

A JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WAUKESHA COUNTY

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PLANNING REPORT
NUMBER 18

A JURISDICTIONAL HIGHWAY SYSTEM PLAN
FOR WAUKESHA COUNTY

Waukesha County Board of Supervisors
Southeastern Wisconsin Regional Planning Commission
Wisconsin Department of Transportation

Southeastern Wisconsin Regional Planning Commission
Continuing Regional Land Use-Transportation Study
P. O. Box 769
Old Courthouse
916 N. East Avenue
Waukesha, Wisconsin
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January 1974

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January 17, 1974

TO: Waukesha County Board of Supervisors
Southeastern Wisconsin Regional Planning Commission
State Highway Commission of Wisconsin

The Waukesha County Board of Supervisors on February 25, 1969, directed that a comprehensive study be made of the jurisdictional responsibility for the construction, maintenance, and operation of arterial streets and highways in Waukesha County and that such study culminate in the recommendation of a long-range plan for integrated state, county, and local arterial street and highway system development within the County. In order to carry out the study, an interagency planning staff was assembled with representation of the County, the Regional Planning Commission, and the State Highway Commission. In order to actually involve the local units of government within the County in this important study, a Technical Coordinating and Advisory Committee was formed by the County Highway Committee to assist and advise the County Highway Committee and the interagency staff. The advisory committee included membership from the U. S. Department of Transportation; the Wisconsin Department of Transportation; the Southeastern Wisconsin Regional Planning Commission; representatives of local units of government having engineering staffs and interested citizens from throughout the County.

This report contains the findings and recommendations of more than three years of intensive study by the interagency staff and the Technical Coordinating and Advisory Committee. The report sets forth a recommended plan for state trunk highway, county trunk highway, and local trunk highway system development within Waukesha County to the year 1990, and contains specific recommendations for carrying out that plan.

The findings and recommendations contained in this report were carefully reviewed and unanimously approved by the Technical Coordinating and Advisory Committee. Adoption and implementation of the recommended plan would, in the Committee's opinion, provide the County with an integrated highway transportation system which would effectively serve and promote a desirable land use pattern within the County, abate traffic congestion, reduce travel time and costs, and reduce accident potential. It would also serve to concentrate appropriate resources and capabilities on corresponding areas of need, assuring the most effective use of the total public financial resources in the provision of highway transportation and providing a sound basis for the establishment of long-range fiscal policies and for the systematic programming of arterial street and highway improvements within Waukesha County.

The report and plan are hereby respectfully submitted for your careful consideration and adoption. Favorable action on the report and plan is respectfully urged by the interagency staff and by the Technical Coordinating and Advisory Committee.

Respectfully submitted,



Vencil F. Demshar, Chairman
Technical Coordinating and Advisory
Committee on Jurisdictional Highway Planning
Waukesha County Highway Commissioner

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Chapter I

INTRODUCTION

On December 1, 1966, the Southeastern Wisconsin Regional Planning Commission, pursuant to its statutory responsibilities and after four years of intensive study, adopted two key elements of a comprehensive plan for the physical development of the seven-county Southeastern Wisconsin Region: a land use plan and a transportation plan. On March 17, 1967, in accordance with its advisory role, the Commission certified these plans to the constituent counties, cities, villages, and towns, as well as to certain state and federal agencies, for adoption and implementation. On May 16, 1967, after careful consideration and upon the recommendation of the Waukesha County Highway Committee, the Waukesha County Board of Supervisors adopted the recommended transportation plan as a guide to be used in making decisions concerning transportation facility development within the county.

The adopted regional land use and transportation plans, as well as the salient findings and recommendations of the comprehensive regional land use-transportation study upon which the plans are based, are set forth in SEWRPC Planning Report No. 7, Volume 1, Inventory Findings-1963; Volume 2, Forecasts and Alternative Plans-1990; and Volume 3, Recommended Regional Land Use and Transportation Plans-1990. The regional transportation plan recommends a three-fold approach to the solution of the growing transportation problems of the rapidly urbanizing Region. First, it recommends the development of an expanded, fully-integrated regional freeway system which would serve to remove heavy volumes of fast, through traffic from the existing surface arterial street and highway system. Second, it recommends the development of an integrated regional modified rapid transit and rapid transit system designed to complement and supplement the transportation services provided by the regional freeway and standard arterial systems and to provide, efficiently and economically, a high level of transit service to the most intensely urbanized areas of the Region. Third, and of direct concern to this report, it recommends improvements and additions to the existing surface arterial street and highway system in order to provide an areawide system of standard

arterials properly related to the recommended freeway and modified rapid transit and rapid transit systems.

The regional transportation plan thus contains, as an integral element, a functional arterial street and highway system plan. This functional plan consists of recommendations concerning the general location, type, capacity, and service levels of the arterial street and highway facilities required to serve the rapidly developing Southeastern Wisconsin Region to the year 1990. Except for freeways the functional plan does not, however, contain recommendations as to which levels and agencies of government should assume responsibility for the construction, operation, and maintenance of each of the various facilities included in the functional plan.¹

As a logical sequel to the adoption of the recommended regional transportation plan and pursuant to specific implementing recommendations contained in that plan, the Waukesha County Board of Supervisors, on February 25, 1969, directed that the County Highway Committee, in cooperation with the U. S. Department of Transportation, Federal Highway Administration; the Highway Commission of the Division of Highways, Wisconsin Department of Transportation; the Southeastern Wisconsin Regional Planning Commission; and the local units of government concerned, proceed with the conversion of the functional highway system plan contained in the adopted regional transportation plan to a jurisdictional highway system plan. The jurisdictional highway system plan was to contain specific recommendations as to the level and agency of government which should assume responsibility for the construction, maintenance, and operation of each segment of the total arterial street and highway system. Such a plan was also to contain concomitant recommendations for the realignment of the federal aid highway systems, as well as of the state and county trunk

¹ *The regional transportation plan recommends that the Wisconsin Department of Transportation, Division of Highways, assume jurisdictional responsibility for all proposed freeway facilities shown on the regional transportation plan within Waukesha County.*

highway systems, and if warranted, proposed necessary changes in the various state and federal aid formulae.

NEED FOR A COMPREHENSIVE REVISION OF HIGHWAY JURISDICTION

Although implementation of the adopted regional transportation plan is an important reason for proceeding with a jurisdictional highway planning study, other important reasons exist. Among these is the fact that the location and extent of the state and county trunk highway systems in Waukesha County, as well as of the related federal aid highway systems, have become increasingly obsolete in light of rapidly changing areawide land use development patterns and accompanying changes in traffic demand. The rapid conversion of land from rural to urban use and the rapid development of automotive transportation within Waukesha County and the Region, of which Waukesha County is a part, have placed new and greatly increased demands on the existing arterial street and highway system in the county. As documented in the regional land use-transportation study, Waukesha County can expect to continue to experience substantial residential, commercial, and industrial growth in the next two decades; and this growth will be accompanied by still greater increases in motor vehicle registrations and in the demand for improved highway transportation facilities. Moreover, a rapidly changing regional land use pattern has brought about, and will continue to bring about, important changes in the manner in which the total street and highway system is affected by increased traffic demand so that the existing jurisdictional highway systems can no longer function as effective subsystems on their present alignment and in their present extent.

Another reason for proceeding with a jurisdictional highway planning study at this time is the fact that land use development has in some cases severely affected the ability of the existing jurisdictional highway systems to perform their intended functions on their existing alignment. As land use and traffic patterns developed over the years within developed areas of Waukesha County, those streets and highways which carried the heaviest volumes of traffic have tended to attract "strip" residential, commercial and industrial land use development. Thus, altogether too often a poor relationship was established between the arterial street system and the adjacent land uses which served not only to increase traffic volume

and impede the operating capacity of the existing arterials but also served to make major capacity improvements in the existing facilities extremely difficult and expensive. Consequently, arterial traffic is, in many locations within the county, confined to facilities which were originally constructed to provide for a much lower level of traffic demand and which are difficult and expensive to improve. Under these circumstances, either rerouting of the arterial traffic is required or the necessary resources must be made available to adequately improve the existing facilities. Realignment of the jurisdictional highway systems is necessary to achieve subsystems which will adequately serve the daily demand for the movement of persons and goods without adversely affecting desirable land use patterns.

In some instances, localized improvements such as adjustments in vertical and horizontal alignment, provision of additional pavement width, control of access, signalization of intersections, and the signing and marking of intersections for channelization of traffic may provide relief from growing traffic congestion. The proper integration of these improvements into a broad, areawide, and long-range effort to improve traffic operations and service also demands realignment of the existing jurisdictional highway systems into more fully integrated subsystems.

Another very important reason for proceeding with a jurisdictional highway planning study at this time is to avoid the piecemeal deletions from the county trunk highway system which have resulted elsewhere in the fragmentation of the system as land has been converted from rural to urban use and concomitantly incorporated. This fragmentation has complicated construction, operation, and maintenance of the system and has destroyed the necessary system continuity. A need exists to assure the maintenance of an integrated county trunk highway system to serve the growing transportation needs of the county, particularly in the eastern portion of Waukesha County, where rapid urbanization and the corresponding growth in travel demand are most prevalent.

Finally, the construction of an areawide freeway system within the Region has radically altered traffic patterns on certain parallel and cross arterials in and near freeway corridors. The existing traffic patterns in Waukesha County will continue to change in the future as additional segments of the regional freeway system are completed and opened to traffic. Adjustment of the

jurisdictional street and highway systems to these changes is essential if both the freeway and the surface arterial systems are to function properly, and will require the realignment of jurisdictional subsystems.

In summary, a jurisdictional highway planning effort is required at this time in order to cope with the growing and changing traffic demands; to adjust the existing jurisdictional systems to changes in land use development along their alignment; to assure the maintenance of an integrated network of county trunk highways as urban development proceeds within the county and large areas of the county are incorporated; and to adjust the jurisdictional systems to reflect the major changes in traffic patterns resulting from freeway utilization, and to reevaluate the system in light of the present inequity in jurisdictional responsibilities throughout the county. The need for such a jurisdictional planning effort is, consequently, becoming increasingly more urgent within Waukesha County.

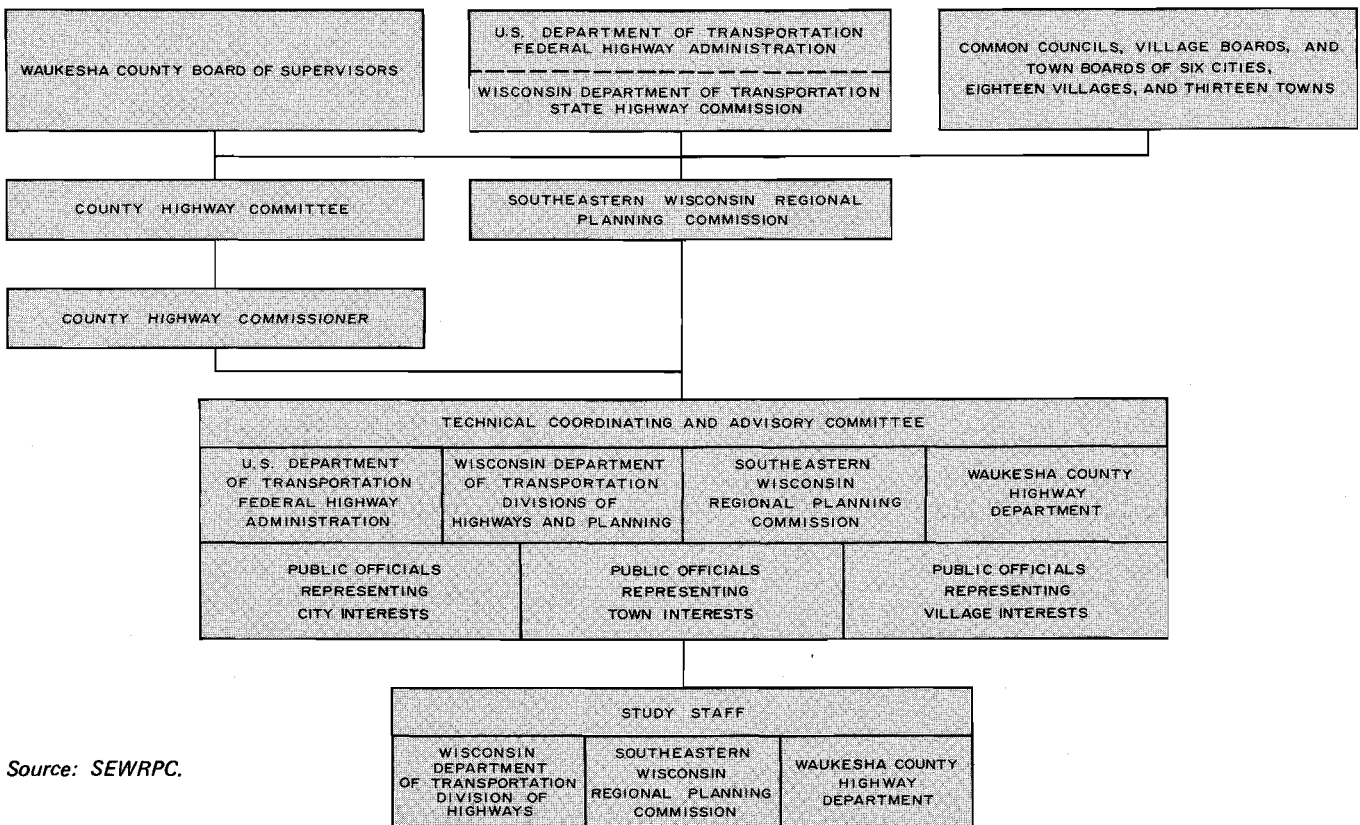
STUDY ORGANIZATION

Staff Requirements

The organization created for the necessary jurisdictional highway planning study is shown in Figure 1. Since the necessary jurisdictional highway planning effort was preceded by an intensive, comprehensive, areawide functional highway planning study, a large staff was not required to carry out the effort. This preceding study provided almost all of the necessary basic planning and engineering data, as well as the basic traffic simulation models, essential to any meaningful jurisdictional highway system planning effort. Thus, only a very small staff of experienced regional transportation planning engineers closely associated with the development of the functional highway system plan and having a thorough understanding of the traffic and land use data and simulation models used in the preparation of that plan was required to convert the functional highway system plan to a jurisdictional highway system plan from a technical standpoint.

Figure 1

ORGANIZATIONAL STRUCTURE FOR THE JURISDICTIONAL HIGHWAY SYSTEM PLANNING PROGRAM WAUKESHA COUNTY, WISCONSIN



Source: SEWRPC.

Advisory Committee Structure

Because any realignment in the jurisdictional highway systems would affect the federal, state, and local units of government concerned in many ways, it was considered essential to actively involve these units of government in the jurisdictional highway planning process. Such participation had been previously obtained within the county in connection with the regional land use-transportation study through the use of a Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning, with technical representation from the local, as well as from the federal, state, and county levels of government. Consultation with the elected heads of the local units of government indicated that a similar arrangement for the jurisdictional highway planning effort would be considered desirable and that technical, not policy-making, local officials should be represented on the advisory committee. A Technical Coordinating and Advisory Committee was, therefore, incorporated into the jurisdictional highway planning study organization to provide guidance and assistance to the staff during the course of the study. Specifically, this Committee was charged with assisting and advising the study staff on technical methods, procedures, and interpretations; assisting in the assembly and evaluation of planning and engineering data; assisting in the establishment, definition, and review of criteria; appraising alternative plans; and resolving any conflicts which might arise in plan preparation and selection. The Committee was intended to be a working committee and to actively involve the federal, state, and local technical officials in the planning process, an objective which it has fully met.

The U. S. Department of Transportation, Federal Highway Administration; the Wisconsin Department of Transportation; the Southeastern Wisconsin Regional Planning Commission; and the Waukesha County Highway Department were represented directly on the Committee. The interests of the six cities and 18 villages within the county were represented on the Committee by the Directors of Public Works, City or Village Engineers, or Building Inspectors of the Cities of Brookfield, Muskego, New Berlin, Oconomowoc, and Waukesha, and the Village of Menomonee Falls. The interests of the 13 towns located within Waukesha County were represented by the Town Board Supervisors from the Towns of Genesee and Lisbon.

A complete committee membership list is set forth in Appendix A of this report. The Committee was responsible for the detailed review and ultimate approval of the completed work of the study staff and for transmittal of the recommended jurisdictional plan to the constituent and cooperating agencies for adoption and implementation.

STUDY PURPOSE AND PLAN OBJECTIVES

The primary purpose of the jurisdictional highway planning study was to identify, and subsequently group into subsystems, classes of arterial streets and highways serving similar functions and providing similar levels of service, utilizing criteria established for this purpose; and, further, to assign jurisdictional responsibility over the subsystems so established to the appropriate level of government having the greatest basic interest so as to achieve the following objectives:

1. Promote implementation of the adopted regional transportation plan.
2. Provide a sound basis for the efficient multijurisdictional management of the total arterial street and highway system and for the attainment of the necessary intergovernmental coordination in that management; and thereby to avoid conflicts over, and duplication in, the administration, financing, design, construction, maintenance, and operation of the individual facilities which must comprise the total arterial street and highway system.
3. Provide a sound basis for the efficient design and improvement of the total arterial street and highway system by combining into subsystems those facilities, which, because of the type and level of service provided, should have similar standards for design, construction, operation, and maintenance.
4. Provide a basis for the establishment of a sound, long-range fiscal policy and for the systematic programming of arterial street and highway improvements; thereby assuring the most effective use of the total public resources in the provision of highway transportation, focusing the appropriate resources and capabilities on the corresponding areas of need.

5. Provide a basis for the more equitable distribution of highway system development costs and revenues among the levels and agencies of government concerned.

FORMAT OF PRESENTATION

The findings and recommendations of the jurisdictional highway study, as presented in this report, have been unanimously approved by the Technical Coordinating and Advisory Committee on Jurisdictional Highway Planning for Waukesha County established for the study. The report briefly

traces the historic development of the present state trunk, county trunk, and federal aid highway systems; describes the techniques and procedures used to prepare a plan for the realignment of these systems; and presents the recommended jurisdictional highway system plan so prepared. Existing financing formulae are described, proposals advanced for the revision of these formulae, and the financial feasibility of the recommended plan determined and documented. Finally, means for implementation of the study findings are provided, together with recommended staging of major improvements.

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THE JURISDICTIONAL HIGHWAY PLANNING PROCESS

INTRODUCTION

The establishment, proper improvement, and efficient operation and maintenance of an arterial highway system are important to the orderly growth and development of any area. Such a system is particularly important to the orderly growth and development of a large metropolitan region and to the orderly growth and development of a county, such as Waukesha County, which is an integral and rapidly urbanizing part of such a large metropolitan region (see Map 1). A well-conceived arterial highway system delineated on the basis of sound planning and engineering principles, will provide a framework upon which good land use development can progress and, if properly improved and maintained, will stimulate and foster the social and economic as well as the physical development of the county and of the entire region of which the county is a part.

The arterial highways of an urbanizing region must function as a single, integrated system over the entire region; yet many levels and agencies of government are responsible for the design, construction, maintenance, and operation of various parts of that total system. The identification of jurisdictional subsystems within the total arterial highway system is, therefore, essential to the attainment of an efficient, workable, and fully integrated highway transportation system and to the avoidance of inefficiencies and duplication of effort. The planning of the total arterial highway system and the identification of the various jurisdictional subsystems on an objective, rational basis are highly complex, technical tasks requiring not only the prerequisite planning and engineering skills and data but also the active participation of the several levels and agencies of government concerned with the provision of highway transportation services within the urbanizing region.

BASIC CONCEPTS

Any planning for coordinated highway system development must involve a comprehensive deter-

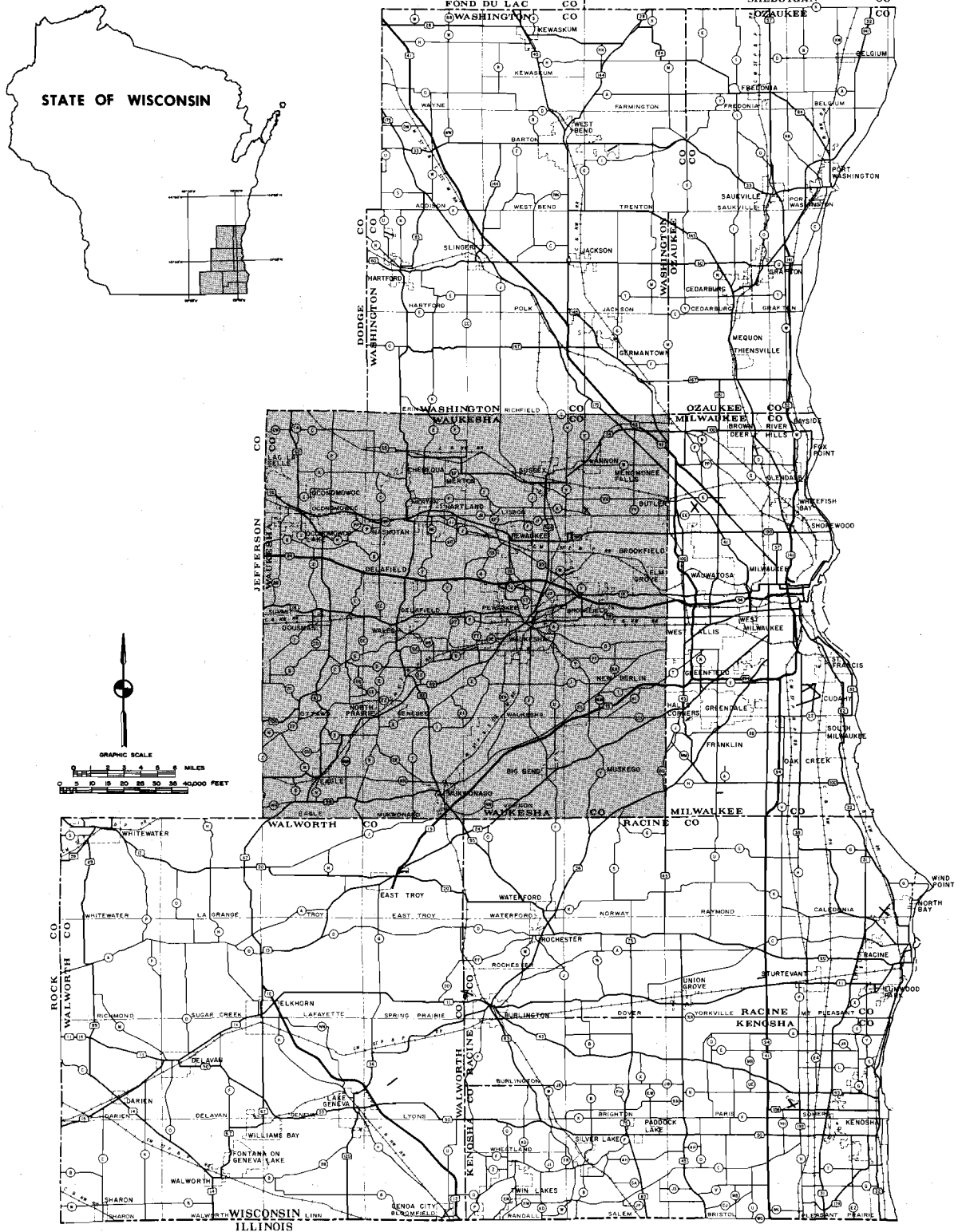
mination of the character of the individual facilities needed to provide an adequate highway transportation system. Such planning cannot be done effectively on an uncoordinated, "one-road-at-a-time" basis, since individual streets and highways do not serve travel independently in any significant way. Rather, most travel involves movement through a total system of highway facilities. Consequently, the planning of highway system development must begin with a consideration of the trips to be served by the facilities and the land uses which generate these trips.

Since it is impossible to provide direct-line highway connections for all travel desires existing within an urbanizing region, the trips must be channelized into a system of arterial streets and highways in a logical and efficient manner. The functional classification of highway facilities defines the nature of this traffic channelization process by identifying the function which each particular street or highway should serve in the total highway system. The functional classification of the total arterial street and highway system thus becomes one of the important elements of the comprehensive transportation planning process. It provides the means for defining travel paths through the total highway network and thereby provides the basis for estimating the amount and character of traffic which each facility in the total system may be expected to carry. The functional classification also provides the means for establishing desirable levels of service to be provided by each of the facilities comprising the total system and a basis for determining the predominant travel distances served by various segments of the total system.

The singularly most important basic concept underlying the jurisdictional highway planning process, therefore, is that the jurisdictional highway planning process must be preceded by a functional highway planning process; that is, a jurisdictional highway system plan must be based upon, and derived from, a prior functional highway system plan. The development of a sound and viable jurisdictional highway system plan,

Map 1

LOCATION OF WAUKESHA COUNTY WITHIN THE SOUTHEASTERN WISCONSIN REGION



Waukesha County comprises about 22 percent of the total area of the seven-county Southeastern Wisconsin Region, contains about 13 percent of the Region's population, employs about 9 percent of its labor force, and contains about 16 percent of its tangible wealth, as measured by equalized assessed real property valuation. The county, which has been a rich agricultural and recreational resource area within the Region, has experienced increasing pressures of urban development with the completion of IH 94 linking the county to the Milwaukee urban area. These pressures may be expected to increase to the plan year 1990.

Source: SEWRPC.

therefore, can properly proceed only within the context of a comprehensive areawide transportation planning process which has identified the transportation needs of the entire urbanizing region to a selected design year and which has provided definitive recommendations for meeting those needs through the improvement of both arterial highway and mass transit facilities in the form of a functional transportation plan.

The functional arterial street and highway system established in the initial regional land use-transportation study effort for the Southeastern Wisconsin Region accordingly became the point of departure for the preparation of the jurisdictional highway system plan within Waukesha County. The jurisdictional highway planning problem was thus one of identifying jurisdictional subsystems within the total arterial system on an objective and rational basis, with the character of the trips served, the character of the land use activities served, and the service level of each subsystem becoming the basis for the subclassification.

Functional Classifications

In the initial regional land use-transportation study effort, all of the existing streets and highways within the Region were classified, on the basis of existing function, into two categories: arterial and all other. The latter category included the collector and local (land access) street sub-categories. The initial classification was based upon the function which the facilities were actually performing at the time of the classification in the considered opinion of experienced, knowledgeable state and local public works engineers responsible for the construction, maintenance, and operation of the total street and highway system. This initial classification was subsequently verified by application of traffic simulation models and comparison of the resulting simulated traffic flows with actual traffic volume counts.

An arterial facility was defined, in the initial regional land use-transportation study effort, as a facility intended to serve the movement of heavy volumes of through traffic. Its primary function, therefore, must be to facilitate the expeditious movement of vehicular traffic. A secondary function may be the provision of access to abutting land, but this function should always be subordinate to the primary function of traffic movement. Arterial facilities include freeways, expressways, certain types of parkways, and "standard surface

arterial" streets and highways.¹ Freeways and expressways do not provide direct access to abutting land uses and are intended to provide safe, convenient, economical, and expeditious movement of the heaviest volumes of traffic involving the longest trip lengths. The standard arterials and certain parkways are intended to serve through traffic; the volumes and trip length characteristics of which do not warrant the use of freeways or expressways.

The collector streets, which were not categorized as arterials in the initial land use-transportation study, provide the transitional connection from the arterial system to the local (land access) street system. As the name implies, the function of collector streets is to collect and distribute traffic, as well as to provide access to abutting land uses. Since arterial routes serve longer trip lengths with a higher level of service, the traffic on a collector street will usually turn onto an arterial wherever the collector intersects an arterial.

In a rectangular grid street pattern, it may be difficult to distinguish clearly between the arterial and collector functions as these functions relate to existing facilities. Straight and continuous collector streets several miles in length may carry significant volumes of traffic, thus appearing to serve as arterials, even though the predominant use of the streets may be to carry traffic to the next junction with an arterial so that the major portion of the trip can be made over arterial facilities. Collector streets, moreover, may serve industrial and commercial as well as residential land uses. In industrial and commercial areas, the collector streets may properly be used by both trucks and buses serving tributary land uses. In residential areas, collector streets may properly be used by buses serving tributary land uses. In

¹A freeway may be defined as a divided arterial highway with full control of access and grade separations at all intersections. An expressway may be 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 may be 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. Standard arterial streets and highways may be defined as arterials with intersections at grade with no control of access, i.e., with direct access to abutting property.

some instances roadway widths of some collector streets may, in response to the character and volume of traffic, be wider than the roadway widths of some arterials. Traffic control devices may be installed to protect or facilitate traffic movement on collectors as well as on arterials.

Functional Classification Criteria

In the delineation of an arterial system, it is important to promote sound future land use development or redevelopment, as well as to protect existing desirable forms of development, by recognizing the diverse needs of the various types of existing and proposed land use development, both rural and urban, in the county. The proper spacing and location of arterial facilities, existing and proposed, are most important to the attainment of this end. Existing land use within the western two-thirds of the county is still predominantly rural in nature, with such urban development as exists occurring in and around the relatively small urban communities in the southwestern area of the county; in and around the lake communities in the northwestern area of the county; and in residential subdivisions dispersed throughout the western two-thirds of the county. Conversely, the eastern one-third of the county has undergone and is continuing to undergo rapid urbanization as a contiguous part of the Milwaukee urbanized area.

In the rural areas of the county, as in the urban areas, arterial facilities must be located to support the everyday activities of families residing in these areas, including work, personal business, shopping, recreation, and social intercourse; and, therefore, must facilitate reasonably fast, safe, and convenient travel between existing urban communities containing commercial, industrial, institutional, recreational, and residential development, and between farmsteads and such communities. In rural areas, however, the arterial facilities must also be located to promote the economic viability and vitality of productive rural enterprises. It is important to recognize that such enterprises include active farmsteads, as well as food processing industries, fowl and fur farms, gravel and stone quarries, nurseries, and orchards. Thus, farmsteads, unlike urban residential areas, represent productive enterprises and are only incidentally utilized as residential areas for farm labor and management. As productive enterprises, these farmsteads require arterial facilities to be located so as to provide ready access to sources of labor, material, and markets. The rural arterial system should also be located to provide

direct connections to the regional freeway system in order to provide ready access to regional commercial, industrial, and recreational activities and to the more highly urbanized areas of the Region. Finally, in order to provide full flexibility to adapt to changing conditions, arterials in rural areas should be located so as to permit future conversion of land from rural to urban use and, in so doing, promote the sound development of planned development units, particularly residential neighborhood units, at various population densities. In order to meet this last requirement, rural arterials should be placed no closer than two miles.

Within urban areas the penetration of residential neighborhoods by heavy volumes of fast, through, vehicular traffic is one of the surest means of destroying the desirable characteristics of such neighborhoods. Arterial routes should, therefore, be located on the periphery of residential neighborhoods. To this end the Regional Planning Commission, in formulating regional development objectives, principles, and standards, has recommended the following minimum spacings for arterial routes in urban areas:

1. High-density² urban development—one-half mile spacing.
2. Medium-density³ urban development—one-mile spacing.
3. Low-density⁴ urban development—two-mile spacing.

Accepting the premise that a well-planned and properly maintained arterial street and highway system should not only serve the traffic demands but do so with minimal disruption of residential

² High-density urban development is defined as development at a gross density ranging from 10,000 to 25,000 persons per square mile (4.8 to 11.8 dwelling units per gross acre).

³ Medium-density urban development is defined as development at a gross density ranging from 3,500 to 9,999 persons per square mile (1.8 to 4.7 dwelling units per gross acre).

⁴ Low-density urban development is defined as development at a gross density ranging from 350 to 3,499 persons per square mile (0.2 to 1.7 dwelling units per gross acre).

development, the location and spacing of arterial facilities becomes unusually important. The arterial system should be clearly identifiable so that it is readily apparent which routes should be carrying the heaviest volumes of through traffic, and so that these routes can serve to provide boundaries between planned development units rather than penetrate and divide these units. Finally, the component parts of the arterial system should be so located that the number of intersections with other arterials allows for good traffic progression and efficient system operation.

Scenic Drives

A third category of facility, normally not considered in the jurisdictional highway planning process but considered as both a special functional and jurisdictional classification under the Waukesha County jurisdictional highway planning program, is the scenic drive. For the purposes of this report, a scenic drive is defined as a marked and signed route over existing streets and highways that traverses particularly pleasing landscapes including areas of topographic, vegetative, and geological interest, and areas containing sites of scientific, cultural, or historic interest. Such scenic drives are normally heavily utilized only during summer weekend and holiday periods, and are routed over existing facilities that perform arterial, collector, and land access functions during the remainder of the time. Although not all, or even a majority of, the facilities and facility mileage over which the scenic drives are routed function as arterials with respect to the weekday travel demand, the areawide nature of the recreational travel demand served by the scenic drive facilities during seasonal weekend and holiday periods dictates that scenic drives be given careful consideration in the jurisdictional highway planning process. The areawide nature of the recreational travel demand served, the need to maintain intercommunity and intercounty continuity in the network of scenic drives through proper marking and signing, and the need to relate such drives properly to the natural resource base all indicate the need for a special functional and jurisdictional classification relating to such drives. Consequently, all existing and proposed scenic drives within Waukesha County were identified as a special functional category and assigned a jurisdictional classification as a part of the Waukesha County highway system planning process.

FUNCTIONAL NETWORK REFINEMENT

As a prerequisite to the actual jurisdictional highway planning process, the functional arterial street and highway system prepared under the initial regional land use-transportation planning effort was refined and updated for Waukesha County to reflect changes in traffic patterns and to better accommodate future land use development. This refinement and updating included a careful review of the existing and desirable future functions of each route included in the original system. This review was made in cooperation with local planning and engineering staffs and included consideration of existing and proposed land uses along the facilities, as well as the location, spacing, and operational characteristics of the facilities themselves.

The review indicated that the original functional arterial system for Waukesha County included some facilities, particularly in urban areas, which actually served collector rather than true arterial functions, and that particularly in rural areas some facilities which were originally considered as collector and local streets were actually performing an arterial function, even though traffic volumes on such facilities were relatively low. It indicated also that the original classification had placed too much emphasis upon the functions actually being served by the various components of the total street and highway system at the time of the original classification and too little emphasis upon the desirable changes in these functions over time. Just because a given street or highway functions as an arterial at the present time does not necessarily mean that it should, in light of changing land use and traffic patterns, continue to perform this function in the future.

Accordingly, certain changes in the functional classification of the total street and highway system within Waukesha County were made. The net result was the removal of about 120 miles of facilities from the arterial system. The revised arterial system was once more reviewed by experienced county and municipal engineers most intimately acquainted with the construction, maintenance, and operation of the total street and highway system; and the revised arterial street and highway system was then adopted as a basis for the jurisdictional highway planning effort.

THE JURISDICTIONAL HIGHWAY PLANNING PROCESS

Based upon the preceding basic concepts, a seven-step planning process was employed in the development of a jurisdictional highway system plan for Waukesha County. The seven steps constituting the process were: 1) study design; 2) formulation of objectives and standards; 3) inventory of existing systems, aid formulae, and financial resources; 4) jurisdictional systems analyses; 5) plan design; 6) plan test and evaluation; and 7) plan adoption. A brief description of each of these seven steps follows (see Figure 2).

Study Design

Every planning program must embrace a formal structure or study design so that the program can be carried out in a logical, consistent, and efficient manner. A statement of policy and procedure, setting forth the routine for the conduct of the study, was, therefore, prepared as the initial work element of the Waukesha County jurisdictional highway planning study. This statement provided a sequential overview of the major work elements of the study; provided for the establishment of the Technical Coordinating and Advisory Committee necessary to assist in the conduct of the study and in the provision of technical policy guidance; established time schedules and a critical path diagram to assist in expediting the completion of the study; and provided for the documentation of the study results in detailed staff memoranda, the minutes of the Technical Coordinating and Advisory Committee meetings, and ultimately, in this published report.

Formulation of Objectives and Standards

In its most basic sense, planning is a rational process for establishing and meeting objectives. The formulation of objectives is, therefore, an essential task to be undertaken before plans can be prepared. The basic transportation system development objectives governing the preparation of the jurisdictional highway plans are set forth in the adopted regional transportation plan⁵ and relate to the provision of an integrated transportation system which effectively serves the existing and proposed land use pattern; the provision of a balanced transportation system providing appropriate types and levels of transportation service

to the various subareas of the Region; the alleviation of traffic congestion and the reduction of travel time; the reduction of accident exposure and the provision of increased travel safety; the provision of a more economical and efficient transportation system; the minimization of disruption of desirable development and of deterioration or destruction of the natural resource base; and the promotion of a high aesthetic quality in the transportation system. That the functional arterial highway system recommended in the adopted regional transportation plan, and upon which the jurisdictional plan is based, met these objectives was demonstrated in the regional transportation study and documented in the planning reports issued under that study.

The conversion of the arterial highway system to a jurisdictional system, however, required the formulation and application of additional standards in the form of functional criteria for the jurisdictional classification of highway systems. These criteria, relating each jurisdictional subclassification to three basic functional characteristics—trip service, land use service, and the operational characteristics of the facilities themselves—formed the basis for plan preparation and evaluation by providing a rational and objective basis for the classification of the total arterial street and highway system into jurisdictional subsystems.

Inventory

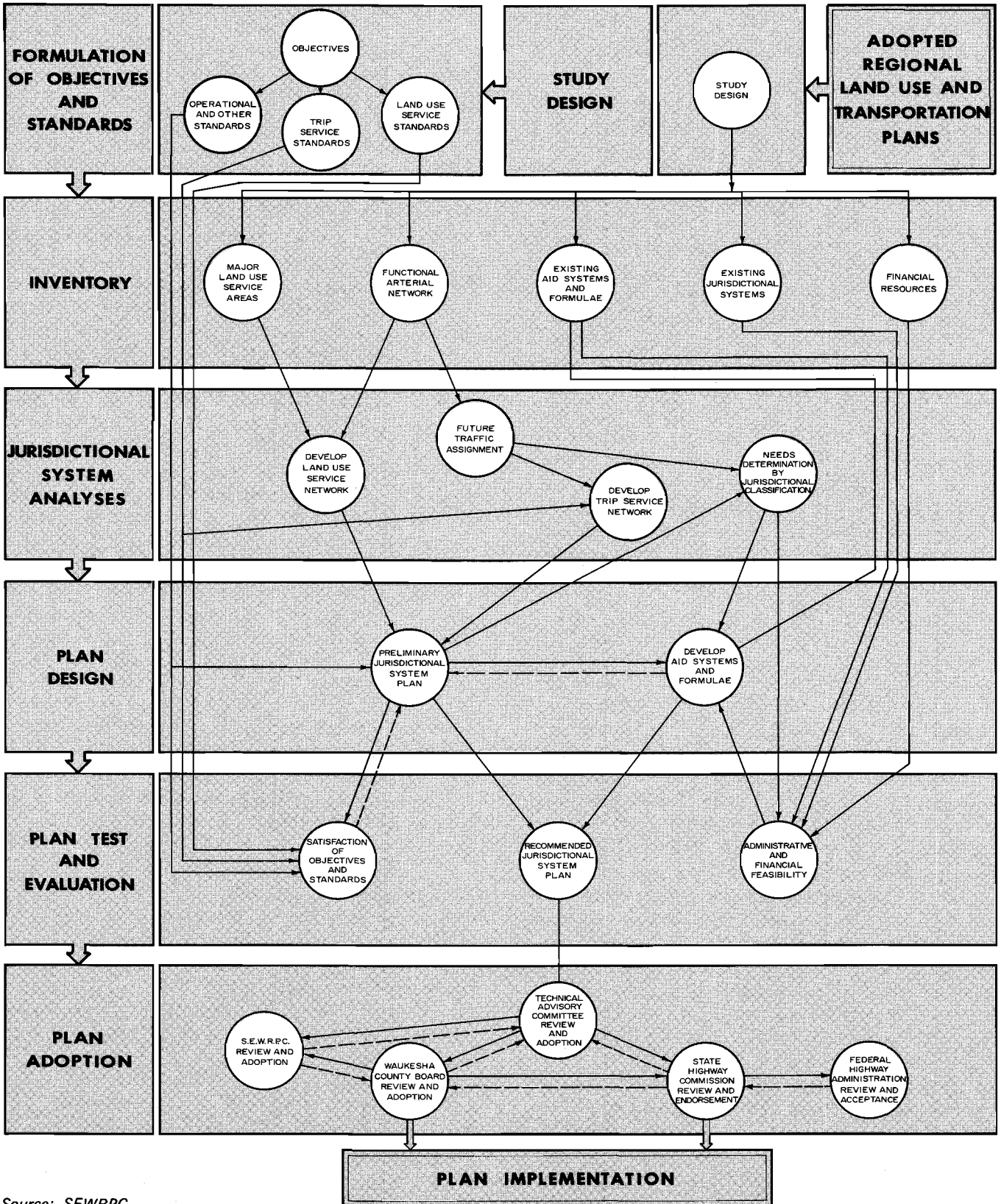
Reliable data collected on a uniform, areawide basis are absolutely essential to the formulation of workable development plans. Consequently, inventory becomes the first operational step in any planning process, growing out of the study design. The crucial nature of factual information in the planning process should be evident, since no intelligent forecasts can be made or alternative courses of action selected without knowledge of the current state of the system being planned.

The sound formulation of a jurisdictional highway system plan for Waukesha County required that factual data be developed on the location and configuration of the existing jurisdictional highway systems, including the supporting federal aid routes; the existing route mileage of each major jurisdictional type by civil division; the attendant construction and maintenance aid formulae and related plan implementation policies and practices; and on historic patterns of highway revenues and expenditures by level and agency of

⁵See *SEWRPC Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990, Chapter II.*

Figure 2

THE JURISDICTIONAL HIGHWAY PLANNING PROCESS FOR WAUKESHA COUNTY



Source: SEWRPC.

government concerned. In addition, as already noted, the functional arterial highway network and the major land use service areas as identified and delineated in the initial regional land use-transportation planning effort were reviewed under the inventory phase and, in some cases, refined and detailed.

Since the jurisdictional highway planning process in Waukesha County had been preceded by a comprehensive, areawide regional transportation planning process, the inventory operations could be confined to the collection of data relating directly to jurisdictional classification. This limited inventory operation and the economies and efficiencies associated therewith were feasible only because the initial regional land use-transportation study had provided the necessary data on the existing and committed transportation facilities and their utilization and, most importantly, had also provided data on the existing travel habits and patterns, including a complete origin and destination study. The initial regional land use-transportation plan had, moreover, provided a full battery of calibrated and operable traffic simulation models essential to the analysis of existing and probable future traffic flows required for proper execution of the jurisdictional highway planning process.

Jurisdictional Systems Analyses

Inventories provide factual information about the existing state of the system being planned, but analyses and forecasts are necessary to provide estimates of future needs. These future needs are determined by a sequence of interlocking forecasts. Economic activity and population forecasts set the general scale of future growth, which can, in turn, be translated into future demand for land use and travel. These future demands can then be scaled against the existing supply of land and transportation system capacity and plans formulated to meet any deficiencies. The necessary economic activity, population, land use, and travel demand forecasts were all prepared under the initial regional land use-transportation planning effort. Under the jurisdictional highway planning study, it remained only to utilize these forecasts in the application of the jurisdictional criteria (see Figure 3). This required analyses of the lengths and volumes of trips to be served by each link in the total arterial street and highway system, an identification of the land use areas to be served by each jurisdictional facility type, and an investigation of the operational characteristics

of the arterial facilities themselves. Essential to these analyses was the availability of the battery of traffic simulation models formulated and maintained by the Regional Planning Commission.

Plan Design

Plan design forms the heart of the planning process. The outputs of each of the previously described planning operations become inputs to the design problem of plan synthesis. No substitute for intuition and professional judgment in plan design has so far been found, much less developed, to a practical level. Means do exist, however, for reducing the gap between the necessary intuitive and integrative grasp of the problem and its magnitude; and these means were fully applied in the Waukesha County jurisdictional highway planning study. They center primarily on the application of systems engineering techniques to the quantitative test of the jurisdictional highway system plans evolved from the functional highway network through the application of intuition and professional judgment. These quantitative tests assure the technical adequacy of the plan design but are of limited usefulness in actual plan synthesis. Consequently, it was still necessary to develop the jurisdictional highway subsystem plans by traditional graphic and analytical "cut and try" methods, then to test quantitatively the resulting design by application of the simulation model techniques, and make necessary adjustments in the design until a workable plan was evolved.

In order to overcome the limitations of individual intuitive grasp of the design problem, maximum resort was made to team effort in the actual plan synthesis; and the knowledge and experience of federal, state, and local highway engineers familiar with the geographic and functional areas concerned were applied to the plan synthesis process through careful Technical Coordinating and Advisory Committee review, interagency staff assignments, and interagency staff conferences. Final determination with respect to the inclusion or exclusion of any facilities in a jurisdictional subsystem which met only marginally the criteria established for that subsystem was made by the Technical Coordinating and Advisory Committee. The plan design procedure thus provided for careful review of the application of the criteria by local, county, regional, state, and federal technical staffs and thereby provided a practical jurisdictional highway system delineation, as well as a practical estimate of plan implementation costs and feasible proposals for plan implementation.

Figure 3

PROCEDURE FOR THE APPLICATION OF CRITERIA IN THE DEVELOPMENT OF A JURISDICTIONAL HIGHWAY SYSTEM PLAN



Source: SEWRPC.

Plan Test and Evaluation

If the plans developed in the design stage of the planning process are to be realized in terms of actual transportation system development, some measures must be applied to quantitatively and qualitatively test these plans in advance of their adoption and implementation. The plan test and evaluation process must ascertain whether or not the plans are realistic in scope; consistent with the desirable advancement of the public interest; technically, legally, and financially feasible; and readily comprehensible by knowledgeable elected public officials, engineers, and technicians who will be ultimately charged with implementation. As already noted, simulation procedures were used to test and verify the technical workability and efficiency of the proposed total arterial highway network. Satisfaction of objectives could be ascertained through application of the jurisdictional criteria in concert with the simulation techniques. These simulation techniques also permitted the determination of future link capacity and accompanying right-of-way and curb-to-curb pavement widths and improvement requirements. A total plan implementation cost could then be assigned to the resulting system configuration by the application of unit construction and mainte-

nance costs. From a composite summary of all existing highway aids and revenues prepared under the planning study, a forecast of the public financial resources available for arterial highway improvements could be provided. By comparing the forecast revenues with the forecast needs, the financial feasibility of the proposed plan could be determined and evaluated.

Plan Adoption

In a practical sense, any plan is not complete until the steps required for its implementation—that is, the steps necessary to convert the plan into action policies and programs—are specified. Plan implementation must begin with plan adoption by the responsible implementing agencies, including particularly the Waukesha County Board of Supervisors and the Highway Commission of the Wisconsin Department of Transportation, and formal recognition by the Federal Highway Administration. All other implementation recommendations, including the schedule for realignment of jurisdictional responsibilities, proposals for capacity protection and right-of-way reservation, staged construction, and capital improvements programming, must follow and flow from such plan adoption.

Chapter III

HISTORICAL DEVELOPMENT AND PRESENT STATE OF THE JURISDICTIONAL HIGHWAY SYSTEMS

HISTORICAL DEVELOPMENT

The earliest European settlers in southeastern Wisconsin traveled "highways" consisting of a network of Indian trails and rivers, which connected the many Indian villages in the territory. It was near these Indian villages at strategic points along the trails and rivers that trading posts were established by the settlers, and many of the present cities and villages within the Region were built on or near the sites of these trading posts and nearby Indian villages.

As settlement became more widespread, several forts were constructed for frontier defense against hostile Indians within the territory of which southeastern Wisconsin was then a part. In order to facilitate the transportation of troops and supplies between these forts, the U. S. Army developed and constructed a system of military roads. Map 2 depicts the military road that traversed Waukesha County. An east-west route comprised part of the road between Milwaukee and Dubuque, Iowa via Madison, portions of which are now USH 18, IH 94, CTH JJ, CTH TJ, CTH G, and CTH CCC. Thus, the earliest roads within the Region were federal roads.

In 1836 the Territorial Legislature established a system of territorial roads. Although these roads were surveyed and located by commissions appointed by the Legislature, construction costs were assumed by the towns or by local private interests. A road tax was levied on real estate to finance construction of these territorial roads. Map 3 depicts the territorial roads that traversed Waukesha County.

Since the territorial roads were generally poorly constructed and therefore did not provide the transportation service required, demand soon developed for the construction of plank roads. About the time Wisconsin attained statehood in 1848, a number of plank roads were chartered by the territorial and state governments. These roads were to be constructed with private capital as toll roads. The receipts from the tolls were expected to recover the capital investment in

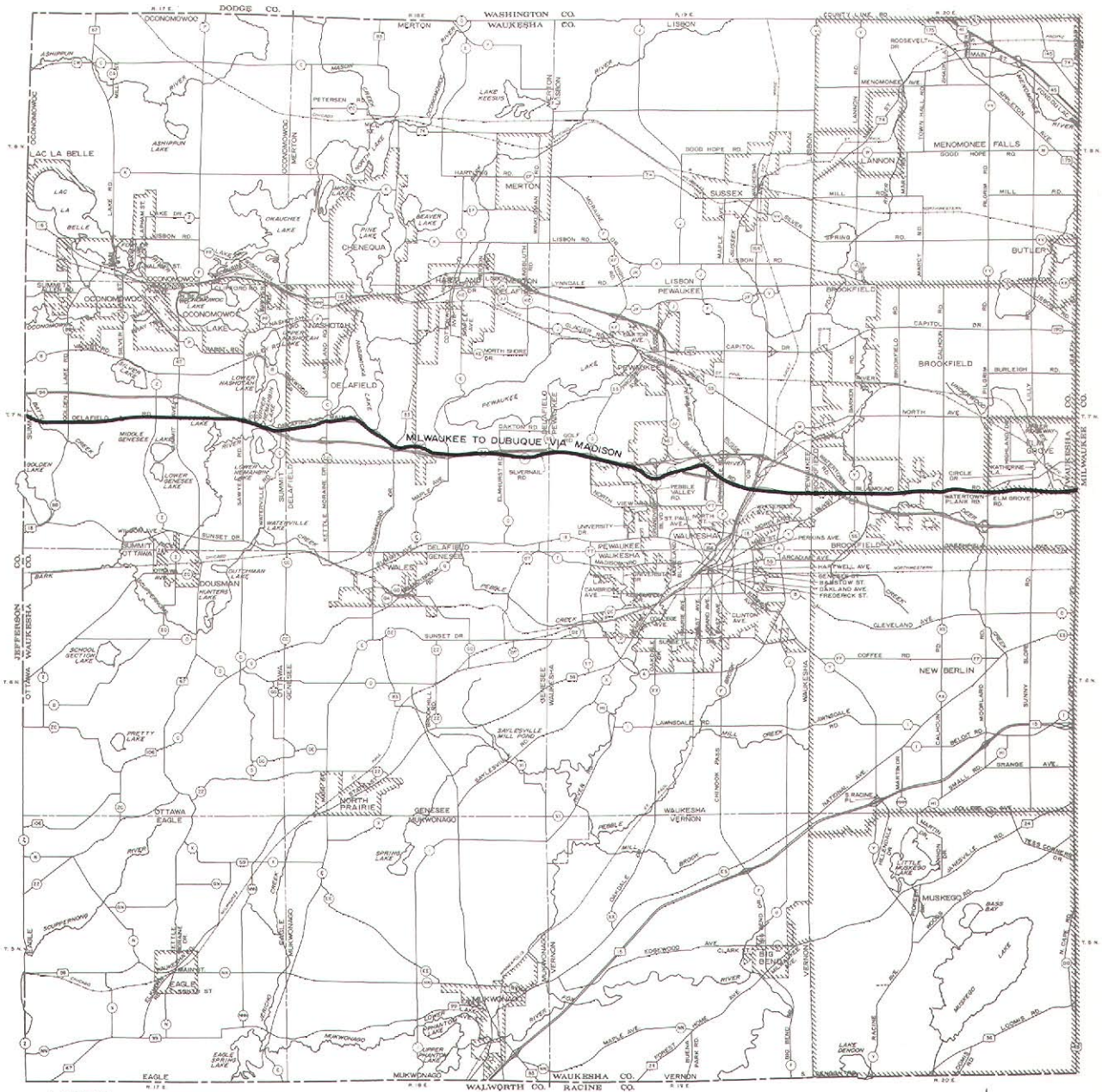
construction, keep the roads in repair, and pay a profit to the road building company. The first of these roads in Wisconsin was the Milwaukee to Lisbon Plank Road chartered in 1846. Map 4 depicts the early plank roads constructed in Waukesha County. A combination of high maintenance costs, low profits, and competition from railroads caused the eventual abandonment of these plank roads. In 1869 the State Legislature authorized and directed town supervisors to declare the remaining plank roads public highways.

After Wisconsin became a state in 1848, all public roads laid out and opened by authorization of the State Legislature were designated as state roads. Commissions were appointed by the State Legislature to establish such roads and were authorized, in addition to opening new roads, to adopt any part of previously established town, county, or territorial roads as state roads. State roads so laid out and opened were a direct charge to the towns through which the roads traversed because of the constitutional provision prohibiting the state government from participation in works of internal improvement. The State Statutes required that the right-of-way for all state roads be established at a width of four rods (66 feet). Later legislation also required all county roads to be laid out with a right-of-way width of not less than four rods. Town roads could be laid out with right-of-way widths of three rods (49.5 feet). The maintenance of the state, county, and town roads was made the responsibility of the towns. The success of the steam railroad in the late 1800's caused highway transportation to be neglected. Private road-building companies passed out of existence, and since the state could not directly participate in road construction, very little progress in highway improvement was realized.

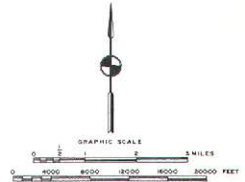
About the turn of the century, the motor vehicle became a practical means of transportation and revived the demand for improved highways to connect and serve the growing population centers. As a result, the Legislature enacted the first county aid highway laws in 1907. One of the important provisions of these laws stated that any town could, by making an appropriation for highways,

Map 2

MILITARY ROAD IN WAUKESHA COUNTY: 1835-1870



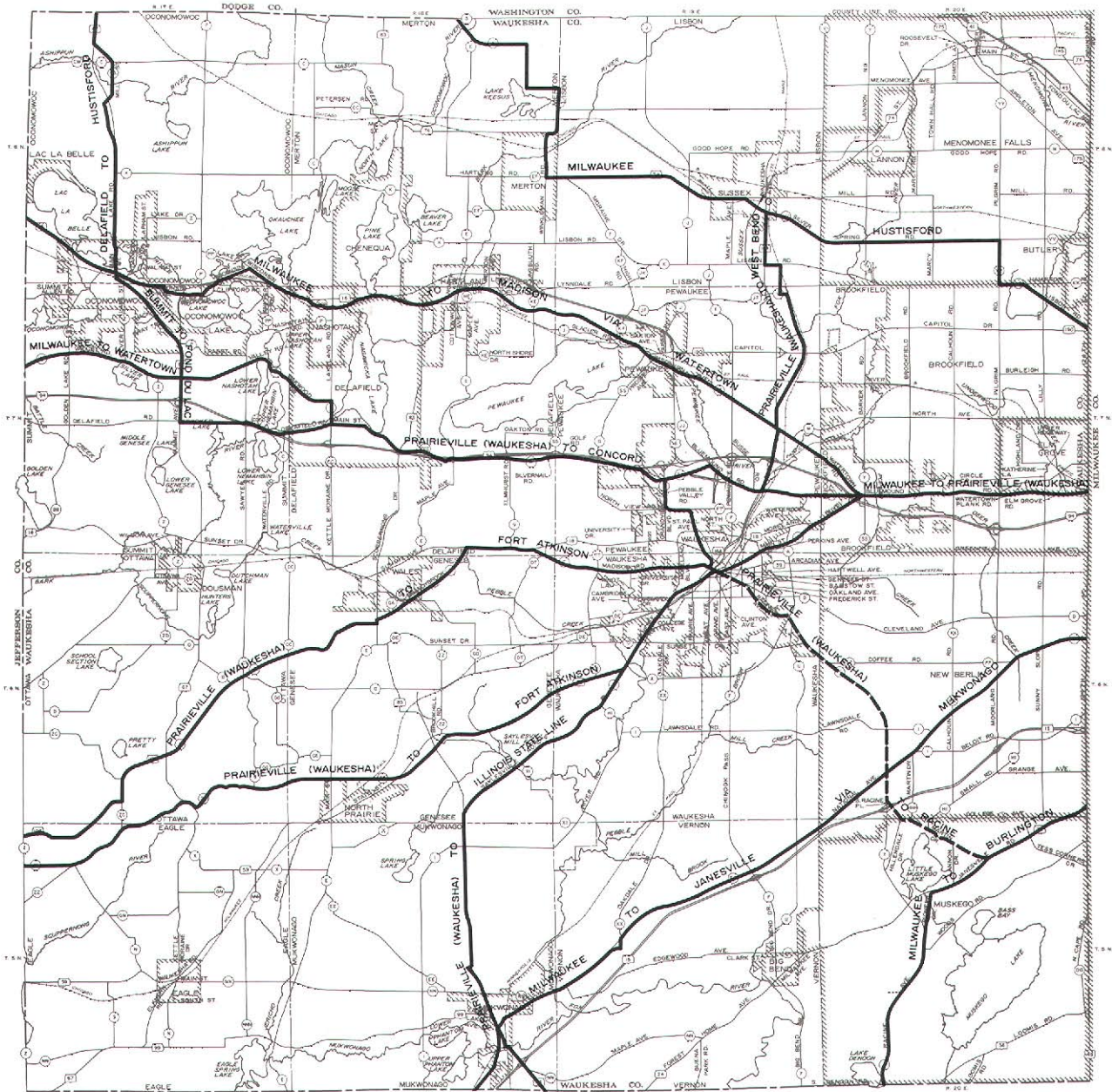
LEGEND
 — MILITARY ROAD



A system of military roads was built by the federal government in territorial Wisconsin to make the transportation of troops and supplies easier between forts established to guard the developing frontier. One of these military roads traversed Waukesha County and connected Milwaukee with Dubuque, Iowa, via Madison. Portions of the present routings of USH 18, IH 94, CTH JJ, CTH TJ, CTH G, and CTH CCC follow the location of this old military road.

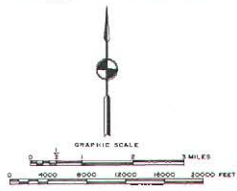
Source: SEWRPC.

TERRITORIAL ROADS IN WAUKESHA COUNTY: 1835-1848



LEGEND

- TERRITORIAL ROAD
- - - ASSUMED TERRITORIAL ROAD

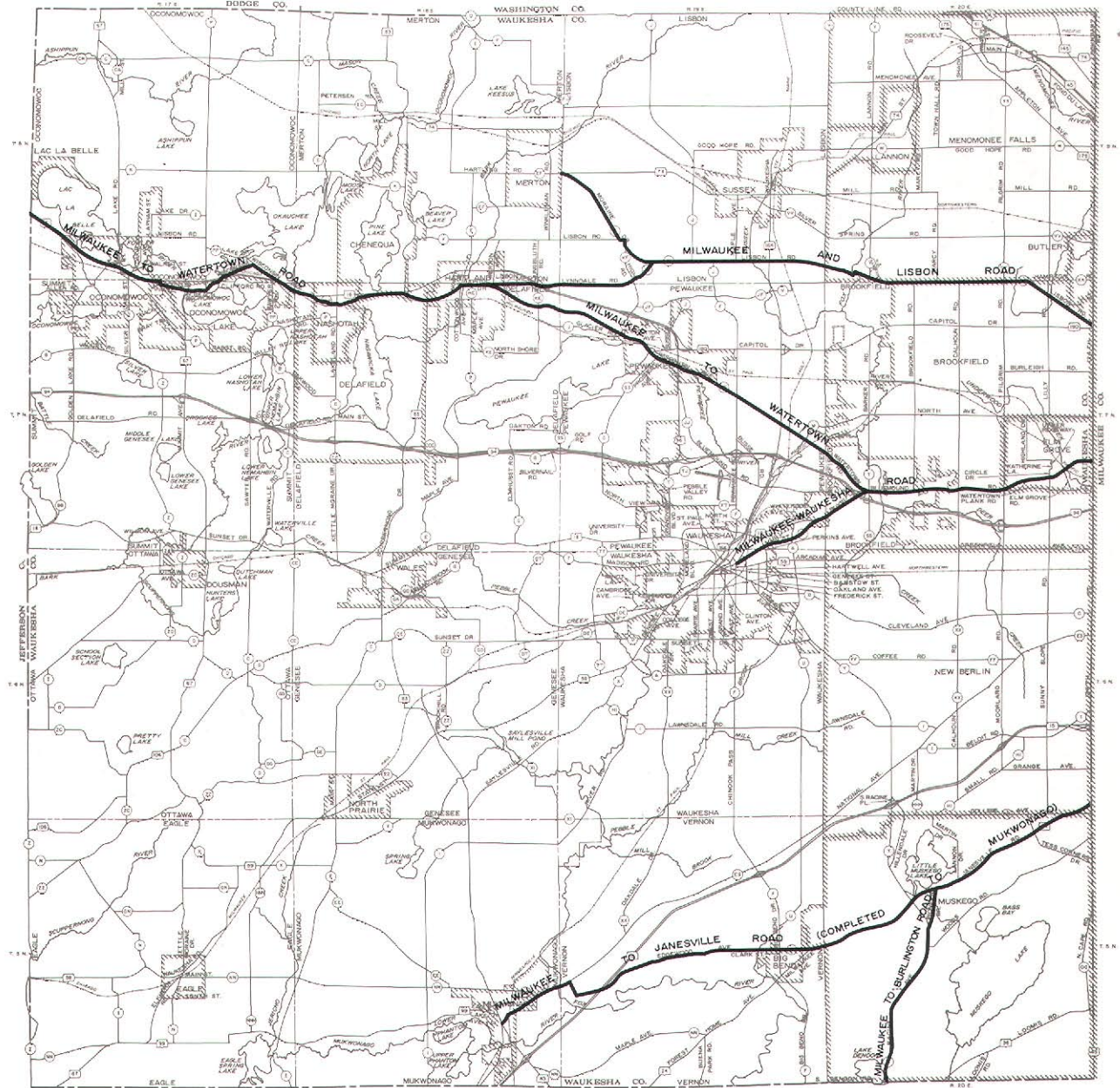


In 1836 the Territorial Legislature established a system of territorial roads to connect important settlements within the territory. Thirteen territorial roads traversed Waukesha County. The Milwaukee-Prairieville road was located approximately along the present alignments of USH 18 and CTH Y. The Milwaukee-Hustisford road approximately followed present Lisbon Road, CTH YY, CTH VV, STH 74, and CTH F. The Milwaukee-Janesville road followed present CTH ES (former STH 15). The Milwaukee-Burlington road was located generally along present STH 24 and CTH Y. The Milwaukee-Madison road generally followed present USH 18, CTH SS, CTH JJ, STH 83, CTH PPP, CTH PP, and USH 16. The Milwaukee-Watertown road generally followed present USH 18, CTH JJ, CTH TJ, IH 94, CTH G, CTH CCC, STH 67, and CTH B. The Prairieville-Concord road generally followed present CTH T, CTH TJ, and then was concurrent with the Milwaukee-Watertown road. The Delafield-Hustisford road follows the general alignment of present CTH C, CTH B, and STH 67. The Summit-Fond du Lac road began at what is presently the intersection of STH 67 and Delafield Road, and followed STH 67 concurrent with the Delafield-Hustisford road. The Prairieville-Fort Atkinson road followed two branches, which converged in Jefferson County, generally along present STH 59, CTH ZZ, CTH N, CTH T, STH 18, CTH G, CTH C, and STH 106. The Prairieville-West Bend road generally followed present STH 164 to CTH VV and then followed the Milwaukee-Hustisford road. The Prairieville-Illinois state line road followed the same alignment as present STH 59, CTH X, and STH 83. The Prairieville-Racine road is assumed to have been routed over present CTH Y, Martin Drive, and Tess Corners Drive.

Source: SEWRPC.

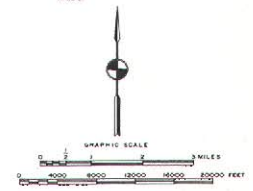
Map 4

PLANK ROADS IN WAUKESHA COUNTY: 1846-1854



LEGEND

— PLANK ROAD



Due to the poor construction of many of the territorial roads, demand soon developed for the construction of plank roads. The four plank roads in Waukesha County linked Milwaukee and Lisbon, generally following present Lisbon Road, CTH K, and CTH F; Milwaukee and Watertown, following alignments of present Watertown Plank Road, USH 18, CTH SS, CTH JJ, STH 83, CTH PPP, CTH PP, and USH 16; Milwaukee and Waukesha, following the present Watertown Plank Road and the USH 18 portions of the Milwaukee-Watertown Road, and then reaching Waukesha along present CTH Y; and Milwaukee and Janesville, with road construction completed to Mukwonago following two branches along present STH 24, CTH Y, CTH U, Edgewood Avenue, and CTH ES (former STH 15).

Source: SEWRPC.

secure a similar amount of money from the county for highway improvements. The counties were required to select systems of highways upon which improvements were to be made and to elect a County Highway Commissioner to carry out the improvements. The counties were also authorized to levy taxes for highway improvements.

In the general election of 1908, the people of the state approved a constitutional amendment which provided:

...that the state may appropriate money in the treasury or to be thereafter raised by taxation for the construction and improvement of public highways....

In the period between 1907, when the county aid highway laws were enacted, and 1911, when the first state aid highway law was passed, it had become increasingly apparent that local units of government alone would not be able to construct and maintain the highway facilities which were needed and being demanded. In addition, public opinion was becoming crystallized in favor not only of a much higher level of highway improvement but also of a more centralized regulation and financing of highway construction and maintenance.

Under Chapter 52, Statutes of 1911, the State Legislature created the State Highway Commission, which was given authority over all matters pertaining to the expenditure of the state highway fund for the improvement of public highways and bridges in the state. The Highway Commission, in turn, organized a State Highway Department to provide the engineering staff necessary to the proper performance of its duties and functions. The chief engineer was designated the State Highway Engineer, and within two years, several division offices were established throughout the state.

In 1916 the United States Congress, realizing the necessity of a national system of highways for interstate transportation and national economic development, passed the first federal aid highway law. The benefits accruing to Wisconsin under this law made it possible for the Highway Commission, already a well-established department, to proceed with the development of an integrated system of state highways, a vast improvement over the aggregation of the discontinuous and often illogical county highway systems then existing. One requirement of the federal aid highway law was that the state assent to the provisions of the

federal act and provide for the maintenance of the highways improved with state and federal aid.

The State Legislature of 1917 directed the Highway Commission to establish a state trunk highway system not to exceed 5,000 miles, which would interconnect every county seat and every city with a population of 5,000 or more. The system was laid out after due investigation and public hearing by the Highway Commission. The new law also provided for the proper marking and signing of the system by the Highway Commission and for the publication and sale of maps for the guidance of travel. Maintenance of this system was assigned to the counties under the general supervision of the State Highway Commission. Map 5 depicts the location and numbering of the original state trunk highway system as established statewide in 1918, and Map 6 depicts this system as established in Waukesha County in 1918 totaling about 71 miles of facilities.

The 1921 Federal Aid Highway Act provided that the states could designate a system of highways, comprising not more than 7 percent of the total road mileage of the state at that time, which would be eligible for federal aid. Wisconsin acted to designate a federal aid system in 1921. This system consisted of a total of 5,516 route-miles of facilities. The Federal Aid Highway Act of 1921 provided that this total mileage be divided into two classes of routes, one known as primary, or interstate, highways, and the second known as secondary, or intercounty, highways. The former were not to exceed three-sevenths of the total federal aid route mileage designated within the state, and the latter, the remaining four-sevenths of that mileage. The primary routes were selected by the State Highway Commission as an integrated system of major intercity traffic carriers totaling 2,364 route-miles of facilities. The secondary system was selected by the State Highway Commission in cooperation with local officials and consisted of, in addition to farm-to-market roads, rural mail routes, rural public school bus routes, and county trunk highways, and totaled 3,152 route-miles of facilities. The total original designation of 5,516 route-miles of federal aid primary and secondary highways under the 1921 Federal Aid Highway Act basically comprises the federal aid primary system within Wisconsin today.

Beginning in 1933, federal aids were made available for the ad hoc improvement of farm-to-market roads not on any federal aid system. The

Map 5

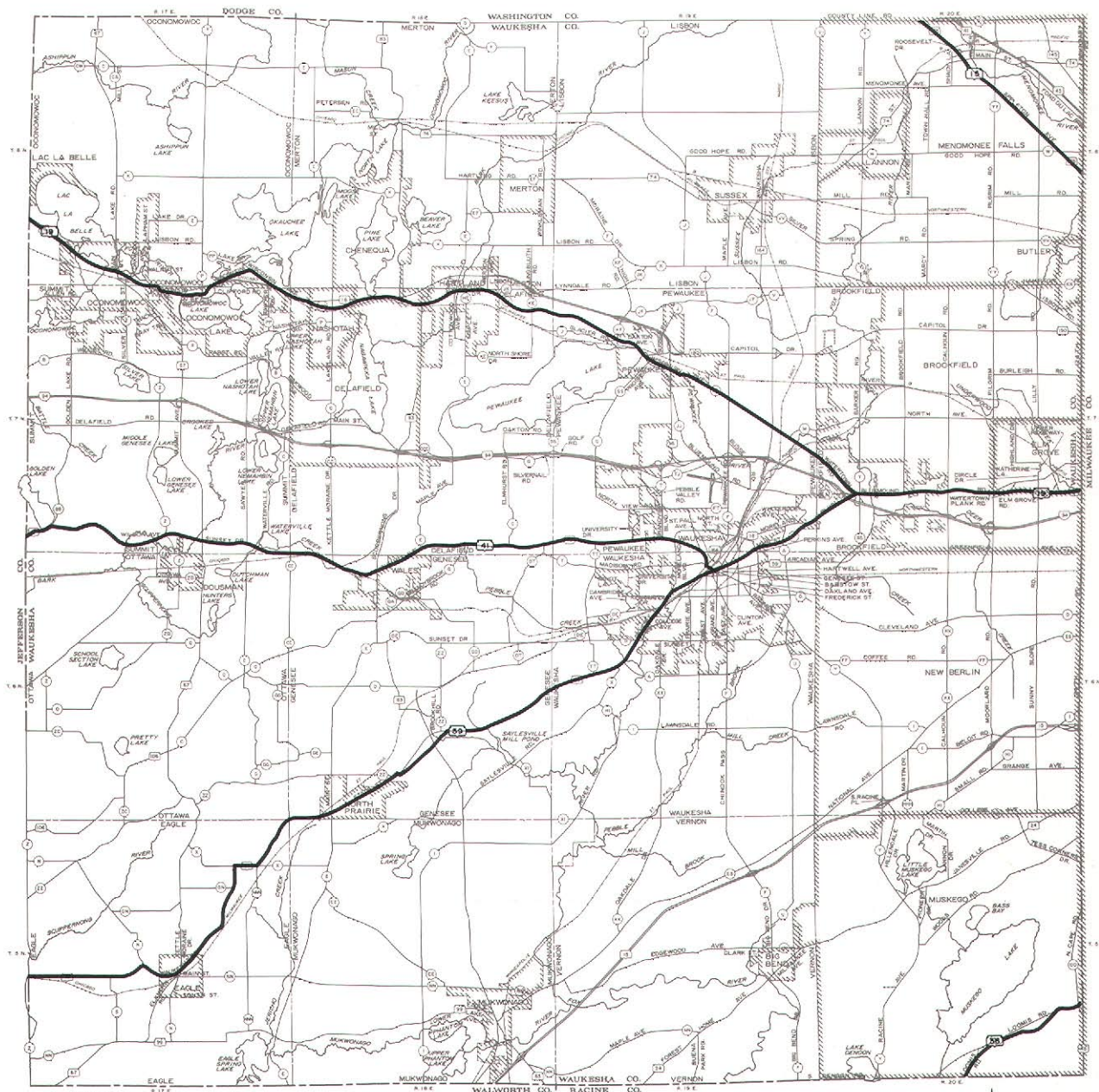
ORIGINAL STATE TRUNK HIGHWAY SYSTEM IN WISCONSIN: 1918



The original state trunk highway system in Wisconsin, as established in 1918, totaled 5,000 miles, and interconnected every county seat and every city in the state with a population of 5,000 persons or more. Initially, this was the only system of streets and highways for which federal aid in partial support of improvements was available. The system of designating state trunk highways by number and of marking the numbers on signs along the route and on maps developed in Wisconsin. The installation of thousands of signs providing information on distance and direction to motorists was completed in 1918.

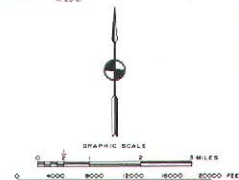
Source: SEWRPC.

ORIGINAL STATE TRUNK HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1918



LEGEND

—(99)— STATE TRUNK HIGHWAY AND NUMBER



The original system of state trunk highways in Waukesha County consisted of about 71 route miles of facilities. The location of these early state trunk highways illustrates the permanence of highways as a feature of the landscape, with portions of the original state trunk highways being located along present USH 18, CTH SS, CTH JJ, STH 83, CTH PPP, CTH PP, USH 16, STH 59, STH 36, and STH 175.

Source: Wisconsin Department of Transportation.

Federal Aid Highway Act of 1944, recognizing the need to improve farm-to-market roads but also recognizing the need to integrate these roads into a system of secondary highways, provided for the creation of a new federal aid secondary system. This federal aid secondary system in Wisconsin was selected by the State Highway Commission in cooperation with local officials, and consisted of approximately 14,000 miles of secondary state trunk highways and major county trunk highways. These 14,000 miles were designated, in addition to the original federal aid highways which now became the federal aid primary system, as the federal aid secondary system.

The 1944 Federal Aid Highway Act also provided for the establishment of a third system of highways known as the federal aid urban system. This system was not a true continuous highway system but, rather, consisted of the extensions of federal aid primary and federal aid secondary routes into urban areas having populations of 5,000 or more.

In the Federal Aid Highway Act of 1956, Congress provided for the development of a national system of interstate and defense highways. Limited to 41,000 miles nationwide at completion, the system was to connect principal metropolitan areas, major ports, and major military installations.

In 1967 the U. S. Department of Transportation, Federal Highway Administration, initiated a program of federal aid to urban areas having a population of 5,000 or more persons known as TOPICS, an acronym standing for the compound term, "Traffic Operations Program to Increase Capacity and Safety." The program was developed in order to encourage municipalities to accelerate their efforts to reduce traffic congestion, facilitate the flow of traffic, and reduce accidents on streets other than those principal streets already on the federal aid highway systems by means of such traffic engineering techniques as intersection channelization, signalization, widening of approaches, and upgrading of lighting.

The Federal Aid Highway Act of 1970 provided for the establishment of an entirely new system of federal aid routes within the urbanized areas of the United States. This system is intended to supplement the existing federal aid highway systems within urbanized areas, which formerly consisted only of the extensions of the federal aid primary and secondary systems into such urbanized areas. As such, the new system is

intended to include the most heavily traveled elements of the urban street and highway system.

During the period from 1918 to 1924, in addition to the state trunk highway system which the counties were required by law to maintain under the supervision of the Highway Commission, each county voluntarily assumed the responsibility for the improvement and maintenance of an additional number of miles of highway. This was done through the broad statutory general powers of the counties to construct and improve any highway within the county boundaries. The facilities so established were called county trunk highways. The 1925 Legislature validated and confirmed as county trunk highways those highways previously selected by the county boards. These highways were to be marked, maintained, and signed by the counties. The county highway systems were also required to join and be continuous between counties. A map of the selected county system was to be filed with the county clerk and copies forwarded to the State Highway Commission for review and approval.

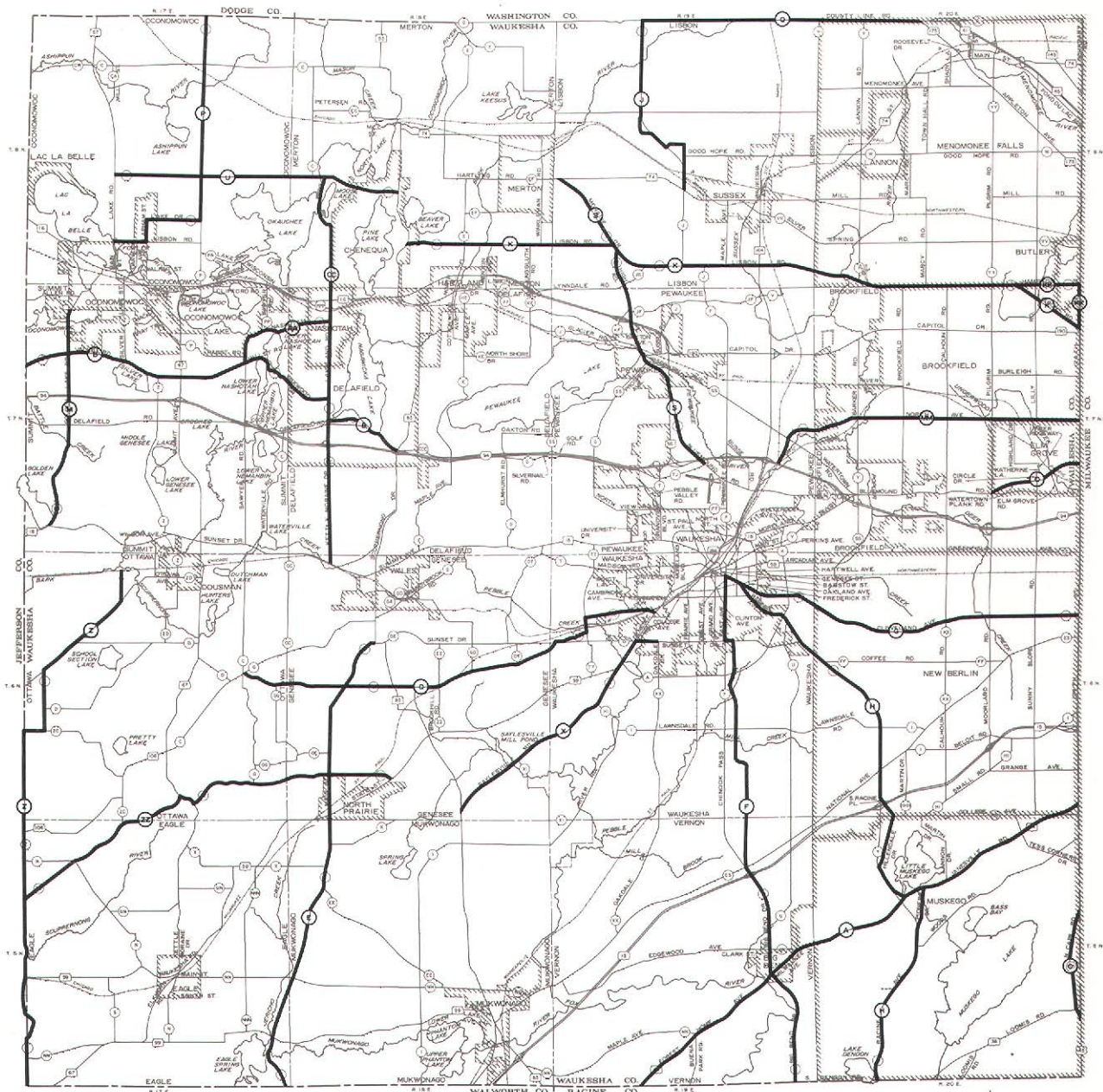
After this initial system was approved, the system could be altered only by the county board through its highway committee, with the approval of the State Highway Commission. Allotments were also provided to be set aside for the improvement of the county trunk highway system, including construction, repair, and maintenance of highways and bridges under supervision of the county highway committee. Map 7 depicts the original county trunk highway system in Waukesha County as validated by the State Legislature in 1925.

The state trunk highway system, which by 1923 had been increased to 10,000 miles statewide, became the primary system of highways; the county trunk highway system, the secondary system; and other roads, more local in nature, the tertiary system.

The statutes specified that the state trunk highway system was to exclude streets or highways in all incorporated areas having a population of 2,500 or more by the last federal census, except that those portions of any such streets or highways along which houses were spaced at an average distance of more than 200 feet could be included at the option of the State Highway Commission. This provision of the statutes permitted the projection of the state trunk highway system into the more thinly developed areas of cities of over

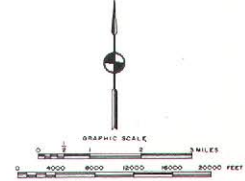
Map 7

COUNTY TRUNK HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1925



LEGEND

 COUNTY TRUNK HIGHWAY AND LETTER



The original county trunk highway system in Waukesha County, established by the County Board and the Wisconsin Legislature in 1925, totaled about 164 route miles of facilities to be marked, maintained, and signed by the county. With the establishment of this system, the original jurisdictional classification of highways in Waukesha County was completed. Portions of the original county trunk highway system remain on the present county trunk highway system, including segments along present alignments of CTH B, CTH BB, CTH C, CTH CC, CTH D, CTH DE, CTH E, CTH F, CTH J, CTH JJ, CTH K, CTH KF, CTH M, CTH OO, CTH P, CTH Q, CTH X, CTH Y, CTH Z, and CTH ZZ.

Source: SEWRPC.

2,500 population to points known as "construction limits." The streets over which the state trunk highway system was routed between the construction limits were designated "connecting streets" and were not legally a part of the state trunk highway system. The cities and villages were assigned the maintenance responsibility for the connecting streets. The same maintenance allotment was provided to the cities and villages for the connecting streets as was provided the counties for state trunk highways of like classification. In 1943 the Legislature changed the definition of the construction limits to those points on the state trunk highways where development had assumed "a predominantly urban characteristic." From these beginnings the highway network in Wisconsin and in Waukesha County developed over the years, with minor additions and revisions, to the present state and county trunk systems.

Table 1 sets forth changes in the jurisdictional street and highway system mileages within Waukesha County over the 54-year period between 1918 and 1972. The state trunk highway mileage shown includes connecting streets. Figure 4 indicates that the mileage of each of the three jurisdictional highway systems has increased to accommodate the rapid growth in population, employment, urban land use, motor vehicle registrations, and vehicle miles of travel within the county. The only exception to this general trend is the decrease in county trunk highway mileage that resulted when, in December of 1936, the

Waukesha County Board of Supervisors acted to reestablish the County System of Prospective State Highways through the transfer of 166 miles of county trunk highways to that system, reducing the county trunk highway system to 266 miles of facilities. The County System of Prospective State Highways, originally established in December of 1915 in accordance with state legislative action of 1911, previously had consisted of facilities which had by 1936 become state or county trunk highways. In November of 1940, the Waukesha County Board acted to transfer to the County Trunk Highway system the 196 route-miles of facilities comprising the County System of Prospective State Highways, which system had been increased by 30 miles of ad hoc additions over the 4-year period from 1936 to 1940. This action increased the County Trunk Highway system to 462 route-miles, and, in effect, eliminated the County System of Prospective State Highways. Legally, the County System of Prospective Highways still exists but has fallen into disuse, no longer being relevant to highway facility development in the county. The function of this system has been supplanted by the provisions of Section 83.03 of the Wisconsin Statutes,¹ which provide

¹Section 83.03 of the Wisconsin Statutes was amended in 1939 by the Legislature to permit the county to construct, improve or repair, or aid in the construction, improvement, or repair of any highway or bridge in the county.

Table 1

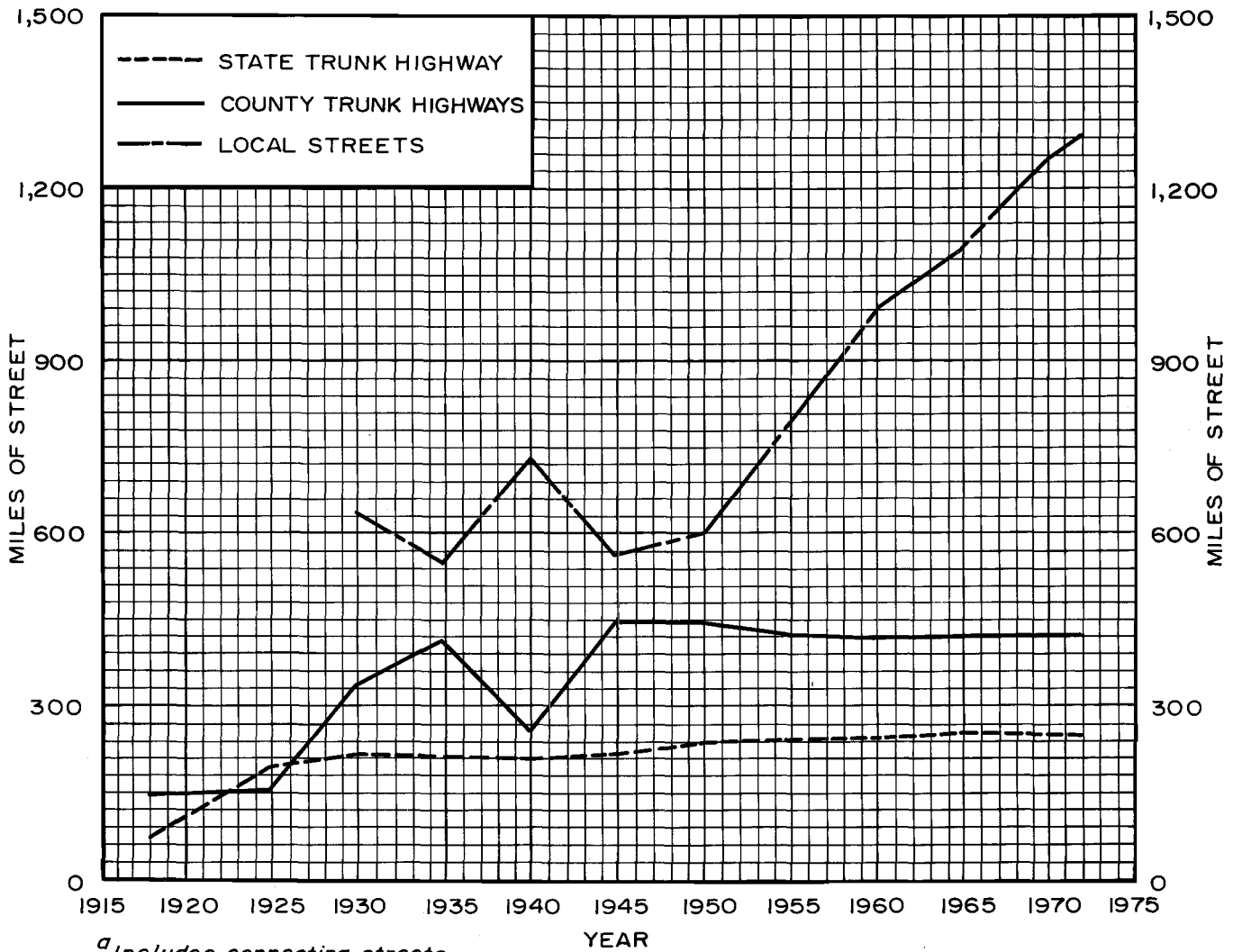
**STREET AND HIGHWAY MILEAGE IN WAUKESHA COUNTY
SELECTED YEARS 1918-1972**

Year	State Trunk Highways (Includes Connecting Streets)		County Trunk Highways		Local Streets		Total Miles
	Number of Miles	Percent of Total	Number of Miles	Percent of Total	Number of Miles	Percent of Total	
1918	71	--	150	--	--	--	--
1925	204	--	166	--	--	--	--
1930	226	18.5	349	28.6	645	52.9	1,220
1935	223	18.4	423	34.9	563	46.7	1,209
1940	223	18.1	266	21.6	741	60.3	1,230
1945	223	17.7	464	36.8	571	45.5	1,258
1950	239	18.3	458	35.2	603	46.5	1,300
1955	242	16.3	442	29.8	795	53.9	1,479
1960	242	14.4	430	25.7	998	59.9	1,670
1965	252	14.1	434	24.3	1,096	61.6	1,782
1970	249	12.8	430	22.1	1,261	65.1	1,940
1972	249	12.5	437	21.9	1,305	65.6	1,991

Source: Wisconsin Department of Transportation and SEWRPC.

Figure 4

TOTAL STREET AND HIGHWAY MILEAGE IN WAUKESHA COUNTY: 1918-1972



Source: Wisconsin Department of Transportation and SEWRPC.

that the county may aid in the construction and maintenance of any street or highway within the county, thereby eliminating the need for a designated system of facilities upon which the county could assist the local units of government in the construction and maintenance of local streets and highways.

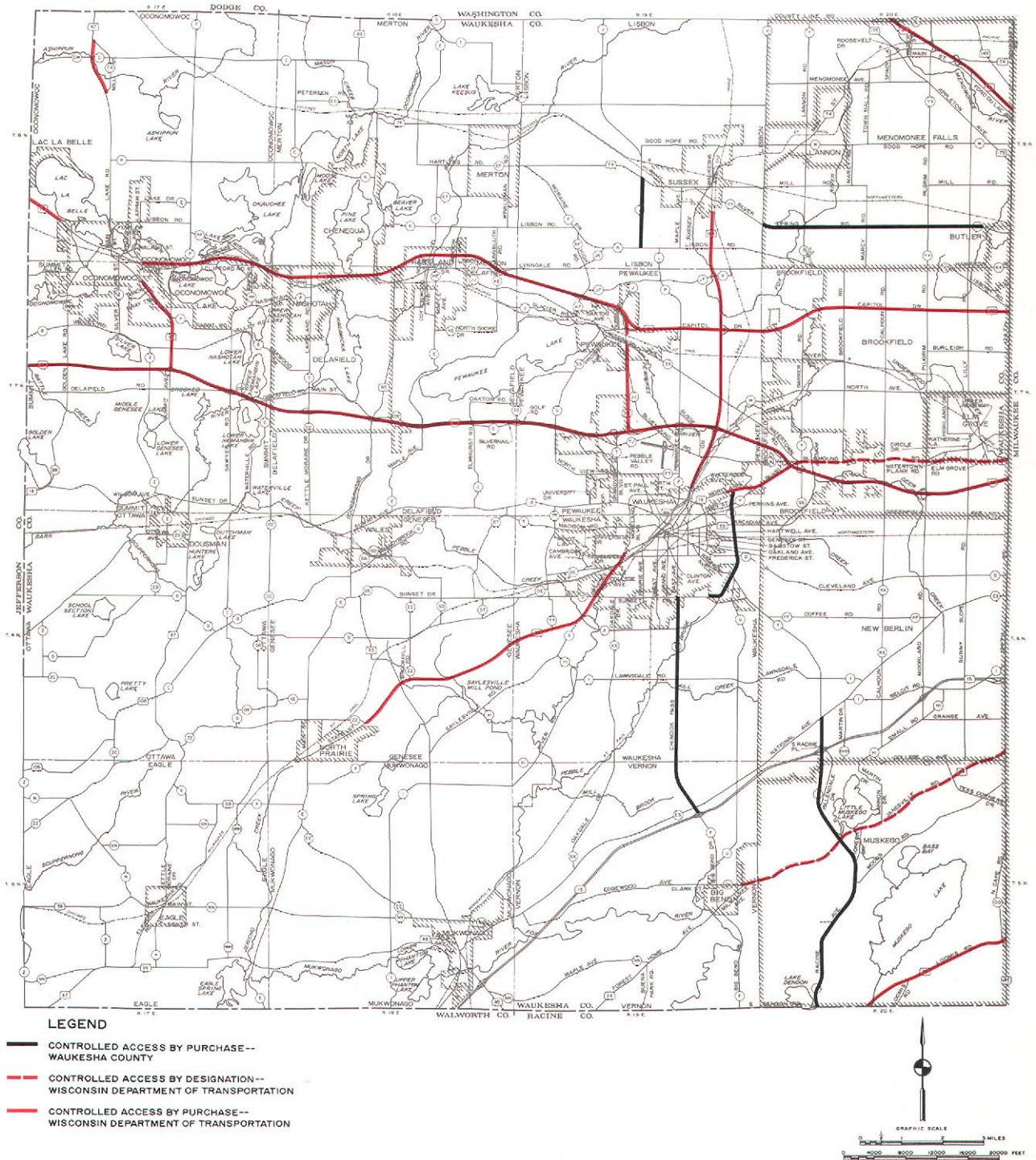
After World War II, the large increase in motor vehicle utilization brought about a public demand for further improvements in highway system development. To improve the safety and level of service on heavily traveled routes, the State Legislature in 1949 authorized the Highway Commission to designate, as controlled-access highways, rural portions of the state trunk highway system on which the average traffic potential was found to be in excess of 2,000 vehicles per day.

Once a highway had been so designated, the Highway Commission could, in the public interest, limit the number of driveways and other access points to abutting land. The total statewide controlled-access highway mileage was limited by statute to 1,500 miles. To date, 371 miles have been so designated, 12 miles within Waukesha County (see Map 8).

In 1955 the State Legislature created the state arterial system as an integrated, statewide, inter-regional, and intercommunity network of highways. The purpose of the statute was to facilitate the improvement of the most important portions of the total state trunk highway system. The statute specifically designated the arterial system by route description and limited it to 2,200 miles. Routes designated in Waukesha County totaled

Map 8

CONTROLLED-ACCESS HIGHWAYS IN WAUKESHA COUNTY: 1972



In order to improve safety and to provide a higher level of service on heavily traveled arterial highways, the Wisconsin Department of Transportation, Division of Highways, has purchased access control along 86 route miles of state trunk highways in Waukesha County. In addition, the State Highway Commission has formally designated 12 miles of controlled-access highway in the county. The Waukesha County Highway Department, in a related effort, has purchased access control along 24 route miles of county trunk highway facilities.

Source: Waukesha County Highway Department and Wisconsin Department of Transportation.

28 miles in length (see Map 9). Aside from the requirements of public hearings for changes, no differences significant to jurisdictional highway system planning or plan implementation exist between ordinary state trunk highways and state arterial highways; and throughout the remainder of this report, state arterial highways will be treated as integral and ordinary parts of the total state trunk highway system.

In 1961 the Legislature authorized the designation of 300 miles of state trunk highways as freeways or expressways.² Those highway segments carrying sufficient traffic to warrant ultimate construction of four or more moving lanes could be so designated. To date, 292 miles have been designated as freeways or expressways, of which 27 miles have been so designated within Waukesha County (see Map 10). In addition, the federal system of interstate and national defense highways, established in 1956, provides for 456 miles of interstate highways within Wisconsin, which are constructed to freeway standards. Of this total, 24.66 miles are located within Waukesha County (see Map 11).

Subject to certain statutory limitations, changes to the state trunk highway system may be made by the Highway Commission if the Commission deems that the public interest is best served by the changes. Procedures for making changes to

²In 1972 this mileage limitation was repealed by the Legislature.

the state trunk highway system are specified in the State Statutes. The requirements vary, depending on the mileage involved, whether or not federal aid systems are involved, and whether the proposed changes are on the state trunk highway system or the state arterial system. Table 2 summarizes these requirements.

The county board is authorized under Section 83 of the Wisconsin Statutes to designate as controlled-access highways those rural portions of the county trunk highway system having an average traffic potential of 1,000 vehicles per day. By cooperative agreement with city or village governing bodies, this authority may be extended into incorporated areas. The total mileage of such designated controlled-access highways in any county is limited to 35 percent of the county trunk mileage. The Waukesha County Board has not chosen to designate any portions of the county trunk highway system as controlled-access facilities. The board has, however, since 1962 controlled access along segments of the county highway system through a program of access right acquisition conducted in the normal course of right-of-way purchase for new construction and reconstruction of the system. Map 8 identifies the 23.45 miles of county trunk highway within Waukesha County for which access rights have been purchased to date.

Streets within corporate areas not on the state trunk or county trunk highway systems are under local jurisdiction for planning, design, construction, maintenance, and operation. Responsibility

Table 2

LEGAL CONSTRAINTS GOVERNING CHANGES TO THE STATE TRUNK HIGHWAY (STH) AND STATE ARTERIAL HIGHWAY SYSTEMS: JANUARY 1, 1972

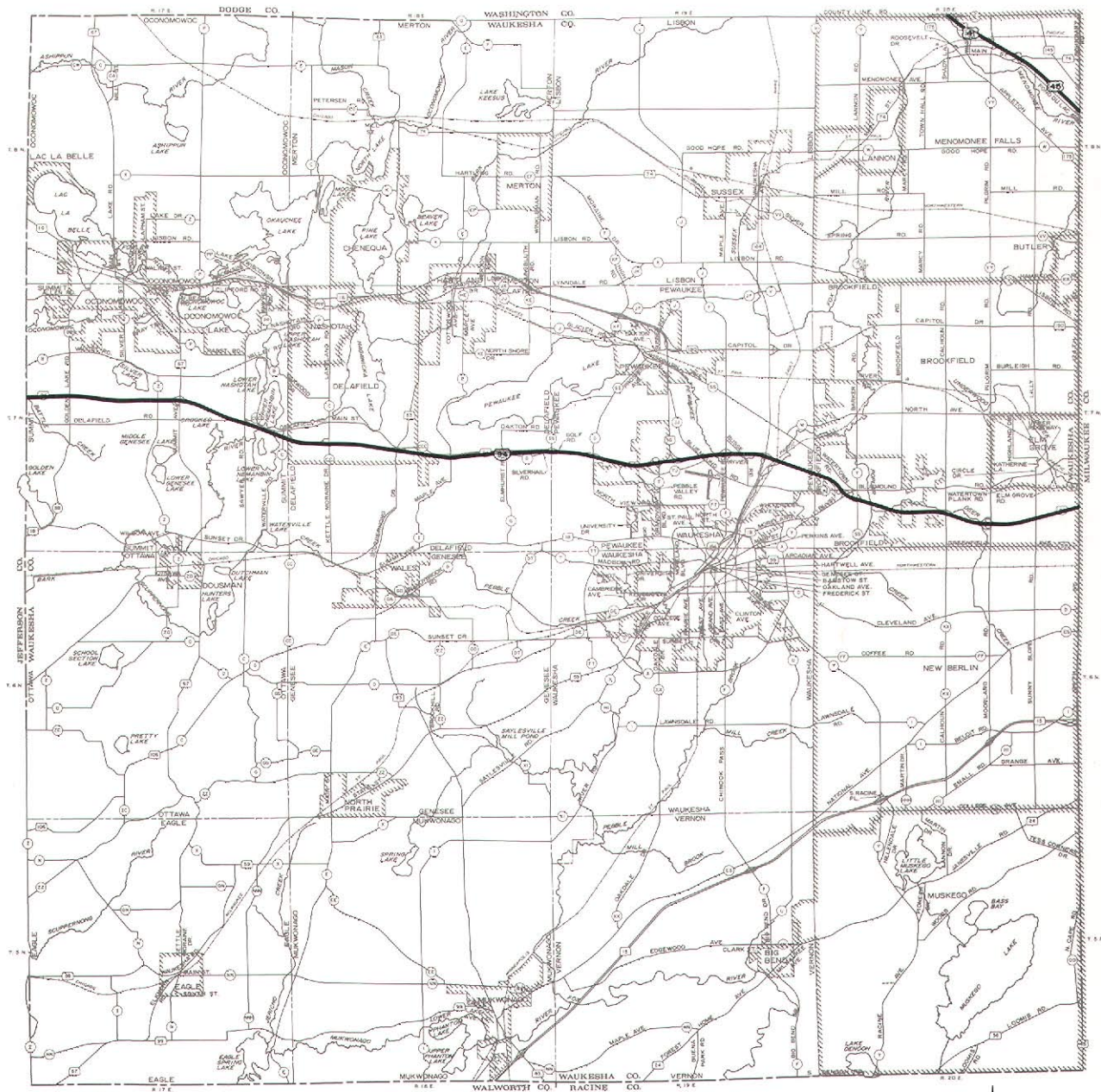
Highway System	Statutory Reference ^a	Length Constraint	Public Hearing Required	County Board Approval Required
STH	84.02(3)(a)	Less than 2 1/2 Miles	No	No
STH	84.02(3)(a)	2 1/2 Miles or More	Yes	Yes
STH & State Arterial. . .	84.02(3)(a)	More than 5 Miles	Yes	Yes
State Arterial	84.025(3)	Less than 5 Miles	No	No
State Arterial	84.025(3)	More than 5 Miles but no Removal From State Trunk Highway System	Yes	No
State Arterial	84.025(3)	More than 5 Miles and any Removal From State Trunk Highway System	Yes	Yes

^aAll references are to the 1971 Wisconsin Statutes.

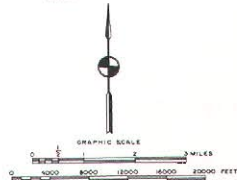
Source: Wisconsin Department of Transportation and SEWRPC.

Map 9

DESIGNATED STATE ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1972



LEGEND
— STATE ARTERIAL HIGHWAY

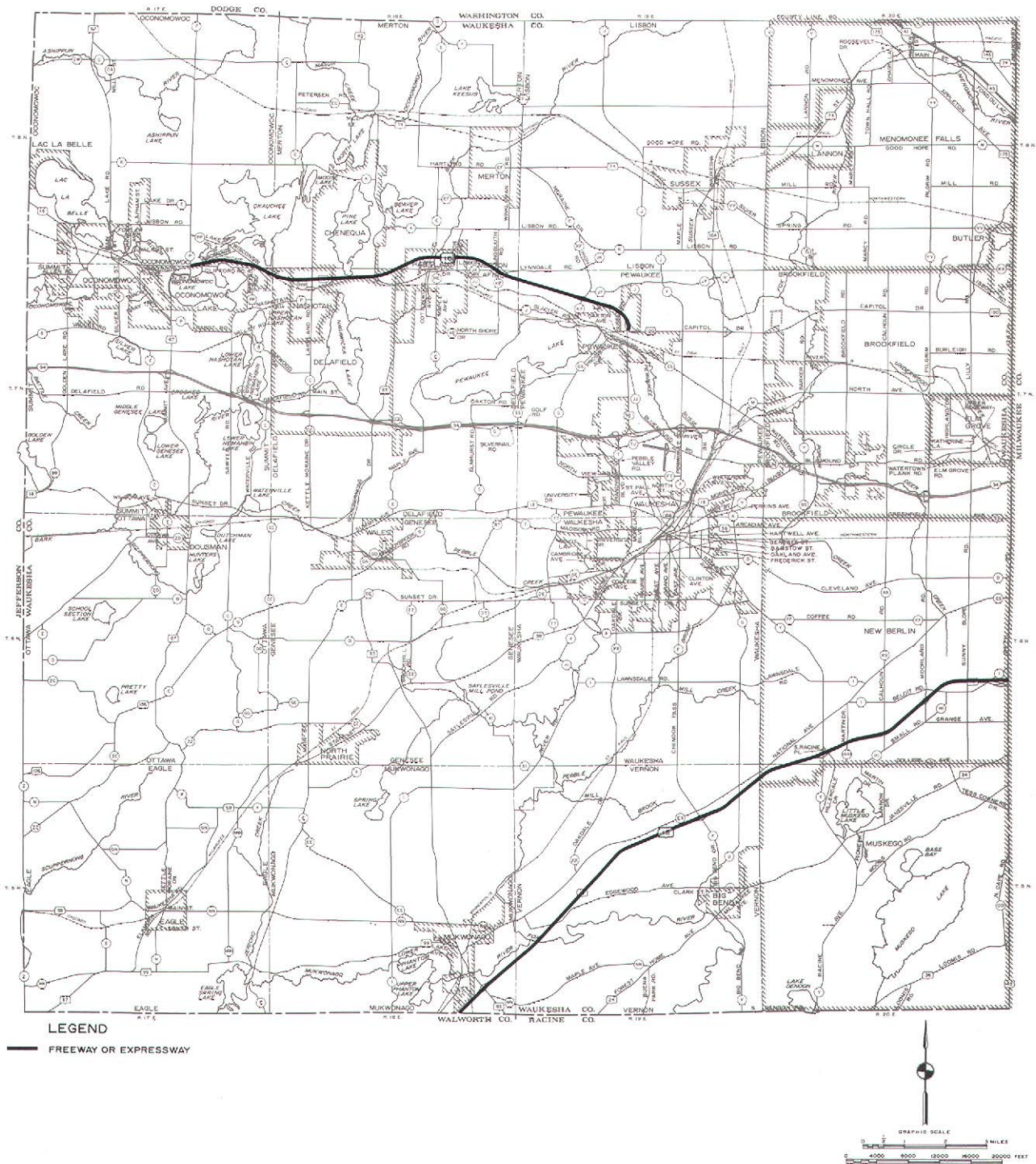


In 1955 the Wisconsin Legislature provided for the creation of the state arterial highway system to facilitate improvement of the most important portions of the total state trunk highway system. Within Waukesha County this system includes about 28 route-miles of facilities exclusively along IH 94 and USH 41-45.

Source: Wisconsin Department of Transportation and SEWRPC.

Map 10

DESIGNATED FREEWAYS AND EXPRESSWAYS IN WAUKESHA COUNTY: 1972

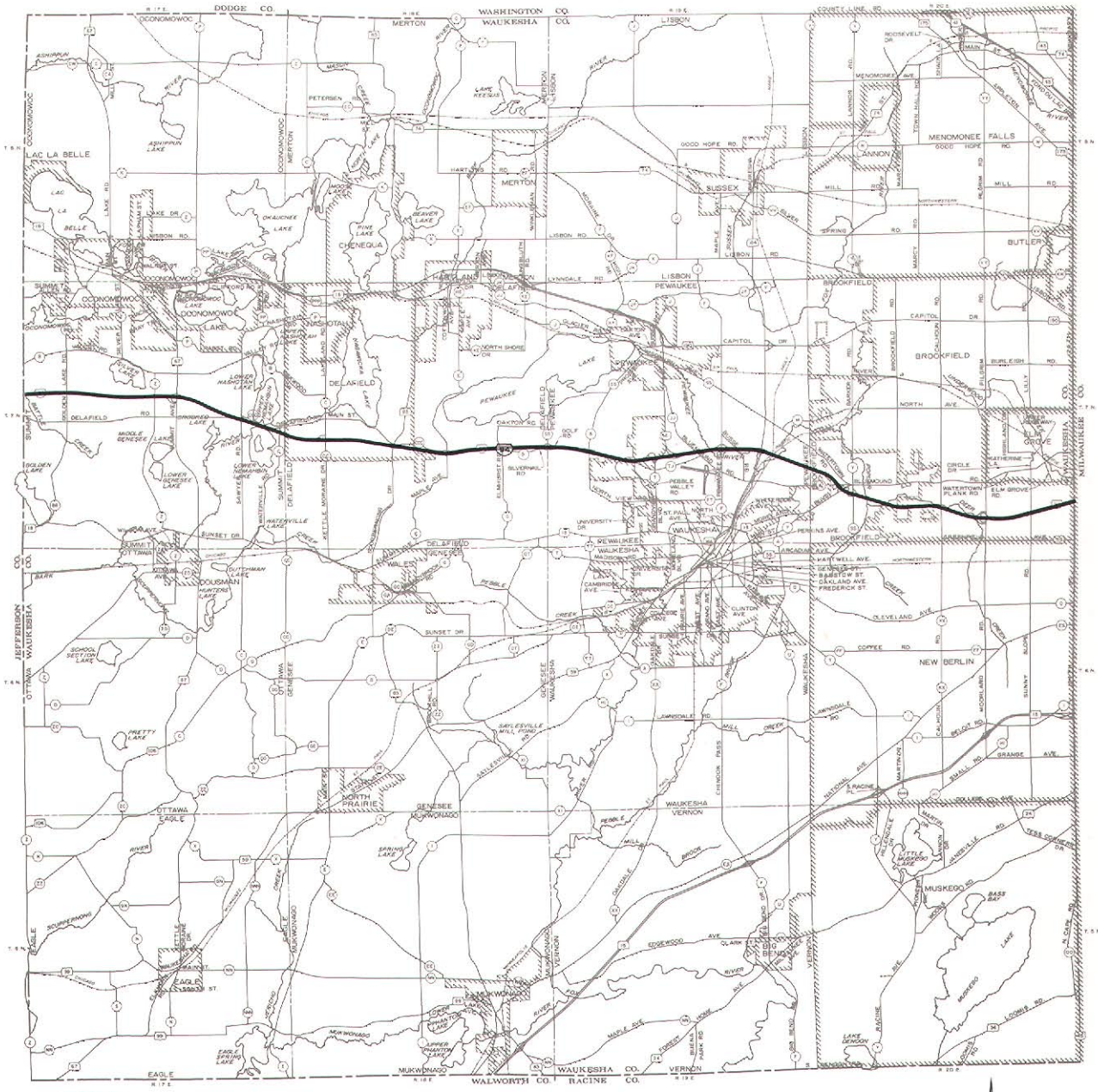


Of the 292 miles of state trunk highways officially designated as freeways or expressways in Wisconsin by the State Highway Commission, about 27 miles have been designated within Waukesha County. These 27 miles are located along two state trunk highway facilities, STH 15 through the City of New Berlin and the Towns of Vernon and Mukwonago and USH 16 from Pewaukee to Oconomowoc.

Source: Wisconsin Department of Transportation and SEWRPC.

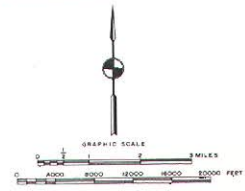
Map 11

DESIGNATED INTERSTATE HIGHWAYS IN WAUKESHA COUNTY: 1972



LEGEND

— INTERSTATE HIGHWAY



In 1956 the U. S. Congress created the federal system of interstate and defense highways to connect principal metropolitan and industrial centers of the United States. About 25 miles of such interstate highway is designated within Waukesha County, consisting entirely of existing IH 94 which traverses the county in an east-west direction.

Source: Wisconsin Department of Transportation and SEWRPC.

for administration of the municipal programs generally is assigned to the city or village engineer or to an engineering consultant acting in this capacity.

CURRENT STATUS

Current Jurisdictional Highway Mileage

As of January 1, 1972, there were in Wisconsin 11,922 miles of state trunk highways, of which 456 miles consisted of interstate highways and 524 miles consisted of connecting streets. In Waukesha County there were 249 miles of state trunk highways, of which 25 miles consisted of interstate highways and 15 miles of other free-ways currently open to travel. In addition, there were 18 miles of connecting streets over which state trunk highways were routed (see Map 12); and there were, as of January 1, 1972, in Waukesha County 437 miles of county trunk highways (see Map 13).

There were, as of January 1, 1972, a total of 1,984 miles of streets and highways open to traffic in Waukesha County. Of this total, 649 miles, or 33 percent, were determined to comprise the functional arterial street and highway network, and these 649 miles were jurisdictionally categorized as shown in Table 3. The configuration of the arterial system within Waukesha County is shown on Map 14. Table 4 summarizes existing mileages by municipality.

Table 3

**PERCENTAGE DISTRIBUTION OF
EXISTING ARTERIAL STREET AND HIGHWAY MILEAGE
IN WAUKESHA COUNTY BY JURISDICTIONAL CATEGORY
JANUARY 1972**

Jurisdictional Category	Number of Miles	Percent of Total
Interstate Highways	24.66	3.8
State Trunk-Freeway	13.11 ^a	2.0
State Trunk-Nonfreeway	192.84	29.7
Connecting Streets	18.03	2.8
County Trunk Highways	267.86	41.3
Local Arterial Streets	132.01	20.4
Total	648.51	100.0

^aComprised of STH 15 and USH 41-45.

Source: Wisconsin Department of Transportation and SEWRPC.

Current Federal Aid Mileages

As of January 1, 1972, there was a total of 540 miles of federal aid routes designated within Waukesha County. Of this total, 25 miles were located on the federal aid interstate system; 157 were located on the federal aid primary system; 334 were located in the federal aid secondary system, and 24 were located on the TOPICS system. The total federal aid system mileage open to traffic as of January 1972 was 491 miles. Of this mileage, 25 miles consisted of federal aid interstate system mileage; 118 miles consisted of federal aid primary system mileage; 324 miles consisted of federal aid secondary system mileage; and 24 miles consisted of TOPICS system mileage. The difference between the designated mileage on the federal aid systems and the miles open to travel is accounted for by new routes, primarily freeways which have been officially designated as being on federal aid systems and which are in various stages of planning, preliminary design, or construction but are not yet open to traffic. The configurations of these federal aid systems within Waukesha County are shown on Map 15, the sections on the federal aid systems which are not open to traffic being indicated by broken lines. Table 5 sets forth the designated federal aid system mileages by municipality.

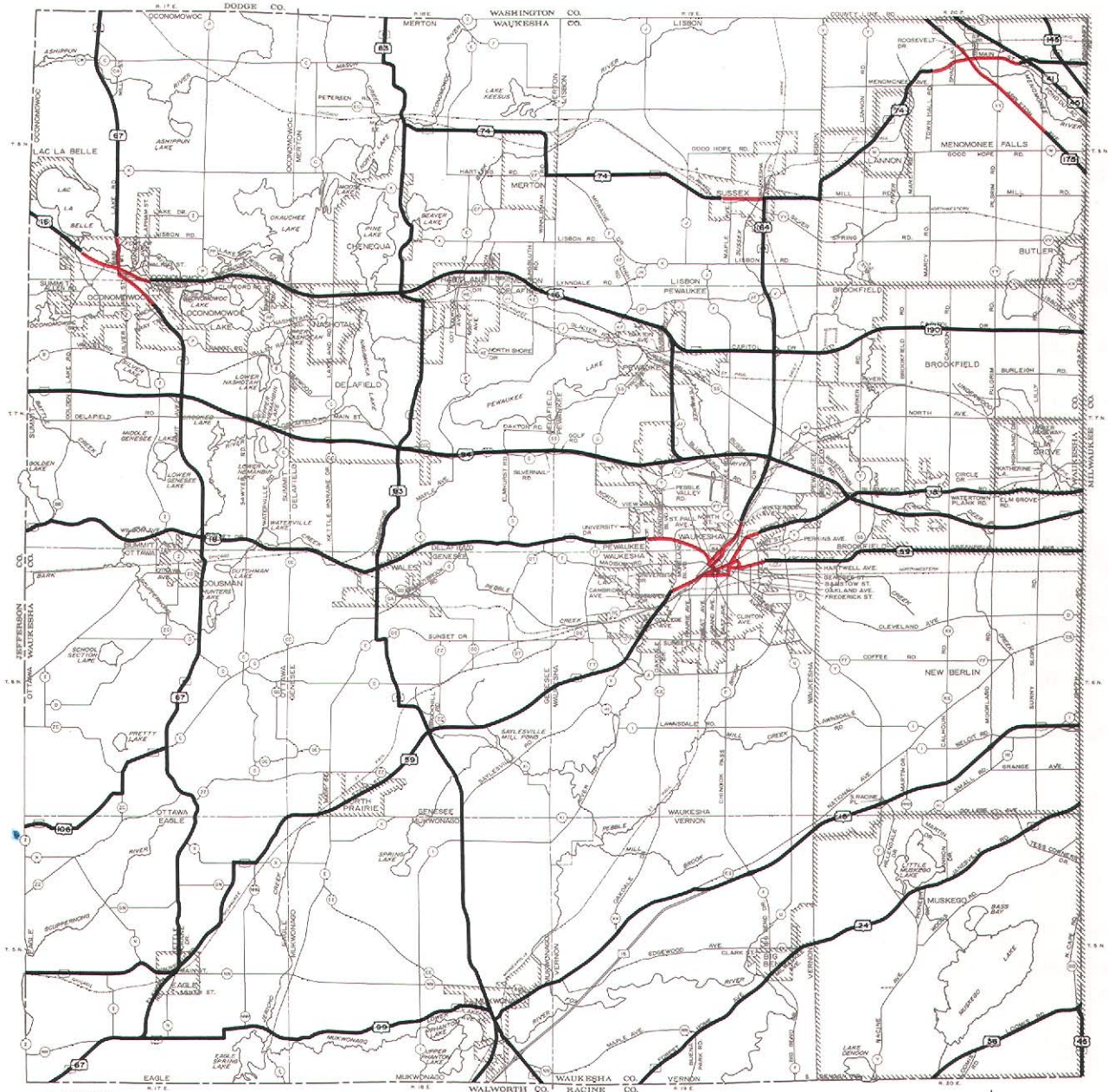
SUMMARY

As of January 1, 1972, there was a total of 1,984 miles of streets and highways open to traffic within Waukesha County. Of this total, 649 miles, or 33 percent, comprised the functional arterial street and highway network. The responsibility for the design, construction, operation, and maintenance of this arterial street and highway network rested with three levels of government; the state, the county, and the local municipalities. Approximately 249 miles, or 38 percent of the arterial street and highway network, was under state jurisdiction, being comprised of interstate highways, state trunk highways, and connecting streets. About 268 miles, or 41 percent, was under county jurisdiction, being comprised of county trunk highways;³ and about 132 miles, or 21 percent, was under city or village jurisdiction, being comprised of local arterial streets and highways.

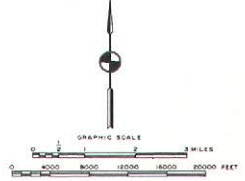
³There were a total of about 438 miles of county trunk highway in Waukesha County in 1972, of which about 170 miles were located on facilities which were not classified as arterials under the study.

Map 12

STATE TRUNK HIGHWAY AND CONNECTING STREET SYSTEM IN WAUKESHA COUNTY: 1972



LEGEND
 — STATE TRUNK HIGHWAY
 — CONNECTING STREET

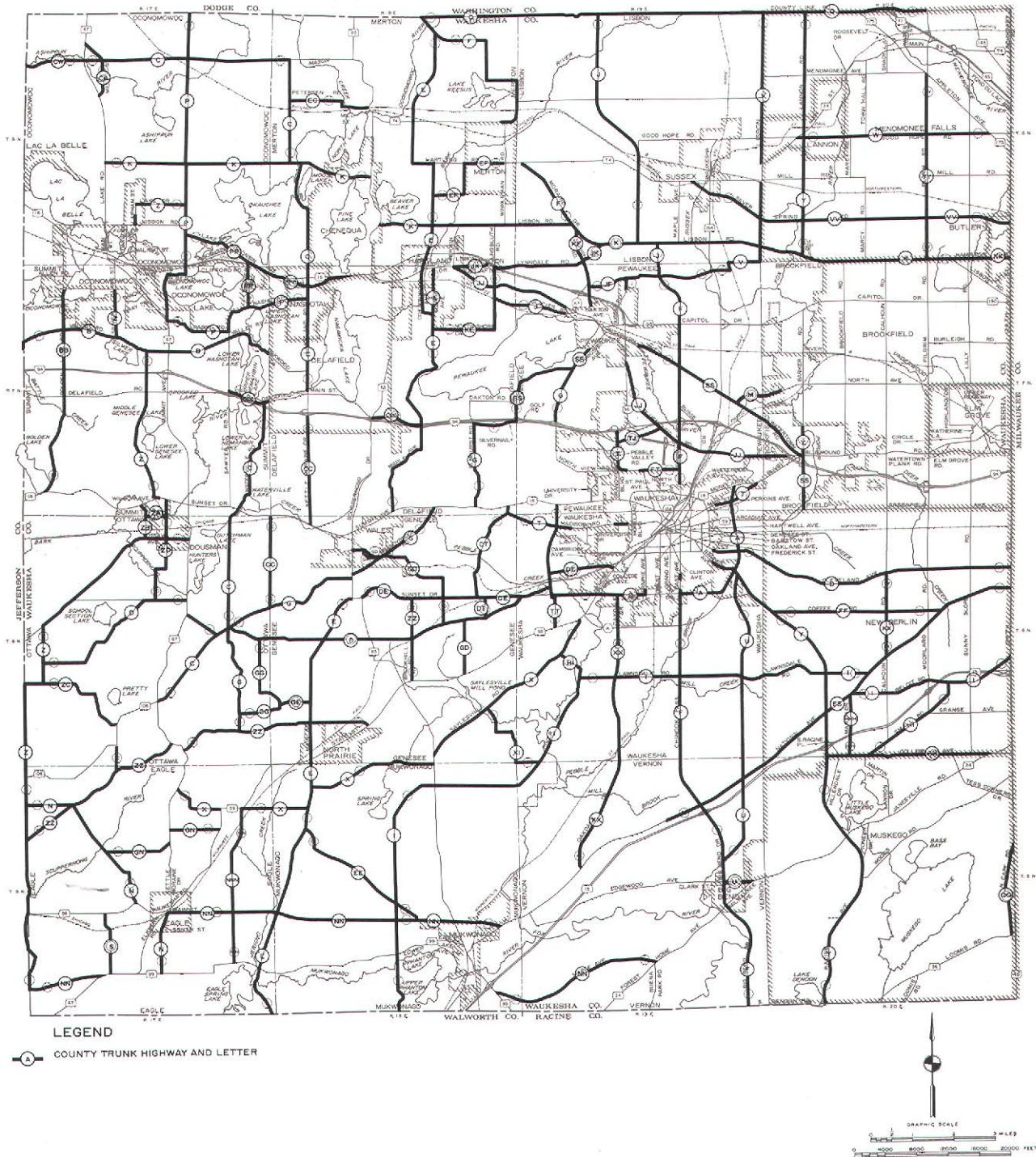


In Waukesha County, the existing system of state trunk highways and connecting streets over which state trunk highways are routed consists of about 249 miles. Of these 249 miles, 18 miles are connecting streets. Such connecting streets exist in the Cities of Oconomowoc and Waukesha and the Villages of Menomonee Falls and Sussex and provide for system continuity. These connecting streets are maintained at the expense of the municipality in which they are located, with nominal reimbursement for such expense from the state at the rate of \$500 per mile per year.

Source: Wisconsin Department of Transportation.

Map 13

COUNTY TRUNK HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1972

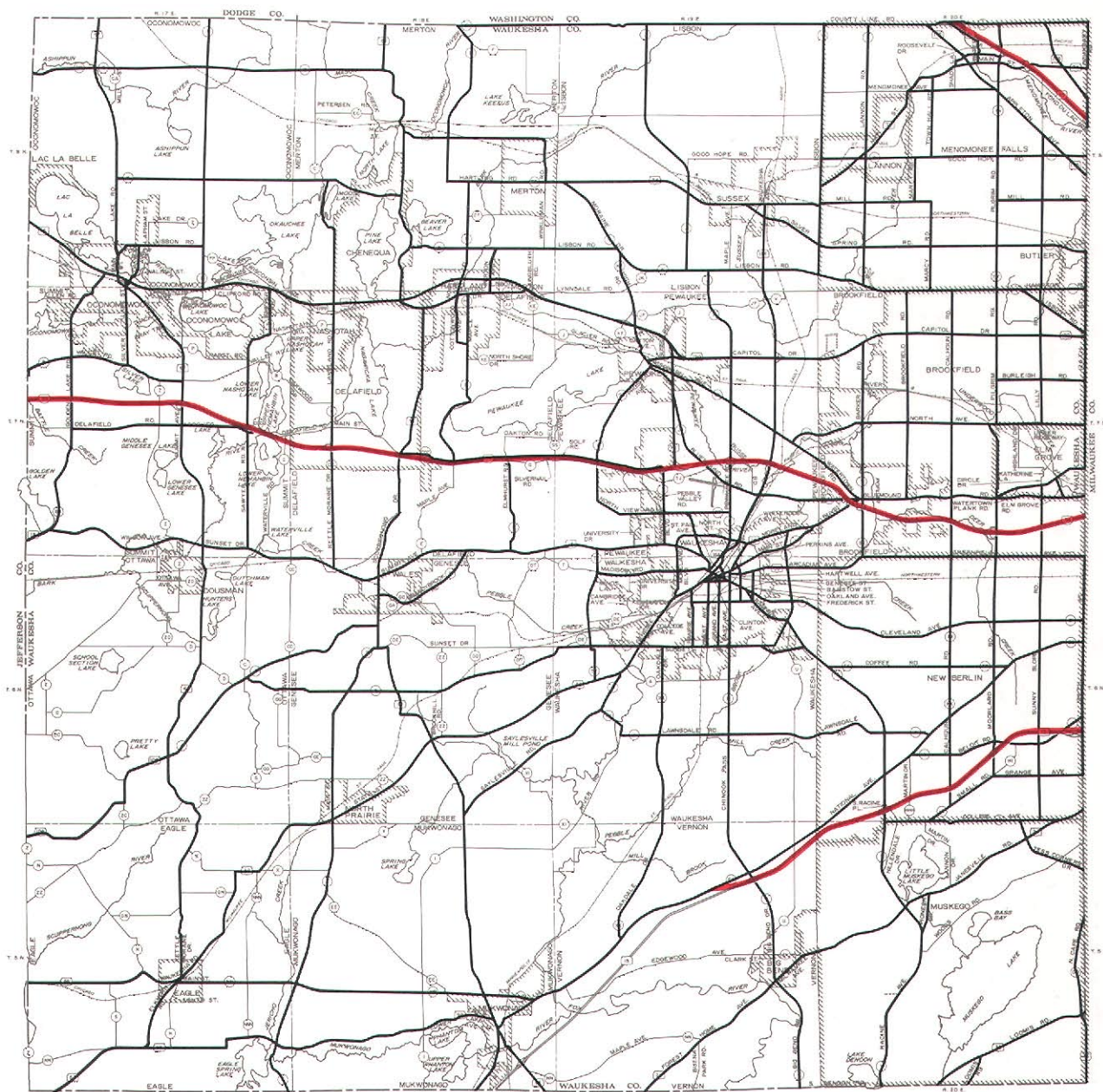


Within Waukesha County there are presently a total of about 437 miles of county trunk highways, 270 miles of which are on the existing arterial street and highway system. The county trunk highways are discontinuous through urban areas within the county, and therefore do not form an integrated system.

Source: Wisconsin Department of Transportation.

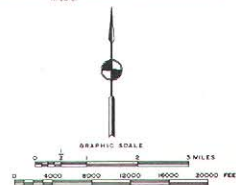
Map 14

ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1972



LEGEND

- FREEWAY
- STANDARD ARTERIAL



The 649 miles of streets and highways shown on this map comprise the existing arterial street and highway system in Waukesha County. Of this total, 249 miles are state trunk highways or connecting streets, 268 miles are county trunk highways, and 132 miles are local streets and highways. Because of the nature of the local streets and highways, and the piece-meal additions and deletions which have been made in the county trunk highway system over time, only the state trunk highway system represents a truly integrated arterial street and highway system.

Source: SEWRPC.

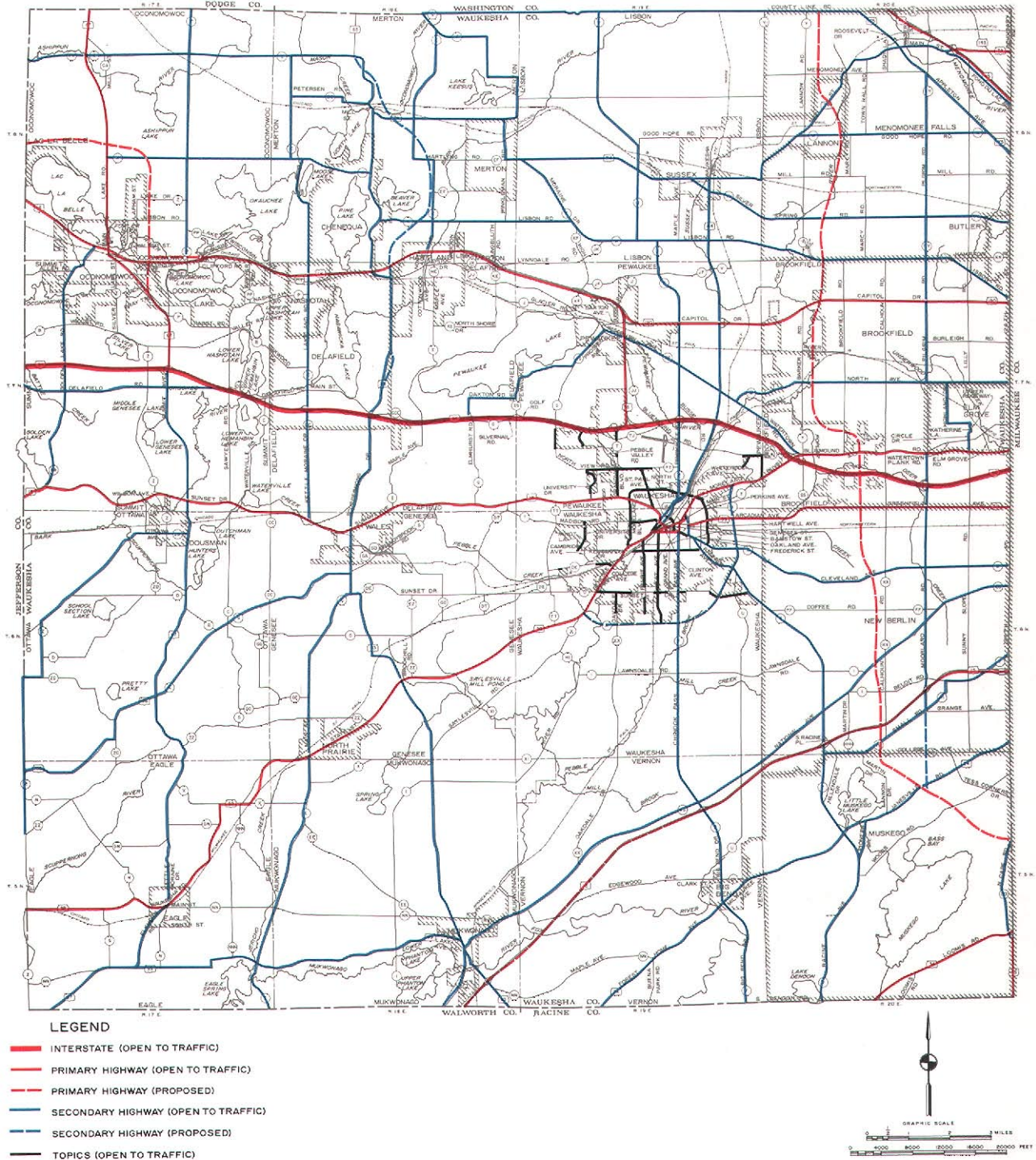
Table 4

**EXISTING JURISDICTIONAL HIGHWAY SYSTEM MILEAGE IN WAUKESHA COUNTY BY CIVIL DIVISION
JANUARY 1972**

Civil Division	Existing Arterials (Miles)							Existing Nonarterials (Miles)			Total
	Interstate Highway	State Trunk Highway		Connecting Street	County Trunk Highway	Local Trunk Highway	Subtotal	County Trunk Highway	Local Trunk Highway	Subtotal	
		Freeway	Nonfreeway								
CITIES											
Brookfield	4.12	--	8.73	--	0.38	32.04	45.27	--	163.08	163.08	208.35
Delafield	3.00	--	4.39	--	2.15	0.48	10.02	0.93	29.86	30.79	40.81
Muskego	--	--	11.38	--	10.97	3.67	26.02	--	82.34	82.34	108.36
New Berlin	--	6.73	--	--	35.17	19.15	65.33	2.40	122.51	124.91	190.24
Oconomowoc	--	--	1.56	3.40	--	3.81	8.77	0.10	26.59	26.69	35.46
Waukesha	0.71	--	1.93	8.71	5.52	20.72	37.59	1.33	97.64	98.97	136.56
Subtotal	7.83	6.73	32.27	12.11	54.19	79.87	193.00	4.76	522.02	526.78	719.78
VILLAGES											
Big Bend	--	--	0.85	--	0.82	--	1.67	0.37	4.35	4.72	6.39
Butler	--	--	--	--	1.12	0.71	1.83	--	8.86	8.86	10.69
Chenequa	--	--	4.75	--	2.86	--	7.61	0.30	0.86	1.16	8.77
Dousman	--	--	0.24	--	--	--	0.24	2.20	1.13	3.33	3.57
Eagle	--	--	2.29	--	0.60	--	2.89	0.51	3.38	3.89	6.78
Elm Grove	--	--	2.04	--	--	4.74	6.78	--	34.28	34.28	41.06
Hartland	--	--	1.57	--	2.37	2.02	5.96	0.45	6.83	7.28	13.24
Lac LaBelle	--	--	--	--	--	--	--	--	2.80	2.80	2.80
Lannon	--	--	2.88	--	3.18	0.85	6.91	--	3.04	3.04	9.95
Menomonee Falls	--	3.66	7.16	4.93	26.46	21.67	63.88	--	109.22	109.22	173.10
Merton	--	--	1.29	--	1.00	--	2.29	0.10	3.18	3.28	5.57
Mukwonago	--	--	3.57	--	1.24	--	4.81	--	9.32	9.32	14.13
Nashotah	--	--	0.99	--	1.81	--	2.80	1.62	2.38	4.00	6.80
North Prairie	--	--	1.90	--	1.00	--	2.90	--	2.01	2.01	4.91
Oconomowoc Lake	--	--	0.04	--	1.46	--	1.50	0.92	5.27	6.19	7.69
Pewaukee	--	--	1.72	--	0.36	3.58	5.66	0.26	10.52	10.78	16.44
Sussex	--	--	1.04	0.99	0.80	--	2.83	--	8.82	8.82	11.65
Wales	--	--	1.44	--	1.60	--	3.04	0.46	7.22	7.68	10.72
Subtotal	--	3.66	33.77	5.92	46.68	33.57	123.60	7.19	223.47	230.66	354.26
TOWNS											
Brookfield	2.23	--	3.92	--	4.22	1.47	11.84	--	24.64	24.64	36.48
Delafield	3.06	--	7.15	--	10.01	2.40	22.62	9.26	13.03	22.29	44.91
Eagle	--	--	19.23	--	4.56	--	23.79	23.83	11.98	35.81	59.60
Genesee	--	--	13.10	--	16.25	--	29.35	19.91	29.66	49.57	78.92
Lisbon	--	--	6.30	--	22.23	--	28.53	2.30	63.94	66.24	94.77
Merton	--	--	7.58	--	13.58	2.81	23.97	10.49	43.76	54.25	78.22
Mukwonago	--	--	11.16	--	8.25	--	19.41	16.85	25.16	42.01	61.42
Oconomowoc	--	--	7.91	--	16.35	1.34	25.60	4.93	52.47	57.40	83.00
Ottawa	--	--	9.19	--	4.73	--	13.92	29.27	17.23	46.50	60.42
Pewaukee	5.41	--	15.77	--	20.09	1.78	43.05	11.07	37.42	48.49	91.54
Summit	6.13	--	12.81	--	10.65	8.16	37.75	13.39	30.46	43.85	81.60
Vernon	--	2.72	8.58	--	11.39	--	22.69	6.58	38.87	45.45	68.14
Waukesha	--	--	4.10	--	24.68	0.61	29.39	9.72	31.44	41.16	70.55
Subtotal	16.83	2.72	126.80	--	166.99	18.57	331.91	157.60	420.06	577.66	909.57
Total	24.66	13.11	192.84	18.03	267.86	132.01	648.51	169.55	1,165.55	1,335.10	1,983.61

Source: Wisconsin Department of Transportation and SEWRPC.

FEDERAL AID HIGHWAY SYSTEMS IN WAUKESHA COUNTY: JANUARY 1972



Highways designated as part of the federal aid highway systems are eligible for federal aid in partial support of improvements. There are presently 540 miles of federal aid routes open to traffic or officially designated within Waukesha County, including 25 miles on the federal aid interstate system, 157 miles on the federal aid primary system, 334 miles on the federal aid secondary system, and 24 miles on the federal aid primary Type II (TOPICS) system. The interstate system consists of IH 94. The primary system includes USH 16, USH 18, STH 15, STH 36, USH 41-45, STH 59, part of STH 67, and STH 190. The secondary system includes STH 24, USH 45, part of STH 67, STH 74, STH 83, STH 99, STH 106, STH 75, and several significant county trunk highways.

Source: Wisconsin Department of Transportation and SEWRPC.

Table 5

FEDERAL AID ROUTE MILEAGE IN WAUKESHA COUNTY BY CIVIL DIVISION
JANUARY 1972^a

Civil Division	Federal Aid Interstate Route Mileage	Federal Aid Primary Route Mileage							Federal Aid Secondary Route Mileage						TOPICS Route Mileage	Total	
		State Trunk Highway				Connecting Street	County Trunk Highway	Local Street	Subtotal	State Trunk Highway		Connecting Street	County Trunk Highway	Local Street			Subtotal
		Freeway		Open to Traffic	Nonfreeway					Officially Designated	Open to Traffic						
		Open to Traffic	Officially Designated														
CITIES																	
Brookfield	4.12	5.07	--	8.73	--	--	--	13.80	--	--	--	0.38	13.33	13.71	--	31.63	
Delafield	3.00	--	--	0.97	--	--	--	0.97	2.23	3.42	--	1.82	0.48	7.95	--	11.92	
Muskego	--	4.04	--	4.80	--	--	--	8.84	--	6.58	--	9.29	0.90	16.77	--	25.61	
New Berlin	--	6.04	6.73	3.61	--	--	--	16.38	--	0.67	--	23.12	5.04	28.83	--	45.21	
Oconomowoc	--	0.60	--	1.56	3.40	--	--	5.56	--	--	--	--	1.43	1.43	--	6.99	
Waukesha	0.71	--	--	1.93	5.32	--	--	7.25	--	--	1.26	1.71	3.43	6.40	23.96	38.32	
Subtotal	7.83	15.75	6.73	21.60	8.72	--	--	52.80	2.23	10.67	1.26	36.32	24.61	75.09	23.96	159.68	
VILLAGES																	
Big Bend	--	--	--	--	--	--	--	--	--	0.85	--	0.82	--	1.67	--	1.67	
Butler	--	--	--	--	--	--	--	--	--	--	--	0.60	--	0.60	--	0.60	
Chenequa	--	--	--	1.09	--	--	--	1.09	--	3.66	--	2.86	--	6.52	--	7.61	
Dousman	--	--	--	0.06	--	--	--	0.06	--	0.18	--	0.77	--	0.95	--	1.01	
Eagle	--	--	--	1.09	--	--	--	1.09	--	1.20	--	--	--	1.20	--	2.29	
Elm Grove	--	--	--	2.04	--	--	--	2.04	--	--	--	--	2.27	2.27	--	4.31	
Hartland	--	--	--	1.49	--	--	--	1.49	0.08	0.08	--	0.26	--	0.42	--	1.91	
Lac LaBelle	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Lannon	--	1.87	--	--	--	--	--	1.87	--	2.88	--	1.16	--	4.04	--	5.91	
Menomonee Falls	--	4.57	3.66	1.37	--	--	--	9.60	--	3.48	4.93	18.77	3.39	30.57	--	40.17	
Merton	--	--	--	--	--	--	--	--	--	1.29	--	0.10	--	1.39	--	1.39	
Mukwonago	--	--	--	1.89	--	--	--	1.89	--	1.68	--	--	--	1.68	--	3.57	
Nashotah	--	--	--	0.99	--	--	--	0.99	--	--	--	1.81	--	1.81	--	2.80	
North Prairie	--	--	--	1.90	--	--	--	1.90	--	--	--	1.00	--	1.00	--	2.90	
Oconomowoc Lake	--	0.09	--	0.04	--	--	--	0.13	--	--	--	--	--	--	--	0.13	
Pewaukee	--	--	--	1.72	--	--	--	1.72	--	--	--	0.24	1.42	1.66	--	3.38	
Sussex	--	--	--	--	--	--	--	--	--	1.04	0.99	0.80	--	2.83	--	2.83	
Wales	--	--	--	0.91	--	--	--	0.91	--	0.53	--	--	--	0.53	--	1.44	
Subtotal	--	6.53	3.66	14.59	--	--	--	24.78	0.08	16.87	5.92	29.19	7.08	59.14	--	83.92	
TOWNS																	
Brookfield	2.23	1.76	--	3.92	--	--	--	5.68	--	--	--	1.58	--	1.58	--	9.49	
Delafield	3.06	--	--	4.14	--	--	--	4.14	1.68	3.01	--	2.16	1.68	8.53	--	15.73	
Eagle	--	--	--	7.18	--	--	--	7.18	--	12.05	--	3.40	--	15.45	--	22.63	
Genesee	--	--	--	6.63	--	--	--	6.63	--	6.47	--	5.94	--	12.41	--	19.04	
Lisbon	--	--	--	--	--	--	--	--	--	6.30	--	19.90	--	26.20	--	26.20	
Merton	--	--	--	1.05	--	--	--	1.05	6.17	6.53	--	22.19	--	34.89	--	35.94	
Mukwonago	--	1.92	--	1.47	--	--	--	3.39	--	9.69	--	3.99	--	13.68	--	17.07	
Oconomowoc	--	7.25	--	7.91	--	--	--	15.16	--	--	--	16.25	--	16.25	--	31.41	
Ottawa	--	--	--	0.23	--	--	--	0.23	--	8.96	--	10.27	--	19.23	--	19.46	
Pewaukee	5.41	--	--	10.19	--	--	--	10.19	--	5.58	--	12.58	--	18.16	--	33.76	
Summit	6.13	--	--	9.10	--	--	--	9.10	--	3.71	--	5.01	4.99	13.71	--	28.94	
Vernon	--	5.03	2.72	4.37	--	--	--	12.12	--	4.21	--	8.52	--	12.73	--	24.85	
Waukesha	--	--	--	4.10	--	--	--	4.10	--	--	--	7.44	--	7.44	--	11.54	
Subtotal	16.83	15.96	2.72	60.29	--	--	--	78.97	7.85	66.51	--	119.23	6.67	200.26	--	296.06	
Total	24.66	38.24	13.11	96.48	8.72	--	--	156.55	10.16	94.05	7.18	184.74	38.36	334.49	23.96	539.66	

^aIn August 1972, 26 miles of arterial facilities located in the Cities of Brookfield, Muskego, New Berlin, and Waukesha and the Villages of Elm Grove and Menomonee Falls were placed on the federal aid urban system.

Source: U. S. Department of Transportation, Federal Highway Administration; Wisconsin Department of Transportation; and SEWRPC.

Superimposed on the state, county, and local trunk highways and arterial streets were 540 miles of federal aid routes, of which about 25 miles, or 5 percent, consisted of federal aid interstate routes; 157 miles, or 29 percent consisted of federal aid primary routes; 334 miles, or 62 percent, consisted of federal aid secondary routes; and 24 miles, or 4 percent, consisted of federal aid primary Type II (TOPICS) routes.

The location and configuration of these jurisdictional highway systems and supporting aid routes were the result of a long process of historical evolution influenced by many complex political, administrative, financial, and engineering considerations and constraints. The state trunk and county trunk highway networks were originally conceived by the State Legislature as integrated highway systems and were originally so delineated and mapped. The state trunk highway network, however, was last studied and revised as an integrated system by the State Legislature in 1923; and the county trunk highway system, by the State Highway Commission of Wisconsin and the Waukesha County Board in 1925. Many piecemeal additions and deletions have been made to these

two jurisdictional highway networks since 1925. Consequently, these two important networks no longer represent fully integrated and continuous arterial highway systems capable of serving, in the most efficient manner possible, the areawide land use and traffic service functions originally intended. Moreover, since the federal aid highway networks are intended to assist in implementing the state and county trunk highway systems and, therefore, reflect the pattern of these systems, these federal aid networks are also in need of revision.

It is, therefore, appropriate at this time to study and analyze the jurisdictional highway systems within Waukesha County and, guided by the functional transportation system plan prepared by the Southeastern Wisconsin Regional Planning Commission and adopted by the Highway Commission of Wisconsin and the Waukesha County Board, to recommend changes necessary to reclassify and regroup these networks into complete, fully coordinated, and continuous systems able to meet the present and expected future arterial highway traffic demands within Waukesha County.

Chapter IV

FUNCTIONAL CRITERIA FOR JURISDICTIONAL CLASSIFICATION

INTRODUCTION

A total street and highway system must serve several important functions. It must provide for the safe and efficient movement of traffic throughout the area served, provide for the access of this traffic to the various land uses to be served, provide integral parts of the storm water drainage system, provide rights-of-way for various utility facilities, and provide space for the admittance of light and air to individual building sites. Because the two most important of these functions—safe and efficient traffic movement and land access—are basically conflicting, street and highway systems are, for planning purposes, divided into functional subsystems according to the primary character of service which the individual facilities comprising the subsystems are expected to provide. This functional subdivision of street and highway systems is done on an areawide basis without regard to governmental jurisdiction or fiscal responsibility. Such a functional grouping or classification is essential to sound transportation planning, not only because it identifies the primary function which any particular facility should serve, but also because it provides a means for defining travel paths for the flow of trips through the total system. The definition of such paths is essential to any traffic assignment made to determine the ability of the system to carry existing and probable future traffic loads.

Three functional groups of street and highway facilities are normally recognized in functional classification for planning purposes: arterial, collector, and local (land access). Only the first of these groups is of direct concern in areawide planning. The primary function of the arterial facilities is to expedite the movement of vehicular traffic. Access to abutting property is a secondary function of some types of arterials and should always be subordinate to the primary function of traffic movement. Arterial streets and highways include freeways, expressways, and certain parkways, as well as those facilities commonly termed "standard" arterials. Together, the individual arterial facilities must form an integrated, areawide system, the geographic configu-

ration and capacity of which are adequate to carry the traffic loads generated by the existing and probable future land use pattern to be served.

Arterial street and highway facilities must form an integrated system over relatively large areas comprised of many local units of government. The degree of areawide importance of the individual facilities comprising the total system varies, with several levels as well as many units of government having interests in, and responsibilities for, the planning, construction, maintenance, and operation of the total arterial street and highway system. Consequently, it becomes necessary to assign jurisdictional responsibility for the various existing and proposed facilities comprising the total system to the various levels and units of government involved.

Just as the functional classification of highway facilities is essential to transportation plan preparation, the jurisdictional classification of such facilities is essential to plan implementation. In addition, the assignment of jurisdictional responsibility for the various portions of the total arterial street and highway system is essential to achieving the important objectives already set forth in Chapter I of this report.

As previously noted, the preparation of an areawide plan for the physical development of the total transportation system must necessarily precede any assignment of jurisdictional responsibility. A plan for the physical improvement of the transportation system is required to identify the existing arterial street and highway system, determine its existing deficiencies, and recommend specific additions and improvements required to serve existing and forecast traffic demands. Such a transportation plan having been prepared, it then becomes necessary, as the first step toward plan implementation, to specify the governmental level and unit which should have responsibility for acquiring, constructing, maintaining, and operating each of the existing and proposed facilities which comprise the total physical system. That is, the functional highway plan must be converted to a jurisdictional plan if plan implementation is

to be achieved. It therefore becomes necessary to develop a set of criteria which may be used as a basis for the assignment of jurisdictional responsibility for the various facilities comprising the total arterial street and highway system. Functional variations within the total arterial system provide a logical basis for the establishment of such criteria.

PURPOSE AND OBJECTIVE OF THE CRITERIA

The purpose of the jurisdictional classification criteria is to provide an objective and rational basis for the assignment of jurisdictional responsibility for the various segments of an existing and proposed arterial street and highway system to the various levels of government concerned. The system is represented by an adopted functional arterial street and highway system plan. The objective of the recommended criteria is to identify subsystems within the total arterial street and highway system which are integral parts of the overall system, and which are within themselves continuous, or are continuous in conjunction with other "higher" subsystems but which vary with respect to the degree of traffic mobility provided, the types of land use areas served, and the types of trips served. The arterial street and highway network maps prepared by the Southeastern Wisconsin Regional Planning Commission under the regional land use-transportation study completed in 1966 were reviewed and updated to represent the necessary definition of the total arterial street and highway system within Waukesha County to which the jurisdictional criteria were to be applied.

ARTERIAL SUBCLASSIFICATION

Three levels of government—state, county, and local (municipal)—have direct jurisdictional responsibility for the planning, design, construction, operation, and maintenance of highway facilities within Waukesha County. It is, therefore, proposed that all segments of the total (existing and proposed) arterial street and highway system be classified into one of three categories: Type I, state trunk; Type II, county trunk; and Type III, local trunk. Two of these three categories—Type I and Type II—were, in turn, given two subcategories: rural and urban. The third category—Type III—was given one subcategory: urban. Urban arterials were defined as those arterial streets and highways located within the present corporate limits of existing cities or villages or

within the recommended areas of future urban development within the county, as shown on the adopted regional land use plan, whichever encompasses the greater area. All other arterials were defined as rural.

1. Type I (State Trunk) Arterials—Urban and Rural

Type I arterials shall include all those routes within the urban or rural areas of the county which are intended to provide, within each respective area, the highest level of traffic mobility; that is, the highest speeds and lowest degree of traffic congestion, the minimum degree of land access service, and which must have regional or interregional system continuity. Ideally, these Type I arterials, because of their function and statewide and regionwide importance, should comprise the state trunk highway system.

2. Type II (County Trunk) Arterials—Urban and Rural

Type II arterials shall include all those routes within the urban or rural areas of the county which are intended to provide, within each respective area, an intermediate level of traffic mobility and an intermediate level of land access service, and which must have intercommunity system continuity. Ideally, these Type II arterials, because of their function and subregional importance, should comprise the county trunk highway system of an area.

3. Type III (Local Trunk) Arterials—Urban

Type III arterials shall include all those routes within the urban areas of the county which are intended to provide the lowest level of arterial traffic mobility and the highest degree of arterial land access service, and which must possess intracommunity system continuity. These Type III arterials are intended to comprise the local arterial system of an area.

A rural subcategory for the Type III arterials was not provided. Analysis of the average trip length occurring on the arterial highway facilities in the rural areas of Waukesha County indicated that the "break point" for a third category of rural arte-

rial highway facilities, should such a category be used, would occur at an average trip length of about 13 miles (see Figure 6) and would have an average trip length range of from 4 to 13 miles. This fact, together with the fact that an analysis of origin-destination data for Waukesha County indicated that 83 percent of the vehicle trips originating in rural areas of the county have one trip end located in a rural community (town) and the other trip end in a small urban community (city or village), indicates that rural travel within Waukesha County is primarily of an intercommunity nature. The findings reflect the socioeconomic relationships that exist between farms which are economic enterprises, residences, and small urban communities which act as farm market and service centers.

The Technical Coordinating and Advisory Committee, moreover, was of the opinion that the town governments within the county were not staffed and equipped to carry out the planning, design, construction, operation, and maintenance of arterial highways nor should they be required to be so staffed and equipped. Consequently, the Committee concluded that the jurisdictional responsibility for all rural arterial highway facilities within Waukesha County should be assigned to either the Type I (state trunk) or the Type II (county trunk) arterial street and highway subsystems.

The urban and rural arterial subclassification types are generally intended to correspond with jurisdictional responsibility by the state, county, and local levels of government. It should not be assumed, however, that the intended correspondence can be rigidly applied in all cases, since certain factors, including legal constraints, boundary line facility coordination, financial resource capabilities, and system mileage limitations may influence the assignment of jurisdictional responsibility for certain arterials regardless of the type of classification determined solely by strict application of the criteria.

CRITERIA

Criteria for the functional subclassification of the total arterial street and highway system can be developed from three basic characteristics of the arterial facilities: 1) the trips served, 2) the areas served, and 3) the operational characteristics of the facilities themselves. In light of the differences between urban and rural land use

development, the differences in the characteristics of the traffic generated by these two types of land use development, and the differences between rural and urban highway facility development, separate jurisdictional classification criteria must be developed for rural and urban areas. Generally, the different kinds of urban land uses are not only more intensely developed, but areas devoted to different kinds of land uses are located much closer together in urban, rather than in rural, areas. Moreover, economically productive rural land uses such as extractive and agricultural operations, which by their very nature require large land areas and a relatively small labor force and, therefore, generate less concentrated traffic with relatively long trip lengths and low traffic volumes, nevertheless require good arterial highway facilities to remain economically productive and competitive.

In Waukesha County the situation is further complicated by the fact that travel on urban arterial facilities in the western two-thirds of the county is, to a great extent, comprised of travel between the relatively small urban communities located in this part of the county, the surrounding rural areas, and the Milwaukee urbanized area, of which the eastern one-third of the county is a part. Consequently, the average trip lengths on these urban arterials are more characteristic of rural, rather than urban, travel. In addition, the traffic volumes on these urban facilities are substantially lower than traffic volumes on urban facilities in the eastern one-third of the county due to differences in the amount and intensity of urban land use development and activities served.

Therefore, the area service and operational criteria for system continuity, spacing, traffic mobility, and land access developed for jurisdictional classification of the arterial streets and highways were separately developed for, and applied to, the urban and rural arterials as previously defined herein. The trip service and operational characteristics criteria, or more specifically, the average trip length and traffic volume, respectively, were separately developed for and applied to all arterials in the eastern one-third of the county and to all arterials in the western two-thirds of the county. It is important to note, then, that the definitions of the terms "urban" and "rural," as applied to arterial highway facilities with respect to these two criteria, relate to two arbitrarily defined geographic areas of the county and are, therefore, different than the definitions otherwise

used herein, which relate to existing and probable future land use development.

Trip Service Criteria

Trip service criteria for a functional subclassification of arterials could include specific criteria concerning trip length, trip purpose, and trip peaking. Trip length was selected for use as being the most significant of these three. It is, moreover, believed that trip purpose and trip peaking are reflected in the other criteria adopted and should, therefore, not be explicitly considered under criteria relating to trip service. The average trip length ranges adopted as criteria for arterial subclassification are presented in Table 6.

The following procedure was used to develop the recommended values for the trip service criteria. An interzonal trip table of trip distance volumes¹ (TDV) was produced by multiplying the number of trips expected to be made between pairs of traffic analysis zones,² as contained in the regional land use-transportation study 1990 interzonal trip table,³ by the respective over-the-road distances as measured along the least-time-paths between the zones of origin and destination. The resulting TDV table was assigned to the 1990 arterial network on a least-time-path basis. The assigned TDV for each link⁴ was then divided by previously

¹The term "trip distance volume," as used herein, is synonymous with the term "volume trip length index," as used by the U. S. Department of Transportation, Federal Highway Administration, in its manual entitled 1968 National Highway Functional Classification Study Manual.

²A traffic analysis zone consists of a homogeneous grouping of trip generation activities, such as a residential neighborhood unit, a regional shopping center, or a contiguous industrial area. Such a zone is shown on the arterial network diagram by a centroid representing the point where trips generated within the zone are assumed to enter and leave the arterial network.

³The 1990 interzonal trip table is a table of the zone-to-zone trip movements showing the quantity of 1990 trips by direction between each pair of zones.

⁴A link consists of a section of the arterial street and highway network, defined at each end by a node point located at the intersection of two arterials. A link is the smallest arterial segment used to describe the total arterial system in the mathematical model used to simulate traffic flows on the arterial street and highway network.

Table 6

AVERAGE TRIP LENGTH CRITERIA FOR ARTERIAL SUBCLASSIFICATION

Arterial Type	Average Trip Length (Miles)	
	Urban	Rural
I (State Trunk)	12.00 or More	18.00 or More
II (County Trunk)	7.50 to 11.99	Less than 18.00
III (Local Trunk)	Less than 7.50	--

Source: SEWRPC.

assigned link volumes to obtain average trip lengths. A curve was plotted to provide a graphical representation of the relationship existing between the link average trip lengths and cumulative arterial system mileage for both urban and rural areas (see Figures 5 and 6). Break points were identified on these curves and used to select trip length ranges representative of each jurisdictional classification type. The break points identified the trip length ranges which should be served by each facility type and did so because they marked the points beyond which a relatively high increase in facility type mileage would accommodate only a relatively small increase in trip length range.

Area Service Criteria

Area service criteria for a functional subclassification of arterials should relate to the land use activities to be connected and served by the various arterial subclassifications. For the purpose of such criteria, the term "connect and serve" was defined as follows for each of the three arterial types:

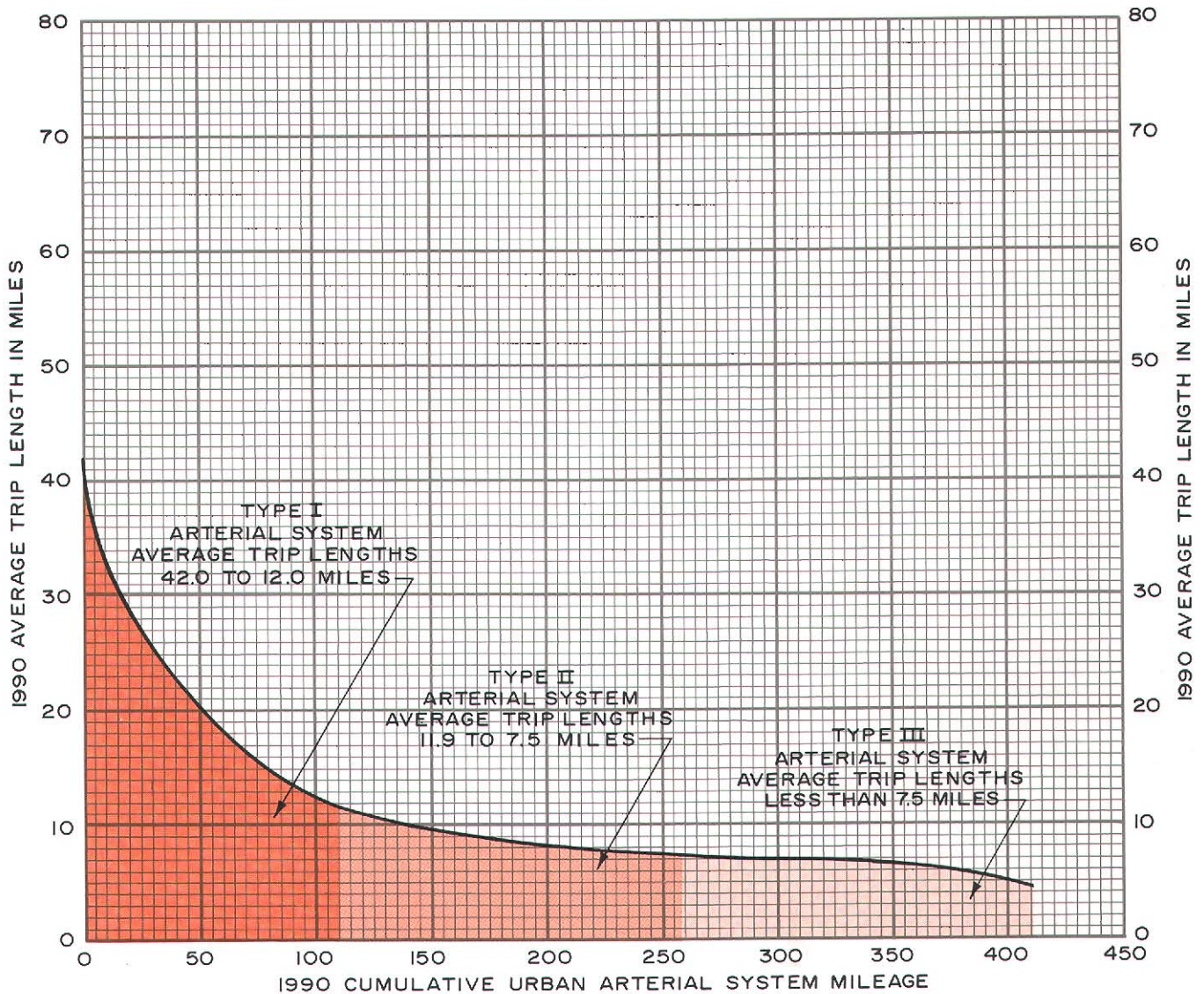
Type I Arterials—Urban and Rural

A Type I urban arterial facility shall be considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within a maximum over-the-road distance of one mile from the main vehicular entrance to the land use to be served.

A Type I rural arterial facility shall be considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available

Figure 5

RELATIONSHIP BETWEEN AVERAGE TRIP LENGTH AND CUMULATIVE URBAN ARTERIAL MILEAGE
WAUKESHA COUNTY ARTERIAL STREET AND HIGHWAY SYSTEM: 1990



Source: SEWRPC.

within a maximum over-the-road distance of two miles from the main vehicular entrance to the land use to be served.

Type II Arterials—Urban and Rural

A Type II urban arterial facility shall be considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within a maximum over-the-road distance of one-half mile of the main vehicular entrance to the land use to be served.

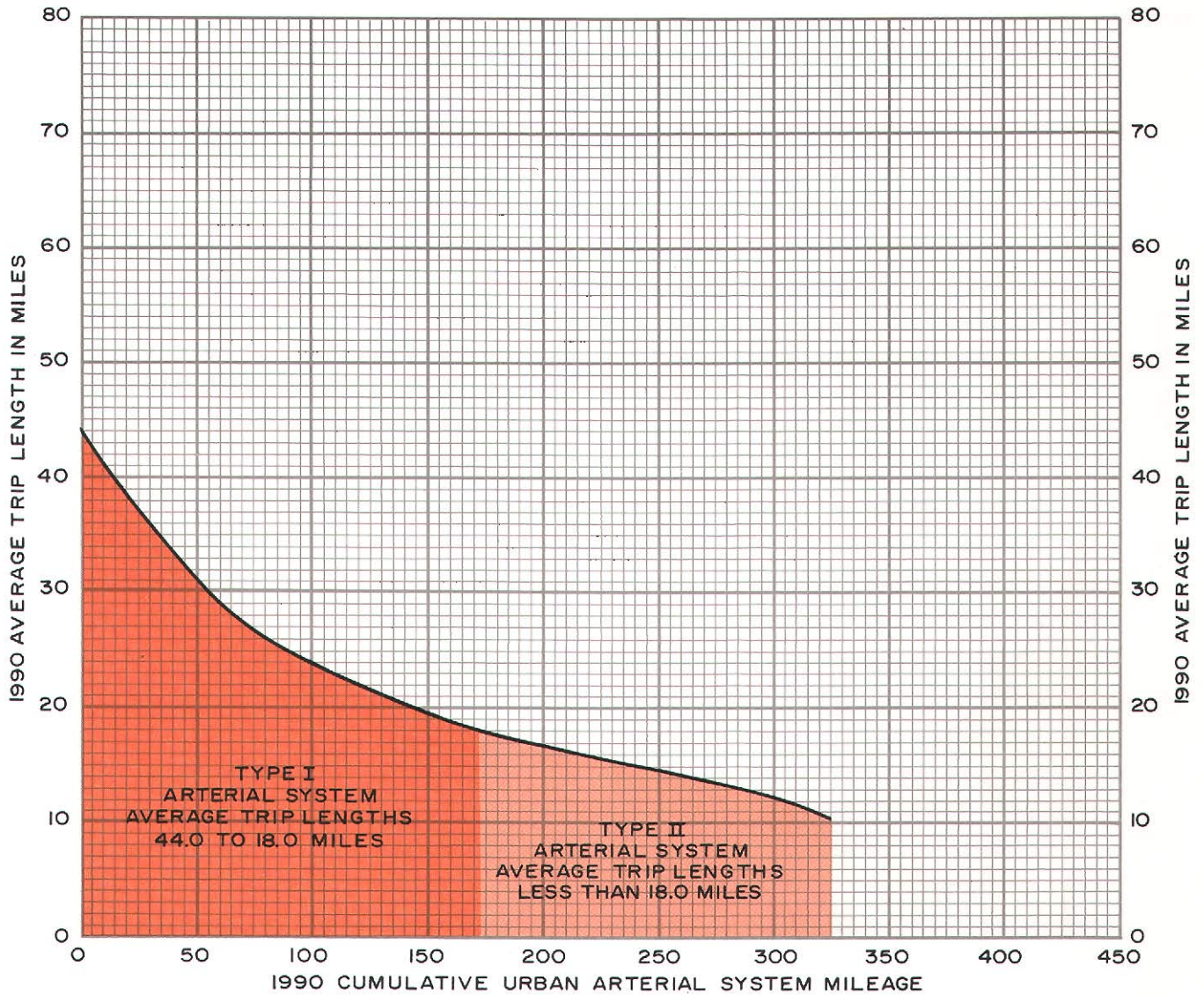
A Type II rural arterial facility shall be considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within a maximum over-the-road distance of one mile of the main vehicular entrance to the land use to be served.

Type III Arterials—Urban

A Type III urban arterial facility shall be considered to "connect and serve" given land uses when direct access from the facility to

Figure 6

RELATIONSHIP BETWEEN AVERAGE TRIP LENGTH AND CUMULATIVE RURAL ARTERIAL MILEAGE
WAUKESHA COUNTY ARTERIAL STREET AND HIGHWAY SYSTEM: 1990



Source: SEWRPC.

roads serving the land use area is available within a maximum over-the-road distance of one-quarter mile of the main vehicular entrance to the land use to be served.

The land use activities to be considered as properly influencing jurisdictional classification to arterial highway systems should be those which, either through their individual or aggre-

gate effects, interact strongly with the need for transportation facilities and which, by their nature, are normally grouped into concentrations which form major traffic generators. These include major transportation terminals, major recreational facilities, regional commercial centers, major industrial centers, certain types of institutional uses, and urban areas. The following criteria with respect to each of these land use classifications were adopted for the Waukesha County jurisdictional highway planning study.

1. Transportation Terminals⁵

Type I Arterials—Urban and Rural

Type I arterial facilities shall connect and serve interregional rail, bus, and major truck terminals;⁶ air-carrier airports;⁷ and seaports.

Type II Arterials—Urban and Rural

Type II arterial facilities shall connect and serve freeway interchanges, general-aviation airports,⁸ pipeline terminals, major intraregional truck terminals,⁹ and rapid transit and modified rapid transit system loading and unloading points not served by Type I arterials.

Type III Arterials—Urban

Type III arterial facilities shall connect and serve truck terminals generating 250 or more truck trips per average weekday and off-street parking facilities having a minimum of 150 parking spaces not served by Type I and Type II arterials.

2. Recreational Facilities

Type I Arterials—Urban and Rural

Type I arterial facilities shall connect and serve all state parks having a gross area of 500 acres or more.

Type II Arterials—Urban and Rural

Type II arterial facilities shall connect and serve regional parks¹⁰ and special recreational use areas of countywide significance, such as zoological and botanical gardens, arenas and stadia seating a minimum of 10,000 persons not served by Type I arterials, and public recreation areas providing onsite parking for a minimum of 250 vehicles.

Type III Arterials—Urban

Type III arterial facilities shall connect and serve community parks¹¹ not served by Type I and Type II arterials.

⁵A transportation terminal shall be defined as a complex of contiguous, concentrated land uses, the purpose of which is to effect a change of transportation mode or a transshipment of goods.

⁶A major interregional truck terminal shall be defined as a complex of contiguous, concentrated land uses generating 250 or more interregional truck trips per average weekday.

⁷An air-carrier airport shall be defined as a public airport intended to serve primarily commercial local service and truck-line air-carrier aircraft providing service to the general public on a regularly scheduled basis between major cities of the country.

⁸A general-aviation airport shall be defined as an airport, either publicly or privately owned, open to public use and intended to serve smaller training, business, charter, agricultural, recreation, and air-taxi aircraft.

⁹A major intraregional truck terminal shall be defined as a complex of contiguous, concentrated land uses generating 250 or more intraregional truck trips per average weekday.

¹⁰A regional park shall be defined as an outdoor recreation area having a broad range of recreational facilities on one site having a minimum gross size of 250 acres serving a multi-community population.

¹¹A community park shall be defined as an outdoor recreation area having a broad range of recreational facilities on one site having a gross size ranging from 30 to 250 acres, and which is intended to meet the basic outdoor recreation needs of the population within a community of 10,000 to 25,000 population, consisting of two to five residential neighborhoods. A residential neighborhood shall be defined as a physically self-contained area which provides housing for the population served by one elementary school and one neighborhood park; an internal street system which discourages penetration of the unit by through traffic; and all of the community and commercial facilities necessary to meet the day-to-day living requirements of the family within the immediate vicinity of its dwelling unit. (See SEWRPC Planning Report No. 7, Volume 2, Page 15.)

3. Commercial Centers

Type I Arterials—Urban and Rural

Type I arterial facilities shall connect and serve major retail and service (regional shopping) centers.¹²

Type II Arterials—Urban and Rural

Type II arterial facilities shall connect and serve community retail and service centers¹³ not served by Type I arterials.

Type III Arterials—Urban

Type III arterial facilities shall connect and serve neighborhood retail and service commercial centers¹⁴ not served by Type I and Type II arterials.

4. Industrial Centers

Type I Arterials—Urban and Rural

Type I arterial facilities shall connect and serve major regional industrial centers.¹⁵

¹²A major retail and service center shall be defined as an existing or officially designated concentration of retail and service uses having a minimum gross site area of 60 acres, intended to serve areawide retail and service needs for a multi-community population ranging from 75,000 to 150,000 persons located within a 10-mile radius. The term "officially designated," as applied to concentration of various land uses, shall be defined as an area shown on adopted regional or local land use plans or recognized in local zoning district maps.

¹³A community retail and service center shall be defined as an existing or officially designated concentration of retail and service uses having a gross site area ranging in size from 20 to 60 acres, intended to serve the retail and service use needs of a community of 10,000 to 25,000 population consisting of a group of two to five residential neighborhoods.

¹⁴A neighborhood retail and service commercial center shall be defined as an existing or officially designated concentration of retail and service uses having a gross site area ranging in size from 5 to 20 acres, intended to serve the retail and service needs of the population of one residential neighborhood.

¹⁵A regional major industrial center shall be defined as an existing or officially designated concentration of manufacturing, wholesaling, and related use establishments having a minimum gross site area of 320 acres or providing employment for over 5,000 persons.

Type II Arterials—Urban and Rural

Type II arterial facilities shall connect and serve major community industrial centers¹⁶ not served by Type I arterials.

Type III Arterials—Urban

Type III arterial facilities shall connect and serve minor community industrial centers¹⁷ not served by Type I and Type II arterials.

5. Institutional

Type I Arterials—Urban and Rural

Type I arterial facilities shall connect and serve universities, county seats, and state institutions.

Type II Arterials—Urban and Rural

Type II arterial facilities shall connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; high schools serving multi-community school districts; and community hospitals not served by Type I arterials.

Type III Arterials—Urban

Type III arterial facilities shall connect and serve city and village halls and high schools not served by Type I and Type II arterials.

6. Urban Areas

Type I Arterials—Rural

Type I rural arterial facilities shall connect and serve urban areas of 2,500 or more population.

Type II Arterials—Rural

Type II rural arterial facilities shall connect and serve developed areas of 500 or more population.

¹⁶A major community industrial center shall be defined as an existing or officially designated concentration of manufacturing, wholesaling, and related-use establishments having a gross site area ranging in size from 100 to 320 acres or providing employment for 1,500 to 5,000 persons.

¹⁷A minor community industrial center shall be defined as an existing or designated concentration of manufacturing, wholesaling, and related-use establishments ranging in size from 20 to 100 acres or providing employment for 300 to 1,500 persons.

Criteria Relating to Operational Characteristics
 Criteria for a functional subclassification of arterials relating to operational characteristics include consideration of system continuity, facility spacing, traffic volume, traffic mobility, and land access.

1. System Continuity

The various arterial subsystems shall form integrated systems within themselves or in conjunction with the other subsystems. The individual facilities comprising any given subsystem shall be directly routed between facility termini so as to provide the shortest travel paths practicable through the arterial network. The following criteria, with respect to system continuity, were adopted for the Waukesha County jurisdictional highway planning study:

Type I Arterials—Urban and Rural

Type I arterial facilities shall have inter-regional or regional continuity comprising total systems at the regional and state level.

Type II Arterials—Urban and Rural

Type II arterial facilities shall have inter-municipality and intercounty continuity comprising integrated systems at the county level.

Type III Arterials—Urban

Type III arterial facilities shall have intra-community continuity comprising an integrated system at the city or village level.

2. Spacing

The location and geometric configuration of highway systems must be properly related to the land uses to be served and should be determined from areawide traffic analyses which consider both existing and probable future traffic loadings derived from existing and proposed land use patterns. Nevertheless, some general criteria may be established with respect to the minimum spacing of various types of facilities based upon good land use planning principles, as well as operational characteristics and engineering constraints. The following criteria with respect to

minimum spacing were adopted for the Waukesha County jurisdictional highway planning study.

Type I Arterials—Urban and Rural

Type I arterial facilities shall generally be located no closer than two miles to, and approximately parallel with, another Type I facility.

Type II Arterials—Urban and Rural

Type II arterial facilities shall generally be located no closer than one mile to, and approximately parallel with, a Type I facility or another Type II facility.

Type III Arterials—Urban

Type III arterial facilities shall generally be located no closer than one-half mile to, and approximately parallel with, a Type I, Type II, or another Type III facility.

3. Volume

Although traffic volume alone provides little indication of the function of an arterial facility, it can, in conjunction with other criteria, become an important jurisdictional criterion. It is important, when considering volume as a criterion for a jurisdictional subclassification of arterials, to recognize that both existing and probable future traffic volumes must be considered, with the latter being given the most weight in the classification process. Table 7 summarizes the criteria, with respect to future (1990) traffic volume, expressed as vehicles per average weekday, adopted for the Waukesha County jurisdictional highway planning study.

Table 7

**TRAFFIC VOLUME CRITERIA FOR
 ARTERIAL SUBCLASSIFICATION**

Arterial Type	Average Weekday Traffic Volume (Vehicles)	
	Urban	Rural
I (State Trunk)	9,000 or More	3,500 or More
II (County Trunk)	5,000 to 8,999	Less than 3,500
III (Local Trunk)	Less than 5,000	--

Source: SEWRPC.

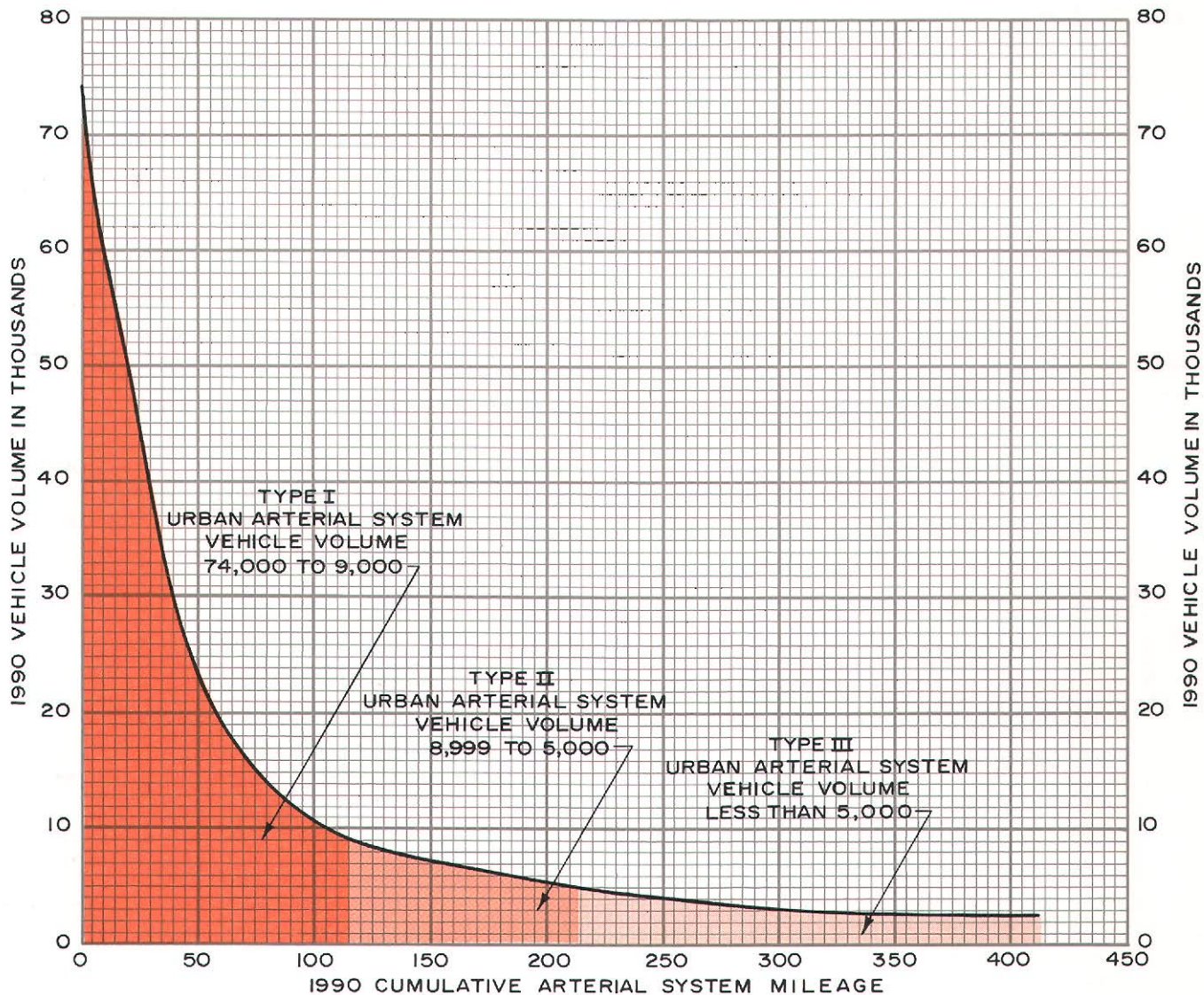
Future potential traffic volumes shall be derived from a system traffic assignment based on an areawide land use plan or projection. Such a traffic assignment exists for Waukesha County as a part of the southeastern Wisconsin regional transportation plan and reflects anticipated 1990 average weekday traffic volumes.

The following procedure was used to develop the recommended values for the traffic volume criteria. The regional land use-transportation study traffic assign-

ment link volumes for 1990 were first arrayed in descending rank order, and a cumulative sum of link length computed for each link place in the descending rank order for both urban and rural areas. From these data, curves were plotted to provide a graphical representation of the relationship existing between traffic volume and cumulative arterial system mileage (see Figures 7 and 8). Break points were identified on these curves and used to select traffic volume ranges representative of each jurisdictional classification

Figure 7

RELATIONSHIP BETWEEN AVERAGE WEEKDAY VEHICLE VOLUME AND CUMULATIVE URBAN ARTERIAL MILEAGE
WAUKESHA COUNTY ARTERIAL STREET AND HIGHWAY SYSTEM: 1990



Source: SEWRPC.

type. The break points identified on the traffic volume curves tended to substantiate, in terms of cumulative jurisdictional subsystem mileage, the trip length criteria previously established.

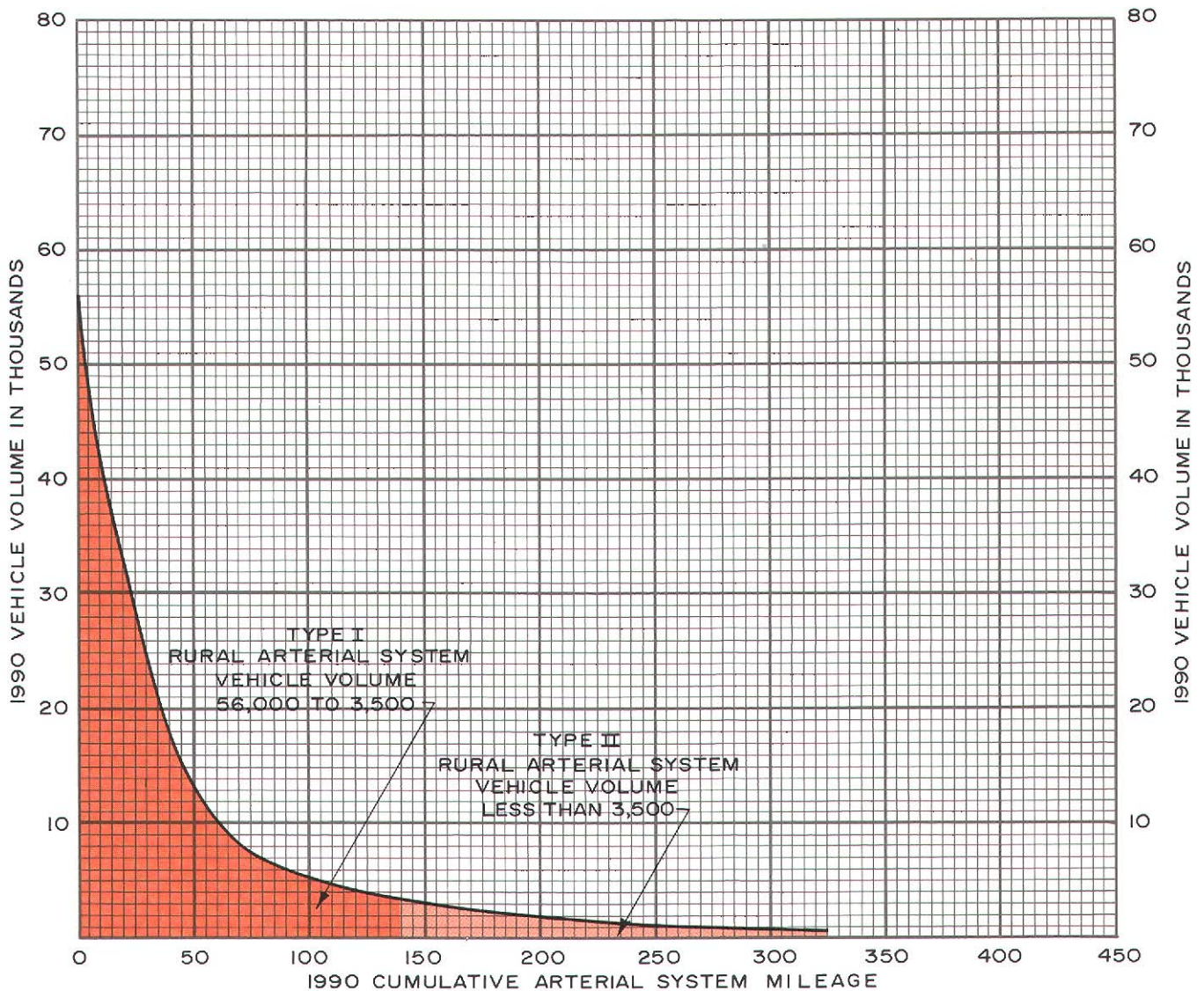
4. Traffic Mobility

Traffic mobility criteria for a functional subclassification of arterials could be

established in terms of speed, volume-to-capacity ratios, or other measures of traffic density. In recognition of the fact that the longer the trip the more critical the time of travel, however, it is an accepted practice to provide higher speeds on the routes of highest arterial function. As a result, the following criteria shown in Table 8 with respect to traffic mobility

Figure 8

RELATIONSHIP BETWEEN AVERAGE WEEKDAY VEHICLE VOLUME AND CUMULATIVE RURAL ARTERIAL MILEAGE
WAUKESHA COUNTY ARTERIAL STREET AND HIGHWAY SYSTEM: 1990



Source: SEWRPC.

were adopted for the Waukesha County jurisdictional highway planning study.

5. Land Access

It has already been noted that two of the basic functions performed by street systems—namely, traffic mobility and land access—are basically conflicting, and that the land access function of arterial facilities must be subordinate to the traffic mobility function. Therefore, a degree of access control which is related to the subclassification of the arterial facility should be exercised over arterials by means of some restriction of direct access. The following criteria with respect to land access control were adopted for the Waukesha County jurisdictional highway planning study:

Table 8

TRAFFIC MOBILITY CRITERIA FOR ARTERIAL SUBCLASSIFICATION

Arterial Type	Average Overall Travel Speed (Miles Per Hour) ^a	
	Urban Area	Rural Area
I (State Trunk)	30 to 70	40 to 70
II (County Trunk)	25 to 50	30 to 60
III (Local Trunk)	20 to 40	.. ^b

^aAverage overall travel speed is the total of the distances traveled by all vehicles using a given section of highway during an average weekday, divided by the total of the actual travel times, including traffic delays. Average overall travel speeds have the following approximate relationships to average operating speeds:

Equivalent Average Operating Speed	Average Overall Travel Speed
20 MPH	10 MPH
30 MPH	21 MPH
40 MPH	32 MPH
50 MPH	43 MPH
60 MPH	54 MPH
70 MPH	65 MPH

^bA rural subcategory for Type III arterials is not provided.

Source: SEWRPC.

Type I Arterials—Urban and Rural

All Type I arterials shall have full or partial control of access.¹⁸

Type II Arterials—Urban and Rural

All Type II arterials shall have at least partial control of access.¹⁹

Type III Arterials—Urban

All Type III arterials shall have at least minimum control of access.²⁰

Table 9 summarizes the functional criteria used for the jurisdictional classification of arterial highways in Waukesha County.

OTHER FACTORS

In the application of the foregoing criteria to the delineation of a jurisdictional highway system, several other factors must be considered, particularly legal and financial constraints. Federal, state, county, and local legislative and financial resource limitations limit the mileage allotment available for state trunk, county trunk, and related federal aid routes and must, therefore, be considered as important constraints on any jurisdictional classification scheme. Evaluation of these legal and financial constraints may show that the jurisdiction for certain facility types must be assumed by a different level of government than might otherwise be indicated by type classification

¹⁸ Full control of access shall be defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic by providing access connections only at selected public roads via grade-separated interchanges.

Partial control of access shall be defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic to a degree that, in addition to access connections at selected public roads, there may be some direct access to abutting land uses, with generally one point of reasonably direct access to each parcel of abutting land as these parcels existed at the time of an official declaration that partial control of access shall be exercised.

¹⁹ See the definition of partial control access, as stated in footnote 18.

²⁰ Minimum control of access shall be defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Table 9

SUMMARY OF FUNCTIONAL CRITERIA FOR THE JURISDICTIONAL CLASSIFICATION OF ARTERIAL HIGHWAYS IN WAUKESHA COUNTY

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk) ^a
S T R U C T U R E	Average Trip Length (Miles)	<u>Urban</u> 12.0 or More <u>Rural</u> 18.0 or More	<u>Urban</u> 7.5 to 11.9 <u>Rural</u> Less than 18.0	<u>Urban</u> Less than 7.5
	Transportation Terminals	<u>Urban^b and Rural^c</u> Connect and serve interregional rail, bus, and major truck terminals; aircarrier airports; and seaports.	<u>Urban^b and Rural^c</u> Connect and serve freeway interchanges, general aviation airports, pipeline terminals, major intraregional truck terminals, and rapid transit and modified rapid transit system loading and unloading points not served by Type I arterials.	<u>Urban^b</u> Connect and serve truck terminals generating 250 or more truck trips per average weekday, and off-street parking facilities having a minimum of 150 parking spaces not served by Type I and II arterials.
L A N D U S E S E R V I C E	Recreational Facilities	<u>Urban and Rural</u> Connect and serve all state parks having a gross area of 500 acres or more.	<u>Urban and Rural</u> Connect and serve regional parks and special recreational use areas of county-wide significance, such as zoological and botanical gardens, arenas and stadia seating a minimum of 10,000 persons not served by Type I arterials, and public recreation areas providing onsite parking for a minimum of 250 vehicles.	<u>Urban</u> Connect and serve community parks not served by Type I and II arterials.
	Commercial Centers	<u>Urban and Rural</u> Connect and serve major retail and service centers.	<u>Urban and Rural</u> Connect and serve community retail and service centers not served by Type I arterials.	<u>Urban</u> Connect and serve neighborhood retail and service commercial centers not served by Type I and II arterials.
	Industrial Centers	<u>Urban and Rural</u> Connect and serve major regional industrial centers.	<u>Urban and Rural</u> Connect and serve major community industrial centers not served by Type I arterials.	<u>Urban</u> Connect and serve minor community industrial centers not served by Type I and II arterials.
	Institutional	<u>Urban and Rural</u> Connect and serve universities, county seats, and state institutions.	<u>Urban and Rural</u> Connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; and community hospitals not served by Type I arterials.	<u>Urban</u> Connect and serve city and village halls and high schools not served by Type I and II arterials.
	Urban Areas	<u>Rural</u> Connect and serve urban areas of 2,500 or more population.	<u>Rural</u> Connect and serve developed areas of 500 or more population.	

Table 9 (continued)

Criteria		Arterial Type		
		I (State Trunk)	II (County Trunk)	III (Local Trunk) ^a
OPERATIONAL CHARACTERISTICS	System Continuity	<u>Urban and Rural</u> Interregional or regional continuity comprising total systems at the regional and state level.	<u>Urban and Rural</u> Intermunicipality and intercounty continuity comprising integrated systems at the county level.	<u>Urban</u> Intracommunity continuity comprising an integrated system at the city, village, or town level.
	Spacing	<u>Urban and Rural</u> Minimum 2 miles.	<u>Urban and Rural</u> Minimum 1 mile.	<u>Urban</u> Minimum 0.5 mile.
	Volume	<u>Urban</u> Minimum 9,000 vehicles per average weekday (1990 forecast).	<u>Urban</u> 5,000 to 8,999 vehicles per average weekday (1990 forecast).	<u>Urban</u> Maximum 5,000 vehicles per average weekday (1990 forecast).
		<u>Rural</u> Minimum 3,500 vehicles per average weekday (1990 forecast).	<u>Rural</u> Maximum 3,500 vehicles per average weekday (1990 forecast).	
	Traffic Mobility	<u>Urban</u> Average overall travel speed ^d 30 to 70 miles per hour. <u>Rural</u> Average overall travel speed ^d 40 to 70 miles per hour.	<u>Urban</u> Average overall travel speed ^d 25 to 50 miles per hour. <u>Rural</u> Average overall travel speed ^d 30 to 60 miles per hour.	<u>Urban</u> Average overall travel speed ^d 20 to 40 miles per hour.
Land Access Control	Full or partial control of access. ^{e,f}	Partial control of access. ^f	Minimum Control of Access. ^g	

^aA rural subcategory for Type III arterials is not provided.

^bUrban arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 1 mile; Type II arterial facility, 0.5 mile; Type III arterial facility, 0.25 mile.

^cRural arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 2 miles; Type II arterial facility, 1 mile.

^dAverage overall travel speed is defined as the sum of the distances traveled by all vehicles using a given section of highway during an average weekday divided by the sum of the actual travel times, including traffic delays.

^eFull control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to movement of through traffic by providing access connections only at selected public roads via grade-separated interchanges.

^fPartial control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic to a degree that, in addition to access connections at selected public roads, there may be some direct access to abutting land uses with generally one point of reasonably direct access to each parcel of abutting land as these parcels existed at the time of an official declaration that partial control of access shall be exercised.

^gMinimum control of access is defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Source: SEWRPC.

alone. It must also be recognized that certain intergovernmental coordination requirements necessitated by road location along or across civil division boundaries may require, as practical plan implementation measures, the assumption of jurisdictional responsibility for certain facilities by a higher level of government than might otherwise be indicated by type classification alone.

SUMMARY

For planning purposes, street and highway systems are divided into functional subsystems according to the primary type of service individual facilities within the subsystems provide. Such a classification is essential to sound transportation planning because it identifies the primary function which a particular facility should serve, as well as providing a means for defining travel paths for trip flow through the total system. Jurisdictional classification criteria are intended to provide an objective and rational basis for the assignment of jurisdictional responsibility for various segments of an existing and proposed arterial street and highway system to the various government levels concerned. The state, county, and local levels of government have direct jurisdictional responsibility for the planning, design, construction, operation, and maintenance of highway facilities in Waukesha County.

It is proposed that all segments of the total (existing and proposed) arterial street and highway system in Waukesha County be classified into one of three categories: Type I, state trunk; Type II, county trunk; and Type III, local trunk. The Type I and Type II categories include urban and rural subcategories; the Type III category was given one subcategory, that of urban. Based on data which indicated that rural travel within Waukesha County is primarily of an intercommunity nature, the Technical Coordinating and Advisory Committee was of the opinion that town governments in Waukesha County were not staffed and equipped to carry out the planning, design, construction,

operation, and maintenance of arterial highways to serve such travel, nor should they be required to do so.

Because of the differences in the characteristics of traffic generated by urban and rural land use development and highway facility development, separate jurisdictional classification criteria were developed for these two areas. Generally, urban land use areas are more intensely developed and located closer together than rural land use areas. The economically productive rural land uses such as extractive and agricultural operations also, by their nature, require large land areas and a relatively small labor force, therefore generating less concentrated traffic. In addition, in Waukesha County, travel on urban arterial facilities in the western two-thirds of the county includes travel between the relatively small urban communities in this part of the county, the surrounding rural areas, and the Milwaukee urbanized area, of which the eastern one-third of the county is a part. Traffic volumes on these urban facilities are substantially lower than traffic volumes on urban facilities in the eastern one-third of the county, due to differences in the amount and intensity of urban land use development and activities served.

The criteria developed were based on the trips served, the areas served, and the operational characteristics of the facilities themselves. Trip length ranges which should be served by each facility type were delineated under the trip service criteria. Area service criteria should relate to land use activities to be connected and served by the various arterial subclassifications. These include major transportation terminals, major recreational facilities, regional commercial centers, major industrial centers, certain types of institutional uses, and urban areas. Criteria relating to operational characteristics include consideration of system continuity, facility spacing, traffic volume, traffic mobility, and land access. Other factors, such as legal and financial constraints, were also considered.

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Chapter V

APPLICATION OF FUNCTIONAL CRITERIA TO DEVELOP JURISDICTIONAL SYSTEMS

INTRODUCTION

In Chapter II of this report, it was indicated that the preparation of a jurisdictional highway system plan for Waukesha County involved a seven-step planning process. The fourth step in this process consisted of the application of functional criteria specifically developed for this purpose in order to separate the total functional arterial street and highway system into rational jurisdictional subsystems. The criteria were applied to the total arterial street and highway system for Waukesha County as proposed in the adopted regional transportation plan, and refined through a careful review of the arterial system conducted as a part of the planning process by experienced public works engineers responsible for the design, construction, operation, and maintenance of arterial highway facilities within the county. The total functional system of arterial street and highway facilities to which the classification criteria were applied is shown on Map 16.

The application of the functional criteria for jurisdictional highway classification, as set forth in Chapter IV of this report, required an analysis of the trip lengths and traffic volumes to be served by each link in the total arterial system, an inventory of the existing and proposed land uses to be served by each of the jurisdictional subsystems, and an investigation of the operational characteristics of the arterial facilities themselves. The procedure developed to establish the jurisdictional classification of each arterial street and highway facility in Waukesha County involved three major steps.

In the first step, each arterial facility was classified in terms of the trip service criteria previously established. Three trip service subsystems were thus identified, each related to a jurisdictional classification. In the second step, each arterial facility was classified in terms of the land use criteria previously established. Three land use service subsystems were thus identified, each related to a jurisdictional classification. Finally, these two sets of jurisdictional subsystems were combined and refined through the application of system continuity and facility spac-

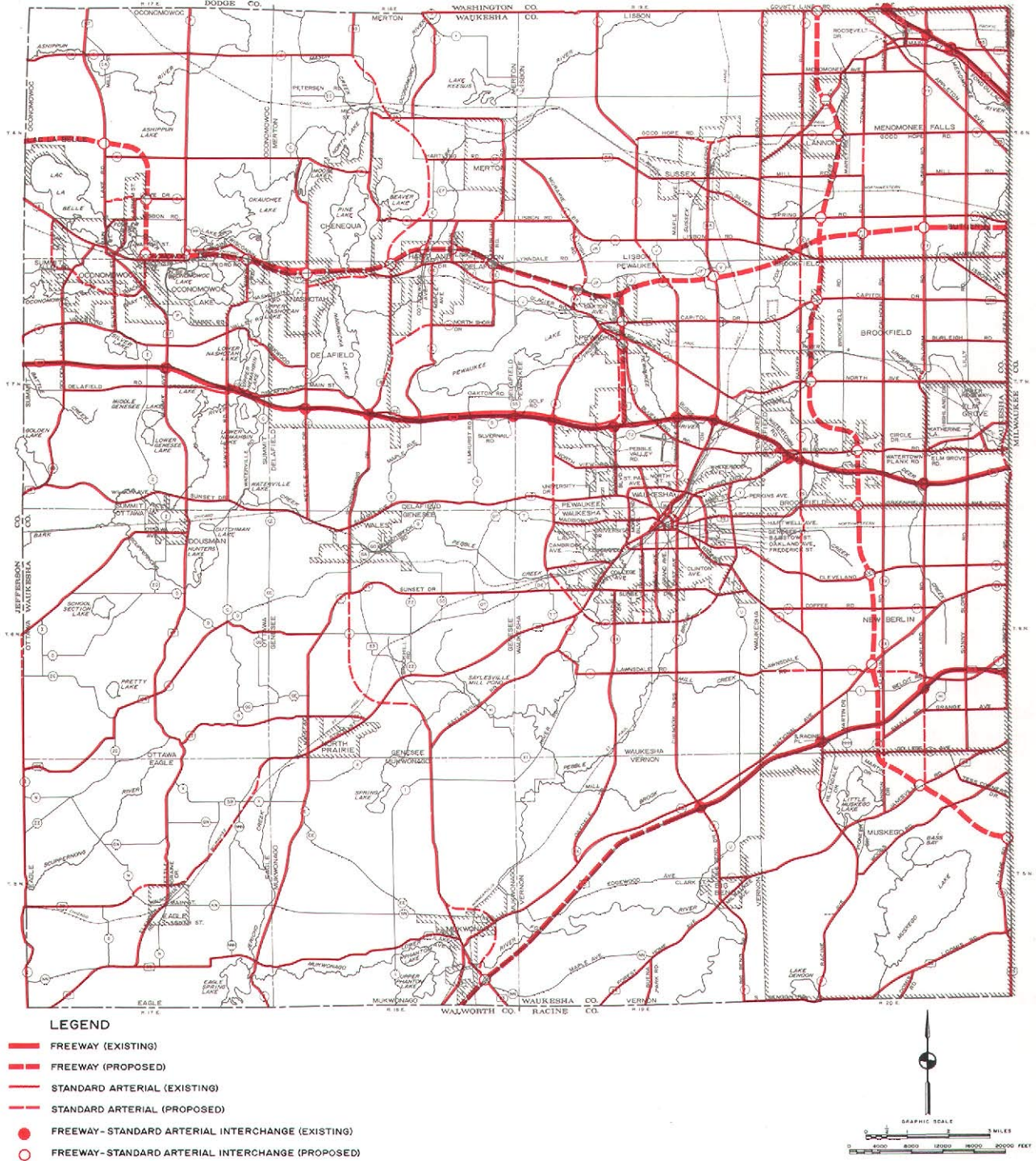
ing criteria to produce a preliminary jurisdictional highway system plan. The preliminary jurisdictional classification of the arterial facilities was thus further refined by staff and Committee consideration and evaluation of the administrative, financial, and legal factors concerned. This entire classification process is illustrated in Figure 3.

TRIP SERVICE JURISDICTIONAL SUBSYSTEMS

It was stated earlier that the functional arterial street and highway system proposed in the adopted regional transportation plan was refined and updated in order both to incorporate the effects of any changes in land use and highway system development which had occurred within Waukesha County since the adoption of the functional plan, and to incorporate certain changes in the functional plan indicated to be desirable since its adoption. For this reason it was necessary to modify the computer description of that portion of the regional arterial network affected by these changes before average trip lengths could be determined for each link in the functional system. Both the structure and the operational characteristics of the arterial network description were analyzed by plotting and checking the minimum time travel paths connecting selected major trip generators located both inside and outside Waukesha County with all traffic analysis zone centroids affected by the network modification. Once this network editing was completed and the computer description of the system deemed satisfactory, the effect of the forecast 1990 travel demand on the network was simulated by a computer traffic assignment of the matrix of 1990 interzonal trips, developed in the regional land use-transportation study, to the 1990 interzonal least-time-travel paths through the arterial network. The accumulated forecast 1990 volumes on each section of the arterial system resulting from the traffic assignment were then analyzed on a link-by-link basis for reasonableness by comparison with existing traffic volumes and previous assignments of forecast traffic volumes.

In the development of the trip service subsystems, the average trip length which could be expected to occur on each link was calculated in the manner

ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1990



A 747-mile arterial street and highway system is proposed to serve existing and probable future travel demand in Waukesha County to the year 1990. This total arterial system forms the basic network to which criteria for the assignment of jurisdictional responsibilities for each link in the system were applied. The total represents a refinement of the arterial street and highway system for Waukesha County as included in the adopted regional transportation plan, and will provide the county with a high level of highway transportation service through 1990, meeting the anticipated increases in travel demand efficiently and effectively.

Source: SEWRPC.

previously described in Chapter IV of this report. Using the calculated trip length data, each link was classified as a Type I, Type II, or Type III arterial facility, in accordance with the previously established trip service criteria. The resulting subsystems are shown on Map 17, the jurisdictional classification for each link being indicated by color code. Continuous segments of lengths of the same color tended to focus attention to routes of similar function which could be combined to form jurisdictional subsystems.

The subsystems delineated by the application of the trip service criteria were found generally to parallel the stratification of the total arterial system into subsystems by relative levels of service. For example, the arterial facilities providing the highest level of service, characterized by free flow traffic conditions—that is, the freeways—exhibited the longest average trip lengths, ranging from 18 miles up to 44 miles, and were, therefore, classified into the highest trip service facility type. Similarly, the facilities providing the lowest level of service—that is, the at-grade arterials in areas with high land use intensities—exhibited the shortest average trip lengths, less than 7.5 miles, and were, therefore, classified into the lowest trip service facility type.

LAND USE SERVICE JURISDICTIONAL SUBSYSTEMS

In preparation for the development of the land use service jurisdictional subsystems, the existing and proposed Type I, Type II, and Type III land use areas, as defined in the previously established criteria, were delineated on a county base map. The existing transportation terminals, recreational facilities, commercial centers, industrial centers, and institutional land uses were identified from existing land use inventories and categorized, through application of the criteria, by the study staff and then reviewed by knowledgeable local planners and engineers. Future land uses were identified from the adopted regional land use plan, adopted community land use plans and zoning ordinances, and current planning data provided by local planners and engineers and similarly categorized by application of the criteria. The land use areas for Type I, Type II, and Type III jurisdictional categories, as delineated for the study, are shown on Map 18.

Utilizing the resulting land use patterns and the land use service criteria previously developed,

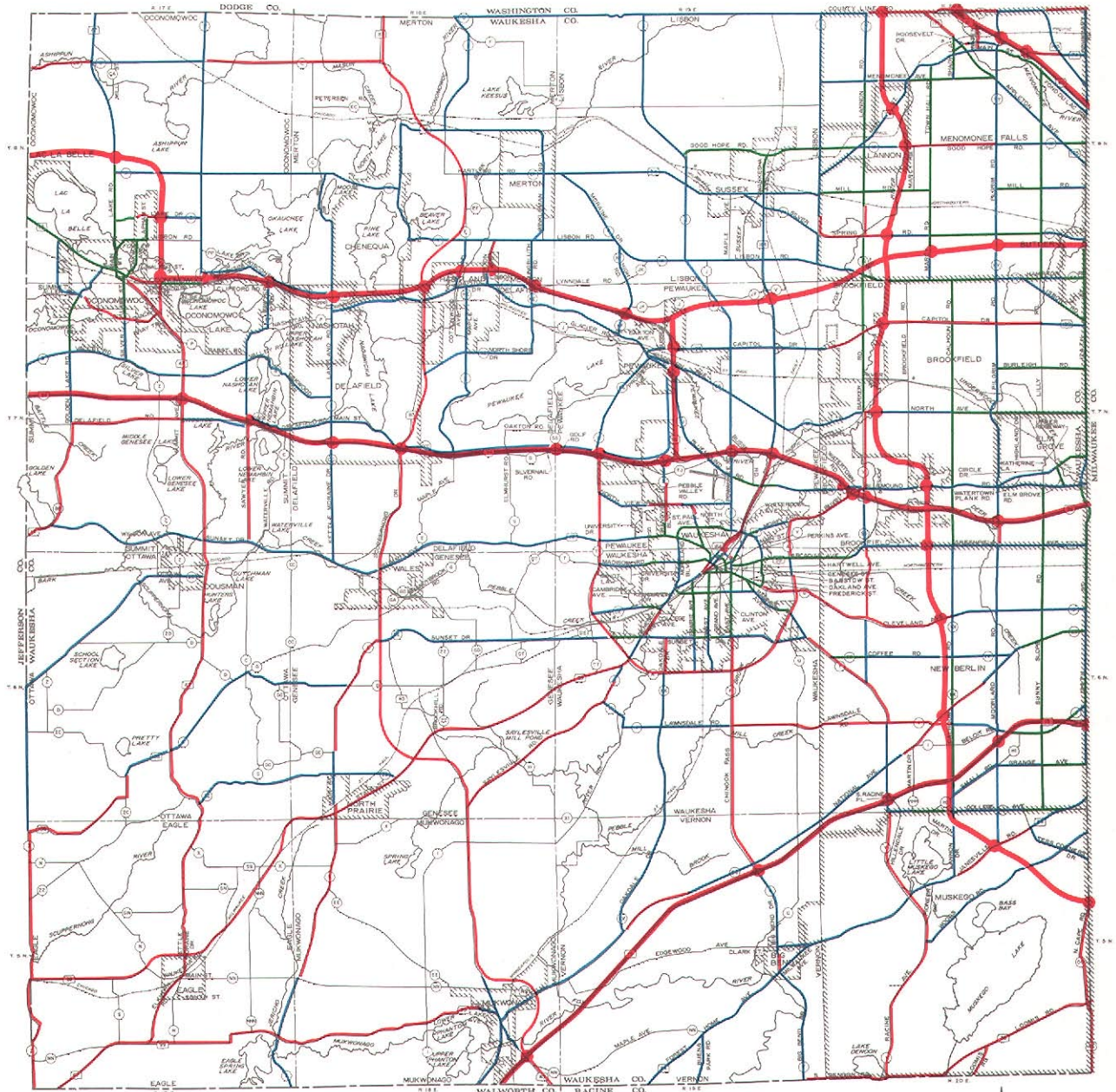
the total arterial street and highway system was classified into three land use service subsystems. This was accomplished through a series of system classifications. First, those arterial facilities which best connected and served each of the Type I land use areas were carefully determined and delineated to form a continuous Type I subsystem. A second arterial subsystem was then established to interconnect with the Type I land use service subsystem and to provide the service required by the established criteria for all Type II land use areas not already served by the Type I arterial highway system. The remaining arterial facilities were classified into a third subsystem to serve the Type III land uses. The resulting jurisdictional subsystems are also shown on Map 18.

DEVELOPMENT OF THE JURISDICTIONAL HIGHWAY SYSTEM PLAN

Through the procedures previously described, two separate groups of Type I, Type II, and Type III subsystems were established—one group developed by application of the trip service criteria and the other by application of the land use service criteria. Generally, the same individual facilities were found to be included within each of the corresponding subsystems. Further refinement of the jurisdictional classification of the total arterial street and highway system was necessary, however, to establish a recommended jurisdictional highway system plan. This refinement was accomplished through the application of the previously established criteria relating to the operational characteristics of each facility, including system continuity, facility spacing, traffic volume, traffic mobility, and land access, to the two groups of subsystems. Other factors considered in this synthesis were legal and financial constraints and intergovernmental coordination requirements.

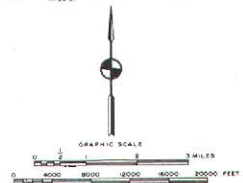
In order to facilitate the application of the traffic volume criteria, a third group of subsystems, shown on Map 19, was identified by application of the traffic volume criteria previously established. This third group of subsystems, based only upon traffic volume considerations, together with the system continuity and facility spacing criteria, was found to be most useful in the refinement of the application of the trip service and land use service criteria necessary to develop the final classification of the entire arterial system into recommended jurisdictional systems.

**JURISDICTIONAL CLASSIFICATION OF THE ARTERIAL STREET AND HIGHWAY SYSTEM
IN WAUKESHA COUNTY BASED ON AVERAGE TRIP LENGTH: 1990**



LEGEND

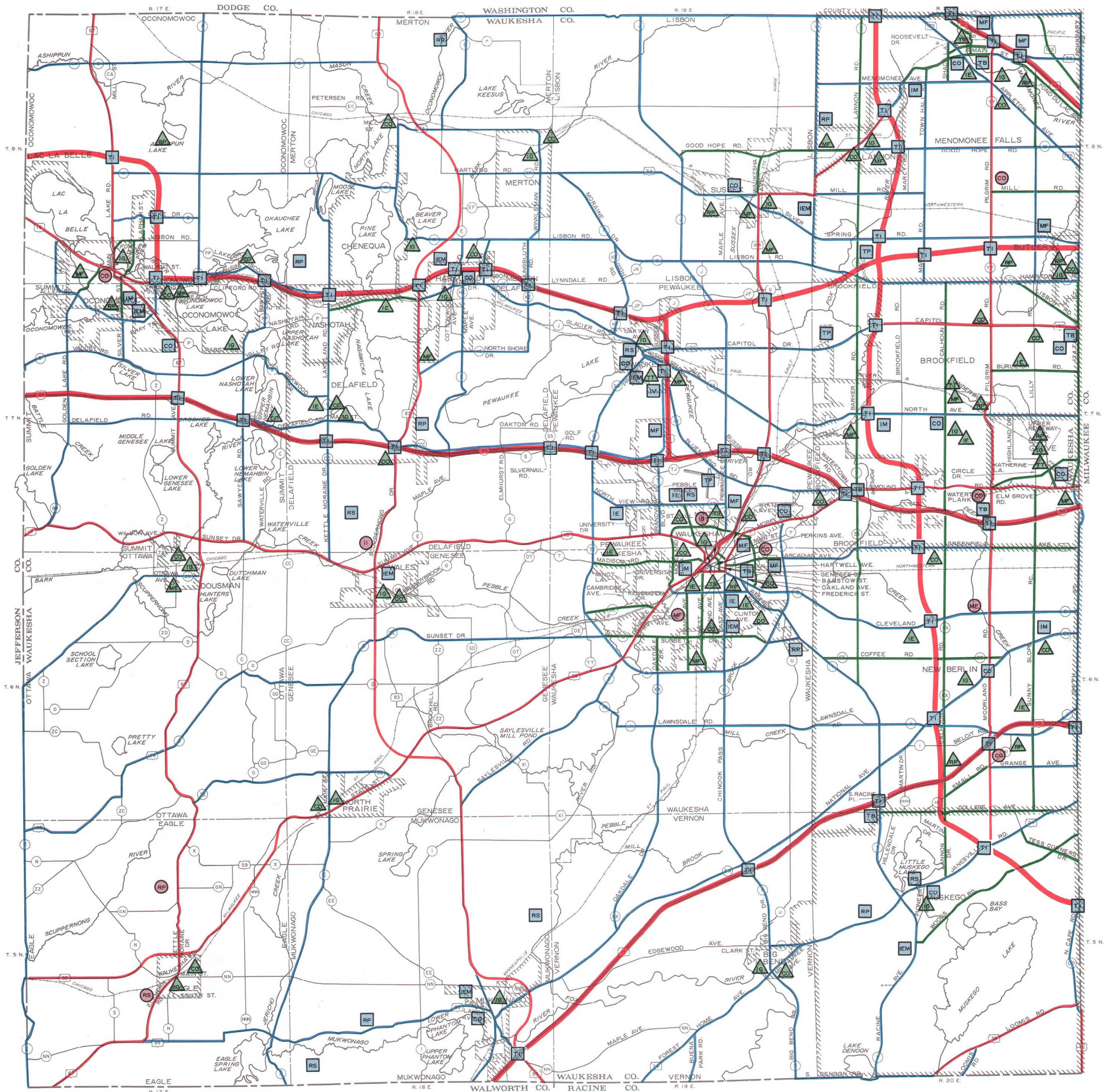
AVERAGE TRIP LENGTH (MILES)		URBAN		RURAL		
—	TYPE I FREEWAY	} 12.00 OR MORE		} 18.00 OR MORE		● FREEWAY-STANDARD ARTERIAL INTERCHANGE
—	TYPE I ARTERIAL					
—	TYPE II ARTERIAL	7.50 TO 11.99		LESS THAN 18.00		
—	TYPE III ARTERIAL	LESS THAN 7.50		—		



Application of the trip length criteria alone resulted in the classification of the total arterial street and highway system into the three jurisdictional subsystems shown on this map. The average trip length for the Type I arterial facility is 12 miles or more in urban areas, and 18 miles or more in rural areas; for the Type II arterial facility, 7.50 to 11.99 miles in urban areas and less than 18 miles in rural areas; and for the Type III arterial facility, less than 7.50 miles in urban areas.

Source: SEWRPC.

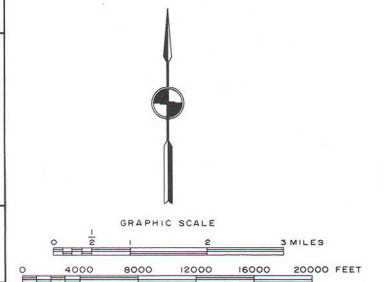
JURISDICTIONAL CLASSIFICATION
OF THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY
BASED ON LAND USE: 1990



LEGEND

- FREEWAY FACILITY CONNECTING AND SERVING TYPE I LAND USES
- ARTERIAL FACILITY CONNECTING AND SERVING TYPE I LAND USES
- ARTERIAL FACILITY CONNECTING AND SERVING TYPE II LAND USES
- ARTERIAL FACILITY CONNECTING AND SERVING TYPE III LAND USES

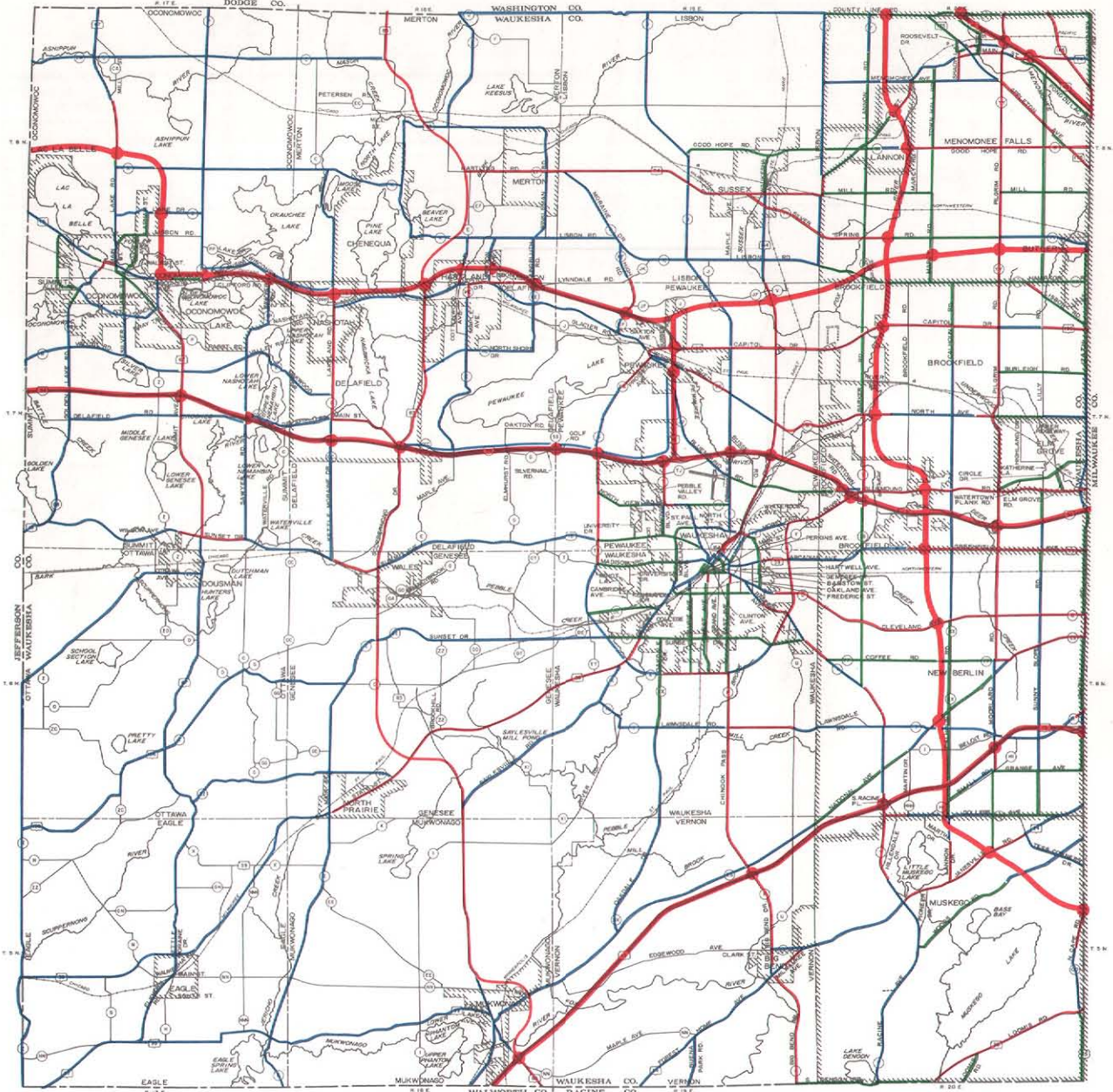
LAND USE TYPE	TRANSPORTATION TERMINALS	RECREATIONAL AREAS	COMMERCIAL CENTERS	INDUSTRIAL CENTERS	INSTITUTIONAL CENTERS
I	<ul style="list-style-type: none"> TR RAIL TERMINAL TB BUS TERMINAL TT TRUCK TERMINAL TP PORT (AIR & SEA) 	<ul style="list-style-type: none"> RS SPECIAL USE AREA RP REGIONAL OR INTER-REGIONAL PARK 	<ul style="list-style-type: none"> CO REGIONAL RETAIL & SERVICE COMMERCIAL CENTER 	<ul style="list-style-type: none"> MF REGIONAL INDUSTRIAL CENTER 	<ul style="list-style-type: none"> IG COUNTY SEAT II STATE INSTITUTION
II	<ul style="list-style-type: none"> TI INTERCHANGE TP NON-COMMERCIAL AIRPORT TL PIPELINE TT TRUCK TERMINAL TB RAPID TRANSIT LOADING 	<ul style="list-style-type: none"> RP COUNTY OR INTER-COUNTY PARK RS SPECIAL USE AREA 	<ul style="list-style-type: none"> CO COMMUNITY RETAIL & SERVICE COMMERCIAL CENTER 	<ul style="list-style-type: none"> MF COMMUNITY MAJOR INDUSTRIAL CENTER 	<ul style="list-style-type: none"> II COUNTY INSTITUTION IE COLLEGE IV VOCATIONAL SCHOOL IEM MULTI-COMMUNITY HIGH SCHOOL
III	<ul style="list-style-type: none"> TT TRUCK TERMINAL TS OFF-STREET PARKING 	<ul style="list-style-type: none"> RP COMMUNITY PARK 	<ul style="list-style-type: none"> CO NEIGHBORHOOD RETAIL & SERVICE COMMERCIAL CENTER 	<ul style="list-style-type: none"> MF COMMUNITY MINOR INDUSTRIAL CENTER 	<ul style="list-style-type: none"> IE HIGH SCHOOL IG CITY OR VILLAGE HALL



Application of the land use service criteria alone resulted in the classification of the total arterial street and highway system into the three jurisdictional subsystems shown on this map. The pattern shown emphasizes the close relationship which exists between land use development and arterial highway needs. The land uses which are shown include transportation terminals; recreational areas; and commercial, industrial, and institutional centers.

Source: SEWRPC.

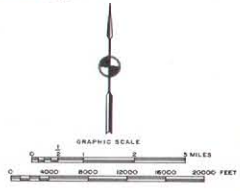
**JURISDICTIONAL CLASSIFICATION OF THE ARTERIAL STREET AND HIGHWAY SYSTEM
IN WAUKESHA COUNTY BASED ON VEHICLE VOLUME: 1990**



LEGEND

VEHICLE VOLUME RANGE (ADT)

	URBAN	RURAL	
TYPE I FREEWAY	9,000 OR MORE	3,500 OR MORE	● FREEWAY-ARTERIAL INTERCHANGE
TYPE I ARTERIAL			
TYPE II ARTERIAL	5,000 TO 8,999	LESS THAN 3,500	
TYPE III ARTERIAL	LESS THAN 5,000	—	



Application of the vehicle volume criteria alone resulted in the classification of the total arterial street and highway system into the three jurisdictional subsystems shown on this map. The configuration of the system again indicates the importance of freeways in serving the highest traffic volume. This third group of subsystems, based only on traffic volume considerations, together with the system continuity and facility spacing criteria, was found to be most useful in the refinement of the application of trip service and land use service criteria necessary to develop the final classification of the entire arterial system into recommended jurisdictional subsystems.

Source: SEWRPC.

By comparing the three separate groups of subsystems—trip service, land use service, and volume—most of the arterial facilities were found to fall clearly into one of the three jurisdictional type categories—Type I, state trunk; Type II, county trunk; and Type III, local trunk—by virtue of meeting all of these criteria for a majority of the route length. Some judgment, however, had to be exercised in the case of a limited number of marginal facilities which did not fall clearly into one category or another because not all of the criteria were met for the majority of the route length.

As shown on Map 20, the total arterial street and highway system was thus objectively and rationally classified into Type I, state trunk; Type II, county trunk; and Type III, local trunk subsystems, which are integral parts of the overall system and which are within themselves continuous but which vary with respect to the types of trip lengths served, the types of land use areas served, and the degree of traffic mobility provided.

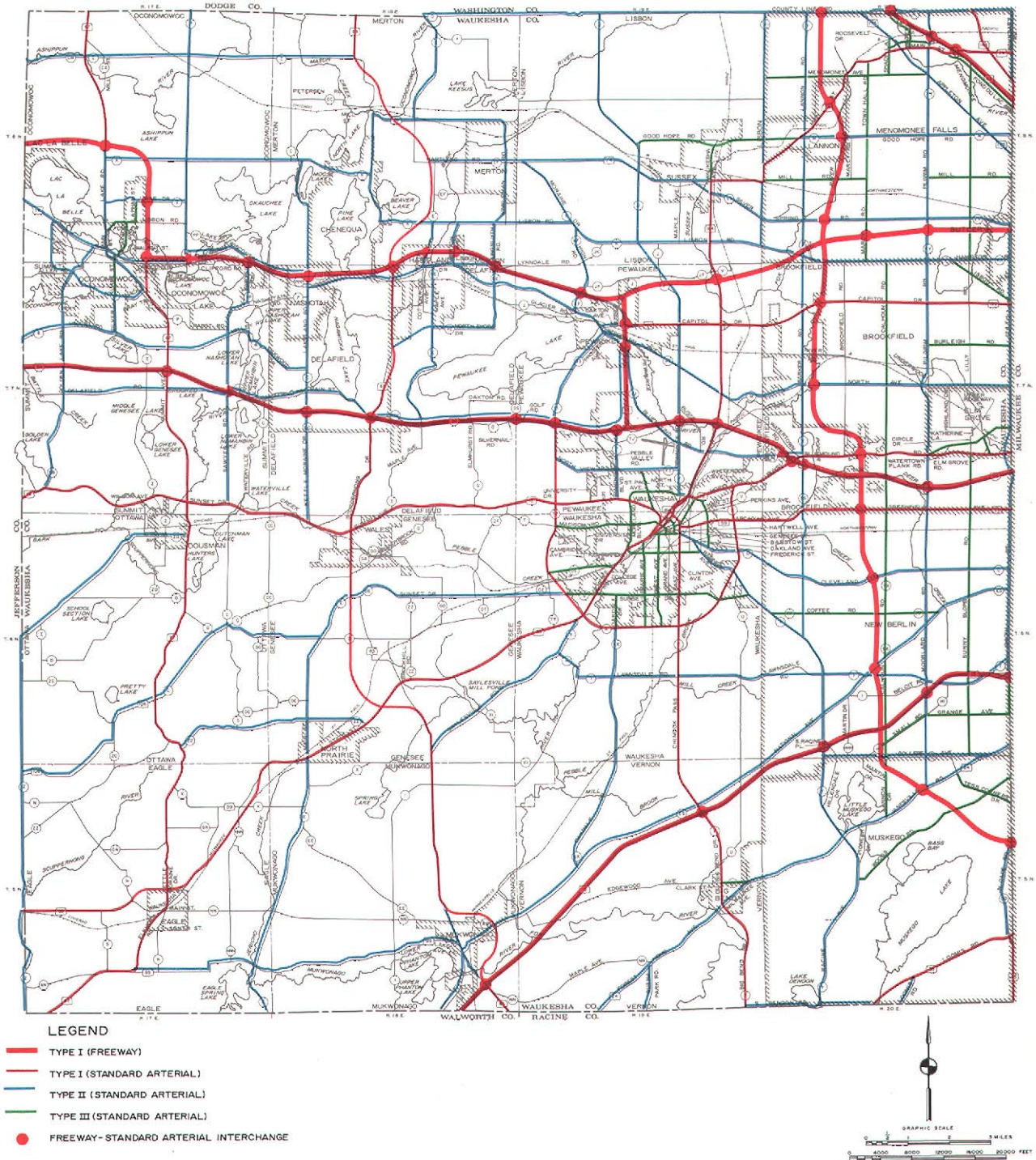
SUMMARY

The application of functional criteria for jurisdictional highway classification required analysis of

the trip lengths and traffic volumes to be served by each link in the total arterial street and highway system, an inventory of existing and proposed land uses to be served by each of the jurisdictional subsystems, and investigation of the operational characteristics of the arterial facilities. This procedure involved three major steps: classification of each arterial facility in terms of the trip service criteria previously established; classification of each arterial facility in terms of the land use criteria previously established; and the combining and refinement of these two sets of jurisdictional subsystems through the application of system continuity and facility spacing criteria.

By comparing trip service, land use service, and volume, it was found that most of the arterial facilities fell into one of the three jurisdictional type categories: Type I, state trunk; Type II, county trunk; and Type III, local trunk. Some judgment was exercised in the case of a limited number of marginal facilities which did not clearly fall into one category or another because not all of the criteria were met for the majority of the route length.

**PROPOSED JURISDICTIONAL CLASSIFICATION
OF THE ARTERIAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1990**



The proposed jurisdictional street and highway system shown on this map represents a synthesis of the trip length, land use, and vehicle volume jurisdictional subsystems shown on Maps 17, 18, and 19 into three individual but integrated, continuous jurisdictional highway systems. These systems consist of the Type I (state trunk), the Type II (county trunk), and the Type III (local trunk) highway subsystems. The Type I highway system carries the greatest traffic volumes, serves the longest trips, and connects the most significant land uses both within Waukesha County and within adjacent counties. The Type II highway system serves primarily intracounty trips, while the Type III highway system serves primarily intracommunity trips.

Source: SEWRPC.

Chapter VI

THE RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN

INTRODUCTION

Previous chapters of this report have described the jurisdictional highway planning process; the criteria developed in this process to group the various arterial routes comprising the total arterial street and highway network into subsystems having similar trip service, land use service, and operational characteristics; and the application of these criteria to develop a jurisdictional highway system plan for Waukesha County. This chapter describes the resulting recommended jurisdictional highway system plan so developed. The plan provides for three jurisdictional highway systems—Type I, state trunk; Type II, county trunk; and Type III, local trunk—which together comprise the total arterial street and highway system required to serve the growing travel demands within Waukesha County and its constituent cities and villages to the plan design year of 1990. The recommended jurisdictional highway system plan thus recommends an alignment of governmental responsibility for each of the various facilities comprising the total arterial street and highway system in the design year. The recommended plan also constitutes a refinement of the functional arterial street and highway system plan prepared by the Southeastern Wisconsin Regional Planning Commission under the initial regional land use-transportation study and, as such, is intended upon its adoption to constitute a functional, as well as a jurisdictional, arterial street and highway system plan for Waukesha County to the design year 1990.

Because certain major arterial street and highway facilities proposed in the functional arterial street and highway system plan will not be constructed and operative until some time beyond the year in which the plan may be expected to be adopted and its implementation initiated, the jurisdictional plan has been staged to the plan design year 1990 through the interim years of 1975 and 1980. The effect of this staging has been to retain temporarily on the proposed Type I (state trunk) arterial system certain routes ultimately proposed as Type II (county trunk) routes by 1990. These routes generally parallel proposed freeways, and the higher jurisdictional classifica-

tion is recommended for the existing surface arterial until such time as the recommended paralleling freeways are constructed in the corridors served. The staging is thus intended to provide the best possible trip service, land use service, and system continuity during the interim period required to implement fully the functional highway system plan.

The jurisdictional highway systems within Waukesha County as these systems are anticipated to exist by 1975, 1980, and 1990 are shown on Maps 22, 23, and 20, respectively. The configurations of the three jurisdictional highway systems, as recommended for the years 1975, 1980, and 1990, are such that in each case the proposed Type I (state trunk) arterial system forms a complete and continuous arterial subsystem in and of itself, the proposed Type II (county trunk) arterial system complements the proposed Type I arterial system and with that system forms a continuous arterial subsystem, while the proposed Type III (local trunk) arterial system comprises the remainder of the total arterial street and highway system. Map 20 indicates this hierarchy of system and subsystem continuity.

THE RECOMMENDED TYPE I (STATE TRUNK) ARTERIAL HIGHWAY SYSTEM

The arterial street and highway system recommended to serve the arterial traffic demand in Waukesha County through the plan design year totals 747 route-miles of facilities, or about 29 percent of the estimated 2,561 route-miles of facilities expected to comprise the total street and highway system within the county in 1990. Of this total arterial system, 264 route-miles, or about 35 percent, are proposed to comprise the Type I (state trunk) arterial highway system. This represents an increase of 16 miles over the existing state trunk highway and connecting street mileage within Waukesha County. The recommended Type I system includes 166 miles of standard arterial facilities, as well as all of the 98 miles of existing, committed, and proposed freeways serving Waukesha County through the plan design year 1990 (see Table 10).

Table 10

**FUNCTIONAL COMPOSITION OF RECOMMENDED
TYPE I (STATE TRUNK) ARTERIAL HIGHWAY SYSTEM
IN WAUKESHA COUNTY: 1990**

Functional Facility Type	Number of Miles	Percent of Total
Freeways		
Existing	47.10	17.8
Proposed	50.74	19.2
Subtotal	97.84	37.0
Standard Surface Arterials		
Existing	136.82	51.8
Proposed	29.64	11.2
Subtotal	166.46	63.0
Total	264.30	100.0

Source: Wisconsin Department of Transportation and SEWRPC.

The proposed Type I (state trunk) arterial system for 1990 is shown on Map B-1, contained in Appendix B to this report. The recommended Type I arterial system includes the following standard arterials, in addition to USH 41-45; USH 16; IH 94; and the Bay, Belt, and STH 15 (Rock) Freeways:

1. USH 18 from the Milwaukee County line west over its present alignment on Blue Mound Road through the Village of Elm Grove, City and Town of Brookfield, and into the City of Waukesha over E. Moreland Boulevard to its intersection with White Rock Avenue; then on new alignment over E. Moreland Boulevard to STH 164 (E. St. Paul Avenue and E. North Street); then over STH 164 (E. St. Paul Avenue and E. North Street, these two streets being paired in one-way operation) to Madison Street; then over its present alignment on Madison and Delafield Streets and Summit Avenue to the west Waukesha corporate limits; and then over its present alignment on Summit Avenue and Sunset Drive through the Towns of Pewaukee, Delafield, Genesee, Ottawa, and Summit and the Villages of Wales and Dousman to the Jefferson County line.
2. STH 36 from the Milwaukee County line southwest over its present alignment on Loomis Road through the City of Muskego to the Racine County line.

3. USH 45 from its intersection with STH 36 (Loomis Road) south over its present alignment through the City of Muskego to the Racine County line.
4. STH 59 from the Milwaukee County line west over its present alignment on Greenfield Avenue through the Cities of Brookfield and New Berlin and Town of Waukesha into the City of Waukesha and over Arcadian Avenue to its intersection with Hartwell Avenue; then on new alignment on Arcadian Avenue, N. East Avenue, and Buckley and Union Streets, crossing the Fox River on a proposed structure linking Buckley and Union Streets, to STH 164 (E. St. Paul Avenue and E. North Street); then over E. St. Paul Avenue and E. North Street, (these two streets being paired in one-way operation) to Emily Street; then over new construction linking W. North Street to W. St. Paul Avenue at the intersection with present STH 59 (W. Wisconsin Avenue); then on present alignment over W. St. Paul Avenue and Genesee Road to the south Waukesha corporate limits; then continuing on present alignment over W. St. Paul Avenue and Genesee Road and State Street through the Towns of Waukesha and Genesee and the Village of North Prairie; then on a reconstructed alignment through the Towns of Mukwonago and Eagle to its intersection with present CTH N; and then on its present alignment to the Jefferson County line.
5. STH 67 from the Washington County line south over its present alignment through the Town of Oconomowoc to its intersection with the proposed USH 16 Oconomowoc bypass; then on new alignment over the proposed USH 16 bypass to its intersection with present USH 16; then over new construction through the Village of Oconomowoc Lake and City of Oconomowoc to present STH 67 at its intersection with Thackeray Trail; and then over its present alignment on Summit Avenue, Kettle Moraine Drive, and Elkhorn Road through the Towns of Summit, Ottawa, and Eagle and Villages of Dousman and Eagle to the Walworth County line.
6. STH 74 from the Milwaukee County line west over its present alignment on Main

Street through the Villages of Menomonee Falls, Lannon, and Sussex and the Town of Lisbon to its proposed terminus at STH 164 (Waukesha Avenue).

7. STH 83 from the Washington County line south over its present alignment to its intersection with Mapleton Road; then on a reconstructed alignment around Beaver Lake through the Town of Merton and City of Delafield to its intersection with W. Capitol Drive; then on its present alignment over Hartland Road, Scuppernong Drive, and Wales Road through the City of Delafield, Towns of Delafield and Genesee, and Village of Wales; then on a reconstructed alignment to its intersection with CTH X; then on its present alignment through the Town of Mukwonago to a point approximately one-quarter of a mile north of its intersection with present CTH NN; then on a reconstructed alignment through the Village of Mukwonago to the proposed interchange with the proposed STH 15 (Rock) Freeway; and then over its present alignment to the Walworth County line.
8. STH 145 from the Milwaukee County line north along its present alignment through the Village of Menomonee Falls to the Washington County line.
9. STH 164 from its intersection with STH 74 (Main Street) south over its present alignment on Waukesha Avenue through the Village of Sussex and Towns of Lisbon and Pewaukee into the City of Waukesha over E. St. Paul Avenue and E. North Street to its terminus at Madison Street.
10. STH 190 from the Milwaukee County line west over its present alignment on Capitol Drive through the City of Brookfield, Towns of Brookfield and Pewaukee, and Village of Pewaukee to its terminus at USH 16.
11. A new state trunk highway facility from proposed STH 59 (Arcadian Avenue) south over East Avenue through the City of Waukesha to the south corporate limits; and then on CTH F (Chinook Pass, Big Bend Drive, Clark Street, and Waterford Avenue) through the Towns of Waukesha and Vernon and Village of Big Bend to the Racine County line.

12. A new state trunk facility from USH 18 (E. Moreland Boulevard) south over CTH A through the Towns of Pewaukee and Waukesha and City of Waukesha to Tomahawk Lane; then on new construction through the City and Town of Waukesha southwest and west to STH 59 (Genesee Road) between CTH X (Saylesville Road) and the Pebble Creek; then continuing on new construction northwest and north through the Town of Waukesha to present CTH TT (Merrill Hills Road) at Shananagi Lane; then north on present CTH TT (Merrill Hills Road) through the Towns of Waukesha and Pewaukee and City of Waukesha to USH 18 (Summit Avenue); then on new construction through the Town of Pewaukee to the intersection of Meadowbrook Road and Northview Road; and then on Meadowbrook Road through the Town of Pewaukee and City of Waukesha to IH 94.

All 37 municipalities within Waukesha County would be connected and served by the proposed Type I arterial system, as the term "connect and serve" was defined in Chapter IV of this report, although not all such municipalities would necessarily have Type I facilities actually located within their corporate limits. The recommended mileages in the total Type I arterial system within each municipality for the years 1975, 1980, and 1990 are indicated in Table 11.

The recommended Type I arterial system is intended to provide the basic framework of the total arterial street and highway system required to serve the existing and probable future traffic demand within Waukesha County to the plan design year of 1990; and the relative degree of efficiency with which each link in the proposed Type I arterial system accomplishes its intended function will, therefore, significantly affect the total operation of the entire arterial street and highway system. Code numbers indicating typical roadway cross sections having right-of-way and pavement widths adequate to serve the forecast 1990 traffic demand for each segment of facility in the recommended Type I arterial system are shown on the plan map contained in Appendix B to this report. The cross sections related to each code number are set forth in Figure B-1, contained in Appendix B to this report, and contain, in addition to recommended typical dimensions, estimated representative unit construction and maintenance costs and service volume ranges at various levels of service.

Table 11

**RECOMMENDED DISTRIBUTION OF TYPE I (STATE TRUNK) ARTERIAL SYSTEM MILEAGE
IN WAUKESHA COUNTY BY CIVIL DIVISION: 1975, 1980, and 1990**

Civil Division	1975			1980			1990		
	Number of Miles			Number of Miles			Number of Miles		
	Freeway	Standard Arterial	Total	Freeway	Standard Arterial	Total	Freeway	Standard Arterial	Total
CITIES									
Brookfield	4.12	8.73	12.85	5.18	10.43	15.61	12.44	10.43	22.87
Delafield	3.97	3.53	7.50	3.97	2.59	6.56	3.97	2.59	6.56
Muskego	--	11.38	11.38	--	4.80	4.80	4.04	4.80	8.84
New Berlin	6.73	4.28	11.01	6.73	3.61	10.34	12.77	3.61	16.38
Oconomowoc	--	4.96	4.96	--	1.51	1.51	1.53	1.51	3.04
Waukesha	0.71	13.63	14.34	2.21	24.49	26.70	3.72	28.74	32.46
Subtotal	15.53	46.51	62.04	18.09	47.43	65.52	38.47	51.68	90.15
VILLAGES									
Big Bend	--	1.67	1.67	--	1.28	1.28	--	1.28	1.28
Butler	--	--	--	--	--	--	0.52	--	0.52
Chenequa	1.09	3.44	4.53	1.09	--	1.09	1.09	--	1.09
Dousman	--	0.24	0.24	--	0.75	0.75	--	0.75	0.75
Eagle	--	2.29	2.29	--	2.29	2.29	--	1.20	1.20
Elm Grove	--	2.04	2.04	--	2.04	2.04	--	2.04	2.04
Hartland	1.49	0.08	1.57	1.94	2.41	4.35	1.94	2.41	2.41
Lac LaBelle	--	--	--	--	--	--	--	--	--
Lannon	--	2.88	2.88	--	3.18	3.18	1.87	3.18	5.05
Menomonee Falls	3.66	7.29	10.95	3.66	7.29	10.95	12.93	7.29	20.22
Merton	--	--	--	--	--	--	--	--	--
Mukwonago	--	1.68	1.68	0.57	2.09	2.66	0.57	1.87	2.44
Nashotah	0.99	--	0.99	0.99	--	0.99	0.99	--	0.99
North Prairie	--	1.90	1.90	--	2.31	2.31	--	2.31	2.31
Oconomowoc Lake	--	0.04	0.04	--	0.09	0.09	--	0.09	0.09
Pewaukee	1.09	0.35	1.44	2.06	0.35	2.41	4.65	1.31	5.96
Sussex	--	0.79	0.79	--	1.92	1.92	--	1.92	1.92
Wales	--	1.44	1.44	--	1.58	1.58	--	1.58	1.58
Subtotal	8.32	26.13	34.45	10.31	27.58	37.89	24.56	27.23	51.79
TOWNS									
Brookfield	2.23	3.92	6.15	0.69	1.10	1.79	1.44	1.10	2.54
Delafield	3.65	6.56	10.21	3.65	7.41	11.06	3.65	7.41	11.06
Eagle	--	17.54	17.54	--	17.54	17.54	--	14.89	14.89
Genesee	--	13.10	13.10	--	12.55	12.55	--	12.72	12.72
Lisbon	--	2.70	2.70	--	1.27	1.27	--	1.27	1.27
Merton	1.05	3.89	4.94	0.60	4.82	5.42	0.60	4.82	5.42
Mukwonago	1.92	9.96	11.88	1.35	9.55	10.90	1.35	5.85	7.20
Oconomowoc	1.22	6.69	7.91	8.16	3.58	11.74	6.63	3.58	10.21
Ottawa	--	6.65	6.65	--	6.40	6.40	--	6.40	6.40
Pewaukee	10.20	11.58	21.78	8.18	8.28	16.46	7.43	8.16	15.59
Summit	6.49	12.45	18.94	6.49	10.80	17.29	6.49	10.80	17.29
Vernon	7.22	9.97	17.19	7.22	5.30	12.52	7.22	5.30	12.52
Waukesha	--	12.55	12.55	--	4.70	4.70	--	5.25	5.25
Subtotal	33.98	117.56	151.54	36.34	93.30	129.64	34.81	87.55	122.36
Total	57.83	190.20	248.03	64.74	168.31	233.05	97.84	166.46	264.30

Source: Wisconsin Department of Transportation and SEWRPC.

The typical cross sections recommended in the plan are based upon analyses of land use impacts, as well as upon analyses of forecast traffic volumes; desirable levels of service; and an assessment of the probable development cost, including cost of right-of-way acquisition. As such, the suggested cross sections will provide traffic capacities required to meet the forecast travel demand at the level of service indicated in the cross-section code shown on the plan map. The Type I arterial facilities constructed to such cross sections will thus form a workable subsystem able to carry satisfactorily the existing and probable future traffic demand and will be properly related to the other arterial subsystems and to existing and probable future land use development within the county and within the Region of which the county is a part. Further consideration and refinement of the suggested typical cross sections, in light of changing geometric and structural design standards, as well as of changing traffic and land use patterns, will be required as each segment of the system is considered for actual improvement.

THE RECOMMENDED TYPE II (COUNTY TRUNK) ARTERIAL HIGHWAY SYSTEM

The proposed Type II (county trunk) arterial highway system includes 386 route-miles of facilities, or about 52 percent of the total arterial mileage proposed to serve Waukesha County in the plan design year of 1990. The proposed Type II arterial system is comprised entirely of standard arterials, since all freeways are included in the proposed Type I arterial system. The total of 386 route-miles of county trunk highways proposed represents a reduction of 51 miles from the existing county trunk mileage. This reduction in total county trunk highway mileage can be effected, even though both the mileage of the arterial system, and the proportion which county trunk highways comprise of that system are increased substantially. The proposed system is shown on Map B-1, Appendix B; and the distribution of the system mileage by municipality for the years 1975, 1980, and 1990 is indicated in Table 12.

As shown on Map 20, all but one of the 48 freeway interchanges with surface arterials expected to exist within Waukesha County by 1990 are served by either the Type I or Type II arterial systems.

Table 12

RECOMMENDED DISTRIBUTION OF TYPE II (COUNTY TRUNK) ARTERIAL SYSTEM MILEAGE IN WAUKESHA COUNTY BY CIVIL DIVISION 1975, 1980, and 1990

Civil Division	Standard Surface Arterial (Miles)		
	1975	1980	1990
CITIES			
Brookfield	15.81	17.01	18.86
Delafield	8.99	8.53	8.53
Muskego	11.68	18.26	20.73
New Berlin	33.62	34.29	38.32
Oconomowoc	3.01	9.37	12.48
Waukesha	7.50	13.96	18.07
Subtotal	80.61	101.42	116.99
VILLAGES			
Big Bend	--	0.85	0.85
Butler	1.76	1.76	1.76
Chenequa	3.21	5.44	5.44
Dousman	1.93	1.06	1.06
Eagle	0.60	--	--
Elm Grove	1.85	1.85	2.30
Hartland	4.41	8.01	8.01
Lac LaBelle	--	--	--
Lannon	3.18	3.18	3.18
Menomonee Falls	34.11	34.64	35.08
Merton	3.09	4.32	4.32
Mukwonago	3.13	2.64	5.68
Nashotah	3.65	2.55	2.55
North Prairie	1.00	1.10	1.10
Oconomowoc Lake	2.38	1.46	1.46
Pewaukee	4.10	8.50	9.28
Sussex	2.04	3.70	4.91
Wales	2.06	--	--
Subtotal	72.50	81.06	86.98
TOWNS			
Brookfield	5.26	2.01	2.30
Delafield	19.99	15.28	14.22
Eagle	17.03	7.13	10.79
Genesee	29.51	14.24	14.23
Lisbon	25.63	23.97	22.93
Merton	24.20	14.67	14.70
Mukwonago	20.07	4.44	8.20
Oconomowoc	19.76	20.27	20.05
Ottawa	29.85	14.85	14.09
Pewaukee	25.63	13.54	10.43
Summit	23.74	23.76	23.43
Vernon	16.24	14.21	15.47
Waukesha	26.91	16.94	11.44
Subtotal	283.82	185.31	182.28
Total	436.93	367.79	386.25

Source: Wisconsin Department of Transportation and SEWRPC.

Sixteen of these interchanges are served by existing or proposed Type I arterial facilities. The Type II arterial street and highway system serves to provide access to 33 of the freeway interchanges with surface arterials including one served by the present STH 24 which is proposed to revert in its entirety to the Type II system. Twenty-three interchanges are served by the following existing CTH facilities proposed to be retained on the Type II arterial system: county trunk highways C, D, E, F, G, P, Q, T, W, Y, Z, CC, ES, JJ, JK-KE, KF, OO, PP, SS, VV, YY, and CCC. In addition six interchanges are served by the following local streets and highways proposed to be integrated into the Type II arterial system: Merton Avenue in the Village of Hartland, Pilgrim Road in the Village of Menomonee Falls, North Avenue in the City of Brookfield, Moorland Road in the Cities of Brookfield and New Berlin, Pilgrim Parkway in the City of Brookfield and Village of Elm Grove, and 124th Street in the City of New Berlin. One interchange in the Village of Menomonee Falls is served by Marcy Road, which is proposed to remain on the Type III arterial system through the plan year. The adequate improvement, maintenance, and operation of these routes is essential to the efficient operation of the freeway system.

In addition, certain routes of countywide significance including both routes formerly designated as state trunk highways and existing local roads are recommended for inclusion in the Type II system. Facilities of the former category include portions of USH 16 in the City and Town of Oconomowoc and Village of Oconomowoc Lake, STH 67 in the City and Town of Oconomowoc, STH 74 in the Towns of Merton and Lisbon and Villages of Merton and Sussex, STH 83 in the Towns of Merton and Mukwonago and Villages of Chenequa and Mukwonago, and all of STH 99, STH 106, and STH 175 within Waukesha County. Facilities in the latter category include Barker Road in the Town and City of Brookfield, Broadway in the City of Waukesha, Capitol Drive in the Village of Pewaukee, Concord Road in the City of Oconomowoc, Johnson Road in the City of New Berlin, Loomis Street in the City of Muskego, Main Street in the Village and Town of Merton, Tavat Road in the Town of Ottawa, W. Moreland Boulevard in the City of Waukesha, Northview Road in the City of Waukesha and Town of Pewaukee, and Racine Avenue in the City of Waukesha.

Also included in the Type II system are certain county and municipal boundary line roads. These inclusions are intended to reduce the number of governmental agencies having primary responsibility for the improvement, maintenance, and operation of these facilities and thereby to reduce the problems involved in achieving the intergovernmental coordination necessary to the cooperative development of the total arterial system. These facilities include Boundary and County Line Roads in the Village of Menomonee Falls, Tichigan Road in the Town of Vernon and City of Muskego, S. Denoon and W. Muskego Dam Roads in the City of Muskego, and 124th Street in the Cities of New Berlin and Brookfield and the Villages of Butler and Elm Grove. In addition to these proposed Type II facilities there are the following present county trunk highways proposed to be retained as Type II facilities through the plan period; B, I, J, K, V, X, CW, DE, FT, HE, HH, HI, XX, and ZD.

The recommended Type II arterial system complements the recommended Type I system and is intended, together with the latter system, to include all major arterials within Waukesha County having areawide significance. In addition, the recommended Type II arterial system is, in the rural areas of the county, intended to serve all of the arterial travel demand which is not served by the Type I arterial system.

Code numbers indicating typical roadway cross sections with right-of-way and pavement widths adequate to serve the forecast 1990 traffic demand for each segment of facility in the recommended Type II arterial system are shown on the plan map contained in Appendix B to this report. The typical cross sections related to each code number are set forth in Figure B-1, Appendix B, and contain, in addition to the recommended typical dimensions, estimated representative construction and maintenance unit costs and service volume ranges at various levels of service. The typical cross sections recommended in the plan are based upon analyses of land use impacts, as well as upon analyses of forecast traffic volumes, desirable levels of service, and an assessment of the probable development cost, including cost of right-of-way acquisition. As such, the suggested cross sections will provide the traffic capacities required to meet the forecast travel demand at the level of service indicated on the cross-section code shown on the plan map. The Type II arterial facilities constructed to such cross sections will thus form a workable subsystem able to carry

satisfactorily the existing and probable future travel demand and will be properly related to the other arterial subsystems and to existing and probable future land use development within the county and within the Region of which the county is a part. Reconsideration and refinement of the suggested typical cross sections will be required in light of changing geometric and structural design standards, as well as of changing land use and traffic patterns, as each segment of facility in the system is considered for actual improvement.

THE RECOMMENDED TYPE III (LOCAL TRUNK) ARTERIAL HIGHWAY SYSTEM

The proposed Type III (local trunk) arterial highway system includes 97 route-miles of facilities, or about 13 percent of the total arterial mileage proposed to serve Waukesha County in the plan design year of 1990. The proposed system is shown on Map B-1, Appendix B, and the distribution by municipality for the years 1975, 1980, and 1990 is indicated in Table 13. The proposed Type III arterial system is intended to serve the lowest level of arterial traffic demand within the urban areas of Waukesha County and, as such, to complement the proposed Type I and Type II subsystems. Even though the Type III system is intended to serve primarily local arterial street and highway needs, this subsystem must, nevertheless, perform efficiently as an integral part of the total arterial street and highway system if that total system is to properly serve the growing traffic demand within the county. The location and configuration of the recommended Type III system, when considered in conjunction with the recommended Type I and Type II systems, are such to generally permit sound urban land use development to proceed in the form of planned residential development units without penetration of the units by arterial streets and highways.

Code numbers indicating typical cross sections with right-of-way and pavement widths adequate to serve the forecast 1990 traffic demand for each link in the recommended Type III arterial system are shown on the plan map contained in Appendix B to this report. The typical cross sections related to each code number are set forth in Figure B-1, Appendix B, and contain, in addition to recommended typical dimensions, estimated representative construction and maintenance unit costs and service volume ranges at various levels of service. The typical cross sections suggested in the plan are based upon analyses of land use

Table 13

RECOMMENDED DISTRIBUTION OF TYPE III (LOCAL TRUNK) ARTERIAL SYSTEM MILEAGE IN WAUKESHA COUNTY BY CIVIL DIVISION 1975, 1980, and 1990

Civil Division	Standard Surface Arterial (Miles)		
	1975	1980	1990
CITIES			
Brookfield	11.07	11.07	11.07
Delafield	--	--	--
Muskego	6.24	6.24	7.81
New Berlin	20.87	20.87	19.81
Oconomowoc	0.88	2.14	3.27
Waukesha	17.70	21.23	22.70
Subtotal	56.76	61.55	64.66
VILLAGES			
Big Bend	0.37	0.66	0.66
Butler	--	--	--
Chenequa	--	--	--
Dousman	--	--	--
Eagle	--	--	--
Elm Grove	2.62	2.62	2.62
Hartland	--	--	--
Lac LaBelle	--	--	--
Lannon	0.85	1.35	1.35
Menomonee Falls	23.30	23.30	23.30
Merton	--	--	--
Mukwonago	--	--	--
Nashotah	--	--	--
North Prairie	--	--	--
Oconomowoc	--	--	--
Pewaukee	--	--	--
Sussex	1.83	1.83	2.46
Wales	--	--	--
Subtotal	28.97	29.76	30.39
TOWNS			
Brookfield	--	--	--
Delafield	--	--	--
Eagle	--	--	--
Genesee	--	--	--
Lisbon	2.51	2.01	1.38
Merton	--	--	--
Mukwonago	--	--	--
Oconomowoc	--	--	--
Ottawa	--	--	--
Pewaukee	1.78	1.34	--
Summit	--	--	--
Vernon	0.34	0.05	--
Waukesha	2.52	0.34	0.13
Subtotal	7.15	3.74	1.51
Total	92.88	95.05	96.56

Source: Wisconsin Department of Transportation and SEWRPC.

impacts, as well as analyses of forecast traffic volume, desirable level of service, and preliminary assessment of the probable development cost, including cost of right-of-way acquisition. As such, the suggested cross sections will provide the traffic capacity required to meet the forecast travel demand at the level of service indicated in the cross-section code shown on the plan map. The Type III arterial facilities constructed to such cross sections will thus provide a workable subsystem able to carry satisfactorily the existing and probable future land use development within the county and the Region of which the county is a part. Further consideration and refinement of the suggested typical cross sections, in light of changing geometric and structural design standards, as well as of changing traffic and land use patterns, will be required as each segment of facility in the system is considered for improvement.

PROSPECTIVE ARTERIAL HIGHWAYS

In addition to the Type I, Type II, and Type III arterial systems, the creation of a system of prospective arterial highways, consisting of 41 route-miles of facilities, is herein recommended. All but approximately two miles of the 41 miles of prospective arterials already exist and presently function as land access or collector facilities. While these prospective arterial facilities will not be required to serve existing or forecast arterial traffic demand through the plan design year, urban development may be expected to continue to occur in Waukesha County beyond the design year of the plan, and such development may be expected to require additional arterial facilities to serve the travel demand generated by it. To this end, those routes which could logically serve the demand generated by such urban development have been identified and are shown on Map B-1, Appendix B.

In the interim period of time to 1990, the prospective arterial highways will continue to serve as collector or land access facilities and, as such, are of direct concern in areawide planning only to the extent that they may be required to serve arterial traffic needs beyond the plan design year. The cross section assigned to the prospective arterials is intended to permit the proper control of access and the reservation of sufficient right-of-way to accommodate a typical, desirable Type III arterial facility cross section. The refinement of the cross section for each

prospective arterial highway can only be accomplished at such time as further urban development is planned or committed and the arterial travel demand generated by such development can be quantified.

The prospective arterials are of direct concern in areawide planning not only because of the need to reserve right-of-way for future arterials, but also because their location and alignment may affect future land use development. The spacing selected for prospective arterials, generally one mile, is such as to provide a sound, basic framework of arterial facilities around which the development of planned residential development units at medium population densities can proceed, while not precluding such development at a lower or at a higher density. The preservation of the right-of-way for these potential traffic carriers will ensure system continuity in the extension of the recommended 1990 arterial street and highway system as urban development continues beyond the forecast 1990 level, and is essential to protect the traffic-carrying capacity of these facilities by controlling access and thereby the degree of conflict between abutting land uses and the basic function of the arterial facilities.

RELATIONSHIP OF RECOMMENDED PLAN TO OTHER COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLANS

One of the important considerations in the preparation of the Waukesha County jurisdictional highway system plan was the intercounty continuity of the arterial street and highway system and the jurisdictional subsystems. In the plan preparation, certain facilities of countywide and local significance within Waukesha County were found to be required to perform arterial service by the plan design year of 1990. These facilities, because of their relatively short length in adjoining counties, were not included in the prior preparation of the jurisdictional highway system plans for Milwaukee and Walworth Counties. These facilities are Woods Road in the City of Muskego in Waukesha County, and in the City of Franklin in Milwaukee County, S. North Cape Road in the City of Franklin in Milwaukee County, and CTH Z in the Town of Eagle in Waukesha County; the Town of Palmyra in Jefferson County; and the Towns of La Grange and Troy in Walworth County. One other facility contained in the Walworth County plan to maintain intercounty continuity with the existing county trunk highway system is proposed

to be a prospective arterial through the plan year 1990. This facility, CTH I, is located in the Town of Mukwonago in Waukesha County and in the Town of East Troy in Walworth County. One facility recommended for inclusion on the county trunk highway system in the jurisdictional highway system plan for Milwaukee County is recommended as a local trunk arterial facility in the Waukesha County plan. This facility, Mill Road, is located in the Village of Menomonee Falls in Waukesha County and in the City of Milwaukee in Milwaukee County. These disparities between Waukesha County and adjoining counties are of a minor nature, and it is recommended that the Advisory Committees for Milwaukee and Walworth Counties meet to modify the respective jurisdictional plans to adjust these plans to the Waukesha County plan.

SCENIC DRIVES

One of the most popular outdoor recreational activities within Waukesha County, and within the Region of which Waukesha County is a part, is pleasure driving, as evidenced by the estimated 56,000 average seasonal Sunday participants in such pleasure driving within Waukesha County in 1971. Forecasts, moreover, indicate that a substantial increase in the demand for this recreational pursuit may be expected, with the average seasonal Sunday participation within the county increasing to over 101,000 participants by 1990. To provide facilities for this activity, the marking and signing of a system of scenic drives routed over existing roadways within the county is herein recommended. The scenic drives recommended to be marked and signed within Waukesha County are shown on Map 21. These drives are routed over 96 miles of streets and highways, of which all but three miles are comprised of existing arterial, collector, and land access facilities. The three-mile exception consists of three short segments of new facilities which would have to be constructed for arterial system continuity. Of the total 96 miles of proposed scenic drives, 60 miles, or about 63 percent, would normally perform arterial street and highway functions; and the remaining 36 miles, or about 37 percent, would normally perform collector and land access functions during weekdays through the plan design year 1990.

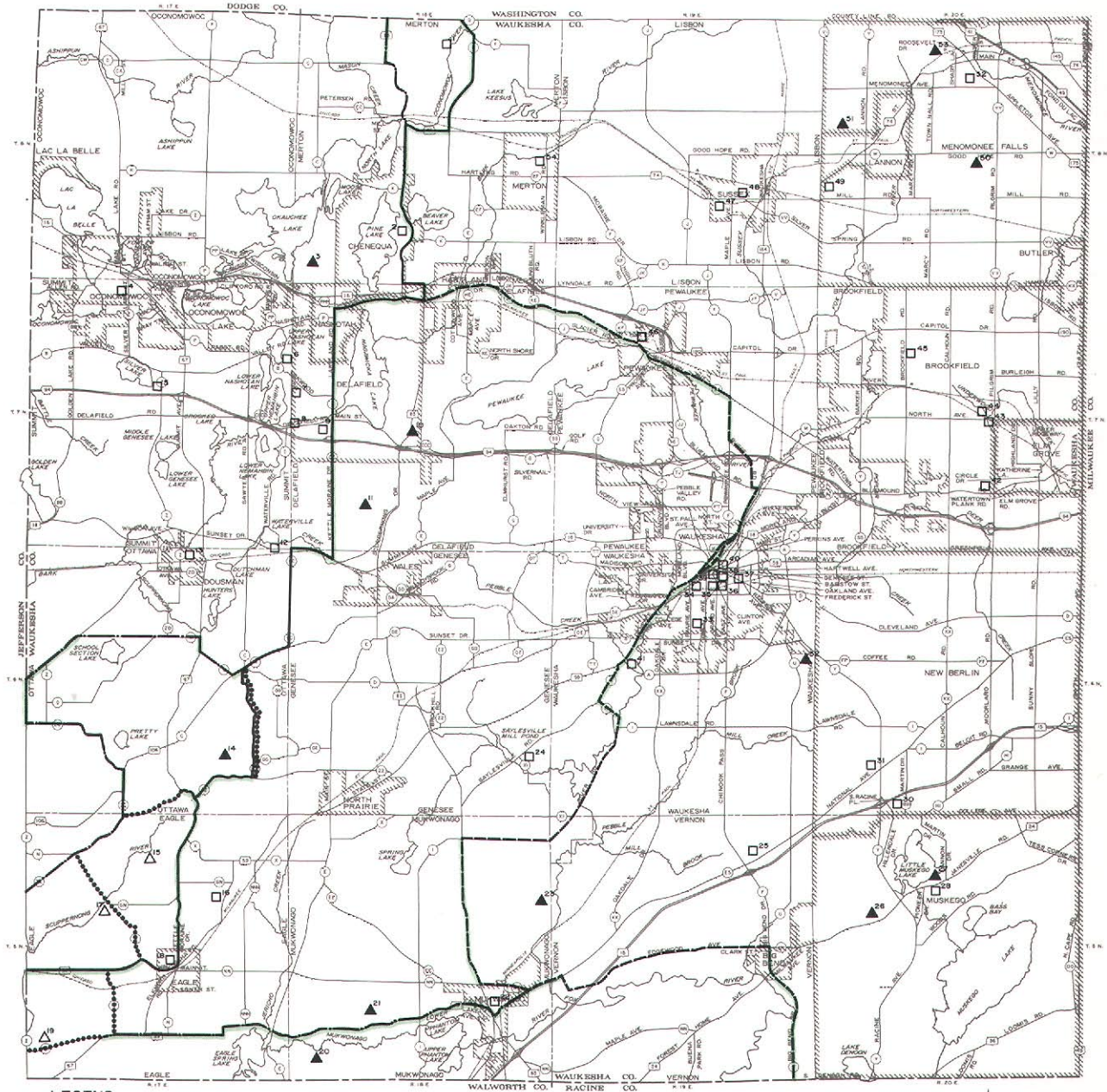
The recommended scenic drive system within Waukesha County consists of those portions of the Kettle Moraine Scenic Drive and the proposed Fox

River Scenic Drive within Waukesha County, with additional interconnecting links to provide for access to the scenic, historical, and recreational sites located in western Waukesha County and for route continuity. The Kettle Moraine Scenic Drive portion of the scenic drive system for the county provides for interconnection between the northern and southern units of the Kettle Moraine State Forest. This drive from the Washington County line south is routed over CTH E, present STH 74, and STH 83 (Mill Street) through the Town of Merton and Village of Chenequa to the proposed frontage road paralleling the proposed USH 16 freeway, then west to CTH C (Genesee Street), then south on CTH C (Genesee Street) through the Village of Nashotah and City of Delafield, continuing south on Genesee Street to CTH CC (Kettle Moraine Drive), and continuing to USH 18 (Summit Avenue) through the Town of Delafield. The drive is then routed over USH 18 (Summit Avenue) to CTH CC (Kettle Moraine Drive), then south on CTH CC (Kettle Moraine Drive) into the Town of Genesee to CTH G, then along CTH G entering the Kettle Moraine State Forest southern unit to CTH ZZ, over CTH ZZ to STH 67 through the Towns of Ottawa and Eagle into the Village of Eagle on STH 67 (Kettle Moraine Drive), then west on STH 59 to the Jefferson County line.

The proposed Fox River Scenic Drive portion of the scenic drive system for the county begins at its intersection with the Kettle Moraine Scenic Drive at STH 83 and the proposed frontage road paralleling the proposed USH 16 freeway in the City of Delafield. This drive proceeds east on Capitol Drive through the Village of Hartland, then over CTH JJ through the Town of Delafield and into the Village of Pewaukee on Wisconsin Avenue, and continuing on Wisconsin Avenue and CTH SS in the Town of Pewaukee to CTH F. This drive is then routed south on CTH F and Busse Road to STH 164 in the Town of Pewaukee and then enters the City of Waukesha on STH 164 (E. North Street and E. St. Paul Avenue) paralleling the Fox River. The drive continues on North Street and St. Paul Avenue and STH 59 (Genesee Road) through the City of Waukesha to CTH X (Saylesville Road) in the Town of Waukesha, then along CTH X (Saylesville Road) to CTH HI, continuing south on CTH HI crossing the Fox River to CTH I (River Road), then continuing on CTH I (River Road) through the Town of Waukesha to STH 83, then on STH 83 through the Town of Mukwonago and into the Village of Mukwonago to CTH NN. The drive then turns east on CTH NN to present

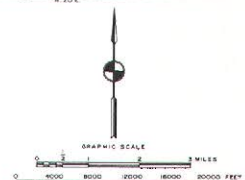
Map 21

RECOMMENDED SCENIC DRIVE SYSTEM IN WAUKESHA COUNTY: 1990



LEGEND

- KETTLE MORaine SCENIC DRIVE
- - - FOX RIVER SCENIC DRIVE
- OTHER CONNECTING SCENIC DRIVES
- STATE PARK ROAD
- PORTION OF SCENIC DRIVE ON THE ARTERIAL STREET AND HIGHWAY SYSTEM
- ▲⁵¹ MAJOR OUTDOOR RECREATION, CONSERVATION, AND RELATED OPEN SPACE SITE (SEE TABLE 14)
- ▲¹⁹ MAJOR CONSERVATION SITE OF PARTICULAR SCIENTIFIC INTEREST (SEE TABLE 14)
- ⁴² CULTURAL AND HISTORICAL SITE (SEE TABLE 14)



The scenic drive system recommended for marking and signing within Waukesha County consists of about 96 miles of existing or proposed arterial, collector, and land access streets. This system consists of the existing Kettle Moraine Scenic Drive and the proposed Fox River Scenic Drive, with additional interconnecting links to provide for access to the scenic, historical, and recreational sites located in western Waukesha County as well as for route continuity.

Source: SEWRPC.

STH 15 (Fox Street), then into the Town of Vernon on present STH 15 (Fox Street) to Edgewood Avenue, then on Edgewood Avenue into the Village of Big Bend, turning south again on present CTH F (Clark Street and Waterford Avenue) through the Village of Big Bend to the Racine County line.

In addition to these two scenic drives, an additional interconnecting link is proposed for the system of scenic drives in Waukesha County. This link is the present STH 15 (Fox Street) from its intersection with the proposed Fox River Scenic Drive at CTH NN in the Village of Mukwonago west to present STH 83 (Rochester Street), then on STH 83 (Rochester Street) to present STH 99 (Eagle Lake Avenue), then west on STH 99 (Eagle Lake Avenue) through the Town of Mukwonago to STH 67 in the Town of Eagle, then on STH 67 to present CTH S. This interconnecting link then branches, with one branch proposed to turn north on the present CTH S to the existing Kettle Moraine Scenic Drive routed over STH 59 and the other branch continuing west on STH 67 to CTH NN and then on CTH NN to the Jefferson County line.

In addition, the Kettle Moraine State Forest southern unit would be served by proposed scenic drives on present county trunk highways D, N, S, Z, and Tavat Road in the Towns of Eagle and Ottawa. The Mason Creek and Oconomowoc River woodland and wildlife habitat areas of recreation in the northwest portion of the county additionally would be served by a branch from the Kettle Moraine Scenic Drive over present STH 83 (Mill Street) from present STH 74 in the Town of Merton north to the Washington County line.

It is proposed that the following existing county trunk highways in the Towns of Eagle and Ottawa which serve the Kettle Moraine State Forest southern unit, which are herein proposed as a part of the scenic drive system of Waukesha County, and which will not be required to perform arterial service in the plan year 1990, be maintained by the Wisconsin Department of Natural Resources as state park roads pursuant to Section 84.28 of the Wisconsin Statutes: present CTH G from CTH D to CTH ZZ; present CTH N from present CTH ZZ to STH 59; present CTH NN from STH 67 to the Jefferson County line; present CTH S in its entirety; and present CTH ZZ from STH 67 to present CTH ZC. It is further proposed that these facilities be retained on the county trunk highway system until their maintenance as state park roads is assumed by the Department of Natural Resources.

The location and configuration of the proposed scenic drive system within the county was based upon analyses of the recreational and natural resource base of the Region and the county carried out by the Regional Planning Commission and, as shown on Map 21, would connect all existing county and state parks within Waukesha County, as well as 40 of the 54 sites of cultural, historical, natural, and scientific interest within the county (see Table 14). In order to attain the necessary intercommunity and intercounty continuity in the scenic drives; to assure the proper relationship of the scenic drives to the natural resource base; to assure uniformity in the marking and signing of the scenic drives; and, most importantly, to assure the attainment of an equitable fiscal policy for the maintenance of the scenic drives, the functional classification categories established under the study were expanded to include, as a special category, the scenic drive.

EVALUATION OF THE PROPOSED JURISDICTIONAL HIGHWAY SYSTEMS

One of the most important objectives of the jurisdictional highway planning process is to attain the most effective use of the total public resources in the provision of highway transportation by focusing the appropriate resources and capabilities on corresponding areas of need. That the recommended jurisdictional highway system plan accomplishes this objective is indicated by the fact that the proposed Type I arterial system may be expected to carry approximately 5.01 million of the 6.91 million arterial miles of travel anticipated to occur daily within Waukesha County by the year 1990. Thus, approximately 35 percent of the total arterial street and highway mileage within the county may be expected to carry approximately 72 percent of the total arterial travel demand. The proposed Type II arterial system may be expected to carry an additional 1.50 million arterial vehicle miles of travel per day. Thus, an additional 52 percent of the total arterial street and highway mileage may be expected to carry an additional 22 percent of the total arterial travel demand. The remaining 400,000 arterial vehicle miles of travel per day, or 6 percent of the total demand, would be carried on the proposed Type III arterial system.

Thus, the proposed Type I and Type II systems combined may be expected to carry approximately 94 percent of the total arterial vehicle miles of travel expected to take place within the county by

Table 14

CULTURAL, HISTORICAL, SCIENTIFIC, AND MAJOR OUTDOOR RECREATIONAL SITES IN WAUKESHA COUNTY: 1973

Code Number ^a	Cultural and Historical, Scientific, or Major Outdoor Recreational Site	
1	Monches Park	Waukesha County Park and Planning Commission
2	Gustav Unonius Marker	Wisconsin Swedish Pioneer Centennial Committee
3	Nashotah Park	Waukesha County Park and Planning Commission
4	Oconomowoc Settlement	Waukesha County Historical Society
5	Turtle Effigy Mound	Waukesha County Historical Society
6	Nashotah Mission	State Historical Society of Wisconsin
7	Bishop Jackson Kemper Home	Waukesha County Historical Society
8	Cushing Memorial	Waukesha County Historical Society
9	Hawks Inn	Waukesha County Historical Society
10	Nagawaukee Park	Waukesha County Park and Planning Commission
11	Lapham Peak	Waukesha County Historical Society
12	Waterville Settlement	Waukesha County Historical Society
13	Masonic Home	State Historical Society of Wisconsin
14	Kettle Moraine State Forest	Wisconsin Department of Natural Resources
15	Kettle Moraine Fen and Low Prairie	Wisconsin Department of Natural Resources
16	The Cobblestone (Hinkley House)	State Historical Society of Wisconsin
17	Scuppernong Prairie	Wisconsin Department of Natural Resources
18	Eagle Settlement	Waukesha County Historical Society
19	Eagle Oak Opening	Wisconsin Department of Natural Resources
20	Rainbow Springs	Owner
21	Mukwonago Park	Waukesha County Park and Planning Commission
22	Mukwonago Settlement	Waukesha County Historical Society
23	Vernon Marsh	Wisconsin Department of Natural Resources
24	Saylesville Settlement	Waukesha County Historical Society
25	Reformed Presbyterian Church of Vernon	Waukesha County Historical Society
26	Muskego Park	Waukesha County Park and Planning Commission
27	Dandelion Park	Owner
28	Muskego Settlement	Waukesha County Historical Society
29	Luther Park Cemetery	Waukesha County Historical Society
30	Cheney-Faulkner Home	Waukesha County Historical Society
31	Prospect Aid Meeting House	Waukesha County Historical Society
32	Minooka Park	Waukesha County Park and Planning Commission
33	Lyman Goodnow Memorial	Waukesha County Historical Society
34	Dunbar Oak	Waukesha County Historical Society
35	Morris Cutler Home	Waukesha County Historical Society
36	Carroll College	State Historical Society of Wisconsin
37	Waukesha Spring	Waukesha Jaycees, Fox Brewing Company, and Weber Waukesha Brewing Company
38	American Legion (Formerly Lain-Estberg) Home	Waukesha County Historical Society
39	Waukesha Settlement, Prehistoric Indian Mounds	Waukesha County Historical Society
40	Mound of the Turtle, and Old Courthouse	Waukesha County Historical Society
41	Fox River	City of Waukesha
42	Dousman-Dunkel-Behling House	Waukesha County Historical Society
43	Pioneer Cemetery	Waukesha County Historical Society
44	Brookfield Settlement	Waukesha County Historical Society
45	Oak Hill Cemetery	Waukesha County Historical Society
46	Pewaukee Settlement	Waukesha County Historical Society
47	Sussex Settlement	Waukesha County Historical Society
48	St. Alban's Episcopal Church	Waukesha County Historical Society
49	St. James Catholic Church	Waukesha County Historical Society
50	Tamarack Swamp	--
51	Menomonee Park	Waukesha County Park and Planning Commission
52	Menomonee Falls Settlement	Waukesha County Historical Society
53	Watershed Divide	Waukesha County Historical Society
54	First Baptist Church of Merton	Waukesha County Historical Society

^aSee Map 21.

Source: Waukesha County Historical Museum and SEWRPC.

the year 1990, leaving only 6 percent to be carried by Type III arterials. This concentration of travel demand on the various arterial subsystems is indicated in Figure 9.

The total vehicle miles of travel which may be expected to occur daily on all streets and highways within Waukesha County by the year 1990 is similarly estimated as 7.77 million vehicle miles. The proportionate share of this total load which each of the recommended jurisdictional subsystems may be expected to carry by 1990 is summarized in Table 15 and Figure 10. The proposed jurisdictional systems thus clearly focus the available resources on the areas of greatest need; and their adoption and improvement should serve to relieve the local units of government of much of the cost attendant to the movement of heavy volumes of fast, through traffic of areawide importance within the county.

STAGING OF THE PROPOSED JURISDICTIONAL HIGHWAY STUDIES

As indicated earlier, not all of the arterial facilities comprising the functional system considered in the jurisdictional classification will be open to

traffic by 1975. In order to accommodate traffic demand in corridors to be served by freeways proposed to be constructed after 1975, it is recommended that certain arterial facilities, which should ultimately be designated as Type II routes, be maintained as Type I routes; and certain facilities, which should serve as collector and local land access streets and highways, be maintained as Type II routes until such time as the paralleling freeways intended to serve the corridors are constructed. Upon completion of these freeways, the interim Type I facilities would revert to Type II facilities; and the interim Type II facilities would revert to collector and local land access streets and highways. This staged development, in addition to providing improved traffic service, would facilitate system continuity and arterial route-marking during the interim plan implementation period. A summary of the proposed freeway construction schedule as set forth in the adopted regional transportation plan is presented in Table 16 together with a list of corresponding surface arterials required to fulfill the Type I needs in the transportation corridor on an interim basis.

The jurisdictional highway system within Waukesha County as this system is anticipated to exist in 1975 is shown on Map 22. This 1975 staging reflects the proposed completion of the USH 16 and STH 15 (Rock) Freeways, and the concomitant

Table 15

ANTICIPATED DISTRIBUTION OF TRAVEL ON THE TOTAL STREET AND HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1990

Type of Street or Highway	Miles		Travel Demand Served	
	Number	Percent of Total	Millions of Vehicle Miles Per Day	Percent of Total
Rural				
Arterial				
Type I (State Trunk)	122.36	4.8	1.51	19.4
Type II (County Trunk)	203.61	8.0	0.26	3.4
Subtotal	325.97	12.8	1.77	22.8
Urban				
Type I (State Trunk)	141.94	5.5	3.50	45.1
Type II (County Trunk)	182.64	7.1	1.24	16.0
Type III (Local Trunk)	96.56	3.8	0.40	5.1
Subtotal	421.14	16.4	5.14	66.2
Arterial Total	747.11	29.2	6.91	89.0
Nonarterial				
Existing and Proposed Collector and Minor Streets	1,813.81	70.8	0.86	11.0
Total	2,560.92	100.0	7.77	100.0

Source: SEWRPC.

Table 16

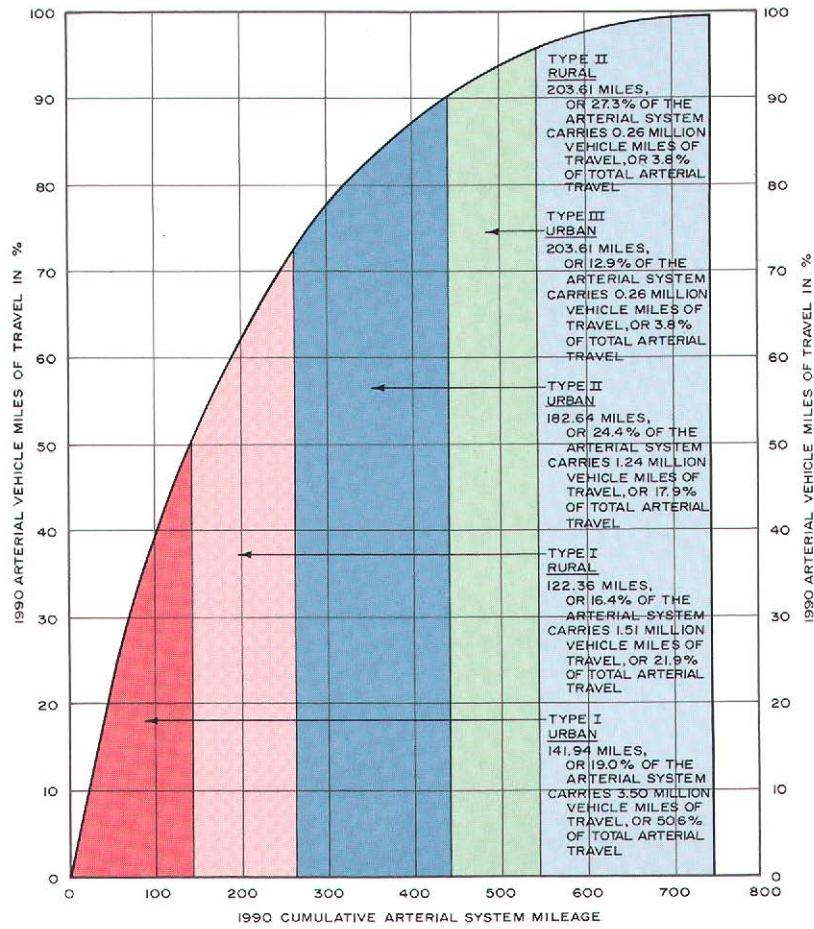
PROPOSED FREEWAYS AND TEMPORARY ALTERNATE ROUTING OVER STATE TRUNK HIGHWAYS IN WAUKESHA COUNTY: 1973-1990

Proposed Freeway	Temporary Alternate Routing
USH 16 Freeway from CTH JJ to approximately Hewitts Point Road (Village of Oconomowoc Lake)	Present USH 16 from CTH JJ to approximately Hewitts Point Road (Village of Oconomowoc Lake)
Oconomowoc bypass from the proposed USH 16 Freeway to the Jefferson County line	Present USH 16 from approximately Hewitts Point Road (Village of Oconomowoc Lake) to the Jefferson County line, and STH 67 from a point 0.39 miles north of CTH K to Thackeray Trail (City of Oconomowoc)

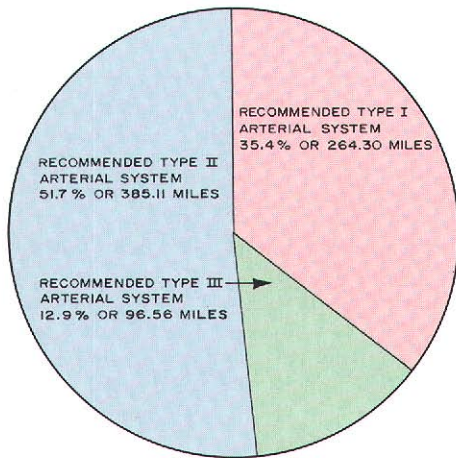
Source: Wisconsin Department of Transportation and SEWRPC.

Figure 9

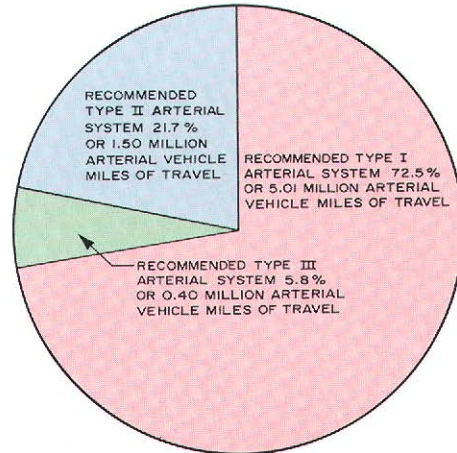
RELATIONSHIP BETWEEN PERCENT OF ARTERIAL VEHICLE MILES OF TRAVEL AND CUMULATIVE ARTERIAL MILEAGE
RECOMMENDED WAUKESHA COUNTY JURISDICTIONAL HIGHWAY SYSTEM: 1990



DISTRIBUTION OF MILEAGE
ON THE TYPE I, TYPE II, AND TYPE III ARTERIAL SYSTEMS
1990



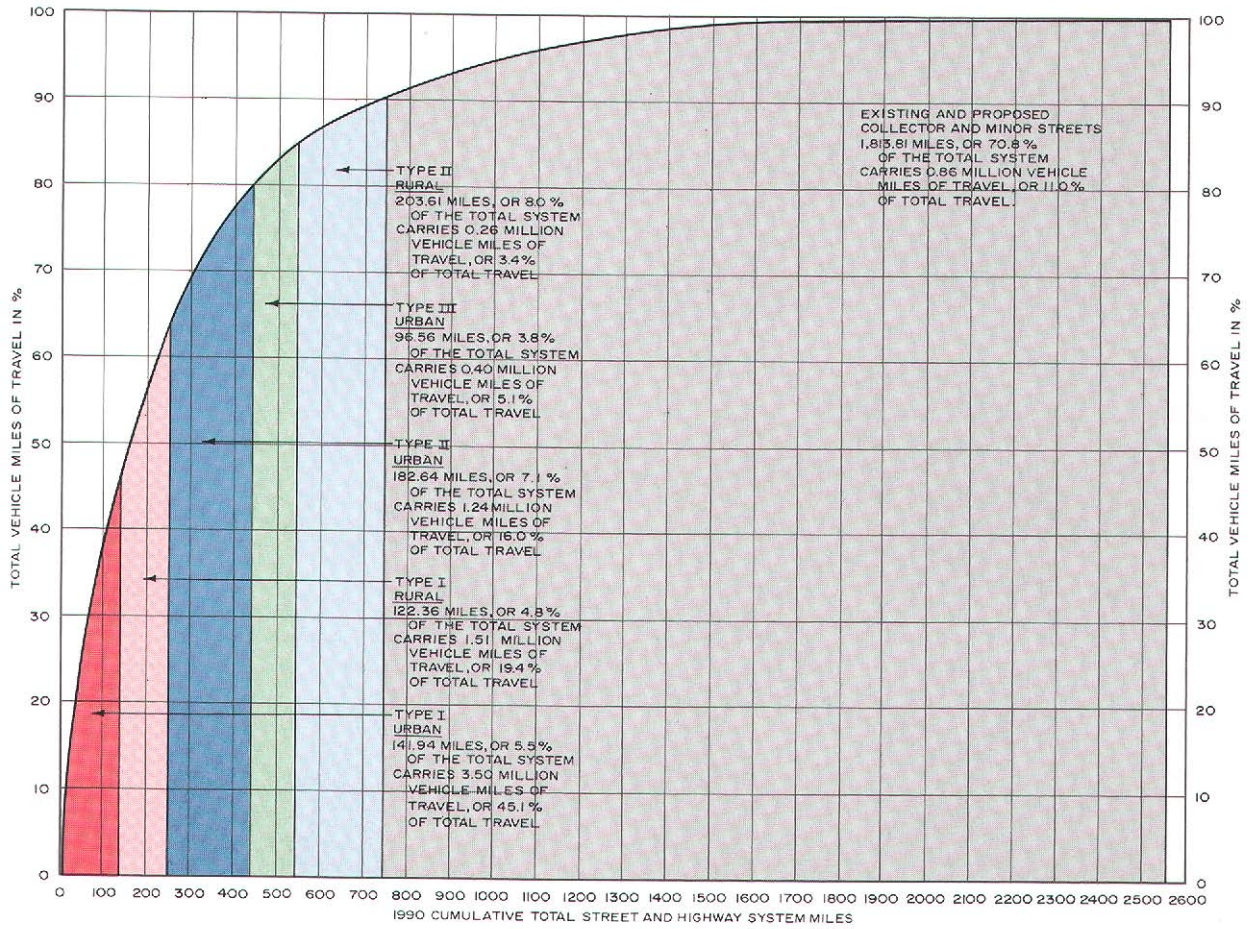
DISTRIBUTION OF ARTERIAL VEHICLE MILES OF TRAVEL
ON THE TYPE I, TYPE II, AND TYPE III ARTERIAL SYSTEMS
1990



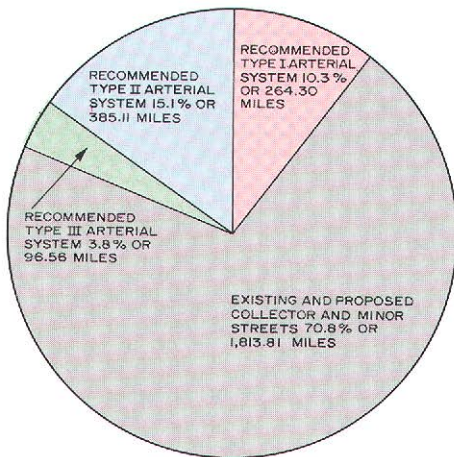
Source: SEWRPC.

Figure 10

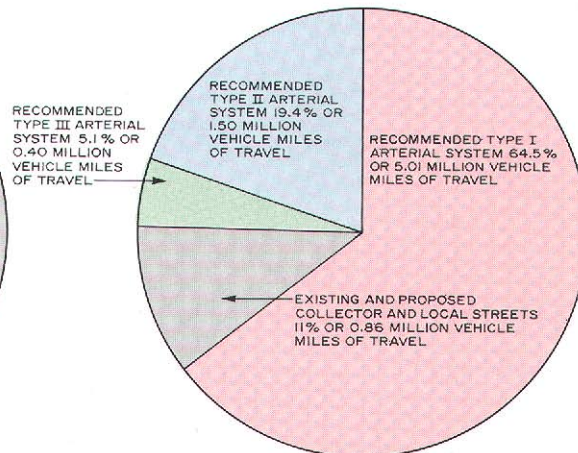
RELATIONSHIP BETWEEN PERCENT OF TOTAL VEHICLE MILES OF TRAVEL AND CUMULATIVE TOTAL MILEAGE RECOMMENDED WAUKESHA COUNTY JURISDICTIONAL HIGHWAY SYSTEM: 1990



DISTRIBUTION OF MILEAGE ON THE TOTAL STREET AND HIGHWAY SYSTEM 1990

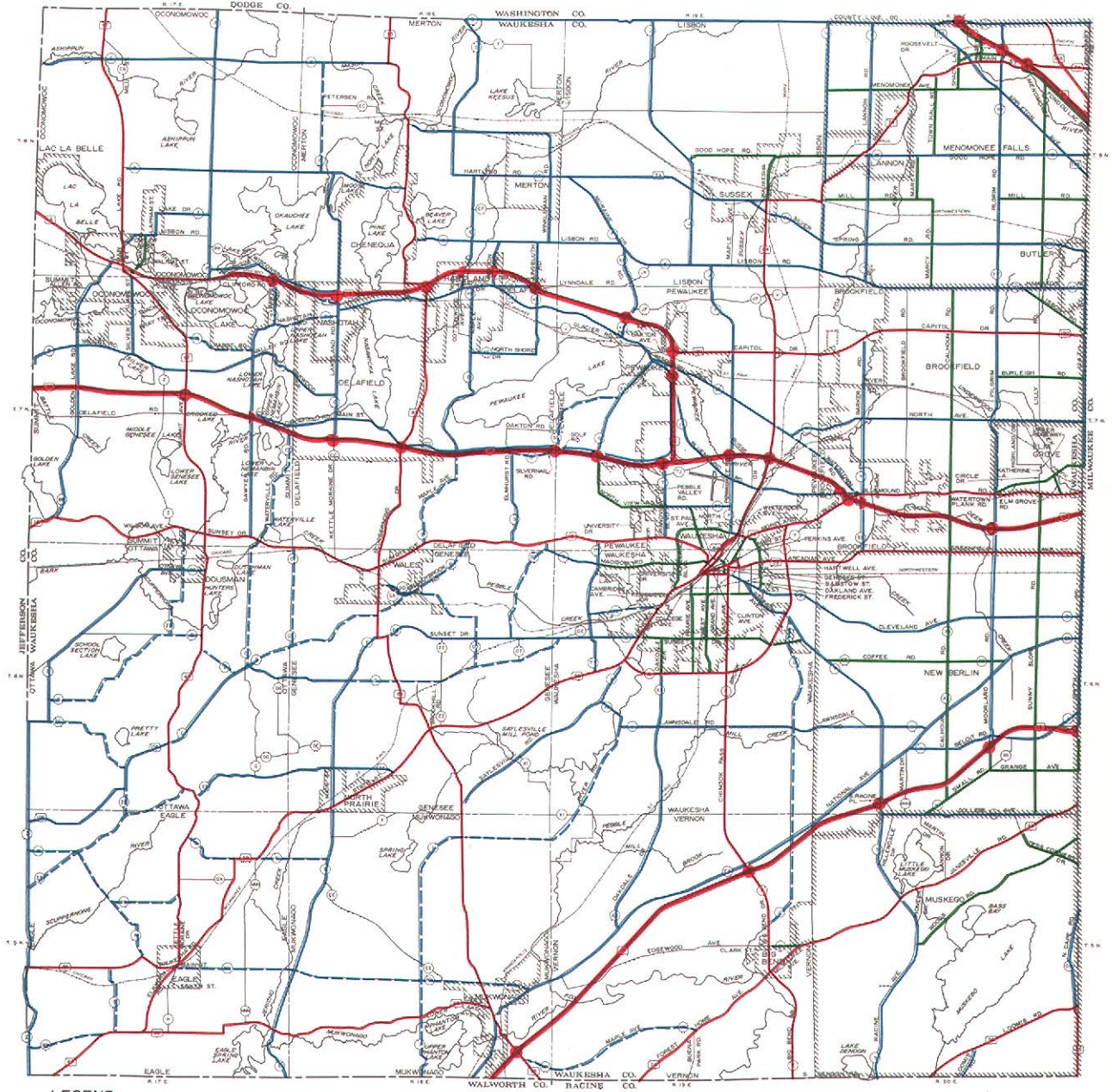


DISTRIBUTION OF VEHICLE MILES OF TRAVEL ON THE TOTAL STREET AND HIGHWAY SYSTEM 1990



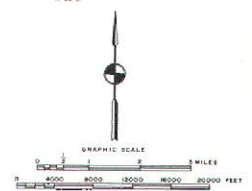
Source: SEWRPC.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN
FOR WAUKESHA COUNTY: 1975 STAGE



LEGEND

- TYPE I (FREEWAY)
- TYPE I (STANDARD ARTERIAL)
- TYPE II (STANDARD ARTERIAL)
- TYPE II (NONARTERIAL TO BE RETAINED ON CTH SYSTEM)
- TYPE III (STANDARD ARTERIAL)
- FREEWAY-STANDARD ARTERIAL INTERCHANGE



The 1975 stage of the recommended jurisdictional highway system plan for Waukesha County, representing the first stage in the implementation of the 1990 plan, includes a freeway system consisting of IH 94, USH 41-45, STH 15, and USH 16 from IH 94 to Hewitts Point Road in the Village of Oconomowoc Lake. Recommended changes in jurisdiction by 1975 include the addition of CTH A from USH 18 to STH 59 to the state trunk highway system; the addition of Moorland Road, Pilgrim Parkway, and Pilgrim Road to the county trunk highway system; and the reversion of STH 106 in its entirety and STH 74 from STH 164 to STH 83 to the county trunk highway system.

Source: SEWRPC.

changes in the jurisdictional classification of present STH 74 through the Towns of Merton and Lisbon and Villages of Merton and Sussex and present STH 15 through the Towns of Vernon and Mukwonago and the Village of Mukwonago. In addition, the proposed completion of the south Waukesha bypass through the City and Town of Waukesha is depicted along with the concomitant changes in the jurisdictional classification of present CTH A through the Towns of Pewaukee and Waukesha and City of Waukesha, present CTH D through the City and Town of Waukesha, and present CTH XX through the City and Town of Waukesha.

County trunk highways proposed to revert to the Type III arterial system by 1975 as indicated on the map are listed in Table 17. The interim routing of CTH Z over Lapham and Lisbon Streets in the City of Oconomowoc is also indicated. This routing is proposed until such time as the extension of CTH Z west from the proposed USH 16 Oconomowoc bypass interchange with present CTH Z is completed. Also indicated is the interim routing of CTH Z over Silver Lake Street in the City of Oconomowoc and Town of Summit, proposed until such time as the proposed south Oconomowoc bypass is constructed. In addition, those highway facilities proposed to be retained on the county trunk highway system through 1975 as nonarterial facilities are listed in Table 18. These facilities constitute 95 miles of existing county trunk highways whose reversion to the

local road systems would effect financial hardship to the rural townships of Waukesha County. Those nonarterial county trunk highway facilities proposed to revert to the local road system by 1975 are listed in Table 19.

The proposed configuration of the jurisdictional highway system within Waukesha County as anticipated to exist by 1980 is shown on Map 23. The 1980 state reflects the proposed completion of the USH 16 Oconomowoc bypass and the extension of CTH Z through the City and Town of Oconomowoc to present STH 67 (Lake Road) and the concomitant changes in jurisdictional classification of present USH 16 routed over Wisconsin Avenue through the City and Town of Oconomowoc and Village of Oconomowoc Lake, and present STH 67 routed over Lake Road, Main Street, and Summit Avenue through the City and Town of Oconomowoc. Also indicated is the proposed completion of the STH 83 relocation east of Beaver Lake through the Town of Merton and Village of Hartland and the concomitant change in jurisdictional classification of present STH 83 through the Town of Merton and Village of Chenequa; as well as the completion of the proposed structure across the Fox River linking Buckley and Union Streets and the concomitant change in the jurisdictional classification of Buckley, Union, and Main Streets and Hartwell and Wisconsin Avenues, all in the City of Waukesha. The nonarterial facilities on the county trunk highway system proposed to revert to the local road system by 1980 are listed in Table 18.

Table 17

COUNTY TRUNK HIGHWAYS PROPOSED TO REVERT TO THE TYPE III ARTERIAL SYSTEM BY 1975

Route	Limits	Municipality
CTH A (W. Sunset Drive)	Proposed Waukesha bypass to present CTH F (East Avenue)	City and Town of Waukesha
CTH D (W. Sunset Drive and S. Prairie Avenue) . .	STH 59 (Genesee Road) to its terminus near Progress Avenue	City and Town of Waukesha
CTH FF (Coffee Road)	In its entirety	City of New Berlin
CTH HI (Small Road)	CTH HH (College Avenue) to W. Grange Avenue	City of New Berlin
CTH T (Madison Street)	CTH TT (Merrill Hills Road) to its terminus near S. Moreland Boulevard	City and Town of Waukesha
CTH U (Edgewood Avenue)	Present CTH F (Clark Street and Waterford Avenue) to present STH 24 (Milwaukee and Forest Home Avenues)	Village of Big Bend and Town of Vernon
CTH XX (Oakdale Drive)	Present CTH D (Sunset Drive) to the proposed Waukesha bypass	City and Town of Waukesha

Source: SEWRPC.

Table 18

COUNTY TRUNK HIGHWAYS PROPOSED TO BE RETAINED THROUGH 1975
AND TO REVERT TO THE LOCAL ROAD SYSTEM BY 1980

Route	Limits	Municipality
CTH C (Waterville Road)	Pleasant View and Mapleton Road to CTH K, CTH CCC (Delafield Road) to USH 18 (Sunset Drive) and USH 18 (Sunset Drive) to present CTH D	Towns of Merton, Summit, and Ottawa
CTH CC	USH 18 to present CTH G	Towns of Genesee and Ottawa
CTH D (Wern Way)	Present CTH DE (Green Lane) to CTH E, CTH C to STH 67, and STH 67 to CTH Z	Towns of Waukesha, Genesee, and Ottawa
CTH DT	CTH T (Madison Street) to CTH DE	Towns of Delafield and Genesee
CTH E (Maple Avenue)	Present STH 74 to CTH K and from CTH CCC to USH 18 (Summit Avenue)	Village of Hartland and Towns of Merton and Delafield
CTH G (Elmhurst and Brandybrook Roads)	USH 18 to CTH C	Towns of Delafield, Genesee, and Ottawa, and Village of Wales
CTH GN	Present CTH N to STH 67	Town of Eagle
CTH GA (James Street)	In its entirety	Village of Wales
CTH GD (Main Street)	In its entirety	Village of Wales and Town of Genesee
CTH I (River Road)	CTH HI to the Walworth County line	Towns of Waukesha and Mukwonago
CTH N	Present CTH ZZ to the Jefferson County line	Town of Eagle
CTH NN (Main Street and Maple Avenue)	STH 24 to STH 83 and STH 15 (Fox Street) to STH 67 (Eikhorn Road)	Village and Town of Eagle, Village and Town of Mukwonago, and Town of Vernon
CTH P (Nashotah, Pabst, and Beach Roads)	CTH C to Dorchester Drive	City of Delafield, Villages of Nashotah and Oconomowoc Lake, and Town of Summit
CTH PPP	USH 16 east to its terminus at USH 16	City of Delafield, Villages of Nashotah and Chenequa
CTH SS (Barker Road)	USH 18 (Bluemound Road) to CTH M (North Avenue), and CTH G (Brandybrook Road) to IH 94	Towns of Brookfield, Delafield, and Pewaukee
CTH T (Madison Street)	Present CTH TT (Merrill Hills Road) to USH 18 (Summit Avenue)	Towns of Waukesha, Genesee, and Delafield
CTH U (Guthrie Road)	In its entirety	City of Waukesha and Towns of Vernon and Waukesha
CTH X	CTH E to STH 67	Towns of Mukwonago and Eagle
CTH Z (Main Street)	USH 18 (Sunset Drive) to present CTH ZD (Ottawa Avenue)	Village of Dousman
CTH ZC	CTH ZZ to STH 106, and STH 106 to CTH Z	Towns of Eagle and Ottawa
CTH ZD (Ottawa Avenue)	Present CTH Z to present CTH D	Village of Dousman and Town of Ottawa
CTH ZZ	CTH Z to CTH ZC	Towns of Eagle and Ottawa

Source: SEWRPC.

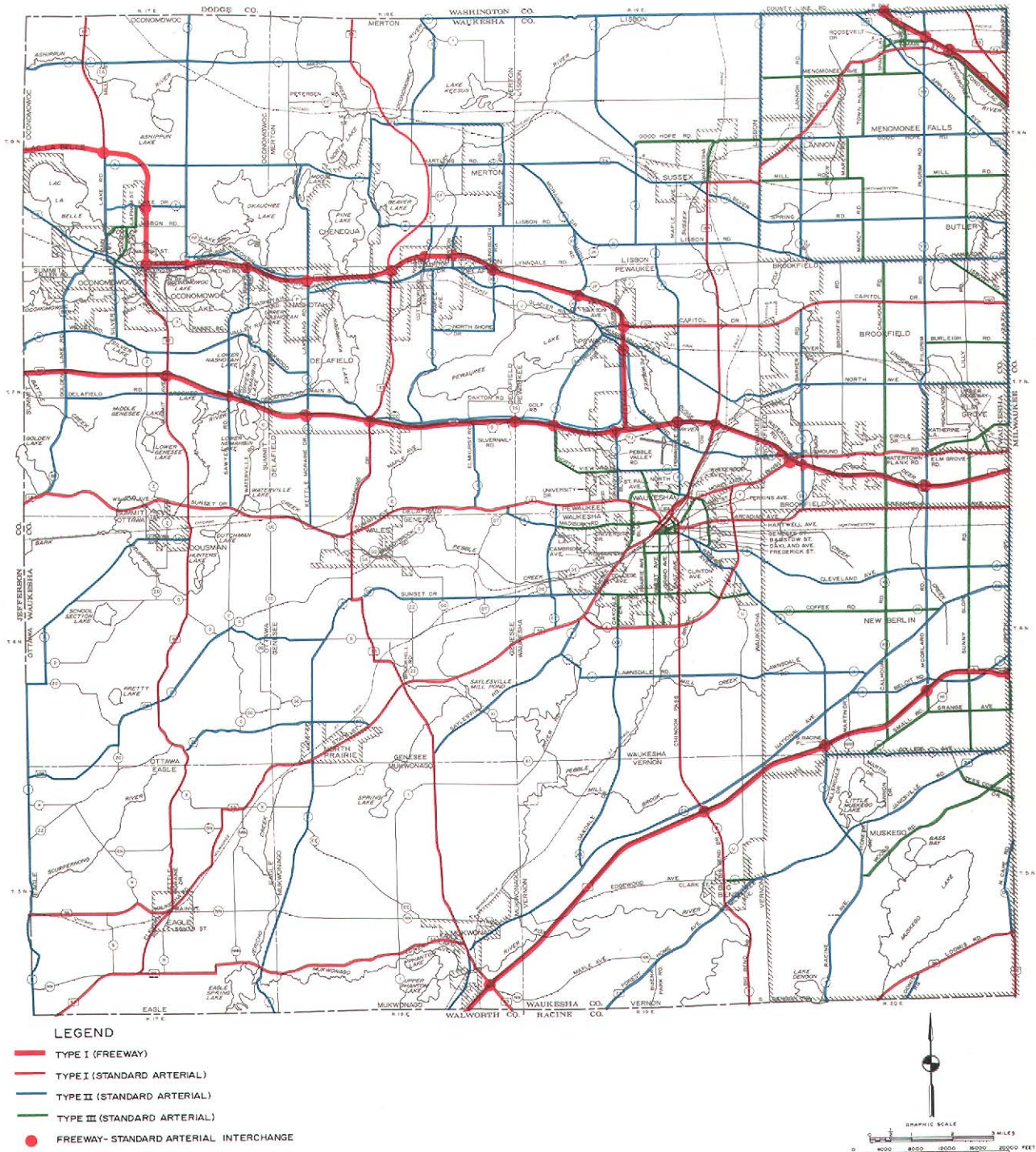
Table 19

COUNTY TRUNK HIGHWAYS PROPOSED TO REVERT TO LOCAL ROAD SYSTEMS BY 1975

Route	Limits	Municipality
CTH CA (Mill Street)	In its entirety	Town of Oconomowoc
CTH DE (Green Lane)	CTH TT (Merrill Hills Road) to present CTH D (Sunset Drive)	Town of Waukesha
CTH DT.	Present CTH D (Wern Way) to CTH DE (Sunset Drive)	Town of Genesee
CTH E (Cottonwood Avenue).	W. Capitol Drive to CTH HE (Maple Avenue)	Village of Hartland and Town of Delafield
CTH EC (Petersen Road)	In its entirety	Town of Merton
CTH EE	In its entirety	Town of Mukwonago
CTH EF	Hartling and Wallschlaeger Roads to present CTH E	Town of Merton
CTH F	Present STH 74 to CTH E	Towns of Lisbon and Merton
CTH GE.	In its entirety	Town of Genesee
CTH GG.	In its entirety	Towns of Genesee and Ottawa
CTH GN.	STH 59 to STH 67	Town of Eagle
CTH HI (Small Road)	Present CTH I (Beloit Road) to W. Grange Avenue	City of New Berlin
CTH HHH (Martin Drive)	In its entirety	City of New Berlin
CTH J (Glacier Road)	In its entirety	Village of Pewaukee and Towns of Delafield and Pewaukee
CTH JF	In its entirety	Village and Town of Pewaukee
CTH JK (Lyndale Road)	USH 16 to CTH K (Lisbon Road)	Towns of Delafield, Pewaukee, and Lisbon
CTH N	Village of Eagle south corporate limits to the Walworth County line	Town of Eagle
CTH N (South Street)	STH 67 (Elkhorn Road) to the Village of Eagle south corporate limits	Village and Town of Eagle
CTH NNN	In its entirety	Town of Eagle
CTH PP (Lake Drive).	CTH P (Brown Street) to Elm Avenue in Okauchee	Town of Oconomowoc
CTH TJ	In its entirety	City of Waukesha, Town of Pewaukee
CTH V (Town Line Road)	CTH K (Lisbon Road) to STH 164	Village of Menomonee Falls and Towns of Lisbon and Pewaukee
CTH X	STH 83 to CTH E	Towns of Genesee and Mukwonago
CTH XI (Point Drive)	In its entirety	Towns of Genesee, Mukwonago, and Waukesha
CTH Y (Main Street)	USH 18 (E. Moreland Boulevard) to the City of Waukesha east corporate limits	City and Town of Waukesha and Town of Pewaukee
CTH Z (Dousman Road)	CTH B (Valley Road) to USH 18 (Sunset Drive)	Town of Summit
CTH ZA (Wilson Avenue)	In its entirety	Village of Dousman and Town of Ottawa
CTH ZB (Utica Road)	In its entirety	Towns of Ottawa and Summit

Source: SEWRPC.

RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN
FOR WAUKESHA COUNTY: 1980 STAGE



The proposed 1980 stage of the recommended Waukesha County jurisdictional highway system plan anticipates the completion of the Oconomowoc bypass portion of the USH 16 Freeway; realignment of STH 83 from IH 94 to the Waukesha-Washington County line; reversion of STH 24 in its entirety to the county trunk highway system; and completion of additional jurisdictional changes affecting both local roads and county trunk highways as described in Table 19.

Source: SEWRPC.

The recommended jurisdictional highway system plan for the year 1990 is shown on Map B-1 of Appendix B of this report. The proposed configuration reflects the proposed completion of the Belt and Bay Freeways within Waukesha County, as well as the west portion of the Waukesha bypass through the Towns of Waukesha and Pewaukee and City of Waukesha, and the concomitant changes in the jurisdictional classification of Northview Road through the City of Waukesha and Town of Pewaukee and county trunk highways G, T, and TT in the Towns of Delafield, Genesee, Pewaukee, and Waukesha. Also indicated is the proposed relocation of STH 83 around the Village of Mukwonago with the concomitant change in jurisdictional classification of present STH 83 (Rochester Street) through the Village of Mukwonago. In addition, the reversion of STH 99 through the Towns of Eagle and Mukwonago and Village of Mukwonago to the Type II arterial system is proposed to occur subsequent to its reconstruction which is anticipated prior to 1990. The proposed configuration also indicates the construction of the south Oconomowoc bypass through the City of Oconomowoc and Town of Summit with the concomitant change in jurisdictional classification of CTH Z (Silver Lake Street) through the City of Oconomowoc and Town of Summit; and the construction of the new links necessary to integrate existing local roads into the proposed Type II arterial system with the concomitant changes in the jurisdictional classification of Johnson Road in the City of New Berlin, Tichigan Road in the Town of Vernon and City of Muskego, S. Denoon and West Muskego Dam Roads in the City of Muskego, Tavat Road in the Town of Ottawa, Boundary Road in the Town of Menomonee Falls, and 124th Street in the City of Brookfield and Village of Elm Grove.

The proposed Type I system is recommended to include 248 route-miles of facilities in 1975, and the proposed Type II system, 342 route-miles. Thus, the total mileage for the combined Type I and Type II systems in 1975 is 590 miles, somewhat less than the proposed 1980 and 1990 equivalent mileages, as shown in Tables 11 and 12. In addition, 95 miles of nonarterial facilities are proposed to be retained as county trunk highways through 1975. In 1980 the proposed Type I system is recommended to include 233 route-miles of facilities, complemented by a proposed Type II system comprised of 368 route-miles of standard arterials. With the completion of the proposed freeway system by 1990, the proposed Type I system is recommended to include 264 route-

miles of facilities; and the proposed Type II system is recommended to include 386 route-miles of facilities.

SUMMARY

This chapter has described the recommended jurisdictional highway plan developed for Waukesha County. The plan provides for three jurisdictional highway systems—Type I, state trunk; Type II, county trunk; and Type III, local trunk—which together comprise the total arterial street and highway system required to serve the growing travel demands in Waukesha County and its constituent cities, villages, and towns to the plan design year 1990. The recommended plan also constitutes a refinement of the functional arterial street and highway system plan prepared by the Southeastern Wisconsin Regional Planning Commission under the initial regional land use-transportation study and, as such, is intended, upon its adoption, to constitute a functional, as well as a jurisdictional, arterial street and highway system plan for Waukesha County to the plan design year 1990.

The arterial street and highway system recommended to serve the traffic demand within Waukesha County through the plan design year 1990 totals 747 route-miles of facilities, or about 29 percent of the estimated 2,561 route-miles of facilities expected to comprise the total street and highway system within the county in 1990. Of this total arterial system, 264 route-miles, or about 35 percent, are proposed to comprise the Type I (state trunk) highway system, an increase of 16 miles over the present system. This Type I system is anticipated to carry approximately 72 percent of the arterial travel demand and approximately 65 percent of the total travel demand expected to be generated in the county by the year 1990. The Type I system is recommended to include all of the existing, committed, and proposed freeway facilities within Waukesha County, as well as certain important standard arterials and, as such, to comprise the basic framework of the total highway transportation system for the county.

The recommended plan further proposes a Type II (county trunk) highway system consisting of 386 route-miles of arterial facilities, or an additional 52 percent of the total arterial mileage required to serve Waukesha County in the plan design year 1990. This Type II system represents a decrease

of 51 route-miles over the present system; would serve to complement the recommended Type I system; is intended to include all major arterial facilities having areawide significance; and is intended to provide for all arterial travel demand generated within the rural areas of the county not served by the Type I system. The Type II system could be expected to carry an additional 22 percent of the arterial travel demand and an additional 19 percent of the total travel demand expected to be generated within Waukesha County by the year 1990.

The Type III (local trunk) highway system recommended in the plan consists of the remaining 97 route-miles of arterial facilities, or about 13 percent of the total arterial mileage proposed to serve Waukesha County in the plan design year 1990. This Type III system is intended to primarily serve the local arterial street and highway needs of the urbanized areas of Waukesha County, while comprising an integral part of the total arterial street and highway system.

The recommended plan also designates 41 route-miles of prospective arterials which, although recommended to remain as collector and local streets through the plan design year 1990, may be required to serve the arterial travel demand generated by continued urban development within the county beyond the plan design year. The purpose of designating these prospective arterials is twofold. First, these facilities are designated to provide a basis for the reservation of the right-of-way required to permit the future development of these facilities as safe and efficient traffic carriers and thereby to economically, as well as efficiently, serve the travel demand which may be generated by urban development occurring within Waukesha County beyond the design year of the plan. To this end, right-of-way widths are recommended for each prospective arterial shown in the plan. Second, these facilities are designated to assure that the location and spacing of the prospective arterials is such to provide a sound framework for future urban expansion in the form of planned residential development units, while assuring arterial system continuity beyond the design year of the plan.

Finally, the plan recommends the marking and signing of a system of scenic drives within the county. This system, consisting of 96 route-miles

of streets and highways, would be comprised of 60 miles of local, county, and state trunk highways and 36 miles of local collector and land access streets. The scenic drive system would accommodate the anticipated 56,000 average seasonal Sunday participants in pleasure driving forecast for 1990 in Waukesha County.

The recommended scenic drive system within Waukesha County consists of those portions of the Kettle Moraine Scenic Drive and the proposed Fox River Scenic Drive within Waukesha County, with additional interconnecting links to provide for access to the scenic, cultural, historical, and recreational sites located in western Waukesha County including the Kettle Moraine State Forest southern unit, the Fox River wetland and wildlife areas, the lake areas of Beaver, Pine, Nagawicka, Pewaukee, Waterville and Phantom Lakes, and the Mason Creek and Oconomowoc River woodland and wildlife areas. The plan proposes that certain existing county trunk highways in the Towns of Eagle and Ottawa which serve the Kettle Moraine State Forest southern unit and which will not be required to perform arterial service in the plan year 1990, but are proposed as part of the scenic drive system of Waukesha County, be maintained by the Department of Natural Resources as state park roads pursuant to Section 84.28 of the Wisconsin Statutes. The plan further proposes that these facilities be retained on the county trunk highway system until their maintenance as state park roads is assumed by the Department of Natural Resources.

Adoption and implementation of the jurisdictional highway system plan recommended in this report would serve to concentrate appropriate resources and capabilities on corresponding areas of need, assuring a more effective use of the total public resources in the provision of highway transportation, and to provide a sound basis for the establishment of long-range fiscal policies and for the systematic programming of arterial street and highway improvements within Waukesha County. It would also provide a basis for the more efficient planning and design of the total arterial street and highway system by combining into subsystems those facilities which should, because of the type and extent of service provided, have similar

standards for design, construction, operation, and maintenance. The adoption and implementation of the jurisdictional highway system plan recommended in this report should provide a sound basis for the efficient multijurisdictional management of the total arterial street and highway system and for the attainment of the intergovern-

mental coordination necessary to the cooperative development of this system. Finally, it should, as demonstrated in a following chapter of this report, provide a more equitable distribution of highway improvement, maintenance, and operating costs among the various levels and agencies of government concerned.

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Chapter VII

FINANCIAL EVALUATION

INTRODUCTION

In order to assure practicality and acceptability, any plan must be evaluated on the basis of financial feasibility. Such an evaluation may show that attainment of the objectives expressed through one or more of the criteria used to prepare the plan are beyond the financial reach of implementing agencies. Under such circumstances it would be necessary to either revise the criteria on which the plan is based and thereby revise the plan, or seek new means of financing plan implementation.

To this end, a careful evaluation was made of the financial feasibility of the jurisdictional highway system plan as produced by application of the planning criteria set forth in this report. Total plan construction and maintenance costs were estimated and compared to anticipated revenues over an approximately 20-year plan implementation period. As a necessary part of this analysis of financial feasibility, the existing structure of highway revenues and expenditures was examined and construction and maintenance formulae and policies were analyzed.

EXISTING HIGHWAY AID STRUCTURE

Federal Aids for Highways¹

Federal aids for highway construction are derived from federal highway user excise taxes and the federal motor fuel tax, presently established at four cents per gallon, and are administered by the U. S. Department of Transportation, Federal Highway Administration, as a segregated fund which can be used only for highway, highway-related and, effective in 1974, for mass transit purposes. Federal aids are provided for approved construction projects on the interstate system, the federal aid primary and secondary systems, and extensions of these latter two systems through urban areas of over 5,000 population, known as the federal aid urban system. The latter three categories of federal aid systems—primary, secondary, and urban—are commonly called the "ABC" systems.

¹ *The Federal Aid Highway Act of 1973 was enacted by the Congress of the United States subsequent to completion of all of the technical work on preparation of the jurisdictional highway system plan for Waukesha County. This Act contains certain provisions having important implications for jurisdictional highway system planning. Important among these provisions is a major realignment of the federal aid highway systems. More specifically, the Act provides, basically, for three federal aid systems: a primary system consisting of rural arterial routes and their urban extensions, including interstate highway routes and their urban extensions, to be designated by each state through its state highway department in accordance with comprehensive, areawide transportation plans; a secondary system consisting of rural "major collector" routes designated by the state highway department and concerned local officials; and an entirely new urban system consisting of urban arterials designated by local officials with concurrence of the state highway department and in accordance with comprehensive, areawide transportation plans. The federal share of projects on these various systems will be 90 percent for interstate facilities and 70 percent for all other facilities.*

The systems concepts expressed in the 1973 Federal Aid Highway Act are consistent with the jurisdictional plans being prepared within southeastern Wisconsin and, indeed, were envisioned and recommended in the jurisdictional highway system plan for Milwaukee County prepared in 1969. Accordingly, the systems realignment included in the 1973 Federal Aid Highway Act will, with respect to the recommended jurisdictional highway plan for Waukesha County as documented in this report, affect only the plan implementation recommendations concerning the placement of highway segments on the various federal aid systems. The recommended Type I (state trunk) highway facilities would, under the new Act, be underlain and supported by federal interstate and federal aid primary routes; the recommended Type II (county trunk) highway facilities in rural areas of the counties would be underlain and supported by federal aid secondary routes; while the recommended Type II (county trunk) and Type III (local trunk) facilities in urban areas would be underlain and supported by the new federal aid urban routes.

Since, under the new Act, the level of funding for the federal aid secondary system was not changed substantially and since the level of funding for the new federal aid urban system represents a substantial increase in federal aid for highway development in urban areas, the net effect of the changes incorporated in the 1973 Federal Aid Highway Act on the financial aspects of the recommended Waukesha County jurisdictional highway system plan is one of a potential increase in federal aid in partial support of necessary arterial highway improvements, with a concomitant potential decrease in the required local funding as estimated in the original technical work presented herein.

Federal aid interstate funds are apportioned to the states on the basis of the following formula:

For the fiscal years 1960 through 1966, funds were apportioned in the ratio which the estimated cost of completing the Interstate System in such State...bears to the sum of the estimated cost of completing the Interstate System in all of the States. For the fiscal years 1967 to the present, funds were apportioned in the ratio which the Federal share of the estimated cost of completing the Interstate System in such State...bears to the sum of the estimated cost of the Federal share completing the Interstate System in all of the States.²

Federal aid primary funds, or "A" funds, are apportioned to the states on the basis of the following formula:

One-third in the ratio which the area of each State bears to the total area of all the States; one-third in the ratio which the population of rural areas of each State bears to the total population of rural areas of all the States as shown by the latest available Federal census; one-third in the ratio which the mileage of rural delivery routes and intercity mail routes where service is performed by motor vehicles in each State bears to the total mileage of such routes in all the States at the close of the next preceding calendar year, as shown by a certificate of the Postmaster General, which he is directed to make and furnish annually to the Secretary. No State shall receive less than one-half of 1 per centum of each year's apportionment.³

Federal aid secondary funds, or "B" funds, are apportioned to the states on the basis of the following formula:

One-third in the ratio which the area of each State bears to the total area of all the States; one-third in the ratio which the population of rural areas of each

State bears to the total rural population of all the States as shown by the latest available Federal census; and one-third in the ratio which the mileage of rural delivery and star routes⁴ certified as above provided, in each State bears to the total mileage of rural delivery and star routes in all the States. No State shall receive less than one-half of 1 per centum of each year's apportionment.⁵

Federal aid funds for improvements on extensions of the federal aid primary and secondary systems into urban areas, or "C" funds, are apportioned to the states on the basis of the following formula:

In the ratio which the population in municipalities and other urban places of five thousand or more in each State bears to the total population in municipalities and other urban places of five thousand or more in all the States, as shown by the latest available Federal census.⁶

In addition to the aforementioned federal aid systems, the Congress in 1967 authorized the U. S. Department of Transportation, Federal Highway Administration, to initiate a program known as TOPICS, utilizing presently available highway funds to provide additional federal aid to urban areas having a population of 5,000 or more persons.⁷ TOPICS is an acronym for "Traffic Operations Program to Increase Capacity and Safety." Federal aid funds authorized by Congress for TOPICS are apportioned to the states on the same basis as federal aid funds for improvements on extensions of the federal aid primary and secondary systems into urban areas, or "C" funds.⁸

⁴ A "star route" is defined by Title 23, United States Code, 104, as any route, usually in a thinly populated region, other than railroad, steamboat, and rural service routes, over which mail is carried under contract; so-called from the star or asterisk used to designate these routes in postal publications.

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Title 23, United States Code, 135.

⁸ It should be noted that the Federal Aid Highway Act of 1973 abolished the separate appropriation for TOPICS improvements. Such improvements, however, were made eligible for federal funds if located on the federal aid urban system.

²Title 23, United States Code, 104.

³*Ibid.*

As a counterpart of the newly established, urban-oriented TOPICS program, the Congress in 1967 authorized the U. S. Department of Transportation, Federal Highway Administration, to initiate a special rural aid program utilizing presently available highway funds. Federal aid funds for this special rural aid program are apportioned to the states on the same basis as regular federal aid primary and secondary funds, and must be expended for projects on the federal aid primary and secondary systems, exclusive of these systems' extensions into urban areas.

The Federal Aid Highway Act of 1970 provides for the establishment of an entirely new system of federal aid routes within the urbanized areas of the United States. This system is intended to supplement the existing federal aid highway systems within urbanizing areas, which, until the 1970 Act, consisted only of the extensions of the federal aid primary and secondary systems into such urbanizing areas. The new urban aid system is intended to include those arterial streets and highways not on the interstate system or on urban extensions of the federal aid primary and secondary systems. The federal aid urban funds are apportioned to the states on the basis of the following formula:

In the ratio which the population in urbanized areas, or parts thereof, in each State bears to the total population in such urbanized areas, or parts thereof, in all the States as shown by the latest available Federal census.⁹

Revenues from Federal Aids for Highways: Federal aid funds are received from the Federal Highway Administration by the Wisconsin Department of Transportation, Division of Highways, as reimbursements for the previously expended funds on approved federal aid projects. Federal aid may be used for preliminary engineering surveys, design, right-of-way acquisition, and construction. Federal funds may not be used for maintenance or administration. Table 20 indicates federal aid apportionments to Wisconsin during the 10 years from fiscal year 1962 through fiscal year 1971.

Disbursements of Federal Aids for Highways: The federal aids received into the State Highway Fund are administered by the State Department of

⁹ Title 23, United States Code, 104(6)(b).

Transportation, Division of Highways. Federal aid interstate funds received by Wisconsin are distributed throughout the state on the basis of the interstate highway construction schedule established by the State Highway Commission. The construction of these interstate highways is accomplished with 90 percent of the costs being paid for with federal interstate funds and the remaining 10 percent paid for with state funds. Table 21 sets forth the annual amounts of federal aid interstate funds expended in Waukesha County during the fiscal years 1962 through 1971.

Federal aid primary funds, including rural primary funds, received by Wisconsin are distributed on the basis of statewide highway construction needs as determined by the State Highway Commission. Since construction is scheduled on a statewide basis and varies annually on a county basis, Waukesha County has received varying annual amounts of such aids. Table 21 sets forth the annual amounts of federal aid primary funds expended in Waukesha County during the fiscal years 1962 through 1971.

The distribution of federal aid secondary funds, including the rural secondary funds, received by Wisconsin is made to the 72 counties on the basis of the following formula: 60 percent on the basis of the rural federal aid secondary miles in the county compared with the total statewide rural federal aid secondary mileage, and 40 percent on the basis of the number of motor vehicles registered within the county compared with the total number of motor vehicles registered within the state. Based on this formula, Waukesha County has received about \$180,000 annually, or more than 2 percent of the total federal aid secondary funds received annually by the state. If a county does not utilize its federal aid secondary apportionment, the funds revert to the State Highway Commission to be reapportioned to other counties which apply for such funds, or to be used by the State Highway Commission at its discretion anywhere in the state on the federal aid secondary system. Waukesha County along with other populous counties in the state has received such reverted funds. The annual amounts of federal aid secondary funds expended in Waukesha County during the fiscal years 1962 through 1971 are shown in Table 21.¹⁰

¹⁰ As a result of the passage of the Federal Aid Highway Act of 1973, this formula will change after June 30, 1976, with detailed administrative procedures for effecting the change to be forthcoming.

Table 20

FEDERAL HIGHWAY AID APPORTIONMENTS TO WISCONSIN BY AID CATEGORY: FISCAL YEARS 1962-1971

Fiscal Year	Aid Category					
	Interstate		Primary		Secondary	
	Apportionment	Percent of Total	Apportionment	Percent of Total	Apportionment	Percent of Total
1962	\$ 22,804,031	54.6	\$ 8,688,009	20.8	\$ 6,034,452	14.4
1963	21,164,100	51.4	9,109,799	22.1	6,431,738	15.6
1964	22,927,775	52.5	9,484,657	21.7	6,690,955	15.3
1965	23,689,058	53.0	9,592,323	21.4	6,770,585	15.1
1966	24,691,450	52.6	10,230,422	21.8	7,207,143	15.3
1967	24,733,350	52.3	10,390,974	22.0	7,313,176	15.5
1968	28,144,962	55.3	10,491,840	20.6	7,381,920	14.5
1969	31,408,425	58.1	10,436,973	19.3	7,344,879	13.6
1970	34,435,600	52.1	13,176,715	19.9	9,273,485	14.0
1971	34,260,800	52.1	13,135,078	20.0	9,243,153	14.0
Total	\$268,259,551	--	\$104,736,790	--	\$ 73,691,486	--
10-Year Average	\$ 26,825,955	--	\$ 10,473,679	--	\$ 7,369,148	--

Fiscal Year	Aid Category				
	Urban		TOPICS ^a		Total Apportionments
	Apportionment	Percent of Total	Apportionment	Percent of Total	
1962	\$ 4,264,732	10.2	\$ --	--	\$ 41,791,224
1963	4,471,619	10.9	--	--	41,177,256
1964	4,588,651	10.5	--	--	43,692,038
1965	4,685,560	10.5	--	--	44,737,526
1966	4,849,228	10.3	--	--	46,978,243
1967	4,836,951	10.2	--	--	47,274,451
1968	4,856,594	9.6	--	--	50,875,316
1969	4,849,228	9.0	--	--	54,039,505
1970	5,320,646	8.1	3,869,561	5.9	66,076,007
1971	5,295,638	8.0	3,849,918	5.9	65,784,587
Total	\$ 48,018,847	--	\$ 7,719,479	--	\$502,426,153
10-Year Average	\$ 4,801,885	--	\$ 3,859,740	--	\$ 53,330,407

^aTOPICS, an acronym for "Traffic Operations Program to Increase Capacity and Safety," was first funded under the Federal Aid Highway Act of 1968.

Source: Wisconsin Department of Transportation.

Federal aid funds to be used on the extensions of federal aid primary and secondary routes within urban areas ("C" funds) are distributed throughout the state on the basis of need, as determined by the State Highway Commission. During the fiscal years 1962 through 1971, Waukesha County received \$1,042,000 of such federal aid funds.

Federal aid funds for TOPICS received by Wisconsin are apportioned by the State Highway Commission to cities and villages with a population of 5,000 or more on the basis of population. For eligibility in the program, a city or village must have a population of 5,000 persons or more and must prepare a plan documenting the operational

improvements required to improve the safety and capacity of the existing arterial street and highway system. Presently, the Cities of Brookfield, Muskego, New Berlin, Oconomowoc, and Waukesha and the Village of Menomonee Falls within Waukesha County would be eligible for TOPICS aid, but only the City of Waukesha has availed itself of such aid to date. Table 22 indicates the amounts of such aid which were available annually had these cities and village chosen to participate in the program.¹¹

The Federal Aid Highway Act of 1970 provided for the establishment of an entirely new system of federal aid routes within the urbanized areas of the United States named the Federal Aid Urban System. This system is intended to supplement the existing federal aid highway systems within urbanized areas, which formerly consisted only of the extensions of the federal aid primary and secondary systems into such urbanized areas, including the most heavily traveled elements of the urban street and highway system. The distribution of funds for the federal aid urban system is based on the ratio of the population within the urbanized area to the total population of all

¹¹ *Op. cit.*, footnote 8.

Table 21

FEDERAL HIGHWAY AID ALLOTTED TO WAUKESHA COUNTY BY AID CATEGORY
FISCAL YEARS 1962-1971

Fiscal Year	Aid Category										Total Allotments	Federal Highway Aid Apportioned to Wisconsin	
	Interstate		Primary		Secondary		Urban ^a		TOPICS			Total	Percent Received by Waukesha County
	Allotment	Percent of Total	Allotment	Percent of Total	Allotment	Percent of Total	Allotment	Percent of Total	Allotment	Percent of Total			
1962	\$2,640,000	77.7	\$ 593,000	17.5	\$ 164,000	4.8	\$ --	--	\$ --	--	\$ 3,397,000	\$ 41,791,224	8.1
1963	56,000	12.6	--	--	390,000	87.4	--	--	--	--	446,000	41,177,256	0.1
1964	963,000	85.5	--	--	164,000	14.5	--	--	--	--	1,127,000	43,692,038	2.6
1965	--	--	1,445,000	52.4	622,000	22.5	693,000	25.1	--	--	2,760,000	44,737,526	6.2
1966	--	--	110,000	24.7	335,000	75.3	--	--	--	--	445,000	46,978,243	0.1
1967	--	--	2,242,000	77.6	648,000	22.4	--	--	--	--	2,890,000	47,274,451	6.1
1968	417,000	23.7	923,000	52.5	68,000	3.9	349,000	19.9	--	--	1,757,000	50,875,316	3.5
1969	--	--	973,000	69.4	430,000	30.6	--	--	--	--	1,403,000	54,039,505	2.6
1970	9,000	0.3	3,251,000	95.1	115,000	3.4	--	--	42,000	1.2	3,417,000	66,076,007	5.2
1971	--	--	781,000	54.7	646,000	45.3	--	--	--	--	1,427,000	65,784,587	2.2
Total	\$4,085,000	--	\$10,318,000	--	\$3,582,000	--	\$1,042,000	--	\$42,000	--	\$19,069,000	\$502,426,153	--
10-Year Average	\$ 408,500	21.4	\$ 1,031,800	54.1	\$ 358,200	18.8	\$ 104,200	5.5	\$21,000	1.1	\$ 1,906,900	\$ 53,330,407	3.6

^a Federal aid funds for improvements on extensions of the federal aid primary and secondary systems into urban areas, or "C" funds.

Source: Wisconsin Department of Transportation.

Table 22

FEDERAL HIGHWAY AID APPORTIONED TO URBAN AREAS IN WAUKESHA COUNTY FOR TOPICS PROGRAM
FISCAL YEARS 1970-1973

Fiscal Year	Municipality					
	City of Brookfield	Village of Menomonee Falls	City of Muskego	City of New Berlin	City of Oconomowoc	City of Waukesha
1970	\$ 29,000	\$27,200	\$15,600	\$23,500	\$10,000	\$ 54,100
1971	29,000	27,200	15,600	23,500	10,000	54,100
1972	22,500	22,200	8,100	18,800	6,100	28,200
1973	22,500	22,200	8,100	18,800	6,100	28,200
Total	\$103,000	\$98,800	\$47,400	\$84,600	\$32,200	\$164,600

Source: Wisconsin Department of Transportation.

urbanized areas within the state. The establishment of the federal aid urban system within Waukesha County was not completed until August of 1972, and, therefore, no apportionments were made in the county during the fiscal years 1962-1971.

State Aids for Highways

State highway aids for construction, operation, and maintenance are derived from the state motor vehicle fuel taxes, motor vehicle registration and driver licensing fees, and motor carrier fees. These funds are administered by the Wisconsin Department of Transportation, Division of Highways, as a segregated fund which can be used only for highway and highway-related purposes.

Revenues from State Aids for Highways: The state motor fuel tax, accounting for almost two-thirds of total motor vehicle tax revenues, was initiated in 1925 at two cents per gallon. It increased to four cents in 1931, six cents in 1955, and to seven cents per gallon in 1966. The second largest source of motor vehicle tax revenues

are the fees collected for motor vehicle registration and operator licensing, which contribute almost all of the remaining one-third of the revenues. Motor carrier fees imposed on owners of trucks and buses for regulatory purposes amount to less than 1 percent of the state motor vehicle revenues. Table 23 indicates the state motor vehicle revenues collected in Wisconsin during the fiscal years 1962 through 1971.

Disbursement of State Aids for Highways: The total annual net motor vehicle revenues, a result of deducting the annual collection and enforcement expenses from the total annual gross motor vehicle revenues, are distributed by the Wisconsin Department of Transportation, Division of Highways, in accordance with the provisions of Section 20.395 and Chapters 83, 84, and 86 of the Wisconsin Statutes. Table 24 indicates the statewide distribution of net motor vehicle revenues for the fiscal years 1962 through 1971. It may be noted from this table that for the fiscal year 1971, about 49 percent of the net motor vehicle revenues were allocated to state trunk highways; about

Table 23

**WISCONSIN MOTOR VEHICLE REVENUES
FISCAL YEARS 1962-1971**

Fiscal Year	Revenue Source			Adjustments ^a	Total Gross Revenues	Collection Expenses and First Charges of Other Agencies ^b	Total Net Revenues to be Distributed
	License Fees	Fuel Taxes	Carrier Fees				
1962	\$ 44,049,978	\$ 75,905,152	\$ 476,666	\$ 1,520	\$ 120,433,316	\$ 8,417,874	\$ 112,015,442
1963	47,955,404	78,527,005	594,285	11,886	127,088,580	9,771,451	117,317,129
1964	48,714,763	81,009,598	571,404	79,118	130,374,883	10,651,603	119,723,280
1965	51,697,661	84,934,763	600,815	20,490	137,253,729	11,421,211	125,832,518
1966	54,762,427	90,054,602	580,363	288	145,397,680	11,139,515	134,258,165
1967	60,304,239	108,385,059	622,716	--	169,312,014	15,992,722	153,319,292
1968	64,111,550	115,395,320	641,279	428	180,148,577	16,443,408	163,705,169
1969	67,062,072	122,142,203	635,072	642	189,839,989	18,948,360	170,891,629
1970	71,083,902	130,512,312	661,238	39,685	202,297,137	26,281,057	176,016,080
1971	72,723,706	137,062,521	653,717	1,360	210,441,304	25,162,359	185,278,945
Total	\$582,465,702	\$1,023,928,535	\$6,037,555	\$155,417	\$1,612,587,209	\$154,229,560	\$1,458,357,649
10-Year Average	\$ 58,246,570	\$ 102,392,854	\$ 603,755	\$ 15,542	\$ 161,258,721	\$ 15,422,956	\$ 145,835,765

^a Adjustments include surplus funds and aids withheld pursuant to Section 84.01(25)(d) of the Wisconsin Statutes.

^b Collection expenses and first charges of other agencies include charges for the following: the administration and collection costs of the Motor Vehicle Department, the Department of Taxation motor fuel tax, and the Public Service Commission; Legislative Council Highway Studies; Department of Public Instruction, Driver Education; Conservation Fund advertising of Wisconsin recreational facilities; the Aeronautics Commission; legislative awards for claims; and the Executive Department.

Source: Wisconsin Department of Transportation.

Table 24

**PERCENTAGE DISTRIBUTION OF NET MOTOR VEHICLE REVENUES BY THE STATE OF WISCONSIN
FISCAL YEARS 1962-1971**

Net Motor Vehicle Revenue Distribution	Annual Percent Distributed									1971 Distribution	
	1962	1963	1964	1965	1966	1967	1968	1969	1970	Amount	Percent
Allotted and Apportioned to Local Units of Government											
Counties	14.1	14.2	14.1	14.1	14.1	12.5	12.4	12.4	12.3	\$ 22,588,540	12.2
Cities	16.7	16.8	17.0	17.1	17.2	15.6	15.5	15.6	15.4	28,343,011	15.3
Villages	3.1	3.2	3.2	3.2	3.2	3.0	3.0	3.0	3.1	5,645,527	3.0
Towns	15.0	15.1	15.1	15.1	15.1	13.6	13.5	13.7	13.4	24,624,810	13.3
Flood Damage Aid	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0
Subtotal	49.0	49.4	49.4	49.5	49.6	44.7	44.4	44.7	44.2	81,239,627 ^a	43.8
Allotted and Apportioned for State Trunk Highways											
Construction	17.3	19.3	20.4	19.5	20.1	25.3	31.1	28.1	25.4	\$ 45,540,847	24.6
Urban Street Improvement	3.4	3.2	3.2	3.0	2.8	2.5	2.3	2.2	2.1	3,800,000	2.1
Bond Retirement and Improvement	7.2	6.9	6.7	6.4	6.0	5.2	4.9	4.7	4.6	8,053,096	4.3
Maintenance, Traffic Service	11.6	11.6	11.3	11.2	11.1	10.7	10.1	10.6	11.7	20,221,200	10.9
Snow Removal	6.2	4.5	3.5	4.6	3.7	4.7	--	2.6	4.4	10,300,000	5.6
Safety Improvement	0.0	0.0	0.0	0.0	0.9	1.4	1.4	1.4	1.4	2,564,527	1.4
Subtotal	45.7	45.5	45.1	44.7	44.6	49.8	49.8	49.6	49.6	90,479,670	48.9
Miscellaneous Allotments ^b	5.3	5.1	5.5	5.8	5.8	5.5	5.8	5.7	6.2	\$ 13,559,648	7.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	\$185,278,945	100.0

^aSubtotal of monies allotted and apportioned to local units of government includes an additional \$37,739 of supplemental privilege tax allotment to be distributed to cities, villages, and towns at a later date.

^bMiscellaneous allotments include appropriations for administrative expenses of the Division of Highways; topographic maps; institution roads; bridge maintenance and operation; special bridges not on the state trunk highway system; state park, forest, and access roads; roadside improvements; and railroad grade crossing protection.

Source: Wisconsin Department of Transportation and SEWRPC.

44 percent were returned to local units of government, including counties, cities, villages, and towns; and about 7 percent were utilized for miscellaneous purposes.

Of the approximately 44 percent returned to local units of government, about 12 percent was distributed to the counties within the state. Annually on June 30, a fixed sum of \$3,500,000 is apportioned among the counties, 60 percent on the basis of the proportion which the total highway mileage within the county, exclusive of city and village streets, comprises of the total of such mileage within the state;¹² and 40 percent on the basis of the proportion which the motor vehicles registered within the county comprise of the total motor vehicles registered with the state. In addition,

each county receives an annual allotment of \$65 per mile of county trunk highway. Finally, at the close of each fiscal year, supplemental aids consisting of 15 percent of the revenue raised by the two-cent-a-gallon increase effected in 1955 and 18 percent of the net motor carrier fees and original four-cent-a-gallon motor fuel tax which remain after the payment of previously committed allotments are apportioned among the counties on the basis of the annual county trunk allotment.

Of the 44 percent of the motor fuel revenues returned to local units of government, approximately 31 percent of the total state highway aids were returned to local municipalities on the following basis: about 13 percent to towns, about 3 percent to villages, and about 15 percent to cities. This return comprises the local road and street allotment and supplemental aids. The basic local road and street allotment, made annually on March 10 to the towns, villages, and cities, is apportioned on the basis of a fixed rate per mile for the number of miles of local roads and

¹² Counties having a population of 500,000 or more may include 25 percent of the city and village street mileage within the county in computing the total highway mileage within the county for the purpose of apportioning the \$2,100,000 allotment.

streets—exclusive of state trunk highways, county trunk highways, and connecting streets—which are open and used for travel. Table 25 shows the rate per mile at which the towns, villages, and cities are paid their respective local road and street allotments. The supplemental aids consist of 35 percent of the revenues raised by the two-cent-a-gallon gas tax increase effected in 1955, and 42 percent of the net motor carrier fees and original four-cent-a-gallon motor fuel tax which remain after the payment of all previously committed allotments. Both the former and latter amounts are distributed as follows: 43 percent to towns, 21 percent to villages and cities with a population of 10,000 or less, and 36 percent to cities with a population over 10,000. The supplemental aids are apportioned on the basis of the amount of the local road and street allotments to the towns and cities with a population over 10,000. Supplemental aids to villages and cities with a population of 10,000 or less are apportioned on the basis of local road mileage.

Finally, on December 15 of each year there is allotted to each town, village, and city in the state an amount equal to 11 percent of the net registration fees collected from commercial vehicles and 20 percent of the net registration fees from all other motor vehicles customarily kept in such towns, villages, or cities. This allotment, known as the highway privilege tax allotment, is supplemented by an additional 40 cents per registered vehicle which resulted from the \$2.00 increase in fees effected in 1966, and is apportioned on the

basis of motor vehicle registrations. The Wisconsin Legislature enacted Chapter 125 of the Wisconsin Laws of 1971 which modified Sections 86.35(1) and 20.395(2)(wd) of the Wisconsin Statutes relating to the privilege highway tax allotment and its supplement, respectively, such that the revenues associated with these two sections of the Statutes are no longer paid directly to the respective cities, villages, and towns, but are placed in the municipal and county shared tax account for distribution essentially on a per capita basis pursuant to Chapter 79 of the Wisconsin Statutes. The last allotments in accordance with Sections 86.35(1) and 20.395(2)(wd) were made on December 15, 1972, with the shared tax distribution to begin subsequent to that date.

State Trunk Highway Improvement and Maintenance Funding

Revenues: Revenues for the construction and maintenance of state trunk highways and the construction of connecting streets are derived from two principal sources: federal aids and state sources. State sources can further be divided into two categories: apportionments made directly from the net motor vehicle revenues and bonds issued for construction. Table 26 indicates the combined state and federal aid funds allocated to Waukesha County for the calendar years 1962 through 1971 for the construction and maintenance of state trunk highways and connecting streets.

Expenditures: In rural areas, construction expenditures on state trunk highways which are not on the federal aid systems are funded entirely from state revenues. Construction expenditures on federal aid systems are funded on a fifty-fifty matching revenue basis on federal aid primary and secondary routes.

In urban areas, construction expenditures on state trunk highways and connecting streets which are not on the federal aid systems are usually funded with 85 percent state and 15 percent city or village monies. Such expenditures on state trunk highways and connecting streets, which are also on the federal aid primary or secondary systems, are usually funded with 50 percent federal, 35 percent state, and 15 percent city or village monies. In either instance, the amount of the local contribution is determined as 15 percent of the "participating" construction costs, which costs are, in turn, determined for each individual project on the basis of the cost of the participating or eligible times, as negotiated and agreed upon

Table 25

LOCAL ROAD AND STREET ALLOTMENTS TO TOWNS, VILLAGES, AND CITIES IN WAUKESHA COUNTY^a

Level of Government	Rate Per Mile
Towns	\$ 65
Villages	65
Cities with Population of:	
0 - 10,000	130
10,001 - 35,000	260
35,001 - 150,000	390
150,001 or more	520

^aThe local road and street allotment is made on March 10 to towns, villages, and cities pursuant to Section 20.395(2)(wb) and Section 86.31 of the 1971 Wisconsin Statutes.

Source: 1971 Wisconsin Statutes.

Table 26

**STATE OF WISCONSIN EXPENDITURES AND REVENUES FOR HIGHWAY AND HIGHWAY-RELATED PURPOSES
IN WAUKESHA COUNTY: CALENDAR YEARS 1962-1971**

Calendar Year	Expenditures ^a			Revenues ^a		
	Maintenance	Construction	Total	State Funds ^b	Federal Aids	Total
1962	\$ 375,751	\$ 3,864,000	\$ 4,239,751	\$ 1,006,751	\$ 3,233,000	\$ 4,239,751
1963	374,704	471,000	845,704	417,704	428,000	845,704
1964	388,744	1,770,000	2,158,744	1,031,744	1,127,000	2,158,744
1965	451,974	4,995,000	5,446,974	3,027,974	2,419,000	5,446,974
1966	397,651	2,964,000	3,361,651	2,916,651	445,000	3,361,651
1967	499,236	4,667,000	5,166,236	2,855,236	2,311,000	5,166,236
1968	488,709	3,957,000	4,445,709	2,732,709	1,713,000	4,445,709
1969	509,858	3,286,000	3,795,858	2,822,858	973,000	3,795,858
1970	546,514	7,755,000	8,301,514	5,041,514	3,260,000	8,301,514
1971	630,086	4,914,000	5,544,086	4,482,086	1,062,000	5,544,086
Total	\$4,663,227	\$38,643,000	\$43,306,227	\$26,335,227	\$16,971,000	\$43,306,227
10-Year Average	\$ 466,323	\$ 3,864,300	\$ 4,330,623	\$ 2,633,523	\$ 1,697,100	\$ 4,330,623

^aThe accounting procedure used in the jurisdictional highway system planning program assumed that total revenues were equal to total expenditures.

^bDue to the accounting of state monies on a statewide basis, state funds in Waukesha County were set equal to the difference between total revenues and federal aids.

Source: Wisconsin Department of Transportation, Waukesha County Highway Department, and SEWRPC.

between the Wisconsin Department of Transportation, Division of Highways; and the local unit of government. The participating items usually, but not always, include right-of-way acquisition; grading; construction of the pavement base and surface, culverts and bridges, curb and gutter, and inlets for surface water drainage with connections to storm sewers; and engineering services. The Wisconsin Department of Transportation, Division of Highways, will, in addition, place and maintain signs and markers for approved detours and maintain such detours during the construction period. The city or village must bear the cost of all utility relocation and storm sewer construction costs not required for purely highway drainage purposes. Therefore, the total contribution by the city or village to a state trunk highway or connecting street improvement project, whether on a federal aid system or not, may actually vary from less than 15 percent to more than 50 percent of the total project cost, depending on the relative costs of the various items on the project and the agreement arrived at between the state and local units of government concerning the definition of participating items.

Maintenance expenditures on the state trunk highway system have increased steadily over the past 10 years and now exceed 15 percent of the net motor vehicle revenues. Maintenance costs for state trunk highways are borne entirely by the state, although most of the maintenance work is actually performed by the county forces under contract to the state. For facilities on the connecting street system, the state partially reimburses the local municipality which is responsible for performing such maintenance. This reimbursement is made at the rate of \$500 per mile per year, an amount substantially less than the actual cost of maintenance.

Table 26 summarizes state expenditures in Waukesha County for the construction and operation and maintenance of the state trunk highway and connecting street systems for the calendar years 1962 through 1971.

County Trunk Highway Funding

Revenues: Counties in Wisconsin receive highway revenues from three principal sources: federal aids, state aids, and county property taxes. In

addition, counties are authorized by Section 67.04 of the Wisconsin Statutes to issue general obligation bonds for highway construction purposes. Waukesha County, however, has not to date utilized bonding for highway purposes. Local property taxes for highway purposes may not exceed two mills (0.002 cent) per dollar of assessed valuation and are paid into the county road and bridge fund. Although the proportion of county highway revenues derived from federal aids, state aids, and local sources varies greatly from county to county and from year to year, an average county within Wisconsin received about 10 percent of its total highway revenues from federal aid, about 36 percent from state aid, and about 54 percent from local sources. Table 27 indicates the revenues received by Waukesha County for highway purposes for the calendar years 1962 through 1971.

Expenditures: Construction expenditures on the county trunk highway system consist of direct expenditures of county funds by the respective

counties, administered through the county highway committees of the county boards; and federal aid funds matched by county funds, administered by the State Highway Commission on those county trunk highways which are also on the federal aid system. Construction expenditures on county trunk highways which are also federal aid routes are usually financed with 70 percent federal funds and 30 percent county funds. The amount of the county contribution is determined as 30 percent of the construction costs, which costs are, in turn, determined by the cost of the participating or eligible items. These participating items are set by federal policy and generally include right-of-way acquisition; grading; construction of the pavement base and surface, culverts and bridges, curb and gutter, outlets for surface drainage, and storm sewer mains adequate for drainage of the pavement surfaces and right-of-way; replacement of walks and private driveways; repair of damages to other roads by reason of their use in hauling materials needed for the improvement; and engineering services. Construction expenditures for

Table 27

**WAUKESHA COUNTY EXPENDITURES AND REVENUES FOR HIGHWAY AND HIGHWAY-RELATED PURPOSES
CALENDAR YEARS 1962-1971**

Calendar Year	Expenditures ^a			Revenues ^a			
	Maintenance	Construction	Total	Local Funds ^b	State Aids	Federal Aids	Total
1962	\$ 970,024	\$ 819,367	\$ 1,789,391	\$ 1,238,207	\$ 368,829	\$ 182,355	\$ 1,789,391
1963	936,820	475,130	1,411,950	1,033,280	378,670	--	1,411,950
1964	940,254	424,444	1,364,698	953,764	410,934	--	1,364,698
1965	1,120,598	808,791	1,929,389	1,159,397	429,002	340,990	1,929,389
1966	1,019,744	579,673	1,599,417	1,137,143	462,274	--	1,599,417
1967	1,110,288	1,373,375	2,483,663	1,423,236	481,300	579,127	2,483,663
1968	1,072,228	526,796	1,599,024	1,085,683	513,341	--	1,599,024
1969	1,121,767	962,773	2,084,540	1,092,426	545,979	446,135	2,084,540
1970	1,241,279	605,947	1,847,226	1,142,613	561,798	142,815	1,847,226
1971	1,369,851	1,526,184	2,896,035	1,939,446	591,389	365,200	2,896,035
Total	\$10,902,853	\$8,102,480	\$19,005,333	\$12,205,195	\$4,743,516	\$2,056,622	\$19,005,333
10-Year Average	\$ 1,090,285	\$ 810,248	\$ 1,900,533	\$ 1,220,519	\$ 474,352	\$ 205,662	\$ 1,900,533

^aThe accounting procedure used in the jurisdictional highway system planning program assumed that total revenues were equal to total expenditures.

^bDue to the accounting methods utilized by the county, local funds were assumed to equal the difference between total revenues and the sum of state and federal aids.

Source: Waukesha County Highway Department and SEWRPC.

county trunk highways which are not on the federal aid system are usually financed entirely with county funds.

The minimum cost to the county for construction of county trunk highways through cities and villages is determined on the basis of the width of the proposed construction, the county being responsible for the full cost of 18 feet of the width plus a portion of the cost of the balance of the width, to be determined by dividing the cost of the width exceeding 18 feet by the total width of the improvement and multiplying by 18, as provided for in Section 83.05(2) of the Wisconsin Statutes. In practice, Waukesha County has historically participated in the cost of improving the total roadway width required.

Maintenance and operation costs for the county trunk highway system are paid for by the county, and maintenance is performed by county forces. Table 27 indicates the county highway funds expended by Waukesha County for highway construction and maintenance and operation during the calendar years 1962 through 1971.

Local Street and Highway Funding

Revenues: Like counties, local units of government receive highway revenues from three principal sources: federal aids, state aids, and local revenues. Although the proportion of highway revenues received from each source will vary from municipality to municipality and from year to year, the average city, village, or town in Wisconsin receives about 17 percent of its total highway revenues from federal aids, about 43 percent from state aids, and about 40 percent from local revenues. The local revenues are derived from local tax receipts, which account for approximately 77 percent and include special assessments, property taxes from the general fund, and miscellaneous sources; and bonding, which accounts for about 23 percent. Tables 28, 29, and 30 indicate the highway and highway-related revenues for cities, villages, and towns, respectively, in Waukesha County for the calendar years 1962 through 1971.

Expenditures: Construction costs for streets and highways under the jurisdiction of a city, village, or town are paid for entirely by the respective

Table 28

CITY EXPENDITURES AND REVENUES FOR HIGHWAY AND HIGHWAY-RELATED PURPOSES IN WAUKESHA COUNTY: CALENDAR YEARS 1962-1971

Calendar Year	Expenditures ^a			Revenues ^a			
	Maintenance	Construction	Total	Local Funds ^b	County Aids	State Aids	Total
1962	\$ 1,186,307	\$ 457,994	\$ 1,644,301	\$ 870,256	\$ --	\$ 774,045	\$ 1,644,301
1963	1,233,984	374,536	1,608,520	775,623	--	832,897	1,608,520
1964	1,199,928	412,115	1,612,043	757,047	4,416	850,580	1,612,043
1965	1,470,277	517,543	1,987,820	996,221	--	991,599	1,987,820
1966	1,408,444	1,575,456	2,983,900	1,893,433	8,371	1,082,096	2,983,900
1967	1,361,217	1,072,841	2,434,058	1,216,389	--	1,217,669	2,434,058
1968	1,390,941	1,415,489	2,806,430	1,464,056	66,000	1,276,374	2,806,430
1969	1,742,462	1,858,578	3,601,040	2,177,030	20,606	1,403,404	3,601,040
1970	1,699,915	1,546,639	3,246,554	1,804,333	--	1,442,221	3,246,554
1971	1,837,771	1,881,046	3,718,817	2,211,349	--	1,507,468	3,718,817
Total	\$14,531,246	\$11,112,237	\$25,643,483	\$14,165,737	\$99,393	\$11,378,353	\$25,643,483
10-Year Average	\$ 1,453,124	\$ 1,111,224	\$ 2,564,348	\$ 1,416,574	\$ 9,939	\$ 1,137,835	\$ 2,564,348

^aThe accounting procedure used in the jurisdictional highway system planning program assumed that total revenues were equal to total expenditures.

^bDue to the accounting methods utilized by individual municipalities, local funds were assumed to equal the difference between total revenues and state aids.

Source: Wisconsin Department of Administration and SEWRPC.

Table 29

**VILLAGE EXPENDITURES AND REVENUES FOR HIGHWAY AND HIGHWAY-RELATED PURPOSES
IN WAUKESHA COUNTY: CALENDAR YEARS 1962-1971**

Calendar Year	Expenditures ^a			Revenues ^a			
	Maintenance	Construction	Total	Local Funds ^b	County Aids	State Aids	Total
1962	\$ 634,348	\$ 241,627	\$ 875,975	\$ 517,896	\$10,368	\$ 347,711	\$ 875,975
1963	571,773	267,685	839,458	451,891	--	387,567	839,458
1964	547,218	418,031	965,249	571,459	--	393,790	965,249
1965	518,940	736,329	1,255,269	832,835	--	422,434	1,255,269
1966	790,751	232,024	1,022,775	563,648	--	459,127	1,022,775
1967	683,420	167,709	851,129	364,610	--	486,519	851,129
1968	767,644	186,730	954,374	446,778	--	507,596	954,374
1969	774,076	142,115	916,191	350,368	2,000	563,823	916,191
1970	958,631	332,605	1,291,236	701,339	1,088	588,809	1,291,236
1971	995,942	961,284	1,957,226	1,328,841	--	628,385	1,957,226
Total	\$7,242,743	\$3,686,139	\$10,928,882	\$6,129,665	\$13,456	\$4,785,761	\$10,928,882
10-Year Average	\$ 724,274	\$ 368,614	\$ 1,092,888	\$ 612,966	\$ 1,346	\$ 478,576	\$ 1,092,888

^aThe accounting procedure used in the jurisdictional highway system planning program assumed that total revenues were equal to total expenditures.

^bDue to the accounting methods utilized by individual municipalities, local funds were assumed to equal the difference between total revenues and state aids.

Source: Wisconsin Department of Administration and SEWRPC.

Table 30

**TOWN EXPENDITURES AND REVENUES FOR HIGHWAY AND HIGHWAY-RELATED PURPOSES
IN WAUKESHA COUNTY: CALENDAR YEARS 1962-1971**

Calendar Year	Expenditures ^a			Revenues ^a			
	Maintenance	Construction	Total	Local Funds ^b	County Aids	State Aids	Total
1962	\$ 421,018	\$ 39,890	\$ 460,908	\$ 268,544	\$ 36,240	\$ 156,124	\$ 460,908
1963	365,274	64,914	430,188	268,102	9,958	152,128	430,188
1964	335,844	18,029	353,873	180,130	6,826	166,917	353,873
1965	331,107	15,226	346,333	158,989	--	187,344	346,333
1966	429,283	30,757	460,040	270,311	--	189,729	460,040
1967	482,786	56,066	538,852	333,506	--	205,346	538,852
1968	529,041	22,757	551,798	334,910	--	216,888	551,798
1969	474,824	32,630	507,454	288,254	--	219,200	507,454
1970	582,089	36,742	618,831	340,887	30,537	247,407	618,831
1971	531,722	8,806	540,528	253,099	26,868	260,561	540,528
Total	\$4,482,988	\$325,817	\$4,808,805	\$2,696,732	\$110,429	\$2,001,644	\$4,808,805
10-Year Average	\$ 448,299	\$ 32,582	\$ 480,881	\$ 269,673	\$ 11,043	\$ 200,165	\$ 480,881

^aThe accounting procedure used in the jurisdictional highway system planning program assumed that total revenues were equal to total expenditures.

^bDue to the accounting methods utilized by individual municipalities, local funds were assumed to equal the difference between total revenues and state aids.

Source: Wisconsin Department of Administration and SEWRPC.

unit of government unless the local street is on a federal aid route. Maintenance and operation costs for all city and village streets and town roads, regardless of federal aid designation, are also paid for by the respective unit of government, with the unit of government involved generally performing its own maintenance work. Tables 28, 29, and 30 summarize the expenditures for construction, operation, and maintenance by all cities, villages, and towns, respectively, in Waukesha County for the calendar years 1962 through 1971.

Concluding Remark—Highway Improvement and Maintenance Funding

Table 31 provides a summary of all expenditures for highway construction, operation, and maintenance in Waukesha County for the calendar years 1962 through 1971. The present participation of the various levels of government in highway construction and maintenance costs is summarized in Table 32. It should be noted that, as explained above, the actual local share of the construction costs of state trunk highways and connecting streets, although nominally set at 15 percent of the cost, may vary considerably depending on the definition of participating or eligible work items. Local participation in past construction projects within Waukesha County has varied from zero to 50 percent of the total cost.

PLAN RECOMMENDATIONS AFFECTING HIGHWAY FINANCING

Analysis of the existing highway aid policies and formulae indicates that two major revisions in these policies and formulae would be desirable in order to meet certain basic objectives of the jurisdictional highway planning effort, namely abolition of the connecting street concept and establishment of uniform construction aid formulae and policies. These revisions would affect any financial analysis of a jurisdictional highway system plan and, therefore, are considered here.

Proposed Abolition of Connecting Streets

If each of the jurisdictional highway systems is to function as an integrated subsystem, then the responsibility for the operation and maintenance of each of the individual facilities comprising the subsystem, as well as the design and construction of these facilities, must ultimately rest with the level and agency of government having the greatest basic interest in these facilities. It was, therefore, considered essential that the state and county trunk highway systems each be made con-

tinuous throughout the county and its incorporated municipalities. The attainment of this subsystem continuity and the attendant unification of operation and maintenance, as well as design and construction responsibilities, dictated the need for abandoning the connecting street concept. In addition to introducing undesirable discontinuities into the state trunk highway system and thereby violating the principles of sound system management, the connecting street concept creates inequities in the distribution of maintenance costs. These inequities result in a shift from the state to the local units of government of nearly the full burden of maintaining facilities designed to serve heavy volumes of fast, through traffic.

The concept of a connecting street dates back to 1917, when a special committee of the State Legislature was appointed by the Governor to establish a state trunk highway system. At this time, the law required "the system to be laid out exclusive of any street and road in a municipality having a population of 2,500 or more by the last federal census, except that portion of any such street or highway along which the houses averaged more than 200 feet apart." Through this provision, the state trunk highway system was made continuous through cities and villages with a population of less than 2,500 but not through cities and villages having a population greater than 2,500, extending into such cities and villages only to the point where residential structures existed at an average spacing of less than 200 feet. Thus these arterial streets, while being marked and signed as routes for state trunk highways and carrying heavy volumes of primarily through traffic, are not a part of the state trunk highway system within the more densely populated portions of such cities in Waukesha County as Oconomowoc and Waukesha, and such villages as Menomonee Falls and Sussex.

Those streets which form the connections between state trunk highways through cities and villages are entitled to receive certain allotments from the net motor vehicles. These allotments were originally intended as a reimbursement to cities and villages for the expenses incurred in maintaining the connecting streets. In 1929, the amount of the allotment for the maintenance of connecting streets was established by the State Legislature at \$500 per mile for any portion of a connecting street on the original 1921 federal aid primary system, \$400 per mile for any portion of a connecting street on the original 1921 federal aid

Table 31

**EXPENDITURES BY FEDERAL, STATE, COUNTY, AND LOCAL GOVERNMENTS FOR
HIGHWAY CONSTRUCTION, OPERATION, AND MAINTENANCE IN WAUKESHA COUNTY
1962-1971**

Calendar Year	Level of Government					
	Federal			State		
	Construction ^a	Operation and Maintenance ^b	Total	Construction ^a	Operation and Maintenance ^b	Total
1962	\$ 3,397,000	\$ --	\$ 3,397,000	\$ 3,864,000	\$ 375,751	\$ 4,239,751
1963	446,000	--	446,000	471,000	374,704	845,704
1964	1,127,000	--	1,127,000	1,770,000	388,744	2,158,744
1965	2,760,000	--	2,760,000	4,995,000	451,974	5,446,974
1966	445,000	--	445,000	2,964,000	397,651	3,361,651
1967	2,890,000	--	2,890,000	4,667,000	499,236	5,166,236
1968	2,057,000	--	2,057,000	3,957,000	488,709	4,445,709
1969	1,403,000	--	1,403,000	3,286,000	509,858	3,795,858
1970	3,417,000	--	3,417,000	7,755,000	546,514	8,301,514
1971	1,427,000	--	1,427,000	4,914,000	630,086	5,544,086
Total	\$19,369,000	--	\$19,369,000	\$38,643,000	\$ 4,663,227	\$43,306,227
10-Year Average	\$ 1,936,900	--	\$ 1,936,900	\$ 3,864,300	\$ 466,323	\$ 4,330,623

Calendar Year	Level of Government					
	County			Local		
	Construction ^a	Operation and Maintenance ^b	Total	Construction ^a	Operation and Maintenance ^b	Total
1962	\$ 819,367	\$ 970,024	\$ 1,789,391	\$ 739,511	\$ 2,244,747	\$ 2,984,258
1963	475,130	936,820	1,411,950	707,135	2,171,031	2,878,166
1964	424,444	940,254	1,364,698	848,175	2,082,990	2,931,165
1965	808,791	1,120,598	1,929,389	1,269,098	2,320,324	3,589,422
1966	579,673	1,019,744	1,599,417	1,838,237	2,628,478	4,466,715
1967	1,373,375	1,110,288	2,483,663	1,296,616	2,527,423	3,824,039
1968	526,796	1,072,228	1,599,024	1,624,976	2,687,626	4,312,602
1969	962,773	1,121,767	2,084,540	2,033,323	2,991,362	5,024,685
1970	605,947	1,241,279	1,847,226	1,915,986	3,240,635	5,156,621
1971	1,526,184	1,369,851	2,896,035	2,851,136	3,365,435	6,216,571
Total	\$ 8,102,480	\$10,902,853	\$19,005,333	\$15,124,193	\$26,260,051	\$41,384,244
10-Year Average	\$ 810,248	\$ 1,090,285	\$ 1,900,533	\$ 1,512,419	\$ 2,626,005	\$ 4,138,424

^aConstruction includes such items as expenditures for engineering costs, right-of-way acquisition, curb and gutter, sidewalks, storm sewers, interest on bond proceeds used for construction purposes, and outlays for roads and streets and bridges and culverts.

^bThe operation and maintenance category includes such items as expenditures for road and street expense; bridge and culvert expense; street cleaning, oiling, and sprinkling; snow and ice removal; street machinery; general administration; signs and guide boards; and traffic control and regulation devices.

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

Table 32

RELATIONSHIP BETWEEN JURISDICTIONAL HIGHWAY CLASSIFICATION AND AID FORMULAE
IN CONSTRUCTION AND MAINTENANCE IN WAUKESHA COUNTY: 1972

Jurisdictional Classification	Number of Miles (1972)	Percent of Total Miles	Participation in Construction Costs	Participation in Maintenance Costs
State Trunk Highways (Excludes connecting streets)	230.61	11.63	Freeways and rural highways - 100 percent state Urban highways - 85 percent state and 15 percent city or village	100 percent state under contract with the county. County is reimbursed on basis of actual machine rental, labor, and material costs incurred
Connecting Streets (Portions of the state trunk system in urban municipalities)	18.03	0.91	85 percent state, 15 percent city or village	State aid at the rate of \$500 per mile to the maintaining municipality, with satisfactory documentation of maintenance and balance of cost borne by municipality
County Trunk Highways	437.41	22.05	Rural highways - 100 percent county Urban highways - 100 percent of 18 feet plus a share of any additional width required by the city or village through which such construction takes place by county with remainder by city or village	Rural highways - State aid consisting of basic \$65 per mile; annual apportionment of \$3,500,000 on basis of motor vehicle registrations and noncity, nonvillage, mileage; and supplemental aids apportioned on the basis of aforementioned aids, with county funds providing the balance of costs
Local Streets and Roads	1,297.56	65.41	100 percent municipal funds	State aid provided at variable rate based on size and class of municipality
Total	1,983.61	100.0	--	--

Federal Aid Classification	Number of Miles (1972)	Percent of Total Miles	Participation in Construction Costs	Participation in Maintenance Costs ^a
Interstate	24.66	4.98	90 percent federal, 10 percent state	100 percent nonfederal
Primary System (Includes 48 percent of the state trunk highway mileage in Waukesha County)	118.31	23.87	50 percent federal, 50 percent nonfederal ^b	100 percent nonfederal
Secondary System (Includes 41 percent of the state trunk highway mileage, 42 percent of the county trunk highway mileage, and 3 percent of the local street and road mileage)	324.33	65.43	50 percent federal, 50 percent nonfederal ^b	100 percent nonfederal
TOPICS	28.37	5.72	50 percent federal, 50 percent city or village	100 percent nonfederal
Total	495.67	100.00	--	--

^aFederal aids are not available for maintenance purposes. Participation in maintenance for routes on the federal aid systems is based on the jurisdictional classification of those routes.

^bParticipation in construction costs is based on the jurisdictional classification of the route, with the federal share being applied to the participation of the unit of government under whose jurisdiction the facility lies.

Source: Wisconsin Department of Transportation and SEWRPC.

secondary system, and \$300 per mile for all other connecting streets. In 1943, the Legislature established the present allotment rate of \$500 per mile for all connecting streets regardless of classification. While the cost of maintaining connecting streets within Waukesha County has increased on an average to more than 10 times the \$500 allotment over the past 28 years, the maintenance allotment rate per mile has remained the same. Thus, a major portion of the burden of maintaining facilities of areawide importance has been shifted to the local units of government.

Two of the cities—Oconomowoc and Waukesha—and two of the villages—Menomonee Falls and Sussex—within Waukesha County have connecting street mileage. Of the 24 cities and villages, 22 have state trunk highway mileage, with the Villages of Butler and Lac LaBelle having no state trunk highway or connecting street mileage. Table 4 indicates the present distribution of state trunk highway and connecting street mileage within Waukesha County by municipality. State trunk highways within Waukesha County are maintained by the county under a maintenance contract with the state, and all maintenance costs actually incurred are reimbursed by the state. All connecting streets within Waukesha County are maintained by the local municipality, and as already noted, an allotment of \$500 per mile is paid to the municipality by the state upon submittal of proper evidence of maintenance expenditures.

In the previous chapter, the establishment within Waukesha County of a Type I arterial highway system totaling 264 route-miles is recommended. Of this total, approximately 98 miles would consist of freeways and the remaining 166 miles of standard arterials. It is proposed that all Type I arterials which are also freeways be classified as state trunk highways, and therefore be maintained by Waukesha County for the Wisconsin Department of Transportation, Division of Highways. The remaining proposed Type I arterials should be constructed and maintained so that adequate capacity, desirable operating conditions, and responsible control of access are provided and preserved on a regionwide or statewide basis. Toward this end and in order to ensure a continuous, uniformly desirable cross section and operating conditions along Type I arterials, it is recommended that the ultimate responsibility for the maintenance and operation of the Type I arterials rest with the Wisconsin Department of Transportation, Division of Highways. All opera-

tions or actions that will have a long-term effect on the traffic capacity and level of service should be encompassed within this responsibility.

It is, therefore, recommended that the state trunk highway system be made continuous through all incorporated areas within the county and that the connecting street concept be abandoned. Under this proposal the State Highway Commission would continue to contract with the county for maintenance of Type I facilities, with the added option of contracting directly with the cities and villages concerned for Type I nonfreeway facility maintenance. It is recommended that the state in all cases contract for maintenance with those cities and villages which have a demonstrated capability and desire to perform the maintenance function and which continue to meet the state established standards for such maintenance. It is further recommended that the state reimburse the county, city, or village on a contractual basis for the cost of the following "eligible" maintenance items on the Type I highway facilities:

1. Physical maintenance of the roadway pavement surfaces and structures, including crack sealing, patching, resurfacing, sweeping, and curb and gutter repair.
2. Physical maintenance of storm sewers located within the highway right-of-way, including cleaning.
3. Snow plowing and ice control between curbs, including removal of snow at bus stops, intersections, and at other locations as required to maintain traffic service.
4. Physical maintenance of traffic control devices, including signs, signals, safety lights, and pavement markings. The cost of maintaining safety lighting shall be determined by a proration of costs based upon the proration of fixtures installed for traffic service at intersections of two Type I facilities or at intersections of Type I and Type II facilities to the total fixtures along the Type I route.
5. Physical maintenance of existing trees located within the highway right-of-way, and mowing grass on medians and shoulders.

The state would not participate in the maintenance of sidewalks or driveways, the care of new trees planted under permit, the care of ornamental flowers and shrubs, or in the maintenance of sprinkler systems or attendant water service.

It is also recommended that the state assume or continue direct administration of the following operational control devices on Type I highway facilities:

1. Issuance of driveway permits.
2. Control of advertising signs.
3. Maintenance of route signs.
4. Establishment of speed zoning.
5. Issuance of special permits.
6. Prohibition of parking, as required, to provide necessary traffic capacity.
7. Installation of traffic control signals.

The state may, at its option, delegate the administration of these operational controls to the local municipalities concerned. Such delegation shall parallel contracting for maintenance service.

Implementation of these recommendations would not only provide for a more equitable distribution of the burden of maintaining arterial facilities of areawide importance, but would also place the operational control of these facilities in the level and agency of government that has the greatest interest in, and the resources available for, these facilities. In all cases, the decision to delegate operational and maintenance responsibilities and authority on the Type I arterial system should rest with the State Highway Commission.

Because of the close parallel which exists between the function of the Type I and Type II arterial systems, it is recommended that county trunk highways also be made continuous through all incorporated areas. The county would continue to maintain the Type II facilities, with the option of contracting with the cities and villages concerned for such maintenance on a full-cost reimbursement basis. It is recommended that the county in all cases contract for maintenance with those cities and villages which have a demonstrated capability and desire to perform the maintenance function and which continue to meet the

county established standards for such maintenance. Eligible maintenance items and operational control devices would be identical to those set forth above for the Type I arterials, with the decision to delegate responsibilities and authority on the Type II arterial system resting with the County Highway Committee.

Proposed Revision of Construction Aid Formulae and Policies

Analysis of the existing aid policies and formulae also revealed certain inconsistencies and inequities in the financing of state and county trunk highway construction projects. As noted previously, these inconsistencies and inequities relate to the definition of construction items eligible for federal and state aids and, in effect, serve to create varying local cost participation rates for identical facility-type construction projects. It is, therefore, considered desirable to modify existing construction aid policies in order to obtain a uniform and more equitable cost sharing between the various levels and units of government concerned.

Recognizing that urban municipalities, due to the character of urban land use development, generally realize certain nontransportation-related benefits from the construction or reconstruction of Type I or Type II highway facilities located within their boundaries, and recognizing that a greater proportion of the travel on such urban facilities will be of an intracommunity nature than in rural areas, it is considered equitable to require the cities and villages to participate in the cost of both state and county trunk highway improvements. Conversely, because rural municipalities, due to the character of rural land use development, generally do not realize the same nontransportation-related benefits from Type I and Type II highway facilities located within their boundaries, and because a greater proportion of the travel on such rural facilities is of an intercommunity nature, it is not considered necessarily equitable to require such communities to participate in the cost of state aid county trunk highway improvements.

It is further considered desirable, in the interest of equity and sound management practices, to establish the local participation rate within the cities and villages of Waukesha County at the same fixed percentage level for both state trunk nonfreeway and county trunk facility construction and to determine eligible work items on a uniform basis throughout the county. These modifications

would not only result in a more equitable distribution of construction costs, but would also serve to simplify programming, scheduling, and financing of improvements, and would assist city and village units of government in budgeting for major highway improvements.

Thus, after careful consideration of alternatives, it is recommended that a uniform policy of construction aid be adopted for both the Type I and Type II highway facilities within cities and villages. This policy should provide for a fixed city or village contribution of 15 percent of the cost of all state and county trunk highway construction projects, with the cost of the construction project being determined on the basis of the following participating work items:

1. Right-of-way acquisition.
2. Grading.
3. Construction of pavement base and surface, curb and gutter, retaining walls, and culverts and bridges.
4. Construction of inlets for surface water drainage, together with connection to storm sewer mains.
5. Construction of storm sewer mains necessary for pavement and right-of-way drainage.
6. Engineering services.
7. Pedestrian walkways and bikeways.

Furthermore, it is recommended that the cost of construction of the Type I and Type II highway facilities in unincorporated areas be borne entirely by the state and county, respectively.

These recommendations are based, however, on the assumption that all state and county trunk highways in cities and villages will be constructed or improved utilizing urban cross sections, while all such highways in towns will be constructed or improved utilizing rural cross sections. Any departure from this assumption will require an adjustment in the recommended policy concerning local contribution, that is, cities and villages would not be required to contribute to the cost of the construction of state and county trunk highways having rural cross sections within their

corporate limits. Conversely, the construction of state and county trunk highways having urban cross sections within a town would require that the town contribute 15 percent of the participating cost of the improvement.

FINANCIAL ANALYSIS AND FEASIBILITY

Financial Analysis

Having determined that two basic changes in highway aid policies and formulae were necessary to achieve the basic objectives of the jurisdictional highway planning effort, a detailed financial analysis of the recommended jurisdictional highway system plan was made based upon the assumption that these changes would be effected. The analysis included consideration of the effects of the proposed plan on highway aids and allotments to the municipalities comprising Waukesha County, as well as consideration of the costs of plan implementation and the total revenues which may be expected to become available over the plan implementation period.

The Wisconsin Statutes provide for the payment of certain basic aids and allotments to counties and municipalities for street and highway purposes. These are apportioned on the basis of formulae involving the type of incorporated area, population, jurisdictional and total street and highway mileage, and motor vehicle registration. The proposed realignment of the jurisdictional highway systems in Waukesha County will affect the mileage of state trunk and county trunk facilities within each municipality in Waukesha County, and will consequently result in changes in the basic aids and allotments for street and highway purposes paid to each municipality and to the county itself.

The effect of the proposed realignment of the jurisdictional highway systems within Waukesha County on highway aids and allotments is summarized in Table 33. This table indicates the recommended change in jurisdictional highway mileage within each municipality within the county, the corresponding changes in basic aids and allotments, and the changes resulting from the proposed abandonment of the connecting street concept. It should be noted that the table provides comparative data for the existing 1972 situation and for the existing street and highway system as the implementation of the jurisdictional highway system plan would have affected the distribution of state aids in 1972. The table also shows com-

Table 33

HIGHWAY AND HIGHWAY-RELATED AIDS AND ALLOTMENTS RETURNED TO MUNICIPALITIES IN WAUKESHA COUNTY
1972, 1975, and 1990

Current Jurisdictional Highway System - 1972

Civil Division	Number of Miles				Local Street Aids and Allotments	Privilege Highway Tax ^a	Connecting Street Allotments	State Trunk Highway Maintenance	
	State Trunk		Connecting Street	County Trunk					Local Street
	Freeway	Nonfreeway							
CITIES									
Brookfield	4.12	8.73	--	0.38	195.12	\$ 360,312	\$ 80,381	\$ --	\$ --
Delafield	3.00	4.39	--	3.08	30.34	56,427	7,923	--	--
Muskego	--	11.38	--	10.97	86.01	158,828	28,432	--	--
New Berlin	6.73	4.28	--	37.57	141.66	261,593	74,815	--	--
Oconomowoc	--	1.56	3.40	0.10	30.40	56,279	24,062	1,700	--
Waukesha	0.71	1.93	8.71	6.85	118.36	325,965	90,286	4,355	--
Subtotal	14.56	32.27	12.11	58.95	601.89	1,219,404	305,899	6,055	--
VILLAGES									
Big Bend	--	0.85	--	1.19	4.35	\$ 7,808	\$ 2,988	\$ --	\$ --
Butler	--	--	--	1.12	9.57	17,177	9,882	--	--
Chenequa	--	4.75	--	3.16	0.86	1,544	1,401	--	--
Dousman	--	0.24	--	2.20	1.13	2,028	3,544	--	--
Eagle	--	2.29	--	1.11	3.38	6,067	1,979	--	--
Elm Grove	--	2.04	--	--	39.02	70,034	27,470	--	--
Hartland	--	1.57	--	2.82	8.85	15,884	11,394	--	--
Lac LaBelle	--	--	--	--	2.80	5,025	698	--	--
Lannon	--	2.88	--	3.18	3.89	6,982	3,056	--	--
Menomonee Falls	3.66	7.16	4.93	26.46	130.89	234,926	70,764	2,465	--
Merton	--	1.29	--	1.10	3.18	5,708	1,589	--	--
Mukwonago	--	3.57	--	1.24	9.32	16,728	6,734	--	--
Nashotah	--	0.99	--	3.43	2.38	4,272	1,754	--	--
North Prairie	--	1.90	--	1.00	2.01	3,608	2,342	--	--
Oconomowoc Lake	--	0.04	--	2.38	5.27	9,459	1,302	--	--
Pewaukee	--	1.72	--	0.62	14.10	25,307	11,050	--	--
Sussex	--	1.04	0.99	0.80	8.82	15,830	9,084	495	--
Wales	--	1.44	--	2.06	7.22	12,959	2,976	--	--
Subtotal	3.66	33.77	5.92	53.87	257.04	461,346	170,007	2,960	--
TOWNS									
Brookfield	2.23	3.92	--	4.22	26.11	\$ 9,711	\$ 9,731	\$ --	\$ --
Delafield	3.06	7.15	--	19.27	15.43	5,739	6,793	--	--
Eagle	--	19.23	--	28.39	11.98	4,457	2,696	--	--
Genesee	--	13.10	--	36.16	29.66	11,032	7,618	--	--
Lisbon	--	6.30	--	24.53	63.94	23,783	10,743	--	--
Merton	--	7.58	--	24.07	46.57	17,322	10,044	--	--
Mukwonago	--	11.16	--	25.10	25.16	9,358	3,973	--	--
Oconomowoc	--	7.91	--	21.28	53.81	20,015	12,355	--	--
Ottawa	--	9.19	--	34.00	17.23	6,408	3,145	--	--
Pewaukee	5.41	15.77	--	31.16	39.20	14,580	22,858	--	--
Summit	6.13	12.81	--	24.04	38.62	14,365	8,139	--	--
Vernon	2.72	8.58	--	17.97	38.87	14,458	5,324	--	--
Waukesha	--	4.10	--	34.40	32.05	11,920	13,087	--	--
Subtotal	19.55	126.80	--	324.59	438.63	163,148	116,506	--	--
Waukesha County	--	--	--	--	--	\$ 640,245	\$ --	\$ --	\$ 695,715
Total	37.77	192.84	18.03	437.41	1,297.56	\$2,484,143	\$592,412	\$9,015	\$ 695,715

Table 33 (continued)

Initial Jurisdictional Realignment - 1975

Civil Division	Number of Miles				Local Street Aids and Allotments	Privilege Highway Tax	Connecting Street Allotments	State Trunk Highway Maintenance	
	State Trunk		Connecting Street	County Trunk					Local Street
	Freeway	Nonfreeway							
CITIES									
Brookfield	4.12	8.73	--	15.81	180.16	\$ 323,825	\$ --	\$ --	\$ --
Delafield	3.97	3.53	--	8.99	25.74	46,492	--	--	--
Muskego	--	11.38	--	11.68	85.30	153,321	--	--	--
New Berlin	6.73	4.28	--	33.62	145.61	261,724	--	--	--
Oconomowoc	--	4.96	--	3.01	27.35	49,400	--	--	35,460
Waukesha	0.71	13.63	--	7.50	116.12	311,318	--	--	39,200
Subtotal	15.53	46.51	--	80.61	580.28	1,146,080	--	--	74,660
VILLAGES									
Big Bend	--	1.67	--	--	4.72	\$ 8,200	\$ --	\$ --	\$ --
Butler	--	--	--	1.76	8.93	15,513	--	--	--
Chenequa	1.09	3.44	--	3.21	1.38	2,397	--	--	--
Dousman	--	0.24	--	1.93	1.40	2,432	--	--	--
Eagle	--	2.29	--	0.60	3.89	6,758	--	--	--
Elm Grove	--	2.04	--	1.85	37.17	64,572	--	--	--
Hartland	1.49	0.08	--	4.41	7.26	12,612	--	--	--
Lac LaBelle	--	--	--	--	2.80	4,864	--	--	--
Lannon	--	2.88	--	3.18	3.89	6,758	--	--	--
Menomonee Falls	3.66	7.29	--	34.11	128.04	222,432	--	--	10,300
Merton	--	--	--	3.09	2.48	4,308	--	--	--
Mukwonago	--	1.68	--	3.13	9.32	16,191	--	--	--
Nashotah	0.99	--	--	3.65	2.90	5,038	--	--	--
North Prairie	--	1.90	--	1.00	2.01	3,492	--	--	--
Oconomowoc Lake	--	0.04	--	2.38	5.27	9,155	--	--	--
Pewaukee	1.09	0.35	--	4.10	11.49	19,961	--	--	--
Sussex	--	0.79	--	2.04	10.81	18,779	--	--	--
Wales	--	1.44	--	2.06	7.22	12,543	--	--	--
Subtotal	8.32	26.13	--	72.50	250.98	436,005	--	--	10,300
TOWNS									
Brookfield	2.23	3.92	--	5.26	25.82	\$ 9,358	\$ --	\$ --	\$ --
Delafield	3.65	6.56	--	19.99	15.16	5,494	--	--	--
Eagle	--	17.54	--	17.03	18.35	6,651	--	--	--
Genesee	--	13.10	--	29.51	36.77	13,327	--	--	--
Lisbon	--	2.70	--	25.63	67.84	24,587	--	--	--
Merton	1.05	3.89	--	24.20	50.20	18,194	--	--	--
Mukwonago	1.92	9.96	--	20.07	31.85	11,543	--	--	--
Oconomowoc	1.22	6.69	--	19.76	56.24	20,383	--	--	--
Ottawa	--	6.65	--	29.85	20.38	7,386	--	--	--
Pewaukee	10.20	11.58	--	25.63	48.36	17,527	--	--	--
Summit	6.49	12.45	--	23.74	39.50	14,316	--	--	--
Vernon	7.22	9.97	--	16.24	39.65	14,370	--	--	--
Waukesha	--	12.55	--	26.91	35.26	12,779	--	--	--
Subtotal	33.98	117.56	--	283.82	485.38	175,915	--	--	--
Waukesha County	--	--	--	--	--	\$ 619,114	\$ --	\$ --	\$ 695,715
Total	57.83	190.20	--	436.93	1,316.64	\$2,377,114	\$ --	\$ --	\$ 780,675

Table 33 (continued)

Recommended Jurisdictional Highway System - 1990

Civil Division	Number of Miles					Local Street Aids and Allotments	Privilege Highway Tax	Connecting Street Allotments	State Trunk Highway Maintenance
	State Trunk		Connecting Street	County Trunk	Local Street				
	Freeway	Nonfreeway							
CITIES									
Brookfield	12.44	10.43	--	18.86	270.40	\$ 888,264	\$ --	\$ --	\$ --
Delafield	3.97	2.59	--	8.53	35.48	104,489	--	--	--
Muskego	4.04	4.80	--	20.73	120.76	264,464	--	--	--
New Berlin	12.77	3.61	--	38.32	201.53	662,026	--	--	--
Oconomowoc	1.53	1.51	--	12.48	55.83	122,268	--	--	10,270
Waukesha	3.72	28.74	--	18.07	212.25	697,241	--	--	165,730
Subtotal	38.47	51.68	--	116.99	896.25	2,738,752	--	--	176,000
VILLAGES									
Big Bend	--	1.28	--	0.85	11.01	\$ 31,709	\$ --	\$ --	\$ --
Butler	0.52	--	--	1.76	10.03	28,886	--	--	--
Chenequa	1.09	--	--	5.44	10.75	30,396	--	--	--
Dousman	--	0.75	--	1.06	6.89	19,843	--	--	--
Eagle	--	1.20	--	--	7.53	21,686	--	--	--
Elm Grove	--	2.04	--	2.30	38.59	111,139	--	--	--
Hartland	1.94	2.41	--	8.01	27.35	78,768	--	--	--
Lac LaBelle	--	--	--	--	2.80	8,064	--	--	--
Lannon	1.87	3.18	--	3.18	8.90	25,632	--	--	--
Menomonee Falls	12.93	7.29	--	35.08	214.93	618,998	--	--	47,320
Merton	--	--	--	4.32	8.29	23,875	--	--	--
Mukwonago	0.57	1.87	--	5.68	23.21	66,845	--	--	--
Nashotah	0.99	--	--	2.55	8.88	25,574	--	--	--
North Prairie	--	2.31	--	1.10	4.77	13,738	--	--	--
Oconomowoc Lake	--	0.09	--	1.46	8.56	24,653	--	--	--
Pewaukee	4.65	1.31	--	9.28	34.99	100,771	--	--	--
Sussex	--	1.92	--	4.91	22.98	66,182	--	--	5,800
Wales	--	1.58	--	--	10.50	30,240	--	--	--
Subtotal	24.56	27.23	--	86.98	460.96	1,326,999	--	--	53,120
TOWNS									
Brookfield	1.44	1.10	--	2.30	17.56	\$ 9,921	\$ --	\$ --	\$ --
Delafield	3.65	7.41	--	14.22	20.77	11,735	--	--	--
Eagle	--	14.89	--	10.79	32.35	18,278	--	--	--
Genesee	--	12.72	--	14.23	54.97	31,058	--	--	--
Lisbon	--	1.27	--	22.93	65.69	37,115	--	--	--
Merton	0.60	4.82	--	14.70	47.74	26,973	--	--	--
Mukwonago	1.35	5.85	--	8.20	41.48	23,436	--	--	--
Oconomowoc	6.63	3.58	--	20.05	48.53	27,419	--	--	--
Ottawa	--	6.40	--	14.09	34.67	19,589	--	--	--
Pewaukee	7.43	8.16	--	10.43	60.72	34,307	--	--	--
Summit	6.49	10.80	--	23.43	38.62	21,820	--	--	--
Vernon	7.22	5.30	--	15.47	41.16	23,255	--	--	--
Waukesha	--	5.25	--	11.44	38.24	21,606	--	--	--
Subtotal	34.81	87.55	--	182.28	542.50	306,512	--	--	--
Waukesha County	--	--	--	386.25	--	\$1,178,325	\$ --	\$ --	\$1,130,170
Total	97.84	166.46	--	386.25	1,899.71	\$5,550,588	\$ --	\$ --	\$1,359,290

^a Beginning in late 1972 that allotment known as the privilege highway tax was no longer returned directly to the city, village, or town in which the vehicle for which licensing fees are paid is garaged, but rather will be co-mingled in the municipal and county shared tax account with other shared taxes for distribution as a shared revenue essentially on a per capita basis. It is estimated in 1973 that the net effect of this change in the method of distributing the privilege highway tax will result in a slight reduction—about 7 percent—in the amount of aid from this source received by Waukesha County and its constituent local units of government. This reduction is due to the fact that the distribution of population throughout the state is not identical to the distribution of motor vehicles. By 1990 it is estimated that this change in the method of distributing the privilege highway tax will result in a net loss of about 15 percent to the county and its communities. In addition, these funds will be co-mingled with other revenue sharing funds and will not, therefore, be specifically identified as the local government share of the privilege highway tax. The effect of this change in the method of distributing the privilege highway tax should not substantially affect the financial analyses relating to the Waukesha County jurisdictional highway system plan presented in this chapter. The amounts shown for the privilege highway tax in this table are based upon the old method of distributing this tax, and can be expected to vary slightly as the new method is implemented.

Source: Wisconsin Department of Transportation and SEWRPC.

parative figures for the final (1990) stage in the implementation of the recommended jurisdictional highway system plan, and includes estimates of the probable effects of anticipated increases in local street mileage resulting from new land use development within the county and of anticipated increases in motor vehicle registrations.

Table 33 indicates that, as a result of the recommended jurisdictional realignment for 1974 as the initial step toward the 1975 stage of the plan, a reduction in the local street aids and allotments paid to units of government in Waukesha County of approximately \$24,500 per year could be expected. This reduction in aids and allotments is due to a 27.67-mile reduction in city and village street mileage, part of a recommended 34.49-mile increase in state and county trunk mileage in those cities and villages; and an increase of 46.75 miles of town roads, part of which consists of a recommended 35.58-mile decrease in county and state trunk mileage in those towns. The proposed abolition of the connecting street system would result in the elimination of the connecting street allotment of \$500 per mile, or a further reduction of aids and allotments paid to the municipalities in Waukesha County of approximately \$9,000 per year. The proposed jurisdictional realignment would thus result in a total decrease in state aids paid to municipalities of about \$33,500 per year.

It should be noted, however, that the transfer of arterial mileage from the local trunk highway system to the county and state trunk highway systems, while reducing the amount of local street aids and allotments to local units of government, also reduces the financial responsibilities of the local units of government for the planning, design, construction, operation, and maintenance of the transferred arterial facilities. The abandonment of the connecting street concept and the establishment of a continuous state trunk highway system through incorporated areas would allow the state to reimburse the maintaining agencies for the actual costs incurred in the maintenance of state trunk highways. Table 33 indicates that the increase in maintenance aids which may be expected to accrue to municipalities in Waukesha County as a result would be approximately \$85,000 per year. Thus, implementation of the recommended jurisdictional highway system plan could be expected to result in a net increase of highway

aids and allotments paid to municipalities within Waukesha County of approximately \$51,500 per year for the year 1974.

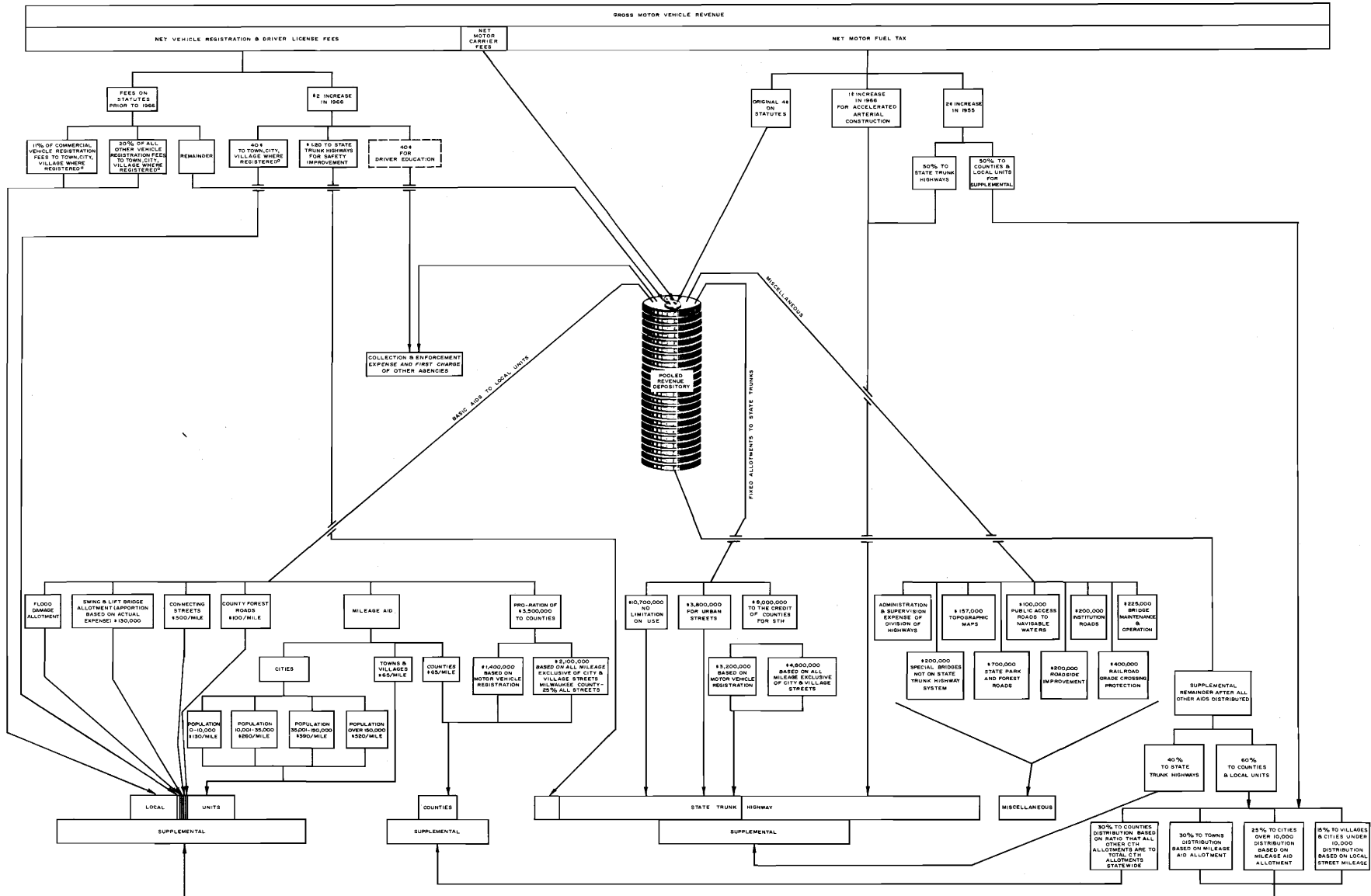
It was recognized that policy change affecting the status of the connecting streets would have to be administratively feasible on a statewide basis. In order for the state to reimburse the maintaining agencies for actual maintenance costs on all state trunk highways, sufficient monies for this purpose would have to be withheld prior to the allotment of supplemental aids. Figure 11 provides a graphic summary of the distribution of total motor vehicle revenues in Wisconsin as provided by the state statutes. It is evident from this diagram that, with the exception of a portion of the supplemental motor fuel tax,¹³ the supplemental aids are apportioned after all other disbursements from the total highway fund have been made. Thus, the portion of the supplemental aids affected by changes in the connecting street concept actually consists of the remainder of highway revenues after all other statutory disbursements have been made and, as such, is shown as disbursements from the bottom of the pooled revenue depository. It is further evident from the diagram that, as changes in other statutory disbursements are made, the resulting remainder available for distribution will change. The effect of such changes on the aids and allotments available to municipalities in Waukesha County may be expected to result in a reduction of \$33,500 per year in local street aids and allotments. Because this process of redistribution provides for the withholding of sufficient funds to reimburse actual maintenance costs accrued on all state trunk highways, however, the net effect of the plan recommendations on Waukesha County would be to increase aids by \$51,500 per year, as previously stated.

It should be noted that the forecast of aids and allotments returned to municipalities as shown in Table 33 for 1990 are based upon forecast 1990 city and village corporate limits and a conservative estimate of expected increases in motor fuel taxes collected due to increased travel within the state.

¹³ Section 20.420 of the Wisconsin Statutes provides that 50 percent of the net receipts of the two-cent-a-gallon supplementary motor fuel tax enacted in 1955 be apportioned to local units of government as a part of the supplemental aids.

Figure 11

DISTRIBUTION OF TOTAL MOTOR VEHICLE REVENUE IN WISCONSIN: 1971



^aBeginning in 1972, those portions of the motor vehicle registration fees historically returned to local units of government known as "privilege highway taxes" were placed in the municipal and county shared tax account for distribution essentially on a per capita basis pursuant to formulas set forth in Chapter 79 of the Wisconsin Statutes.

Source: Wisconsin Department of Transportation.

Financial Feasibility

The financial feasibility of the recommended jurisdictional highway system plan was evaluated by comparing estimated plan implementation costs with anticipated highway revenues. The evaluation was based upon three assumptions: that the preceding recommendations concerning the abandonment of the connecting street concept will be adopted and implemented, that the preceding recommendations concerning the adoption of uniform construction aid formulae and policies will be adopted and implemented, and that the recommendations concerning the realignment of the federal aid systems set forth in Chapter VI of this report will be adopted and implemented.

Estimates of the cost of constructing and maintaining the total street and highway system within Waukesha County through the plan design year of 1990 were prepared by applying unit improvement and maintenance costs to the existing and proposed arterial, collector, and local (land access) street mileage. These cost estimates were then compared with a forecast of highway revenues which could reasonably be expected to be received over the plan implementation period. The revenue forecasts were based upon an extrapolation of historical highway expenditures within Waukesha County. Because the historical record of highway expenditures at the local level did not permit accurate separation of the costs attendant to the construction and maintenance of arterial facilities from those attendant to nonarterial facilities, construction and maintenance costs for nonarterial facilities were estimated and included in the total plan implementation cost.

Estimated Cost of Arterial System: As described in Chapter VI of this report, the jurisdictional highway system plan set forth in this report recommends a typical cross section for each link in the total arterial street and highway system. Representative unit construction and maintenance costs were prepared for each typical cross section used, as shown in Appendix B of this report. The jurisdictional highway system plan, by incorporation of these recommended typical cross sections, reflects estimated arterial highway needs through the plan design year of 1990. The total cost of plan implementation could thus be calculated by totaling, from the coded network maps, the route mileage of each typical cross section included in the plan, multiplying this mileage by the unit construction and maintenance costs attendant to the typical cross sections, and adding

special costs for major railroad or highway grade separation and river crossing structures, as shown on the jurisdictional highway system plan map.

The unit cost data for each typical cross section were developed from analyses of actual cost data provided by the District Office of the Division of Highways, and reflect recent experience in areas of development similar to Waukesha County. It should be noted that these unit costs, in 1971 dollars, range from 15 percent to 35 percent less than comparable units costs for construction and maintenance of comparable cross sections in Milwaukee County, as shown in Appendix B of SEWRPC Planning Report No. 11, A Jurisdictional Highway System Plan for Milwaukee County. The principal reasons for these lower unit costs in Waukesha County are lower traffic volumes resulting in lower maintenance costs, and lower right-of-way acquisition, utility relocation, and material costs encountered in the construction of new facilities or in the improvement of existing facilities. It should be further noted that the cost of resurfacing the minimum two-lane rural cross section (see Appendix B) has been adjusted to include minor reconstruction for spot improvement of horizontal and vertical alignment and of intersections.

The resulting total arterial plan implementation costs are summarized by jurisdictional subsystem in Table 34. The plan implementation costs are expressed in terms of 1971 unit prices and total approximately \$371 million for the entire arterial system, including approximately \$319 million for construction and \$52 million for maintenance costs. The breakdown of these costs by level of government is set forth in Table 35.

Table 34
PLAN IMPLEMENTATION COSTS FOR THE
WAUKESHA COUNTY
JURISDICTIONAL HIGHWAY SYSTEM PLAN
BY JURISDICTIONAL SUBSYSTEM
1972-1990

Jurisdictional Subsystem	Plan Implementation Costs		
	Construction	Maintenance	Total
Arterial			
Type I (State Trunk) . . .	\$204,775,000	\$ 20,707,000	\$225,482,000
Type II (County Trunk) . .	84,947,900	23,664,300	108,612,200
Type III (Local Trunk) . .	29,647,000	7,559,100	37,206,100
Subtotal	319,369,900	51,930,400	371,300,300
Nonarterial	\$ 20,597,600	\$ 68,024,000	\$ 88,621,600
Total Street and Highway System	\$339,967,500	\$119,954,400	\$459,921,900

Source: SEWRPC.

Table 35

**PLAN IMPLEMENTATION COSTS FOR THE
WAUKESHA COUNTY
JURISDICTIONAL HIGHWAY SYSTEM PLAN
BY LEVEL OF GOVERNMENT
1972-1990**

Level of Government	Plan Implementation Costs		
	Construction	Maintenance	Total
Arterial System			
State			
Type I (State Trunk) . . .	\$198,484,700	\$ 20,707,000	\$219,191,700
Type II (County Trunk) . .	10,647,000	--	10,647,000
Subtotal	209,131,700	20,707,000	229,838,700
County			
Type II (County Trunk) . .	\$ 61,076,300	\$ 23,664,300	\$ 84,740,600
City			
Type I (State Trunk) . . .	\$ 4,446,800	\$ --	\$ 4,446,800
Type II (County Trunk) . .	8,404,600	--	8,404,600
Type III (Local Trunk) . .	20,971,000	5,214,500	26,185,500
Subtotal	33,822,400	5,214,500	39,036,900
Village			
Type I (State Trunk) . . .	\$ 1,843,500	\$ --	\$ 1,843,500
Type II (County Trunk) . .	4,820,000	--	4,820,000
Type III (Local Trunk) . .	8,676,000	2,344,300	11,020,600
Subtotal	15,339,500	2,344,300	17,684,100
Total	\$319,369,900	\$ 51,930,400	\$371,300,300
Nonarterial System			
City	\$ 10,235,300	\$ 39,952,900	\$ 50,188,200
Village	4,568,300	19,805,700	24,374,000
Town	5,794,000	8,265,400	14,059,400
Total	\$ 20,597,600	\$ 68,024,000	\$ 88,621,600
Total Street and Highway System	\$339,967,500	\$119,954,400	\$459,921,900

Source: SEWRPC.

Estimated Cost of Nonarterial System: Construction and maintenance needs for nonarterial streets and highways and collector and local (land access) streets over the plan implementation period were also estimated, utilizing unit construction and maintenance cost data developed from information provided by local units of government. These unit cost data were expressed separately for the urban (cities and villages) and rural (towns) areas of the county, as shown in the typical cross sections for urban and rural nonarterials in Appendix B. The mileage of new facilities was calculated by applying the appropriate factors representing the portion of land normally devoted to collector¹⁴

¹⁴ Collector streets were assumed to occupy 2.3 percent of high-density and 1.5 percent of medium- and low-density, fully developed urban areas, and have a recommended right-of-way width of 80 feet. Accordingly, a factor of 1.5 miles per square mile was applied to anticipated new high-density development, and 1.0 mile per square mile to anticipated new medium- and low-density development to obtain corresponding collector street mileage.

and local¹⁵ streets under good land subdivision practice to the total land area to be converted from rural to urban use within each municipality in Waukesha County over the plan design period. Since there is relatively no difference between collector and local street cross sections in rural areas, the same unit costs were utilized for the aggregate of all rural nonarterial mileage. Although different collector and local street cross sections are used within the various cities and villages in Waukesha County, these differences were not considered significant, and the same unit costs were utilized for the aggregate of all urban nonarterial mileage.

The construction cost estimates for nonarterial streets within cities and villages were based on the following assumptions: all new nonarterial facilities would be constructed at the cost of the developer, approximately 10 percent of all existing nonarterial facilities would require reconstruction, approximately 40 percent of the existing nonarterial mileage would require resurfacing, and the remaining 50 percent would require maintenance only during the planning period.

The assumptions upon which estimates of construction costs for nonarterial streets and highways within the towns were based are as follows: all new nonarterial facilities would be constructed at the cost of the developer, approximately 10 percent of all existing nonarterial facilities would require reconstruction, approximately 40 percent of all existing nonarterial facilities would require resurfacing, and 50 percent would require only maintenance during the planning period.

The estimated construction and maintenance costs for new and existing nonarterial facilities through the plan design year of 1990 are summarized in Table 34. Expressed in terms of 1971 prices, costs total approximately \$89 million, of which \$21 million is for construction and \$68 million is for maintenance. The breakdown of these costs by level of government is shown in Table 35.

¹⁵ Local (land access) streets were assumed to occupy 17.8 percent of high-density, 17.0 percent of medium density, and 14.2 percent of low-density, fully developed urban areas, and have a recommended right-of-way width of 60 feet. Accordingly, factors of 15.7 miles per square mile, 15.0 miles per square mile, and 12.5 miles per square mile were applied to anticipate new high-, medium-, and low-density development respectively, to obtain corresponding local (land access) street mileage.

Thus, the total cost of full plan implementation over the 20-year plan implementation period was estimated at \$460 million based on 1971 prices, of which \$340 million was for construction and \$120 million for maintenance.

Estimated Revenues: Anticipated revenues available for highway purposes within Waukesha County over the plan implementation period were estimated from an analysis of the rate of expenditure for highway and highway-related purposes within Waukesha County from 1962 through 1971. A summary of the 10-year expenditures for highway construction and maintenance within Waukesha County was presented in Table 31 of this report. An estimate of anticipated revenues was prepared by projecting the current rate of expenditure, as developed for local sources on a per capita basis, over the plan implementation period. Assuming that no new revenue sources would become available for highway purposes, it was estimated that \$460 million could be expected to become available for highway purposes over the plan implementation period, or an amount equal to the total costs of implementing the street and highway plan, estimated to be \$460 million. It was concluded, therefore, that the plan was financially feasible.

The public financial resources analysis conducted under the jurisdictional highway planning program indicated that, given the same relative local tax effort as cities and villages for highway transportation purposes, the towns would be financially capable of providing the required level of highway service. The local tax effort required to implement the recommended jurisdictional highway system plan within the cities and villages of the county is expected to approximate \$20.50 per capita per year, a slight decrease from the present high of \$21.78 per capita per year, over the approximately 20-year plan implementation period. To fully implement the recommended plan, the average local tax effort within the towns would have to approximate \$20.73 per capita per year over the 20-year plan implementation period, or about \$8 more than the present average effort of \$12.85 per capita per year, thus necessitating an increase in the town tax effort. The analysis concluded that with an equitable equalized local tax effort by cities, villages, and towns of approximately \$20.53 per capita per year, the recommended jurisdictional highway system plan was financially feasible. If no such adjustment in tax effort is made, the anticipated revenues would still be within about 1 percent of the esti-

mated cost of fully implementing the recommended plan. More importantly, since town revenues would be used entirely for nonarterial facilities, a decision by the towns not to increase their per capita expenditures for highways would not affect the level of arterial highway service.

It should be noted, however, that with the recommended transfer of local trunk arterial street and highway system mileage to the county and state trunk highway systems, thereby reducing the local responsibility for highway facility design, construction, operation, and maintenance, a concomitant adjustment of highway revenue distribution will be required.

It should also be noted that neither appreciated plan implementation costs nor appreciated revenues were used in the comparison; a valid procedure, since any inflation of implementation costs may be expected to be offset by a corresponding inflation in revenues. The amount of monies available for highway expenditures may be expected to increase, not only because of the effects of inflation but also because of increasing motor vehicle registrations and motor vehicle utilization.

SUMMARY

This chapter has explored the financial feasibility of the recommended jurisdictional highway plan for Waukesha County. This exploration has required a description of the existing highway aid structure and the two major revisions in this structure being recommended in order to meet the basic objectives of the jurisdictional highway planning effort; namely, the abandonment of the connecting street concept and the adoption of uniform construction aid formulae and policies for state and county trunk highways. The analysis indicated that the recommended plan is financially feasible without new sources of highway revenues for the county as a whole.

Total plan implementation costs, including construction and maintenance of collector and minor land access as well as arterial facilities, was estimated at \$460 million over the 20-year plan implementation period. Anticipated revenues for highway purposes over this same period based upon current rates of expenditure were estimated at \$460 million, or approximately equal the amount required to fully implement the plan. The financial analysis assumed an equitable, equalized local tax effort between the cities, vil-

lages, and towns approximating \$20.53 per capita per year over the 20-year plan period to fully implement the plan.

It should be further noted in this respect that it is extremely difficult to forecast revenues which may become available for highway purposes over the 20-year plan implementation period. This difficulty is due not only to the length of the forecast period involved and the unpredictable changes which may occur during this period in such important factors affecting highway revenues as the general level of economic activity, a shifting of priorities in the expenditures of public funds to such items as housing and mass transit, and major changes in the structure of highway aid formulae which will come about upon expiration of the massive interstate highway construction program; but also the changing of corporate limits and concomitant changes of responsibilities for

those existing town roads which would fall within the new city or village corporate limits. Because of these difficulties, the historical trend of expenditures for highway purposes within Waukesha County had to be used to forecast future revenues. On this basis, the historical participation at the federal level in construction aids for secondary and primary federal aid routes was incorporated in the forecasts.

It should be noted that while the financial analysis of the plan is feasible for the county as a whole, some disparity in the distribution of resources may exist initially between the county and local levels of government relating to the transfer of local trunk facilities to the county trunk system, and relating primarily to the nonarterial streets and highways within the municipality and the level of service required by its populace.

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Chapter VIII

PLAN IMPLEMENTATION

INTRODUCTION

Implementation of the recommended jurisdictional highway system plan described in the preceding chapters of this report would provide Waukesha County with integrated state, county, and local trunk highway systems able to effectively meet existing and anticipated future travel demands at an adequate level of service. It would, in addition, assist in achieving a more efficient design, construction, maintenance, and operation of the total arterial street and highway system; a more equitable distribution of highway improvement and maintenance costs; and the intergovernmental coordination necessary to the efficient and effective provision of highway transportation facilities and services within Waukesha County.

In a practical sense, the recommended plan is not complete until the steps required for its implementation are specified. This chapter, therefore, is presented as a guide for use in the implementation of the recommended jurisdictional highway system plan. Basically, it outlines the actions which must be taken by the various levels and agencies of government concerned if the recommended jurisdictional highway system plan is to be fully carried out. Those units and agencies of government which have plan adoption and plan implementation powers applicable to the recommended plan are identified, necessary formal plan adoption actions are specified, and specific implementation actions are recommended with respect to development of the jurisdictional subsystems comprising the total arterial street and highway system within Waukesha County.

The plan implementation recommendations are, to the maximum extent possible, based upon and related to existing governmental programs and predicated upon existing state enabling legislation. Certain changes in the state enabling legislation, however, are recommended as deemed necessary to implement fully the recommended plan. Because of the ever-present possibility of unforeseen changes in economic conditions, state and federal enabling legislation, and governmental and fiscal policies, it is not possible to declare once and for all time exactly how a process as com-

plex as highway plan implementation should be administered and financed. It will, therefore, be necessary to update periodically not only the recommended jurisdictional highway system plan itself but the recommendations contained herein for implementation of this plan.

BASIC PRINCIPLES AND CONCEPTS

It is important to recognize that plan implementation measures must grow out of adopted plans. Thus, action policies and programs must be preceded by plan adoption and should emphasize the most important and essential elements of the plan and those areas of action which will have the greatest impact on achieving the objectives expressed in the plan. With respect to the recommended jurisdictional highway system plan, primary attention in plan implementation should accordingly be focused upon coordinated development of the Type I (state trunk) highway and Type II (county trunk) highway networks. These two arterial subsystems together provide the basic framework for the provision of essential highway transportation services within Waukesha County, not only satisfying almost 84 percent of the total traffic demand within the county but also providing the highest level of highway transportation service and accommodating the longest trips. Plan implementation, therefore, should focus primarily on these two subsystems, particularly with respect to the attainment of the recommended location, capacity, and timing of improvements, leaving implementation of the Type III (local trunk) system to the local units of government. This is not to be interpreted, however, to mean that improvement of the Type III (local trunk) facilities need not be fully coordinated with development of the Type I (state trunk) and Type II (county trunk) highway systems, but only that primary attention in plan implementation should be focused on facilities of areawide importance—the state and county trunk highways—leaving greater flexibility for the improvement of facilities of primarily local importance.

PLAN IMPLEMENTATION ORGANIZATIONS

Full implementation of the recommended jurisdictional highway system plan will be dependent upon

coordinated action by 41 agencies of government: the U. S. Department of Transportation, Federal Highway Administration; the Wisconsin Department of Transportation; the Wisconsin Department of Natural Resources; the Waukesha County Board; and the governing bodies of the 37 cities, villages, and towns located within Waukesha County. Substantial implementation of the recommended plan, however, in the form of integrated state and county trunk highway system development will involve only three agencies of government: the U. S. Department of Transportation, Federal Highway Administration; the Wisconsin Department of Transportation; and the Waukesha County Board. A brief discussion of the duties and functions of these three agencies as they relate to the jurisdictional highway system plan implementation follows. Although the three agencies are for convenience discussed separately, the interdependence between the various levels of government represented and the need for close interagency cooperation cannot be overemphasized.

U. S. Department of Transportation, Federal Highway Administration

The U. S. Department of Transportation, Federal Highway Administration, administers all federal highway aid programs, working through the Wisconsin Department of Transportation, Division of Highways. The Federal Highway Administration must approve all changes in the federal aid systems and will, in this respect, have an important role in implementation of the recommended jurisdictional highway system plan for Waukesha County.

Wisconsin Department of Transportation

The Highway Commission of the Wisconsin Department of Transportation, Division of Highways, is broadly empowered to provide the state with a highway transportation system. The State Highway Commission is charged with responsibility for administering all state and federal aids for highway improvements; for the planning, design, construction, and maintenance of all state trunk highways; and for planning, laying out, revising, constructing, reconstructing, and maintaining the national system of interstate and defense highways, the federal aid primary system, the federal aid secondary system, the federal aid urban system, and the formerly independently funded TOPICS system, the latter five functions all being subject to federal review and regulation. The State Highway Commission is also responsible

for reviewing county trunk highway routes in order to assure that these routes form an integrated system of county trunk highways between adjoining counties. The State Highway Commission is authorized to enter into cooperative agreements with the governing bodies of any county, city, village, or town, or with the federal government, respecting the financing, planning, establishment, improvement, maintenance, use, regulation, or vacation of highways within their respective jurisdiction.

Specifically, three sections of the Wisconsin Statutes, when considered together, provide the basis for what might be considered a master plan for the state trunk highway system. One of these sections directs the preparation of county maps showing the official layout of the state trunk highway system. The second permits marked and traveled locations to differ from the official locations and thereby allows the official layout maps to function in some instances as plans. Indeed, it appears that these official layout maps were originally regarded as master plans for the state trunk highway system. Special legislative committees, whose function was to periodically study and revise the entire state trunk highway system, apparently functioned in 1917, 1919, 1923, and for the last time in 1934, and their work is reflected on the official layout maps. Since 1934 all consideration of changes in the system has been on a piecemeal, ad hoc basis by the State Highway Commission, acting pursuant to the provisions of Chapter 84 of the Wisconsin Statutes, or by the State Legislature itself, as provided by Chapter 518, Laws of 1947; Chapter 475, Laws of 1949; Chapter 75, Laws of 1953; Chapters 369 and 371, Laws of 1955; Chapters 596, 597, and 598, Laws of 1961; and Chapter 348, Laws of 1971. The third permits the State Highway Commission to establish locations and right-of-way widths for future freeways or expressways and to protect the rights-of-way for these facilities from development. It is also apparent that the various federal aid systems in and of themselves constitute long-range plans insofar as they tend to coordinate the expenditure of federal highway aid monies.

The planning and programming procedure developed by the State Highway Commission within this legislative framework determines when and where the various improvement projects will be accomplished on the existing state trunk highway system and establishes standards for such determination. The procedure provides an orderly

and effective device whereby the many complex and highly interrelated tasks involved in the final accomplishment of modern highway improvement projects—tasks such as route location, including necessary mapping and preliminary engineering; implementation of legal changes in the state trunk highway routes, including necessary public hearings, detailed design and final engineering, acquisition of right-of-way, preparation of construction plans, specifications, and cost estimates, and letting of contracts; and actual construction, including layout, inspection, and final surveys—can be carried out and, as such, the procedure constitutes an effective current planning program.

The State Highway Commission is also empowered to review and regulate subdivision plats along state trunk highways outside the corporate limits of the City of Milwaukee and, as previously noted, is empowered to prepare official maps of future freeway and expressway routes. The Wisconsin Division of Highways, through its administration of federal and state highway aids to local units of government and through its highway design and engineering functions, exerts a powerful influence on street and highway system planning and development within Wisconsin and is probably the single most important agency to highway system plan implementation.

Waukesha County Board

At the county level of government within Wisconsin, county highway committees, operating under the aegis of the county boards, are made responsible for the administration and expenditure of all county funds for highway construction and maintenance and are empowered to establish and change the county trunk highway system, subject to the approval of the State Highway Commission; to cooperate with the State Highway Commission in the selection of a system of federal aid secondary roads; and to acquire land for county highway purposes by purchase or condemnation.

PLAN ADOPTION

Adoption or endorsement of the recommended jurisdictional highway system plan by the three major plan implementation agencies is essential, not only to assure a common understanding between the several governmental agencies and to enable their staffs to program the necessary implementation work, but also to meet certain statutory requirements. In addition to adoption or endorsement of the jurisdictional highway

system plan by the implementing agencies, plan adoption by the Southeastern Wisconsin Regional Planning Commission, in accordance with Section 66.945(10) of the Wisconsin Statutes, will be essential in order to continue to qualify the implementing agencies for federal grants in partial support of highway improvement projects with Waukesha County.

It is extremely important to understand that adoption or endorsement of the recommended jurisdictional highway system plan by any unit or agency of government pertains only to the statutory duties and functions of the adopting or endorsing agency, and such adoption or endorsement does not and cannot in any way preempt action by another unit or agency of government within its jurisdiction. Thus, adoption or endorsement of the jurisdictional highway system plan by the state and county would make the plan applicable as a guide to state and county highway system development and not to local trunk highway system development. To make the plan applicable as a guide to local highway system development would require its adoption by the municipalities concerned.

The following specific plan adoption actions are hereby recommended:

1. That the Waukesha County Board, upon recommendation of the Waukesha County Highway Committee, formally adopt the recommended jurisdictional highway system plan as a guide to future highway facility development within Waukesha County, as authorized by Section 66.945(12) of the Wisconsin Statutes.
2. That upon approval of the recommended jurisdictional highway system plan by the Waukesha County Board, the State Highway Commission formally act to endorse and integrate the recommended jurisdictional highway system plan, including the recommendations for the staged construction thereof, into the state long-range highway system plans, as authorized by Sections 84.01, 84.02, 84.025, 84.29, and 84.295 of the Wisconsin Statutes, as a guide to highway system development within Waukesha County.
3. That upon approval of the recommended jurisdictional highway system plan by the Waukesha County Board, the Wisconsin

Department of Natural Resources formally act to endorse and integrate the recommended jurisdictional highway system plan, including specifically the recommendations for state park roads serving the Kettle Moraine State Forest southern unit, into the long range plans for state park and state forest highway service as authorized by Section 84.28 of the Wisconsin Statutes.

4. That the U. S. Department of Transportation, Federal Highway Administration, through the Wisconsin Division of Highways, formally acknowledge the recommended jurisdictional highway system plan as a guide to the review of requests for realignment of the various federal aid systems and to the administration and granting of federal aids for highway improvement within Waukesha County.
5. That the Southeastern Wisconsin Regional Planning Commission, in accordance with Sections 66.945(9) and (10) of the Wisconsin Statutes, act to formally adopt the recommended jurisdictional highway system plan as an integral part of the master plan for the Region, constituting an amendment to the regional transportation plan adopted by the Commission on December 1, 1966.

To supplement the aforementioned recommended federal, state, regional, and county actions, it is suggested that the six city common councils, 18 village boards, and 13 town boards within Waukesha County act to adopt the recommended jurisdictional highway system plan as authorized by Section 66.945(12) of the Wisconsin Statutes as a guide to highway system development within their area of jurisdiction. A model resolution for adoption of the Waukesha County Jurisdictional Highway system plan is set forth in Appendix C. It is also suggested that the respective local planning agencies by resolution adopt and integrate the recommended jurisdictional highway system plan, as this plan affects their area of jurisdiction, into the local master plans, pursuant to Section 62.23(3)(b) of the Wisconsin Statutes, and certify such adoption to their local governing body.

Subsequent Adjustment of the Plan

No long-range plan can be permanent in all of its aspects or precise in all of its elements. Amendments to the recommended jurisdictional highway system plan will be forthcoming, not only

from the work of the Southeastern Wisconsin Regional Planning Commission under its continuing areawide transportation planning responsibilities, but also from the state, county, and local agencies as these agencies adjust and refine the plan during implementation and as new highway improvement programs are created or existing programs expanded or curtailed. Any such adjustment, however, will require on a continuing basis the same close cooperation between the local, areawide, state, and federal agencies concerned as has been evidenced in the preparation of the jurisdictional highway system plan itself. To achieve this necessary coordination between local, state, and federal programs and thereby assure the timely adjustment of the recommended plan, it is recommended that the Technical Coordinating and Advisory Committee on Jurisdictional Highway Planning for Waukesha County, created for the jurisdictional highway planning study, be retained, and that all agencies having highway planning and plan implementation powers advise and transmit from time to time any subsequent proposed changes in the plan to the Committee for review and possible integration into an amended jurisdictional highway system plan. In order to achieve full intergovernmental coordination in highway system development within Waukesha County, it is further recommended that the Committee annually review and comment on highway construction project priorities and other major plan implementation actions as proposed by the various implementing agencies.

PLAN IMPLEMENTATION

Implementation of the recommended jurisdictional highway system plan may be considered under four distinct but interrelated areas of action by the three major implementing agencies concerned: 1) realignment of state and county jurisdictional responsibilities, 2) realignment of the federal aid systems, 3) realignment of state and county operational responsibilities, and 4) right-of-way reservation and acquisition and facility construction. Major implementation efforts of a system-wide nature will be necessary in the first three areas to bring the existing jurisdictional systems, federal aid routes, and operational responsibilities into alignment with the 1975 staging of the recommended plan. Subsequent actions in these three areas can be on an individual route basis, as developing events dictate, to reach the 1990 staging of the recommended plan. All implementation efforts in the fourth area can be part of the

normal construction programming efforts of two of the major implementing agencies.

Realignment of Jurisdictional Responsibilities

In Wisconsin, realignment of the state trunk highway system is made a joint state-county function, pursuant to Sections 84.02(3) and 84.025(3) of the Wisconsin Statutes. It is accordingly recommended that, upon adoption of the recommended jurisdictional highway system plan by the Waukesha County Board and endorsement by the State Highway Commission, the State Highway Commission act in cooperation with the Waukesha County Board to effect the realignment of the state trunk highway system within Waukesha County.

It is recommended that the initial action include all of the specific additions to, and deletions from, the state trunk highway system set forth in Table 36, in order to achieve the first (1975) stage of plan implementation. Subsequent actions should effect the specific additions to, and deletions from, the state trunk highway system set forth in Tables 37 and 38 for 1980 and the design year (1990) of the recommended plan. It is recommended that all of the initial changes in the state trunk highway system be effected by one inclusive action of the State Highway Commission of Wisconsin supported by the Waukesha County Board. Such action may require public hearing prior to action, as specified by Sections 84.02(3)

Table 36

ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE I (STATE TRUNK) ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1975

Additions to State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 15 (Rock Freeway)	Evergreen Drive (Town of Vernon) to the Walworth County line	Towns of Vernon and Mukwonago	5.03
CTH A	USH 18 to STH 59	City of Waukesha and Towns of Pewaukee and Waukesha	6.42
CTH F	CTH A to CTH U, and south corporate limits of the Village of Big Bend to the Racine County line	City of Waukesha, Towns of Waukesha and Vernon, and Village of Big Bend	9.45
East Avenue	Main Street to W. Sunset Drive	City of Waukesha	2.07
E. Moreland Boulevard	White Rock Avenue to St. Paul Avenue	City of Waukesha	0.25
North Street	Madison Street to Wisconsin Avenue	City of Waukesha	0.30
St. Paul Avenue	Madison Street to Wisconsin Avenue	City of Waukesha	0.29
Clark Street	CTH U to STH 24	Village of Big Bend	0.59
Waterford Avenue	STH 24 to south corporate limits	Village of Big Bend	0.23
Deletions From State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 15	Evergreen Drive (Town of Vernon) to Village of Mukwonago east corporate limits, and Village of Mukwonago south corporate limits to the Walworth County line	Towns of Vernon and Mukwonago	5.57
STH 15 (Fox Street)	East corporate limits to Rochester Street	Village of Mukwonago	0.98
STH 15 (Main Street)	Rochester Street to south corporate limits	Village of Mukwonago	0.79
USH 18 (White Rock Avenue).	E. Moreland Boulevard to Main Street	City of Waukesha	0.72
STH 74	Village of Sussex west corporate limits to STH 83	Towns of Lisbon and Merton and Village of Merton	8.06
STH 74 (Main Street)	STH 164 to the west corporate limits	Village of Sussex	1.24
STH 106	STH 67 to the Jefferson County line	Towns of Eagle and Ottawa	4.23
STH 175	Milwaukee County line to the Washington County line	Village of Menomonee Falls	5.06

Source: SEWRPC.

Table 37

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE I (STATE TRUNK)
ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1975-1980**

Additions to State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
USH 16-STH 67	STH 67 at Thackeray Trail (City of Oconomowoc) to the Jefferson County line	City and Town of Oconomowoc	6.67
(Oconomowoc Bypass)			
STH 83	Mapleton Road (Town of Merton) to USH 16	Town of Merton, Village of Hartland, City of Delafield	6.17
Buckley Street	Main Street to Corrina Boulevard	City of Waukesha	0.17
Union Street	North Street to Corrina Boulevard	City of Waukesha	0.22
Deletions From State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
USH 16	Hewitts Point Road (Village of Oconomowoc Lake) to the City of Oconomowoc east corporate limits	Towns of Oconomowoc and Summit	1.75
USH 16 (Wisconsin Avenue)	East corporate limits to the Jefferson County line	City of Oconomowoc	3.39
STH 24 (Forest Home Avenue)	Village of Big Bend west corporate limits to the Racine County line	Town of Vernon	3.83
STH 24 (Janesville Road)	Milwaukee County line to the Village of Big Bend east corporate limits	City of Muskego	6.58
STH 24 (Milwaukee Avenue)	East corporate limits to the west corporate limits	Village of Big Bend	0.85
STH 59 (Clinton Street)	St. Paul Avenue to Wisconsin Avenue	City of Waukesha	0.23
STH 59 (Hartwell Avenue)	Main Street to Arcadian Avenue	City of Waukesha	0.18
STH 59 (Main Street)	Hartwell Avenue to Wisconsin Avenue	City of Waukesha	0.79
STH 59 (Wisconsin Avenue)	St. Paul Avenue to East Avenue	City of Waukesha	0.63
STH 67	USH 16 Oconomowoc Bypass to the City of Oconomowoc north corporate limits	Town of Oconomowoc	0.92
STH 67 (Lake Road)	North corporate limits to Main Street	City of Oconomowoc	1.56
STH 67 (Main Street)	Lake Road to Summit Avenue	City of Oconomowoc	0.24
STH 67 (Summit Avenue)	Main Street to STH 67 at Thackeray Trail	City of Oconomowoc	1.24
STH 83	Mapleton Road (Town of Merton) to USH 16	Town of Merton, Villages of Hartland and Chenequa, and City of Delafield	6.25

Source: SEWRPC.

and 84.025(3) of the Wisconsin Statutes, Subsequent realignments can be effected on a route-by-route basis, as dictated by developing circumstances.

In Wisconsin, establishment of state park roads serving state forests or providing direct connections between the most convenient state trunk highway and state forests may be designated by the Wisconsin Department of Natural Resources upon petition of the abutting land holders, the local unit of government, and the County Board. It is accordingly recommended that, upon adoption of the recommended jurisdictional highway system

plan by the Waukesha County Board, endorsement by the Wisconsin Department of Natural Resources, and adoption by the local units of government, the Wisconsin Department of Natural Resources act in cooperation with the Waukesha County Board and the local units of government concerned to effect the recommended additions to the system of state park roads within Waukesha County.

In Wisconsin, realignment of the county trunk highway system, like realignment of the state trunk highway system, is made a joint state-

Table 38

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE I (STATE TRUNK)
ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1980-1990**

Additions to State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 83 (Mukwonago Bypass)	North corporate limits to STH 15 (Rock Freeway)	Town and Village of Mukwonago	3.01
New Facility (Waukesha Western Bypass)	STH 59 to IH 94	Towns of Pewaukee and Waukesha and City of Waukesha	5.18
Bay Freeway	Milwaukee County line to USH 16 Freeway	Villages of Butler, Menomonee Falls and Pewaukee and Towns of Brookfield and Pewaukee	10.04
Belt Freeway	Milwaukee County line to the Washington County line	Cities of Brookfield, Muskego, and New Berlin; Villages of Lannon and Menomonee Falls; and Town of Brookfield	23.06
Deletions From State Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 83 (Rochester Street)	North corporate limits to the east corporate limits	Village of Mukwonago	1.49
STH 99	STH 67 to Village of Mukwonago west corporate limits	Towns of Eagle and Mukwonago	7.33
STH 99 (Eagle Lake Avenue)	West corporate limits to Rochester Street	Village of Mukwonago	1.10

Source: SEWRPC.

county function pursuant to Section 83.025 of the Wisconsin Statutes. It is accordingly recommended that, upon adoption of the recommended jurisdictional highway system plan by the Waukesha County Board and endorsement by the State Highway Commission, the Waukesha County Board act in cooperation with the Highway Commission to effect the realignment of the county trunk highway system within Waukesha County.

It is recommended that the initial action include all of the specific additions to, and deletions from, the county trunk highway system set forth in Table 39, in order to achieve the first (1975) stage of plan implementation. Subsequent actions should effect the specific additions to, and deletions from, the county trunk highway system set forth in Tables 40 and 41 for 1980 and the design year (1990) of the recommended plan. It is recommended that all of the initial changes in the county

trunk highway system be effected by one inclusive action of the Waukesha County Board supported by the State Highway Commission. Subsequent realignments can be effected on a route-by-route basis, as dictated by developing circumstances.

In order to achieve the desired continuity of the state and county trunk highway systems through incorporated municipalities, it is recommended that the Waukesha County Board support the enactment of legislation presently before the State Legislation which would amend Section 84.02(11) of the Wisconsin Statutes to abolish the connecting street concept, and Section 83.025(1) to prohibit the governing body of any city or village from unilaterally removing a street or highway from the county trunk system. It is further recommended that the State Highway Commission sponsor amendments to Section 349.13 of the Wisconsin Statutes to explicitly empower the State Highway

Table 39

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE II (COUNTY TRUNK)
ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1975**

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 15 (Fox Street)	East corporate limits of the Village of Mukwonago to STH 83 (Rochester Street)	Village of Mukwonago and Town of Mukwonago	1.32
STH 15 (Main Street)	STH 83 (Rochester Street) to the south corporate limits of the Village of Mukwonago	Village of Mukwonago and Town of Mukwonago	1.01
STH 15 (National Avenue)	Evergreen Drive to the east corporate limits of the Village of Mukwonago, and the south corporate limits of the Village of Mukwonago to the Walworth County line	Towns of Vernon and Mukwonago	5.57
STH 74	STH 83 to present CTH F, present CTH EF to the west corporate limits of the Village of Sussex	Towns of Merton and Lisbon and Village of Merton	7.03
STH 74 (Main Street)	Present CTH F to CTH EF	Village of Merton	1.03
STH 74 (Main Street)	West corporate limits of the Village of Sussex to STH 164	Village of Sussex	1.24
STH 106	STH 67 to the Jefferson County line	Towns of Ottawa and Eagle	4.23
STH 175 (Appleton Avenue)	Milwaukee County line to the Washington County line	Village of Menomonee Falls	5.06
124th Street	CTH VV (Silver Spring Drive) to IH 94, and Robinwood Street to STH 15 (Rock Freeway)	Villages of Menomonee Falls and Butler, City of Brookfield, Village of Elm Grove, and City of New Berlin	9.00
Barker Road	The south corporate limits of the City of Brookfield to STH 190 (Capitol Drive)	City of Brookfield and Town of Brookfield	2.82
Broadway	The east corporate limits of the City of Waukesha to East Avenue	City of Waukesha	0.94
Capitol Drive	Merton Avenue to STH 83	Village of Hartland	1.49
Capitol Drive	High Road to the north corporate limits of the Village of Pewaukee	Village of Pewaukee	0.63
Concord Road	USH 16 (Wisconsin Avenue) to a point 0.06 mile south of Grandview Avenue	City of Oconomowoc	1.40
County Line Road	Pilgrim Road to Boundary Road	Village of Menomonee Falls	2.00
Genesee Street	IH 94 to Main Street	City of Delafield	0.48
Good Hope Road	STH 175 (Appleton Avenue) to the Milwaukee County line	Village of Menomonee Falls	0.47
Grandview Boulevard	USH 18 (Summit Avenue) to Northview Road	City of Waukesha	0.71
Hartling Road	CTH EF to proposed STH 83	Town of Merton	0.81
Jungbluth Road	USH 16 to CTH K	Town of Merton	1.02
Lapham Street	CTH Z (Lake Drive) to Lisbon Street	City of Oconomowoc	0.25
Lisbon Street	STH 67 (Lake Road) to Lapham Street	City of Oconomowoc and Town of Oconomowoc	0.76
Loomis Road	STH 36 to the Racine County line	City of Muskego	0.71
Main Street	Milwaukee Street to the west corporate limits of the City of Delafield	City of Delafield	1.70
Main Street	Wisconsin Avenue to USH 16	Village of Pewaukee	0.70
Mapleton Road	CTH C to STH 83	Town of Merton	1.57
Merton Avenue	CTH JK (Capitol Drive) to CTH K	Village of Hartland and Town of Merton	1.03
Milwaukee Street	Main Street to STH 83	City of Delafield	1.01
Moorland Road	USH 18 (Blue Mound Road) to STH 15 (Rock Freeway)	Cities of Brookfield and New Berlin	5.79
West Moreland Boulevard	Pewaukee Road to STH 164	City of Waukesha	0.16

Table 39 (continued)

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
North Avenue	Milwaukee County line to 0.50 mile west of Barker Road	City of Brookfield	5.51
Northview Road	Grandview Boulevard to a point 0.25 mile east of Delafield Street	City of Waukesha	0.78
Pewaukee Road	West Moreland Boulevard to the north corporate limits of the City of Waukesha	City of Waukesha	0.25
Pilgrim Parkway	North Avenue to USH 18 (Blue Mound Road)	City of Brookfield and Village of Elm Grove	1.73
Pilgrim Road	STH 175 to the Washington County line, and Lisbon Road to North Avenue	Village of Menomonee Falls and City of Brookfield	3.44
Prospect Avenue	Wisconsin Avenue to the south corporate limits of the Village of Pewaukee	Village of Pewaukee	0.57
Racine Avenue.	The east corporate limits of the City of Waukesha to Broadway	City of Waukesha	0.65
Sawyer Road	CTH P (Pabst Road) to USH 18 (Sunset Drive)	Town of Summit	4.20
Silver Lake Street	Summit Avenue to the south corporate limits of the City of Oconomowoc	City of Oconomowoc	0.61
State Frontage Road (Golf Road)	CTH E (Maple Avenue) to CTH T	Towns of Delafield and Pewaukee and City of Waukesha	4.95
West Street	Capitol Drive to CTH KF	Village of Pewaukee and Town of Pewaukee	0.91
Winkleman Road	CTH EF to CTH K	Village of Merton and Town of Merton	1.55
Wisconsin Avenue	CTH PPP (Wisconsin Avenue) to CTH P (Brown Street)	Town of Oconomowoc	1.18
Wisconsin Avenue	Capitol Drive to the east corporate limits of the Village of Pewaukee	Village of Pewaukee	1.32
New Facility	STH 83 to CTH C (Lakeland Road)	City of Delafield and Villages of Chenequa and Nashotah	2.10
New Facility	CTH C (Lakeland Road) to the west corporate limits of the Village of Nashotah	Village of Nashotah	0.48
New Facility	CTH T to Main Street	City of Waukesha, Town of Pewaukee, and Village of Pewaukee	2.01
New Facility (Lawnsdale Road)	Approximately 0.35 mile west of Lawnsdale Road's intersection with CTH Y (Racine Avenue) to approximately 1.17 miles west of that intersection	City of New Berlin	0.82
Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH A (W. Sunset Drive)	USH 18 (E. Moreland Boulevard) to CTH F (East Avenue)	Towns of Pewaukee and Waukesha and City of Waukesha	3.71
CTH CA (Mill Street).	STH 67 to CTH C, and CTH C to STH 67	Town of Oconomowoc	1.54
CTH D (W. Sunset Drive and S. Prairie Avenue	STH 59 (Genesee Road) to its terminus at Progress Avenue	Town of Waukesha and City of Waukesha	1.30
CTH DE (Green Lane)	CTH TT (Merrill Hills Road) to present CTH D (Sunset Drive)	Town of Waukesha	0.58
CTH DT.	Present CTH D (Wern Way) to CTH DE (Sunset Drive)	Town of Genesee	0.51
CTH E (Cottonwood Avenue).	West Capitol Drive to CTH HE (Maple Avenue)	Village of Hartland and Town of Delafield	1.28

Table 39 (continued)

Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH EC (Petersen Road)	STH 83 to CTH C	Town of Merton	2.06
CTH EE	CTH NN to CTH E	Town of Mukwonago	3.76
CTH EF	Hartling and Wallschlaeger Roads to present CTH E	Town of Merton	1.51
CTH F	Present STH 74 to CTH E	Towns of Merton and Lisbon	4.39
CTH F (Big Bend Drive)	CTH ES (National Avenue) to the north corporate limits of the Village of Big Bend, and from the south corporate limits of the Village of Big Bend to the Racine County line	Town of Vernon	4.47
CTH F (Chinook Pass)	From a point 0.13 mile north of present CTH A (Sunset Drive) to CTH ES (National Avenue)	City of Waukesha, Towns of Waukesha and Vernon	5.43
CTH F (Clark Street)	The north corporate limits of the Village of Big Bend to STH 24 (Milwaukee Avenue)	Village of Big Bend	0.82
CTH F (East Avenue)	Corner lots of Douglas Avenue and East Avenue and Estberg Avenue and East Avenue	City of Waukesha	0.05
CTH F (Waterford Avenue)	STH 24 (Milwaukee Avenue) to the south corporate limits of the Village of Big Bend	Village of Big Bend	0.23
CTH FF (Coffee Road)	CTH Y (Racine Avenue) to CTH ES (National Avenue)	City of New Berlin	4.16
CTH ^a G	Present CTH D to present CTH ZZ	Town of Ottawa	2.75
CTH GE	CTH E to present CTH GG	Town of Genesee	0.76
CTH GG	CTH D to present CTH G	Towns of Ottawa and Genesee	3.05
CTH GN	STH 59 to STH 67	Town of Eagle	1.24
CTH HI (Small Road)	Present CTH I (Beloit Road) to CTH HH (College Avenue)	City of New Berlin	2.78
CTH HHH (Martin Drive)	CTH ES (National Avenue) to CTH HH (College Avenue)	City of New Berlin	1.47
CTH I (Lawnsdale Road)	Approximately 0.35 mile west of the intersection of Lawnsdale Road and CTH Y (Racine Avenue) to approximately 1.31 miles west of that intersection	City of New Berlin	0.96
CTH J (Glacier Road)	CTH KE to the west corporate limits of the Village of Pewaukee and present CTH JF to a point 0.32 mile south of CTH JF	Towns of Delafield and Pewaukee and Village of Pewaukee	2.13
CTH JF	CTH KF to STH 164	Town of Pewaukee and Village of Pewaukee	3.12
CTH JK (Lynndale Road)	USH 16 to CTH K (Lisbon Road)	Towns of Delafield, Pewaukee, and Lisbon	2.87
CTH KX (Calhoun Road)	CTH ES (National Avenue) to CTH D (Cleveland Avenue)	City of New Berlin	2.07
CTH ^a N	STH 59 to present CTH ZZ	Town of Eagle	3.02
CTH N (South Street)	STH 99 to STH 67 (Elkhorn Road)	Town of Eagle and Village of Eagle	1.52
CTH ^a NN	Jefferson County line to STH 67	Town of Eagle	1.78
CTH NNN	STH 99 to STH 59	Town of Eagle	3.89
CTH PP (Lake Drive)	CTH P (Brown Street) to Wisconsin Avenue	Town of Oconomowoc	1.27
CTH PPP (East Wisconsin Avenue)	CTH C (Lakeland Road) to USH 16	Village of Nashotah	0.52
CTH ^a S	STH 67 to STH 59	Town of Eagle	1.59
CTH T (Madison Street)	CTH TT (Merrill Hills Road) to its terminus near S. Moreland Boulevard	Town of Waukesha and City of Waukesha	0.72
CTH TJ	CTH JJ (Blue Mound Road) to a point 0.50 mile west of CTH T	Town of Pewaukee and City of Waukesha	1.60
CTH U (Edgewood Avenue)	Present CTH F (Clark Street) to present STH 24 (Milwaukee Avenue)	Village of Big Bend and Town of Vernon	0.67

Table 39 (continued)

Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH V (Town Line Road)	CTH K (Lisbon Road) to STH 164	Towns of Pewaukee and Lisbon and the Village of Menomonee Falls	1.79
CTH X	STH 83 to CTH E	Towns of Genesee and Mukwonago	3.20
CTH XI (Point Drive)	CTH X (Saylesville Road) to CTH I (River Road)	Towns of Genesee, Waukesha, and Mukwonago	2.38
CTH XX (Oakdale Drive)	Present CTH D (Sunset Drive) to the proposed Waukesha bypass	City of Waukesha and the Town of Waukesha	0.74
CTH Y (Main Street)	USH 18 (East Moreland Boulevard) to the east corporate limits of the City of Waukesha	City of Waukesha and the Town of Pewaukee	1.20
CTH Z (Dousman Road)	CTH B (Valley Road) to USH 18 (Sunset Drive)	Town of Summit	3.85
CTH ZA (Wilson Avenue)	CTH Z (Main Street) to present CTH ZB (Utica Road)	Village of Dousman and the Towns of Summit and Ottawa	0.51
CTH ZB (Utica Road)	USH 18 (Sunset Drive) to CTH Z	Towns of Summit and Ottawa	0.87
CTH ^a ZZ	STH 67 to present CTH ZC	Town of Ottawa and Town of Eagle	1.52
CTH ZZ (Brook Hill Road)	STH 59 and CTH DE	Town of Genesee	2.02

^aExisting county trunk highways that are proposed to be deleted from the county trunk system in 1975 and transferred to the State Park Road system—refer to Chapter VI.

Source: SEWRPC.

Table 40

ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE II (COUNTY TRUNK) ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1975-1980

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
USH 16	CTH P (Brown Street) to the east corporate limits of the City of Oconomowoc	Towns of Summit and Oconomowoc	0.93
USH 16 (Wisconsin Avenue)	The east corporate limits of the City of Oconomowoc to the Jefferson County line	City of Oconomowoc	3.39
STH 24	CTH NN (Maple Avenue) east to the Village of Big Bend west corporate limits	Town of Vernon	2.06
STH 24 (Forest Home Avenue)	Racine County line to CTH NN (Maple Avenue)	Town of Vernon	1.77
STH 24 (Janesville Road)	Milwaukee County line to the east corporate limits of the Village of Big Bend	Cities of New Berlin and Muskego and Town of Vernon	6.96
STH 24 (Milwaukee Avenue)	West corporate limits of the City of Muskego to the west corporate limits of the Village of Big Bend	Village of Big Bend	0.85
STH 67	USH 16 Interchange to the north corporate limits of the City of Oconomowoc	Town of Oconomowoc	0.92
STH 67 (Lake Road)	North corporate limits of Oconomowoc to Wisconsin Avenue	City of Oconomowoc	1.67
STH 67 (Main Street)	Wisconsin Avenue to Summit Avenue	City of Oconomowoc	0.14
STH 67 (Summit Avenue)	Main Street to Thackeray Trail	City of Oconomowoc	1.24
STH 83	STH 74 to CTH K	Town of Merton and Village of Chenequa	2.74

Table 40 (continued)

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH Z	Present CTH NN to Walworth County line	Town of Ottawa	0.64
Boundary Road	STH 74 to CTH Q (County Line Road)	Village of Menomonee Falls	1.06
Capitol Drive	USH 16 to Oakton Avenue	Village of Pewaukee	0.28
Delafield Road	CTH BB (Golden Lake Road) to Sawyer Road	Town of Summit	3.96
Lake Drive and Fairview Road	Lapham Street and CTH Z (Lake Drive) to STH 67 (Lake Road)	City of Oconomowoc	0.68
Oakton Avenue	Capitol Drive to Wisconsin Avenue	Village of Pewaukee	0.52
Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH C (Waterville Road)	Pleasant View and Mapleton Road to CTH K, CTH CCC (Delafield Road) to USH 18 (Sunset Drive), and USH 18 (Sunset Drive) to present CTH D	Towns of Merton, Summit, and Ottawa	8.96
CTH CC	USH 18 (Sunset Drive) to present CTH G	Towns of Genesee and Ottawa	2.28
CTH D	CTH Z to STH 67, STH 67 to CTH C, CTH E to CTH DT	Towns of Ottawa and Genesee	8.67
CTH D (Wern Way)	CTH DT to present CTH DE (Green Lane)	Towns of Genesee and Waukesha	1.06
CTH DE (Westmoreland Road)	CTH TT (Merrill Hills Road) to STH 59 (Genesee Road)	City of Waukesha	1.61
CTH DT	CTH T (Madison Street) to CTH DE	Towns of Delafield and Genesee	2.38
CTH E	STH 74 to CTH K	Town of Merton and Village of Hartland	2.95
CTH E (Maple Avenue)	CTH CCC to USH 18 (Summit Avenue)	Town of Delafield	2.64
CTH G	STH 83 to present CTH D	Towns of Genesee and Ottawa	3.42
CTH G (Brandy Brook Road)	CTH SS to present CTH G (Elmhurst Road)		1.24
	USH 18 (Summit Avenue) to STH 83	Towns of Delafield and Genesee and Village of Wales	2.65
CTH GA (James Street)	CTH G (Brandy Brook Road) to present CTH GD (West Main Street)	Village of Wales	0.43
CTH GD	CTH D to east corporate limits of the Village of Wales	Town of Genesee	2.61
CTH GD (Main Street)	East corporate limits of the Village of Wales to STH 83	Village of Wales	1.02
CTH GN	STH 67 to present CTH N	Town of Eagle	1.66
CTH I (River Road)	CTH HI to the Walworth County line	Towns of Waukesha and Mukwonago	11.37
CTH N	Present CTH ZZ to Jefferson County line	Town of Eagle	1.13
CTH NN	East corporate limits of the Village of Eagle to present STH 15	Towns of Eagle and Mukwonago and Village of Mukwonago	7.56
CTH NN (Main Street)	East corporate limit of the Village of Eagle to STH 67	Village of Eagle	0.60
CTH NN (Maple Avenue)	Present STH 24 to STH 83	Towns of Vernon and Mukwonago	4.21
CTH P	Present CTH C to the west corporate limits of the City of Delafield	Village of Nashotah and City of Delafield	0.97
CTH P (Beach Road)	South corporate limits of the Village of Oconomowoc Lake to present CTH P (Pabst Road)	Town of Summit	0.31
CTH P (Nashotah Road)	West corporate limits of the City of Delafield to present CTH PP (Sawyer Road)	Town of Summit	0.51
CTH P (Pabst Road)	CTH P (Sawyer Road) to STH 67	Village of Oconomowoc Lake and Town of Summit	1.60
CTH PPP	CTH C (Lakeland Road) to the west corporate limits of the Village of Nashotah	Village of Nashotah	0.59

Table 40 (continued)

Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH SS	CTH G to IH 94	Village of Pewaukee and Towns of Delafield and Pewaukee	2.40
CTH SS (Watertown Road).	Barker Road to CTH M (North Avenue)	Towns of Brookfield and Pewaukee	2.07
CTH U (Guthrie Road)	CTH Y (Racine Avenue) to CTH F (Big Bend Drive)	Town of Waukesha, City of Waukesha, Town of Vernon, and City of Muskego	6.27
CTH X	CTH E to STH 67	Towns of Mukwonago and Eagle	2.99
CTH Z (Main Street).	USH 18 (Sunset Drive) to CTH ZD (Ottawa Avenue)	Village of Dousman	0.95
CTH ZC	Present CTH Z to present CTH ZZ	Towns of Ottawa and Eagle	3.05
CTH ZD (Ottawa Avenue)	Present CTH Z (Main Street) to CTH D	Village of Dousman and Town of Ottawa	1.72
CTH ZZ	Present CTH Z to present CTH ZC	Town of Eagle	2.85
Lapham Street.	CTH Z (Lake Drive) to Lisbon Road	City of Oconomowoc	0.50
Lisbon Road	Lapham Street to STH 67 (Lake Road)	City of Oconomowoc	0.76

Source: SEWRPC.

Table 41

ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED TYPE II (COUNTY TRUNK) ARTERIAL HIGHWAY SYSTEM IN WAUKESHA COUNTY: 1980-1990

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
STH 83 (Rochester Street).	The north corporate limits of the Village of Mukwonago to the south corporate limits of the Village of Mukwonago	Village of Mukwonago	1.49
STH 99	STH 67 to the west corporate limits of the Village of Mukwonago	Towns of Eagle and Mukwonago	7.33
STH 99 (Eagle Lake Avenue)	The west corporate limits of the Village of Mukwonago to STH 83 (Rochester Street)	Village of Mukwonago	1.10
124th Street	Watertown Plank Road to approximately IH 94	Village of Elm Grove and City of Brookfield	1.07
CTH J	CTH K to a point on CTH J approximately 0.76 mile north of STH 190 (Capitol Drive)	Town of Lisbon, Village of Pewaukee, and Town of Pewaukee	1.66
Barker Road	STH 190 (Capitol Drive) to CTH K (Lisbon Road)	Town of Brookfield and Village of Menomonee Falls	1.28
Boundary Road	STH 74 to STH 145	Village of Menomonee Falls	0.72
Buena Park Road	STH 24 (Forest Home Avenue) to the Racine County line	Town of Vernon	1.14
South Denoon Road	CTH Y (Racine Avenue) to Crowbar Drive	City of Muskego	1.21
Johnson Road	STH 59 (Greenfield Avenue) to CTH Y (Racine Avenue)	City of New Berlin	3.08
Moorland Road	STH 15 (Rock Freeway) to the proposed Belt Freeway	Cities of New Berlin and Muskego	2.32
Muskego Dam Road	CTH Y (Racine Avenue) to STH 36	City of Muskego	1.22
Northview Road	Grandview Boulevard to the proposed western Waukesha bypass	City of Waukesha	1.66
Tichigan Road	Crowbar Drive to CTH F (Big Bend Drive)	City of Muskego and Town of Vernon	1.50

Table 41 (continued)

Additions to County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
New Facility	Winkleman Road to Jungbluth Road at CTH K	Town of Merton	0.32
New Facility	CTH KE (North Shore Drive) at CTH E (Maple Avenue) to STH 83	Town of Delafield	1.09
New Facility	Intersection of CTH Z and Tavat Road to the intersection of Lundt Road and CTH Z	Town of Ottawa	1.58
New Facility (Beloit Road)	Moorland Road to CTH ES (National Avenue)	City of New Berlin	1.53
New Facility (Oconomowoc South Bypass)	USH 16 (Wisconsin Avenue) to STH 67	City of Oconomowoc, Towns of Oconomowoc and Summit	3.79

Deletions From County Trunk Highway System			
Route	Limits	Municipality	Number of Miles
CTH D (Sunset Drive)	STH 59 (Genesee Street) to the proposed western Waukesha bypass	City of Waukesha	0.81
CTH G (Elmhurst Road)	IH 94 to USH 18	Town of Delafield	1.93
CTH J and CTH F	CTH K to approximately 1.40 miles south of CTH K on CTH F	Towns of Lisbon and Pewaukee	1.40
CTH I (Beloit Road)	Moorland Road to CTH ES (National Avenue)	City of New Berlin	1.94
CTH T (Madison Street)	CTH TT (Merrill Hills Road) to USH 18 (Summit Avenue)	Towns of Waukesha, Genesee, and Delafield	1.42
CTH TT (Merrill Hills Road)	USH 18 (Summit Avenue) to STH 59 (Genesee Road)	City of Waukesha and Town of Waukesha	2.61
CTH Z	Intersection of CTH Z and Tavat Road to the junction on CTH Z and the Jefferson County line	Town of Ottawa	1.84
Silver Lake Street	Summit Avenue to the proposed south bypass	City of Oconomowoc	0.75
Winkleman Road	CTH K to a point approximately 0.35 mile north of CTH K	Town of Merton	0.35

Source: SEWRPC.

Commission to limit or prohibit the stopping, standing, or parking of vehicles on any part of the state trunk highway system.

Aid System Adjustment

Upon realignment of the state and county trunk highway systems and pursuant to the foregoing recommendations, it will be necessary to adjust the federal aid system as established under Title 23, U. S. Code, Section 103, as amended by the Federal Aid Highway Act of 1973, to the resulting state and county trunk highway systems. In Wis-

consin the State Highway Commission is, pursuant to Section 84.01(17) of the Wisconsin Statutes, charged with the responsibility for laying out and revising the national system of interstate and defense highways and the federal aid primary system subject to federal review and approval. The State Highway Commission and the county board, acting through its highway committee, are charged with the joint responsibility of laying out and revising the federal aid secondary system, also subject to federal review and approval, pursuant to Section 83.026 of the Wisconsin Statutes.

It is accordingly recommended that, upon realignment of the state and county trunk highway systems, the State Highway Commission act to effect the realignment of the federal aid primary system within Waukesha County. It is recommended that the initial action include all of the specific additions to, and deletions from, the federal aid primary system set forth in Table 42 in order to achieve the first stage (1975) of plan implementation. Subsequent actions should effect the specific additions to, and deletions from, the federal aid primary system set forth in Tables 43 and 44 for 1980 and the design year (1990) of the recommended plan. It is recommended that all of the initial changes in the federal aid primary system be effected by one inclusive action of the State Highway Commission supported by the Waukesha County Board. Subsequent realignments can be effected on a route-by-route basis as dictated by developing circumstances.

It is further recommended that, upon realignment of the state and county highway systems, the State Highway Commission act in cooperation with the Waukesha County Board to effect the realignment of the federal aid secondary system within Waukesha County. It is recommended that the initial action include all of the specific additions to, and deletions from, the federal aid secondary system set forth in Table 45 in order to achieve the first stage (1975) of plan implementation. Subsequent actions should effect the specific additions to, and deletions from, the federal aid secondary system set forth in Tables 46 and 47 for 1980 and the design year (1990) of the recommended plan. It is recommended that all of the initial changes

in the federal aid secondary system be effected by one inclusive action of the State Highway Commission supported by the Waukesha County Board. Subsequent realignments can be effected on a route-by-route basis, as dictated by developing circumstances.

Finally, it is recommended that the federal aid urban system, as established under the Federal Aid Highway Act of 1970, be designated to coincide with the Type III (local trunk) highway system within that portion of Waukesha County which lies within the Milwaukee urbanized area as defined by the U. S. Bureau of the Census.¹

It is recommended that the U. S. Department of Transportation, Federal Highway Administration, cooperate in and approve the above-recommended revisions in the federal aid systems.

The realignment of the federal aid systems will be one of the major benefits of the jurisdictional highway planning program in Waukesha County. The present designation of federal aid routes does not, in all cases, coincide with major arterial routes. Yet, the selective transfer of federal

¹ It should be noted that a federal aid urban system consisting of 25.59 miles of facilities was established in Waukesha County in August 1972. Of this total, 25.04 miles represent recommended Type III (local trunk) highways or recommended Type II (county trunk) highways located in the urbanized area, which designations are fully consistent with the recently enacted Federal Aid Highway Act of 1973. The remaining 0.55 mile represents recommended Type I (state trunk) highways which ultimately should be placed on the federal aid primary system.

Table 42

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED
FEDERAL AID PRIMARY SYSTEM IN WAUKESHA COUNTY: 1975**

Additions to Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
STH 15 (Rock Freeway)	Evergreen Drive (Town of Vernon) to the Walworth County line	Towns of Vernon and Mukwonago	5.03
STH 67	IH 94 to Village of Eagle north corporate limits and south corporate limits to the Walworth County line	Towns of Summit, Ottawa, and Eagle and Village of Dousman	17.01
STH 67 (Kettle Moraine Drive) . .	North corporate limits to STH 59 (Waukesha Road)	Village of Eagle	0.40
STH 67 (Elkhorn Road)	STH 59 (Waukesha Road) to the south corporate limits	Village of Eagle	0.80

Table 42 (continued)

Additions to Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
STH 74	STH 164 to Custer Lane (Village of Lannon)	Villages of Sussex, Menomonee Falls, and Lannon and Town of Lisbon	4.07
STH 74 (Main Street)	Custer Lane to a point 1.37 miles west of the Milwaukee County line	Villages of Menomonee Falls and Lannon	3.62
STH 83	Washington County line to Capitol Drive (Village of Hartland), from Oakwood Road (City of Delafield) to IH 94, from the Village of Wales south corporate limits to the Village of Mukwonago north corporate limits, and from the STH 15 (Rock Freeway) to the Walworth County line	Towns of Merton, Delafield, Genesee, and Mukwonago, Village of Chenequa, and City of Delafield	20.50
STH 83 (Hartland Road)	Capitol Drive to Oakwood Road	Village of Hartland, City of Delafield, and Town of Delafield	1.74
STH 83 (Scuppernong Road)	IH 94 to Boys School Road	Town of Delafield	2.48
STH 83 (Wales Road)	Boys School Road to the Village of Wales south corporate limits	Village of Wales and Town of Genesee	1.26
STH 83 (Mukwonago Bypass)	North corporate limits to the STH 15 (Rock Freeway)	Village and Town of Mukwonago	1.49
STH 145.	Milwaukee County line to the Washington County line	Village of Menomonee Falls	2.83
STH 164	Moreland Boulevard (City of Waukesha) to STH 74 (Main Street) in the Village of Sussex	Towns of Pewaukee and Lisbon, Village of Sussex, and City of Waukesha	7.92
STH 164 (One-way pair of North Street and St. Paul Avenue)	Madison Street to Moreland Boulevard	City of Waukesha	6.19
CTH A	USH 18 to STH 59	City of Waukesha and Towns of Pewaukee and Waukesha	6.42
CTH F (Chinook Pass and Big Bend Drive)	CTH A to CTH U, and Village of Big Bend south corporate limits to the Racine County line	City of Waukesha, Towns of Waukesha and Vernon, and Village of Big Bend	9.45
Arcadian Avenue	East Avenue to Hartwell Avenue	City of Waukesha	0.25
East Avenue	Main Street to W. Sunset Drive	City of Waukesha	2.07
East Moreland Boulevard	White Rock Avenue to St. Paul Avenue	City of Waukesha	0.25
Madison Street.	North Street to St. Paul Avenue	City of Waukesha	0.15
North Street	Madison Street to Wisconsin Avenue	City of Waukesha	0.30
St. Paul Avenue	Madison Street to Wisconsin Avenue	City of Waukesha	0.29
Clark Street	CTH U to STH 24	Village of Big Bend	0.59
Waterford Avenue	STH 24 to south corporate limits	Village of Big Bend	0.23

Deletions From Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
STH 15	Evergreen Drive (Town of Vernon) to Village of Mukwonago east corporate limits, and Village of Mukwonago south corporate limits to the Walworth County line	Towns of Vernon and Mukwonago	5.57
STH 15 (Fox Street).	East corporate limits to Rochester Street	Village of Mukwonago	0.98
STH 15 (Main Street)	Rochester Street to south corporate limits	Village of Mukwonago	0.79
USH 18 (White Rock Avenue).	East Moreland Boulevard to Main Street	City of Waukesha	0.72

^aUntil such time as the realignment of the state trunk highway system is effected, the two above noted facilities are recommended to remain on the federal aid urban system established in August 1972.

Source: SEWRPC.

Table 43

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED
FEDERAL AID PRIMARY SYSTEM IN WAUKESHA COUNTY
1975-1980**

Additions to Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
USH 16-STH 67 (Oconomowoc Bypass)	STH 67 at Thackeray Trail (City of Oconomowoc) to the Jefferson County line	City and Town of Oconomowoc	6.67
Buckley Street	Main Street to Corrina Boulevard	City of Waukesha	0.17
Union Street	North Street to Corrina Boulevard	City of Waukesha	0.22
Deletions From Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
USH 16	Hewitts Point Road (Village of Oconomowoc Lake) to the City of Oconomowoc east corporate limits	Towns of Oconomowoc and Summit	1.75
USH 16 (Wisconsin Avenue)	East corporate limits to the Jefferson County line	City of Oconomowoc	3.39
STH 24 (Forest Home Avenue)	Village of Big Bend west corporate limits to the Racine County line	Town of Vernon	3.83
STH 24 (Janesville Road)	Milwaukee County line to the Village of Big Bend east corporate limits	City of Muskego	6.58
STH 24 (Milwaukee Avenue)	East corporate limits to the west corporate limits	Village of Big Bend	0.85
STH 59 (Hartwell Avenue)	Main Street to Arcadian Avenue	City of Waukesha	0.18
STH 59 (Main Street)	Hartwell Avenue to Wisconsin Avenue	City of Waukesha	0.79
STH 67	USH 16 Oconomowoc Bypass to the City of Oconomowoc north corporate limits	Town of Oconomowoc	0.92
STH 67 (Lake Road)	North corporate limits to Main Street	City of Oconomowoc	1.56
STH 67 (Main Street)	Lake Road to Summit Avenue	City of Oconomowoc	0.24
STH 67 (Summit Avenue)	Main Street to STH 67 at Thackeray Trail	City of Oconomowoc	1.24

Source: SEWRPC.

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Table 44

ADDITIONS TO THE RECOMMENDED FEDERAL AID PRIMARY SYSTEM IN WAUKESHA COUNTY: 1980-1990

Additions to Federal Aid Primary System			
Route	Limits	Municipality	Number of Miles
New Facility (Waukesha Western Bypass).	STH 59 to IH 94	Towns of Pewaukee and Waukesha and City of Waukesha	5.03
Bay Freeway	Milwaukee County line to USH 16 Freeway	Villages of Butler, Menomonee Falls, and Pewaukee and Towns of Brookfield and Pewaukee	10.04
Belt Freeway	Milwaukee County line to the Washington County line	Cities of Brookfield, Muskego, and New Berlin; Villages of Lannon and Menomonee Falls; and Town of Brookfield	23.06

Source: SEWRPC.

Table 45

**ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED
FEDERAL AID SECONDARY SYSTEM IN WAUKESHA COUNTY: 1975**

Additions to Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
STH 15 (Fox Street)	East corporate limits of the Village of Mukwonago to STH 83 (Rochester Street)	Village of Mukwonago and Town of Mukwonago	1.32
STH 15 (Main Street)	STH 83 (Rochester Street) to the south corporate limits of the Village of Mukwonago	Village of Mukwonago and Town of Mukwonago	1.01
STH 15 (National Avenue).	Evergreen Drive to the east corporate limits of the Village of Mukwonago, and the south corporate limits of the Village of Mukwonago to the Walworth County line	Towns of Vernon and Mukwonago	5.57
124th Street	CTH VV (Silver Spring Drive) to IH 94 and Robinwood Street to STH 15 (Rock Freeway)	Villages of Menomonee Falls and Butler, City of Brookfield, Village of Elm Grove, and City of New Berlin	9.00
CTH B (Oakwood Drive)	West corporate limits of the City of Delafield to CTH C (Genesee Street)	City of Delafield	1.10
CTH B (Valley Road)	Jefferson County line to the west corporate limits of the City of Delafield	Town of Summit	6.72
CTH CCC	STH 83 to CTH E (Maple Avenue) and Sawyer Road to the west corporate limits of the City of Delafield	City of Delafield and Town of Delafield and Town of Summit	2.20
CTH D	CTH C to CTH E	Towns of Ottawa and Genesee	2.39
CTH D (Sunset Drive)	CTH DE (Green Lane) to STH 59 (Genesee Road)	Town of Waukesha	1.82
CTH DE (Sunset Drive)	STH 83 to CTH D (Wern Way)	Towns of Genesee and Waukesha	4.13
CTH E (Maple Avenue)	CTH HE (Maple Avenue) to IH 94	Village of Hartland and Town of Delafield	3.27
CTH EF	STH 74 to the east corporate limits of the Village of Merton	Village of Merton	1.00
CTH G	CTH SS to IH 94	Town of Pewaukee	1.45
CTH HE (Maple Avenue)	Capitol Drive to CTH E (Cottonwood Avenue)	Village of Hartland and Town of Delafield	1.12
CTH HH (College Avenue).	STH 24 (Janesville Road) to CTH Y (Racine Avenue)	Cities of New Berlin and Muskego	3.97
CTH HI	CTH X (Saylesville Road) to CTH I (Lawnsdale Road)	Town of Waukesha	0.82
CTH I (Lawnsdale Road)	CTH HI to CTH ES (National Avenue) ^a and CTH HI to Moorland Road	Town of Waukesha and City of New Berlin	8.37
CTH JJ	West corporate limits of the Village of Pewaukee to CTH JK (Capitol Drive)	Towns of Pewaukee and Delafield and Village of Hartland	1.70
CTH JJ (Bluemound Road)	USH 16 to IH 94, USH 18 interchange	Town of Pewaukee, City of Waukesha, and Town of Brookfield	5.18
CTH JK (Lisbon Avenue)	Merton Avenue to USH 16	Village of Hartland, Towns of Merton and Hartland	1.03
CTH KE (North Shore Drive)	CTH E (Maple Avenue) to USH 16	Village of Hartland and Town of Delafield	3.05
CTH KF (High Road)	West Street to CTH K (Lisbon Road)	Towns of Pewaukee and Lisbon	1.32
CTH KK (Hampton Road).	Lisbon Road to the Milwaukee County line	City of Brookfield and Villages of Menomonee Falls and Butler	1.46
CTH P (Brown Street)	Dodge County line to present USH 16	Town of Oconomowoc	6.26
CTH PPP.	The west corporate limits of the Village of Nashotah to the west corporate limits of the City of Delafield	City of Delafield	0.47

Table 45 (continued)

Additions to Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
CTH T	IH 94 to Northview Road	Town of Pewaukee and City of Waukesha	1.04
CTH V (Town Line Road)	Washington County line to STH 74, and CTH VV (Silver Spring Road) to CTH K (Lisbon Road)	Town of Lisbon and Villages of Menomonee Falls and Lannon	4.44
CTH X (Saylesville Road)	STH 59 (Genesee Road) to STH 83	Towns of Waukesha and Genesee	4.01
CTH XX (Oakdale Drive)	CTH ES (National Avenue) to the proposed south bypass of City of Waukesha	Towns of Vernon and Waukesha	6.18
CTH Y (Lannon Road)	Washington County line to CTH K (Lisbon Road)	Villages of Menomonee Falls and Lannon	5.88
CTH Z	CTH ZZ to the Walworth County line	Town of Eagle	3.79
CTH Z (Silver Lake Street).	CTH B (Valley Road) to the south corporate limits of the City of Oconomowoc	Town of Summit	1.14
CTH ZZ	STH 67 to STH 59	Towns of Ottawa and Genesee	4.75
Broadway	Hartwell Avenue to East Avenue	City of Waukesha	0.27
Capitol Drive	Merton Avenue to STH 83	Village of Hartland	1.49
Capitol Drive	High Road to the north corporate limits of the Village of Pewaukee	Village of Pewaukee	0.63
County Line Road	STH 175 (Appleton Avenue) to Boundary Road	Village of Menomonee Falls	3.74
Good Hope Road	STH 175 (Appleton Avenue) to the Milwaukee County line	Village of Menomonee Falls	0.47
Grandview Boulevard	USH 18 (Summit Avenue) to Northview Road	City of Waukesha	0.71
Hartling Road	CTH EF to proposed STH 83	Town of Merton	0.81
Jungbluth Road	USH 16 to CTH K	Town of Merton	1.02
Loomis Road	STH 36 to the Racine County line	City of Muskego	0.71
Main Street	Milwaukee Street to the west corporate limits of the City of Delafield	City of Delafield	1.70
Main Street	Wisconsin Avenue to USH 16	Village of Pewaukee	0.70
Mapleton Road	CTH C to STH 83	Town of Merton	1.57
Merton Avenue	CTH JK (Capitol Drive) to CTH K	Village of Hartland and Town of Merton	1.03
Milwaukee Street	Main Street to STH 83	City of Delafield	1.01
North Avenue	Capitol Drive to USH 16	Village of Hartland	0.37
West Moreland Boulevard	Pewaukee Road to STH 164	City of Waukesha	0.16
Northview Road	Grandview Boulevard to CTH F (Pewaukee Road)	City of Waukesha and Town of Pewaukee	1.54
Pilgrim Parkway ^a	North Avenue to USH 18 (Blue Mound Road)	City of Brookfield and Village of Elm Grove	1.73
Sawyer Road	USH 18 (Sunset Drive) to CTH PPP (Wisconsin Avenue)	Town of Summit, Village of Oconomowoc Lake, and Town of Oconomowoc	6.24
Silver Lake Street.	Summit Avenue to the south corporate limits of the City of Oconomowoc	City of Oconomowoc	0.61
State Frontage Road (Golf Road)	CTH E (Maple Avenue) to CTH T	Towns of Delafield and Pewaukee and City of Waukesha	4.95
Sunset Drive	CTH DE (Green Lane) to CTH D (Wern Way)	Town of Waukesha	0.18
West Street	Capitol Drive to CTH KF	Village of Pewaukee and Town of Pewaukee	0.91
Winkleman Road	CTH EF to CTH K	Village of Merton and Town of Merton	1.55
Wisconsin Avenue.	CTH PPP (Wisconsin Avenue) to CTH P (Brown Street)	Town of Oconomowoc	1.18
Wisconsin Avenue	Capitol Drive to Prospect Avenue	Village of Pewaukee	0.37

Table 45 (continued)

Additions to Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
New Facility	STH 83 to CTH C (Lakeland Road)	City of Delafield and Villages of Chenequa and Nashotah	2.10
New Facility	CTH C (Lakeland Road) to the west corporate limits of the Village of Nashotah	Village of Nashotah	0.48
New Facility	CTH T to Main Street	City of Waukesha, Town of Pewaukee, and Village of Pewaukee	2.01

Deletions From Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
STH 67	IH 94 to the north corporate limits of the Village of Eagle and from the south corporate limits of the Village of Eagle to the Walworth County line	Town of Summit, Village of Dousman, and Towns of Ottawa and Eagle	17.01
STH 67 (Elkhorn Road)	STH 59 (Waukesha Road) to the south corporate limits of the Village of Eagle	Village of Eagle	0.80
STH 67 (Kettle Moraine Drive)	STH 59 (Waukesha Road) to the north corporate limits of the Village of Eagle	Village of Eagle	0.40
STH 74	STH 164 to Custer Lane	Village of Sussex, Town of Lisbon, and Villages of Menomonee Falls and Lannon	4.07
STH 74 (Main Street)	Custer Lane to a point 1.37 miles west of the Milwaukee County line	Villages of Lannon and Menomonee Falls	3.63
STH 83 (Official Only)	Washington County line to Capitol Drive (Village of Hartland), Oakwood Road (City of Delafield) to IH 94	Town of Merton, Village of Chenequa, City of Delafield	10.29
STH 83	South corporate limits of the Village of Wales to the north corporate limits of the Village of Mukwonago, and from the south corporate limits of the Village of Mukwonago to the Walworth County line	Towns of Genesee and Mukwonago	10.31
STH 83 (Hartland Road)	Capitol Drive to Oakwood Road	Village of Hartland, Town of Delafield, and City of Delafield	1.72
STH 83 (Scuppernong Road)	IH 94 to Boys School Road	City of Delafield and Towns of Delafield and Genesee	2.62
STH 83 (Wales Road)	Boys School Road to the south corporate limits of the Village of Wales	Town of Genesee and the Village of Wales	1.18
STH 164 (North Street)	Moreland Boulevard to Madison Street	City of Waukesha	0.95
STH 164 (St. Paul Avenue)	Moreland Boulevard to Madison Street	City of Waukesha	0.97
CTH A	USH 18 (Moreland Boulevard) to approximately Tomahawk Lane	Towns of Pewaukee and Waukesha and City of Waukesha	2.66
CTH C	Mapleton Road to CTH K	Town of Merton	2.52
CTH EC (Petersen Road)	STH 83 to CTH C	Town of Merton	2.06
CTH F	Present STH 74 to CTH E	Towns of Merton and Lisbon	4.39
CTH F (Big Bend Drive)	CTH ES (National Avenue) to the north corporate limits of the Village of Big Bend, and from the south corporate limits of the Village of Big Bend to the Racine County line	Town of Vernon	4.47
CTH F (Chinook Pass)	From a point 0.13 mile north of present CTH A (Sunset Drive) to CTH ES (National Avenue)	City of Waukesha, Towns of Waukesha and Vernon	5.43

Table 45 (continued)

Deletions From Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
CTH F (Clark Street)	The north corporate limits of the Village of Big Bend to STH 24 (Milwaukee Avenue)	Village of Big Bend	0.82
CTH F (East Avenue)	Corner lots of Douglas Avenue and East Avenue and Estberg Avenue and East Avenue	City of Waukesha	0.05
CTH F (Waterford Avenue)	STH 24 (Milwaukee Avenue) to the south corporate limits of the Village of Big Bend	Village of Big Bend	0.23
CTH G	STH 83 to CTH C	Towns of Genesee and Ottawa	3.42
CTH HI (Small Road)	CTH I (Beloit Road) to CTH HH (College Avenue)	City of New Berlin	2.78
CTH I (Lawnsdale Road)	Approximately 0.35 mile west of the intersection of Lawnsdale Road and CTH Y (Racine Avenue) to approximately 1.31 miles west of that intersection	City of New Berlin	0.96
CTH SS	CTH G to Oakton Road	Towns of Pewaukee and Delafield	1.88
CTH SS (Watertown Road)	USH 18 (Blue Mound Road) to CTH M (North Avenue)	Towns of Brookfield and Pewaukee	2.07
Circle Drive	Katherine Lane to Watertown Plank Road	Village of Elm Grove	0.14
East Avenue	Main Street to West Sunset Drive	City of Waukesha and Town of Waukesha	1.73
Elmhurst Road	Oakton Road to IH 94	Town of Delafield	0.53
Highland Drive	North Avenue to Juneau Boulevard	Village of Elm Grove	1.00
Juneau Boulevard	Highland Drive to Upper Ridge Way	Village of Elm Grove	0.56
Katherine Lane	Upper Ridge Way to Circle Drive	Village of Elm Grove	0.09
Lisbon Road	Milwaukee County line to Hampton Road	City of Brookfield	1.72
Oakton Road	CTH SS to Elmhurst Road	Town of Delafield	1.15
Pioneer Drive	STH 24 (Janesville Road) to CTH Y (Racine Avenue)	City of Muskego	0.92
Upper Ridge Way	Juneau Boulevard to Katherine Lane	Village of Elm Grove	0.21

^aWith enactment of the Federal Aid Highway Act of 1973, it is anticipated that those segments of the Type II (county trunk) arterial highway system within urban and urbanized areas, as those terms are defined by the U. S. Bureau of the Census, recommended above for addition to the federal aid secondary system, will instead be placed on the federal aid urban system along with the recommended Type III (local trunk) arterial highway system. Toward this end, the two facilities noted have already been added to the federal aid urban system.

Source: SEWRPC.

Table 46

ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED FEDERAL AID SECONDARY SYSTEM IN WAUKESHA COUNTY: 1975-1980

Additions to Federal Aid Secondary System ^a			
Route	Limits	Municipality	Number of Miles
USH 16	CTH P (Brown Street) to the west corporate limits of the City of Oconomowoc	Towns of Summit and Oconomowoc	4.32
STH 67	USH 16 Interchange to the north corporate limits of the City of Oconomowoc	Town of Oconomowoc	0.92
STH 67 (Lake Road)	North corporate limits of the City of Oconomowoc to Wisconsin Avenue	City of Oconomowoc	1.67
STH 67 (Main Street)	Wisconsin Avenue to Summit Avenue	City of Oconomowoc	0.14
STH 67 (Summit Avenue)	Main Street to Thackeray Trail	City of Oconomowoc	1.24
CTH Z (Lake Drive)	CTH P (Brown Street) to STH 67 (Lake Road)	Town of Oconomowoc and City of Oconomowoc	2.42

Table 46 (continued)

Additions to Federal Aid Secondary System ^a			
Route	Limits	Municipality	Number of Miles
Boundary Road	STH 74 to CTH Q (County Line Road)	Village of Menomonee Falls	1.06
Capitol Drive	USH 16 to Oakton Avenue	Village of Pewaukee	0.28
Oakton Avenue	Capitol Drive to Wisconsin Avenue	Village of Pewaukee	0.52
Deletions From Federal Aid Secondary System			
Route	Limits	Municipality	Number of Miles
CTH E	STH 74 to CTH K	Town of Merton and Village of Hartland	3.01

^aWith enactment of the Federal Aid Highway Act of 1973, it is anticipated that those segments of the Type II (county trunk) arterial highway system within urban and urbanized areas, as those terms are defined by the U. S. Bureau of the Census, recommended above for addition to the federal aid secondary system, will instead be placed on the federal aid urban system along with the recommended Type III (local trunk) arterial highway system.

Source: SEWRPC.

Table 47

ADDITIONS TO AND DELETIONS FROM THE RECOMMENDED FEDERAL AID SECONDARY SYSTEM IN WAUKESHA COUNTY: 1980-1990

Additions to Federal Aid Secondary System ^a			
Route	Limits	Municipality	Number of Miles
124th Street	Watertown Plank Road to approximately IH 94	Village of Elm Grove and City of Brookfield	1.07
CTH DE.	From the intersection of CTH D and proposed STH 83, to a point 0.21 mile east of the intersection	Town of Genesee	0.21
CTH J	CTH K to a point on CTH J approximately 0.76 mile north of STH 190 (Capitol Drive)	Town of Lisbon, Village of Pewaukee, and Town of Pewaukee	1.66
CTH SS	USH 18 (Bluemound Road) to STH 59 (Greenfield Avenue)	City of Brookfield	1.32
Barker Road	USH 18 (Bluemound Road) to CTH K (Lisbon Road)	Town of Brookfield and Village of Menomonee Falls	4.83
Boundary Road	STH 74 to STH 145	Village of Menomonee Falls	0.72
Buena Park Road	STH 24 (Forest Home Avenue) to the Racine County line	Town of Vernon	1.14
South Denoon Road	CTH Y (Racine Avenue) to Crowbar Drive	City of Muskego	1.21
Johnson Road	STH 59 (Greenfield Avenue) to CTH Y (Racine Avenue)	City of New Berlin	3.08
Moorland Road	CTH HI to the proposed Belt Freeway	Cities of New Berlin and Muskego	1.76
Muskego Dam Road	CTH Y (Racine Avenue) to STH 36	City of Muskego	1.22
Northview Road	Grandview Boulevard to the proposed western Waukesha bypass	City of Waukesha	1.66
Tichigan Road	Crowbar Drive to CTH F (Big Bend Drive)	City of Muskego and Town of Vernon	0.70
New Facility	Winkleman Road to Jungbluth Road at CTH K	Town of Merton	0.32

Table 47 (continued)

Additions to Federal Aid Secondary System ^a			
Route	Limits	Municipality	Number of Miles
New Facility	CTH KE (North Shore Drive) at CTH E (Maple Avenue) to STH 83	Town of Delafield	1.09
New Facility	Intersection of CTH Z and Tavat Road to the intersection of Lundt Road and CTH Z	Town of Ottawa	1.58
New Facility (Beloit Road).	Moorland Road to CTH ES (National Avenue)	City of New Berlin	1.53
New Facility (Oconomowoc South Bypass)	Present USH 16 (Wisconsin Avenue) to STH 67	City of Oconomowoc and Towns of Oconomowoc and Summit	3.79
Deletions From Federal Aid Secondary System			
Route	Limits	Municipality	
STH 83	Mapleton Road to present STH 74, and CTH K to Capitol Drive	Village of Chenequa and Town of Merton	5.91
CTH J and CTH F	CTH K to approximately 1.40 miles south of CTH K on CTH F	Towns of Lisbon and Pewaukee	1.40
CTH Z	Intersection of CTH Z and Tavat Road to the junction of CTH Z and the Jefferson County line	Town of Ottawa	1.84
Silver Lake Street.	Summit Avenue to the proposed South Bypass	City of Oconomowoc	0.75
Winkleman Road	CTH K to a point approximately 0.35 mile north of CTH K	Town of Merton	0.35

^aWith enactment of the Federal Aid Highway Act of 1973, it is anticipated that those segments of the Type II (county trunk) arterial highway system within urban and urbanized areas, as those terms are defined by the U. S. Bureau of the Census, recommended above for addition to the federal aid secondary system, will instead be placed on the federal aid urban system along with the recommended Type III (local trunk) arterial highway system.

Source: SEWRPC.

aid designations for given routes has been discouraged in recent years without the benefit of comprehensive study. By correlating jurisdictional responsibility with federal aid importance, implementation of the recommended jurisdictional highway system plan will achieve the alignment of the federal aid primary system with the Type I (state trunk) highway system, the alignment of the federal aid secondary system with the Type II (county trunk) highway system, and the alignment of the federal aid urban system with the Type III (local trunk) highway system.

Realignment of Operational Responsibilities

The State Highway Commission, following the realignment of the state and county trunk highway systems as recommended in this report, shall assume full operational and maintenance responsibilities, as hereinafter defined, over the recom-

mended state trunk highway system, and shall mark and maintain all state trunk highways within Waukesha County, including those facilities within incorporated cities and villages. The Waukesha County Board shall similarly assume full operational and maintenance responsibilities as hereinafter defined over the recommended county trunk highway system, and shall mark and maintain all county trunk highways within Waukesha County, including those facilities within incorporated cities and villages.

It is recommended that the Waukesha County Board, in cooperation with appropriate governmental agencies and organizations such as the State Department of Natural Resources, the County Park and Planning Commission, the County Historical Society, garden and women's clubs, and recreation-oriented business associations, mark

and sign the recommended system of scenic drives within Waukesha County for such recreational activities as pleasure driving and sightseeing, and to provide access to the sites of cultural, historical, recreational, scenic, and scientific interest within the county.

It is recommended that the State Highway Commission continue to contract with the Waukesha County Board, pursuant to Section 84.07 of the Wisconsin Statutes, for maintenance of the Type I (state trunk) highway facilities. It is further recommended that the state contract for maintenance with those cities and villages which have a demonstrated capability and desire to perform the maintenance function, and which continue to meet the state-established standards for such maintenance. It is similarly recommended that the county contract for maintenance with those cities and villages which have a demonstrated capability and desire to perform the maintenance function, and which continue to meet the county-established standards for the maintenance of the Type II (county trunk) highway facilities. It is recommended that the State Highway Commission and the Waukesha County Highway Committee, respectively, establish standards for such contractual maintenance, relating these standards to the recommended eligible maintenance items set forth in Chapter VII of this report, namely physical maintenance of roadway surface pavements and structures and physical maintenance of storm sewers, snow and ice control between curbs, traffic control devices, and pavement marking. It is similarly recommended that the state and county assume direct administration of the operational control devices on the state and county trunk highway systems, respectively, as recommended in Chapter VII of this report, namely issuance of driveway permits, control of advertising signs, maintenance of signals and route signing, establishment of speed zoning, issuance of special permits and prohibition of parking.

It is further recommended that the State Highway Commission, pursuant to Section 84.25 of the Wisconsin Statutes, review the status of controlled-access highways within Waukesha County and declare all such Type I (state trunk) highway facilities within the county which meet the statutory requirements and provisions as controlled-access highways. It is similarly recommended that the Waukesha County Board, pursuant to Section 83.027 of the Wisconsin Statutes, declare all such county trunk highway facilities within

Waukesha County as are found to meet the statutory requirements and provisions as controlled-access highways.

Facility Construction and Right-of-Way Acquisition

It has already been noted that the planning and programming procedure developed by the State Highway Commission provides an orderly and effective device whereby the many complex and highly interrelated tasks involved in the final accomplishment of modern highway improvement projects—tasks such as route location, including necessary mapping; preliminary engineering; implementation of legal changes in the state trunk highway routes; detailed design and final engineering; acquisition of right-of-way; preparation of construction plans, specifications, and cost estimates; letting of contracts; and actual construction, including layout, inspection and final surveys—can be carried out and, as such, this planning and programming procedure constitutes an effective current planning and plan implementation program. It is accordingly recommended that the recommended jurisdictional highway system plan be integrated into the state and county highway construction planning and programming procedures as necessary to meet the staged completion dates recommended in the jurisdictional highway system plan. In order to assist in such integration, the priority list of Type I and Type II highway facility improvement projects set forth in Tables 48 and 49 has been prepared. The list of recommended highway improvements is arranged in order of priority of need based upon a systems analysis of the existing and probable future traffic demands and on consideration of necessary system continuity, of existing structural condition, and of feasible project limits.

Facility Construction: In connection with facility construction, it is recommended that the State Highway Commission and the Waukesha County Board adopt common, uniform construction aid formulae and policies providing for a fixed local contribution of 15 percent of the cost of all state and county trunk highway construction projects involving urban cross sections, except interstate highway and other freeway projects, with the cost of the construction project being determined on the basis of the participating work items set forth in Chapter VII of this report, namely right-of-way acquisition; grading; construction of pavement base and surface and curb and gutter; construction of inlets for surface water drainage, together with connections to storm sewer mains; construction

Table 48

**RECOMMENDED STAGING OF TYPE I (STATE TRUNK)
ARTERIAL HIGHWAY SYSTEM IMPROVEMENTS
IN WAUKESHA COUNTY: 1973-1990**

Time Period	Highway Facility	Limits	Municipality	Number of Miles	Estimated Improvement Costs (By Time Period)
1973-1975	USH 16	CTH JJ to approximately the intersection of USH 16 and Hewitts Point Road	Towns of Pewaukee, Delafield, Merton, Oconomowoc, and Summit; Villages of Pewaukee, Hartland, Chenequa, Nashotah, and Oconomowoc Lake; and City of Delafield	11.52	
	USH 18 (Summit Avenue)	City of Waukesha west corporate limits to STH 83 (Wales Road)	Towns of Pewaukee, Delafield, Genesee and Village of Wales	6.43	
	STH 67	Delafield Road to proposed USH 16	Town of Summit and City of Oconomowoc	3.58	
	STH 74	West corporate limits of the Village of Sussex to CTH J; east corporate limits of the Village of Merton to its west corporate limits; and from STH 83 (proposed) to old STH 83	Town of Lisbon, Village of Merton, and Town of Merton	3.30	
	STH 83 (Rochester Street)	North corporate limits of the Village of Mukwonago to the south corporate limits of the Village of Mukwonago	Village of Mukwonago	1.49	
	East Moreland Boulevard	White Rock Avenue to STH 164	City of Waukesha	0.25	
	North Street (New Facility)	Madison Street to Wisconsin Avenue	City of Waukesha	0.30	
	Subtotal	--	--	26.87	\$ 14,421,900
1976-1980	USH 16	Present USH 16 from CTH P (Brown Street) to proposed USH 16, and from a point 1.45 miles east of the Jefferson County line to the Jefferson County line	Towns of Oconomowoc and Summit and City of Oconomowoc	2.38	
	USH 16 (Oconomowoc Bypass)	Jefferson County line to approximately Hewitts Point Road	Town of Oconomowoc	6.94	
	STH 24 (Janesville Road)	Milwaukee County line to CTH Y (Racine Avenue)	Cities of New Berlin and Muskego	4.95	
	STH 59	West corporate limits of the Village of North Prairie to the Jefferson County line	Towns of Genesee, Mukwonago, and Eagle	8.58	
	STH 59 (Arcadian Avenue)	Johnson Road to the east corporate limits of the City of Waukesha	City of New Berlin and Town of Waukesha	2.33	
	STH 59 (Greenfield Avenue)	Milwaukee County line to Johnson Road	Cities of New Berlin and Brookfield and Town of Brookfield	5.02	
	STH 83 (Mukwonago Bypass)	North corporate limits of the Village of Mukwonago on present STH 83 to STH 15 (Rock Freeway)	Town of Mukwonago and Village of Mukwonago	2.88	
	STH 164	IH-94 to the north corporate limits of the City of Waukesha	Town of Pewaukee	1.72	
	STH 175 (Appleton Avenue)	Garfield Drive to the Washington County line	Village of Menomonee Falls	1.44	
	Buckley Street and Union Street	Main Street to STH 164 (North Street)	City of Waukesha	0.39	
	New Facility (Waukesha Western Bypass)	STH 59 (Genesee Road) to IH 94	Towns of Waukesha and Pewaukee	5.18	
	Subtotal	--	--	41.81	\$ 21,672,000
1981-1985	USH 18	East Moreland Boulevard to the Milwaukee County line	City of Waukesha, Towns of Pewaukee and Brookfield, and City of Brookfield	7.92	
	STH 36	Milwaukee County line to the Racine County line	City of Muskego	3.87	
	STH 45	Racine County line to STH 36	City of Muskego	1.59	
	STH 59 (State Street)	CTH ZZ to the south corporate limits of the Village of North Prairie	Town of Genesee and Village of North Prairie	1.97	
	STH 59 (Genesee Road)	CTH DE (West Moreland Road) to CTH X (Saylesville Road)	Town of Waukesha	1.54	
	STH 59 (St. Paul Avenue)	Wisconsin Avenue to West Moreland Boulevard	City of Waukesha	0.73	
	STH 67 (Kettle Moraine Drive)	Waukesha Road (STH 59) to proposed STH 59	Village of Eagle	0.40	
	STH 67 (Lake Street)	USH 16 Bypass to Wisconsin Avenue	Town of Oconomowoc and the City of Oconomowoc	2.59	

Table 48 (continued)

Time Period	Highway Facility	Limits	Municipality	Number of Miles	Estimated Improvement Costs (By Time Period)
	STH 67 (Main Street)	Wisconsin Avenue to Summit Avenue	City of Oconomowoc	0.14	
	STH 67 (Summit Avenue)	Main Street to Thackeray Trail	City of Oconomowoc	1.24	
	STH 67 (Elkhorn Road)	Waukesha Road (STH 59) to the south corporate limits of the Village of Eagle	Village of Eagle	0.80	
	STH 83 (Proposed)	Washington County line to Mariner Road	Town of Merton, Village of Hartland, Town of Delafield, City of Delafield	10.60	
	STH 164	IH 94 to the proposed Bay Freeway, and approximately a point 0.86 mile south of STH 74 (Main Street) to STH 74 (Main Street)	Towns of Pewaukee and Lisbon and the Village of Sussex	4.37	
	CTH F (Big Bend Drive)	CTH ES (National Avenue) to the north corporate limits of the Village of Big Bend	Town of Vernon	2.02	
	CTH F (Chinook Pass)	CTH A (Sunset Drive) to CTH ES (National Avenue)	Towns of Waukesha and Vernon and City of Waukesha	5.30	
	CTH F (East Avenue)	Main Street to CTH A (Sunset Drive)	City of Waukesha and Town of Waukesha	1.73	
	Arcadian Avenue	Pleasant Street to Hartwell Avenue	City of Waukesha	0.16	
	Belt Freeway	USH 18 (Bluemound Road) to the Milwaukee County line	Cities of Brookfield, New Berlin, and Muskego	11.41	
	Subtotal	--	--	58.38	\$ 71,807,800
1986-1990	STH 74	CTH V (Town Line Road) to a point 0.20 mile south of Good Hope Road, and from a point 0.19 mile north of CTH Y to Custer Lane	Village of Lannon	1.87	
	STH 74 (Main Street)	Custer Lane to Elder Lane, STH 175 (Appleton Avenue) to Water Street, and Fond du Lac Avenue to the Milwaukee County line	Villages of Lannon and Menomonee Falls	2.85	
	STH 83	IH 94 to the north corporate limits of the Village of Mukwonago and STH 15 (Rock Freeway) to the Walworth County line	Town of Delafield, Village of Wales, Town of Genesee, and Town of Mukwonago	16.80	
	STH 99	STH 67 to Rochester Street	Towns of Eagle and Mukwonago and Village of Mukwonago	8.43	
	STH 145	Washington County line to the Milwaukee County line	Village of Menomonee Falls	2.83	
	CTH A	USH 18 (East Moreland Boulevard) to Tomahawk Lane	Town of Waukesha and City of Waukesha	2.66	
	Bay Freeway	Milwaukee County line to USH 16	Villages of Butler and Menomonee Falls and Towns of Brookfield and Butler	10.04	
	Belt Freeway	USH 18 (Blue Mound Road) to the Washington County line	City of Brookfield, Town of Brookfield, and Villages of Menomonee Falls and Lannon	11.65	
	Subtotal	--	--	57.13	\$ 44,464,200
	Total	--	--	184.19	\$152,365,900

Source: Wisconsin Department of Transportation and SEWRPC.

of storm sewer mains necessary for pavement and right-of-way drainage; and engineering services.

Except for interstate highway projects in Waukesha County, freeway projects on federal aid routes are financed with 50 percent federal funds and 50 percent state funds. In accordance with the Federal Aid Highway Act of 1970, federal participation will be increased beginning in fiscal year 1974 to 70 percent, and local participation will be decreased to 30 percent of eligible costs on federal aid projects.

Right-of-Way Reservation: A considerable interval necessarily exists between the time a long-range plan for a given highway facility is formally adopted and the time when actual construction of the facility can begin. If maximum economies are to be effected and future disruption to urban development minimized, the conversion of open land to urban use and the redevelopment of land for urban use within required future right-of-way lines must be avoided. This is particularly true in the rural areas in and surrounding developing cities and villages such as exist in Waukesha

Table 49
RECOMMENDED STAGING OF TYPE II (COUNTY TRUNK)
ARTERIAL HIGHWAY SYSTEM IMPROVEMENTS
IN WAUKESHA COUNTY: 1973-1990

Time Period	Highway Facility	Limits	Municipality	Number of Miles	Estimated Improvement Costs (By Time Period)
1973-1975	CTH A	Tomahawk Lane to STH 59 (Genesee Road)	City of Waukesha and Town of Waukesha	3.53	
	CTH I (Lawnsdale Road)	0.38 mile from the west corporate limits of the City of New Berlin to CTH Y (Racine Avenue)	City of New Berlin	1.17	
	CTH JK (Lisbon Avenue)	Merton Avenue to USH 16	Village of Hartland and Towns of Merton and Summit	1.03	
	CTH OO (Cape Road)	Milwaukee County line to a point 0.47 mile north of USH 45	City of Muskego	1.80	
	CTH P (Brown Street)	Present USH 16 to the Ashippun River	Town of Oconomowoc	4.35	
	CTH T (Grandview Boulevard)	IH 94 to Northview Road	City of Waukesha and Town of Pewaukee	1.10	
	Merton Avenue	CTH JK (Capitol Drive) to CTH K	Village of Hartland and Town of Merton	1.03	
	New Facility	East corporate limits of the Village of Chenequa to CTH C (Lakeland Road) and CTH C (Lakeland Road) to CTH PPP	City of Delafield, Villages of Chenequa and Nashotah	2.09	
	New Facility	CTH PPP (Wisconsin Avenue) to CTH P (Brown Street)	Town of Oconomowoc	1.18	
	Subtotal	--	--	17.28	
1976-1980	CTH F	CTH SS to a point 0.76 mile north of STH 190 (Capitol Drive)	Town of Pewaukee	1.79	
	CTH F (Pewaukee Road)	North corporate limits of the City of Waukesha to IH 94	Town of Pewaukee	1.50	
	CTH HH (College Avenue)	STH 24 (Janesville Road) to CTH Y (Racine Avenue)	Cities of New Berlin and Muskego	4.02	
	CTH JJ	CTH JK to east corporate limits of Village of Hartland	Village of Hartland	0.32	
	CTH Q (County Line Road)	CTH V to Milwaukee County line	Village of Menomonee Falls	2.52	
	CTH YY (Pilgrim Road)	CTH K (Lisbon Road) to the Washington County line	Village of Menomonee Falls	5.84	
	CTH Z (Lake Drive)	STH 67 (Lake Road) to the present terminus of Lake Drive, and Lapham Street to the proposed USH 16 bypass	City of Oconomowoc and Town of Oconomowoc	0.85	
	Boundary Road	Washington County line to STH 145	Village of Menomonee Falls	0.89	
	Capitol Drive	Merton Avenue to STH 83	Village of Hartland	1.48	
	Capitol Drive	West Street to the north corporate limits of the Village of Pewaukee	Village of Pewaukee	0.34	
	Jungbluth Road	USH 16 to CTH K	Town of Merton	1.02	
	Moorland Road	IH 94 to STH 15 (Rock Freeway)	Cities of Brookfield and New Berlin	5.00	
	Pilgrim Parkway	Watertown Plank Road to North Avenue	Village of Elm Grove and City of Brookfield	1.73	
	Pilgrim Road	North Avenue to CTH K (Lisbon Road)	City of Brookfield	3.17	
West Moreland Boulevard	Pewaukee Road to STH 164	City of Waukesha	0.16		
Subtotal	--	--	30.63	\$14,409,800	
1981-1985	CTH D (Cleveland Avenue)	Milwaukee County line to the east corporate limits of the City of Waukesha	City of New Berlin and Town of Waukesha	7.60	
	CTH D (Sunset Drive)	Proposed Waukesha bypass to CTH DE (Green Lane)	Town of Waukesha	0.83	
	CTH DE (Sunset Drive)	Green Lane to STH 83	Towns of Waukesha and Genesee	4.31	
	CTH ES (National Avenue)	Milwaukee County line to CTH Y (Racine Avenue)	City of New Berlin	5.64	
	CTH G	South corporate limits of the Village of Pewaukee to IH 94	Town of Pewaukee	2.10	
	CTH HE (Maple Avenue)	Capitol Drive to CTH KE (North Shore Drive)	Village of Hartland and Town of Delafield	1.14	
	CTH J	CTH K to a point 0.76 miles north of STH 190 (Capitol Drive)	Towns of Lisbon and Pewaukee	1.66	
	CTH KF	USH 16 to CTH K	Towns of Lisbon and Pewaukee	1.76	
	124th Street	CTH VV (Silver Spring Road) to STH 190 (Capitol Drive), Burleigh to IH 94, Robinwood Street to STH 15 (Rock Freeway)	Village of Menomonee Falls, City of Brookfield, Village of Elm Grove, and City of New Berlin	5.11	
	Broadway	East corporate limits of the City of Waukesha to Racine Avenue	City of Waukesha	0.50	
	Capitol Drive	USH 16 to Oakton Avenue	Village of Pewaukee	0.22	
	Concord Road	USH 16 to south corporate limits of the City of Oconomowoc	City of Oconomowoc	1.65	
	Genesee Street	IH 94 to Main Street	City of Delafield	0.48	
	Hartling Road	CTH EF to proposed STH 83	Town of Merton	0.81	

Table 49 (continued)

Time Period	Highway Facility	Limits	Municipality	Number of Miles	Estimated Improvement Costs (By Time Period)	
1981-1985	Moorland Road	STH 15 (Rock Freeway) to STH 24 (Janesville Road)	Cities of New Berlin and Muskego	2.34		
	North Avenue	Milwaukee County line to Barker Road	City of Brookfield	5.00		
	Northview Road	CTH FT to the proposed Waukesha bypass	City of Waukesha and Town of Pewaukee	2.19		
	Oakton Avenue	Capitol Drive to Wisconsin Avenue	Village of Pewaukee	0.30		
	Pewaukee Road	West Moreland Boulevard to the north corporate limits of the City of Waukesha	City of Waukesha	0.25		
	Prospect Avenue	Wisconsin Avenue to the south corporate limits of the Village of Pewaukee	Village of Pewaukee	0.58		
	Winkleman Road	CTH K to CTH EF	Town of Merton and Village of Merton	1.58		
	Wisconsin Avenue.	Capitol Drive to the east corporate limits of the Village of Pewaukee	Village of Pewaukee	1.56		
	New Facility (Oconomowoc South Bypass)	Present USH 16 to STH 67 (Summit Avenue)	City of Oconomowoc, and Towns of Oconomowoc and Summit	3.77		
	Subtotal		--	--	51.38	\$23,608,600
1986-1990	CTH C (Lakeland Road) . . .	USH 16 to Main Street	Village of Nashotah and City of Delafield	2.85		
	CTH E (Main Street)	CTH ZZ to STH 59 (State Road)	Village of North Prairie	0.89		
	CTH EF	STH 74 to Wallschlaeger Road	Village of Merton	1.00		
	CTH I (Lawsdale Road)	CTH F (Chinook Pass) to a point 1.17 miles west of CTH Y (Racine Avenue), and CTH Y (Racine Avenue) to the Milwaukee County line	Town of Waukesha and City of New Berlin	7.10		
	CTH JJ (Blue Mound Road)	Barker Road to IH 94	Towns of Brookfield and Pewaukee	3.28		
	CTH K	Proposed STH 83 to CTH F (Moraine Drive)	Towns of Merton and Lisbon	3.95		
	CTH K (Lisbon Road)	Proposed Belt Freeway to CTH KK (Hampton Avenue)	Village of Menomonee Falls and City of Brookfield	3.21		
	CTH KE	CTH E (Maple Avenue) to STH 83	Town of Delafield	0.94		
	CTH KK (Hampton Road) . . .	CTH K (Lisbon Road) to the Milwaukee County line	City of Brookfield and Villages of Butler and Menomonee Falls	1.44		
	CTH M (North Avenue) . . .	Barker Road to CTH SS	City of Brookfield and Town of Pewaukee	1.71		
	CTH SS	CTH M (North Avenue) to the south corporate limits of the Village of Pewaukee	Town of Pewaukee	2.56		
	CTH SS	STH 59 (Greenfield Avenue) to USH 18	Town of Brookfield	1.32		
	CTH VV (Silver Spring Road)	Milwaukee County line to Lilly Road, Pilgrim Road to approximately 0.78 mile west of Pilgrim Road, and from the proposed Belt Freeway to the east corporate limits of the Village of Sussex	Village of Menomonee Falls and Town of Lisbon	4.79		
	CTH W (Good Hope Road)	STH 74 to the Milwaukee County line	Villages of Lannon and Menomonee Falls	5.21		
	CTH Y (Barker Road)	South corporate limits of the City of Brookfield to USH 18	Town of Brookfield	0.75		
	CTH Y (Racine Avenue) . . .	East corporate limits of the City of Waukesha to Hillendale Drive (City of Muskego) and from STH 24 (Janesville Road) to the Racine County line	Town of Waukesha and Cities of New Berlin and Muskego	11.30		
	CTH Y (Lannon Road)	Washington County line to CTH K (Lisbon Road)	Village of Menomonee Falls and Town of Lisbon	5.88		
	CTH Z	CTH ZD to the west corporate limits of the Village of Dousman	Village of Dousman and Town of Ottawa	0.33		
	CTH ZD	STH 67 to CTH Z	Town of Ottawa and Village of Dousman	0.57		
	Barker Road	The south corporate limits of the City of Brookfield to CTH K (Lisbon Road)	City of Brookfield, Town of Brookfield, and Village of Menomonee Falls	4.10		
	Johnson Road	STH 59 (Greenfield Avenue) to CTH Y (Racine Avenue)	City of New Berlin	3.08		
	Main Street	Milwaukee Street to the west corporate limits of the City of Delafield	City of Delafield	0.94		
	Main Street	Wisconsin Avenue to CTH T	Village of Pewaukee	0.70		
	Milwaukee Street	Main Street to STH 83	City of Delafield	1.77		
	Muskego Dam Road	Kelsey Drive to STH 36	City of Muskego	0.61		
	Racine Avenue	Broadway to the east corporate limits of the City of Waukesha	City of Waukesha	1.11		
	CTH T (Extended)	Main Street to CTH T (Grandview Road)	Town of Pewaukee and Village of Pewaukee	2.09		
	New Facility (Tavat Road) . .	Tavat Road to CTH Z	Town of Ottawa	0.50		
	Subtotal		--	--	73.98	\$28,766,400
	Total		--	--	173.27	\$73,798,100

Source: SEWRPC.

County, where urban development, if allowed to proceed in the path of needed highway facilities, will not only make the eventual construction of the proposed facilities extremely costly and difficult but will also require expensive and agonizing readjustment of the urban development itself to the ultimate highway development.

It is therefore recommended that prior reservation of right-of-way for the required highway facilities be accomplished in accordance with the recommended jurisdictional highway system plan, utilizing statutory devices made available for this purpose including official mapping, building setback line ordinances, and land subdivision control ordinances. Such prior reservation of right-of-way serves as an expression of governmental intent to acquire land for highway purposes in advance of actual facility construction, and thereby cannot only achieve great economies in ultimate right-of-way acquisition, but also permits land adjacent to the required right-of-way to be privately purchased and developed with full knowledge of the future highway development proposals. Such action can serve greatly to reduce public misunderstanding of proposed highway improvements and should thereby assist in avoiding and overcoming opposition to the actual construction of the recommended facilities. Such prior reservation of right-of-way also serves to assure that lands needed for future highways will be available when needed at the price of unimproved land. This serves not only to effect great economies but also to avoid in the future the disruption, dislocation, discontent, and great expense involved in the acquisition and clearance of developed areas for street and highway purposes.

The most effective and efficient means of prior reservation of right-of-way for highway purposes is the use of the official mapping powers granted by the State Legislature to the State Highway Commission, counties, cities, villages, and towns in Wisconsin. These powers are thoroughly discussed and illustrated in SEWRPC Planning Guide No. 2, Official Mapping Guide, February 1964. It is recommended that, upon adoption of the jurisdictional highway system plan by the Waukesha County Board and endorsement by the State Highway Commission, the Waukesha County Board in cooperation with the six cities, 18 villages, and 13 towns within Waukesha County adopt a modified "official" map pursuant to Section 80.64 of the Wisconsin Statutes. This map initially should

encompass all of the Type I and Type II highway facilities which are to remain on existing location and which, therefore, should require no route location studies as a basis for the mapping. Proposed Type I and Type II highway facilities which are to be placed on new locations should be added to the map as the necessary route location studies are completed. Such a County Official Map will serve to establish street and highway widths in excess of the widths in use and likewise to establish the location and width of proposed future arterial streets or highways. It is important to note, however, that to become effective such a county map must be approved by the governing body of the municipality in which a mapped street or highway or any part thereof is located and, therefore, actually becomes a joint county and city, village, or town map. It is, therefore, recommended that the governing bodies of the six cities, 18 villages, and 13 towns within the county approve the County Map prepared in accordance with the adopted jurisdictional highway system plan.

It is further recommended, because of the limited powers of such a county map, that the County Official Map be augmented by the preparation and adoption of local official maps and ordinances, which would include, in addition to the recommended state and county mapped routes, all of the Type III highway facilities shown on the recommended jurisdictional highway system plan. In accordance with Section 62.23(6) of the Wisconsin Statutes, such official mapping may be supplemented in certain intensely developed areas by the establishment of building setback lines, pursuant to Section 62.23(11) of the Wisconsin Statutes, in order to protect portions of recommended street and highway rights-of-way.

It is recommended that the planning agencies of the six cities, 18 villages, and 13 towns within the county recommend to their respective governing bodies, pursuant to Section 236.45(4) of the Wisconsin Statutes, the adoption of the subdivision regulations similar to those contained in the SEWRPC Model Land Division Ordinance set forth in SEWRPC Planning Guide No. 1, Land Development Guide, November 1963, to assure dedication of required rights-of-way for the arterial streets and highways included on the recommended jurisdictional highway system plan. It is further recommended that the respective governing bodies adopt such ordinances or amendments thereto, pursuant to Section 236.45 of the Wisconsin Statutes.

Finally, it is recommended that the plan commissions of the six cities, 18 villages, and 13 towns within the county formulate and recommend to their respective governing bodies new zoning ordinances or amendments to their existing ordinances, pursuant to Section 62.23(7) of the Wisconsin Statutes, to provide for traffic, parking, and access restrictions; exclusive highway service districts; sign controls; and conditional use regulations similar to those provided in the SEWRPC Model Zoning Ordinance as set forth in SEWRPC Planning Guide No. 3, Zoning Guide, April 1964, and apply these provisions properly to the lands abutting the proposed Type I, II, and III arterial subsystems. It is further recommended that their respective governing bodies adopt such ordinances or amendments pursuant to Section 62.23(7) of the Wisconsin Statutes.

SUMMARY

This chapter has set forth specific procedures for implementation of the recommended jurisdictional highway system plan. The most important of the recommended plan implementation actions are summarized in the following paragraphs by level of government concerned.

Federal Level

U. S. Department of Transportation, Federal Highway Administration: It is recommended that the U. S. Department of Transportation, Federal Highway Administration:

1. Acknowledge the recommended jurisdictional highway system plan for Waukesha County and utilize the plan as a guide in the review of requests for realignment of the various federal aid systems and in the administration and granting of federal aids for highway improvement within the county.
2. Cooperate in, and approve the adjustment of, the federal aid systems to the recommended jurisdictional highway system plan.

State Level

Highway Commission of the Wisconsin Department of Transportation, Division of Highways: It is recommended that the State Highway Commission:

1. Endorse and integrate the recommended jurisdictional highway system plan into the state long-range highway system plan.

2. Seek, in cooperation with the Waukesha County Board, realignment of the state trunk, county trunk, and federal aid systems to the recommended jurisdictional highway system plan.
3. Assume full operational and maintenance responsibilities for all state trunk highways within Waukesha County.
4. Review the status of controlled-access highways within Waukesha County and declare all such state trunk highways within Waukesha County found to meet the statutory requirements and provisions as controlled-access highways.
5. Proceed with right-of-way acquisition and facility construction to meet the staged facility completion dates included in the recommended jurisdictional highway system plan.
6. Adopt uniform construction aid formulae and policies for all state trunk highways consistent with similar formulae and policies for all county trunk highways in Waukesha County.

Wisconsin Department of Natural Resources: It is recommended that the Natural Resources Board of the Wisconsin Department of Natural Resources:

1. Endorse and integrate the recommended jurisdictional highway system plan into the state long range plans for state park and state forest highway access.
2. Seek, in cooperation with the Waukesha County Board and local units of government, establishment of a state park road system serving the Kettle Moraine State Forest southern unit as recommended in the plan.
3. Assume the full operational and maintenance responsibility for the state park roads recommended in the jurisdictional highway system plan.

Regional Level

Southeastern Wisconsin Regional Planning Commission: It is recommended that the Southeastern

Wisconsin Regional Planning Commission act to formally adopt the recommended jurisdictional highway system plan as an integral part of the master plan for the Region, constituting an amendment to the regional transportation plan adopted by the Commission on December 1, 1966.

County Level

Waukesha County Board: It is recommended that the Waukesha County Board, upon recommendation of the Waukesha County Highway Committee:

1. Adopt the recommended jurisdictional highway system plan as a guide to future highway facility development within the county.
2. Seek, in cooperation with the State Highway Commission, realignment of the state trunk, county trunk, and federal aid systems to the recommended jurisdictional highway system plan.
3. Assume full operational and maintenance responsibilities for all county trunk highways within Waukesha County.
4. Proceed, in cooperation with the appropriate agencies and organizations, to designate a system of scenic drives to be marked and signed for routing within Waukesha County.²
5. Declare all county trunk facilities that are found to meet the statutory requirements and provisions as controlled-access highways.
6. Proceed with right-of-way acquisition and facility construction as necessary to meet the staged facility completion dates included

² Section 83.42 of the Wisconsin Statutes, created by the Wisconsin Legislature in 1973, establishes a state system of rustic roads. "...in order to create and preserve rustic and scenic roads for vehicular, bicycle and pedestrian travel in unhurried, quiet and leisurely enjoyment; to protect and preserve recreational driving, culture, beauty, trees, vegetation and wildlife by establishing protective standards of rustic road design, access, speed, maintenance and identification, which will promote a continuous system of rustic roads and scenic easements for the public health and welfare;..." It is accordingly recommended that the Waukesha County Board and the local units of government in the county, as appropriate, make application to the Wisconsin Rustic Roads Board to designate as rustic roads those portions of the recommended scenic drives in Waukesha County which meet the established standards for maintenance, identification, construction, and use as rustic roads.

in the recommended jurisdictional highway system plan.

7. Adopt uniform construction aid formulae and policies for all county trunk highways consistent with similar formulae and policies for state trunk highways in Waukesha County.
8. Establish, with the approval of the municipalities as they are affected, a modified "official" map including the proposed Type I and Type II highways.

Local Level

1. It is suggested that, to supplement recommended federal, state, regional, and county plan adoption actions, six city common councils, 18 village boards, and 13 town boards within Waukesha County act to adopt the recommended jurisdictional highway system plan as a guide to highway system development within their area of jurisdiction. It is further suggested that the respective local planning agencies adopt and integrate the recommended jurisdictional highway system plan into the local master plans and certify such adoption to their local governing body.
2. It is recommended that the six city common councils, 18 village boards, and 13 town boards within Waukesha County act to approve a County Official Map prepared in conformance with the recommended jurisdictional highway system plan, and establish local official maps including the proposed local trunk highway facilities.
3. It is recommended that the six city common councils, 18 village boards, and 13 town boards within Waukesha County adopt, pursuant to the recommendation of their local planning agencies, subdivision control ordinances and zoning regulations necessary to assure the integrity of the recommended jurisdictional highway system plan.

In addition, it is recommended that the State Highway Commission and the Waukesha County Board cooperatively support state legislation to abolish the connecting street concept and assure the full continuity of state and county trunk highway systems through incorporated municipalities.

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Chapter IX

SUMMARY AND CONCLUSIONS

INTRODUCTION

On December 1, 1966, the Southeastern Wisconsin Regional Planning Commission, pursuant to its statutory responsibilities and after four years of intensive study, adopted a comprehensive regional transportation plan for the seven-county Southeastern Wisconsin Region. On March 17, 1967, in accordance with its advisory role, the Commission certified this plan to the constituent counties, cities, villages, and towns, as well as to certain state and federal agencies, for adoption and implementation. Subsequently, all of the county boards concerned as well as the State Highway Commission adopted or endorsed the recommended transportation plan as a guide to the development of transportation facilities within the Region. The Waukesha County Board of Supervisors adopted the plan on May 16, 1967, after careful consideration and upon the recommendation of the Waukesha County Highway Committee. Southeastern Wisconsin thus became the first large urbanizing region in the United States to have completed and adopted an official transportation plan in accordance with the spirit and intent of the 1962 Federal Aid Highway Act.

The adopted regional transportation plan contains, as an integral element, a functional arterial street and highway system plan. This functional plan consists of recommendations concerning the general location, type, capacity, and service levels of the arterial street and highway facilities required to serve the rapidly developing region to the year 1990. Except for freeways, however, the functional plan does not contain recommendations as to which levels and agencies of government should assume responsibility for the construction, operation, and maintenance of each of the various facilities included in the functional plan.

As a logical sequel to the adoption of the regional transportation plan, and as recommended in that plan, the Waukesha County Board of Supervisors directed that the County Highway Committee, in cooperation with the U. S. Department of Transportation, Federal Highway Administration; the Wisconsin Department of Transportation, Division

of Highways; the Southeastern Wisconsin Regional Planning Commission; and the local units of government concerned proceed with the conversion of the functional highway system plan contained within the adopted regional transportation plan to a jurisdictional plan. This plan would contain specific recommendations as to the level and agency of government which should assume responsibility for the construction, maintenance, and operation of each segment of the total arterial street and highway system within Waukesha County. Such a plan would also contain concomitant recommendations for the realignment of the federal aid highway systems, as well as of the state and county trunk highway systems, and if warranted, proposed necessary or desirable changes in the various federal, state, and county highway aid formulae, policies, or programs.

Although implementation of the adopted regional transportation plan was an important reason for proceeding with the jurisdictional highway planning program, other equally important reasons existed. The jurisdictional highway planning effort was also required in order to cope with the growing traffic demands within Waukesha County, adjust the existing jurisdictional highway systems to changes in land use development along their alignment, reestablish an integrated county trunk highway system, and adjust the jurisdictional highway systems to better serve the major changes in traffic patterns within the county that have resulted from freeway construction and use.

Accordingly, an interagency study staff consisting of planning and engineering personnel drawn from the staffs of the Wisconsin Department of Transportation, Division of Highways; and the Southeastern Wisconsin Regional Planning Commission was organized to carry out the necessary jurisdictional highway planning effort. Because any realignment of the existing jurisdictional highway systems would affect the local units of government within the county in many ways, it was considered essential to involve actively these local units of government in the planning process. This was done by the formulation of a Technical Coordinating and Advisory Committee on Jurisdictional

Highway Planning, with representation from the U. S. Department of Transportation, Federal Highway Administration; the Wisconsin Department of Transportation, Division of Highways and Planning; the Southeastern Wisconsin Regional Planning Commission; the Waukesha County Highway Department; and 14 local public officials and citizen members who collectively represent the interests of the six cities, 18 villages, and 13 towns within Waukesha County.

STUDY PURPOSE AND PLAN OBJECTIVES

The primary purpose of the jurisdictional highway planning study was to identify and subsequently group into subsystems classes of arterial streets and highways serving similar functions and providing similar levels of service and, further, to assign jurisdictional responsibility over the subsystems so established to the appropriate level of government having the greatest basic interest. This was intended to achieve the following objectives:

1. Promote implementation of the adopted regional transportation plan.
2. Provide a sound basis for the efficient multijurisdictional management of the total arterial street and highway system and for the attainment of the necessary intergovernmental coordination in that management.
3. Provide a sound basis for the efficient design and improvement of the total arterial system by combining into subsystems those facilities which, because of the type and level of service provided, should have similar standards for design, construction, operation, and maintenance.
4. Provide a basis for the establishment of a sound, long-range fiscal policy and for the systematic programming of arterial street and highway improvements, and thereby assure the most effective use of the public resources in the provision of highway transportation, focusing the appropriate resources and capabilities on corresponding areas of need.
5. Provide a basis for the more equitable distribution of highway system development costs and revenues among the levels and agencies of government concerned.

THE JURISDICTIONAL HIGHWAY PLANNING PROCESS

The singularly most important basic concept underlying the jurisdictional highway planning process applied in Waukesha County was that the jurisdictional highway planning process must be preceded by, and grow out of, a functional highway planning process; that is, that a jurisdictional highway system plan must be based upon, and derived from, a prior functional highway system plan. The development of a sound and viable jurisdictional highway system plan, therefore, can properly proceed only within the context of a comprehensive, areawide transportation planning process which has identified the transportation needs of the entire urbanizing region to a selected design year and which has provided definitive recommendations for meeting those needs through the improvement of both arterial highway and mass transit facilities in the form of a functional transportation plan.

Based upon this basic concept, a seven-step planning process was employed in the development of a jurisdictional highway system plan for Waukesha County: 1) study design; 2) formulation of objectives and standards; 3) inventory of existing systems, aid formulae, and financial resources; 4) jurisdictional systems analyses; 5) plan design, 6) plan test and evaluation; and 7) plan adoption. One of the most important steps in this process was the formulation of a set of criteria which could be used as a basis for the objective and rational assignment of jurisdictional responsibility to the various facilities comprising the total arterial street and highway system. Functional variations within the total system provided the basis for the establishment of the criteria.

Since three levels of government—state, county, and local—have direct responsibilities for the planning, design, construction, operation, and maintenance of highway facilities within southeastern Wisconsin, criteria were prepared to classify all segments of the total arterial street and highway systems into three subsystems: Type I (state trunk) highway facilities; Type II, (county trunk) highway facilities; and Type III (local trunk) highway facilities. The Type I highway facilities included all those routes which are intended to provide the highest level of traffic mobility, that is, the highest speeds and lowest degree of traffic congestion; the minimum degree of land access service; and which must have

regional or interregional system continuity. The Type II highway facilities include all those routes which are intended to provide an intermediate level of traffic mobility, an intermediate level of land access service, and which must have intercommunity system continuity. The Type III highway facilities include all those routes which are intended to provide the lowest level of arterial traffic mobility, the highest degree of arterial land access service, and which must possess intracommunity system continuity. The Type III arterial subsystem was provided only in the urban areas of Waukesha County, with all arterial facilities in the rural areas being included in either Type I or Type II arterial subsystems.

The criteria deemed most significant to a functional subclassification of the total arterial system were related to three basic characteristics of the facilities: the trips served, the land uses served, and the operational characteristics of the facilities themselves. Detailed criteria related to each of these basic characteristics were prepared as a part of the jurisdictional highway planning study and have been fully described in Chapter IV of this report.

The criteria were applied to the total arterial street and highway system for Waukesha County as proposed in the adopted regional transportation plan and subsequently refined through a careful review of the arterial network by experienced public works engineers responsible for the design, construction, operation, and maintenance of arterial highway facilities within the county. The application of the criteria required a careful analysis of the trip lengths and traffic volumes to be served by each link in the total arterial system, an inventory of the land uses to be served by each of the jurisdictional subsystems, and an investigation of the operational characteristics of the arterial facilities themselves. This application has been fully described in Chapter V of this report.

PRESENT STATE OF THE JURISDICTIONAL HIGHWAY SYSTEMS

The study found that, as of January 1, 1972, there were a total of 1,984 miles of streets and highways open to traffic within Waukesha County. Of this total, 649 miles, or approximately 33 percent, comprised the functional arterial street and highway network. Responsibility for the design, construction, operation, and maintenance of this

arterial street and highway network rested with three levels and 39 units of government—the state, the county, and 37 local municipalities. Approximately 248 miles, or 38 percent, of the arterial network, were comprised of the state trunk highways and connecting streets within the county. About 268 miles of the 437 total county trunk highway miles in the county (169 miles being nonarterial), or 42 percent, were under county jurisdiction; and about 132 miles of the 1,298 miles of local trunk highway, or 20 percent, were under city, village, and town jurisdiction.

Superimposed on the state, county, and local trunk highways were 467 miles of federal aid routes, of which about 25 miles, or 5.4 percent, were a federal aid interstate route; 118 miles, or 25.2 percent, were federal aid primary routes; and 324 miles, or 69.4 percent, were federal aid secondary routes.

The location and configuration of these jurisdictional highway systems and supporting aid routes were the result of a long process of historic evolution influenced by many complex political, administrative, financial, and engineering considerations and constraints. The state trunk and county trunk networks were originally conceived by the State Legislature as integrated highway systems and were originally so delineated and mapped. The state trunk highway network, however, was last studied and revised as an integrated system by the State Legislature in 1934; and the county trunk systems, by the State Highway Commission and the Waukesha County Board in 1925. Many piecemeal additions and deletions have been made to these two jurisdictional highway networks since 1925 and 1934. Consequently, these two important networks no longer represent fully integrated, continuous, arterial highway systems capable of serving in the most efficient manner possible the areawide land use and traffic service functions originally intended. Moreover, since the federal aid highway networks are intended to assist in implementing the state and county trunk highway systems, and therefore reflect the pattern of these systems, these federal aid networks were also found to be in need of revision.

It was, therefore, considered most appropriate at this time to study and analyze the jurisdictional highway systems within Waukesha County, and guided by the functional transportation system plan prepared by the Southeastern Wisconsin Regional Planning Commission, endorsed by the State High-

way Commission, and adopted by the Waukesha County Board, to recommended changes necessary to reclassify and regroup these networks into complete, fully coordinated, and continuous systems able to meet the present and expected future arterial highway traffic demands within Waukesha County at an adequate level of service.

THE RECOMMENDED PLAN

The jurisdictional highway system plan prepared for Waukesha County provides for three jurisdictional highway systems—Type I, state trunk; Type II, county trunk; and Type III, local trunk—which together comprise the total arterial street and highway system required to serve the growing travel demands within Waukesha County and its constituent cities, villages, and towns to the plan design year of 1990. Thus, the jurisdictional highway system plan recommends an alignment of governmental responsibility for each of the various facilities comprising the total arterial street and highway system in the design year. The recommended plan also constitutes a refinement of the functional arterial street and highway system plan prepared by the Southeastern Wisconsin Regional Planning Commission and, as such, is intended upon its adoption to constitute a functional, as well as a jurisdictional, highway system plan for Waukesha County to the plan design year of 1990. As a functional plan, the plan recommends cross sections having right-of-way and pavement widths adequate to serve the forecast traffic demand at a desirable level of service while meeting state and regional transportation system development objectives.

Type I (State Trunk) Highway System

The arterial street and highway system recommended to serve the growing traffic demand within Waukesha County through the plan design year 1990 totals approximately 747 route-miles of facilities, or about 29 percent of the estimated 2,561 route-miles of facilities expected to comprise the total street and highway system within the county in 1990. Of this total arterial system, 264 route-miles, or about 35 percent, are proposed to comprise the Type I system, an increase of 16 route-miles over the present system. This Type I system may be expected to carry approximately 72 percent of the arterial travel demand and approximately 65 percent of the total travel demand expected to be generated with Waukesha County by the year 1990. The Type I system as recommended includes all of the committed and

proposed freeway facilities within the county as well as certain important surface arterials, and, as such, comprises the basic framework of the total highway transportation system in the county.

Type II (County Trunk) Highway System

The recommended plan further proposes a Type II (county trunk) highway system consisting of 386 route-miles, or an additional 52 percent, of the total arterial mileage required to serve the county in the plan design year of 1990. This Type II system represents a reduction of 51 route-miles over the present system. It is intended to complement the recommended Type I highway system, and together with that system, to include all major arterial facilities having areawide significance. The county trunk highway system may be expected to carry 22 percent of the arterial travel demand and 19 percent of the total travel demand expected to be generated within Waukesha County by the year 1990.

Type III (Local Trunk) Highway System

Finally, the plan recommends a Type III (local trunk) highway system consisting of the remaining 97 route-miles of arterial facilities, or about 13 percent, of the total arterial mileage proposed to serve Waukesha County in the plan design year 1990. This Type III system, comprising an integral part of the total arterial street and highway system, represents a decrease of 35 route-miles over the present system and is intended to serve primarily local arterial street and highway needs.

Scenic Drive System

Finally, the Technical Coordinating and Advisory Committee recognized the need for the marking and signing of a system of scenic drives within the county. The recommended system consists basically of a Fox River scenic drive and a Kettle Moraine scenic drive, with interconnecting links, providing access to the county's scenic, historical, cultural, and scientific areas. Portions of the recommended scenic drive system are further recommended to become state park roads under the jurisdiction of the Wisconsin Department of Natural Resources.

Financial Feasibility

In order to determine the practicality and acceptability of the recommended jurisdictional highway system plan, a careful analysis was made of the financial feasibility of the plan. Total plan construction and maintenance costs were estimated and compared to anticipated revenues over

a 20-year plan implementation period. As a necessary part of this analysis, the existing structure of highway revenues and expenditures was carefully examined and construction and maintenance formulae and policies analyzed. The analysis indicated that the recommended plan is financially feasible. Total plan implementation costs, including construction and maintenance of collector and minor land-access as well as arterial facilities, were estimated at \$460 million over the 20-year plan implementation period.

It is extremely difficult to forecast the revenues which may become available for highway purposes over the 20-year plan implementation period. This difficulty is due not only to the length of the forecast period involved and the unpredictable changes which may occur during this period in such important factors affecting highway revenues as the general level of economic activity, but also to major changes in the structure of highway aid formulae which will come about upon expiration of the massive interstate highway construction program. Based upon current rates of expenditures for highway purposes within Waukesha County, anticipated revenues for highway purposes over the plan implementation period were estimated at \$460 million, or approximately equal the amount required to fully implement the plan.

Although the financial analysis indicates that the plan is feasible considering the county as a whole, some disparities may exist with respect to the initial distribution of resources between the county and local levels of government relating to the transfer of local trunk facilities to the county trunk system and within the individual municipalities comprising the county relating primarily to the anticipated costs of, and revenues for, the Type III system and to the nonarterial facilities located within the various municipalities within Waukesha County.

The financial analysis also carefully explored the effect of the recommended changes in the jurisdictional highway systems on supplemental aids and allotments as well as on other construction and maintenance aids, and resulted in the formulation of two major recommended revisions to the aid structure: the abandonment of the connecting street concept, and the adoption of common, uniform construction aid formulae and policies for state and county trunk highways.

Implementing Recommendations

Specific procedures for implementation of the recommended jurisdictional highway system plan have been set forth in Chapter VIII of this report. The most important of these include formal plan adoption by the Waukesha County Board and by the Southeastern Wisconsin Regional Planning Commission, and endorsement by the Highway Commission of the Wisconsin Division of Highways and the Wisconsin Department of Natural Resources; realignment of the state trunk, county trunk, and federal aid systems to conform with the recommended jurisdictional highway system plan through the cooperative actions of the Waukesha County Board, the State Highway Commission, and the U. S. Department of Transportation, Federal Highway Administration; abolition of the connecting street concept and assumption of full operational and maintenance responsibilities by the state for all state trunk highways and by the county for all county trunk highways, with the state and county recommended to contract for maintenance with those cities and villages which have a demonstrated capability and desire to perform the maintenance function and which continue to meet the state and county established standards for such maintenance; integration of the recommended plan into the construction, planning, and programming procedures of both the Highway Commission and the Waukesha County Highway Department; and adoption of common, uniform construction aid formulae and policies for all state and county trunk highways within Waukesha County. Additional recommendations include the establishment of an Official Map for the protection of the rights-of-way of all Type I and Type II highway facilities through the cooperative action of the Waukesha County Board and the governing bodies of the 37 municipalities comprising the county.

CONCLUSION

Adoption and implementation of the jurisdictional highway system plan recommended in this report would provide the county with an integrated highway transportation system which will effectively serve the existing, and promote a desirable future, land use pattern; meet the anticipated future travel demand at an adequate level of service; abate traffic congestion; reduce travel time and costs between component parts of the Region; and reduce accident exposure. It would serve to concentrate appropriate resources and capabilities on corresponding areas of need, assuring a more

effective use of the total public resources in the provision of highway transportation, and provide a sound basis for the establishment of long-range fiscal policies and for the systematic programming of arterial street and highway improvements within Waukesha County. It would also provide a basis for the more efficient planning and design of the total arterial street and highway system,

for the efficient multijurisdictional management of that system, and for the attainment of intergovernmental coordination necessary to the cooperative development of the system. Finally, it should provide a more equitable distribution of highway improvement, maintenance, and operating costs among the various levels and agencies of government concerned.

APPENDICES

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Appendix A

TECHNICAL COORDINATING AND ADVISORY COMMITTEE ON
JURISDICTIONAL HIGHWAY PLANNING FOR WAUKESHA COUNTY

Vencil F. Demshar, P.E. Chairman	County Highway Commissioner, Waukesha County
Kurt W. Bauer, P.E.	Executive Director, SEWRPC
Donald J. Finch	Director of Public Works, City of New Berlin
Arne L. Gausmann	Director, Bureau of Systems Planning, Division of Planning, Wisconsin Department of Transportation
Richard M. Jung, Sr.	Town Supervisor, Town of Lisbon
Thomas R. Kinsey, P.E.	District Engineer, District 2, Division of Highways, Wisconsin Department of Transportation
Gerald Lee	Building Inspector, City of Muskego
William Muth	Director of Public Works, City of Brookfield
Robert H. Paddock	Division Engineer, U. S. Department of Transportation, Federal Highway Administration, Madison
Wilbur G. Perren	Town Supervisor, Town of Genesee
Floyd Usher	City Engineer, City of Oconomowoc
Rodney M. VandenNoven	Director of Public Works, City of Waukesha
Max A. Vogt	Village Engineer, Village of Menomonee Falls

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Appendix B

DETAILED DATA—WAUKESHA COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN

Table B-1

CONSTRUCTION AND MAINTENANCE COST ESTIMATES FOR WAUKESHA COUNTY
JURISDICTIONAL HIGHWAY SYSTEM PLAN BY MUNICIPALITY^a

Civil Division	Construction Cost Estimates					Maintenance Cost Estimates					Total	
	Arterial			Nonarterial	Subtotal	Arterial			Nonarterial			Subtotal
	Type I Nonfreeway	Type II	Type III	Existing Local, Collector		Type I Nonfreeway	Type II	Type III	New Local, Collector ^b	Existing Local, Collector		
CITIES												
Brookfield	\$ 831,500	\$ 1,662,100	\$ 3,927,000	\$ 3,223,800	\$ 9,644,400	--	\$ --	\$ 945,400	\$ 2,400,700	\$10,249,600	\$13,595,700	\$ 23,240,100
Delafield	130,500	346,500	--	482,400	959,400	--	--	--	311,800	1,564,700	1,876,500	2,835,900
Muskego	390,400	1,278,000	2,693,000	1,349,700	5,711,100	--	--	550,900	920,700	4,481,400	5,953,000	11,664,100
New Berlin	507,800	3,327,400	6,264,000	2,158,600	12,257,800	--	--	1,622,400	1,375,000	7,023,100	10,020,500	22,278,300
Oconomowoc	202,600	736,100	789,000	667,800	2,395,500	--	--	181,000	466,000	2,065,000	2,712,000	5,107,500
Waukesha	2,384,000	1,054,500	7,298,000	2,353,000	13,089,500	--	--	1,914,800	1,768,700	7,326,200	11,009,700	24,099,200
Subtotal	4,446,800	8,404,600	20,971,000	10,235,300	44,057,700	--	--	5,214,500	7,242,900	32,710,000	45,167,400	89,225,100
VILLAGES												
Big Bend	\$ 36,600	\$ 2,600	\$ 241,000	\$ 90,300	\$ 370,500	--	\$ --	\$ 53,600	\$ 193,200	\$ 288,300	\$ 535,100	\$ 905,600
Butler	--	199,300	--	151,800	351,100	--	--	--	49,300	500,100	549,400	900,500
Chenequa	--	26,800	--	44,300	70,100	--	--	--	314,400	134,900	449,300	519,400
Dousman	2,300	57,300	--	76,700	136,300	--	--	--	72,600	226,500	299,100	435,400
Eagle	79,100	--	--	95,200	174,300	--	--	--	87,300	267,500	354,800	529,100
Elm Grove	273,600	248,800	676,000	586,000	1,784,400	--	--	208,000	71,600	1,931,300	2,210,900	3,995,300
Hartland	104,900	401,900	--	241,800	748,600	--	--	--	438,500	735,500	1,174,000	1,922,600
Lac LaBelle	--	--	--	47,700	47,700	--	--	--	--	156,800	156,800	204,500
Lannon	156,300	188,200	493,000	47,700	885,200	--	--	110,500	118,000	158,300	386,800	1,272,000
Menomonee Falls	774,800	2,346,300	5,864,000	1,796,000	10,781,100	--	--	1,639,800	2,799,700	5,873,300	10,312,800	21,093,900
Merton	--	264,000	--	113,800	377,800	--	--	--	73,000	337,900	410,900	788,700
Mukwonago	151,000	266,300	--	269,200	686,500	--	--	--	220,700	811,500	1,032,900	1,718,700
Nashotah	--	124,000	--	68,200	192,200	--	--	--	130,400	214,800	345,200	537,400
North Prairie	135,300	52,900	--	46,000	234,200	--	--	--	40,700	145,000	185,700	419,900
Oconomowoc Lake	12,800	4,500	--	105,800	123,100	--	--	--	94,800	340,800	435,600	558,700
Pewaukee	--	481,200	--	443,200	924,400	--	--	--	256,900	1,286,000	1,542,900	2,467,300
Sussex	50,900	156,900	1,402,000	182,700	1,792,500	--	--	332,700	316,500	562,000	1,211,200	3,003,700
Wales	65,900	--	--	161,900	227,800	--	--	--	44,800	512,800	557,600	785,400
Subtotal	1,843,500	4,820,000	8,676,000	4,568,300	19,907,800	--	--	2,344,600	5,322,400	14,483,300	22,150,300	42,058,100
TOWNS												
Brookfield	\$ --	\$ --	\$ --	\$ 14,800	\$ 14,800	--	\$ --	\$ --	\$ 153,500	\$ 109,600	\$ 263,100	\$ 277,900
Delafield	--	--	--	258,600	258,600	--	--	--	--	301,600	301,600	560,200
Eagle	--	--	--	402,800	402,800	--	--	--	--	451,200	451,200	854,000
Genesee	--	--	--	684,100	684,100	--	--	--	--	804,400	804,400	1,488,500
Lisbon	--	--	--	799,900	799,900	--	--	--	--	1,291,700	1,291,700	2,091,600
Merton	--	--	--	593,600	593,600	--	--	--	--	767,000	767,000	1,360,600
Mukwonago	--	--	--	516,100	516,100	--	--	--	--	646,100	646,100	1,162,200
Oconomowoc	--	--	--	559,700	559,700	--	--	--	19,800	752,700	772,500	1,332,200
Ottawa	--	--	--	431,600	431,600	--	--	--	--	510,400	510,400	942,000
Pewaukee	--	--	--	253,700	253,700	--	--	--	248,700	424,700	673,400	927,100
Summit	--	--	--	480,300	480,300	--	--	--	--	622,400	622,400	1,102,700
Vernon	--	--	--	512,000	512,000	--	--	--	--	665,900	665,900	1,177,900
Waukesha	--	--	--	286,800	286,800	--	--	--	73,700	422,000	495,700	782,500
Subtotal	--	--	--	5,794,000	5,794,000	--	--	--	495,700	7,769,700	8,265,400	14,059,400
Waukesha County	\$ --	\$61,076,300	\$ --	\$ --	\$ 61,076,300	--	\$23,664,300	\$ --	\$ --	\$ --	\$23,664,300	\$ 84,740,600
Total	\$6,290,300	\$74,300,900	\$29,647,000	\$20,597,600	\$130,835,800	--	\$23,664,300	\$7,559,100	\$13,061,000	\$54,963,000	\$99,247,400	\$230,083,200

^aFor analysis purposes, it was assumed that the corporate limits of cities and villages would change over the 20-year plan implementation period to include any adjacent planned urban development as recommended in the adopted regional land use plan.

^bPlan implementation costs set forth in Chapter VII of this report assumed that the cost of all new collector streets and local streets would be borne by the developer.

Source: SEWRPC.

INTRODUCTION TO FIGURE B-1
TYPICAL RURAL AND URBAN STREET AND HIGHWAY CROSS SECTIONS

The typical rural and urban street and highway cross sections developed under the Waukesha County jurisdictional highway system planning program and utilized in the preparation of the Waukesha County jurisdictional highway system plan are shown in Figure B-1. The cross sections presented include, for two, four, and six moving lanes of traffic, both desirable and minimum configurations of pavement width; curb lawns, medians, shoulders, and sidewalks where appropriate; and the required right-of-way.

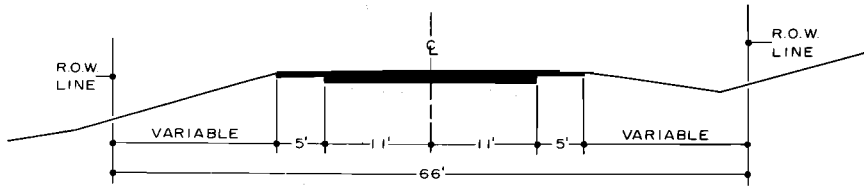
Included with each cross section are typical cost estimates, on a per mile basis, for the construction, resurfacing, and annual maintenance of the particular facility involved. In atypical circumstances such as unusual topography or intensive urban development, the typical cross sections presented may require modification during plan

implementation to meet detailed design standards and to minimize disruption of the landscape or cityscape. It should be noted that the resurfacing cost for Cross Section No. 1, a minimum two-lane rural arterial, includes costs for minor reconstruction for spot improvement of horizontal and vertical alignment and of intersections. It should also be noted that the per mile costs for construction, resurfacing, and annual maintenance are expressed in 1971 dollars and reflect the most recent cost experiences of the Wisconsin Division of Highways in Waukesha County and in areas of the state similar to Waukesha County. While these cost estimates thus provide an average project cost for all proposed arterial highway improvements within Waukesha County, the cost of an individual project during plan implementation should be expected to vary somewhat from the average costs.

Figure B-1

TYPICAL RURAL AND URBAN STREET AND HIGHWAY CROSS SECTIONS

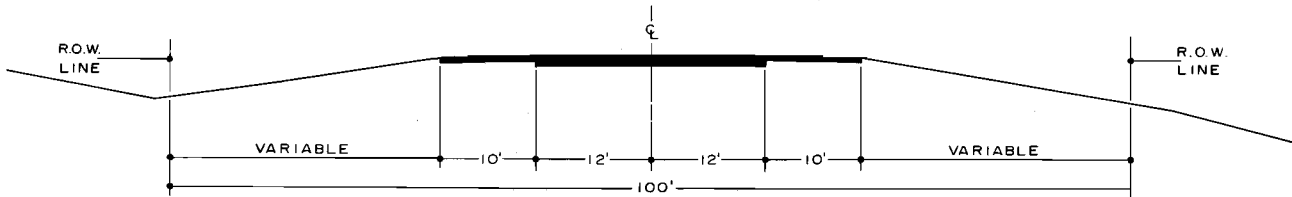
RURAL AREA
TYPICAL CROSS SECTION NO. 1
MINIMUM TWO LANE ARTERIAL



GRAVEL BASE VARIES
22' HIGH TYPE PAVEMENT, 66' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$160,000
RESURFACE = \$ 27,000
MAINTENANCE = \$ 1,700 (ANNUAL)

CAPACITY RANGE:
LEVEL OF SERVICE MAXIMUM SERVICE VOLUME
B 4,400 VEH./DAY
C 7,400 VEH./DAY

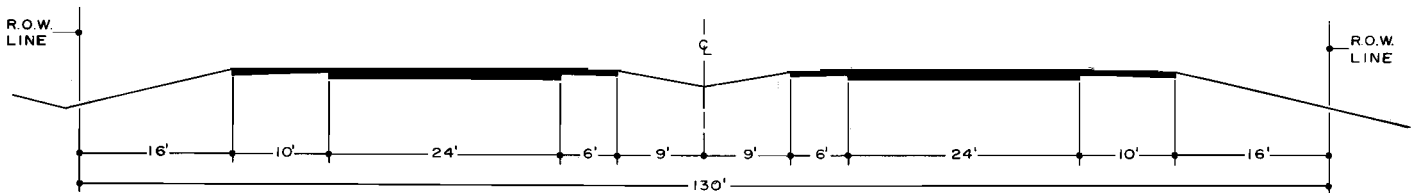
RURAL AREA
TYPICAL CROSS SECTION NO. 2
DESIRABLE TWO LANE ARTERIAL



GRAVEL BASE VARIES
24' HIGH TYPE PAVEMENT, 100' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$205,000
RESURFACE = \$ 32,000
MAINTENANCE = \$ 1,700 (ANNUAL)

CAPACITY RANGE:
LEVEL OF SERVICE MAXIMUM SERVICE VOLUME
B 5,200 VEH./DAY
C 8,500 VEH./DAY

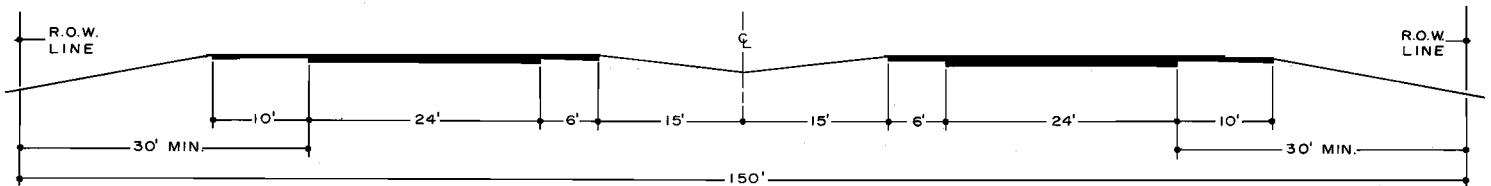
RURAL AREA
TYPICAL CROSS SECTION NO. 3
MINIMUM FOUR LANE ARTERIAL



GRAVEL BASE VARIES
DUAL 24' HIGH TYPE PAVEMENT, 130' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$535,000
RESURFACE = \$ 51,000
MAINTENANCE = \$ 3,400 (ANNUAL)

CAPACITY RANGE:
LEVEL OF SERVICE MAXIMUM SERVICE VOLUME
B 8,700 VEH./DAY
C 13,400 VEH./DAY

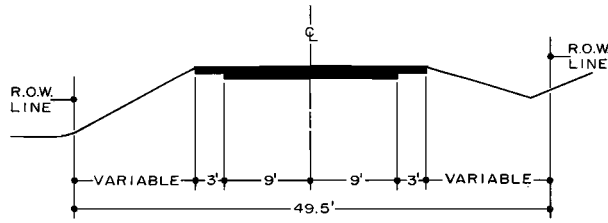
RURAL AREA
TYPICAL CROSS SECTION NO. 4
DESIRABLE FOUR LANE ARTERIAL



GRAVEL BASE VARIES
DUAL 24' HIGH TYPE PAVEMENT, 150' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$595,000
RESURFACE = \$ 51,000
MAINTENANCE = \$ 3,400 (ANNUAL)

CAPACITY RANGE:
LEVEL OF SERVICE MAXIMUM SERVICE VOLUME
B 8,700 VEH./DAY
C 13,400 VEH./DAY

RURAL AREA
TYPICAL CROSS SECTION
MINIMUM TWO LANE
COLLECTOR OR MINOR STREET^a

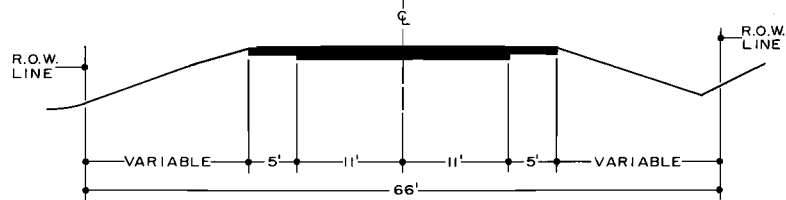


GRAVEL BASE VARIES

18' BITUMINOUS PAVEMENT

49.5' R.O.W.

RURAL AREA
TYPICAL CROSS SECTION
DESIRABLE TWO LANE
COLLECTOR OR MINOR STREET^a

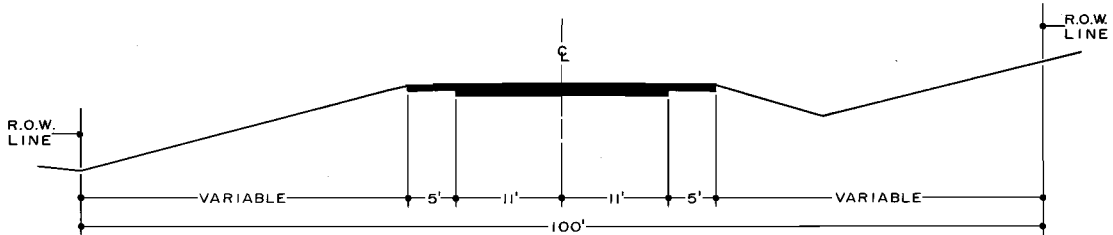


GRAVEL BASE VARIES

22' BITUMINOUS PAVEMENT

66' R.O.W.

RURAL AREA
TYPICAL CROSS SECTION
PROSPECTIVE ARTERIAL



GRAVEL BASE VARIES

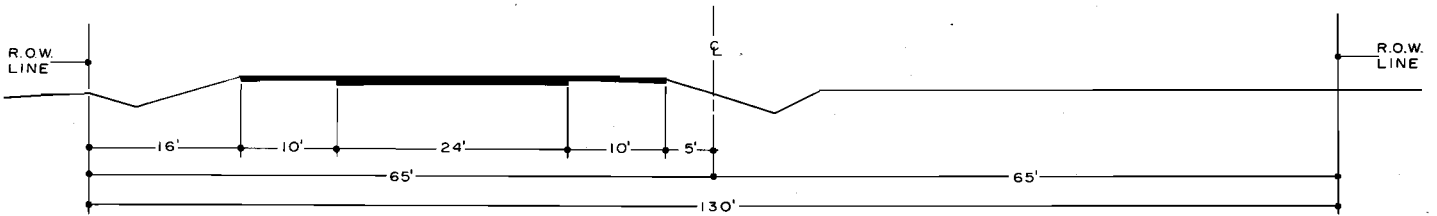
22' BITUMINOUS PAVEMENT

100' R.O.W.

ESTIMATED COST PER MILE FOR RURAL, NON-ARTERIAL STREETS:
CONSTRUCTION = \$160,000 (AVERAGE)
RESURFACE = \$13,000 (AVERAGE)
MAINTENANCE = \$1,100 (ANNUAL AVERAGE)

^a Town road standards as established in section 86.26, Wisconsin statutes.

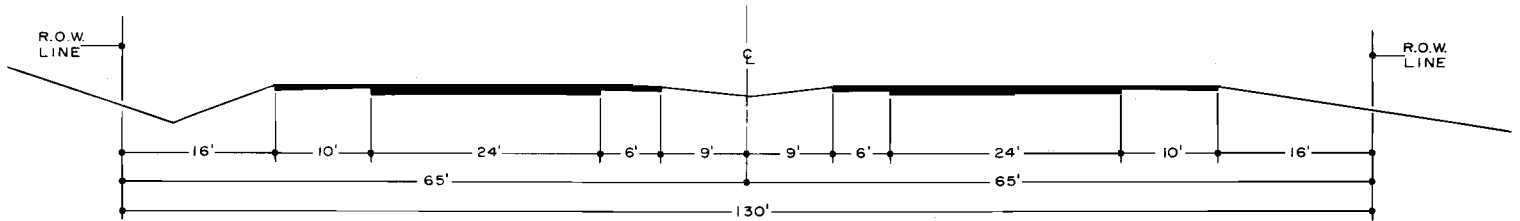
URBANIZING AREA
TYPICAL CROSS SECTION NO. 5
DESIRABLE TWO LANE ARTERIAL
(INITIAL STAGE OF FUTURE FOUR LANE ARTERIAL)



GRAVEL BASE VARIES
24' HIGH TYPE PAVEMENT, 130' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$385,000
RESURFACE = \$ 24,400
MAINTENANCE = \$ 2,000 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
RURAL	B	5,200 VEH./DAY
	C	8,500 VEH./DAY
URBAN	B	6,100 VEH./DAY
	C	6,800 VEH./DAY
	D	7,400 VEH./DAY

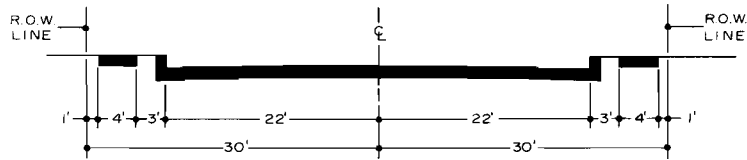
URBANIZING AREA
TYPICAL CROSS SECTION NO. 6
DESIRABLE FOUR LANE ARTERIAL



GRAVEL BASE VARIES
DUAL 24' HIGH TYPE PAVEMENT, 130' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$590,000
RESURFACE = \$ 48,000
MAINTENANCE = \$ 5,000 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
RURAL	B	8,700 VEH./DAY
	C	13,400 VEH./DAY
URBAN	B	11,100 VEH./DAY
	C	12,300 VEH./DAY
	D	13,600 VEH./DAY

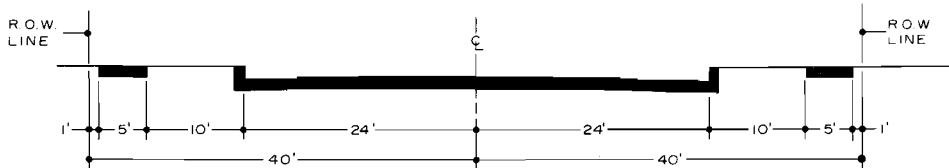
URBAN AREA
TYPICAL CROSS SECTION NO. 7
MINIMUM TWO LANE ARTERIAL



6" GRAVEL BASE
44' HIGH TYPE PAVEMENT, 60' R.O.W.
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 380,000
RESURFACE = \$ 26,000
MAINTENANCE = \$ 7,700 (ANNUAL)

CAPACITY RANGE:		
LEVEL OF SERVICE		MAXIMUM SERVICE VOLUME
B		11,300 VEH./DAY
C		11,600 VEH./DAY
D		12,400 VEH./DAY

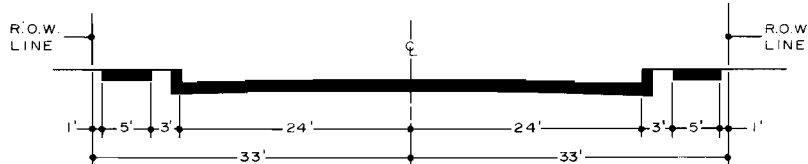
URBAN AREA
TYPICAL CROSS SECTION NO. 8
DESIRABLE TWO LANE ARTERIAL



6" GRAVEL BASE
48' HIGH TYPE PAVEMENT, 80' R.O.W.
(ADDITIONAL R.O.W. MAY BE RESERVED IN
UNDEVELOPED AREAS)
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 405,000
RESURFACE = \$ 23,000
MAINTENANCE = \$ 5,000 (ANNUAL)

CAPACITY RANGE:		
LEVEL OF SERVICE		MAXIMUM SERVICE VOLUME
B		12,300 VEH./DAY
C		12,800 VEH./DAY
D		13,900 VEH./DAY

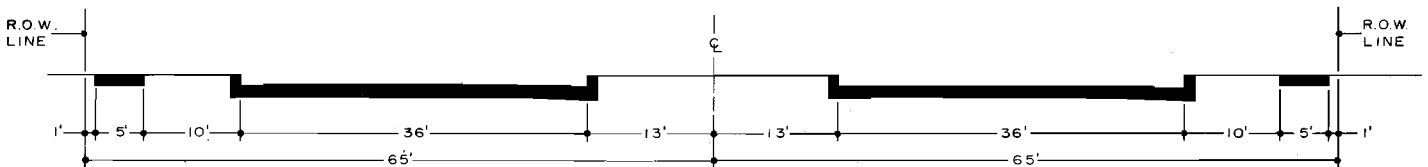
URBAN AREA
TYPICAL CROSS SECTION NO. 9
MINIMUM FOUR LANE ARTERIAL



6" GRAVEL BASE
48' HIGH TYPE PAVEMENT, 66' R.O.W.
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 360,000
RESURFACE = \$ 23,000
MAINTENANCE = \$ 5,000 (ANNUAL)

CAPACITY RANGE:		
LEVEL OF SERVICE		MAXIMUM SERVICE VOLUME
B		15,700 VEH./DAY
C		17,100 VEH./DAY
D		19,500 VEH./DAY

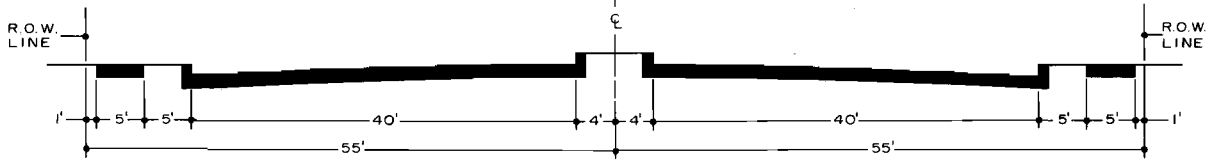
URBAN AREA
TYPICAL CROSS SECTION NO. 10
DESIRABLE FOUR LANE ARTERIAL



6" GRAVEL BASE
DUAL 36' HIGH TYPE PAVEMENT, 130' R.O.W.
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 810,000
RESURFACE = \$ 33,000
MAINTENANCE = \$ 7,000 (ANNUAL)

CAPACITY RANGE:		
LEVEL OF SERVICE		MAXIMUM SERVICE VOLUME
B		18,400 VEH./DAY
C		19,600 VEH./DAY
D		22,500 VEH./DAY

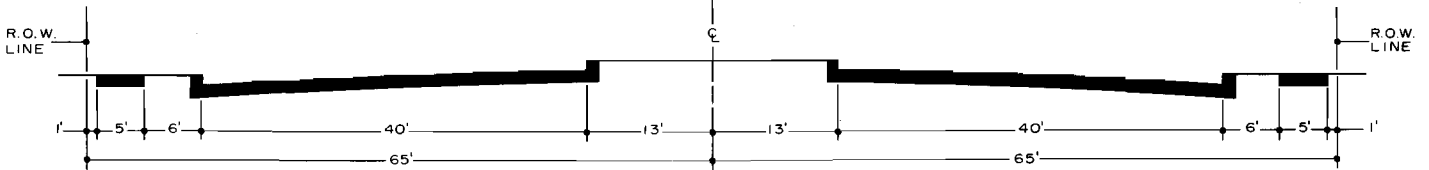
URBAN AREA
TYPICAL CROSS SECTION NO.11
MINIMUM SIX LANE ARTERIAL



6" GRAVEL BASE
DUAL 40' HIGH TYPE PAVEMENT, 110' R.O.W.
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$830,000
RESURFACE = \$ 37,000
MAINTENANCE = \$ 9,000 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
B		27,500 VEH./DAY
C		29,600 VEH./DAY
D		34,600 VEH./DAY

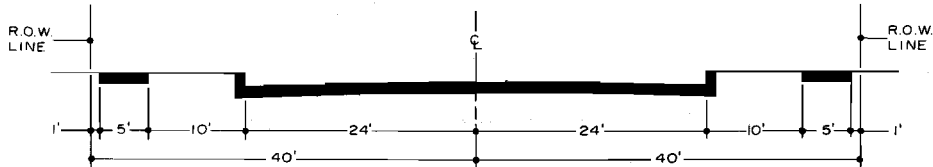
URBAN AREA
TYPICAL CROSS SECTION NO.12
DESIRABLE SIX LANE ARTERIAL



6" GRAVEL BASE
DUAL 40' HIGH TYPE PAVEMENT, 130' R.O.W.
SIDEWALK, STREET LIGHTING
ESTIMATED COST PER MILE:
CONSTRUCTION = \$845,000
RESURFACE = \$ 37,000
MAINTENANCE = \$ 9,000 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
B		27,500 VEH./DAY
C		29,600 VEH./DAY
D		34,600 VEH./DAY

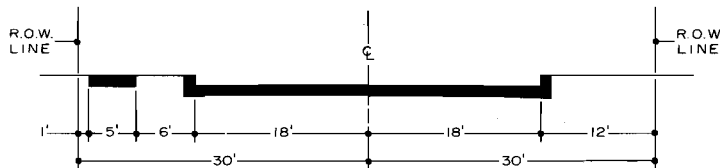
URBAN AREA
TYPICAL CROSS SECTION
COLLECTOR STREET



6" GRAVEL BASE
48' HIGH TYPE PAVEMENT
80' R.O.W.

ESTIMATED COST PER MILE:
CONSTRUCTION = \$235,000
RESURFACE = \$ 23,800
MAINTENANCE = \$ 4,100 (ANNUAL)

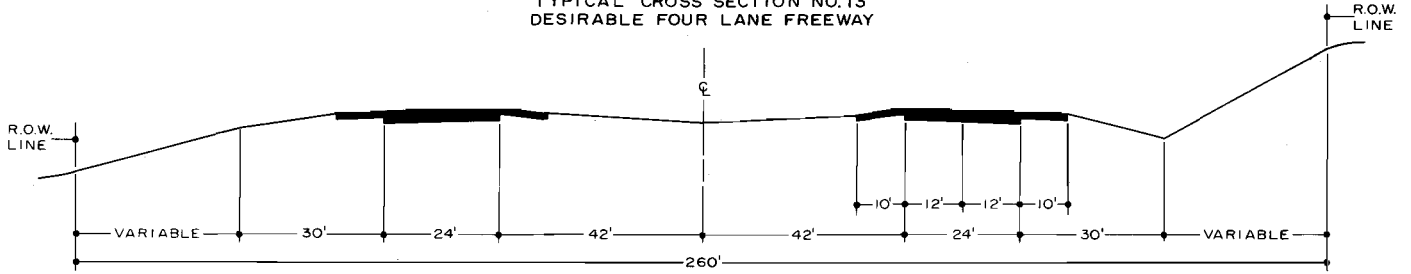
URBAN AREA
TYPICAL CROSS SECTION
MINOR STREET



6" GRAVEL BASE
36' HIGH TYPE PAVEMENT
60' R.O.W.

ESTIMATED COST PER MILE:
CONSTRUCTION = \$185,000
RESURFACE = \$ 17,000
MAINTENANCE = \$ 2,700 (ANNUAL)

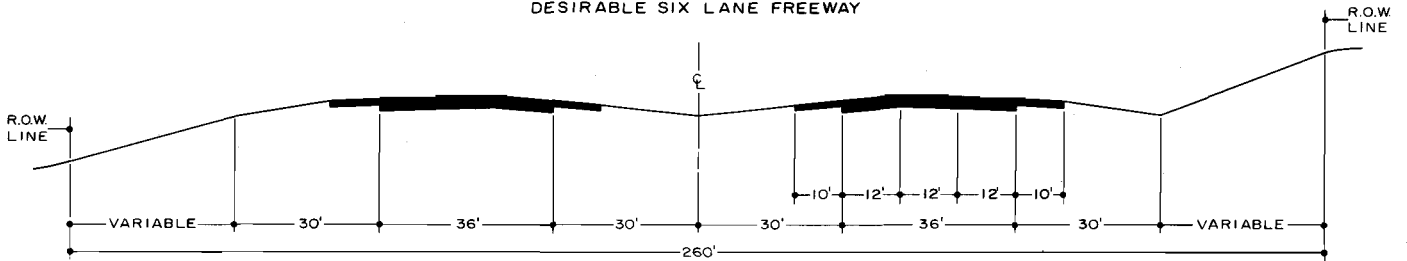
RURAL AREA
TYPICAL CROSS SECTION NO.13
DESIRABLE FOUR LANE FREEWAY



DUAL 24' HIGH TYPE PAVEMENT, 260' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 815,000
RESURFACE = \$ 52,000
MAINTENANCE = \$ 4,100 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
A		19,200 VEH./DAY
B		27,500 VEH./DAY
C		37,500 VEH./DAY

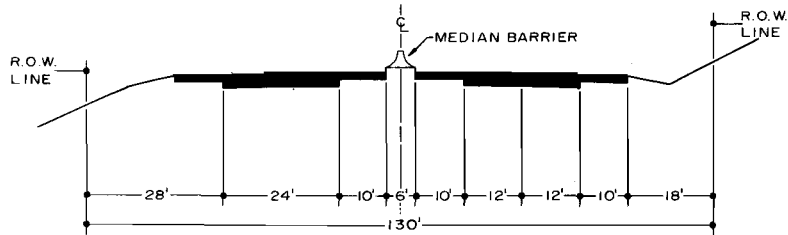
RURAL AREA
TYPICAL CROSS SECTION NO.14
DESIRABLE SIX LANE FREEWAY



DUAL 36' HIGH TYPE PAVEMENT, 260' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 980,000
RESURFACE = \$ 66,000
MAINTENANCE = \$ 5,300 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
A		33,000 VEH./DAY
B		47,800 VEH./DAY
C		60,000 VEH./DAY

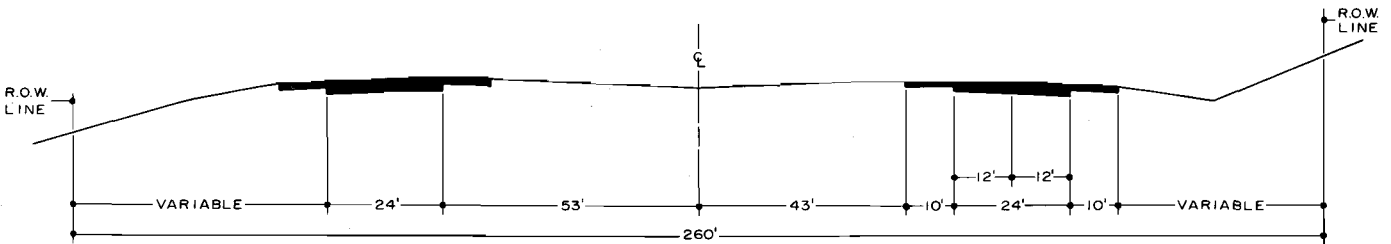
URBAN AREA
TYPICAL CROSS SECTION NO.15
MINIMUM FOUR LANE FREEWAY



DUAL 24' HIGH TYPE PAVEMENT, 130' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$920,000
RESURFACE = \$ 52,000
MAINTENANCE = \$ 6,600 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
B		37,800 VEH./DAY
C		51,500 VEH./DAY
D		61,900 VEH./DAY

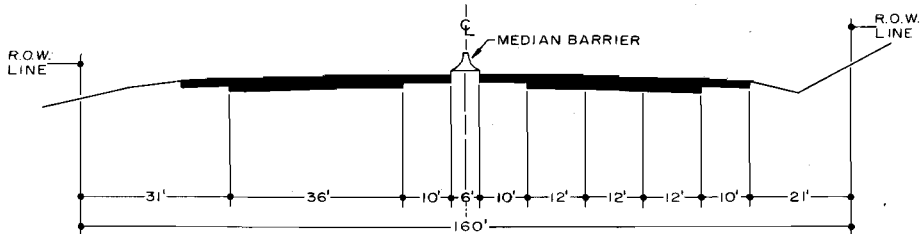
URBAN AREA
TYPICAL CROSS SECTION NO.16
DESIRABLE FOUR LANE FREEWAY



DUAL 24' HIGH TYPE PAVEMENT, 260' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 1,100,000
RESURFACE = \$ 52,000
MAINTENANCE = \$ 12,000 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
B		37,800 VEH./DAY
C		51,500 VEH./DAY
D		61,900 VEH./DAY

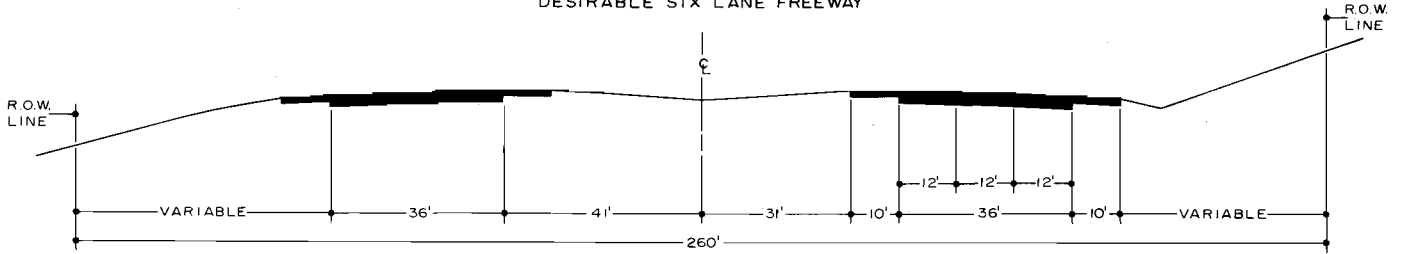
URBAN AREA
TYPICAL CROSS SECTION NO.17
MINIMUM SIX LANE FREEWAY



DUAL 36' HIGH TYPE PAVEMENT, 160' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 1,115,000
RESURFACE = \$ 56,000
MAINTENANCE = \$ 7,700 (ANNUAL)

CAPACITY RANGE:		MAXIMUM SERVICE VOLUME
LEVEL OF SERVICE		
B		65,700 VEH./DAY
C		82,500 VEH./DAY
D		92,800 VEH./DAY

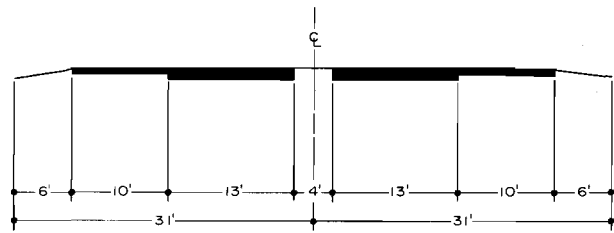
URBAN AREA
TYPICAL CROSS SECTION NO. 18
DESIRABLE SIX LANE FREEWAY



DUAL 36' HIGH TYPE PAVEMENT, 260' R.O.W.
ESTIMATED COST PER MILE:
CONSTRUCTION = \$ 1,285,000
RESURFACE = \$ 66,000
MAINTENANCE = \$ 14,000 (ANNUAL)

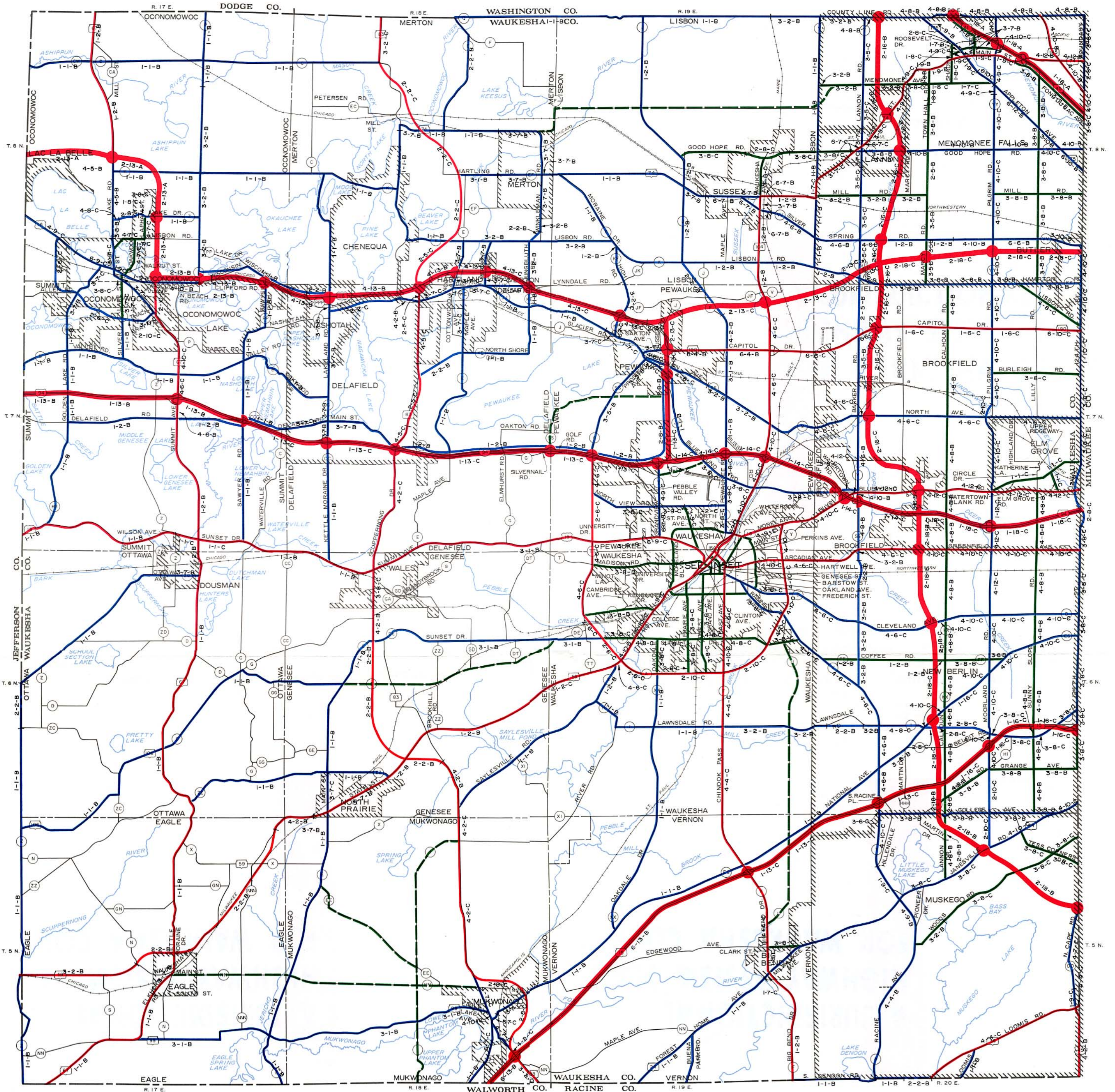
CAPACITY RANGE:	LEVEL OF SERVICE	MAXIMUM SERVICE VOLUME
	B	65,700 VEH./DAY
	C	82,500 VEH./DAY
	D	92,800 VEH./DAY

TYPICAL TRANSITWAY CROSS SECTION



FOR FUTURE DEVELOPMENT WITHIN FREEWAY MEDIAN

MAP B-1 RECOMMENDED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WAUKESHA COUNTY – 1990



LEGEND

- JURISDICTIONAL CLASSIFICATION**
- TYPE I ARTERIAL (FREEWAY – STATE TRUNK HIGHWAY)
 - TYPE II ARTERIAL (STATE TRUNK HIGHWAY)
 - TYPE III ARTERIAL (COUNTY TRUNK HIGHWAY)
 - TYPE III ARTERIAL (LOCAL TRUNK HIGHWAY)
 - PROSPECTIVE ARTERIAL
 - FREEWAY-STANDARD ARTERIAL INTERCHANGE

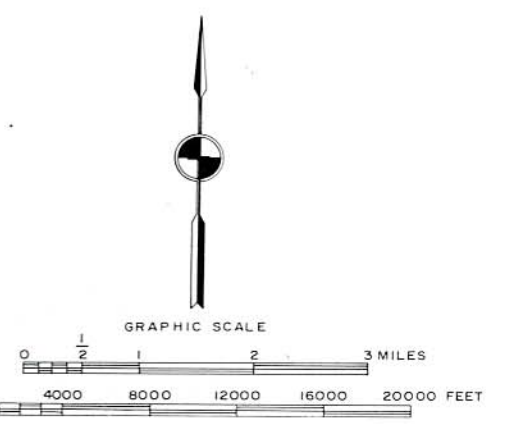
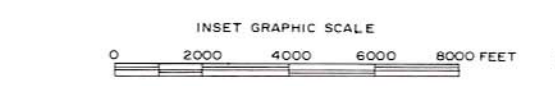
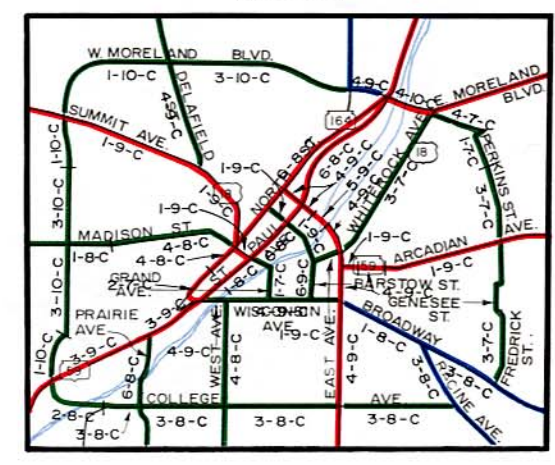
DESIGN CLASSIFICATION

- LEVEL OF SERVICE
- TYPICAL CROSS SECTION
- TYPE OF IMPROVEMENT

TYPE OF IMPROVEMENT	TYPICAL CROSS SECTION ^a	LEVEL OF SERVICE ^b
1. Resurfacing Only	1. Two-Lane Arterial (Minimum-Rural Area)	A. Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.
2. Construction of New Facility	2. Two-Lane Arterial (Desirable-Rural Area)	B. Level of Service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes per hour suitable for rural highways.
3. Reconstruction With Same Capacity	3. Four-Lane Arterial (Minimum-Rural Area)	C. Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes per hour suitable for urban design practice.
4. Reconstruction for Additional Capacity	4. Four-Lane Arterial (Desirable-Rural Area)	D. Level of Service D approaches unstable flow, with tolerable operating speeds being maintained through consideration of changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.
5. Special Project	5. Two-Lane Arterial (Desirable-Urban Area)	E. Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. At capacity, speeds are typically, but not always, in the neighborhood of 30 mph. Flow is unstable, and there may be stoppages of momentary duration.
6. No Work Required	6. Four-Lane Arterial (Desirable-Urban Area)	F. Level of Service F describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. The section under study will be serving as a storage area during gaps or all of the peak hour. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.
	7. Two-Lane Arterial (Minimum-Urban Area)	
	8. Two-Lane Arterial (Desirable-Urban Area)	
	9. Four-Lane Arterial (Desirable-Urban Area)	
	10. Four-Lane Arterial (Minimum-Urban Area)	
	11. Six-Lane Arterial (Minimum-Urban Area)	
	12. Six-Lane Arterial (Desirable-Urban Area)	
	13. Four-Lane Freeway (Desirable-Rural Area)	
	14. Six-Lane Freeway (Minimum-Urban Area)	
	15. Four-Lane Freeway (Minimum-Urban Area)	
	16. Four-Lane Freeway (Desirable-Urban Area)	
	17. Six-Lane Freeway (Minimum-Urban Area)	
	18. Six-Lane Freeway (Desirable-Rural Area)	

NOTE: RECOMMENDED TYPE OF IMPROVEMENT AND LEVEL OF SERVICE CLASSIFICATIONS WERE NOT DEVELOPED FOR PROSPECTIVE ARTERIALS. THE PROSPECTIVE ARTERIAL CROSS SECTION SET FORTH IN FIGURE B-1 SHOULD BE APPLIED TO ALL PROSPECTIVE ARTERIALS.

INSET



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Appendix C

SUGGESTED MODEL RESOLUTION FOR ADOPTION OF THE
WAUKESHA COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN

WHEREAS, the Southeastern Wisconsin Regional Planning Commission which was duly created by the Governor of the State of Wisconsin in accordance with Section 66.945(2) of the Wisconsin Statutes on the 8th day of August 1960, upon petition of the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha, has the function and duty of making and adopting a master plan for the physical development of the Region; and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission has completed and adopted a regional transportation plan (highway and transit components) at its meeting held on the 1st day of December 1966; and

WHEREAS, the said adopted regional transportation plan recommends as an important plan implementation step that the State Highway Commission of Wisconsin, the Milwaukee County Expressway Commission (now the Milwaukee Expressway and Transportation Commission), and the seven county highway committees, in cooperation with the local units of government within the Region, convert the functional highway plan contained in the adopted regional transportation plan into a jurisdictional plan on a county-by-county basis; and

WHEREAS, the Waukesha County Highway Commissioner, acting pursuant to a directive of the Waukesha County Board of Supervisors, dated February 25, 1969, requested on February 25, 1969, the guidance, cooperation, and assistance of the Commission in the preparation of a jurisdictional highway system plan for Waukesha County; and

WHEREAS, a Technical Coordinating and Advisory Committee for Jurisdictional Highway Planning in Waukesha County was created to assist in the preparation of such a study, which consisted of knowledgeable and experienced engineers and planners from the U. S. Department of Transportation, Wisconsin Department of Transportation, Waukesha County, municipalities within Waukesha County, and the Southeastern Wisconsin Regional Planning Commission, as well as citizen representatives; and

WHEREAS, under the guidance of the Technical Coordinating and Advisory Committee for Jurisdictional Highway Planning in Waukesha County and of a competent interagency staff, all research studies undertaken for the accomplishment of a jurisdictional highway system plan for Waukesha County have been concluded, including: 1) the preparation and printing of a map setting forth the proposed jurisdictional highway system in Waukesha County, as projected to the calendar year 1990; and 2) the preparation and publication of SEWRPC Planning Report No. 18, entitled A Jurisdictional Highway System Plan for Waukesha County, published in January of 1974, which contains specific recommendations as to the level and agency of government which should assume responsibility for the construction, maintenance, and operation of each segment of the total 1990 planned arterial street and highway system within Waukesha County, and concomitant recommendations for the realignment of the federal aid highway systems and the state and county trunk highway systems, together with descriptive and explanatory matter and other matters intended to comprise a conversion of the functional highway plan for Waukesha County into a jurisdictional highway plan, said functional plan being a component of the adopted regional transportation plan; and

WHEREAS, the process of converting the adopted functional highway plan for Waukesha County into a jurisdictional highway system plan has necessarily resulted in refinements to the functional highway plan, such refinements consisting of additions, deletions, and changes to the functional highway system, thus constituting recommended amendments to the adopted functional plan; and

WHEREAS, the Commission has transmitted certified copies of its resolution adopting such jurisdictional highway system plan for Waukesha County, together with the aforementioned SEWRPC Planning Report No. 18, to the local units of government; and

WHEREAS, the (Name of Local Governing Body) did on the _____ day of _____, 19__, approve a resolution adopting the regional transportation plan; and

WHEREAS, the (Name of Local Governing Body) has supported, participated in the financing of, and generally concurred in the regional transportation and other planning programs undertaken by the Southeastern Wisconsin Regional Planning Commission and believes that the Waukesha County jurisdictional highway system plan as prepared by the Commission in cooperation with other agencies is a valuable guide not only to the development of Waukesha County but also of the community, and the adoption of such plan by the (Name of Local Governing Body) will assure a common understanding by the several governmental levels and agencies concerned and enable these levels and agencies of government to program the necessary plan implementation work.

NOW, THEREFORE, BE IT HEREBY RESOLVED that, pursuant to Section 66.945(12) of the Wisconsin Statutes, the (Name of Local Governing Body) on the _____ day of _____, 19__, hereby adopts the Waukesha County jurisdictional highway system plan previously adopted by the Commission as set forth in SEWRPC Planning Report No 18, as an amendment to the highway system component of the adopted regional transportation plan and as a guide for community development.

BE IT FURTHER RESOLVED, that the _____ Clerk transmit a certified copy of this resolution to the Southeastern Wisconsin Regional Planning Commission.

(Chairman, President, or Mayor of Local Governing Body)

ATTESTATION:

(Clerk of Local Governing Body)

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**TECHNICAL COORDINATING AND ADVISORY COMMITTEE ON
JURISDICTIONAL HIGHWAY PLANNING FOR WAUKESHA COUNTY**

Vencil F. Demshar, P.E. County Highway Commissioner,
Chairman
Waukesha County

Kurt W. Bauer, P.E. Executive Director, SEWRPC

Donald J. Finch Director of Public Works, City of New Berlin

Arne L. Gausmann Director, Bureau of Systems Planning, Division of Planning,
Wisconsin Department of Transportation

Richard M. Jung, Sr. Town Supervisor, Town of Lisbon

Thomas R. Kinsey, P.E. District Engineer, District 2, Division of Highways,
Wisconsin Department of Transportation

Gerald Lee Building Inspector, City of Muskego

William Muth Director of Public Works, City of Brookfield

Robert H. Paddock Division Engineer, U. S. Department of Transportation,
Federal Highway Administration, Madison

Wilbur G. Perren Town Supervisor, Town of Genesee

Floyd Usher City Engineer, City of Oconomowoc

Rodney M. VandenNoven Director of Public Works, City of Waukesha

Max A. Vogt Village Engineer, Village of Menomonee Falls

**INTERAGENCY STAFF
WAUKESHA COUNTY JURISDICTIONAL HIGHWAY STUDY**

Kurt W. Bauer, P.E. Executive Director
SEWRPC

Peter L. Benwitz Associate Transportation Planner
SEWRPC

Thomas R. Clark, P.E. Chief Planning Engineer, District 2
Division of Highways
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