work done on the outside, in order to maintain schedules. This condition is expected to worsen as the equipment becomes increasingly more unreliable. A program of gradual replacement of printing equipment was recommended to upgrade the efficiency of the Printing Department and avoid the consequences of a major breakdown. Specifically, the following new equipment should be acquired:

Item	Estimated Ratio of Productivity Over Present Equipment	Estimated Cost
Transfer Press	3 to 1	$100,000
Ticket and Pass Press	1½ to 1	38,000
Paper-cutter (computerized type to replace outdated manual type)	2 to 1	26,000
Folder (present equipment outdated and too small)	4 to 1	10,500

Project M-6D Cashier's Equipment

A review of equipment replacement needs to improve the efficiency of the Cashier's Division was conducted in 1977. The study revealed that a new ventilator system and miscellaneous equipment is needed at an estimated cost of $4,500. The fareboxes presently in use on the buses date back to the mid-1920's, and the locks are wearing out. A locksmith has given up trying to repair them and the work is presently being done by the Cashier, who is approaching retirement.

Present operations are using 1083 fareboxes with 112 in storage. The fareboxes in storage are not usable in their present condition and will have to be modified in the event that the transportation operation is expanded. In addition, paper money is not readily accepted by the present fareboxes. The long-range solution to the problem would be to replace the present fare collection system with a new one. A study of this problem should be conducted during 1978.

M-7 PERSONNEL FUNCTIONS

The Personnel Department expanded its responsibilities considerably during 1977, which resulted in an increase in the overall efficiency of the personnel functions of the transit system. These expanded responsibilities, plus measures to further increase its efficiency in future years, are set forth below:

Project M-7A Expanded Responsibilities

Eight major projects that have expanded the responsibilities of the Personnel Department were undertaken during 1977. These include the following:

1. An Affirmative Action Program was developed and implemented in January 1977.

2. A Discrimination Case File was developed and the responsibility for case handling was placed in the Personnel Department effective in January 1977.

3. The development of an effective Wage and Salary Administration Program to include position descriptions, employee performance appraisals, and wage studies was begun during 1977. Completion is anticipated in mid-1978 with about 175 man hours required.

4. A Salary Kardex system was implemented and all personnel forms including the Employment Application were reviewed. The review resulted in a new employment application form and an improved bus operator and other position selection procedure.

5. A review of current employment testing procedures was undertaken and completed by the Personnel Department.

6. The department has developed a historical summary (1935 to present) concerning contract negotiations. In addition, a complete Fringe Benefit Study and Wage Rate Survey covering twelve (12) major transit companies has been completed in preparation for future contract negotiations. Additional man hours are required in 1978 to complete this project.

7. A new training and testing program for Extra Clerks in the Transportation Department was developed by the Personnel Department in 1977.

8. The Personnel Department has assumed personnel related responsibilities that were, in the past, assigned to other departments. Testing of applicants for Equipment and Plant positions is now conducted by the Personnel Department. The department also assumed responsibility of preparing most employe "Transaction Notices" (employe status, promotion, etc.) that were formerly handled by individual departments. A review of such notices as to content will require about 40 man hours during 1978.

Project M-7B Employe Relations

The employe relations program of the transit system was expanded during 1977. "HI-LITES", a newsletter issued to all employes, has been increased in size with increased emphasis on both transit system and employe related information. A study revealed that no existing handbook governing such areas as company policy, pension plan, medical insurance, and employe services led to a lack of continuity in dissemination of information regarding these areas. Accordingly, a new Employe Handbook was developed in 1977 for issuance to all employes. Revisions to the pension plan booklet will require additional study time.

Project M-7C Personnel Policy Manual

A study revealed that a lack of general knowledge among some management employes led to some inconsistencies in administering some company policies. Consequently, a Personnel Policy Manual was developed during 1977. The purpose of the manual is to provide department heads and selected supervisory personnel with a systematic and consistent approach to administering transit system policies and practices. It was designed as a fundamental communication tool for members of management to help clarify transit system policy. For example, employment procedures, employe fringe benefits, and payroll procedures are outlined in the manual. Additional man hours are required for research, development, and implementation of additional policies.

Project M-7D Personnel Record Keeping System

A review of the current personnel record keeping system revealed that the Personnel Department needs a formal Personnel Record Keeping System to assure compliance with government regulations regarding record retention. About 16 man hours are required for establishing such a system.

M-8 RISK MANAGEMENT

Several studies and actions within the Claim Department will result in its increased operating efficiency. These actions are set forth below:

Project M-8A Staff Requirement Study

The Claim Department is understaffed with respect to investigators and adjustors. Time studies since August 1, 1977, indicate that the field men are working from six to ten hours overtime each week and the backlog is increasing. A staff requirement study was completed in 1977, and a request for one additional staff member was included in the 1978 budget. However, the position was not funded.

Project M-8B Safety Program Review

While the Milwaukee County Transit System and its predecessors have always had an above average safety record and have won many safety awards because of that record, there has been a substantial increase in the number of industrial accidents during 1977. More emphasis on safety could be established by a system-wide safety program, with an objective of improving conditions which now result in accidents. A safety program review should be undertaken during 1978.

Appendix F

NEWSPAPER ARTICLES PERTAINING TO TRANSPORTATION SYSTEM MANAGEMENT

THE MILWAUKEE JOURNAL Saturday, November 5, 1977

Planners Seek Ways to Unclog City Streets

By Lawrence Sussman
Journal Transportation Reporter

Without new freeway construction, Milwaukee motorists may have to wait long periods to get on freeways, bus drivers may control stop lights and Downtown commuters may find long term parking increasingly expensive.

These are among the measures recommended by the Southeastern Wisconsin Regional Planning Commission to keep the existing freeways relatively free flowing.

The commission has become discouraged with delays in freeway construction, according to Kurt Bauer, its executive director. If the freeways aren't built, Bauer said, "something has to be done to break the impasse."

Likes '66 Plan

He believes the 1966 transportation plan for southeastern Wisconsin, which called for extending the Lake Freeway into Illinois and running the Stadium North Freeway to Green Bay, made sense. But if the freeways are in a no-go position, something has to be done to change people's driving habits, he says.

Several suggestions will be discussed by the Intergovernmental Coordinating and Advisory Committee at 9:30 a.m. Nov. 18 in Room 306 of the Milwaukee County Courthouse. The City of Milwaukee, Milwaukee County and the Wisconsin Department of Transportation would have to pass laws to put the recommendations into effect.

The planners assume that automobile traffic will continue growing, with or without new freeways. Their ideas include:

Keeping cars waiting for longer periods at inbound freeway ramps until traffic lightens enough to allow the cars to enter. Minneapolis uses this system, and cars wait about one minute before entering a freeway, Bauer said. The wait may induce the driver to use a secondary arterial street instead of the freeway next time.

"He (the motorist) is going to sit and sit until traffic allows him to enter," Bauer said.

Making it increasingly more costly to park in Downtown Milwaukee parking lots. Each additional hour of parking would cost more than the preceding hour. The change would encourage short term parking for business or shopping and discourage long term parking by working commuters.

Redesigning the "temporary" freeway ends, such as that of the Stadium South Freeway. This would aid traffic flow and cut down on the current bottlenecks.

The Stadium North Freeway is a special problem, Bauer said, and his commission probably wants to do a separate study on it. This would include ways of improving the northwest arterials that the freeway flows into, such as Lisbon and Appleton Aves.

Increasing no-parking provisions on secondary arterial streets and giving police towaway powers.

Making sure secondary arterial streets have timed traffic lights from community to community so that traffic can flow smoothly on these streets.

Maintaining and expanding current bus routes to encourage more bus use.

Allowing bus drivers to control traffic signals with a device inside the bus, letting them travel through intersections while minimizing disruption to the cross-flow traffic.

Giving carpools preferential parking.

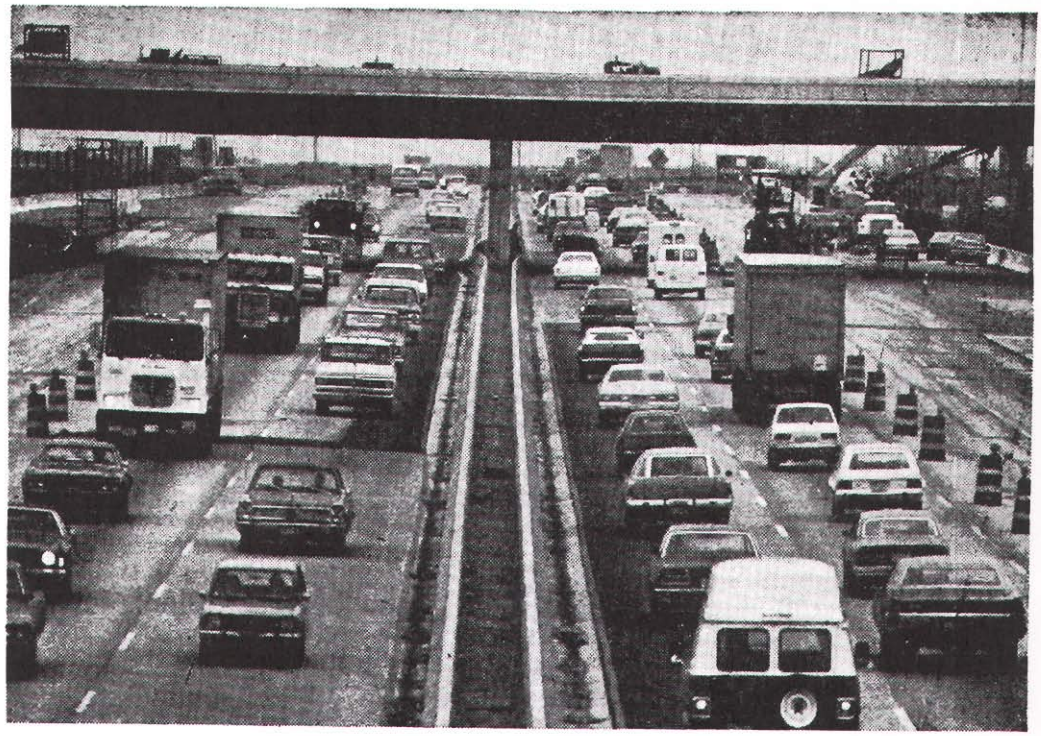
"We've been struggling with these (freeway) problems for four or five years," Bauer said. "If these things work, then some of the freeways would never have to be built."

These recommendations would get people to adjust their travel patterns to the (freeway) systems, rather than adjusting the systems to the people, he said.

The Advisory Committee has 20 members and includes representatives from the various governmental units.

THE MILWAUKEE JOURNAL

Thursday, November 17, 1977



—Journal Photo

The last project? Airport Spur construction gives drivers a taste of future traffic tieups

Until the Freeway Fog Clears

Whatever side you're betting on in Milwaukee County's persistent freeway fracas, you should recognize that the current impasse over construction and finance is likely to continue for the foreseeable future. So, meantime, what can be done about traffic buildup?

Lots. And an intriguing list of possibilities has been compiled by the Southeastern Wisconsin Regional Planning Commission. Among the ideas:

—Control the entry to freeways, giving rush-hour preference to buses and carpools; other drivers would have to wait (maybe a minute or so) until their entry would not slow freeway traffic.

—Stiffen Downtown parking fees for commuters who park all day, thereby stimulating bus and carpool use; but retain reasonable short-term fees for Downtown shoppers. (Actually, fees should be set to entice shoppers Downtown.)

—Reconstruct the "temporary" ends of unfinished freeway segments to smooth traffic flow.

—Improve bus service, including use of special devices that would let bus drivers briefly control traffic signals to minimize bus slowdowns.

—Take various steps to unclog arterial streets and speed traffic.

—Establish flexible work hours, staggered shifts and similar breaks with a job schedule tradition that mainly causes rush-hour traffic jams. (This idea, especially, deserves far more serious consideration than it has received.)

Such ideas are not new. Many of them are being used elsewhere, with varying success. Freeway opponents have been trying for a long time to get the Milwaukee area seriously to consider such alternatives to finishing the largely completed freeway system.

And therein lies perhaps the greatest barrier to giving many of these ideas a try. Freeway backers may resist for fear that success would further undermine public support of freeway completion. If that attitude seems improbable, just remember that transportation improvement is not always the only motivation for freeway completion; labor unions, envisaging construction jobs, are among the most forceful freeway supporters.

Nevertheless, a combination of these transportation ideas should be tried. They make sense as interim measures, and surely would be necessary if the Airport Spur, now under construction, turns out to be the final freeway segment.

Moreover, if these steps brought marked improvement of transportation, the community should then be able to get a firmer grasp on the slippery question that underlies the whole freeway flap: Would the *additional* traffic improvement offered by freeway completion be worth the additional disruption and cost? Full and frank consideration of that question will be more difficult so long as the SEWRPC alternatives remain untested.

MILWAUKEE SENTINEL
Saturday Nov. 19, 1977

Big Estimate For Freeway Lights, Ramps

Placing stoplights and special ramps for buses at expressway entrance ramps in Milwaukee and parts of Ozaukee and Waukesha Counties would cost between $4 million and $10 million, members of a committee of the Southeastern Wisconsin Regional Planning Commission were told Friday.

The committee, which is studying ways to coordinate transportation in southeastern Wisconsin, told commission staff members to look into the proposal and report back at its next meeting, Dec. 14.

The group must come up with a plan by the end of the year to receive federal aid in 1978.

The stoplights would be used to regulate the flow of traffic on the expressways during peak periods, committee members were told. The stoplights might be installed as far away as Highway P or Route 16 in Waukesha County.

Some Milwaukee County members of the committee were skeptical of the plan. They said they feared it would discourage people living closer to the central city from using the freeways during rush hours because people farther out would be able to get on first.

THE MILWAUKEE JOURNAL
Saturday, November 19, 1977

Ramp Meters Run Into Heavy Traffic

By Lawrence Sussman
of The Journal Staff

Plans for controlling freeway traffic through ramp metering drew a hostile response Friday from several Milwaukee County supervisors.

Supervisor Joseph Hutsteiner argued that ramp metering might discourage use of the freeways for short trips and thus be unfair to Milwaukee County taxpayers.

Metering is one of 24 proposals under consideration to improve the operation of the freeways and the transit system.

If approved, traffic lights would be set up on all freeway entrance ramps. When the lights were on red, cars would have to wait until traffic sensors had determined that the freeway was relatively clear and turned the lights to green.

The system has been used in Minneapolis, where motorists must wait on the average of one minute before entering the freeway.

Federally Mandated

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is presenting the 24 proposals as part of a Transportation System Management Plan that is required by the federal government.

The proposals were presented to the Intergovernmental Coordinating and Advisory Committee on Transportation. The committee includes county, state and local government representatives and is expected to decide Dec. 14 whether a study should be made specifically of the metering proposal.

The plan would give preferential treatment to high occupancy vehicles such as buses or car pool vehicles.

David Schultz, a SEWRPC planner, estimated that the program would cost $4 million to $10 million to install on the 150 ramps in Milwaukee, Waukesha and Ozaukee Counties.

Minneapolis Cited

Schultz said ramp metering had worked well in Minneapolis and was to be extended to all its freeways soon.

Ramp metering, he added, encourages the use of public transportation and car pooling.

Hutsteiner, however, did not like the idea of "forcing people off the freeways."

SEWRPC is attempting to find ways of moving traffic in southeastern Wisconsin that would eliminate a need for new freeways.

To this end, Kurt Bauer, its executive director, has suggested redesigning the temporary ends of certain freeways so that they can better accommodate traffic. In addition, he has proposed upgrading the Milwaukee County Transit System and allowing bus drivers to have equipment to control stop lights. He also has suggested making it increasingly more expensive to park Downtown.

"The objective is to encourage short term parking for shopping or business and discourage long term parking by commuters," Bauer said. He would do this by making each additional parking hour more expensive.

THE MILWAUKEE JOURNAL Thursday, December 15, 1977

Ramp Metering May Be Studied

By Lawrence Sussman
Journal Transportation Reporter

Will freeways work better here if vehicles have to wait to get on them? The Southeastern Wisconsin Regional Planning Commission (SEWRPC) apparently wants to find out.

A SEWRPC advisory committee recommended starting preliminary work on the study Wednesday. SEWRPC is expected to approve the recommendation Monday. The commission's staff and the Wisconsin Department of Transportation would do the preliminary work.

The study would determine if a coordinated ramp metering system should be installed on freeways in Milwaukee, Waukesha and Ozaukee Counties. The study would take more than two years to complete and could cost about $500,000, David Schulz, a SEWRPC planner, said. Even if the study recommends a metering system, Schulz does not expect ramp metering actually to be installed here for five years.

Bus Priority

Ramp metering would work by placing stop and go lights at freeway on-ramps. Cars would have to wait in single file until freeway traffic was light enough to allow each car to enter the freeway.

With these controls, the SEWRPC staff believes that freeway traffic will be able to move at 40 miles an hour during peak hours. Buses, carpools and vans would be given freeway priority and would not have to wait at the on-ramps.

The Intergovernmental Coordinating and Advisory Committee also recommended doing studies on reconstructing the temporary endings of unfinished freeway segments such as the Stadium Freeway North. These segments should get traffic off the freeways better than they do now, the committee said.

The committee also suggested a study on setting flexible work hours so that everyone doesn't leave work at the same time. Another recommended study would determine if making it increasingly expensive to park Downtown would encourage people to take a bus rather than drive their cars to work.

Some Opposition

The SEWRPC staff gave top priority to the ramp metering idea and it met the most opposition from committee members. "People in Milwaukee County won't be able to get on the expressways," Supervisor Joseph Hutsteiner said. "This is going to back it up.

"I'm going to have to sit out there (on the ramps) for 15 or 20 minutes . . . .This is a cheap way of the state not giving money to complete the freeways," he added.

Other committee members, however, asked that the study be done, noting it may show that ramp meters won't work.

After the meeting, Schulz answered Hutsteiner's complaints. Through ramp metering, "we are trying to make the maximum use of the freeways and give priorities to buses," Schulz said.

By limiting freeway traffic, the motorist may have to wait several minutes before getting on the freeway, but once on, he will get to his destination more quickly than before, Schulz continued.

Against Short Trips

He admitted ramp metering "will discourage making short trips," but he added: "We didn't make a multi-million-dollar investment for three quarters of a mile trips."

The ramp metering system also could be designed so that people in the outlying areas have the same delays as Milwaukee County residents, he said.

Freeways, he continued, do not work effectively if cars are backed up bumper to bumper. "We're trying to better allocate a scarce commodity," and ramp metering has worked well in Minneapolis and Houston, he added.

THE MILWAUKEE JOURNAL

Saturday, December 24, 1977

—Journal Photo by George P. Koshollek

North-South Freeway at morning "rush" hour: Ramp metering may help unglue our traffic.

Putting More Flow in Freeways

"Hurry up and wait," goes the old Army motto. The Southeastern Wisconsin Regional Planning Commission is studying a sophisticated new traffic control system that may turn the motto around, at least for Milwaukee area freeway users. The amended version might read: "Wait a bit, hurry later."

Teaming with state highway officials, planners are doing preliminary work on a major study of "ramp metering" — the use of computer-controlled stoplights to regulate freeway access during traffic peaks. The system, which would be a boon to mass transit and a blessing to motorists who now suffer through freeway snarls, would cover all Milwaukee County freeways, and probably portions of those in Waukesha, Ozaukee, Washington and Racine Counties.

It would offer exclusive entrance ramps (with no waiting) for Freeway Flyer buses, and possibly for car pool vehicles. At regular entrance ramps, the red-green traffic light cycle would be regulated by computer, according to freeway traffic flow. If built, this would be the largest ramp metering system in the nation.

Minneapolis opened a pioneering version of the metering system in April, 1974, along a heavily traveled 17 mile stretch of I-35W. It has nine exclusive bus ramps, two of which admit car pool vehicles (those with three or more occupants). TV monitor cameras watch for potential snags — vehicle breakdowns and accidents.

In peak traffic, we're told, a car may have to wait two or three minutes for the green light at entrance ramps. At worst, in fog or heavy snow, the wait may stretch to 15 minutes. On balance, rush hour traffic flows smoothly and swiftly. "Without metering, delays would be intolerable," one traffic official told us. "We're getting as much out of the freeway as possible." Now, metering is being added to nine more miles of Twin Cities freeways.

By making motorists wait for their "hurry," when necessary, the metering idea offers some rare advantages. It speeds traffic flow by keeping volume in check. It helps discourage short freeway jumps that boost congestion. Drivers may find it quicker to use city streets than to wait for "green" at a freeway ramp.

By giving the edge to mass transit and car pools, the system promotes *people* volume instead of vehicle volume.

By wringing the most utility out of an existing freeway system, metering helps avoid the building of new freeways at extravagant cost, both social and economic. If the Milwaukee system is built, it probably will doom another costly proposal — that long-stalled exclusive busway from Downtown westward, paralleling I-94.

Milwaukee's metering study merits a green light and good speed.