



CITY OF WEST BEND TRANSPORTATION SYSTEM PLAN: 2010

WASHINGTON COUNTY WISCONSIN

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**COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 210**

**CITY OF WEST BEND TRANSPORTATION SYSTEM PLAN: 2010
WASHINGTON COUNTY, WISCONSIN**

Prepared by the
Southeastern Wisconsin Regional Planning Commission
P. O. Box 1607
Old Courthouse
916 N. East Avenue
Waukesha, Wisconsin 53187-1607

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March 1994

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SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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March 31, 1994

The Honorable Michael R. Miller
Mayor of the City of West Bend
City Hall
1115 S. Main Street
West Bend, Wisconsin 53095

Dear Mayor Miller:

In April 1991, the City of West Bend requested the Southeastern Wisconsin Regional Planning Commission to prepare a transportation system plan for the City and environs. The Regional Planning Commission, working with an Advisory Committee appointed by the City, has now completed the requested plan. We are pleased to transmit to you on behalf of the Advisory Committee this report documenting the plan. The plan recommends the arterial street and highway improvements necessary to permit traffic to move efficiently and safely within and through the City of West Bend and environs both now and as the City continues to develop to the year 2010.

The recommended plan is based upon a careful analyses of existing and probable future transportation system needs in the planning area. Considered in the analyses were the existing and planned land use patterns in the West Bend area; the characteristics of the existing transportation facilities and services of the area; the existing and probable future use of the transportation facilities in the area; and the land use and transportation system development objectives of the City. On the basis of these considerations, the existing and probable future arterial street and highway deficiencies in the area were identified, alternative improvements proposed and evaluated, and a recommended plan developed.

On January 12, 1994, the Advisory Committee completed its careful review of the planning work and recommended the plan set forth in this report to the City Plan Commission and Common Council for consideration and adoption. Such adoption and subsequent implementation of the plan over time should provide the City with the arterial street and highway system necessary to properly serve existing and proposed development in the greater West Bend area to the year 2010.

The Regional Planning Commission is appreciative of the assistance provided by the City through the City Director of Community Development and City Engineer in preparation of this plan. The Commission staff stands ready to assist the City in presenting the recommended plan to the public and to the City Plan Commission and Common Council.

Sincerely,



Kurt W. Bauer
Executive Director

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Chapter I

INTRODUCTION

On April 25, 1991, the City of West Bend requested the Southeastern Wisconsin Regional Planning Commission to prepare a transportation system plan for the City. This report presents that plan. As requested, the plan includes:

- Recommendations for the current and future classification of City streets by function, including arterial, collector, and land access streets;
- Recommendations for needed improvements to the City arterial street system, including identification of major street widenings and new arterial street construction;
- Recommendations for the cross-section and attendant right-of-way width for each segment of arterial street in the City; and
- Recommendations for the level and unit of government which should be responsible for the construction, maintenance, and operation of each segment of street and highway within the City.

Those plan recommendations which should be implemented immediately are identified; the remaining recommendations are staged in five-year increments to the year 2010, consistent with expected needs and financial resources.

The recommended plan is based upon careful analysis of existing and probable future transportation needs in the City and upon evaluation of alternative improvements, including the option of simply maintaining the existing arterial street system in the City. In the evaluation of alternative improvements, the potential implications for land use development were considered, as were the impacts on the efficiency and safety of the City transportation system. Also considered in the evaluation of alternative transportation improvements was the disruption which could be caused by the alternative improvements and the costs attendant to those improvements. The plan was prepared with the assistance of an advisory committee appointed by the Mayor. The membership of this Committee is listed on the inside front cover of this report.

STUDY AREA

The study area considered in this report consists of the geographic area shown on Map 1. The study area is located in north-central Washington County and consists of the City of West Bend and the Town of West Bend, as well as portions of the Towns of Barton, Farmington, and Trenton. The study area encompasses approximately 63.4 square miles. The City of West Bend, based on 1989 corporate limits, comprises about 10.2 square miles, or about 16 percent of the total planning area. The Town of Barton comprises about 13.7 square miles, or about 21 percent of the planning area. The Town of Farmington comprises about 3.1 square miles, or 5 percent of the planning area. The Town of Trenton comprises about 17 square miles, or 27 percent of the planning area. The Town of West Bend comprises about 19.4 square miles, or 31 percent of the planning area.

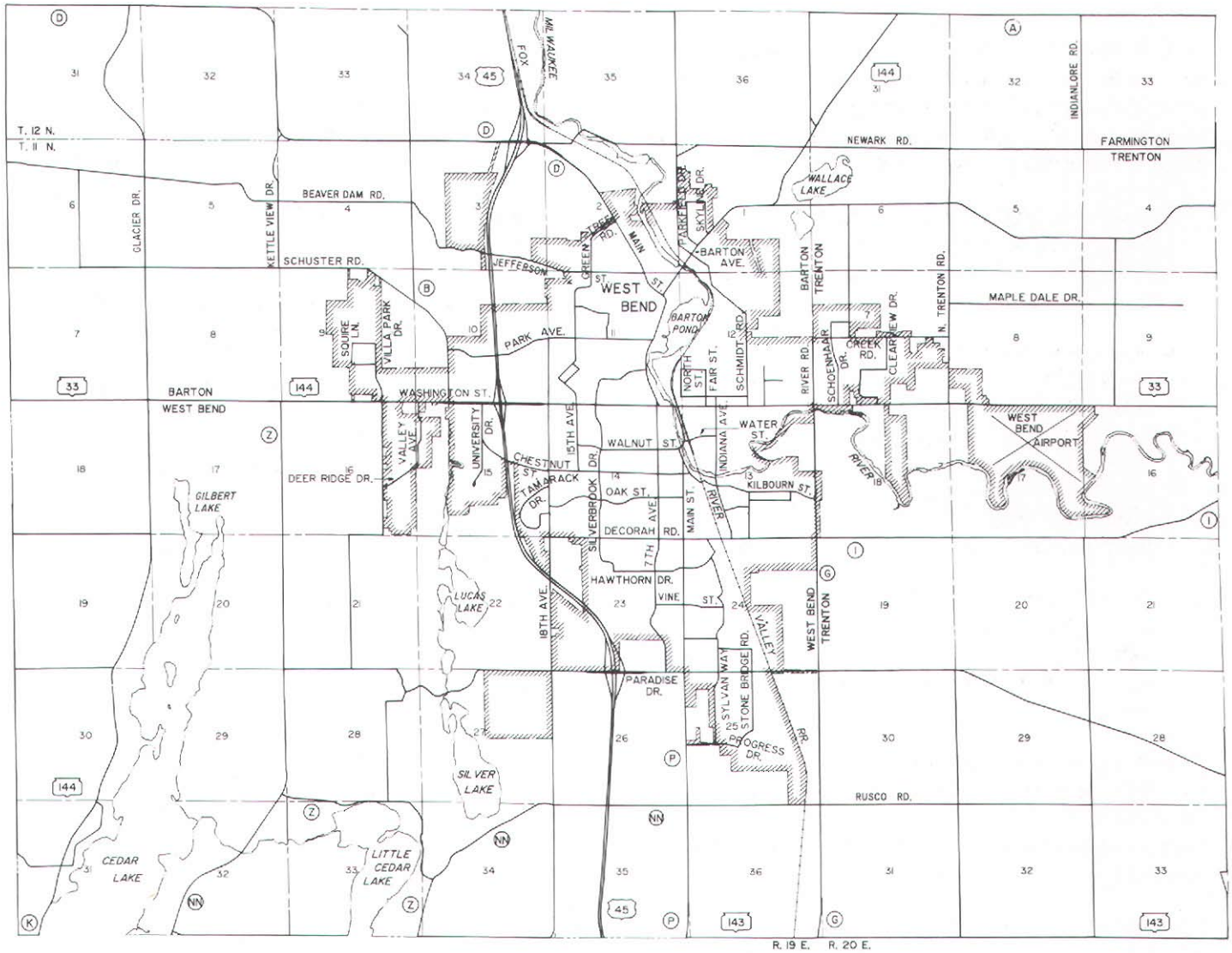
REPORT FORMAT

As already noted, this report presents a recommended transportation system plan for the City of West Bend, together with the salient findings of the studies and analyses on which the plan is based. Following this introductory chapter, Chapter II presents the objectives and standards used in the identification of existing and future transportation deficiencies and also in the design and evaluation of alternative transportation system improvements. The objectives define basic goals which are to be achieved by the City transportation system; the standards provide a quantitative basis on which to relate those objectives to alternative system plans.

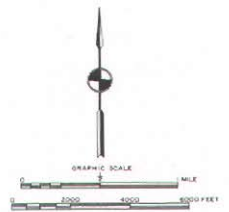
In Chapter III a description of the existing and planned land use development in the study area are briefly described. The historic development of the planning area and the existing land use pattern in the planning area are presented. Historic and probable future population and employment levels are presented, along with planned land use development in the study area. Data on existing and forecast travel habits and patterns, based on existing and planned land uses, are presented.

Map 1

CITY OF WEST BEND TRANSPORTATION PLAN STUDY AREA



Source: SEWRPC.



Chapter IV presents a description of the existing transportation system of the study area. The existing street and highway system is described with respect to functional, jurisdictional, and Federal aid classification; cross-sections of the component facilities; intersection control; speed limits; and railway and school crossings. Mass transit facilities serving the City are also described. Existing and potential future arterial system deficiencies are identified. Current regional, County, and local transportation system plans are briefly described.

Chapter V describes and evaluates alternative transportation improvements designed to abate

the identified existing and anticipated future transportation problems of the study area. Existing average weekday traffic volumes on each arterial street are presented, along with forecasts of probable future average weekday traffic volumes based on planned development for the City and the Southeastern Wisconsin Region.

Chapter VI describes the recommended plan of arterial street improvements for the City planning area. A financial evaluation of the recommended plan is also presented. The final chapter, Chapter VII, presents a summary of the transportation plan and of the findings of the studies on which that plan is based.

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Chapter II

OBJECTIVES, PRINCIPLES, AND STANDARDS

INTRODUCTION

The formulation of objectives is an essential part of any sound planning effort. Objectives guide the preparation of alternative plans and, when converted to specific measures of plan effectiveness, or "standards," provide the structure for comparatively evaluating the alternatives. Because planning objectives provide this basis for plan preparation and selection, the formulation of objectives is a particularly critical, as well as necessary, step in the planning process.

One of the major responsibilities of the Advisory Committee created to guide the City of West Bend planning area transportation study was to assist in the formulation of the necessary transportation system development objectives and supporting principles and standards. The objectives set forth herein were formulated by the Advisory Committee with the assistance of the Commission staff. The objectives represent adaptations of the long-range transportation system development objectives previously adopted by the Southeastern Wisconsin Regional Planning Commission and the advisory committees concerned.¹ The similarities between the City of West Bend planning area transportation system objectives and standards set forth herein and the previously adopted regional transportation system objectives and standards are to be expected, since the objectives, not only for regional transportation systems, but also for a local transportation system, essentially serve to define formally the basic needs which transportation facilities and services should satisfy, such as personal mobility, economic efficiency, and environmental quality.

¹See Chapter II of SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume Two, Alternative and Recommended Plans, May 1978; and Chapter II of SEWRPC Planning Report No. 33, A Primary Transit System Plan for the Milwaukee Area, June 1982.

BASIC CONCEPTS AND DEFINITIONS

The term "objective" is subject to a wide range of interpretation and application and is closely linked to other terms often used in planning work which are also subject to a wide range of interpretation and application. Therefore, in order to provide a common frame of reference, the following definitions have been adopted for use in Commission planning efforts:

1. Objective: A goal or end toward attainment of which plans and policies are directed.
2. Principle: A fundamental, primary, or generally accepted tenet used to support objectives and prepare standards and plans.
3. Standard: A criterion used as a basis of comparison to determine the adequacy of plan proposals to attain objectives.
4. Plan: A design which seeks to achieve agreed-upon objectives.

OBJECTIVES

The following City of West Bend transportation system objectives have been adopted by the Advisory Committee to this study after careful review:

1. A transportation system which, through its location, capacity, and design will effectively serve at an adequate level of service the existing and future development within the City of West Bend planning area.
2. A transportation system which is economical and efficient, satisfying all other objectives at the lowest possible cost.
3. A transportation system which minimizes the disruption of existing neighborhood and community development, minimizes adverse effects upon the property tax base, and minimizes the deterioration and/or destruction of the natural resource base.

4. A transportation system with a high aesthetic quality whose major facilities will possess the proper visual relation to the landscape.

PRINCIPLES AND STANDARDS

Complementing each of the foregoing objectives is a planning principle and a set of planning standards. Each set of standards is directly related to the planning principle and to the objective, serving to facilitate quantitative application of the objectives in plan design, test, and evaluation. The planning principle, moreover, supports each specific objective by asserting its validity.

The planning standards adopted herein fall into two groups: comparative and absolute. The comparative standards, by virtue of their nature, are applied in the comparison and evaluation of alternative plan proposals. The absolute standards are applied individually to each alternative plan proposal and are expressed in terms of minimum or desirable values. Table 1 sets forth the objectives, the supporting planning principles, and the associated comparative and absolute standards.

OVERRIDING CONSIDERATIONS

In the application of the planning standards and in the preparation of alternative City transportation system plans, several overriding considerations must be recognized. First, it must be recognized that an overall evaluation of the alternative plans must be made on the basis of cost. Such analysis may show that the attainment of one or more of the objectives or supporting standards is beyond the economic capability of the units of government within the planning area and, therefore, cannot be met practically and must be either reduced or eliminated.

Second, it must be recognized that it is unlikely that any one alternative plan proposal will meet all the objectives and standards completely. To the extent to which each objective and standard is met, exceeded, or violated must serve as a measure of the ability of each alternative plan to achieve the objective. Third, it must be recognized that certain objectives and standards may conflict, requiring resolution through compromise, and that meaningful plan evaluation may take place only through a comprehensive assessment of each of the alternative plans against all the objectives and standards.

SUMMARY

This chapter has presented a set of transportation system development objectives, principles, and standards for the City of West Bend planning area developed by the Advisory Committee as a guide to the preparation and evaluation of alternative transportation system plans for the planning area. The four objectives have been developed within the context of the regional transportation system plan objectives, principles, and standards previously adopted by the Regional Planning Commission.

The standards which support the four objectives provide important guidelines for subsequent planning area transportation system planning efforts, facility design efforts, and related plan implementation efforts. This chapter thus documents the guiding objectives and supporting standards which the recommended City of West Bend planning area transportation system plan is intended to meet, and the criteria by which the implementation policies and programs can be designed to carry out the plan recommendations and ensure compatibility and consistency between transportation system improvements and land use development and redevelopment in the City of West Bend planning area.

Table 1

**CITY OF WEST BEND PLANNING AREA TRANSPORTATION SYSTEM
DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS**

OBJECTIVE NO. 1

A transportation system which, through its location, capacity, and design, will effectively serve at an adequate level of service the existing and planned future land use pattern of the planning area.

PRINCIPLE

To support the everyday activities of business, shopping, and other activities, a transportation system which provides for reasonably fast, safe, and convenient travel is essential. Travel indirection, accidents, congestion, and a lack of public transit facilities and services may increase the cost of transportation, which could adversely affect the relative market advantage of businesses and industries and the attractiveness of supporting residential and business development. An inadequate street system can result in the diversion of through traffic to local streets, which can substantially affect the attractiveness and traffic safety within residential neighborhoods.

STANDARDS

1. Arterial streets and highways should be provided at intervals of no more than one-half mile in each direction in urban medium-high-density and high-density areas; at intervals of no more than one mile in each direction in medium density areas; at intervals of no more than two miles in each direction in urban suburban-density areas; and at intervals of no less than two miles in each direction in rural areas.^a
2. Arterial street routings in urban portions of the planning area should be direct and understandable.
3. Arterial streets and highways should be located and designed so that the traffic volumes they carry do not exceed their design capacity. An arterial street or highway operating over design capacity will cause substantial delays at intersections and significantly restrict lane changing and passing maneuvers. In addition, the potential for accidents is increased on arterials carrying traffic volumes over design capacity.

OBJECTIVE NO. 2

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

PRINCIPLE

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

STANDARDS

1. The sum of transportation system capital, operating, and maintenance costs should be minimized.
2. The direct benefits derived from transportation improvements should exceed the direct costs of such improvements.

OBJECTIVE NO. 3

A transportation system which minimizes disruption of existing neighborhood and community development, minimizes adverse effects upon the property-tax base, and minimizes the deterioration and/or destruction of the natural resource base.

PRINCIPLE

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

Table 1 (continued)

STANDARDS

1. The penetration of neighborhood units and of neighborhood facility service areas by arterial streets and highways and major mass transit routes should be minimized.
2. The dislocation of households, businesses, industries, and public and institutional buildings as caused by the reconstruction of existing or the construction of new transportation facilities and terminals should be minimized.
3. The location of transportation facilities in or through primary environmental corridors should be minimized.
4. The total amount of land used for transportation and terminal facilities should be minimized.
5. The reduction of the property-tax base as caused by the reconstruction of existing or the construction of new transportation facilities and terminals should be minimized.
6. The destruction of historic buildings and of historic, scenic, and cultural sites as caused by the reconstruction of existing or the construction of planned transportation facilities and terminals should be minimized.
7. The transportation system should be located and designed so as to minimize the exposure of the planning area population to unacceptable noise levels.
8. The amount of energy used in operating the transportation system, particularly the petroleum-based fuels, should be minimized.

OBJECTIVE NO. 4

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

PRINCIPLE

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

STANDARDS

1. Transportation facility construction plans should be developed using sound geometric, structural, and landscape design standards which consider the aesthetic quality of the transportation facilities and the areas through which they pass.
2. Transportation facilities should be located to avoid destruction of visually pleasing buildings, structures, or natural features and to avoid interference with vistas to such features.

^aThe definition of density for residential development is as follows:

<i>High-Density</i>	<i>11.0-15.0 housing units per net residential acre (multi-family dwelling units);</i>
<i>Medium-High-Density</i>	<i>6.1 to 10.9 housing units per net residential acre (two- and multi-family dwelling units);</i>
<i>Medium-Density</i>	<i>2.3 to 6.9 housing units per net residential acre (for example, an area with single-family homes on 65-by-100 foot to 100-by-200 foot lots)</i>
<i>Low-Density</i>	<i>0.7 to 2.2 housing units per net residential acre (for example, an area with single-family homes on lots of one-half to one-and-one-half acres);</i>
<i>Suburban-Density</i>	<i>0.2 to 0.6 housing units per net residential acre (for example, with single-family homes on lots of one-and-one-half to five acres).</i>

Source: SEWRPC.

Chapter III

EXISTING AND PLANNED LAND USE DEVELOPMENT

INTRODUCTION

This chapter describes the existing and anticipated future development of the City of West Bend planning area as it is pertinent to transportation system planning and development. The existing development within the City of West Bend largely establishes the current transportation needs of the City. The existing and future development of the City together largely establish the anticipated future transportation needs. This chapter begins with a brief description of the historic development of the City of West Bend planning area. A description of the existing land uses within the planning area follows, along with a summary of existing and historic population and employment levels within the City and within the City planning area. Finally, after population, employment, and land use demand forecasts have been presented, the land use plan for the City planning area is described.

HISTORIC GROWTH OF THE WEST BEND AREA

The pattern of urban growth in the West Bend study area from 1850 through 1990 is depicted on Map 2. From 1850 to 1950, urban development in the study area occurred largely in relatively tight, generally concentric, rings emanating outward from the central portion of the City of West Bend and the Village of Barton. During the 1950s changes occurred in the pattern of development in the area as urban development started becoming discontinuous and diffused, occurring in scattered enclaves throughout the surrounding rural areas in the Towns of Barton, Trenton, and West Bend. In 1961 the Village of Barton and the City of West Bend consolidated. Since 1960, development and urbanization in the study area have continued in a scattered pattern, especially since the mid-1970s.

EXISTING LAND USE DEVELOPMENT

The existing land use development in the City of West Bend planning area as of 1990 is shown on Map 3 and summarized in Table 2. The planning area consists of 40,591 acres, or

approximately 63.4 square miles. Of this total area, about 8,768 acres, or about 21.6 percent, were in urban uses: residential, commercial, industrial, institutional, recreational, transportation, and utilities. The remaining 31,823 acres, or approximately 78.4 percent, were in rural uses: agriculture and agriculture-related open lands, woodlands, wetlands, extractive and landfill, and surface water.

Most of the developed lands within the City planning area were being used for residential purposes. In 1990 residential land use in the planning area accounted for approximately 48 percent of the developed urban area, but only about 9 percent of the total planning area.

Commercial land use in the planning area generally consists of retail and wholesale commercial establishments. In 1990 there were 363 acres of land in commercial land use. Although the total acreage devoted to commercial land uses represents only about 4 percent of the total land area in urban uses and less than 1 percent of the total planning area, most of the commercial needs of residents within the planning area are being met by commercial facilities located there.

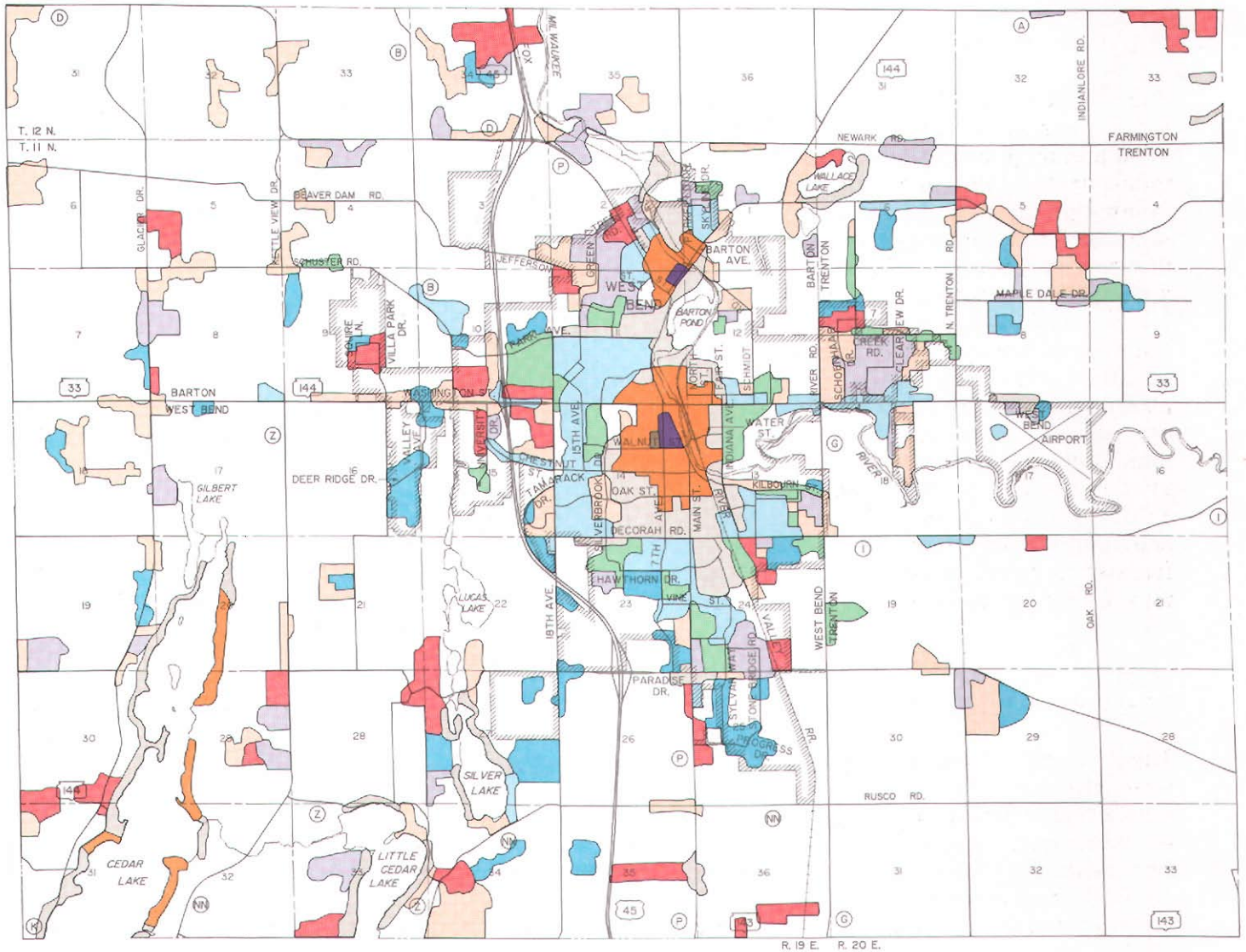
In 1990 industrial land uses occupied approximately 303 acres, or less than 4 percent of the urban land uses within the planning area and less than 1 percent of the total. Generally, this industrial land use acreage is concentrated within the central city of the City of West Bend or within the City of West Bend Industrial Park East and Industrial Park South.

Governmental and institutional land uses include governmental offices and facilities at all levels, churches and related facilities, and educational facilities. In 1990 such land uses accounted for 468 acres, about 5 percent of the urban land uses within the planning area and about 1 percent of the total planning area.

In 1990 recreational land uses accounted for 504 acres, or about 7 percent of the urban land uses within the planning area and about 1 percent of the total planning area. This acreage represents only those publicly owned lands presently improved for recreational use.

Map 2

HISTORIC URBAN GROWTH IN THE WEST BEND STUDY AREA: 1850-1990



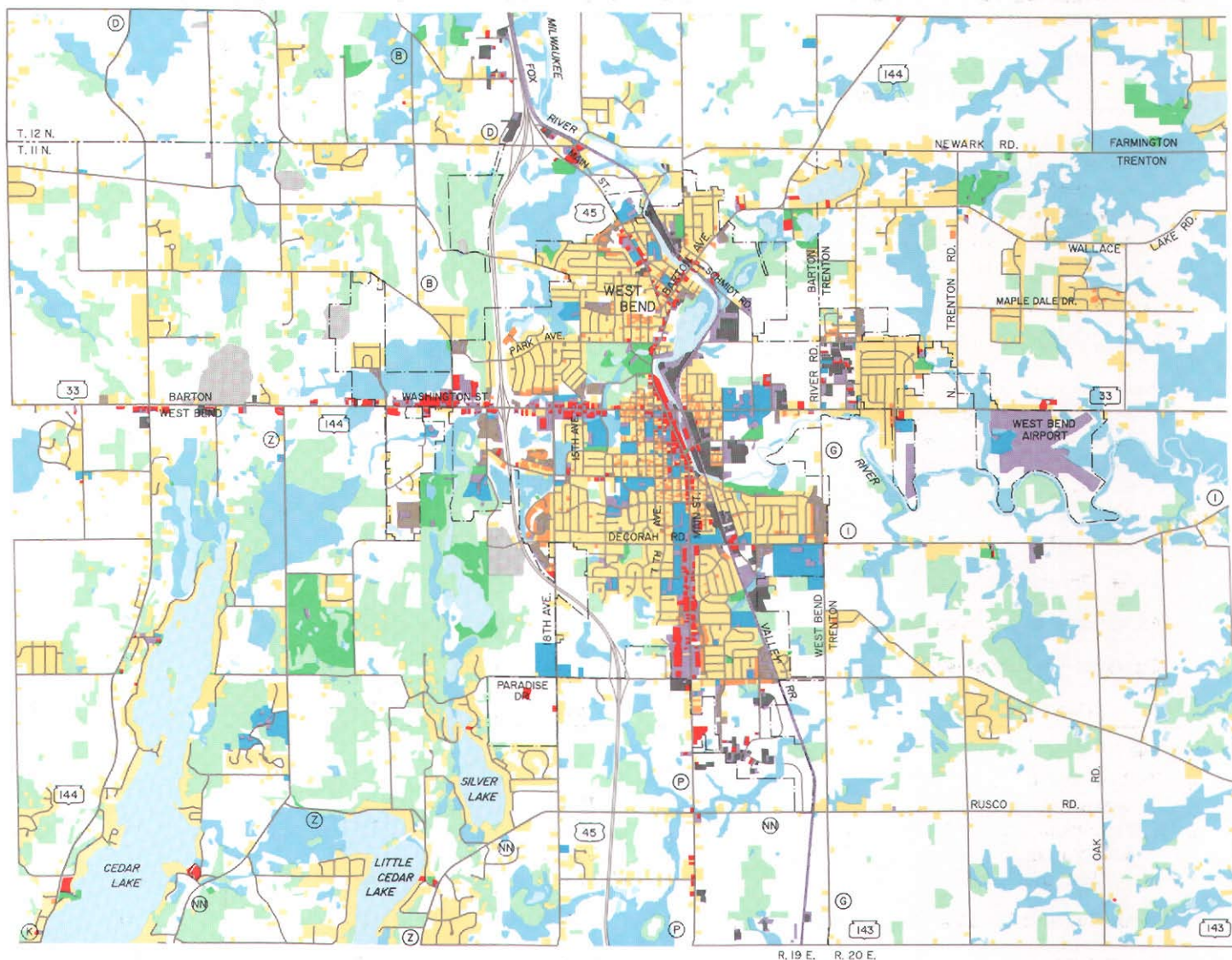
LEGEND

1850	1964 - 1970
1851 - 1880	1971 - 1975
1881 - 1920	1976 - 1980
1921 - 1950	1981 - 1985
1951 - 1963	1986 - 1990










Source: SEWRPC.

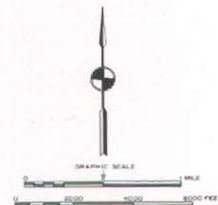
Map 3

LAND USE IN THE WEST BEND STUDY AREA: 1990



LEGEND

- | | |
|---|---|
|  SINGLE-FAMILY RESIDENTIAL |  GOVERNMENTAL AND INSTITUTIONAL |
|  TWO-FAMILY RESIDENTIAL |  RECREATIONAL |
|  MULTI-FAMILY RESIDENTIAL |  WETLANDS |
|  COMMERCIAL |  WOODLANDS |
|  INDUSTRIAL |  WATER |
|  EXTRACTIVE AND LANDFILL |  AGRICULTURAL AND OTHER OPEN LANDS |
|  TRANSPORTATION, COMMUNICATIONS AND UTILITIES | |



Source: SEWRPC.

Table 2

SUMMARY OF EXISTING LAND USE IN THE CITY OF WEST BEND PLANNING AREA: 1990

Land Use Category	Number of Acres	Percent of Subtotal Urban and Rural	Percent of Total
Urban			
Residential			
Single-Family	3,833.3	43.7	9.4
Two-Family	170.9	2.0	0.4
Multi-Family	199.3	2.3	0.5
Subtotal	4,203.5	48.0	10.3
Commercial	362.6	4.1	0.9
Industrial	303.0	3.5	0.8
Transportation and Utilities			
Arterial Streets and Highways	796.6	9.1	2.0
Local and Collector Streets	1,414.7	16.1	3.5
Truck and Bus Terminals	18.0	0.2	^a
Railways	90.5	1.0	0.2
Airports	155.2	1.8	0.4
Subtotal	2,564.9	28.2	6.1
Urban Open Lands	362.0	4.1	0.9
Governmental and Institutional	467.8	5.3	1.2
Parks and Recreational ^b	503.9	6.8	1.5
Urban Subtotal	8,767.7	100.0	21.6
Rural			
Natural Areas			
Water	1,795.5	5.6	4.4
Wetlands	4,692.3	14.7	11.6
Woodlands	4,204.5	13.2	10.4
Subtotal	10,692.3	33.5	26.4
Extractive and Landfill	200.2	0.6	0.5
Agricultural	18,338.4	57.6	45.2
Other Open Lands	2,592.3	8.2	6.4
Rural Subtotal	31,823.2	100.0	78.4
Total	40,590.9	--	100.0

^aLess than 0.5 percent.

^bIncludes only areas used for intensive outdoor recreational activities.

Source: SEWRPC.

Transportation utility land uses include lands devoted to streets, highways, railway rights-of-way, airports, and major electric power transmission rights-of-way. In 1990 these land uses accounted for about 2,565 acres, or approximately 6 percent of the total planning area and approximately 28 percent of all urban development. Arterial streets and highways accounted for 797 acres, or about 9 percent of the urban land uses and about 2 percent of the total planning area in 1990.

The agricultural and agriculture-related open lands category includes all crop lands, pasture lands, orchards, nurseries, and fallow and fur farms, as well as unused lands at the fringes of developing areas. Sites of farm dwelling were classified as residential urban land use and were assigned a site area of 20,000 square feet; they were thus excluded from the agricultural land use category. All other farm buildings have been included in the agricultural land use category. In 1990 agricultural and related open lands in the planning area totaled 18,338 acres, or approximately 45 percent of all lands in the planning area, and about 58 percent of the rural land uses.

The area within the planning area in woodlands, surface water, and wetlands in 1990 occupied a total of 10,692 acres, or about 26 percent of the total planning area, and about 34 percent of the rural land uses. The remaining area within the planning area, other open lands or unused lands, landfills, and extractive uses such as quarries, totaled 2,792 acres, or about 9 percent of the rural land uses and about 7 percent of the total planning area.

EXISTING POPULATION AND EMPLOYMENT

Table 3 presents historic and existing levels of population, households, and employment in the City of West Bend planning area. Over the past two decades, the population in the City of West Bend planning area increased, at an average annual rate of about 2.1 percent, to 33,700 people in 1990.¹ The number of households increased, at an average annual rate of 2.4 percent, to a

level of 12,325 households in 1990. Employment in the City of West Bend planning area increased, at an average annual rate of about 1.6 percent over the past decade, to a level of about 15,000 jobs in 1990.

FUTURE LAND USE PLAN AND POPULATION AND EMPLOYMENT LEVELS

The alternative future scenario selected by the City of West Bend as the basis for the formulation of the land use plan for the City of West Bend planning area anticipated the same level of employment as the intermediate-growth centralized scenario in the adopted regional land use plan for the design year 2010. Forecast levels of population and households for the planning area under the City's land use plan modestly exceeded the levels anticipated under the adopted regional plan: 35,000 versus 32,050 and 13,800 versus 12,370, respectively. This scenario was believed to best represent the future with respect to growth and development in the planning area. Table 4 indicates the future levels of population, household, and employment which would be accommodated in the City of West Bend planning area for the design year 2010, as well as the levels which would be accommodated in Washington County and in the Southeastern Wisconsin Region.

A land use plan for the City of West Bend planning area was published in July 1992; it will accommodate the anticipated growth in population and employment within the area. To accommodate this growth, it is estimated that approximately 2,596 gross acres will be converted from rural land uses to urban land uses by the year 2010, an annual rate of less than 1 percent of the total study area.² The land use plan for the City of West Bend planning area envisions the conversion of approximately 1,498 acres of existing rural land uses to residential land use between 1990 and the year 2010, an increase of about 33 percent. The envisioned amount of future growth in commercial and industrial development between 1990 and the year 2010 may be expected to result in the

¹Based on U. S. Bureau of the Census data as reported in March 1991.

²By definition, a gross acre includes the land devoted to transportation uses, including parking.

Table 3

**CITY OF WEST BEND PLANNING AREA HISTORIC POPULATION,
HOUSEHOLDS, AND EMPLOYMENT: 1960, 1970, 1980, AND 1990**

Area	1960	1970 ^a	1980	1990	Historic Average Annual Rate of Growth to 1990 (percent)
City of West Bend					
Population	9,969	16,555	21,484	23,916	3.0
Households	2,926	4,807	7,293	8,898 ^b	3.8
Employment	--	10,456	12,722	15,000 ^b	2.0
City of West Bend Planning Area					
Population	14,500	22,378	30,057	33,700	2.9
Households	4,100 ^b	6,335	9,728	12,325 ^b	3.7
Employment	--	11,212	14,441	17,200 ^b	2.4
Washington County					
Population	46,119	63,839	84,848	95,328	2.4
Households	12,500	18,692	28,363	32,977 ^b	3.3
Employment	14,500	23,100	31,800	41,800	3.6
Southeastern Wisconsin Region					
Population	1,573,614	1,756,083	1,764,919	1,810,364	0.5
Households	465,900	566,756	664,973	676,107	1.2
Employment	647,900	753,700	884,200	990,300	1.4

^aEstimates of employment are for the year 1972.

^bEstimated.

Source: SEWRPC.

Table 4

**CITY OF WEST BEND PLANNING AREA POPULATION,
HOUSEHOLDS, AND EMPLOYMENT: EXISTING 1990 AND PLANNED 2010**

Area	1990	City of West Bend Land Use Plan: 2010	Forecast Average Annual Rate of Growth 1990 to 2010 (percent)
City of West Bend			
Population	23,916	35,000	1.9
Households	8,898 ^a	13,800	2.2
Employment	15,000 ^a	19,900	1.4
City of West Bend Planning Area			
Population	33,700	41,400	1.0
Households	12,325 ^a	15,800	1.2
Employment	17,200 ^a	21,200	1.1
Washington County			
Population	95,328	111,700	0.8
Households	32,977 ^a	41,600	1.2
Employment	41,800	47,900	0.7
Southeastern Wisconsin Region			
Population	1,810,364	1,911,000	0.3
Households	676,107	774,300	0.7
Employment	990,300	1,095,000	0.5

^aEstimated.

Source: SEWRPC.

conversion of an additional 62 and 464 acres, respectively, or increases of 13 percent and 147 percent, respectively. The remaining 572 acres envisioned to be converted from rural land uses are expected to be allocated between governmental and institutional, 156 acres, and park and recreational, 416 acres, land uses. The increase in governmental and institutional land uses would be about 30 percent and the increase in park and recreational land uses would be about 101 percent. The anticipated growth in the City of West Bend planning area is based upon the area experiencing modestly more rapid growth than the seven-county Southeastern Wisconsin Region. The anticipated growth in the City of West Bend planning area is also consistent with the regional land use plan for Southeastern Wisconsin, which envisions only moderate growth in the Region and proposes a centralized land use pattern, with new urban growth generation occurring at medium densities along the full periphery of, and outward from, existing urban centers.

Map 4 displays the manner in which future residential, commercial, and industrial land use demand would be accommodated within the City of West Bend planning area under the recently completed land use plan for the year 2010. The plan proposes an arrangement and intensity of land use which are attractive and environmentally sensitive and efficient. The plan recommends that intensive urban development be permitted only in those areas which are covered by soils suitable for such development, which are not subject to special hazards such as flooding, and which can be efficiently served by centralized municipal facilities, including public sanitary sewer and water supply. The land use plan also recommends that intensive urban development not be permitted in the primary environmental corridors of the planning area, which contain the best remaining elements of the planning area's woodlands, wetlands, wildlife habitat areas, groundwater recharge and discharge areas, and areas with recreational and scenic value. The plan also recommends that intensive urban development not be permitted in the most productive farmland units remaining within the City's planning area. Finally, the plan recommends that land uses which are compatible, such as residential and neighborhood commercial facilities and services, be located in proximity to each other, but that land

uses such as residential and industrial, which are incompatible, be isolated from each other.

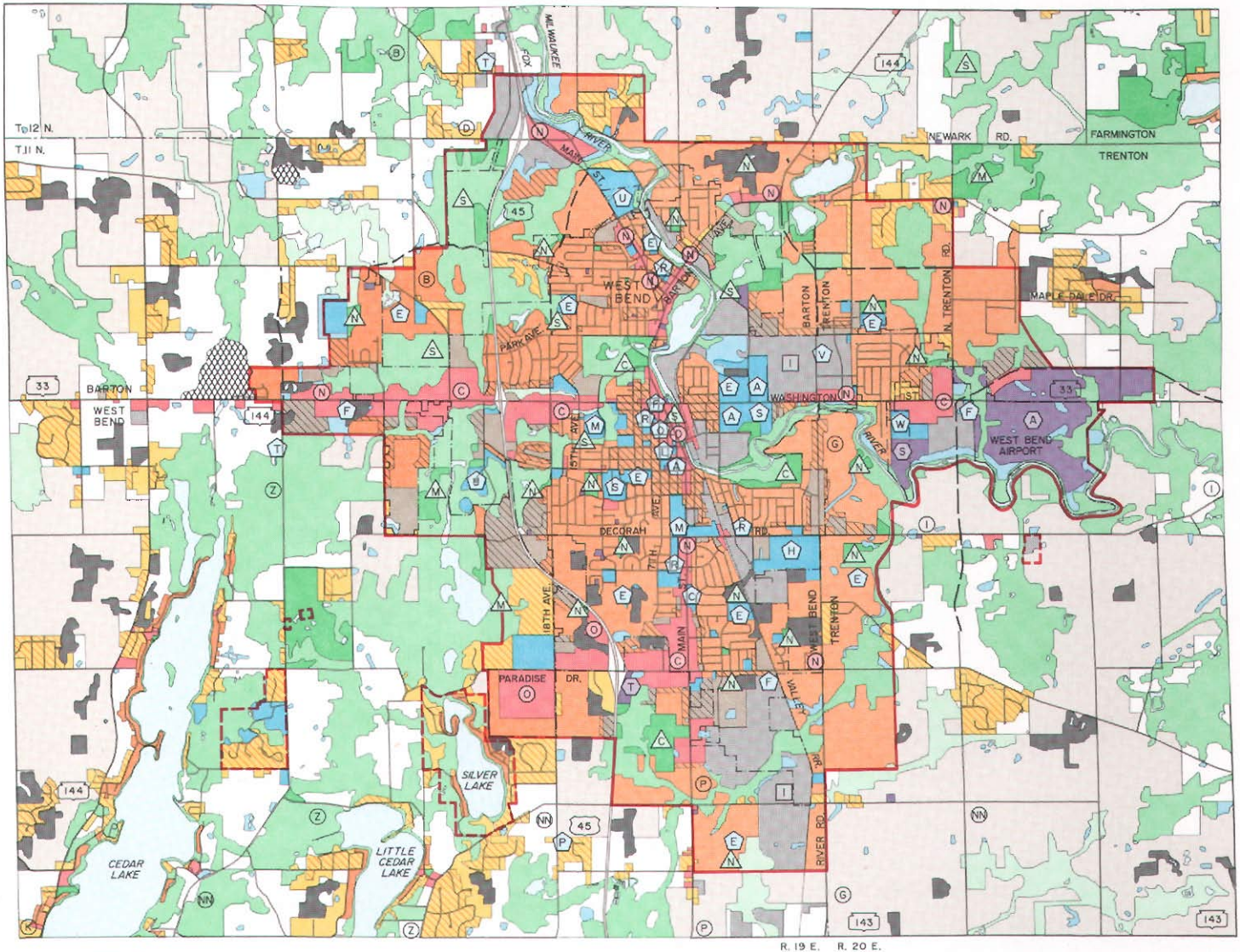
Because of the spatial distributions of lands currently developed and lands recommended by the recently adopted City of West Bend year 2010 land use plan to remain open or undeveloped, the majority of new development within the urban services boundary may be expected to occur south of Decorah Road or east of River Road, as shown in Map 5. The resulting contiguous area of development within the planning area would permit the most economical provision of community utilities and services, and an integrated pattern of arterial streets to serve it. Further information on this land use plan is available in SEWRPC Community Assistance Planning Report No. 167, A Land Use Plan for the City of West Bend: 2010.

TRAFFIC PATTERNS

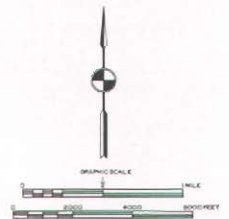
The transportation system of a community should efficiently serve the patterns of traffic within the community, between the community and surrounding communities, and through the community. Existing traffic patterns may be used to identify deficiencies in the existing transportation system; anticipated future traffic patterns may be used to design a transportation system plan to serve those patterns efficiently.

An analysis was made, based on Commission travel simulation model applications, of the total vehicle trip types which occur in the City of West Bend planning area. Vehicle trip types may be classified as internal trips, with both origin and destination within the planning area; internal/external trips, with either origin or destination, but not both, within the planning area; and through trips, which pass through the planning area and which originate and are destined for areas outside that area. As indicated in Figure 1, a total of 108,600 vehicle trips were made in the planning area on an average weekday in 1990. Of this total, approximately 55,000, or 51 percent, were internal trips; 45,600, or 42 percent, were internal/external trips; and the remaining 8,000, or 7 percent, were through trips. Therefore, about 93 percent of the vehicular traffic using the arterial street and highway system in the planning area on an average weekday in 1990 either originated within, or was destined for, the planning area.

**EXPECTED PATTERNS OF RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL
DEVELOPMENT WITHIN THE CITY OF WEST BEND PLANNING AREA TO THE DESIGN YEAR 2010**

**LEGEND**

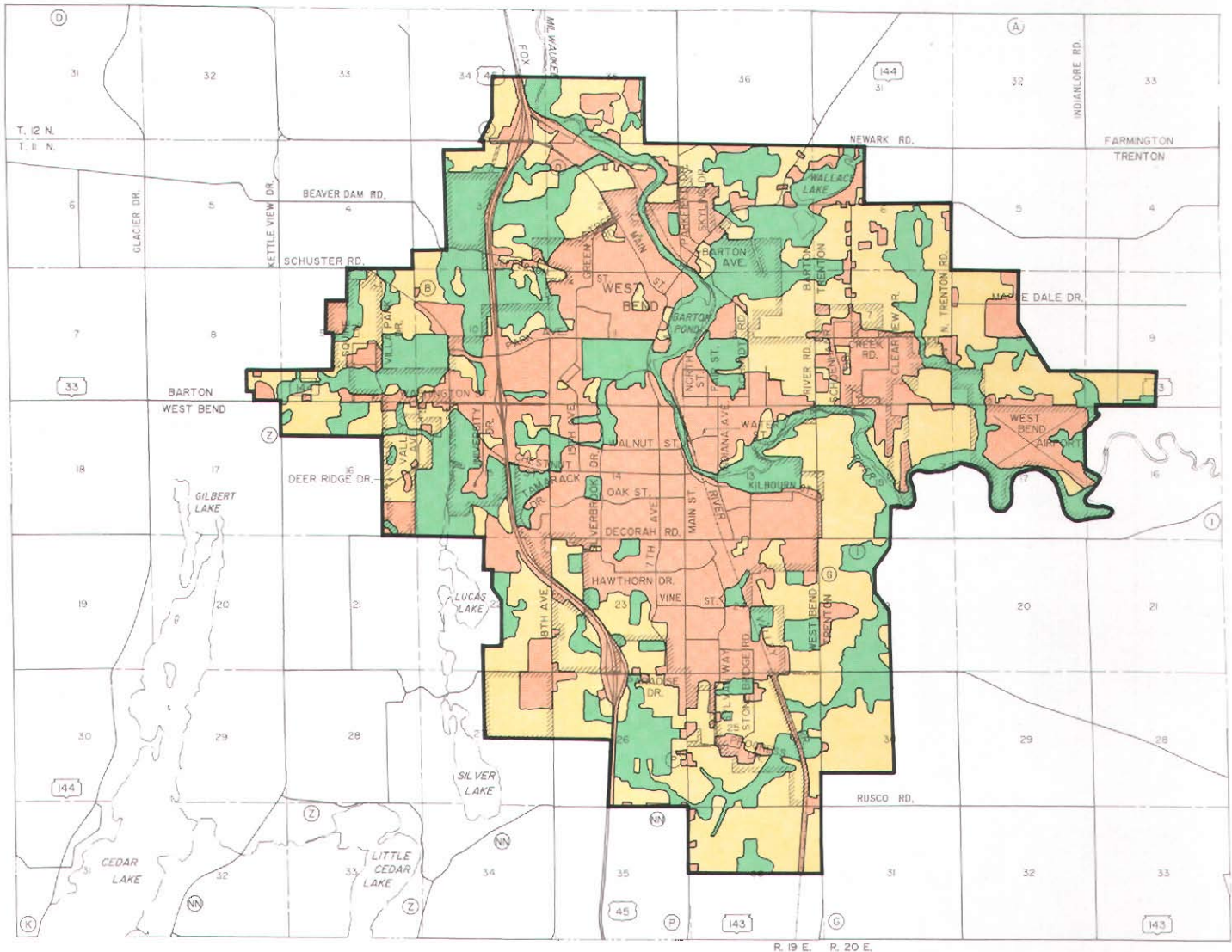
- | | | |
|--|--|---|
| — URBAN SERVICE AREA BOUNDARY | TRANSPORTATION, COMMUNICATIONS, AND UTILITIES | PRIMARY ENVIRONMENTAL CORRIDOR |
| - - - SPECIAL SANITARY SEWER SERVICE AREAS | A AIRPORT | SECONDARY ENVIRONMENTAL CORRIDOR |
| — PROPOSED ARTERIAL STREET | T TRANSIT STATION | ISOLATED NATURAL AREA |
| SINGLE-FAMILY SUBURBAN
RESIDENTIAL (1.5 TO 4.9 ACRE LOTS) | S SEWAGE TREATMENT PLANT | OTHER OPEN LANDS TO BE PRESERVED |
| SINGLE-FAMILY LOW DENSITY RESIDENTIAL
(20,000- TO 65,399- SQUARE-FOOT LOTS) | GOVERNMENTAL AND INSTITUTIONAL | PRIME AGRICULTURAL LANDS |
| SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL
(7,200- TO 19,999- SQUARE-FOOT LOTS) | C CITY HALL AND POLICE DEPARTMENT | RURAL ESTATE AND OTHER AGRICULTURAL AND
OPEN LANDS |
| TWO-FAMILY RESIDENTIAL DEVELOPMENT
(6 TO 10.9 DWELLING UNITS PER NET RESIDENTIAL
ACRE) | A COUNTY ADMINISTRATIVE OFFICES | WATER |
| MULTI-FAMILY MEDIUM-HIGH DENSITY
RESIDENTIAL (6.1 TO 10.9 DWELLING
UNITS PER NET RESIDENTIAL ACRE) | T TOWN HALL | |
| MULTI-FAMILY HIGH DENSITY RESIDENTIAL (11.0
TO 15.0 DWELLING UNITS PER NET RESIDENTIAL ACRE) | L LIBRARY | |
| COMMERCIAL DEVELOPMENT | F FIRE STATION | |
| D CENTRAL BUSINESS DISTRICT | W PUBLIC WORK FACILITIES | |
| C COMMUNITY RETAIL AND SERVICE CENTER | V VEHICLE EMISSIONS TESTING STATION | |
| N NEIGHBORHOOD RETAIL AND SERVICE CENTER | O POST OFFICE | |
| O OFFICE CENTER | S HOSPITAL | |
| QUARRYING AND EXTRACTIVE DEVELOPMENT | P PUBLIC PRE-SCHOOL | |
| INDUSTRIAL DEVELOPMENT | E PUBLIC ELEMENTARY SCHOOL | |
| I INDUSTRIAL PARK | M PUBLIC MIDDLE SCHOOL | |
| | H PUBLIC HIGH SCHOOL | |
| | R PRIVATE SCHOOL | |
| | U COLLEGE | |
| | PARKS AND RECREATION | |
| | M MAJOR PARK | |
| | C COMMUNITY PARK | |
| | N NEIGHBORHOOD PARK | |
| | S SPECIAL OUTDOOR RECREATION AND
OTHER OPEN SPACE SITES | |



Source: SEWRPC.

Map 5

**GENERALIZED EXISTING 1990 AND DESIGN YEAR 2010 AND BEYOND
DEVELOPED LANDS AND OPEN LANDS WITHIN THE CITY OF WEST BEND URBAN
SERVICE AREA AS DEFINED BY THE ADOPTED CITY OF WEST BEND LAND USE PLAN**

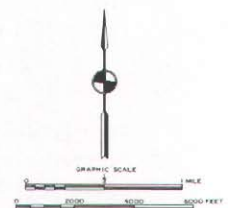


LEGEND

— 2010 URBAN SERVICE AREA BOUNDARY

GENERALIZED LAND USE PATTERNS

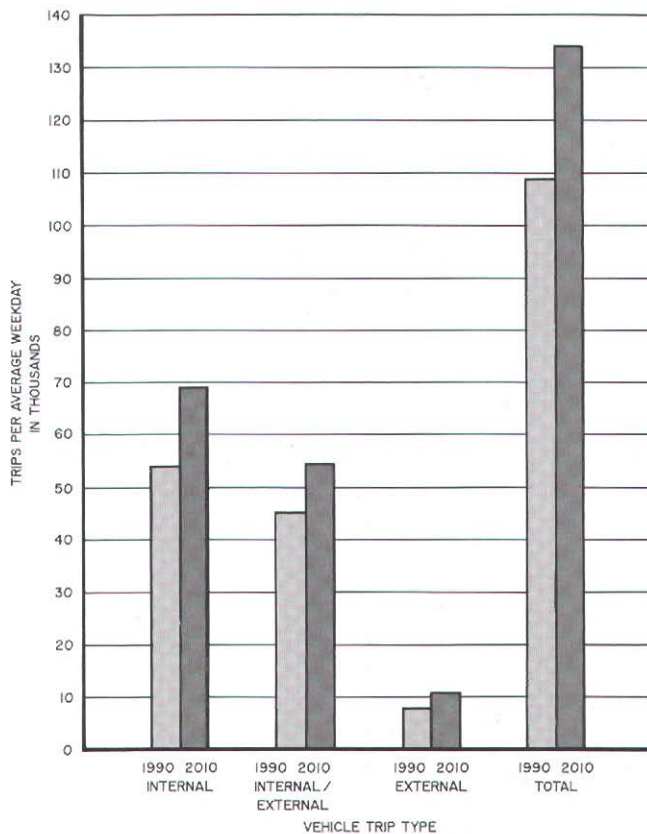
- EXISTING 1990 DEVELOPED LANDS
- ADDITIONAL LANDS ANTICIPATED TO BE DEVELOPED BY THE DESIGN YEAR 2010 UNDER THE ADOPTED CITY OF WEST BEND LAND USE PLAN
- OPEN LANDS--PRIMARY AND SECONDARY ENVIRONMENTAL CORRIDORS, ISOLATED NATURAL AREAS, AND SELECTED OTHER EXISTING OPEN LANDS--RECOMMENDED TO BE RETAINED IN A NATURAL STATE UNDER THE ADOPTED CITY OF WEST BEND LAND USE PLAN



Source: SEWRPC.

Figure 1

**DISTRIBUTION OF TOTAL
VEHICLE TRIPS OCCURRING IN THE CITY
OF WEST BEND PLANNING AREA ON AN
AVERAGE WEEKDAY: 1990 AND 2010**



Source: SEWRPC.

As shown in Figure 1, by the forecast design year 2010 a total of 134,300 vehicle trips may be expected in the City of West Bend planning area. Of this total, about 69,200, or 52 percent, may be expected to be internal trips, an increase of 26 percent over 1990. Approximately 54,100 trips, or 40 percent, may be expected to be internal/external trips, an increase of 19 percent; and the remaining 11,000 trips, or 8 percent, may be expected to be through trips, an increase of 38 percent over 1990. Therefore, about 92 percent of the forecast design year 2010 average weekday vehicular traffic using the arterial street and highway system in the planning area will either originate within, or be destined for, the planning area, compared to 93 percent in 1990.

SUMMARY AND CONCLUSIONS

The historic pattern of urban development in the City of West Bend planning area reflects the pattern of urban development which has occurred throughout the Southeastern Wisconsin Region. Over the 100-year period from 1850 to 1950, urban development in the study area occurred in relatively tight, generally concentric, rings emanating outward from the central portion of the City of West Bend and the Village of Barton. During the 1950s changes occurred in the pattern of development in the area as urban development became discontinuous and diffuse, occurring in scattered enclaves throughout the surrounding rural areas in the Towns of Barton, Trenton, and West Bend. This scattered pattern of urbanization has been marked by lower overall population densities, a diffusion of both commercial and residential development, and increased use of shopping and service establishments outside the downtown area.

Over the past two decades the levels of population, households, and employment in the City of West Bend planning area have increased at a much faster rate than those in Washington County and in the seven-county Southeastern Wisconsin Region. Between 1960 and 1990 the population of the planning area increased, at an average annual rate of about 2.9 percent, to about 33,700 people in 1990. The number of households increased, at an average annual rate of 3.7 percent, to a level of 12,325 households in 1990. Employment in the City planning area increased, at an average annual rate of about 2.4 percent, to a level of about 17,200 jobs in 1990. By way of comparison, over the past three decades the growth rates in population, households, and employment have been under 3.7 percent in Washington County and under 1.5 percent in the seven-county Southeastern Wisconsin Region.

The recently completed land use plan for the City of West Bend planning area for the year 2010 envisions accommodating modest growth in population and employment. The land use plan envisions the conversion of about 2,596 acres of existing rural land uses to urban land uses in the planning area between 1990 and 2010. Of the 2,596 acres expected to be converted, 1,498 acres is envisioned to be for residential land uses, 62 acres of commercial development, 464 acres of industrial development, 156 acres of governmen-

tal and institutional development, and 416 acres of park and recreational development.

Because of the spatial distribution of lands currently developed and lands recommended to remain open or undeveloped by the recently adopted City of West Bend year 2010 land use plan, the majority of new development within the urban service area boundaries may be expected to occur south of Decorah Road or east of River Road, as shown in Map 5. The resulting contiguous area of development would permit the most economical provision of community utilities and services and an integrated pattern of arterial streets to serve it.

In 1990, an estimated 108,600 total vehicle trips were made on the arterial street and highway

system in the City of West Bend planning area. Of the 108,600 total vehicle trips, 55,000 trips, or 51 percent, were internal trips; 45,600 trips, or 42 percent, were internal/external trips; and 8,000 trips, or 7 percent, were through trips. By the forecast design year 2010 the total number of vehicle trips on the arterial street and highway system may be expected to be approximately 134,300, an increase of about 24 percent over the 1990 level. The number of internal trips may be expected to increase by about 26 percent to 69,200 trips, the number of internal/external trips may be expected to increase by about 19 percent to 54,100 trips, and the number of through trips is expected to increase to 11,000 trips, or 38 percent.

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Chapter IV

EXISTING TRANSPORTATION SYSTEM

INTRODUCTION

This chapter describes the existing transportation system in the West Bend planning area. A functional classification of the streets and highways in the planning area is presented, together with a classification according to jurisdictional responsibility. Also presented in this chapter is a brief description of the cross-section of each segment of the arterial element of the planning area street and highway system. Arterial street intersections are also described, including traffic-control measures and special traffic lanes. Information is also presented on speed limits, parking restrictions, railway crossings, and school crossings. The public transit services currently provided in the West Bend planning area are also described in this chapter.

FUNCTIONAL CLASSIFICATION

Any street and highway system must serve two important functions: 1) moving traffic efficiently and safely and 2) providing direct access to homes, businesses, and industries. These two functions are basically incompatible. Heavy volumes of fast, through traffic cannot be moved efficiently or safely on a street which serves abutting land uses through multiple points of access. A street carrying heavy volumes of fast-moving traffic is not attractive or safe for abutting residential uses. Accordingly, street and highway systems should be organized, planned, designed, and constructed, around a functional classification of the various facilities comprising the total system. At least three functional classifications of streets and highways should be recognized: 1) arterial streets, 2) collector streets, and 3) land-access streets. Arterial streets are those streets and highways intended primarily to serve the movement of traffic. To accomplish this, the arterials must form an integrated system providing needed transportation service between major subareas of an urbanized area and through that urbanized area. Access to abutting properties may be a secondary function of some types of arterial streets and highways, but it should always be subordinate to the primary function of expediting traffic movement.

Collector and land-access streets are sometimes referred to together as local, minor, or nonarterial, streets. Collector streets are those streets or highways which are intended to serve as connections between the arterial street system and land-access streets. In addition to collecting traffic from, and distributing traffic to, the land-access streets, the collector streets usually have a secondary function: the provision of access to abutting property. Land-access streets are those streets and highways which are intended to serve primarily as a means of access to abutting property.

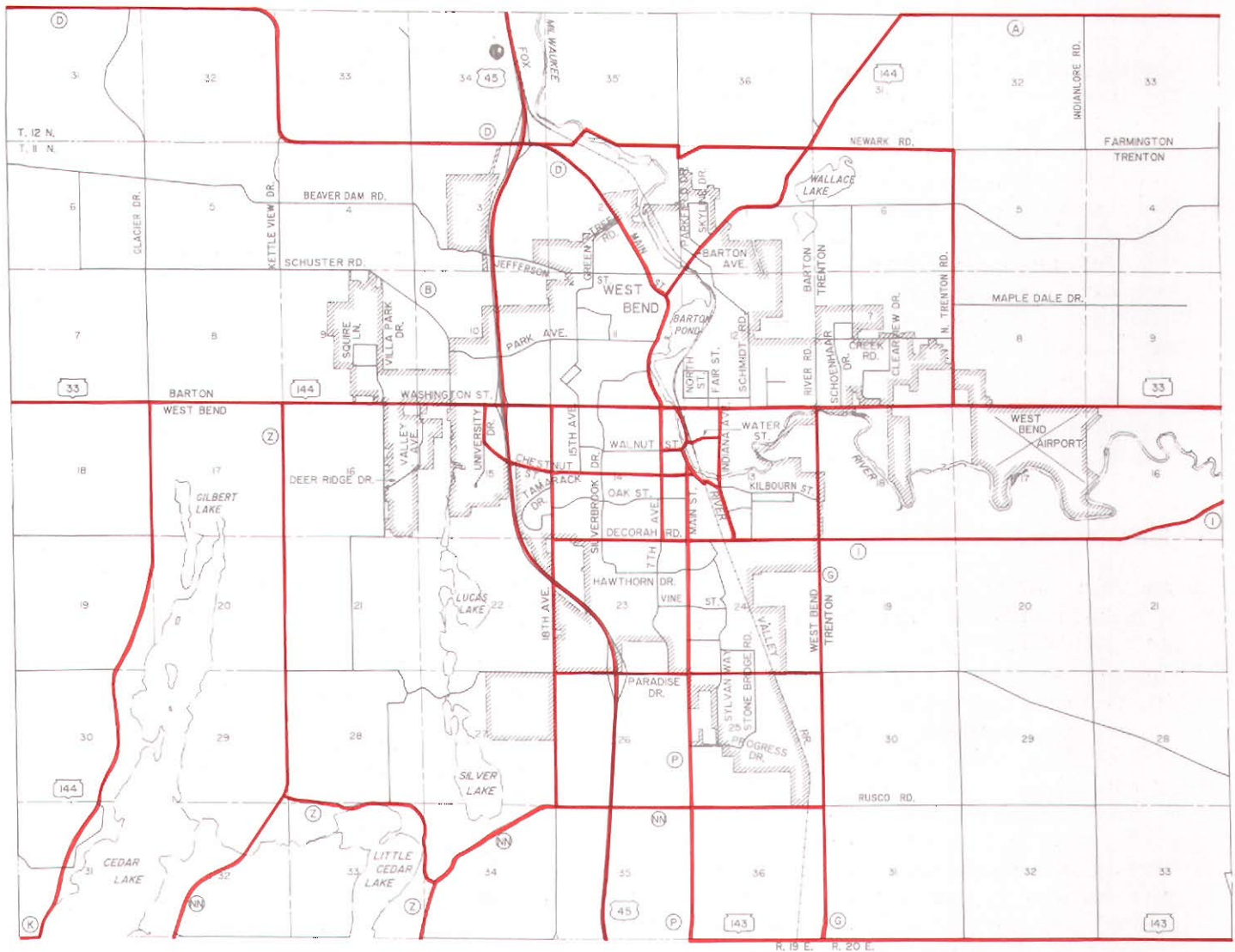
The functional classification of the existing street and highway system in the West Bend Planning area as identified by the Regional Planning Commission is shown on Map 6. Table 5 sets forth the distribution of the total street and highway system mileage in the West Bend area by functional classification. This classification is based upon the existing and proposed land uses to be served by the street and highway system, and, for each segment of each street and highway, the existing and probable future traffic volumes, the vehicle trip lengths, and the physical and operating characteristics of the roadway. The need to provide a continuous system of arterial streets and highways in the planning area and the spacing of potential arterial streets were also considered in the classification.

The Wisconsin Department of Transportation has prepared a functional classification of all streets and highways on a Statewide basis. This classification, which is based primarily on the existing traffic volumes carried by each segment of street and highway, groups streets and highways into one of four major types: 1) principal arterial, 2) minor arterial, 3) collector, and 4) local. This classification for the planning area is shown on Map 7 and in Table 5.

It may be noted that the total street and highway mileage within the planning area currently classified as arterials by the Wisconsin Department of Transportation, 39.6 miles, is about 55 percent of the 72.5 miles so classified by the Regional Planning Commission. Within the City of West Bend, the total of 22.2 miles of streets

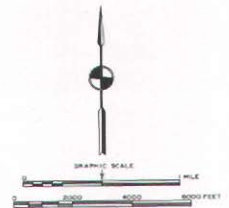
Map 6

**FUNCTIONAL CLASSIFICATION OF THE CITY OF WEST BEND
PLANNING AREA EXISTING STREET AND HIGHWAY SYSTEM AS DEFINED
BY THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION**



LEGEND

- ARTERIAL STREETS AND HIGHWAYS
- SELECTED NONARTERIAL STREETS AND HIGHWAYS



Source: SEWRPC.

and highways classified as arterials by the Wisconsin Department of Transportation is about 10 percent greater than the total of 20.5 miles so classified by the Regional Planning Commission. About 3.2 miles of streets and

highways classified as arterials by the Wisconsin Department of Transportation are not considered part of the arterial system by the Regional Planning Commission. Further, of the 7.6 miles of streets and highways in the City of

Table 5

**DISTRIBUTION OF STREET AND HIGHWAY SYSTEM MILEAGE BY
FUNCTIONAL CLASSIFICATION IN THE CITY OF WEST BEND PLANNING AREA: 1990**

Functional Classification	Wisconsin Department of Transportation Functional Classification for Aid Purposes: 1990	Southeastern Wisconsin Regional Planning Commission Functional Classification: 1990
	Miles	Miles
City of West Bend		
Arterial Streets and Highways		
Principal	4.2	--
Minor	18.0	--
Subtotal	22.2	20.5
Local Streets		
Collector	7.6	--
Land Access	69.3	--
Subtotal	76.9	78.6
Total	99.1	99.1
Town of Barton		
Arterial Streets and Highways		
Principal	1.4	--
Minor	4.6	--
Subtotal	6.0	12.5
Local Streets		
Collector	5.2	--
Land Access	32.4	--
Subtotal	37.6	31.1
Total	43.6	43.6
Town of Farmington		
Arterial Streets and Highways		
Principal	--	--
Minor	1.1	--
Subtotal	1.1	3.5
Local Streets		
Collector	2.4	--
Land Access	5.1	--
Subtotal	7.5	5.1
Total	8.6	8.6
Town of Trenton		
Arterial Streets and Highways		
Principal	2.9	--
Minor	0.5	--
Subtotal	3.4	11.5
Local Streets		
Collector	8.7	--
Land Access	33.6	--
Subtotal	42.3	34.2
Total	45.7	45.7

Table 5 (continued)

Functional Classification	Wisconsin Department of Transportation Functional Classification for Aid Purposes: 1990	Southeastern Wisconsin Regional Planning Commission Functional Classification: 1990
	Miles	Miles
Town of West Bend		
Arterial Streets and Highways		
Principal	4.9	--
Minor	2.5	--
Subtotal	7.4	24.5
Local Streets		
Collector	16.1	--
Land Access	38.1	--
Subtotal	54.2	37.1
Total	61.6	61.6
Study Area		
Arterial Streets and Highways		
Principal	13.4	--
Minor	26.7	--
Subtotal	40.1	72.5
Local Streets		
Collector	40.0	--
Land Access	178.5	--
Subtotal	218.5	186.1
Total	258.6	258.6

Source: Wisconsin Department of Transportation and SEWRPC.

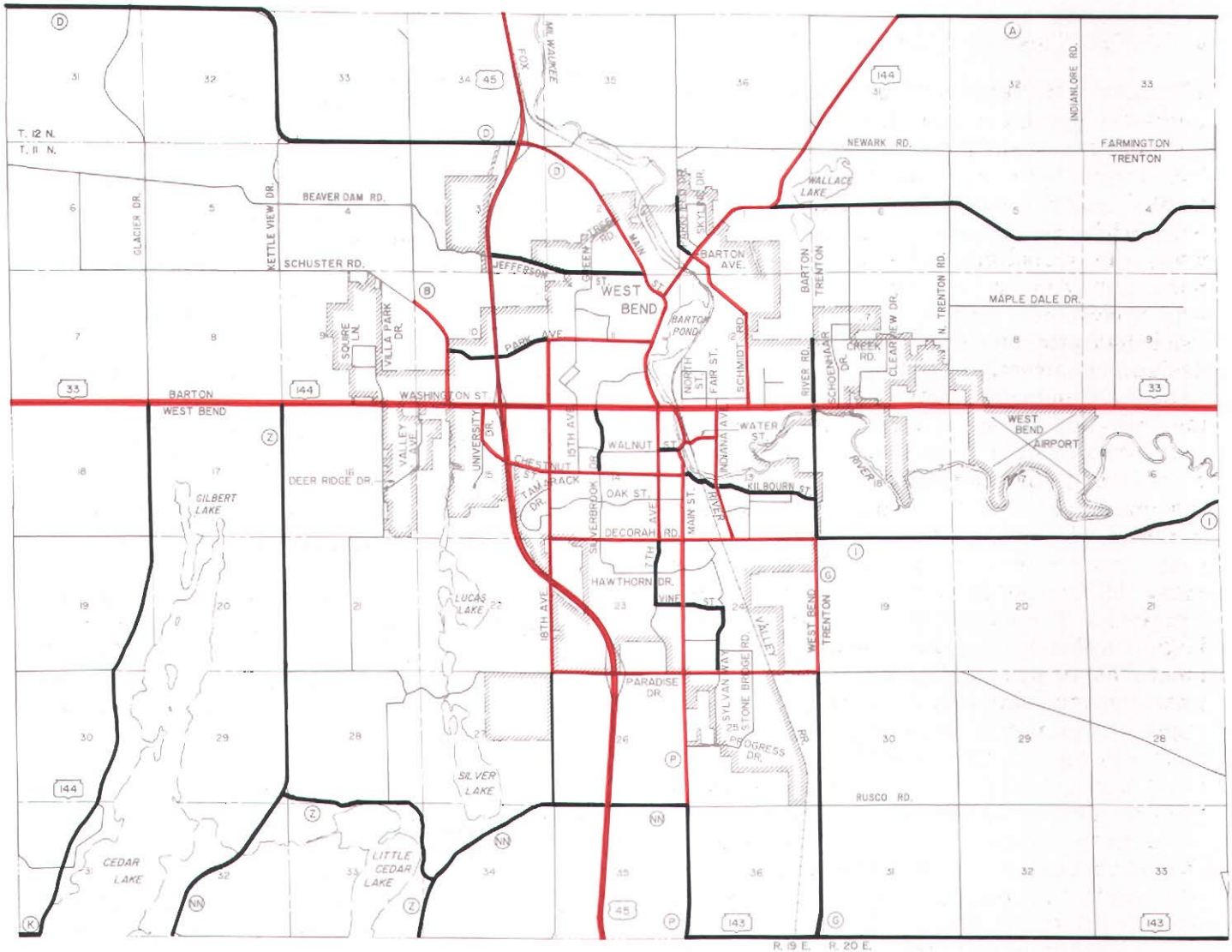
West Bend classified as collectors by the Wisconsin Department of Transportation, about 1.6 miles are classified as arterials by the Regional Planning Commission.

Within the planning area, but outside the City of West Bend, the Wisconsin Department of Transportation has classified a total of 17.9 miles of streets and highways as arterials, all of which are so classified by the Regional Planning Commission. An additional 34.1 miles of facilities, however, are classified as arterials by the Regional Planning Commission. About 29.0 miles of the streets and highways classified as arterials by the Regional Planning Commission are classified as either major or minor collectors by the Wisconsin Department of Transportation. Some of these facilities currently meet or exceed the Department's volume criteria for classification as principal arterials, notably STH 144,

CTH Z, and CTH I. State Trunk Highway 143 nearly meets the volume criteria for classification as a principal arterial. A travel survey conducted on this facility by the Regional Planning Commission in October 1990 found that 65 percent of its survey day travel was between counties, and thus should be considered arterial traffic. Further, nearly all of the remaining facilities classified as collectors by the Department meet or exceed the Department's volume criteria for classification as minor arterials. The fact that these facilities are not classified as arterials may be due, at least in part, to administrative limitations imposed on the Department with respect to the total mileage within the State that may be so classified. Under State guidelines, principal and minor arterials should comprise 2 to 4 percent and 4 to 8 percent, respectively, of the total certified rural mileage statewide.

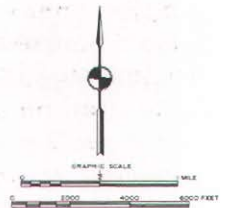
Map 7

FUNCTIONAL CLASSIFICATION OF THE CITY OF WEST BEND PLANNING AREA EXISTING STREET AND HIGHWAY SYSTEM AS DEFINED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION



LEGEND

- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- SELECTED LAND ACCESS STREETS



Source: SEWRPC.

The remaining five miles of streets and highways classified as arterials by the Regional Planning Commission do not carry sufficient average weekday traffic volumes for classification as either arterials or collectors by the

Wisconsin Department of Transportation. However, these facilities are expected to function as arterials as development occurs during the planning period at the fringes of the City of West Bend. It is in recognition of the need to provide

properly spaced arterials to meet future travel demands of the anticipated development that these facilities are classified as arterials by the Regional Planning Commission.

JURISDICTIONAL CLASSIFICATION

The arterial street element of the total street and highway system can also be classified by jurisdictional responsibility into State, County, and local trunk highways. A subcategory of the State trunk highway system is the connecting highway. With the exception of a connecting highway, the jurisdictional classification of a particular segment of arterial facility indicates which level of government, State, County, or local, has primary responsibility for planning, design, construction, operation, and maintenance. A connecting highway is a local street marked and signed as a State trunk highway providing continuity for the state trunk highway route through a municipality. Responsibility for the maintenance and operation of connecting highways is delegated to the municipalities, subject to review and approval by the Department of Transportation. State funding for these activities is provided through the Connecting Highway Aids Program. Although the Department has responsibility for improvement projects on the connecting highway system, a request from a local municipality is required to initiate a project. When State or Federal funds are utilized to fund a connecting highway improvement project, with or without local funding participation, the project is subject to Department review and approval. Local funding participation is now expected when 40 percent or more of the traffic on a roadway has either an origin or destination within one-half mile of the improvement project. A local municipality may implement an improvement project on a connecting highway without Department approval if the municipality provides 100 percent of the project funding. The Department may rescind the connecting highway designation when appropriate.

Map 8 shows the existing jurisdictional classification of the streets and highways in the West Bend planning area. Table 6 sets forth the distribution of the total street and highway system mileage in the West Bend area by jurisdictional classification.

FEDERAL AID SYSTEM

Also underlying the arterial highway system are two Federal aid highway systems, the National Highway System (NHS) and the Interstate System, which is a part of the National Highway System. These Federal aid highway systems designate those streets and highways which are eligible for Federal funds to offset part of the cost of improvements. The remainder of the arterial street and highway system in the West Bend planning area is also eligible to receive Federal aid under the Surface Transportation Program created by the Federal Intermodal Surface Transportation Efficiency Act of 1991. Generally, only those streets and highways which are part of one of the Federal aid systems or part of the remaining arterial street and highway system are eligible to receive Federal funds, although certain exceptions to this rule exist. These exceptions include replacement or rehabilitation of bridges and safety improvements. The level of Federal funding for an eligible project depends on the type of Federal aid system concerned and the type of project and the total amount of Federal monies available.¹ Those streets and highways included on the National Highway System in the West Bend planning area are shown on Map 9.² Table 7 indicates the distribution of arterial street and highway system mileage by Federal aid system category in the West Bend planning area.

PHYSICAL CHARACTERISTICS OF THE EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM

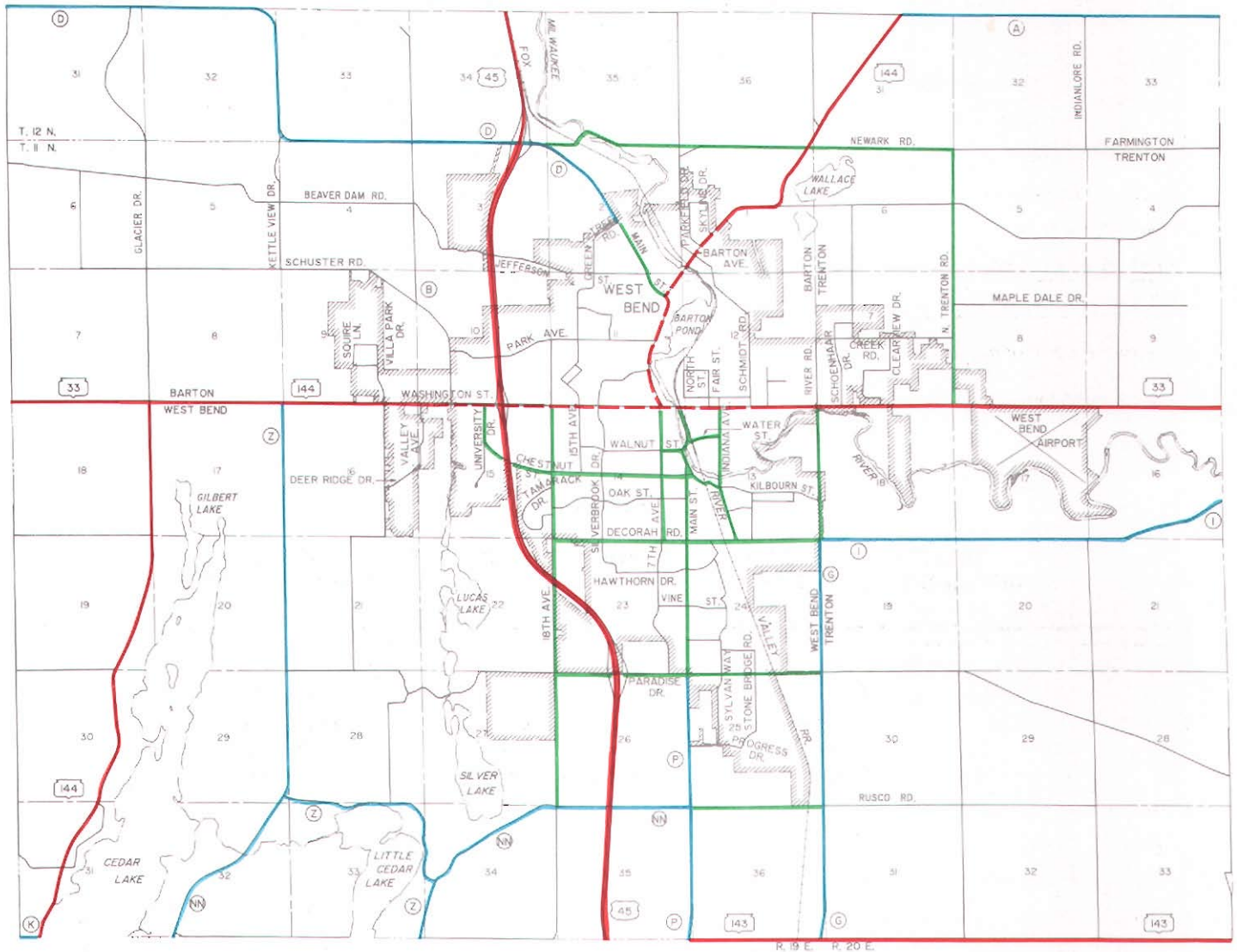
Certain physical characteristics of an arterial street establish, to a large degree, the volume of traffic it can efficiently and safely accommodate, that is, its design capacity. The most important of these physical characteristics are pavement width and on-street parking regulations.

¹*Eligible improvements to Federal Aid Interstate facilities can receive up to 90 percent Federal funding; all other eligible arterial improvements can receive up to 80 percent Federal funding. There are no Interstate facilities in the West Bend area.*

²*As of July 1992, the designated system is a preliminary system, subject to change.*

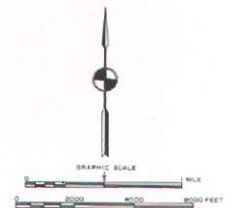
Map 8

**JURISDICTIONAL CLASSIFICATION OF THE CITY OF WEST BEND
PLANNING AREA EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM: 1990**



LEGEND

- STATE TRUNK FREEWAY
- STATE TRUNK NONFREEWAY
- - - CONNECTING HIGHWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



Source: SEWRPC.

Table 8 indicates the pavement width for each segment of arterial street within the West Bend planning area. Also noted in this table is the type of cross-section provided on each arterial segment: urban, with curb and gutter, or rural,

with shoulders and road ditches. Parking restrictions and shoulder widths are identified as appropriate. Map 10 shows the roadway sections provided to carry traffic within and through the West Bend planning area.

Table 6

**JURISDICTIONAL CLASSIFICATION OF THE STREET AND
HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA: 1990**

Municipality	Existing Jurisdictional Classification (miles)			
	State Trunk Highway ^a	County Trunk Highway	Local Street	Total
City of West Bend	6.5	0.3	92.3	99.1
Town of Barton	4.7	7.2	31.7	43.6
Town of Farmington	1.1	2.4	5.1	8.6
Town of Trenton	3.9	4.6	37.2	45.7
Town of West Bend	9.6	11.9	40.1	61.6
Total	25.8	26.4	206.4	258.6

^aIncludes connecting highway mileage.

Source: SEWRPC.

Table 7

**FEDERAL AID CLASSIFICATION OF THE EXISTING ARTERIAL STREET
AND HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA: 1990**

Municipality	Federal Aid System (miles)			
	Arterial Miles on the National Highway System ^a	Arterial Miles on the Interstate System	Arterial Miles Eligible for Federal Surface Transportation Program Funding	Total
City of West Bend	4.2	--	16.3	20.5
Town of Barton	1.4	--	11.1	12.5
Town of Farmington	--	--	3.5	3.5
Town of Trenton	2.9	--	8.6	11.5
Town of West Bend	4.9	--	19.6	24.5
Total	13.4	0.0	59.1	72.5

^aAs of July 1992 the designated National Highway System is preliminary and may be subject to modification.

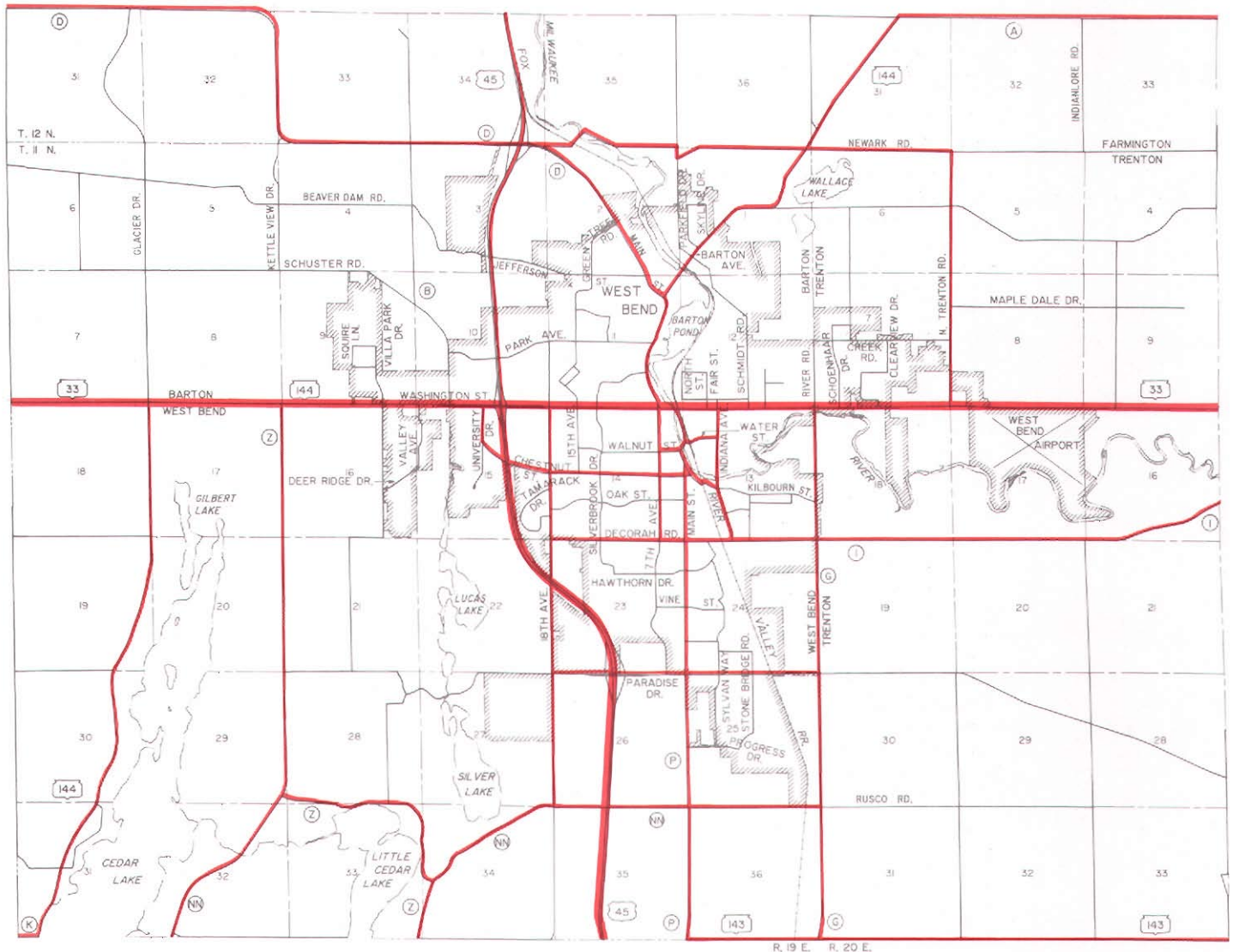
Source: SEWRPC.

In the developed urban portions of the West Bend planning area, where arterial intersections are more closely spaced, the capacity of the roadway segments is limited by the capacity of the intersections with other arterials. The design capacity of arterial approaches to intersections

is a function not only of the through pavement width of the arterial approach, but also of the type of traffic control provided and the provision of dedicated left- or right-turn lanes. Table 9 identifies these characteristics for each arterial intersection in the West Bend planning area.

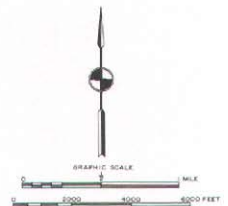
Map 9

FEDERAL AID CLASSIFICATION OF THE EXISTING CITY OF
WEST BEND PLANNING AREA STREET AND HIGHWAY SYSTEM: 1992



LEGEND

- NATIONAL HIGHWAY SYSTEM
- HIGHWAY SYSTEM ELIGIBLE FOR
FEDERAL SURFACE TRANSPORTATION
PROGRAM FUNDING



Source: SEWRPC.

TRAFFIC-CONTROL MEASURES
ON THE EXISTING ARTERIAL
STREET AND HIGHWAY SYSTEM

Traffic Signals/Stop Signs

Traffic on arterial streets and highways in the West Bend planning area is controlled at inter-

sections by traffic signals or stop signs. The type of control provided at each arterial street intersection is set forth in Table 9.

Railway Crossing Protection

There is a single railway line through the West Bend planning area, owned and operated by the

Table 8

**PHYSICAL CHARACTERISTICS OF THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE WEST BEND
PLANNING AREA: 1992**

Arterial	Termini	Cross-Section	Pavement Width (feet)	Shoulder Width (feet)		Parking Restrictions
				Inner	Outer	
USH 45	Town of West Bend south town line to CTH D (N. Main Street)	Rural	Dual 24	6	12	--
	CTH D (N. Main Street) to north study limits	Rural	Dual 24	6	8	--
STH 33 (Washington Street)	Town of West Bend West town line to Nabob Road intersection	Rural	24	10	10	--
	Nabob Road intersection to STH 144 intersection	Rural	48	10	10	--
	STH 144 intersection (concurrent with STH 33) to the east to a point 1,200 feet west of CTH B	Rural	24	10	10	--
	From a point 1,200 feet west of CTH B to CTH B intersection	Urban	Dual 24	--	--	No parking allowed
	CTH B intersection to 18th Avenue intersection	Urban	Dual 24	--	--	No parking allowed
	18th Avenue intersection to Silverbrook Drive intersection	Urban	44	--	--	No parking allowed
	Silverbrook Drive intersection to 9th Avenue intersection	Urban	44	--	--	--
	9th Avenue intersection to STH 144 (Main Street) intersection	Urban	44	--	--	No parking allowed
	STH 144 (Main Street) intersection to Island Avenue intersection	Urban	48	--	--	No parking allowed
	Island Avenue intersection to Wisconsin Avenue intersection	Urban	48	--	--	Two-hour parking allowed on south side
	Wisconsin Avenue intersection to Schmidt Road intersection	Urban	48	--	--	--
	Schmidt Road intersection to Trenton Road intersection	Rural	24	3	3	--
	Trenton Road intersection to east study limits	Rural	24	7	7	--
STH 143	CTH P intersection to the east study limit	Rural	20	3	3	--
STH 144	Town of West Bend south town line to STH 33 intersection	Rural	24	1	1	--
STH 144 (Barton Avenue)	Main Street intersection to Roosevelt Drive intersection	Urban	44	--	--	No parking allowed on west side
	Roosevelt Drive intersection to River Drive intersection	Urban	44	--	--	Two-hour parking allowed 9 a.m. to 9 p.m. (both sides)
	River Drive intersection to Commerce Street intersection	Urban	38	--	--	Two-hour parking allowed 9 a.m. to 9 p.m. (both sides)
	Commerce Street intersection to 0.10 mile north of Commerce Street intersection	Urban	44	--	--	Two-hour parking allowed 9 a.m. to 9 p.m. (both sides)
	0.10 mile north of Commerce Street intersection to City of West Bend north corporate limits	Urban	44	--	--	No parking allowed on east side

Table 8 (continued)

Arterial	Termini	Cross-Section	Pavement Width (feet)	Shoulder Width (feet)		Parking Restrictions
				Inner	Outer	
STH 144 (Barton Avenue) (continued)	City of West Bend north corporate limits to 0.35 mile north	Rural	24	3	3	--
	0.35 mile north of City of West Bend north corporate limits to north study limits	Rural	24	6	6	--
STH 144 (Main Street)	STH 33 (Washington Street) intersection to 8th Avenue intersection	Urban	40	--	--	Two-hour parking allowed on east side
	8th Avenue intersection to Barton Avenue intersection	Urban	40	--	--	No parking allowed
CTH A	STH 144 intersection east to the east study limits	Rural	22	3	3	--
CTH D	Town of Barton west town line to 0.90 mile west of South CTH B	Rural	24	4	4	--
	0.90 mile west of South CTH B to South CTH B	Rural	22	6	6	--
	South CTH B east to beginning of divided cross-section	Rural	22	3	3	--
	East from the beginning of the divided cross-section to the end of the divided cross-section	Rural	Dual 24	0	10	--
CTH D (N. Main Street)	End of the divided cross-section to E. Greentree Road intersection	Rural	24	10	10	--
CTH G	STH 143 intersection to Rusco Drive intersection	Rural	22	10	10	--
	Rusco Drive intersection to 0.10 mile south of Decorah Road	Rural	22	5	5	--
	0.10 mile south of Decorah Road to Decorah Road intersection	Rural	22	0	0	--
CTH I	CTH G intersection to east study limit	Rural	22	3	3	--
CTH K	STH 144 intersection to west study limits	Rural	22	6	6	--
CTH NN	Town of West Bend south town line to CTH Z intersection	Rural	22	8	8	--
	CTH Z intersection to 18th Avenue intersection	Rural	24	6	6	--
	18th Avenue intersection to CTH P intersection	Rural	24	3	3	--
CTH P	Paradise Drive intersection to STH 143 intersection	Rural	24	6	6	--
CTH Z	STH 33 intersection to CTH NN intersection	Rural	22	4	4	--
	CTH NN intersection to Town of West Bend south town line	Rural	24	6	6	--
Chestnut Street	University Drive intersection to 18th Avenue intersection	Urban	36	--	--	--
	18th Avenue intersection to 10th Avenue intersection	Urban	40	--	--	--
	10th Avenue intersection to 8th Avenue intersection	Urban	40	--	--	No parking allowed on south side during school hours

Table 8 (continued)

Arterial	Termini	Cross-Section	Pavement Width (feet)	Shoulder Width (feet)		Parking Restrictions
				Inner	Outer	
Chestnut Street (continued)	8th Avenue intersection to 7th Avenue intersection	Urban	50	--	--	No parking allowed
	7th Avenue intersection to 6th Avenue intersection	Urban	50	--	--	No parking allowed on south side
	6th Avenue intersection to 5th Avenue intersection	Urban	50	--	--	No parking allowed on south side except on Sunday
	5th Avenue intersection to S. Main Street intersection	Urban	50	--	--	No parking allowed on south side
	S. Main Street intersection to Kilbourn Street intersection	Urban	36	--	--	No parking allowed on south side
Decorah Road	CTH G intersection to Madison Street intersection	Urban	36	--	--	No parking allowed on south side and no parking allowed on north side during school hours
	Madison Street intersection to Eastern Avenue intersection	Urban	36	--	--	No parking allowed on south side
	Eastern Avenue intersection to Indiana Avenue intersection	Urban	38	--	--	No parking allowed on north side
	Indiana Avenue intersection to Wisconsin Central Railroad	Urban	38	--	--	No parking allowed
	Wisconsin Central Railroad to W. Lincoln Avenue intersection	Urban	38	--	--	No parking allowed on south side from 6 a.m. to 9 a.m. Monday through Friday
	W. Lincoln Avenue intersection to S. Main Street intersection	Urban	38	--	--	No parking allowed
	S. Main Street intersection to 5th Avenue intersection	Urban	40	--	--	No parking allowed on south side
	5th Avenue intersection to 7th Avenue intersection	Urban	40	--	--	--
	7th Avenue intersection to Crestview Drive intersection	Urban	35	--	--	No parking allowed on north side
	Crestview Drive intersection to Silverbrook Drive intersection	Urban	40	--	--	No parking allowed on south side
	Silverbrook Drive intersection to 18th Avenue intersection	Urban	36	--	--	--
Indiana Avenue	STH 33 (Washington Street) to Kilbourn Street intersection	Urban	40	--	--	Two-hour parking allowed (both sides)
	Kilbourn Street intersection to Locust Street intersection	Urban	30	--	--	No parking allowed on west side
	Locust Street intersection to Decorah Street intersection	Urban	36	--	--	Two-hour parking allowed (both sides)

Table 8 (continued)

Arterial	Termini	Cross-Section	Pavement Width (feet)	Shoulder Width (feet)		Parking Restrictions
				Inner	Outer	
Kilbourn Street	Poplar Street intersection to Chestnut Street intersection	Urban	18	--	--	No parking allowed
	Chestnut Street intersection to 2nd Avenue intersection	Urban	30	--	--	No parking allowed on north side
	2nd Avenue intersection to Indiana Avenue intersection	Urban	30	--	--	No parking allowed
Lighthouse Road	Newark Drive intersection to Sleepy Hollow Drive intersection	Rural	18	3	3	--
	Sleepy Hollow Drive intersection to CTH D intersection	Rural	22	4	4	--
N. Main Street	Greentree Road intersection to STH 144 (Barton Avenue) intersection	Urban	42	--	--	--
S. Main Street	STH 33 (Washington Street) intersection to Walnut Street intersection	Urban	60	--	--	Two-hour parking allowed from 6 a.m. to 2 a.m. (both sides)
	Walnut Street intersection to Chestnut Street intersection	Urban	40	--	--	Two-hour parking allowed from 6 a.m. to 2 a.m. (both sides)
	Chestnut Street intersection to Locust Street intersection	Urban	40	--	--	--
	Locust Street intersection to Sycamore Street intersection	Urban	40	--	--	Two-hour parking allowed on east side only
	Sycamore Street intersection to Decorah Street intersection	Urban	40	--	--	No parking allowed
	Decorah Street intersection to Vine Street intersection	Urban	48	--	--	No parking allowed
	Vine Street intersection to Paradise Drive intersection	Urban	64	--	--	No parking allowed
Newark Drive	Trenton Road intersection to STH 144 intersection	Rural	20	2	2	--
	STH 144 intersection to Salisbury Road intersection	Rural	18	2	2	--
	Salisbury Road intersection to Lighthouse Road intersection	Rural	20	3	3	--
Paradise Drive	18th Avenue intersection east 0.25 mile to beginning of divided cross-section	Rural	22	4	4	--
	Beginning of divided cross-section east to end of divided cross-section	Rural	Dual 24	0	8	--
	End of divided cross-section to CTH P intersection	Urban	48	--	--	No parking allowed
	CTH P intersection east to the City of West Bend east corporate limits	Urban	46	--	--	--
	City of West Bend east corporate limits to CTH G intersection	Rural	24	8	8	--
S. River Road	CTH I intersection to Kilbourn Street intersection	Urban	52	--	--	--
	Kilbourn Street intersection north to the City of West Bend corporate limits ...	Rural	22	2	2	--

Table 8 (continued)

Arterial	Termini	Cross-Section	Pavement Width (feet)	Shoulder Width (feet)		Parking Restrictions
				Inner	Outer	
S. River Road (continued)	City of West Bend corporate limits north to surface change south of Milwaukee River	Rural	18	2	2	--
	Surface change south of Milwaukee River to STH 33 (Washington Street) intersection	Urban	52	--	--	No parking allowed
Rusco Drive	CTH P intersection to CTH G intersection	Rural	22	2	2	--
Trenton Road	STH 33 intersection to Maple Dale Drive intersection	Rural	18	3	3	--
	Maple Dale Drive intersection to Newark Drive intersection	Rural	20	3	3	--
University Drive	Chestnut Street intersection to STH 33/STH 144 (Washington Street) intersection	Urban	40	--	--	--
Walnut Street	7th Avenue intersection to 6th Avenue intersection	Urban	30	--	--	No parking allowed
	6th Avenue intersection to S. Main Street intersection	Urban	40	--	--	Two-hour parking allowed on both sides. No parking allowed Sundays from 6:00 a.m. to 1:00 p.m. on south side
Water Street	Island Avenue intersection to Wisconsin Avenue intersection	Urban	30	--	--	No parking allowed
	Wisconsin Avenue intersection to Indiana Avenue intersection	Urban	30	--	--	Two-hour parking allowed on south side
7th Avenue	STH 33 (Washington Street) to Cedar Street intersection	Urban	40	--	--	No parking allowed
	Cedar Street intersection to Hickory Street intersection	Urban	40	--	--	Two-hour parking allowed (both sides)
	Hickory Street intersection to Walnut Street intersection	Urban	35	--	--	No parking allowed on west side
	Walnut Street intersection to Decorah Road intersection	Urban	40	--	--	--
18th Avenue	CTH NN intersection to Paradise Drive intersection	Rural	22	2	2	--
	Paradise Drive intersection to Decorah Road intersection	Rural	22	3	3	--
	Decorah Road intersection to Chestnut Street intersection	Urban	46	--	--	--
	Chestnut Street intersection to STH 33 (Washington Street) intersection	Urban	46	--	--	No parking allowed on east side

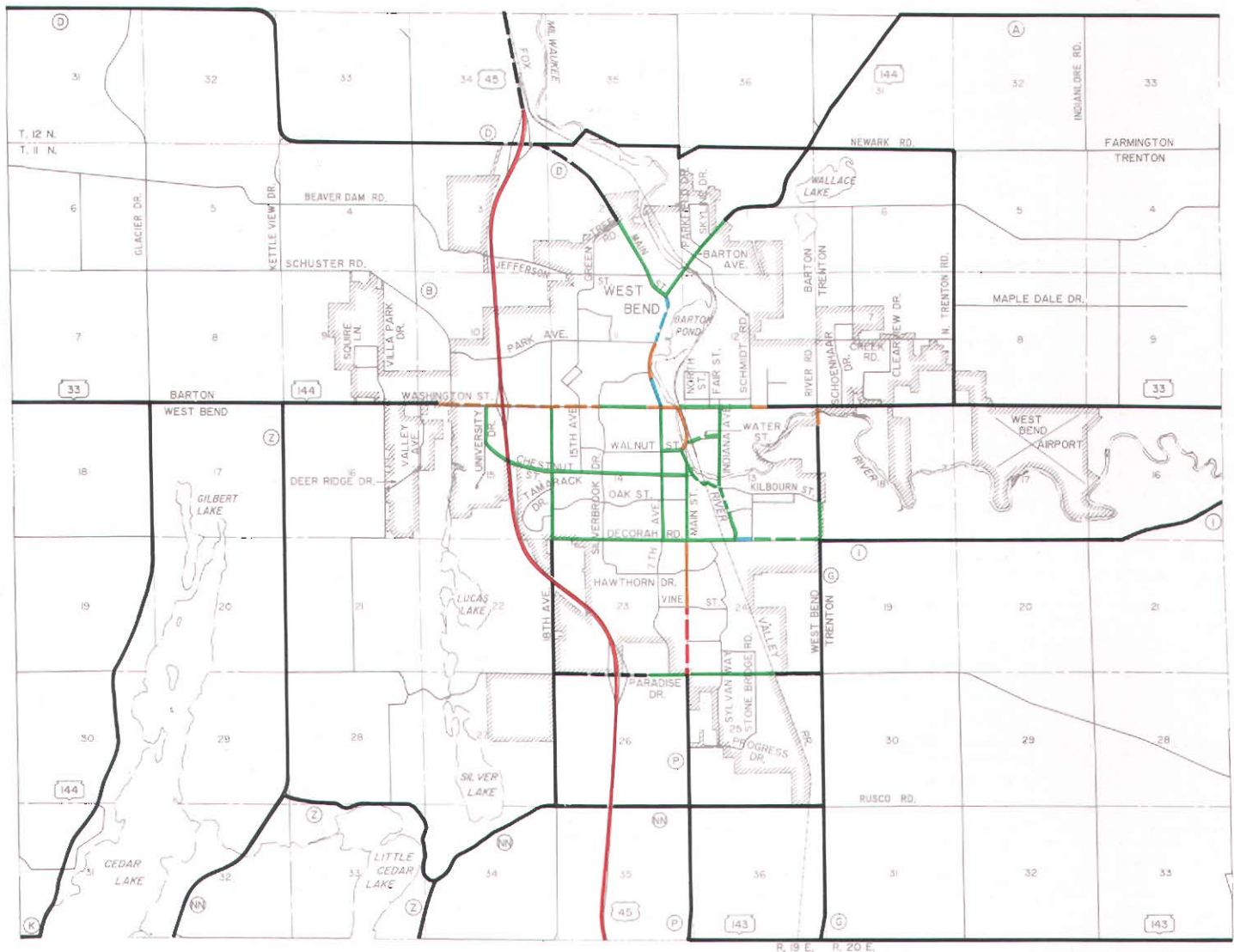
Source: Wisconsin Department of Transportation and SEWRPC.

Fox River Valley Railroad. The line traverses the planning area in a generally north-south direction and is located at grade. This railway,

which carries freight traffic between Milwaukee and Green Bay, has eleven grade crossings with streets and highways within the West Bend

Map 10

**EXISTING TRAFFIC LANES PROVIDED ON THE ARTERIAL STREET AND
HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA: 1992**



LEGEND

STANDARD ARTERIALS-RURAL

- TWO-LANES UNDIVIDED
- FOUR-LANES DIVIDED

STANDARD ARTERIALS-URBAN

- TWO-TRAFFIC LANES / TWO AUXILIARY LANES
- TWO-TRAFFIC LANES / ONE AUXILIARY LANE
- THREE-TRAFFIC LANES / ONE AUXILIARY LANE
- THREE-TRAFFIC LANES
- FOUR-TRAFFIC LANES-UNDIVIDED
- FOUR-TRAFFIC LANES-DIVIDED
- FOUR-TRAFFIC LANES / CENTER LEFT TURN LANE

FREEWAY

- FOUR-TRAFFIC LANES

Source: SEWRPC.

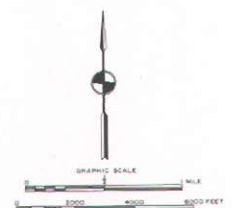


Table 9

CHARACTERISTICS OF ARTERIAL INTERSECTIONS IN THE CITY OF WEST BEND PLANNING AREA: 1992

Facility	Arterial Intersection	Traffic Control	Special Intersection Treatment
STH 33	STH 144	Stop sign, one-way (STH 144)	Lane provided for northbound and eastbound right turns and lane provided to bypass westbound left turns
STH 33/STH 144 (Washington Street)	CTH Z	Stop sign, one-way (CTH Z)	Lane provided for northbound and eastbound right turns and lane provided to bypass westbound left turns
	University Drive	Stop sign, one-way (University Drive)	Lane provided for northbound and westbound left turns and northbound right turns
	18th Avenue	Traffic Signal	Lane provided for left turns at all approaches and lane provided for northbound right turns
	7th Avenue	Traffic Signal	Lane provided for northbound, eastbound and westbound left and right turns and southbound left turns
STH 33 (Washington Street)	S. Main Street	Stop sign, one-way (S. Main Street)	Lane provided for northbound right turns
	Island Avenue	Traffic Signal	Lane provided for northbound left turns and southbound right turns
	Indiana Avenue	Traffic signal	Lane provided for northbound right turns and westbound left turns
	N. River Road	Stop sign, two-way (N. River Road and S. River Road)	Lane provided for left and right turns at all approaches
	Trenton Road	Stop sign, one-way (Trenton Road)	Lane provided for westbound right turns and bypass lane provided for eastbound left turns
STH 143	CTH P	Stop sign, one-way (STH 143)	Lane provided to bypass southbound left turns
	CTH G	Stop sign, two-way (CTH G)	--
STH 144	CTH K	Stop sign, one-way (CTH K)	--
STH 144 (Main Street)	Barton Avenue	Traffic signal	Lane provided for northbound right turns, southbound left turns and westbound left turns
STH 144 (Barton Avenue)	Newark Drive	Stop sign, two-way (Newark Drive)	--
	CTH A	Stop sign, two-way (CTH A and Club Lane)	Lane provided for northbound right turns
CTH G	Rusco Road	Stop sign, two-way (Rusco Road)	--
	Paradise Drive	Stop sign, two-way (Paradise Road)	Lane provided for southbound and west bound right turns
	CTH I (Decorah Road)	Stop sign, four-way	Lane provided for northbound right turns
CTH P	CTH NN	Stop sign, two-way (CTH NN)	--
	Paradise Drive	Traffic signal	Lane provided for eastbound, westbound and southbound left turns and southbound right turns
CTH Z	CTH NN North	Stop sign, one-way (CTH Z)	Lane provided for westbound left and right turns
	CTH NN South	Stop sign, one-way (CTH Z)	Lane provided to bypass northbound left turns and lane provided for southbound right turns
Chestnut Street	University Drive	Stop sign, one-way (Chestnut Street)	--
Indiana Avenue	Water Street	Stop sign, two-way (Water Street)	--
	Kilbourn Street	Stop sign, four-way	Lane provided for southbound right turns
	Decorah Road	Stop sign, three-way (Indiana Avenue both approaches and east leg of Decorah Road)	Lane provided for westbound right turns and eastbound left turns
Kilbourn Street	Chestnut Street	Stop sign, one-way (Chestnut Street)	Lane provided for southbound right turns
N. Main Street	Jefferson Street	Stop sign, two-way (Jefferson Street)	--
	Lighthouse Road	Stop sign, one-way (Lighthouse Road)	Lane provided for westbound right turns and two lanes provided eastbound used to bypass left turning vehicles
S. Main Street	Walnut Street	Traffic signal	Traffic circle on north leg. Lane provided for northbound and eastbound right turns and for westbound and eastbound left turns
	Kilbourn Street	Stop sign, two-way (Kilbourn Street and Poplar Street)	Lane provided to bypass southbound left turning traffic
	Chestnut Street	Stop sign, two-way (Chestnut Street)	--
	Decorah Road	Traffic signal	Lane provided for northbound and southbound left turns
Trenton Road	Newark Drive	Stop sign, one-way (Trenton Road)	--
7th Avenue	Walnut Street	Stop sign, four-way	--
	Chestnut Street	Stop sign, two-way (Chestnut Street)	--
	Decorah Road	Stop sign, two-way (Decorah Road)	--
18th Avenue	Chestnut Street	Stop sign, four-way	Lane provided for westbound right turns
	Decorah Road	Stop sign, four-way	Lane provided for southbound and westbound right turns
	Paradise Drive	Stop sign, four-way	--
	CTH NN	Stop sign, four-way	Lane provided for eastbound and westbound right turns

Source: SEWRPC.

planning area. Eight of the nine arterial street and highway crossings are protected by either flashing signals or automatic crossing gates. The remaining arterial street crossing, Rusco Drive, is protected by stop signs on both approaches. The two nonarterial street crossings are protected only by crossbuck signs. There is no passenger service on this line.

School Crossing Protection

Map 11 identifies the location of all public and private elementary, junior high, and senior high schools in the West Bend planning area and the school crossing protection provided on arterial streets. This protection includes 15 miles per hour school zone speed limits and adult crossing guards.

Speed Limits

Map 12 identifies the current posted speed limits on arterial streets and highways in the West Bend planning area.

EXISTING AND FORECAST TRANSPORTATION SYSTEM USE

Historic and Current Arterial Street Traffic

The existing use of, and level of service provided by, the arterial streets and highways in the West Bend planning area can best be quantified through the collection of data on vehicular traffic volumes. Accordingly, within the planning area, average weekday traffic volume counts were collated for each arterial roadway segment. Such counts have been taken by the Wisconsin Department of Transportation on a periodic basis since 1968, the latest such counts being taken in 1992. Map 13 displays the 24-hour average weekday traffic volumes on the arterial street system of the West Bend planning area in 1992.

The trend in traffic volume in the West Bend planning area from 1968 through 1992 is set forth in Table 10. Particularly substantial increases in traffic volume have occurred on Washington Street (STH 33) at the western corporate limits of the City of West Bend; on USH 45 between STH 33 and CTH D; on Island Avenue between Water Street and STH 33; on Paradise Drive between 18th Avenue and Main Street; and on River Road between Decorah Road and STH 33. Substantial traffic increases have also occurred on CTH NN south of CTH Z; on CTH D between CTH B and USH 45; on

CTH G between Paradise Drive and Decorah Road; on Paradise Drive between Main Street and CTH G; and on USH 45 between Paradise Drive and STH 33. Over the past 24 years, traffic volumes on these facilities have increased a minimum of about 10 percent per year.

A two-lane rural arterial generally has a design capacity of about 7,000 vehicles per day, a four-lane divided rural arterial generally has a design capacity of about 22,000 vehicles per day, and a four-lane rural freeway generally has a design capacity of approximately 52,500 vehicles per day.

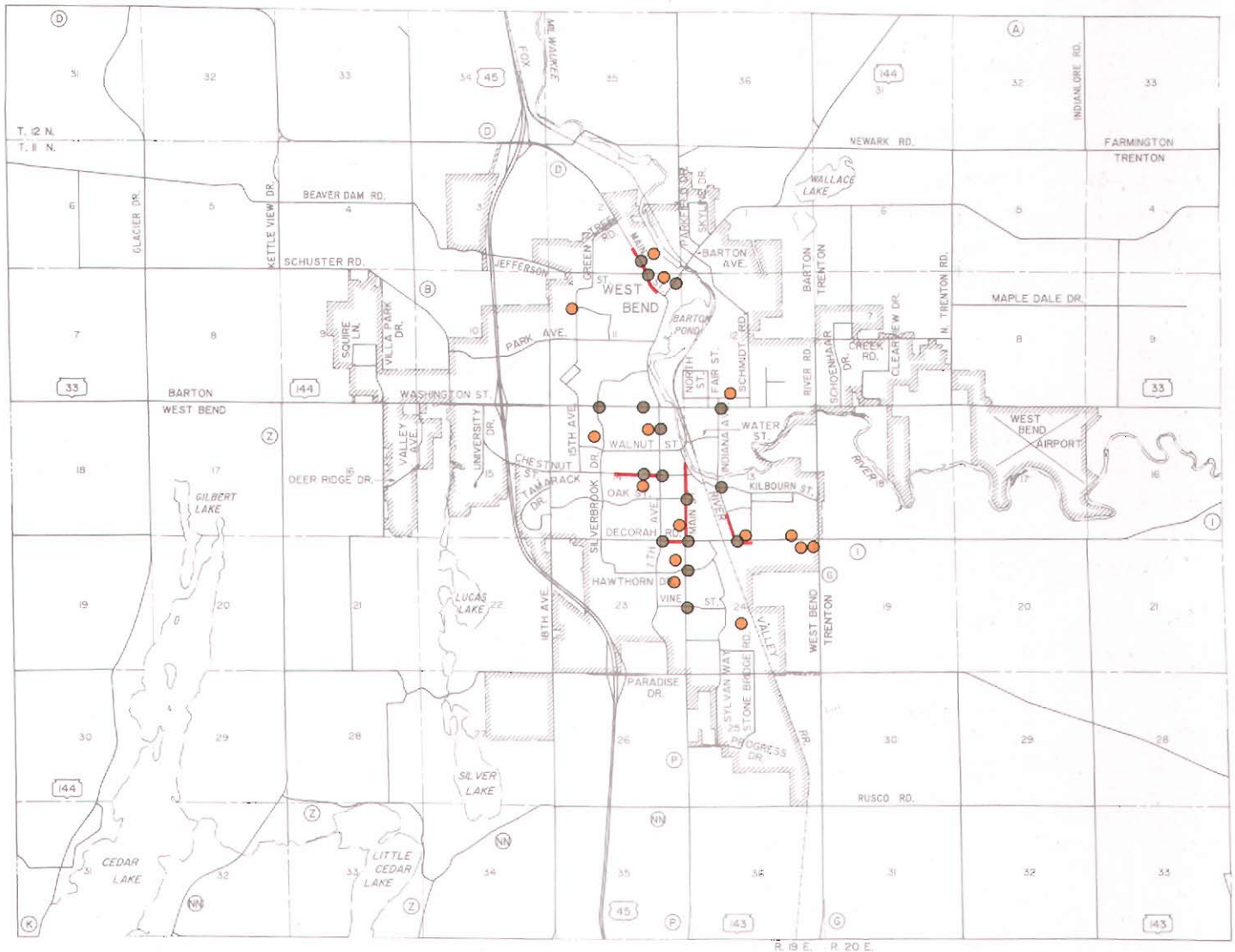
A two-traffic-lane urban arterial generally has a design capacity of 13,000 per day, an urban four-lane undivided arterial has a design capacity of about 17,000 vehicles per day, an urban four-lane divided arterial has a design capacity of about 25,000 vehicles per day, and a six-lane, divided urban arterial has a design capacity of about 35,000 vehicles per day. As already noted, also significantly affecting the design capacity of an urban arterial are the characteristics of its intersections, including intersection approach pavement width; the presence of dedicated turn lanes; the presence of parking within 200 feet of the intersection; the presence, type, and operation of traffic-control devices; the percentage of right- and left-turn movements; and the percentage of trucks and buses in the traffic streams.

It may be expected that traffic using urban arterials carrying average weekday traffic volumes exceeding their design capacity will experience significant delays at controlled intersections, reduced speeds between intersections, and increased accident rates. The reduced speeds and intersection delays on urban arterials carrying average weekday traffic volumes equaling or exceeding their design capacity will generally occur only during the morning and evening peak-traffic hours, and, in some cases, during the midday. During evening and early morning hours, there will generally be little, if any, traffic congestion and delay. Also, on most urban arterial streets, weekend peak-traffic volumes will be lower than weekday peak-traffic volumes.

Generally, arterials carrying traffic volumes substantially exceeding design capacity will experience vehicle delays of about 35 seconds at signalized intersections during the peak-traffic

Map 11

EXISTING SCHOOL SITES AND SELECTED ARTERIAL STREET AND HIGHWAY
SCHOOL CROSSING PROTECTION IN THE CITY OF WEST BEND PLANNING AREA: 1992



LEGEND

- SCHOOL SITE
- ADULT CROSSING GUARD
- SCHOOL SPEED LIMIT SIGNS POSTED

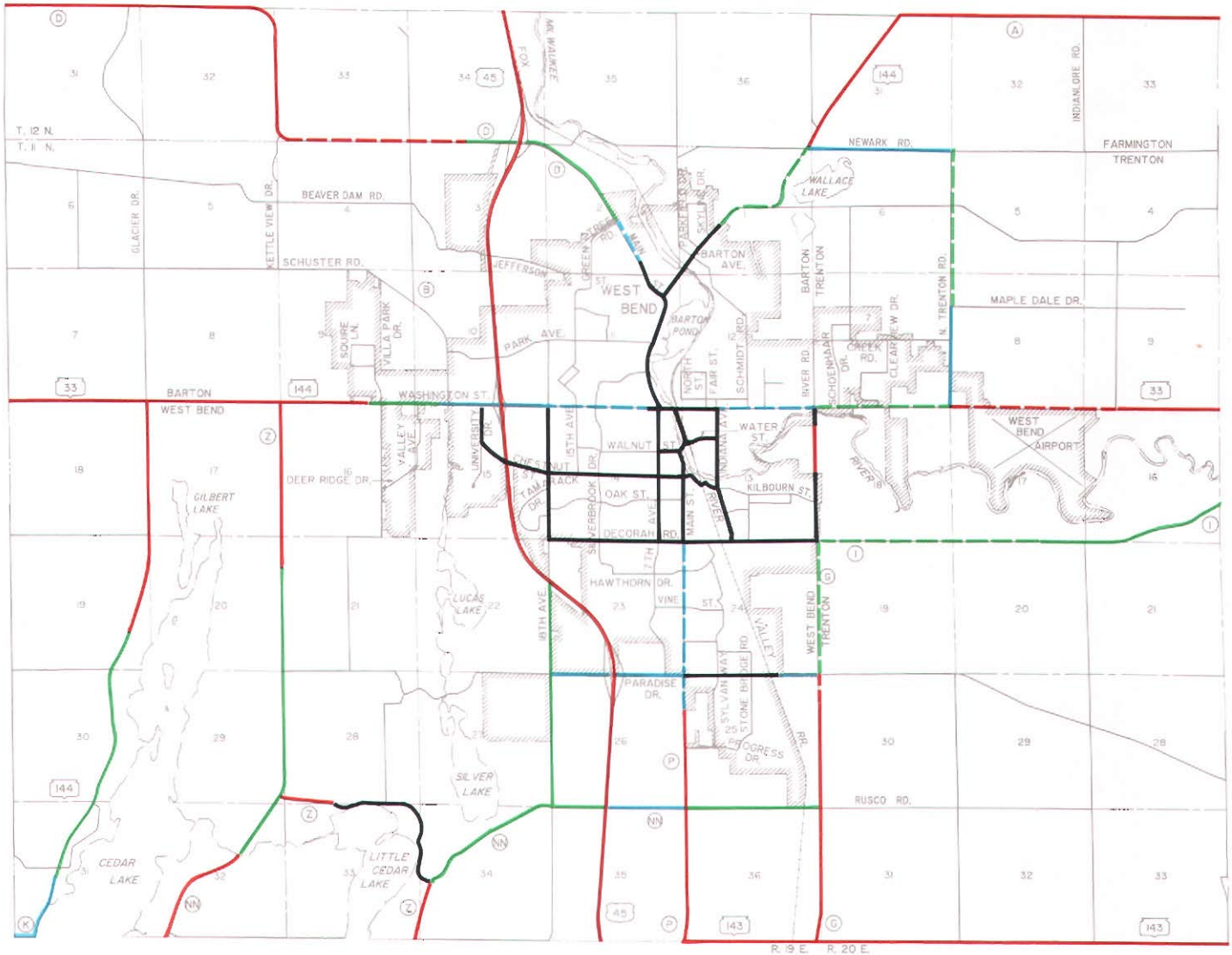
Source: SEWRPC.

period, with delays of about 120 seconds to some vehicles. Vehicles may have to wait through more than one traffic signal red phase to clear the intersection, particularly left-turning vehicles. Also, between controlled intersections,

arterials carrying traffic volumes greater than their design capacity may be expected to experience restrictions on operating speed and on the ability of vehicles to maneuver. Travel times on such arterials may typically increase by one-

Map 12

**POSTED SPEED LIMITS ON THE ARTERIAL STREET AND
HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA: 1992**



Source: SEWRPC.

third over the average travel times on uncongested facilities.

Arterials carrying traffic volumes equaling or approaching design capacities may typically

experience vehicle delays of about 20 to 30 seconds at signalized intersections during peak-traffic periods, with delays to some vehicles approaching 90 seconds. The average travel times on such arterials will typically increase by

Table 10

**AVERAGE WEEKDAY TRAFFIC VOLUME ON SELECTED
ARTERIALS IN THE CITY OF WEST BEND PLANNING AREA: 1968-1992**

Arterial Street	Location	Average Weekday Traffic Volume											Average Annual Growth Rate
		1968	1969	1970	1971	1974	1977	1980	1983	1986	1989	1992	
USH 45	South of Paradise Drive ...	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	12,860	15,410	16,780	4.5
	North of Paradise Drive south of STH 33	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	10,040	13,220	14,100	5.8
	North of STH 33 south of CTH D	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a	7,145	9,240	10,970	7.4
	North of CTH D	--	3,510	3,600	3,900	6,110	5,930	7,490	6,630	8,460	9,910	12,110	5.5
STH 33/STH 144	East of STH 144 west of CTH Z	--	3,560	3,560	5,025	6,090	6,490	7,325	7,890	9,360	11,750	11,540	5.2
	East of CTH Z west of CTH B	--	3,760	3,760	5,440	7,160	10,220	10,630	10,870	15,070	18,700	--	8.4
	East of CTH B west of University Drive	--	--	--	--	9,150	11,530	12,450	12,400	18,340	23,700	19,800	4.4
	East of USH 45 west of 18th Avenue ...	5,020	--	--	--	--	--	--	--	--	25,680	25,160	6.9
	East of 18th Avenue west of 7th Avenue	7,740	5,670	5,670	10,460	10,850	12,950	12,760	13,050	16,930	17,110	20,350	4.1
STH 33	East of Wisconsin Street west of Indiana Avenue	6,500	--	--	11,550	11,220	10,440	13,710	18,250	13,050	15,420	16,050	3.8
	East of River Road west of Trenton Road ...	--	--	--	--	--	--	7,740	7,840	9,380	10,940	12,070	3.8
	East of Trenton Road	--	2,225	2,225	5,975	9,140	2,790	4,730	4,420	5,570	6,460	7,490	5.4
STH 143	East of CTH P west of CTH G	--	960	960	910	1,380	1,525	1,690	1,855	1,970	2,770	--	5.4
	East of CTH G	--	--	--	1,690	2,040	--	2,110	2,650	2,390	2,900	2,310	1.5
STH 144	North of CTH K south of Hillcrest Road	--	--	--	--	--	3,285	2,790	2,310	2,370	2,950	3,970	1.3
	North of Hillcrest Road south of STH 33	--	1,130	1,175	1,225	2,460	--	--	2,300	2,620	3,150	3,240	4.7
	North of STH 33 south of Park Avenue ...	11,680	--	--	12,940	10,200	--	--	--	13,950	15,300	15,610	1.2
	North of Park Avenue south of N. Main Street	--	--	--	13,470	14,610	18,120	16,310	16,200	13,740	14,560	15,940	0.8
	North of N. Main Street south of Schmidt Road	5,010	--	--	6,200	6,280	7,310	7,150	7,080	7,460	8,290	13,950	4.4
	North of Schmidt Road south of Wallace Lake Road	2,650	3,245	3,245	4,000	4,210	--	--	--	6,010	6,660	7,300	4.3
	North of Newark Road south of CTH A	--	1,970	1,970	2,160	2,750	2,605	3,120	3,560	4,215	4,100	4,520	3.7
	South of CTH A	--	1,970	1,970	2,160	2,750	2,605	3,120	3,560	4,215	4,100	4,520	3.7
CTH A	East of STH 144	--	510	505	790	875	970	925	1,110	1,140	1,400	1,200	3.8
CTH D	West of CTH B	--	--	--	--	--	--	780	680	970	1,040	1,410	5.1
	East of CTH B west of USH 45	--	620	620	930	1,020	1,175	1,650	1,515	2,280	3,345	3,420	7.7
	East of USH 45 west of Lighthouse Road	--	3,925	4,025	5,230	7,510	--	--	--	6,200	7,240	6,400	2.1
CTH G	North of STH 143 south of Rusco Road ...	--	1,240	1,240	2,030	--	2,875	3,200	2,990	4,235	2,780	3,570	4.7
	North of Paradise Drive south of Decorah Road	--	1,250	1,250	2,545	2,630	--	3,410	3,660	3,590	4,090	6,790	7.6
CTH I	East of River Road	--	780	770	1,320	2,165	2,235	2,080	2,640	2,760	3,490	2,950	6.0
CTH NN	South of CTH Z	--	655	655	900	1,100	1,565	2,585	2,680	2,750	3,040	--	8.0
	North of CTH Z west of 18th Avenue	--	470	470	650	760	790	970	920	1,810	2,130	2,240	7.0
	East of 18th Avenue west of CTH P	--	470	470	650	760	790	970	920	775	910	830	2.5
CTH P	North of CTH NN south of Paradise Drive	--	--	--	9,340	10,135	10,180	9,990	10,890	6,580	7,690	7,240	-1.2
CTH Z	South of CTH NN	--	400	400	475	750	900	1,020	1,070	1,450	1,730	1,250	5.1
	North of CTH NN south of STH 33	--	790	790	855	1,000	1,670	2,710	2,720	3,255	3,290	3,780	7.0
Chestnut Street	East of University Drive west of S. 18th Avenue	500	--	--	830	1,570	--	--	--	--	1,410	2,360	6.7

Table 10 (continued)

Arterial Street	Location	Average Weekday Traffic Volume											Average Annual Growth Rate
		1968	1969	1970	1971	1974	1977	1980	1983	1986	1989	1992	
Chestnut Street (continued)	East of 18th Avenue west of Silverbrook Drive	1,180	--	--	1,540	2,390	2,440	2,670	3,340	3,730	3,680	3,910	5.1
	East of 7th Avenue west of Main Street	1,840	--	--	2,200	3,430	2,760	2,730	2,460	2,100	1,950	2,700	1.6
Decorah Road	East of 18th Avenue west of 7th Avenue	1,470	--	--	2,710	3,850	4,290	5,080	6,210	5,960	5,860	7,120	6.8
	East of 7th Avenue west of Main Street	3,860	--	--	6,520	9,640	10,140	8,960	9,470	8,720	8,380	9,070	3.6
	East of Main Street west of Indiana Avenue	5,460	--	--	7,650	9,740	11,670	9,550	9,910	10,070	10,750	--	3.3
	East of Indiana Avenue west of River Road	3,270	2,370	3,965	7,120	6,640	5,030	4,830	5,590	6,670	6,200	8,390	4.0
Indiana Avenue	North of Decorah Road south of Kilbourn Street	3,280	--	--	4,640	7,360	8,000	6,790	6,200	6,240	6,410	5,970	2.5
	North of Water Street south of STH 33	3,180	--	--	5,920	9,020	7,470	10,320	8,570	8,950	9,730	7,170	3.4
Island Avenue	North of Water Street south of STH 33	1,366	--	--	1,310	970	1,200	--	8,820	8,040	7,460	--	8.4
Kilbourn Street	East of Main Street west of Indiana Avenue	2,095	--	--	2,120	3,500	2,900	2,900	2,630	2,740	2,940	--	1.6
Main Street	North of Paradise Drive south of Vine Street	--	--	--	--	10,135	--	--	12,340	13,460	13,970	--	2.2
	North of Vine Street south of Decorah Road	10,920	--	--	14,990	18,690	18,360	20,050	19,680	17,280	19,670	21,050	2.8
	North of Decorah Road south of Chestnut Street	10,900	--	--	14,340	16,490	15,870	15,000	14,160	12,100	14,180	17,590	2.0
	North of Chestnut Street south of Water Street . . .	11,260	--	--	13,120	14,240	16,820	16,810	12,580	11,120	13,230	15,880	1.4
N. Main Street	South of Jefferson Street north of Barton Avenue	6,170	--	--	8,140	7,560	10,400	10,310	10,780	8,100	8,880	9,320	1.7
Paradise Drive	East of 18th Avenue west of USH 45	--	--	--	--	--	--	--	2,690	3,340	4,540	7,400	11.9
	East of USH 45 west of Main Street	--	975	975	--	--	1,530	2,170	2,430	9,110	11,960	14,870	12.6
	East of Main Street west of CTH G	--	1,625	1,625	--	--	--	--	2,660	3,630	5,130	8,620	7.5
River Road	North of Decorah Road south of STH 33	--	--	--	--	--	--	--	--	2,510	2,200	7,250	19.3
7th Avenue	North of Decorah Road south of Chestnut Street	3,080	--	--	4,010	5,110	4,540	4,330	5,720	4,230	4,100	5,790	3.1
	North of Chestnut Street south of STH 33	4,730	--	--	5,310	5,710	4,160	5,740	10,160	8,710	9,730	--	3.5
University Drive	South of STH 33	--	--	--	--	1,540	2,280	1,960	2,540	3,160	2,640	4,020	5.5
Water Street	East of Main Street west of Indiana Avenue	1,070	--	--	1,450	4,710	1,940	1,370	1,560	1,690	2,090	3,340	4.9
18th Avenue	North of Paradise Drive south of Decorah Road	--	--	--	--	--	--	--	--	3,870	4,190	5,780	6.9
	North of Decorah Road south of Chestnut Street	--	--	--	--	--	--	5,710	6,960	6,450	6,670	9,940	4.7
	North of Chestnut Street south of STH 33	--	--	--	--	--	--	5,590	--	--	7,980	9,920	4.9

^aBefore 1985, USH 45 was routed over present-day CTH P, Main Street, and CTH D through the planning area. The route shifted to new alignment upon construction of the first two lanes of the West Bend Freeway from STH 145 to Paradise Drive in 1985, and the construction to CTH D in 1986. In 1989, the remaining two lanes were constructed to complete the freeway.

Source: Wisconsin Department of Transportation and SEWRPC.

tion of, the recently adopted regional land use plan for Southeastern Wisconsin,³ as refined and detailed in the also recently adopted land use plan for the City and its environs.⁴ The City of West Bend Plan Commission based the latter land use plan on levels of population and employment similar to those of the recently adopted regional land use plan. The selected population forecast level of 35,000 persons within the City's urban service area used in preparing the West Bend land use plan approximates the population forecast of about 32,000 persons for that same area used in preparing regional land use plan. The forecast level of employment within the City's urban service area of 19,900 jobs selected by the City Plan Commission is identical to that envisioned under the regional land use plan.

The City of West Bend land use plan urban service area is shown on Map 5. This service area reflects land use and utility system investment decisions that have resulted in a committed urban area with the capability to accommodate urban development beyond the year 2010. Full development of the sewer service area would result in the conversion of about 9.4 square miles of rural and other open lands to urban use, about twice that required to accommodate the year 2010 forecast population and employment levels noted above if development patterns were to be narrowly confined to contiguous urban parcels. When fully developed, the sewer service area may be expected to accommodate a total population of about 52,000 persons and a total employment level of nearly 32,000 jobs. These levels approximate the growth for the West Bend area under a high-growth decentralized development scenario postulated for the Southeastern Wisconsin Region. Full development of the urban service area is not anticipated by the year 2010; the levels of population and employment under the high-growth scenario are not reasonably attainable by the year 2010. Figure 2 depicts graphically historic employment, household, and population data along with forecast levels of employment, households, and population under the adopted City of West

Bend land use plan, the adopted regional land use plan, and the high-growth decentralized regional land use scenario.

Forecast design year 2010 average weekday traffic volumes on the existing arterial street and highway system within the West Bend planning area, which are derived from forecast levels of employment, households, and population reflected in the adopted City and regional land use plans, are shown in Map 14. These volumes assume no improvements to the arterial street and highway system other than resurfacing or reconstruction and low-cost transportation systems management measures intended to increase traffic capacity and improve traffic safety at arterial intersections.

Forecast design year 2010 average weekday traffic volumes on the existing arterial street and highway system within the West Bend planning area, based upon full development of the West Bend sewer service area, beyond the year 2010, consistent with the high-growth decentralized land use scenario for the Region, are shown in Map 15.

IDENTIFICATION OF ARTERIAL TRANSPORTATION DEFICIENCIES

The need for major arterial improvements in the West Bend planning area can best be defined by identifying current and future deficiencies in the arterial system. The identification of these deficiencies should be guided by transportation system development objectives and standards adopted for the planning area, as set forth in Chapter II of this report. Three of the adopted standards are particularly useful in identifying the elements of the arterial street and highway system which are deficient and, therefore, need improvement, or where the system needs expansion. These standards require that a minimum spacing of arterials not be exceeded in the urban portion of the planning area, that urban arterials be direct in routing and alignment, and that arterial traffic volumes not be permitted to exceed arterial design capacity. Each of these three standards relates to the first transportation system development objective, that an adequate level of transportation service be provided to existing and future development within the West Bend planning area. The three standards are set forth below:

- Arterial streets and highways should be provided at intervals of no more than one-half mile in urban medium-high- and high-

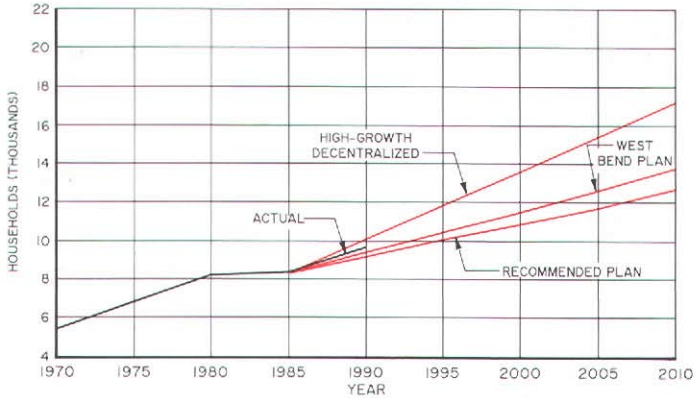
³See *SEWRPC Planning Report No. 40, A Land Use Plan for Southeastern Wisconsin—2010*, January 1992.

⁴See *SEWRPC Community Assistance Planning Report No. 167, A Land Use Plan For The City of West Bend: 2010*, June 1992.

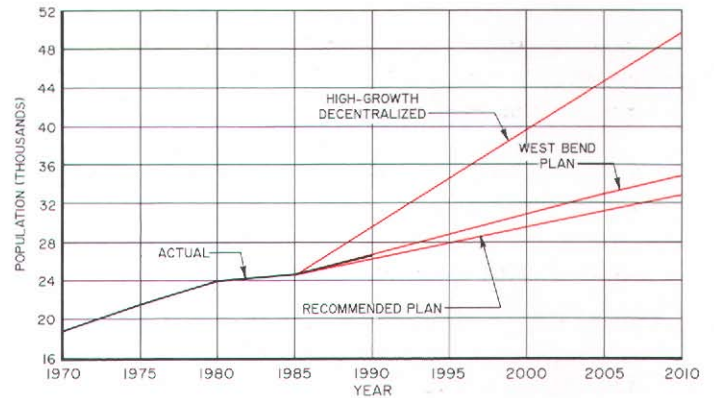
Figure 2

FORECAST LEVELS OF HOUSEHOLDS, POPULATION, AND EMPLOYMENT IN THE WEST BEND URBAN SERVICE AREA, THE WEST BEND PLANNING AREA, AND THE SOUTHEASTERN WISCONSIN REGION UNDER THE REGIONAL INTERMEDIATE-GROWTH CENTRALIZED PLAN, THE REGIONAL HIGH-GROWTH DECENTRALIZED PLAN, AND THE ADOPTED CITY OF WEST BEND LAND USE PLAN

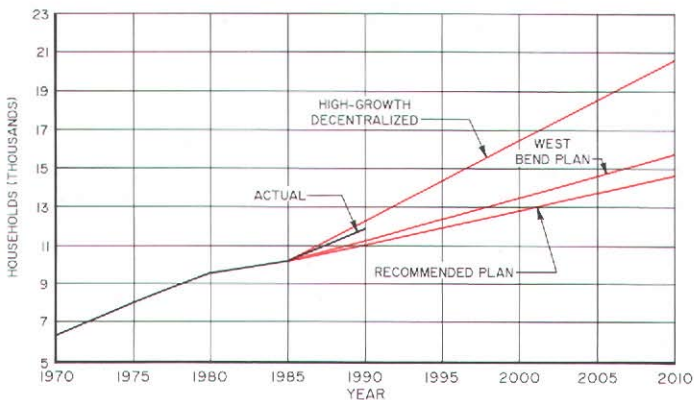
**HISTORIC AND FORECAST HOUSEHOLDS
WEST BEND URBAN SERVICE AREA**



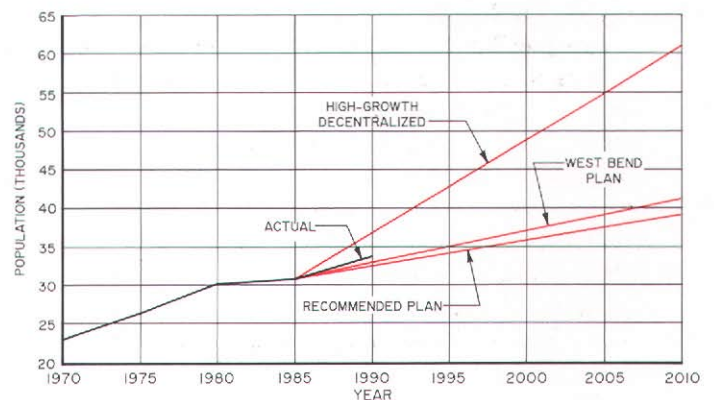
**HISTORIC AND FORECAST POPULATION
WEST BEND URBAN SERVICE AREA**



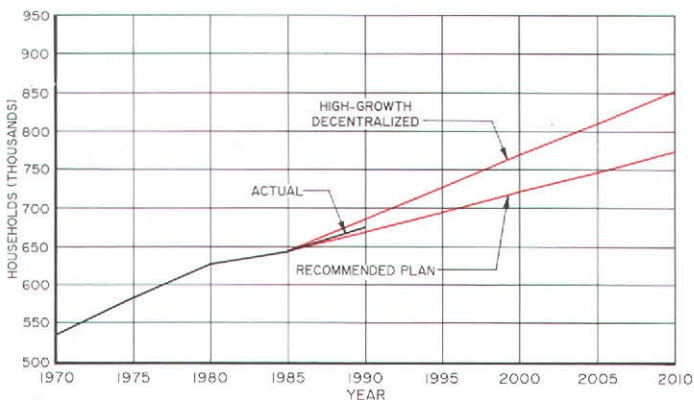
**HISTORIC AND FORECAST HOUSEHOLDS
WEST BEND PLANNING AREA**



**HISTORIC AND FORECAST POPULATION
WEST BEND PLANNING AREA**



**HISTORIC AND FORECAST HOUSEHOLDS
SOUTHEASTERN WISCONSIN REGION**



**HISTORIC AND FORECAST POPULATION
SOUTHEASTERN WISCONSIN REGION**

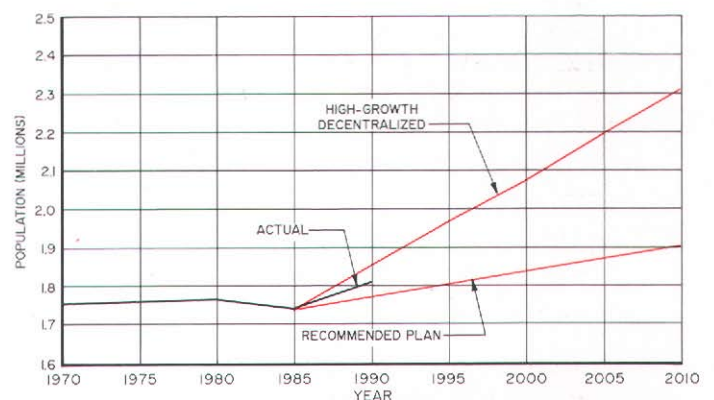
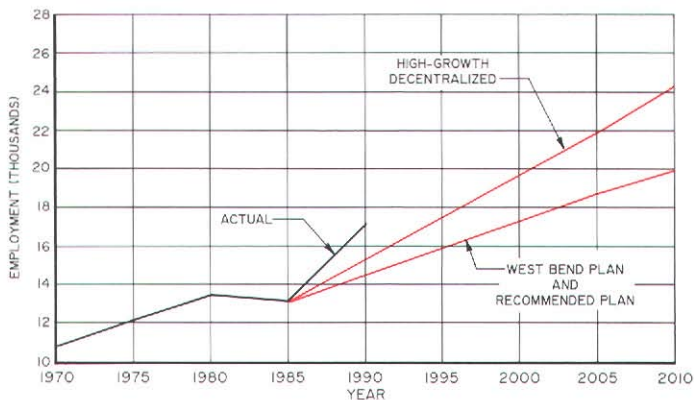
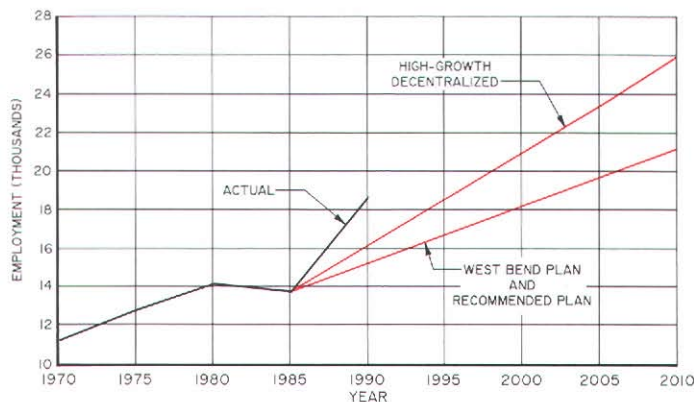


Figure 2 (continued)

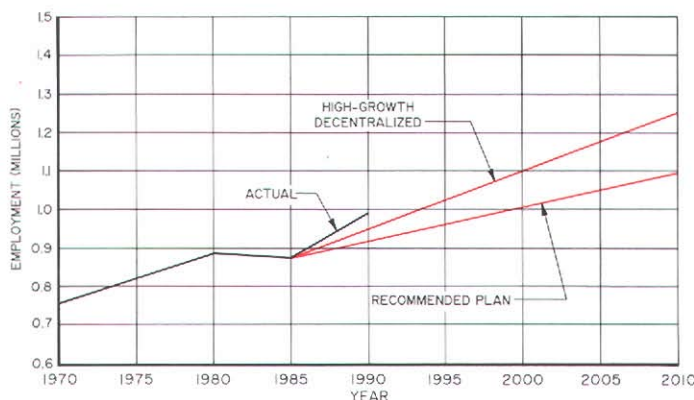
HISTORIC AND FORECAST EMPLOYMENT
WEST BEND URBAN SERVICE AREA



HISTORIC AND FORECAST EMPLOYMENT
WEST BEND PLANNING AREA



HISTORIC AND FORECAST EMPLOYMENT
SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

density areas, at intervals of no more than one mile in urban medium-density areas, at intervals of no more than two miles in urban suburban-density areas, and at intervals of no less than two miles in rural areas.⁵

- Arterial street routings in urban portions of the planning area should be direct and understandable.
- Arterial street traffic volumes should not be permitted to exceed arterial design capacity.

Inadequate Arterial Spacing

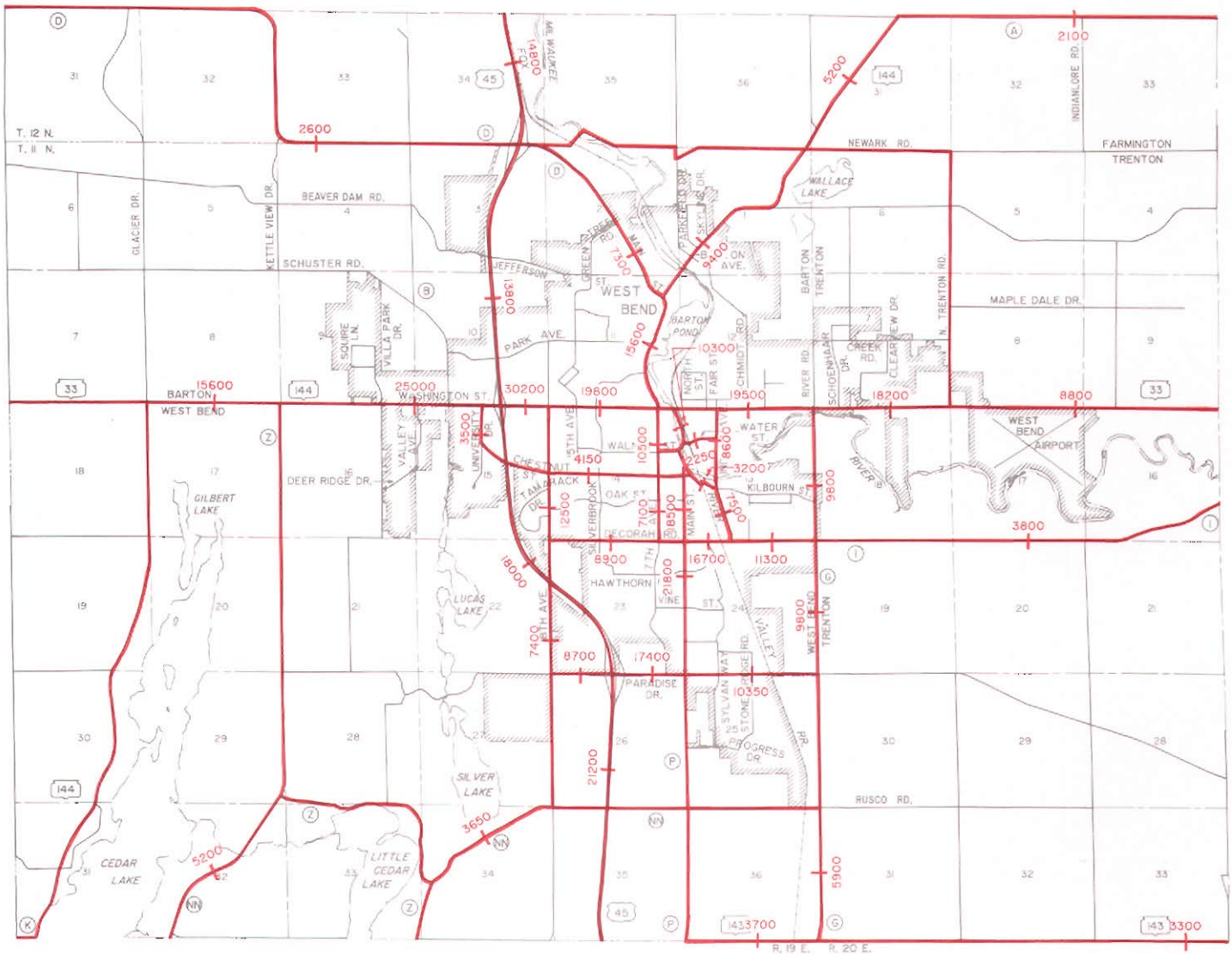
It is important to note that the standards relating to adequate spacing and direct routing of arterials are to be applied only in the urban portions of the planning area. Adequate spacing and convenient routing of arterials are essential to the support of existing urban development and to the promotion of new urban development in areas envisioned for such development in the land use plan. Generalized boundaries of that part of the planning area which may be considered currently urban and which are envisioned as urban under planned future conditions are shown on Map 5.

Map 16 summarizes the existing arterial problems identified through application of the adopted standards. The existing identified arterial spacing problems are a result of spacing in excess of one mile. These four include: 1) along the extension of 18th Avenue from Washington Street (STH 33) north to N. Main Street (CTH D), 2) along Jefferson Street from 18th Avenue to N. Main Street, 3) on Schmidt Road between STH 33 and Barton Avenue (STH 144), and 4) along N. River Road extended

⁵The definition of density for residential development is as follows: *High-Density*: 11.0-15.0 housing units per net residential acre (multi-family dwelling units); *Medium-High-Density*: 6.1-10.9 housing units per net residential acre (two- and multi-family dwelling units); *Medium-Density*: 2.3 to 6.9 housing units per net residential acre (for example, an area with single-family homes on 65-by-100-foot to 100-by-200-foot lots); *Low-Density*: 0.7 to 2.2 housing units per net residential acre (for example, an area with single-family homes on lots of one-half to one-and-one-half acres); *Suburban-Density*: 0.2 to 0.6 housing units per net residential acre (for example, an area with single-family homes on lots of one-and-one-half to five acres).

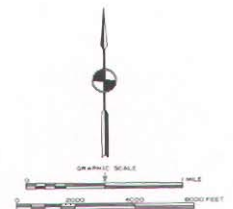
Map 14

FORECAST DESIGN YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES BASED ON THE ADOPTED CITY AND REGIONAL LAND USE PLANS ON THE EXISTING 1992 ARTERIAL STREET AND HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA



LEGEND

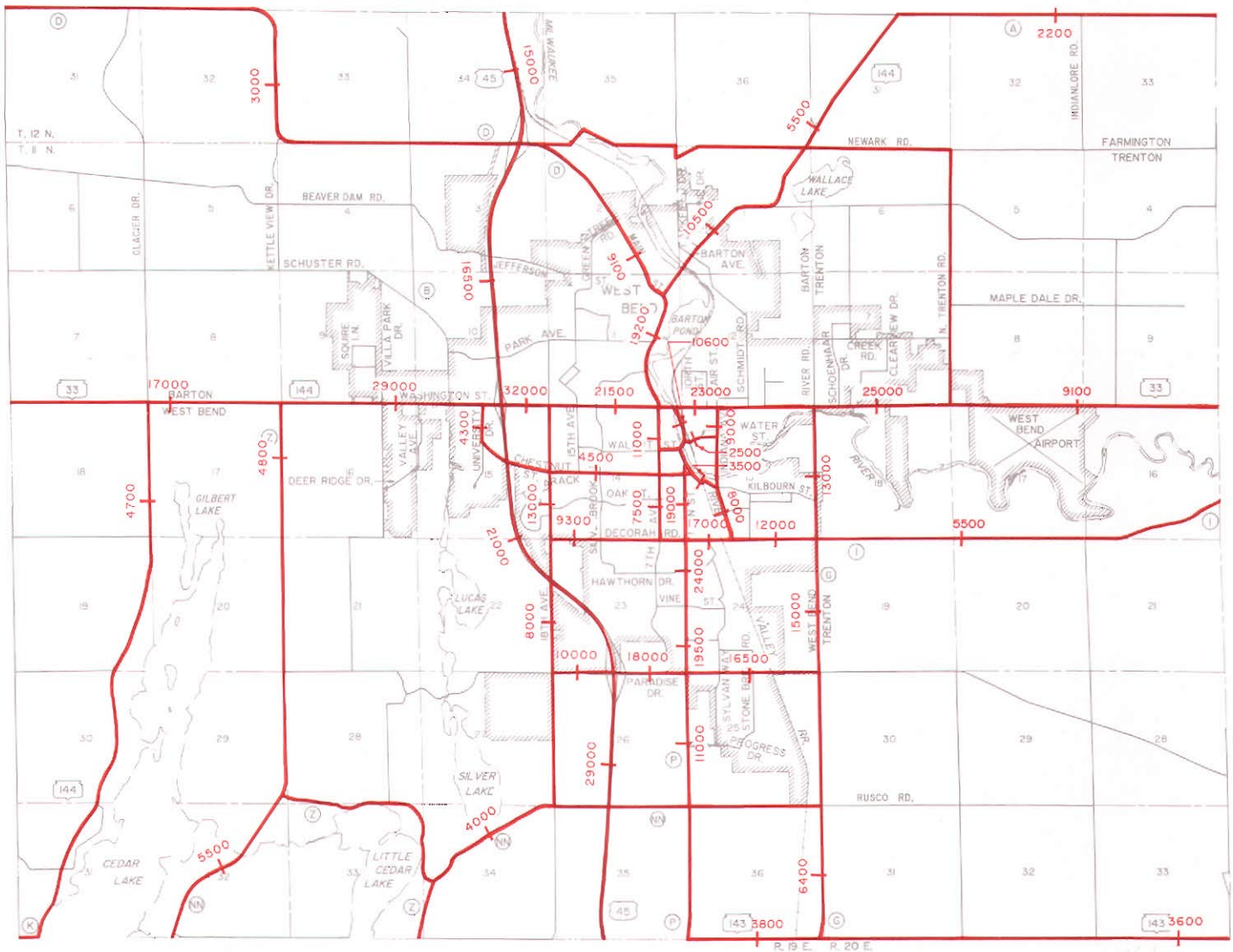
- ARTERIAL STREETS AND HIGHWAYS
- 12000 FORECAST DESIGN YEAR 2010
AVERAGE WEEKDAY TRAFFIC VOLUMES
BASED ON THE ADOPTED CITY AND
REGIONAL LAND USE PLANS



Source: SEWRPC.

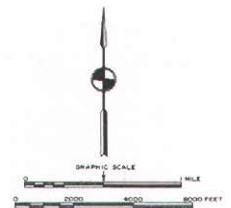
Map 15

FORECAST DESIGN YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES BASED ON FULL DEVELOPMENT WITHIN THE CITY'S URBAN SERVICE AREA AND THE HIGH-GROWTH DECENTRALIZED SCENARIO ON THE EXISTING 1992 ARTERIAL STREET AND HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA



LEGEND

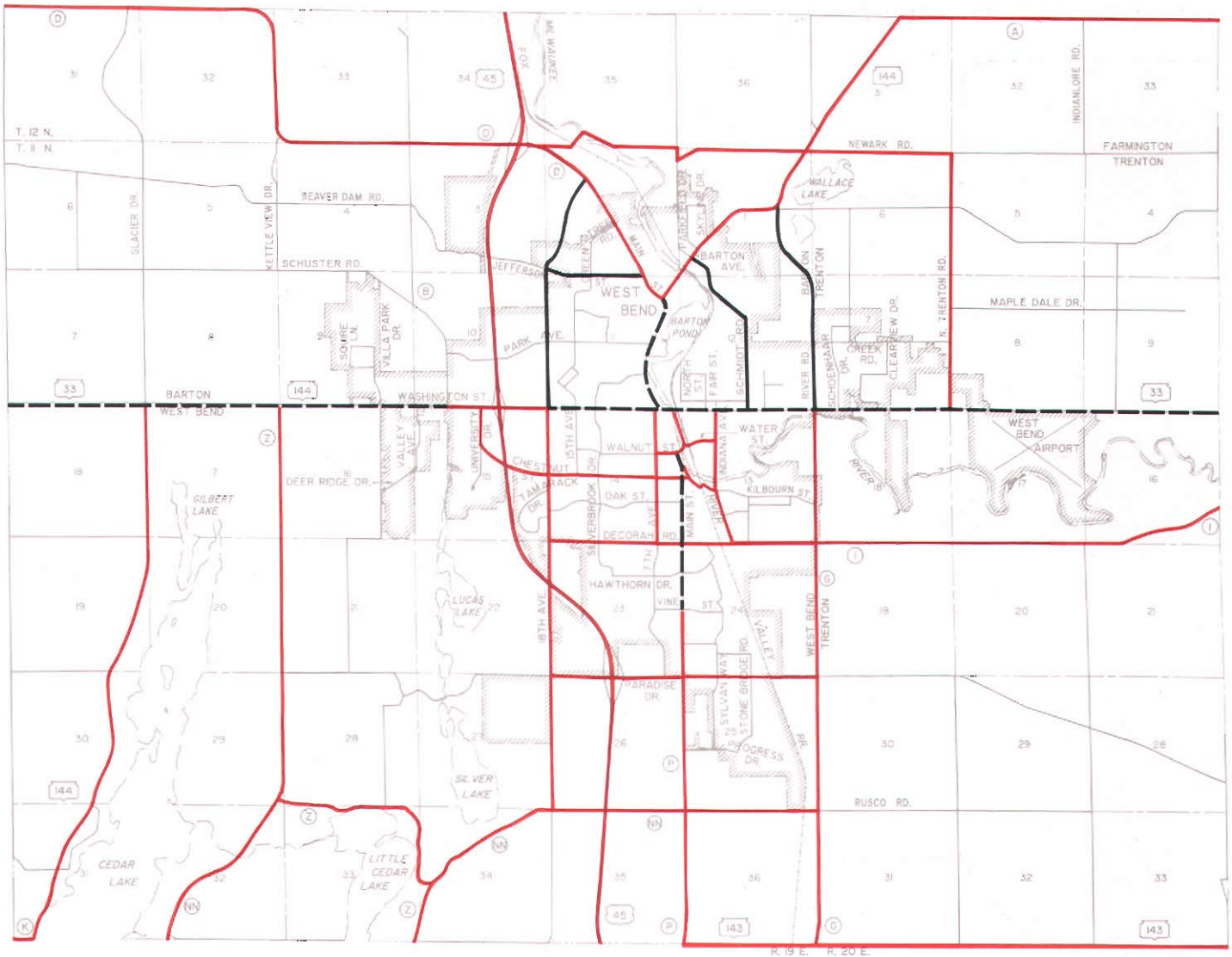
-  ARTERIAL STREETS OR HIGHWAYS
 FORECAST DESIGN YEAR 2010
 AVERAGE WEEKDAY TRAFFIC VOLUME



Source: SEWRPC.

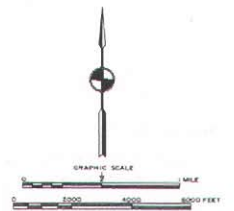
Map 16

EXISTING ARTERIAL DEFICIENCIES IN THE CITY OF WEST BEND PLANNING AREA: 1992



LEGEND

- ARTERIAL SPACING DEFICIENCY
- - - ARTERIAL CAPACITY DEFICIENCY
- ARTERIAL STREETS OR HIGHWAYS



Source: SEWRPC.

from Washington Street (STH 33) to Wallace Lake Road and west along Wallace Lake Road Drive to STH 144.

Application of the arterial spacing standard to the increased areal extent of urban development proposed in the adopted year 2010 land use plan for the City of West Bend and environs resulted in the identification of four additional arterial spacing problems. These include: 1) Kettle View Drive between Schuster Drive and CTH D, 2) County B and CTH B between STH 33 and a new facility connecting Schuster Drive with Beaver Dam Road, 3) a new facility about one mile north of, and parallel to, STH 33 between River Road and Trenton Road, and 4) Paradise Road between CTH G and Maple Road. In addition, the extension of Kettle View Drive from STH 33 to Schuster Drive, Schuster Drive from Kettle View Drive and its extension to Beaver Dam Road along with Beaver Dam Road from the extension of Schuster Drive to 18th Avenue, and the extension of Maple Road from a point just north of Paradise Drive to STH 33 were identified not only as arterial spacing deficiency problems but also as missing arterial system segments resulting in travel indirection. The existing and design year 2010 arterial spacing and travel indirection problems are shown on Map 17.

Capacity Deficiencies

Existing problems of arterial capacity deficiency were identified by comparing the existing 1992 average weekday traffic volume on each arterial street and highway segment to its design capacity. Four significant existing capacity deficiencies were identified within the study area: 1) the segment of STH 33 from the western limits of the planning area to County B, 2) another segment of STH 33 from 18th Avenue to the eastern planning area boundary, 3) the segment of Main Street (STH 144) from STH 33 to Park Avenue, and 4) the segment of Main Street between Vine Street and Walnut Street. These arterial street and highway segments are shown on Map 16.

The forecast design year 2010 traffic volumes, based on the forecast levels of employment, households, and population in the adopted City and regional land use plans, were compared to the existing design capacity on each arterial street and highway segment to identify potential future arterial capacity deficiency problems. Potential future arterial capacity deficiencies identified within the study area were: 1) STH 33

between University Drive and River Road, 2) Decorah Road between 7th Avenue and Indiana Avenue, 3) Main Street between Vine Street and Walnut Street, and 4) Paradise Drive between USH 45 and Main Street. These arterial street and highway segments are shown on Map 17.

It may also be noted that capacity deficiencies identified by comparing existing 1992 average weekday traffic counts to existing arterial design capacity may be expected to be exacerbated because forecast design year average weekday traffic volumes on the arterial system may be expected to be higher than existing volumes.

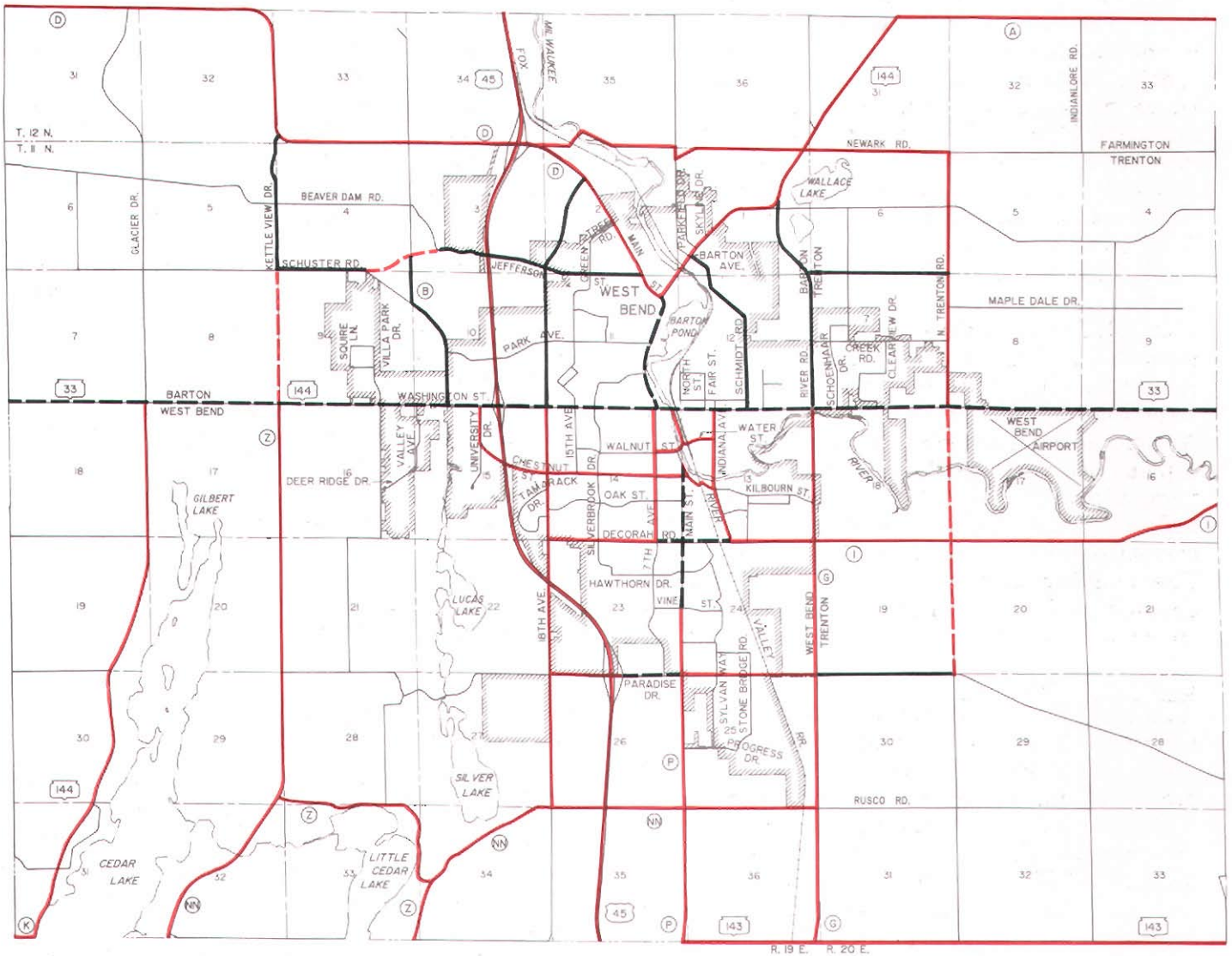
The forecast design year 2010 traffic volumes, based on forecast levels of employment, households, and population which may be expected if the lands within the City's urban service area are fully developed beyond the year 2010, were also compared to the existing design capacity on each arterial street and highway segment to identify potential capacity deficiency problems. Additional potential future capacity deficiencies which may be expected under this scenario include: 1) Main Street between Paradise Drive and Vine Street, 2) River Road between Paradise Drive and STH 33, and 3) Paradise Drive between Main Street and River Road.

EXISTING PUBLIC TRANSPORTATION FACILITIES AND SERVICES

Existing transit services in and near the City of West Bend consist largely of specialized transportation services designed to serve the needs of the elderly and disabled population groups in and around the City of West Bend. Such services typically require an advance reservation, operate only during certain hours or on certain days, accommodate trips made only within Washington County, and use vehicles such as accessible vans and accessible buses, station wagons, and private automobiles. The operators of these services include the American Cancer Society, the West Bend Chapter of the American Red Cross, the Cedar Lake Home Campus, the Cedar Ridge Retirement Campus, selected nonprofit organizations participating in the Wisconsin Department of Transportation's Job Ride Program, LP & P Nichols, Ltd., Specialized Transport Services, Inc., the Samaritan Home, The Threshold, Inc., Washington County Department of Social Services, Washington County Office on Aging, and the West Bend Joint School District.

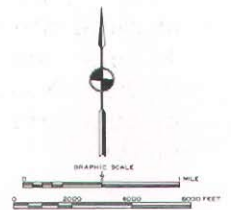
Map 17

POTENTIAL FUTURE ARTERIAL DEFICIENCIES ON THE EXISTING ARTERIAL SYSTEM UNDER THE FORECAST DESIGN YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES BASED ON THE ADOPTED CITY OF WEST BEND AND REGIONAL LAND USE PLANS



LEGEND

- ARTERIAL SPACING DEFICIENCY
- - - ARTERIAL CAPACITY DEFICIENCY
- ARTERIAL STREETS OR HIGHWAYS
- - - ARTERIAL SPACING AND TRAVEL INDIRECTION DEFICIENCY



Source: SEWRPC.

Only two transit services provided within the West Bend area were available for use by the general public in 1989. These include the service provided by Greyhound Lines, Inc., which operates one of their intercity motor bus routes through the City of West Bend on a daily basis, and the taxicab service provided by Veteran's Cab in the City of West Bend.

In April 1991, the City of West Bend adopted a plan for the provision of transit service available to the general public using a publicly supported demand-responsive transit system in the West Bend area.⁶ The provision of the recommended transit service began in January 1993.

OVERVIEW OF THE CURRENTLY ADOPTED REGIONAL TRANSPORTATION SYSTEM AND COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLANS

The recommended year 2000 regional transportation system plan, adopted by the Commission in 1978, is a second-generation plan with three major components: arterial streets and highways, including freeways; public transit facilities and services; and transportation system management measures.⁷ It is important to note that the regional transportation system plan is designed to serve the regional land use plan and is not a projection of current development trends toward decentralization of population, employment, and urban land use. Thus, implementation of the regional transportation system plan would serve to promote implementation of the regional land use plan.

It is also important to note that the transportation system plan is a balanced plan, including highway, public transit, and transportation

system management recommendations. The plan emphasizes public transit improvements and transportation system management measures to reduce the need for highway facilities. It is important that all three components of the plan, arterial highways, public transit, and transportation systems management, be implemented if an efficient transportation system is to be achieved, since no one component is designed to provide all the needed transportation service. The arterial highway component of the adopted regional transportation system plan is shown in graphic summary form on Map 18 and the public transit component is shown on Map 19.

In 1989, a new Washington County Jurisdictional Highway System Plan was adopted, refining and detailing the highway element of the adopted regional transportation system plan.⁸ The improvements and jurisdictional transfers recommended under the new jurisdictional highway system plan reflect those changes in land use development and attendant changes in traffic patterns and volumes and related expected changes in year 2000 travel demand which had occurred after adoption of the regional transportation system plan. Map 20 shows that part of the new Washington County Jurisdictional Highway System Plan: 2000 for the West Bend planning area. Recommended highway improvements, construction to provide additional traffic lanes, or construction to provide new facilities, in the West Bend planning area are set forth in Table 11. Recommended jurisdictional transfers in the West Bend planning area are set forth in Table 12. Timely transfer of these facilities to the appropriate governmental unit may be expected to promote implementation of the recommended improvements.

Within Washington County, bus-on-freeway service is proposed over two routes serving five stations and collecting and distributing passengers on route extensions in the City of West Bend and the Village of Germantown. The service would operate in both directions and would be provided at 12- to 15-minute headways in the morning and afternoon peak periods and

⁶See SEWRPC Community Assistance Planning Report No. 189, *A Transit System Feasibility Study and Development Plan for the City of West Bend: 1992-1996*, February 1991.

⁷See SEWRPC Planning Report No. 25, *A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin—2000, Volume One, Inventory Findings*, April 1975; *Volume Two, Alternative and Recommended Plan*, May 1978.

⁸See SEWRPC *Amendment to the Washington County Jurisdictional Highway System Plan—2000*, June 1990.

Map 18

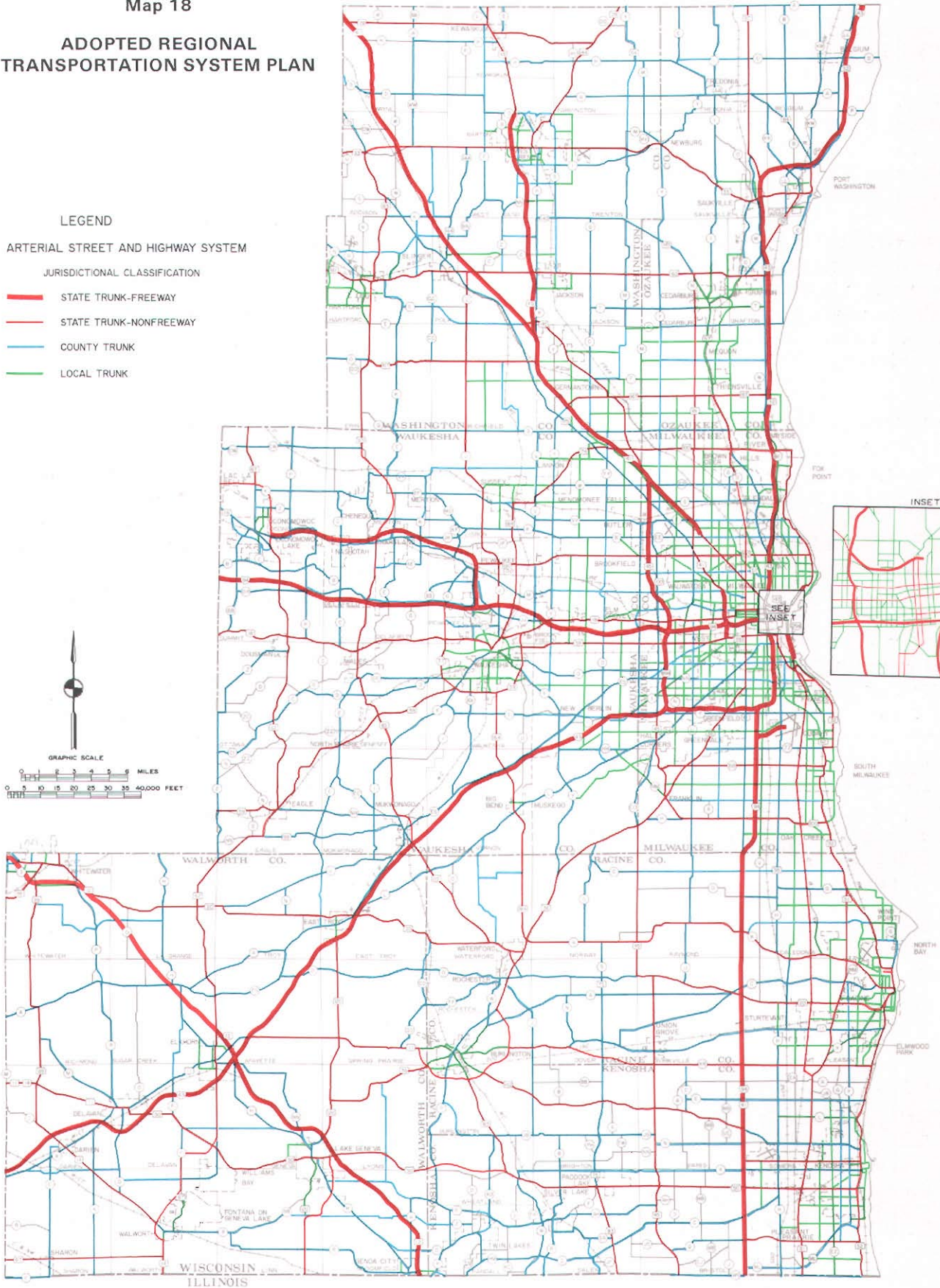
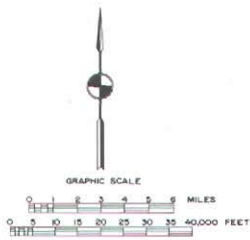
ADOPTED REGIONAL TRANSPORTATION SYSTEM PLAN

LEGEND

ARTERIAL STREET AND HIGHWAY SYSTEM

JURISDICTIONAL CLASSIFICATION

- STATE TRUNK-FREEWAY
- STATE TRUNK-NONFREEWAY
- COUNTY TRUNK
- LOCAL TRUNK

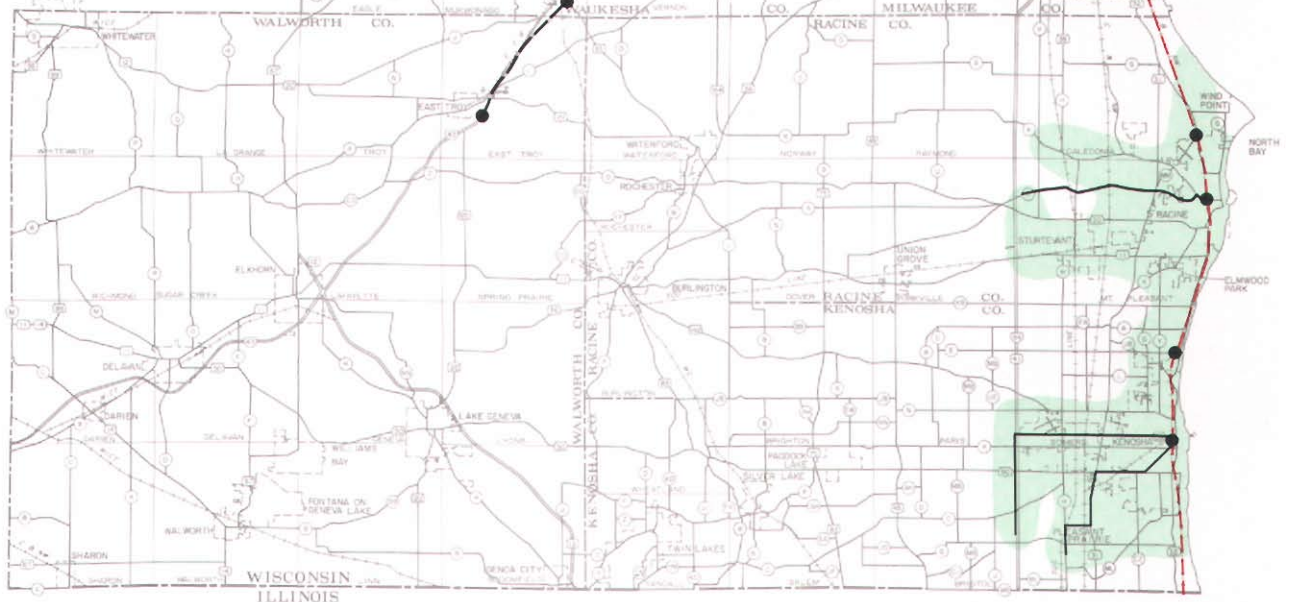
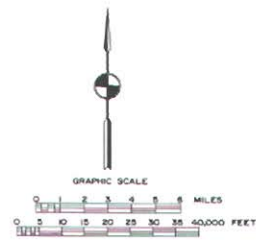


Source: SEWRPC.

Map 19

**PUBLIC TRANSIT ELEMENT OF THE
REGIONAL TRANSPORTATION PLAN**

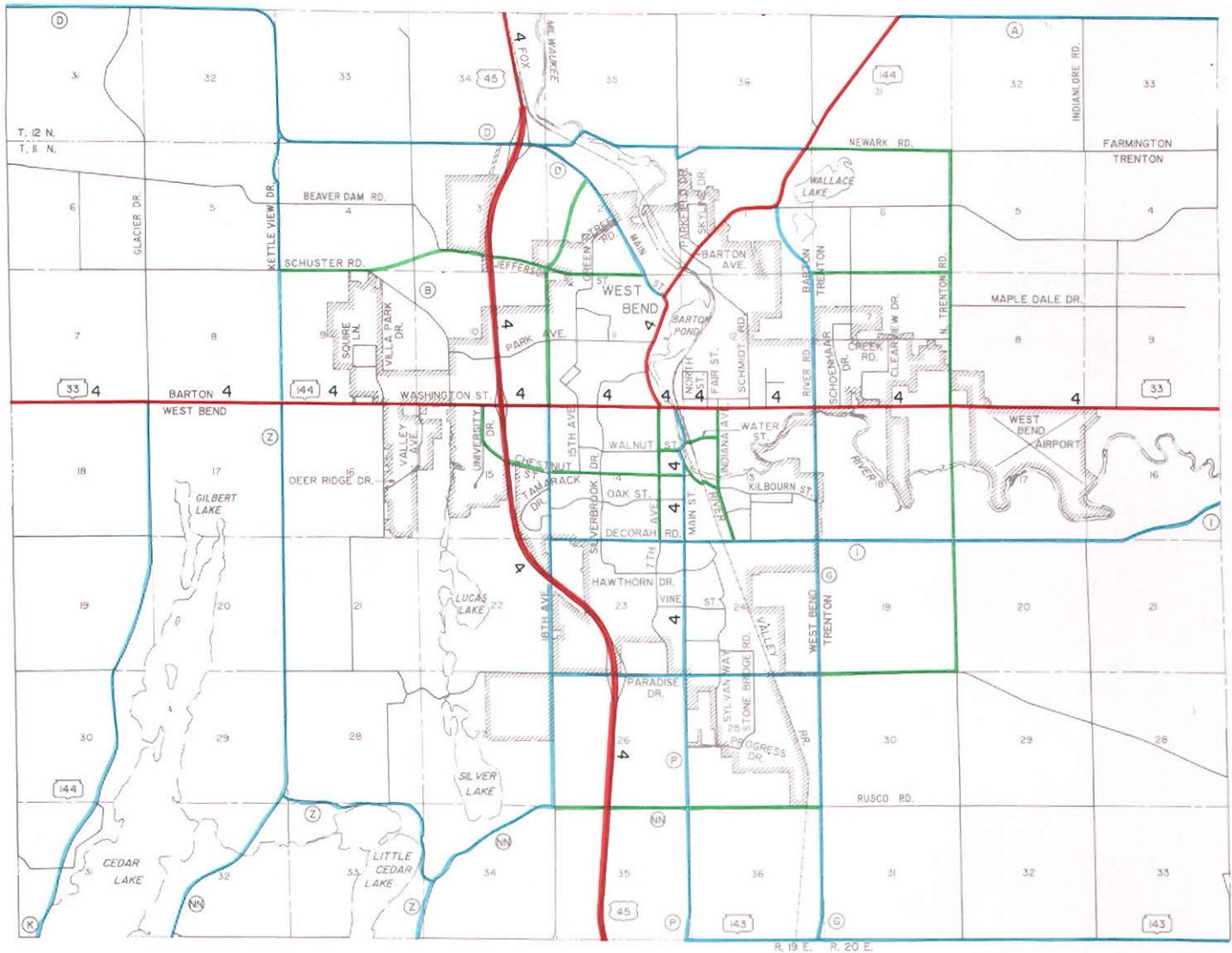
- LEGEND**
- TRANSIT ROUTES**
- LIGHT RAIL TRANSIT/EXPRESS BUS
 - - - BUS-ON-FREEWAY RIGHT-OF-WAY
 - BUS-ON-NONFREEWAY RIGHT-OF-WAY
 - - - COMMUTER RAIL
- TRANSIT STATIONS**
- WITH PARKING
 - WITHOUT PARKING
- LOCAL TRANSIT SERVICE AREA



Source: SEWRPC.

Map 20

CITY OF WEST BEND PLANNING AREA JURISDICTIONAL HIGHWAY SYSTEM PLAN: 2000



LEGEND

FREEWAY

STATE TRUNK HIGHWAY

STANDARD ARTERIAL

STATE TRUNK HIGHWAY

COUNTY TRUNK HIGHWAY

LOCAL TRUNK HIGHWAY

4 NUMBER OF TRAFFIC LANES
(2 WHERE UNNUMBERED)

Source: SEWRPC.

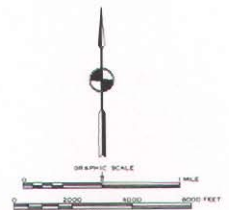


Table 11

**CAPACITY IMPROVEMENTS RECOMMENDED UNDER THE NEW WASHINGTON COUNTY
JURISDICTIONAL HIGHWAY SYSTEM PLAN IN THE CITY OF WEST BEND PLANNING AREA**

Jurisdiction	Facility	Termini	Description
Existing Location (additional traffic lanes)			
State	USH 45	CTH D to Village of Kewaskum northern planning area boundary	Widen from two to four traffic lanes
	STH 33	CTH Z to CTH B	Widen from two to four traffic lanes
	STH 33	18th Avenue to 7th Avenue	Widen from two to four traffic lanes
	STH 33	Schmidt Road to River Road	Widen from two to four traffic lanes
	STH 33	USH 41 to CTH Z	Widen from two to four traffic lanes
	STH 33	River Road to Trenton Road	Widen from two to four traffic lanes
	STH 33	Oak Road to Ozaukee County eastern planning area boundary	Widen from two to four traffic lanes
New Location (new roadway)			
State	STH 33	Trenton Road to Oak Road	Construct four lanes on new alignment
County	S. River Road extension Kettleview Drive	STH 33 to S. River Road STH 33 to Schuster Road	Construct two lanes on new alignment ^a Construct two lanes on new alignment
Local	18th Avenue extension Jefferson Street extension Schuster Drive extension Trenton Road extension	Park Avenue to CTH P Trenton Road to N. River Road Schuster Drive to Beaver Dam Road . . . STH 33 to Maple Road	Construct two lanes on new alignment Construct two lanes on new alignment Construct two lanes on new alignment Construct two lanes on new alignment

^aThis improvement has been implemented.

Source: SEWRPC.

at 30- to 60-minute headways in the midday and off-peak periods. The bus-on-freeway service would connect not only with the Milwaukee central business district, but also with planned express bus routes. Under the plan, about 5,300 transit person trips would be generated within Washington County on an average weekday in the year 2000, or about 2 percent of the approximately 257,000 total person trips which may be expected to be generated on all travel modes in the year 2000.

The public transit element of the year 2000 regional transportation system plan has been refined in the West Bend planning area through the adoption in 1991 of a transit system plan for the City of West Bend. Under the adopted transit system development plan, demand-responsive transit service would be provided to the general public through the operation of a publicly subsidized shared-ride taxicab system. Operations began in January 1993, with service from 6:00 a.m. to 10:00 p.m. Monday through Saturday and from 8:00 a.m. to 2:00 p.m. on Sundays and holidays. Transit service is provided to serve all trips within the West Bend planning area which have at least one end of the trip located in the City of West Bend.

SUMMARY

This chapter has presented information on the existing transportation system in the City of West Bend planning area. In 1991, a total of about 258.6 miles of streets and highways existed in the West Bend planning area. Each segment of this total street and highway network has been classified according to function, jurisdictional responsibility, and Federal aid eligibility. A total of 72.5 miles, or about 28 percent, of the total network are functionally classified as arterials, with the remaining 186.1 miles, or 72 percent, classified as collectors or land-access streets. The State of Wisconsin has jurisdictional responsibility for 25.8 miles of the total highway mileage in the planning area, or about 10 percent of the total mileage. Washington County has jurisdictional responsibility for 26.4 miles of the arterial highway mileage in the planning area, or about 10.2 percent of the mileage. The remaining 206.4 miles of streets and highways in the planning area are under the jurisdiction of the City of West Bend, the Town of Barton, the Town of Farmington, the Town of Trenton, and the Town of West Bend, comprising about 79.8 percent of the total street and highway mileage within the City of West

Table 12

CHANGES IN HIGHWAY SYSTEM JURISDICTIONAL RESPONSIBILITY UNDER THE NEW WASHINGTON COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN IN THE CITY OF WEST BEND PLANNING AREA^a

Unit of Government	Jurisdiction		Facility	From	To
	Planned	Existing			
Town of Barton	County trunk highway County trunk highway County trunk highway County trunk highway Local trunk highway Local trunk highway Local nonarterial	New facility New facility Local trunk highway Local trunk highway New facility New facility County trunk highway	Kettleview Drive extension N. River Road extension Kettleview Drive Newark Road/Lighthouse Drive Schuster Drive extension 18th Avenue CTH B	Schuster Drive City of West Bend CTH D CTH D Schuster Drive City of West Bend CTH D	STH 33 STH 144 Schuster Drive STH 144 Beaver Dam Road CTH D City of West Bend
Town of Trenton	County trunk highway County trunk highway Local trunk highway Local trunk highway	State trunk highway Local trunk highway New facility New facility	STH 143 S. River Road Jefferson Street extension Trenton Road/Maple Road	CTH G STH 33 West town line STH 33	CTH M CTH I Trenton Road Maple Road end
Town of West Bend	County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway Local trunk highway	State trunk highway State trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway County trunk highway	STH 144 STH 143 18th Avenue Decorah Road S. River Road Paradise Drive Paradise Drive CTH NN	STH 33 CTH P CTH NN 18th Avenue STH 33 18th Avenue City of West Bend 18th Avenue	CTH K CTH G City of West Bend City of West Bend City of West Bend City of West Bend CTH G CTH P
City of West Bend	County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway County trunk highway Local trunk highway	New facility New facility Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway Local trunk highway New facility	S. River Road extension N. River Road extension Island Avenue S. River Road N. River Road N. Main Street Paradise Drive 18th Avenue Main Street Decorah Road 18th Avenue extension	STH 33 Creek Road STH 33 CTH 1 STH 33 Green Tree Road 18th Avenue South corporate limits Island Avenue 18th Avenue North corporate limits	South corporate limit North corporate limit Main Street North corporate limit North corporate limit Barton Avenue East corporate limit STH 33 Paradise Drive CTH I Park Avenue

^aThe jurisdictional transfers recommended should all be initiated as soon as possible, since the transfers will promote implementation of the recommended plan improvement.

Source: SEWRPC.

Bend planning area. All 72.5 miles of arterial streets and highways are eligible for Federal funding.

An inventory of the physical characteristics of the existing arterial street and highway system was conducted. This inventory included the type of cross-section, the width of the pavements, and parking restrictions for each arterial segment. The type of traffic control, that is, traffic signals or stop signs, at each arterial street intersection was identified. The railway and school crossing protection on the arterial street and highway system were identified. Finally, data were collected on the posted speed limits for the arterial street and highway system of the West Bend planning area.

Data on the existing and historic average weekday traffic volumes for the arterial streets and highways in the West Bend planning area

were collated. Forecast design year 2010 traffic volumes for the existing arterial street and highway system in the West Bend planning area were prepared. These forecast volumes have their basis in the recently adopted land use plan for the City and environs and the proposed new regional land use plan for Southeastern Wisconsin.

Current arterial system deficiencies were identified using transportation system development objectives and standards adopted for the planning area and set forth in Chapter II of this report. Three of the adopted standards are particularly useful in identifying deficiencies and, therefore, where improvement or system expansion is necessary. These standards require that a minimum spacing of arterials not be exceeded in the urban portion of the planning area, that urban arterials be direct in routing and alignment, and that arterial traffic volumes

not be permitted to exceed arterial design capacity. The existing arterial spacing problems were identified in the four corridors, including 1) along the extension of 18th Avenue from Washington Street (STH 33) north to North Main Street (CTH D), 2) along Jefferson Street from 18th Avenue to North Main Street (CTH D), 3) on Schmidt Road between STH 33 and Barton Avenue (STH 144), and 4) along North River Road extended from West Washington Street (STH 33) to Newark Drive and west along Newark Drive to STH 144. Four significant existing arterial capacity deficiencies based on existing 1992 average weekday traffic volumes were identified within the study area: 1) a segment of STH 33 from the western limits of the planning area to County B, 2) another segment of STH 33 from 18th Avenue to the eastern planning area boundary, 3) a segment of North Main Street (STH 144) from STH 33 to Park Street, and 4) a segment of Main Street between Vine Street and Walnut Street.

Application of the arterial spacing standard to the increased areal extent of urban development proposed in the adopted year 2010 land use plan for the City of West Bend and environs resulted in the identification of four additional arterial spacing problems. These include: 1) Kettle View Drive between Schuster Drive and CTH D, 2) County B and CTH B between STH 33 and a new facility connecting Schuster Drive with Beaver Dam Road, 3) a new facility about one mile north of, and parallel to, STH 33 between River Road and Trenton Road, and 4) Paradise Road between CTH G and Maple Road. In addition, the extension of Kettle View Drive from STH 33 to Schuster Drive, Schuster Drive from Kettle View Drive and its extension to Beaver Dam Road along with Beaver Dam Road from the extension of Schuster Drive to 18th Avenue, and the extension of Maple Road from a point just north of Paradise Drive to STH 33 were identified not only as arterial spacing deficiency problems but also as missing arterial system segments resulting in travel indirection.

Potential future arterial capacity deficiencies were identified by comparing the current design capacity on each existing arterial street and highway segment to the forecast design year 2010 traffic volumes derived from the forecast levels of employment, households, and population under the adopted City and regional land

use plans. Potential future arterial capacity deficiencies identified within the study area were: 1) STH 33 between University Drive and River Road, 2) Decorah Road between 7th Avenue and Indiana Avenue, 3) Main Street between Paradise Drive and Vine Street, and 4) Paradise Drive between USH 45 and Main Street.

An inventory of the existing transit service in and near the City of West Bend was also conducted. This service consists largely of specialized transportation services designed to serve the needs of the elderly and disabled population groups in and around the City of West Bend. Only two transit services provided within the West Bend area were available for general public use in 1989, including the service provided by Greyhound Lines, Inc., operating an inner-city bus route through the City of West Bend on a daily basis, and the taxicab service provided by Veteran's Cab in the City of West Bend.

The regional transportation system plan, which was adopted by the Commission in 1978, is a second-generation plan with three major components: arterial streets and highways, including freeways; public transit facilities and services; and transportation system management measures intended to meet the travel demands in the region to the year 2000. It is important to note that the regional transportation system plan is designed to serve the regional land use plan, and is a balanced plan, including highway, public transit, and transportation system management recommendations. Public transit improvements and transportation system management measures were emphasized to reduce the need for highway facilities. No one component was designed to provide all the needed transportation service anticipated for the year 2000.

In 1989, the new Washington County jurisdictional highway system plan was adopted, refining in detail the highway element of the adopted regional transportation system plan. The new jurisdictional highway system plan reflects changes which have occurred in the planning area after the adoption of the regional transportation system plan with respect to land use development and the related changes in traffic patterns which may be expected. The public transit element of the plan within Washington County identified the provision of bus-on-freeway service to operate over two routes and serve five stations, as well as to collect and

distribute passengers on route extensions in the City of West Bend and the Village of Germantown. The public transit element of the year 2000 regional transportation system plan has been refined in the West Bend planning area through the adoption in 1991 of a transit system plan for the City of West Bend. Under the adopted transit

system development plan, demand-responsive transit service would be provided to the general public through the operation of a publicly subsidized shared-ride taxicab system to serve all trips within the West Bend planning area which have at least one trip end located in the City of West Bend.

Chapter V

ALTERNATIVE TRANSPORTATION SYSTEM IMPROVEMENTS CONSIDERED TO ABATE EXISTING AND PROBABLE FUTURE DEFICIENCIES

INTRODUCTION

This chapter identifies and evaluates alternative transportation system improvements considered to abate existing and probable future deficiencies identified in the City of West Bend planning area. The first section of the chapter presents a summary of existing and probable future transportation system deficiencies assuming no improvements in the current arterial system. The next section of the chapter describes the degree to which the currently adopted design year 2000 Washington County Jurisdictional Highway System Plan may be expected to abate the existing and probable future deficiencies of the system, with emphasis upon any remaining deficiencies. The next section of the report identifies and evaluates alternative improvements which would abate the deficiencies anticipated to remain following implementation of the Washington County Jurisdictional Highway System plan.

TRANSPORTATION SYSTEM DEFICIENCIES

A number of arterial system deficiencies were identified by comparing existing conditions on the arterial street system to the transportation system development objectives and standards set forth in Chapter II. These deficiencies are shown in graphic summary form on Maps 14 and 15 in Chapter IV, "Existing Transportation System." After comparing the existing areal extent of urban development in the West Bend area and the related standards, a total of four arterial spacing deficiency problems were identified which would require, for elimination, extension of the following arterials: 1) Jefferson Street between 18th Avenue and Main Street, 2) N. River Road from Creek Road to STH 144, 3) Schmidt Road from STH 33 to STH 144, and 4) 18th Avenue from STH 33 to Main Street (CTH D).¹ A comparison of the existing 1992 average weekday traffic volumes to the existing

arterial street and highway system design capacity resulted in the identification of the following three arterial street and highway system capacity deficiency problems: 1) STH 33 from the West Bend planning area boundary to County B and from 18th Avenue to the east planning area boundary, 2) STH 144 from STH 33 to its intersection with Main Street, and 3) Main Street from Vine Street to Walnut Street.

On the basis of a comparison of the arterial spacing criteria to the anticipated areal extent of urban development by the year 2010, as set forth in the recently adopted land use plan for the City of West Bend and environs, a number of additional arterial spacing deficiencies were identified which required for resolution the extension of the following arterials: 1) County B and CTH B from STH 33 to a new facility connecting Schuster Drive with Beaver Dam Road, 2) Paradise Road from CTH G to Maple Road, and 3) a new facility approximately one mile north of, and parallel to, STH 33 from River Road to Trenton Road.

The elimination of three arterial spacing deficiency problems may also be expected to reduce travel indirection in the study area. These include: 1) Kettle View Drive from CTH D to Schuster Drive and its extension from Schuster Drive to STH 33, 2) Schuster Drive and its extension from Kettle View Drive to Beaver Dam Road and the latter from the Schuster Drive extension to 18th Avenue, and 3) the extension of Trenton Road from the current northerly terminus of Maple Road to STH 33.

Finally, four arterial capacity deficiency problems were identified through the comparison of forecast design year 2010 average weekday traffic volumes based on the adopted City of West Bend and regional land use plans to the design capacity of the existing arterial street and highway system. These probable future capacity deficiency problems included: 1) STH 33 from University Drive to Trenton Road, 2) Decorah Road from 7th Avenue to Indiana Avenue, 3) Paradise Drive from USH 45 to Main Street, and 4) Main Street from Walnut Street to Vine Street.

¹Late in 1992, the City of West Bend initiated the design of the extension of 18th Avenue between Park Street and Jefferson Street.

IMPLEMENTATION OF THE ADOPTED WASHINGTON COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN

The currently adopted Washington County Jurisdictional Highway System Plan, shown in Map 20 in Chapter IV, "Existing Transportation System," recommends a number of capacity improvements intended to abate existing and future arterial spacing deficiency problems. The capacity improvements recommended in this plan were intended to abate existing and potential future arterial system capacity deficiency problems under the adopted regional land use plan, the intermediate-growth centralized land use plan. These improvements are shown on Map 21 and listed in Table 11 in Chapter IV. Adoption by the City of West Bend on June 1, 1992, of a land use plan with modestly higher forecast levels of households and population than envisioned in the adopted regional land use plan may be expected to result in modestly higher average weekday traffic volumes on arterial facilities. Thus, capacity improvements beyond those recommended in the adopted Washington County Jurisdictional Highway System Plan may be necessary to meet the anticipated design year 2010 average weekday traffic volumes at the desired level of service.

As shown in Map 22, the capacity improvements recommended in the adopted Washington County Jurisdictional Highway System Plan may be expected to abate all but two of the arterial spacing and travel indirection deficiency problems. The two arterial spacing problems not expected to be abated include needed facilities in north-south corridors roughly centered on: 1) County B and CTH B from Schuster Drive extended to STH 33 and 2) Schmidt Road from STH 144 to STH 33.

Implementation of the adopted Washington County Jurisdictional Highway System Plan may be expected to abate all the identified existing arterial capacity deficiency problems except those relating to the segment of Main Street between Vine Street and Decorah Road, which would continue to operate over its design capacity. Implementation of the adopted Washington County Jurisdictional Highway System Plan may also be expected to abate some of the identified future arterial system capacity problems. It may be noted that many of the roadway segments anticipated to have capacity deficiencies even after the jurisdictional highway system

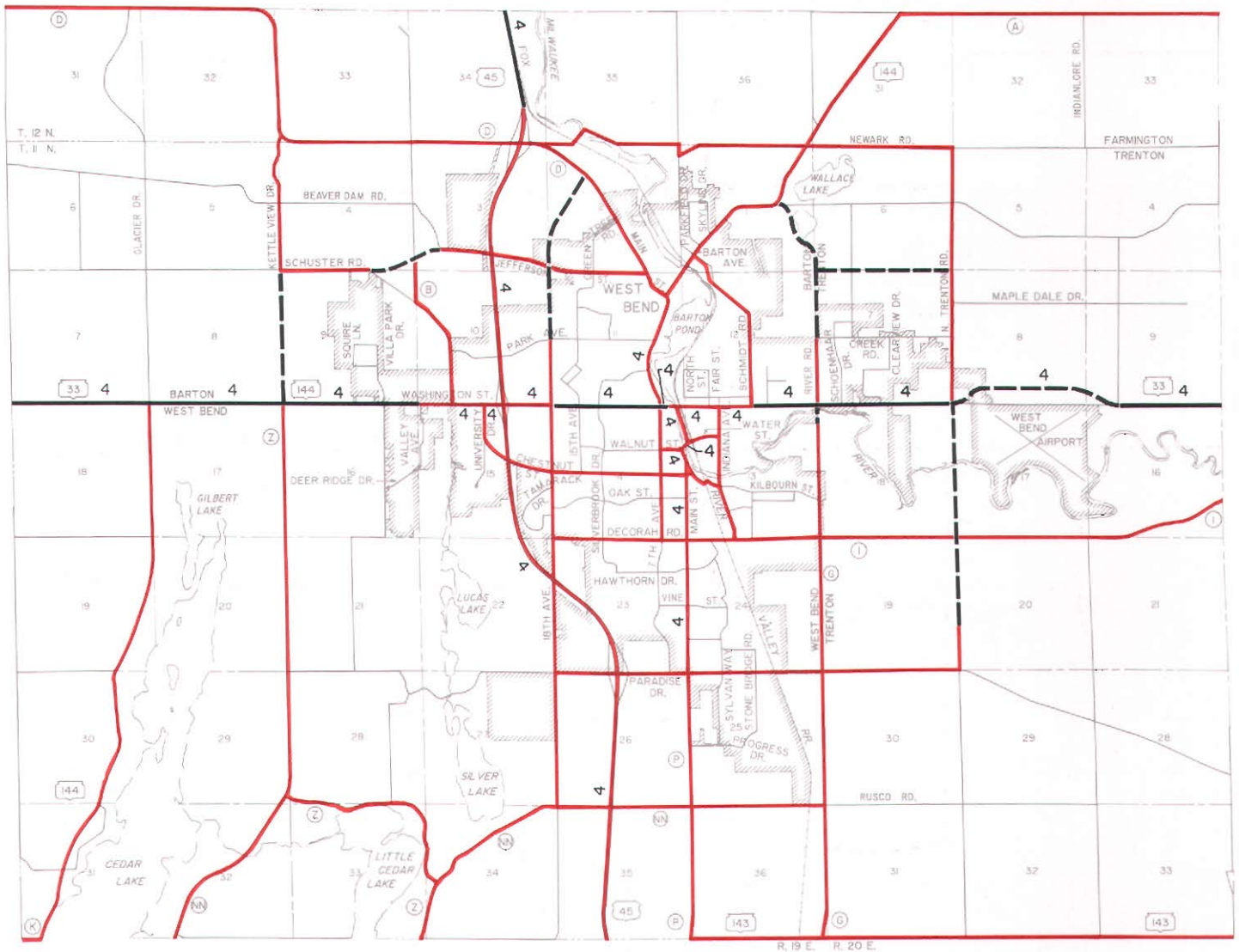
plan is implemented have existing average weekday traffic volumes which approach or exceed the planned roadway capacity. This may, in part, be attributed to the strip commercial development which has been permitted to occur along these routes. This development pattern results in what are, in effect, local vehicle trips on the arterial system as each destination is accessed. In comparison, when Paradise Mall is the destination, the arterial system is utilized only to enter the parking lot. Travel within the Mall is either by walking or by vehicle on the internal roadways of the site, not on the arterial system. Some remaining capacity deficiencies may also be, in part, due to the modestly higher levels of households envisioned in the urban service area under the recently adopted City land use plan. The following arterial system capacity deficiency problems under design year 2010 average weekday traffic volumes would not be expected to be abated. Future traffic volumes on STH 33 from University Drive to Trenton Road may be expected to equal or exceed the design capacity of the four-lane roadway recommended in the Washington County Jurisdictional Highway System Plan. Future traffic volumes on Main Street from Vine Street to Walnut Street, may be expected to equal or exceed the design capacity of the four traffic lanes recommended for that segment of Main Street in the Washington County Jurisdictional Highway System Plan. Finally, future traffic volumes may be expected to exceed the design capacity of the two-lane arterial recommended in the Washington County Jurisdictional Highway System Plan on the following roadway segments: 1) Decorah Road from 7th Avenue to Indiana Avenue and 2) Paradise Drive from USH 45 to Main Street.

DESIGN AND EVALUATION OF ALTERNATIVE IMPROVEMENTS TO RESOLVE FUTURE ROADWAY DEFICIENCIES

This section of the Chapter presents an evaluation of alternative roadway improvements to address the probable future roadway deficiencies, based on the adopted City of West Bend and regional land use plans, expected to remain in the City of West Bend area subsequent to full implementation of the capacity improvements recommended under the current Washington County Jurisdictional Highway System Plan.

Map 21

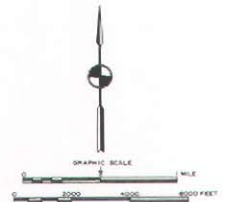
CAPACITY IMPROVEMENTS RECOMMENDED UNDER THE ADOPTED WASHINGTON COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN



LEGEND

- WIDEN ON CURRENT ALIGNMENT TO PROVIDE ADDITIONAL TRAFFIC LANES ^a
- CONSTRUCT ON NEW ALIGNMENT
- 4 NUMBER OF LANES (2 WHERE UNNUMBERED)
- ARTERIAL SYSTEM

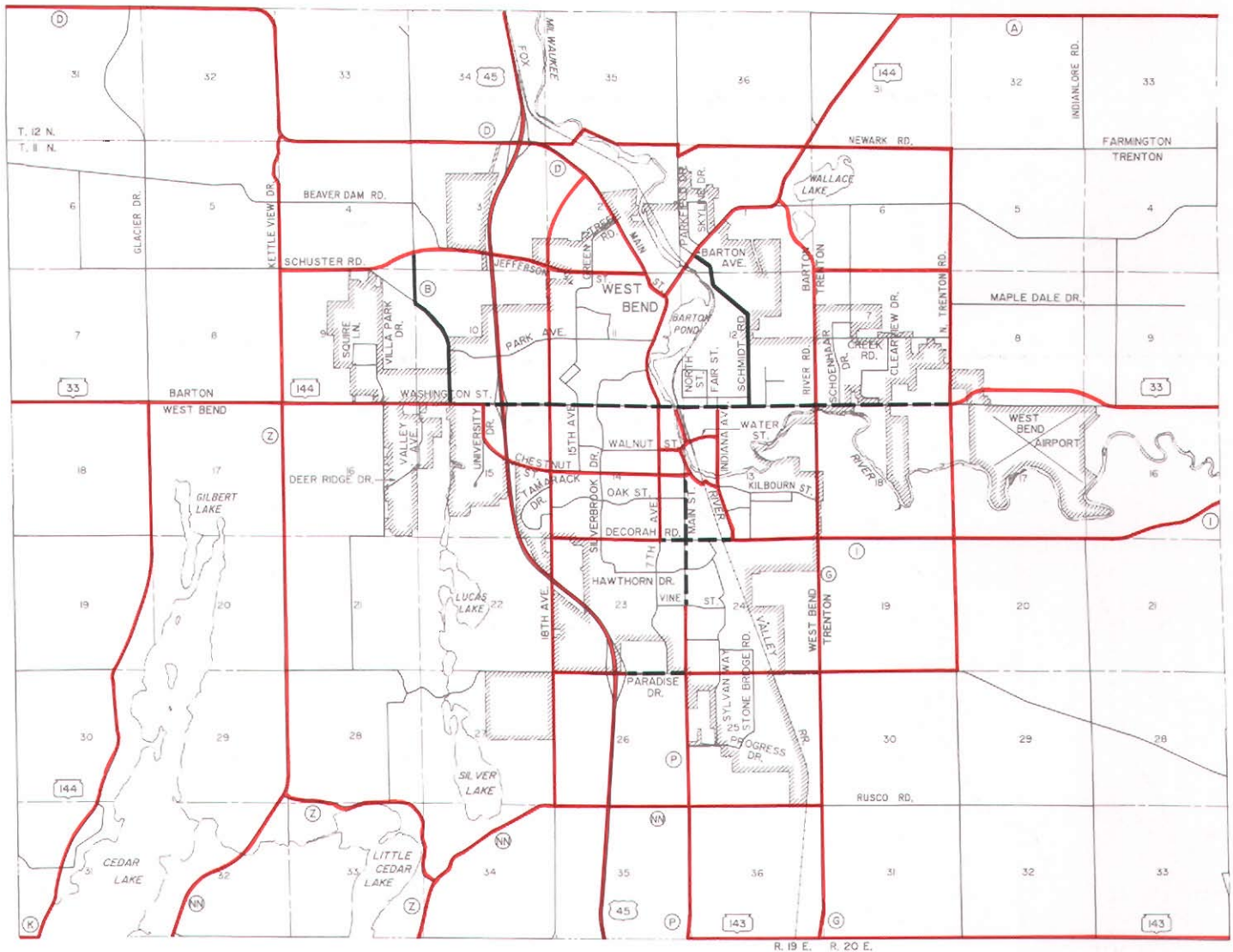
^aADDITIONAL TRAFFIC LANES MAY BE PROVIDED VIA IMPLEMENTATION OF ON-STREET PARKING PROHIBITIONS AT SELECTED LOCATIONS WITHIN THE CITY OF WEST BEND



Source: SEWRPC.

Map 22

**EXISTING AND DESIGN YEAR 2010 ARTERIAL DEFICIENCIES TO REMAIN UPON
IMPLEMENTATION OF THE CAPACITY IMPROVEMENTS RECOMMENDED IN THE WASHINGTON
COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN BASED ON FORECAST 2010 TRAVEL DEMAND
ANTICIPATED UNDER THE ADOPTED CITY OF WEST BEND AND REGIONAL LAND USE PLANS**



With respect to the arterial spacing deficiency problems, the need for additional arterials in the two corridors identified, namely, County B and CTH B between Schuster Drive and STH 33 and Schmidt Road between STH 144 and STH 33, was evaluated. Alternative roadway improvements required to abate the probable future roadway capacity deficiencies which may be expected to remain within the City of West Bend planning area upon full implementation of the capacity improvements recommended in the current Washington County Jurisdictional Highway System Plan were identified and evaluated.

Also, at the specific request of the study Advisory Committee, alternative alignments for the long-planned extension of N. River Road from Creek Road to STH 144 were evaluated. This recommended improvement has long been proposed in the adopted Washington County Jurisdictional Highway System Plan.

Arterial Spacing Deficiencies

Two arterial spacing deficiencies which would not be resolved by the adopted Washington County Jurisdictional Highway System Plan were identified under the adopted land use plan for the City of West Bend. One arterial spacing deficiency problem was identified in a corridor centered on County B between STH 33 and CTH B at the north corporate limits in the City of West Bend and CTH B between County B at the City of West Bend north corporate limits and the proposed extension of Schuster Drive in the Town of Barton. This corridor lies between USH 45, an arterial facility, on the east, and the proposed extension of Kettle View Road recommended to be added to the arterial system in the current jurisdictional highway system plan on the west. These two facilities are roughly parallel, and approximately 1.6 miles apart. It should be noted that USH 45 is a limited-access facility, providing no direct land access within the corridor. Further, USH 45 constitutes a physical barrier which prevents access to the next north-south arterial, 18th Avenue which is located about 0.5 mile further east. Thus, Kettle View Drive and its proposed extension is the only north-south surface arterial west of USH 45 to serve traffic generated by the area between Kettle View Drive extended and USH 45, on the one side, and Schuster Drive and STH 33, on the other.

Urban land uses currently abutting County B in 1992 included commercial and high-density

residential development, although about half of the lands abutting County B were undeveloped. South of the proposed extension of Schuster Drive, the primary land use abutting CTH B in 1992 was agricultural and other open lands, with some low-density residential development immediately north of the City limits. The adopted design year 2010 City land use plan envisions additional commercial development and additional high-density residential development within the City and conversion of the existing agricultural and open lands in the Town of Barton to medium-density residential uses. The standards set forth in Chapter II recommend that arterial streets be provided at intervals of no more than one mile in each direction in urban areas developed at medium densities. Therefore, because the existing north-south arterial spacing exceeds one mile and because the area to be served is expected to be developed to at least medium density, it is recommended that County B between CTH B at the north corporate limits of the City and STH 33 and CTH B from the proposed extension of Schuster Drive to County B at the north corporate limits of the City of West Bend be added to the arterial street system as a local arterial.

The second problem of arterial spacing deficiency under the adopted City land use plan was noted in the corridor between the Milwaukee River and Trenton Road north of STH 33. The currently adopted Washington County Jurisdictional Highway System Plan recommends the extension of N. River Road from Creek Road northerly to STH 144 near its intersection with Wallace Lake Road. Advisory Committee members requested consideration of the addition of Schmidt Road between STH 144 and STH 33 to the arterial street and highway system on the basis of existing average weekday traffic volumes and the perception that it currently functions as an alternative route to STH 144 between STH 33 at 7th Avenue to its intersection with Schmidt Road in the City of West Bend. Trenton Road, the only existing north-south arterial in this corridor, lies at the east boundary of the corridor and is approximately 1.6 to two miles east of the Milwaukee River.

The land uses abutting Schmidt Road in 1992 consisted primarily of environmental corridor lands and agricultural and other open lands. Lands in urban use were devoted primarily to industrial and governmental uses. By the year

2010, the City's land use plan design year, it is anticipated that nearly all open lands in the corridor would be converted to urban uses, including expansion of the existing governmental and industrial land uses, and some medium- and medium-to-high-density residential land uses. Therefore, because Schmidt Road currently functions to relieve STH 144 and because the area to be served may be expected to be developed for urban uses with at least medium densities by the year 2010 and because such areas should be served by arterials at spacings of one mile or less, it is recommended that Schmidt Road from STH 144 to STH 33 be added to the arterial street and highway system as a local arterial.

Arterial Capacity Deficiencies

This section of the chapter presents an evaluation of alternative roadway improvements intended to abate anticipated future arterial capacity deficiency problems identified in the City of West Bend planning area. These problems may be expected if forecast levels of population, households, and employment set forth in the City's recently adopted land use plan are reached. These roadway improvements would be beyond those identified in the adopted Washington County Jurisdictional Highway System Plan. Alternative roadway improvements considered included: 1) the conversion of existing two-lane rural cross-sections to undivided urban cross-sections with curb-to-curb pavement with widths ranging from 44 to 52 feet, 2) minor roadway widenings of up to four feet on each side of the existing pavements to provide pavement widths of 48 feet, 3) reconstruction of existing roadways to provide a five-lane undivided urban roadway with a curb-to-curb width of 66 feet, and 4) reconstruction of existing roadways to provide dual roadway urban cross-sections with dual two-lane, 28-foot-wide roadways or dual three-lane, 36-foot-wide pavements in each direction separated by a median 24 to 28 feet in width, and 5) the provision of a new interchange between USH 45 and the surface arterial street system. In some cases, the prohibition of parking would be required. On all arterial roadway segments expected to have a future capacity problem and on which on-street parking is currently permitted, the prohibition of on-street parking was also considered.

When there is sufficient pavement width, the prohibition of existing on-street parking may be considered a low-cost technique to provide additional travel lanes without roadway widening and its attendant disruption. The prohibition of all on-street parking may, however, be expected to result in problems for abutting landowners and complaints to City officials. The most obvious problem is a reduction in overall parking supply without an attendant decrease in demand. Competition for remaining nearby parking increases and users must frequently park farther from their destination than they had previously. This may become particularly troublesome in older neighborhoods where former residences have been allowed to convert to commercial land uses without the attendant provision of off-street parking. In such cases, on-street parking may be the only parking available to serve these sites and its removal may be expected to be detrimental to continued operation of individual businesses.

The City of West Bend, in acknowledging these problems, has, in the past, created parking districts which permit the acquisition of lands abutting the segment of roadway on which parking is to be prohibited and constructed off-street parking lots on this land. It is recommended that the City consider utilization of this and/or other techniques to replace on-street parking lost to abate capacity deficiencies.

Tables 13 through 17 provide an evaluation of the alternatives considered to abate the anticipated future arterial capacity deficiencies in the City of West Bend planning area. The alternatives are compared to maintenance of the existing roadway with respect to right-of-way required, construction costs, potential disruption, and traffic and other impacts. The roadway segments considered:

- Decorah Road between 7th Avenue and Indiana Avenue Alternatives (See Table 13)
 1. Maintain existing two-traffic-lane/two-auxiliary-lane urban section.
 2. Prohibit all parking to provide 38- to 40-foot-wide pavement.
 3. Reconstruct and prohibit parking to provide 52-foot-wide, four-traffic-lane urban section.

Table 13

**EVALUATION OF IMPROVEMENTS TO ABATE POSSIBLE FUTURE CAPACITY
DEFICIENCY ON DECORAH ROAD FROM 7TH AVENUE TO INDIANA AVENUE**

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Maintain Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section	<p>7th Avenue to Main Street 40-foot pavement 80-foot right-of-way</p> <p>Main Street to Fox River Valley Railroad 38-foot pavement 64.75-foot right-of-way</p> <p>Fox River Valley Railroad to Indiana Avenue 38-foot pavement 80-foot right-of-way</p>	\$150,000 total	None	<p>Existing roadway capacity of 13,000 average weekday traffic volume (AWDT) is insufficient for safe and uncongested movement of projected 16,700 AWDT</p> <p>Delay and congestion will occur at 7th Avenue, Main Street, and Indiana Avenue as traffic volumes increase, creating a need for multi-way stop sign control and, ultimately, traffic signal control at 7th Avenue and Indiana Avenue</p> <p>Installation of traffic signals at the Indiana Avenue and Decorah Road intersection may result in traffic safety problems if vehicles on the eastbound approach are queued across the Fox River Valley Railroad trackage when a train arrives. This potential safety problem may be abated by the installation of regulatory signing with the message, "DO NOT STOP ON TRACKS"</p> <p>Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross-streets</p>	Costs may be eligible for 80 percent Federal funding. Local cost-share borne by the City	Not recommended
Prohibit All On-Street Parking	<p>7th Avenue to Main Street 40-foot pavement 80-foot right-of-way</p> <p>Main Street to Fox River Valley Railroad 38-foot pavement 64.75-foot right-of-way</p> <p>Fox River Valley Railroad to Indiana Avenue 38-foot pavement 80-foot right-of-way</p>	<p>\$152,200 total</p> <p>\$150,000 resurface 2,200 signing</p>	None	<p>Existing pavement width precludes substantial increase in existing roadway capacity of 13,000 AWDT, which is insufficient for safe and uncongested movement of projected 16,700 AWDT</p> <p>Delay and congestion will occur at 7th Avenue, Main Street, and Indiana Avenue as traffic volumes increase, creating a need for multi-way stop sign control and, ultimately, traffic signal control at 7th Avenue and Indiana Avenue</p> <p>Installation of traffic signals at the Indiana Avenue and Decorah Road intersection may result in traffic safety problems if vehicles on the eastbound approach are queued across the Fox River Valley Railroad trackage when a train arrives. This potential safety problem may be abated by the installation of regulatory signing with the message, "DO NOT STOP ON TRACKS"</p> <p>Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross-streets</p> <p>Eliminates all on-street parking</p>	Costs may be eligible for 80 percent Federal funding. Local cost-share borne by the City	Not recommended

Table 13 (continued)

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Reconstruction to Provide Four-Traffic-Lane Undivided Urban Section and Prohibit All On-Street Parking	<p>7th Avenue to Main Street 52-foot pavement 80-foot right-of-way</p> <p>Main Street to Fox River Valley Railroad 48-foot pavement 66-foot right-of-way</p> <p>Fox River Valley Railroad to Indiana Avenue 48-foot pavement 80-foot right-of-way</p>	<p>\$1,357,200 total</p> <p>\$1,355,000 reconstruction 2,200 signing</p>	Acquire 1.25-foot-wide strip of Decorah Road from Main Street to Fox River Valley Railroad	<p>Planned roadway capacity of 17,000 AWDT is marginally sufficient for safe and efficient movement of projected 16,700 AWDT</p> <p>Reduces delay and congestion resulting from traffic signals at 7th Avenue and Indiana Avenue</p> <p>Installation of traffic signals at the Indiana Avenue and Decorah Road intersection may result in traffic safety problems if vehicles on the eastbound approach are queued across the Fox River Valley Railroad trackage when a train arrives. This potential safety problem may be abated by the installation of regulatory signing with the message, "DO NOT STOP ON TRACKS"</p> <p>Minimizes delay and accident potential as through traffic may bypass turning vehicles at cross-streets</p> <p>48-foot pavement would accommodate four minimum-width 11-foot traffic lanes, 52-foot pavement would accommodate four desirable 12-foot-wide traffic lanes</p> <p>Eliminates all on-street parking</p>	<p>Costs may be eligible for 80 percent Federal funding. Local cost-share borne by the City</p> <p>Edge of pavement five to six feet closer to abutting development</p>	Recommended

Source: SEWRPC.

● **S. Main Street between Vine Street and Walnut Street Alternatives (See Table 14)**

1. Maintain existing two-traffic-lane/two-auxiliary-lane urban section and existing four-traffic-lane urban section.
2. Prohibit parking on existing two-traffic-lane/two-auxiliary-lane urban section to provide 40-foot-wide pavement.
3. Widen existing 40-foot-wide urban section by four feet on each side of existing roadway and prohibit parking to provide 48-foot-wide, four-traffic-lane urban section.
4. Reconstruct and prohibit parking to provide 66-foot-wide, five-traffic-lane urban section.

● **Paradise Drive between USH 45 and Main Street Alternatives (See Table 15)**

1. Maintain existing four-traffic-lane divided rural section and existing four-traffic-lane undivided urban section and existing two-traffic-lane/two-auxiliary-lane urban section.
2. Reconstruct S. Main Street and Paradise Drive intersection to provide four traffic lanes through the intersection along with exclusive left- and right-turn lane.
3. Reconstruct existing two-traffic-lane urban section as five-lane urban section.
4. Reconstruct existing two-traffic-lane urban and rural sections as four-lane divided urban section.

Table 14

**EVALUATION OF IMPROVEMENTS TO ABATE POSSIBLE FUTURE CAPACITY
DEFICIENCY ON MAIN STREET FROM WALNUT STREET TO VINE STREET**

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Maintain Existing Two-Traffic-Lane/Two-Auxiliary-Lane Undivided Urban Section and Four-Traffic-Lane Undivided Urban Section	Walnut Street to Decorah Road 40-foot pavement 80-foot right-of-way Decorah Road to Vine Street 48-foot pavement 100-foot right-of-way	\$355,400 total	None	Existing roadway capacities of 13,000 average weekday traffic volume (AWDT), and 17,000 AWDT for two- and four-traffic-lane urban section, respectively, are insufficient for safe and uncongested movement of projected 18,500 to 21,800 AWDT Delay and congestion will be exacerbated at existing signalized intersections at Walnut Street, Decorah Road, and Paradise Drive as traffic volumes increase; increasing traffic volumes may create a need for traffic signals at Chestnut Street; and cross-street traffic experiences more difficulty in entering or crossing the traffic stream on Main Street Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross-streets	Costs may be eligible for 80 percent Federal funding Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County	Not recommended
Prohibit All On-Street Parking	Walnut Street to Decorah Road 40-foot pavement 80-foot right-of-way Decorah Road to Vine Street 48-foot pavement 100-foot right-of-way	\$358,000 total \$355,400 resurface 2,600 signing	None	Existing 40-foot pavement width from Walnut Street to Decorah Road precludes substantial increase in existing roadway capacity of 13,000 AWDT of that segment; parking currently prohibited from Decorah Road to Vine Street and there would not be any change in roadway capacity on that segment. Thus, roadway capacities remain inadequate for safe and efficient movement of projected 18,500 to 21,800 AWDT Delay and congestion will be exacerbated at existing signalized intersections at Walnut Street, Decorah Road, and Paradise Drive as traffic volumes increase; increasing traffic volumes may create a need for traffic signals at Chestnut Street; and cross-street traffic experiences more difficulty in entering or crossing the traffic stream on Main Street Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross-streets Eliminates all on-street parking	Costs may be eligible for 80 percent Federal funding Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County	Not recommended

Table 14 (continued)

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Minor Widening and Prohibition of All On-Street Parking to Provide a Four-Traffic-Lane Urban Section	Walnut Street to Vine Street 48-foot pavement 80- to 100-foot right-of-way	\$879,400 total \$701,800 widen 175,000 resurface 2,600 signing	None	<p>The minimum roadway capacity from Walnut Street to Decorah Road would increase to 17,000 AWDT, but the roadway capacities from Decorah Road to Vine Street would not change. Thus, roadway capacities remain inadequate for safe and efficient movement of projected 18,500 to 21,800 AWDT</p> <p>The increase in roadway capacity from Walnut Street to Decorah Road would provide for improved safety and efficient movement compared to the existing two-traffic-lane roadway, but the problems associated with delay and congestion, while reduced, would not be eliminated</p> <p>Eliminates all on-street parking</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County</p> <p>New roadway to be centered between existing sidewalks; new edge of pavement up to five feet closer to existing development</p>	Not recommended
Minor Widening and Prohibition of All On-Street Parking to Provide a Four-Traffic-Lane Urban Section and Reconstruction to Provide Four Traffic Lanes with Continuous Left-Turn Lane Five-Lane Undivided Urban Section, and Prohibit All On-Street Parking	Walnut Street to Decorah Road 48-foot pavement 80-foot right-of-way Decorah Road to Vine Street 66-foot pavement 90-foot right-of-way	\$1,700,000 total \$1,697,400 construction 2,600 signing	None	<p>The roadway capacity from Walnut Street to Decorah Road would increase to 17,000 AWDT and the roadway capacity from Decorah road to Vine Street would increase to 19,000 AWDT. Thus roadway capacities remain inadequate for safe and efficient movement of projected 18,500 to 21,000 AWDT</p> <p>The increase in roadway capacity would provide for improved safety and more efficient movement compared to the existing roadway, but problems associated with delay and congestion, while reduced, would not be eliminated</p> <p>Eliminates all on-street parking</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County</p> <p>New roadway to be centered between existing sidewalks; new edge of pavement up to five feet closer to existing development</p>	Recommended
Reconstruction to Provide Four Traffic Lanes with Continuous Left-Turn Lane Five-Lane Undivided Urban Section and Prohibit All On-Street Parking	Walnut Street to Vine Street 66-foot pavement 90-foot right-of-way	\$3,401,500 total \$3,176,800 construction 222,100 resurface 2,600 signing	Acquire 5.0-foot-wide strip of right-of-way on each side of existing right-of-way from Walnut Street to Decorah Road	<p>Planned roadway capacity of 19,000 AWDT is marginally sufficient to insufficient for safe and uncongested movement of projected 18,500 to 21,800 AWDT</p> <p>The increase in roadway capacity from Walnut Street to Vine Street provides for improved safety and efficient movement of the projected 18,500 to 24,000 AWDT compared to the existing two-traffic-lane and four-traffic-lane undivided urban sections, but the problems associated with delay and congestion, while further abated, would not be eliminated</p> <p>Eliminates all on-street parking</p> <p>Left-turning traffic separated from through traffic, thereby improving safety</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County</p> <p>New edge of pavement up to 13 feet closer to existing development</p>	Not recommended

Table 14 (continued)

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Reconstruction to Provide Four-Traffic-Lane Divided Urban Section	Dual 28-foot pavements separated by 24- to 28-foot median and 110-foot right-of-way	\$4,228,6000 total \$4,226,000 construction 2,600 signing	Acquire an additional 30 feet of right-of-way from Walnut to Decorah Road and an additional 10 feet of right-of-way from Decorah Road to Vine Street The acquisition of 30 feet of right-of-way from Walnut Street to Locust Street would likely require the displacement of all structures on one side of the existing roadway or the other	Planned roadway capacity of 25,000 AWDT is sufficient for safe and efficient movement of projected 18,500 to 21,800 AWDT Minimizes delay and congestion resulting from traffic signals Minimizes delay and accident potential as through traffic may bypass turning vehicles at cross-streets Eliminates all on-street parking Direct access to abutting properties possible only on one side of median; access to abutting properties on opposite side of median requires U-turns at median openings Median openings would be provided at cross-streets. Mid-block median openings would be spaced at intervals of about 400 feet	Costs may be eligible for 80 percent Federal funding Local cost-share will probably be borne by Washington County, since adopted County Jurisdictional Highway System Plan recommends transfer of Main Street from STH 33 to Paradise Drive to the County New edge of pavement ranges from seven to 20 feet closer to existing development depending upon the existing roadway width	Not recommended

Source: SEWRPC.

5. Construct a new freeway-to-surface arterial interchange between USH 45 and CTH NN.
- STH 33 between University Drive and 18th Avenue Alternatives (See Table 16)
 1. Maintain existing four-lane divided urban section.
 2. Reconstruct existing four-lane divided urban section to provide six-lane divided urban section.
 3. Construct a new freeway-to-surface arterial interchange between USH 45 and Decorah Road.
- STH 33 between 18th Avenue and Trenton Road Alternatives (See Table 17)
 1. Maintain the existing two-traffic-lane/two-auxiliary-lane urban section and existing two-lane rural section.
 2. Reconstruct the existing two-traffic-lane/two-auxiliary-lane urban section,

18th Avenue to 7th Avenue, to four traffic lanes with a continuous left-turn lane, for five-lane urban section and prohibit parking on existing two-traffic-lane/two-auxiliary-lane urban section, 7th Avenue to Schmidt Road, and reconstruct existing two-lane rural section to four-lane divided urban section.

Evaluation of Alternative Alignments for Extension of N. River Road

The Washington County Jurisdictional Highway System Plan has long recommended that the extension of N. River Road between Creek Road and STH 144 be added to the arterial street system as a county trunk highway. This proposed arterial is located approximately 0.5 mile east of Schmidt Road and approximately one mile west of Trenton Road.

Lands which may be expected to abut an extended River Road were largely undeveloped in 1992. By the design year 2010, however, it may be expected that these lands would be converted to urban uses at medium densities with the exception of those lands identified as

Table 15

**EVALUATION OF IMPROVEMENTS TO ABATE POSSIBLE FUTURE CAPACITY
DEFICIENCY ON PARADISE DRIVE BETWEEN USH 45 AND MAIN STREET**

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Maintain Existing Four-Traffic-Lane/Divided Rural Section; Existing Four-Traffic-Lane Undivided Urban Section; Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section	A point 1,250 feet east of USH 45 to 7th Avenue 48-foot pavement 115- to 140-foot right-of-way 7th Avenue to Main Street 48-foot pavement 83-foot right-of-way	\$162,000 total	None	Existing roadway capacity of 13,000 average weekday traffic volume (AWDT) is insufficient for safe and uncongested movement of projected 17,400 AWDT Delay and congestion will increase due to the existing traffic signal at Main Street as traffic increases and will occur at the USH 45 on- and off-ramp terminals as increasing traffic creates a need for traffic signals Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross-streets	Costs may be eligible for 80 percent Federal funding Local cost-share may be borne by Washington County since adopted County Jurisdictional Highway System Plan recommends transfer of Paradise Drive from 18th Avenue to CTH G to Washington County ^a	Not recommended
Maintain Existing Four-Traffic-Lane Sections; Reconstruct Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section to Provide Four-Lane Undivided Urban Section with Exclusive Turn Lanes at 7th Avenue and S. Main Street; and Prohibit All On-Street Parking	46- to 48-foot pavement 80-foot minimum right-of-way width	\$577,800 total \$500,700 construction 75,000 resurface 2,800 parking	7th Avenue to Eder Street: Acquire seven-foot strip of right-of-way on south side of roadway; displace three buildings abutting existing south right-of-way line	Planned roadway capacity of 17,000 AWDT is marginally insufficient for safe and uncongested movement of projected 17,400 AWDT Delay and congestion resulting from traffic signals at S. Main Street would be reduced Minimizes delay and accident potential as through traffic may bypass turning vehicles at cross-streets Eliminates all on-street parking Exclusive left turn lanes and two through traffic lanes at Main Street and Paradise Drive would minimize delay and congestion at this intersection	Costs may be eligible for 80 percent Federal funding Local cost-share may be borne by Washington County since adopted County Jurisdictional Highway System Plan recommends transfer of Paradise Drive from 18th Avenue to CTH G to Washington County ^a Edge of pavement would be seven feet closer to existing development at the intersection of Main Street and Paradise Drive	Recommended
Resurface Existing Four-Traffic-Lane Divided Rural Section; Reconstruct Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section to Provide Four Traffic Lanes with Continuous Left-Turn Lane Five-Lane Urban Section	66-foot pavement 90-foot right-of-way	\$897,800 total \$820,000 construction 2,800 parking 75,000 resurface	7th Avenue to Main Street: Acquire a 12-foot strip of right-of-way on south side of roadway	Planned roadway capacity of 19,000 AWDT is sufficient for safe and uncongested movement of projected 17,400 AWDT Delay and congestion resulting from traffic signals at S. Main Street would be reduced Minimizes delay and accident potential as through traffic may bypass turning vehicles at cross-streets Eliminates all on-street parking Left turning traffic separated from through traffic, thereby improving safety	Costs may be eligible for 80 percent Federal funding Local cost-share may be borne by Washington County since adopted County Jurisdictional Highway System Plan recommends transfer of Paradise Drive from 18th Avenue to CTH G to Washington County ^a Edge of pavement would range from seven to 10 feet closer to abutting development	Not recommended

Table 15 (continued)

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Reconstruct Existing Rural and Urban Sections to Provide Four-Traffic-Lane Divided Urban System	Dual 28-foot pavements separated by 24- to 28-foot median and 110-foot right-of-way	\$1,442,800 total \$1,440,000 construction 2,800 parking	West of 7th Avenue: Acquire 10-foot-wide strip of right-of-way 280 feet in length and displace one residence from the north side of the roadway 7th Avenue to Main Street: Acquire five- to 10-foot strip of road on the north side of the roadway and a 22-foot strip of right-of-way and displace three buildings on the south side of the roadway	Planned roadway capacity of 25,000 is sufficient for a safe and uncongested movement of projected 16,500 to 18,000 AWDT Minimizes delay and congestion resulting from traffic signals Minimizes delay and accident potential as through traffic may bypass turning vehicles at cross-streets Eliminates all on-street parking Direct access to abutting properties possible only on one side of median; access to abutting properties on opposite side of median requires U-turns at median openings	Costs may be eligible for 80 percent Federal funding Local cost-share may be borne by Washington County since adopted County Jurisdictional Highway System Plan recommends transfer of Paradise Drive from 18th Avenue to CTH G to Washington County ^a The new edge of pavement would be 21 feet closer to abutting development	Not recommended
Construct a New Freeway-to-Surface Arterial Interchange on USH 45 at CTH NN	--	\$7,252,700 total \$4,443,700 interchange construction 2,809,000 attendant roadway improvements	Acquire approximately 12 acres of right-of-way at USH 45 and CTH NN	Estimated 2,200 AWDT diverted from Paradise Drive between USH 45 and CTH G	The Wisconsin Department of Transportation has a policy requiring that a local municipality share in the project costs when new access is provided on a facility under its jurisdiction. The local share will be 50 percent of the total project cost unless the project is deemed to provide some benefit to the State trunk highway system as well. In the latter case, it may be possible to negotiate an alternative proportionate share. Local cost-share will probably be borne by City of West Bend since adopted County Jurisdictional Highway System Plan recommends transfer of CTH NN from 18th Avenue to CTH P to the City Construction of a new interchange may be expected to encourage development adjacent to the interchange. Only the northeast quadrant of the proposed interchange would be in the design year 2010 urban service area. Thus, there would be pressure to extend urban services. Conversion of lands in the other three interchange quadrants would result in the loss of prime agricultural lands	Not recommended

^aIf implemented by municipalities currently having jurisdiction over the roadway, the local share would be borne by the City of West Bend.

Table 16

**EVALUATION OF IMPROVEMENTS TO ABATE POSSIBLE FUTURE CAPACITY
DEFICIENCY ON STH 33 FROM UNIVERSITY DRIVE TO 18TH AVENUE**

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Maintain Existing Four-Traffic-Lane Divided Urban Section	Dual 28-foot roadway separated by 26-foot median and 110- to 165-foot right-of-way	\$ 100,000	None	<p>Existing roadway capacity of 25,000 average weekday traffic volume (AWDT) is insufficient for safe and uncongested movement of projected 30,200 AWDT</p> <p>Delay and congestion will be exacerbated at existing signalized intersection at 18th Avenue as traffic volumes increase; and increasing traffic volumes may create a need for the traffic signals at University Drive; and cross-street traffic experiences more difficulty in entering or crossing the traffic stream on STH 33</p> <p>Delay and accidents will increase as through traffic is delayed by right turning traffic at cross-streets</p> <p>All on-street parking is prohibited</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>The local cost-share may be borne by the City of West Bend since current Wisconsin Department of Transportation policy requires local funding participation when 40 percent or more of the total traffic on particular roadway segment is identified as local traffic</p> <p>This section of roadway would be anticipated to carry forecast 2010 average weekday traffic volumes which exceed its design capacity</p>	Recommended
Reconstruct to Provide Six-Traffic-Lane Urban Section	Dual 36- to 40-foot roadways separated by 24- to 28-foot median and 130-foot median	\$2,225,000	<p>University Drive to USH 45: Acquire a 315-foot-long, five-foot-wide strip of right-of-way on the north side of the roadway</p> <p>USH 45 to 18th Avenue: Acquire a 1,260-foot-long, five-foot-wide strip of right-of-way from the north side of the roadway and a 1,575-foot-long, 15-foot-wide strip of right-of-way from the south side of the roadway. Two businesses would be displaced</p>	<p>Planned roadway capacity of 35,000 AWDT is sufficient for safe and uncongested movement of projected 30,200 AWDT</p> <p>Reduces the delay and congestion at signalized intersections</p> <p>Reduces delay and accidents as through traffic has improved ability to bypass right turning vehicles</p> <p>All on-street parking would be prohibited</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>The local cost-share may be borne by the City of West Bend since current Wisconsin Department of Transportation policy requires local funding participation when 40 percent or more of the total traffic on particular roadway segment is identified as local traffic</p> <p>The edge of pavement would be 12 feet closer to abutting development</p> <p>Additional right-of-way may be required at intersections to accommodate exclusive right-turn lanes</p> <p>USH 45 structures over STH 33 would require reconstruction to accommodate a six-traffic-lane divided urban section</p> <p>Some pedestrians may experience difficulty crossing STH 33, particularly if exclusive turn lanes are provided</p>	Not recommended

primary environmental corridors. While not directly abutting the proposed extension of N. River Road between Creek Road and

STH 144, additional industrial and commercial development is also envisioned in the City land use plan by the design year 2010 along the

Table 16 (continued)

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Construction of New Interchange on USH 45 at Decorah Road	--	\$5,475,500	Acquire approximately 12 acres of right-of-way and displace one residence and one outbuilding. Approximately 3.2 acres are part of a gravel pit	Estimated 300 AWDT diverted from STH 33 between USH 45 and 18th Avenue. No diversion estimated west of USH 45	<p>University Drive from Chestnut Street to Decorah Road and Decorah Road from University Drive to 18th Avenue are not currently arterials and would have to be added to the arterial system as two traffic lane arterials</p> <p>University Drive from Chestnut Street to Decorah Road and Decorah Road from University Drive to 18th Avenue would require reconstruction to meet arterial standards</p> <p>Southbound on-ramp constructed as a loop ramp in northwest quadrant to minimize impact on gravel pit in southwest quadrant</p> <p>Local cost-share may be borne by Wisconsin Department of Transportation although the Department does have a policy requiring that a local municipality share in the project costs when new access is provided on a facility under its jurisdiction. The local share will be 50 percent of the total project cost unless the project is deemed to provide some benefit to state highway system as well. In the later case, it may be possible to negotiate an alternative proportionate share</p>	Not recommended
Construction of a New Interchange on USH 45 at Beaver Dam Road	--	--	--	--	Construction of an interchange at this location would violate the Federal Highway Administration's one mile spacing requirement between urban interchanges as Beaver Dam Road is located less than 0.9 mile south of CTH D. As a result, this alternative was eliminated from further consideration	Not recommended

Source: SEWRPC.

existing segment of N. River Road between STH 33 and Creek Road. With the recent construction of a new bridge across the Milwaukee River on S. River Road, the long proposed extension of N. River Road would provide

another direct north-south route through the urban service area of the City and environs. Such a route may be expected to provide relief to both Main Street south of STH 33 and STH 144 north of STH 33 through the City.

Table 17

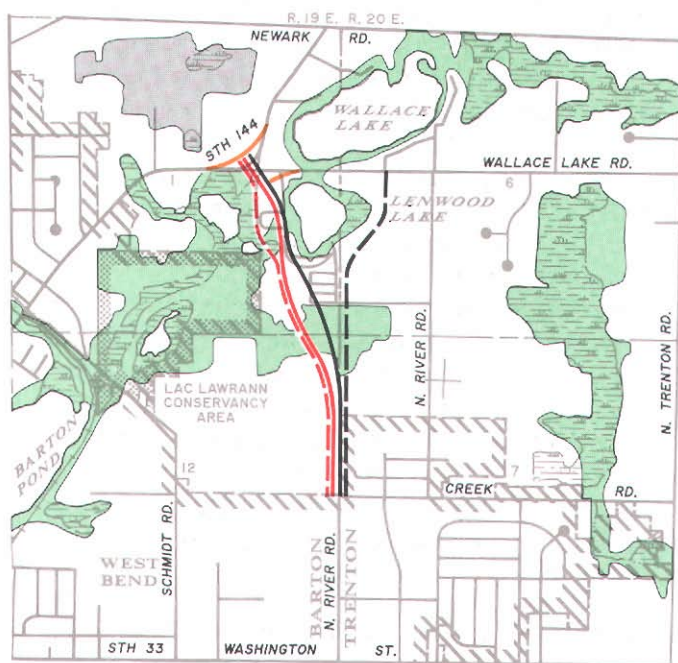
**EVALUATION OF IMPROVEMENTS TO ABATE POSSIBLE FUTURE
CAPACITY DEFICIENCY ON STH 33 FROM 18TH AVENUE TO TRENTON ROAD**

Alternatives	Pavement and Right-of-Way Width	Estimated Construction Cost	Disruption	Traffic Impacts	Other Impacts	Staff Recommendation
Maintain Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section and Two-Lane Rural Section	<p>18th Avenue to Milwaukee River 48-foot minimum variable width pavement 66-foot minimum variable width right-of-way</p> <p>Milwaukee River to Schmidt Road 48-foot pavement 66-foot right-of-way</p> <p>Schmidt Road to Trenton Road 24-foot pavement 66-foot right-of-way</p>	\$643,500 total	None	<p>Existing roadway capacities of 13,000 and 19,000 average weekday traffic volume (AWDT), two-lane and five-traffic-lane sections, respectively, are insufficient for safe and uncongested movement of projected 18,200 to 19,500 AWDT</p> <p>Delay and congestion will be exacerbated at existing signalized intersections at 18th Avenue, 7th Avenue, Island Avenue, and Indiana Avenue as traffic volumes increase; increasing traffic volumes may create a need for traffic signals at Schmidt Road, River Road, and Trenton Road; and cross-street traffic experiences more difficulty in entering or crossing the traffic stream on STH 33</p> <p>Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross-streets</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>The local cost-share will probably be borne by the Wisconsin Department of Transportation</p>	Not recommended
<p>Reconstruct Existing Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section to Provide Four-Traffic-Lane with Continuous Left-Turn-Lane Five-Lane Undivided Urban Section</p> <p>Prohibit Parking on Two-Traffic-Lane/Two-Auxiliary-Lane Urban Section to Provide Four-Traffic-Lane Undivided Urban Section</p> <p>Reconstruct Two-Traffic-Lane Rural Section and Prohibit Parking to Provide Four-Traffic-Lane Divided Section</p>	<p>18th Avenue to 7th Avenue 66-foot roadway 79- to 85-foot right-of-way</p> <p>7th Avenue to Milwaukee River 48-foot minimum variable width pavement 66-foot minimum variable width right-of-way</p> <p>Milwaukee River to Schmidt Road 48-foot pavement 66-foot right-of-way</p> <p>Schmidt Road to Trenton Road Dual 28-foot pavements separated by 24- to 28-foot median</p>	<p>\$6,354,100 total</p> <p>\$6,142,500 construction 200,000 resurface 8,200 parking</p>	<p>Schmidt Road to Trenton Road; Acquire 32 foot strip of right-of-way on both sides of roadway, and displace four residences from south side of roadway</p>	<p>Existing roadway capacity of 19,000 AWDT and planned roadway capacities of 17,000 and 25,000 AWDT are sufficient or marginally insufficient for safe and uncongested movement of projected 18,200 to 19,500 AWDT</p> <p>Delay and congestion will be exacerbated at existing signalized intersections at 18th Avenue, 7th Avenue, Island Avenue, and Indiana Avenue as traffic volumes increase; increasing traffic volumes may create a need for traffic signals at Schmidt Road, River Road, and Trenton Road; and cross-street traffic experiences more difficulty in entering or crossing the traffic stream on STH 33</p> <p>Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross-streets. However, the increase in delay and accidents is reduced between the Milwaukee River and Trenton Road through the provision of additional roadway capacity</p>	<p>Costs may be eligible for 80 percent Federal funding</p> <p>The local cost-share will probably be borne by the City of West Bend as current Wisconsin Department of Transportation policy requires local funding participation when 40 percent or more of the total traffic on a particular roadway segment is identified as local traffic</p> <p>The edge of pavement of the divided section would be 28 feet closer to abutting development</p>	Recommended

Source: SEWRPC.

Map 23

**ALTERNATIVE ALIGNMENTS FOR
THE EXTENSION OF N. RIVER ROAD
BETWEEN CREEK ROAD AND STH 144**



LEGEND

PROPOSED NORTH RIVER ROAD EXTENSION

- ALTERNATIVE ONE
- ALTERNATIVE TWO
- - - ALTERNATIVE THREE
- - - ALTERNATIVE FOUR
- MINOR ROADWAY REALIGNMENTS

ENVIRONMENTAL CORRIDORS

- PRIMARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL RESOURCE AREA
- WETLAND



Source: SEWRPC.

Therefore, because it would provide a direct north-south route through the study area and because the area to be served may be expected to be developed for urban use at at least urban medium densities by the year 2010 and because such areas should be served by arterials at spacings of one mile or less, it is recommended that the proposed extension of N. River Road from Creek Road to STH 144 be retained on the arterial street and highway system as a county trunk arterial.

Pursuant to the request of the study Advisory Committee, a total of four alternative alignments, as shown on Map 23, were considered for the extension of N. River Road between Creek Road and STH 144 at Wallace Lake Road. It may be noted that analysis of Alternative Alignment 3 was specifically requested. Also shown on Map 23 are the environmental corridors and wetlands which may be impacted by the alternative routes for the extension of N. River Road. It should be noted that the alignments shown should not be considered definitive roadway centerline alignments. Rather, they are intended to represent the general alignment of a corridor within which the proposed N. River Road may be located. The definitive roadway centerline alignment would be established in a subsequent preliminary engineering study which may be expected to consider and evaluate a number of alternative alignments. Nevertheless, for the purposes of a comparative analysis of the advantages and disadvantages of the alternative alignments shown, it was assumed that the centerline of the alternative corridor was the centerline of a roadway within each corridor. Of the four alignments, three would be routed west of Lenwood Lake and the fourth would be routed east of Lenwood Lake.

As shown on Map 23, Alternative Alignments 1, 2, and 3 are more direct than Alternative Alignment 4. While Alternative Alignment 4 is about 0.1 mile shorter than Alternative Alignments 1, 2, and 3 between Creek Road and Wallace Lake Road, travel over Alternative Alignment 4 would also entail about 0.4 mile of travel on Wallace Lake Road.

With respect to impacts on primary environmental corridors and wetlands, it may be noted that Alternative Alignment 1 crosses approximately 770 feet of primary environmental corridor, Alternative Alignment 2 crosses approximately 960 feet of primary environmental corridor, Alternative Alignment 3 crosses approximately 2,150 feet of primary environmental corridor including approximately 650 feet of wetlands; and Alternative Alignment 4 crosses nearly 1,050 feet of primary environmental corridor. Alternative Alignments 1 and 2 are adjacent to about 220 feet of wetlands within a primary environmental corridor, just west of Lenwood Lake, while Alternative Alignment 4 would not impact any wetlands. It may be noted that

careful roadway design could minimize the potential for any adverse impact on wetlands under Alternative Alignments 1 and 2.

All but Alternative 4 may be expected to disrupt or displace some existing residences or businesses. Alternatives 1, 2, and 3, for example, may be expected to divide the land upon which a business known as Lenwood Lake Beach and Campground is located into two parcels. Alternatives 1 and 2 would divide the parcel virtually in half separating the lake and beach from the campground. These alternatives would displace the campground office, three permanent residences, and 16 campsites. Alternative 3 would sever a small triangular parcel, about three acres, from the southwest corner of the existing parcel. Five permanent residences and 14 campsites would be displaced, although the remainder of the campground would not be separated from the lake and beach under this alternative.

The introduction of arterial traffic into an area valued for its quiet, park-like setting would not be desirable, and, in this respect, the impacts of Alternatives 1 and 2 would be considered to be more severe than the impacts of Alternative 3. Gauging precisely to what extent the arterial traffic would degrade the operation of this business is difficult, although the owner of Lenwood Lake Beach and Campground has stated² that the business would be destroyed if either Alternative 1 or 2 were implemented. The owner has further stated that any reduction in his business would be reflected elsewhere in the local economy since his patrons purchase goods and services from other area merchants. It may also be noted that the owner stated that the alignment of Alternative 3, as it parallels his west property line, would not provide sufficient offset between the proposed roadway and permanent residences and campsites abutting that property line. Finally, it may be noted that the City of West Bend is considering purchase of the parcel abutting the Lenwood Lake Beach and Campground parcel on the west which Alternative Alignment 3 would cross for park purposes. While the remainder of the lands crossed by Alternatives 1 through 3 is currently undeveloped, each of these alignments crosses approximately 0.5 mile of agricultural land just north of Creek Road.

²Mr. Dricken expressed his concerns in a letter to the Commission, a copy of which is attached as Appendix A.

Alternative Alignment 4 would not displace any residences or businesses. With the exception of the primary environmental corridor previously noted, this alignment crosses agricultural land over its entire length. This alternative would require the reconstruction of Wallace Lake Road between S. Wallace Lake Drive and STH 144 to meet arterial roadway standards. Reconstruction of Wallace Lake Road from its current cross-section, 20 to 22 foot pavement width with zero to two-foot shoulders, to either minimum or a desirable two lane rural arterial cross section would entail widening to a uniform 22-foot pavement width with six-foot shoulders or to a uniform 24-foot pavement width with 10-foot shoulders, respectively. The open-ditch storm-water drainage system may be expected to require an additional 12 to 15 feet. Although the reconstructed cross-section would therefore be expected to be substantially wider than the existing cross-section, the edge of pavement would only be one to two feet closer to existing development.

It is estimated that the construction cost to implement these alternatives will range from \$3.6 million for Alternative Alignments 1 and 2, to \$4.0 million for Alternative Alignment 3, to \$4.2 million for Alternative Alignment 4, including the reconstruction of Wallace Lake Road to arterial standards. Because of the potential impacts on the Lenwood Lake Beach and Campground, it is recommended that Alternative Alignments 1 and 2 be dropped from further consideration. Of the two remaining Alignments, Alternative Alignment 3 is superior to Alternative Alignment 4 because it is the most direct connection between Creek Road and STH 144. However, Alternative Alignment 3 would not only cross wetlands if constructed parallel and adjacent to the west property line of the Lenwood Lake Beach and Campground, but would cross lands envisioned to become park lands. Table 18 summarizes the advantages and disadvantages of each of the four alternative alignments presented herein for the proposed extension of N. River Road from STH 144 to STH 33. It is recommended that the extension of River Road from Creek Road to STH 144 be retained in the transportation system plan as shown in the Washington County Jurisdictional Highway System Plan. It is further recommended that a preliminary engineering study, including analysis of the four alternatives presented herein along with any other appropri-

Table 18

**COMPARISON OF ALTERNATIVE ALIGNMENTS CONSIDERED FOR THE
EXTENSION OF N. RIVER ROAD BETWEEN CREEK ROAD AND STH 144**

Alternative	Traffic Impacts	Advantages	Disadvantages
Alignment 1	<p>Forecast average weekday traffic volume (AWDT), 2,000 to 3,500, meets volume criteria set forth in the Washington County Jurisdictional Highway System Plan for classification as a county trunk highway</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) to a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p>	<p>Provides a north-south arterial with a Milwaukee River crossing on the east side of the City of West Bend and provides arterial service to the industrial park in the northeast quadrant of the STH 33 and River Road intersection, thereby addressing two concerns identified by Advisory Committee members at their first meeting</p> <p>Provides a north-south arterial between STH 33 and STH 144 at the proper spacing to support future development anticipated in the City's adopted year 2010 land use plan north of STH 33 between the Milwaukee River and Trenton Road in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides a direct, understandable route in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Minimizes the penetration of the primary environmental corridor in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>About 1.6 miles in length</p>	<p>Crosses about 770 feet of primary environmental corridor</p> <p>Divides the Lenwood Lake Beach and Campground site in half, separating the lake and beach from the campground and would probably displace the campground office, three permanent residences, and 16 campsites</p> <p>Introduces arterial traffic into an area valued for its quiet, park-like setting</p> <p>The owner of the Lenwood Lake Beach and Campground has stated that this alternative alignment would destroy his business, which, in turn, would have a detrimental impact on other local businesses because his patrons purchase goods and services from other area merchants</p>
Alignment 2	<p>Forecast AWDT, 2,000 to 3,500, meets volume criteria set forth in the Washington County Jurisdictional Highway System Plan for classification as a county trunk highway</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) to a route comprised of Wisconsin Street, and Main Street from STH 33 to Paradise Drive</p>	<p>Provides a north-south arterial with a Milwaukee River crossing on the east side of the City of West Bend and provides arterial service to the industrial park in the northeast quadrant of the STH 33 and River Road intersection, thereby addressing two concerns identified by Advisory Committee members at their first meeting</p> <p>Provides a north-south arterial between STH 33 and STH 144 at the proper spacing to support future development anticipated in the City's adopted year 2010 land use plan north of STH 33 between the Milwaukee River and Trenton Road in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides a direct, understandable route in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>About 1.6 miles in length</p>	<p>Crosses about 960 feet of primary environmental corridor. The penetration of the primary environmental corridor is about 190 feet, or 25 percent, more than under Alternative Alignment 1</p> <p>Divides the Lenwood Lake Beach and Campground site in half, separating the lake and beach from the campground and would probably displace the campground office, three permanent residences, and 16 campsites</p> <p>Introduces arterial traffic into an area valued for its quiet, park-like setting</p> <p>The owner of the Lenwood Lake Beach and Campground has stated that this alternative alignment would destroy his business, which, in turn, would have a detrimental impact on other local businesses because his patrons purchase goods and services from other area merchants</p>

Table 18 (continued)

Alternative	Traffic Impacts	Advantages	Disadvantages
Alignment 3	<p>Forecast AWDT, 2,000 to 3,500, meets volume criteria set forth in the Washington County Jurisdictional Highway System Plan for classification as a county trunk highway</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) to a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive</p>	<p>Provides a north-south arterial with a Milwaukee River crossing on the east side of the City of West Bend and provides arterial service to the industrial park in the northeast quadrant of the STH 33 and River Road intersection, thereby addressing two concerns identified by Advisory Committee members at their first meeting</p> <p>Provides a north-south arterial between STH 33 and STH 144 at the proper spacing to support future development anticipated in the City's adopted year 2010 land use plan north of STH 33 between the Milwaukee River and Trenton Road in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides a direct, understandable route in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>About 1.6 miles in length</p> <p>The owner of the Lenwood Lake Beach and Campground has stated that of the three alternative alignments west of Lenwood Lake, this alternative would be the least disruptive to this business</p>	<p>Crosses about 2,150 feet of primary environmental corridor of which approximately 650 feet is wetlands. The most disruptive with respect to the penetration of the primary environmental corridor</p> <p>Severs about three acres from the southwest corner of the Lenwood Lake Beach and Campground site and would probably displace five permanent residences and 14 campsites</p> <p>Introduces arterial traffic into an area valued for its quiet, park-like setting</p> <p>Approximately 900 feet of this alternative alignment lie in the property immediately west of the Lenwood Lake Beach and Campground site, said property currently under consideration for purchase as parklands by the City of West Bend</p>
Alignment 4	<p>Forecast AWDT, 1,800 to 3,000, meets volume criteria set forth in the Washington County Jurisdictional Highway System Plan for classification as a county trunk highway</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) to a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive</p>	<p>Provides a north-south arterial with a Milwaukee River crossing on the east side of the City of West Bend and provides arterial service to the industrial park in the northeast quadrant of the STH 33 and River Road intersection, thereby addressing two concerns identified by Advisory Committee members at their first meeting</p> <p>Provides a north-south arterial between STH 33 and STH 144 at the proper spacing to support future development anticipated in the City's adopted year 2010 land use plan north of STH 33 between the Milwaukee River and Trenton Road in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>Provides capacity relief to: 1) STH 144 from the Barton Avenue intersection with Main Street to STH 33 and 2) a route comprised of Wisconsin Street, Water Street, and Main Street from STH 33 to Paradise Drive in conformance with the standards adopted by the Advisory Committee and set forth in Chapter II, "Objectives, Principals, and Standards"</p> <p>The penetration of the primary environmental corridor is more severe than under Alternative Alignments 1 and 2, but less severe than Alternative Alignment 3</p>	<p>Crosses about 1,050 feet of primary environmental corridor, about 280 and 90 feet more than under Alternative Alignments 1 and 2, or about 36 and 9 percent, respectively</p> <p>About 2.0 miles in length, or about 20 percent longer than the other alternative alignments</p> <p>Some travel indirection results from route east of Lenwood Lake with related increase in travel times</p> <p>Wallace Lake Road would have to be added to the arterial system from its intersection with STH 144 easterly to the proposed route, and reconstructed to arterial standards</p> <p>Average weekday traffic volumes lower and capacity relief to existing arterials less than Alternative Alignments 1, 2, and 3</p>

Source: SEWRPC.

ate alignments, be conducted to establish a definitive centerline alignment and the actual impacts of that alignment.

Not shown in Map 23, but also considered and rejected, was an alignment identified by the

Advisory Committee to connect N. River Road from its intersection with Creek Road northwesterly to Schmidt Road at a point about 0.7 mile north of STH 33. Similar to the long-planned extension of River Road to STH 144 near its intersection with Wallace Lake Road, this route

would provide a connection between STH 144 and STH 33 at River Road which would permit traffic to bypass congested segments of STH 33 and STH 144. Such a connection would not, however, satisfy the need to provide a direct, understandable, and properly spaced arterial system in an area bounded by STH 33 on the south, STH 144 and Schmidt Road on the west, Newark Road on the north, and Trenton Road on the east to support the development anticipated under the City's adopted land use plan.

IMPROVEMENTS RECOMMENDED TO RESOLVE ANTICIPATED FUTURE ROADWAY DEFICIENCIES

Implementation of the highway system improvements recommended in the currently adopted Washington County Jurisdictional Highway System Plan may be expected to abate most, but not all, of the existing and probable future system deficiencies in the City of West Bend Planning area. The arterial deficiencies were identified on the basis of forecast average weekday traffic volumes expected to be generated by the forecast levels of employment, households, and population envisioned in the adopted City of West Bend land use plan and adopted regional land use plan for the design year 2010. The five roadway segments anticipated to have capacity deficiencies even after the jurisdictional highway system plan is implemented currently carry average weekday traffic volumes which approach or exceed the planned roadway capacity. This may, in part, be attributed to the strip commercial development which abuts these segments, a development pattern resulting in what are, in effect, local vehicle trips on the arterial system as each destination is accessed. Some remaining capacity deficiencies may also be, in part, due to modestly increased travel demand resulting from the modestly higher forecast level of households envisioned in the urban service area under the recently adopted City land use plan than under the adopted regional land use plan.

Shown in Table 19 are the arterial system deficiencies expected to remain following implementation of the adopted jurisdictional highway system plan, the alternatives considered to abate those deficiencies, and the improvement recommended with regard to each deficiency. It should be noted that consideration was given not only to the potential of each alternative to abate the

identified problem, but also to the estimated cost of implementation and potential disruption attendant to each alternative.

The capacity improvements and proposed additions to the arterial street and highway system recommended to abate anticipated future traffic problems are shown on Map 24. Included are the capacity improvements identified in the currently adopted Washington County Jurisdictional Highway System Plan as well as those capacity improvements anticipated to be required beyond that plan.

Forecast average weekday traffic volumes on two planning area roadway segments may be expected to equal or modestly exceed the four-traffic-lane roadway capacities proposed in the adopted jurisdictional highway system. These segments are STH 33 between 18th Avenue and Trenton Road and Main Street between Vine Street and Walnut Street. While further capacity improvements were considered, such improvements are not recommended at this time. However, unlike the adopted jurisdiction highway system plan, which identified only the need for four lanes, specific cross-section recommendations are herein recommended.

Three roadway cross-sections are proposed for STH 33: 1) a four-traffic-lane with continuous left-turn lane five-lane urban section from 18th Avenue to Main Street, 2) a four-traffic-lane undivided urban section from Main Street to Schmidt Road, and 3) a four-traffic-lane divided urban section from Schmidt Road to Trenton Road. Two roadway cross-sections are proposed for Main Street: 1) a four-traffic-lane undivided urban section from Decorah Road to Walnut Street and 2) a four-traffic-lane with continuous left-turn lane five lane urban section from Decorah Road to Vine Street.

OTHER ISSUES

Members of the Committee guiding the preparation of the City of West Bend transportation system plan for the year 2010 expressed concern that 7th Avenue south of STH 33, while functioning as an arterial street and while recognized in the plan as such, was designed as a land-access street. It was further noted that, south of Chestnut Street, residential and school land uses abut 7th Avenue and that arterial traffic is incompatible with the existing roadway cross-section or the abutting land uses.

Table 19

**ALTERNATIVE AND RECOMMENDED ROADWAY IMPROVEMENTS TO ABATE
ROADWAY DEFICIENCIES EXPECTED TO REMAIN FOLLOWING IMPLEMENTATION OF
CURRENTLY ADOPTED WASHINGTON COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN**

Deficiency Type	Facility or Location	Segment Limits		Alternatives		Estimated Cost to Implement Recommended Alternative
		From	To	Considered	Recommended	
Spacing	Corridor centered on County B and CTH B	STH 33	The proposed extension of Schuster Drive	Add County B from STH 33 to CTH B at the north corporate limit of the City of West Bend and CTH B from County B to proposed Schuster Drive extension to the arterial system as a local trunk highway	Add County B from STH 33 to CTH B at the north corporate limit of the City of West Bend and CTH B from County B to proposed Schuster Drive extension to the arterial system as a local trunk highway	\$ 875,000
	Corridor centered on Schmidt Road	STH 33	STH 144	Add Schmidt Road from STH 33 to STH 144 to the arterial system as a local trunk highway	Add Schmidt Road from STH 33 to STH 144 to the arterial system as a local trunk highway	1,700,000
Capacity	STH 33	University Drive	18th Avenue	Maintain existing four-traffic-lane divided urban section Reconstruct to six-traffic-lane divided urban section Construct new interchange on USH 45 at Decorah Road Construct new interchange on USH 45 at Beaver Dam Road	Maintain existing four-traffic-lane divided urban section	\$ 100,000
	STH 33 ^a	18th Avenue	Trenton Road	Maintain existing two-traffic-lane/two-auxiliary-lane urban section and two-traffic-lane rural section Reconstruct to provide four-traffic-lane urban section with continuous left-turn lane; reconstruct two-lane rural section to provide a four-traffic-lane divided urban section; prohibit all on-street parking on the two-traffic-lane/two-auxiliary-lane urban section to provide four traffic lanes	Reconstruct to provide four-traffic-lane urban section with continuous left-turn lane; reconstruct two-lane rural section to provide a four-traffic-lane divided urban section; prohibit all on-street parking on the two-traffic-lane/two-auxiliary-lane urban section to provide four traffic lanes	6,354,100
	Decorah Road	7th Avenue	Indiana Avenue	Maintain existing two-traffic-lane/two-auxiliary-lane urban section Prohibit all on-street parking Reconstruct to provide four-traffic-lane undivided urban section and prohibit all on-street parking	Reconstruct to provide four-traffic-lane undivided urban section and prohibit all on-street parking	1,357,200
	Main Street ^b	Walnut Street	Vine Street	Maintain existing two-traffic-lane/two-auxiliary-lane urban section and four-traffic-lane undivided urban section Prohibit all on-street parking Minor widening and prohibit all on-street parking to provide a four-traffic-lane urban section Minor widening of existing two-traffic-lane/two-auxiliary-lane urban section to provide a four-traffic-lane undivided urban section and reconstruction of existing four-lane undivided urban section to provide a four-traffic-lane urban section with continuous left-turn lane and prohibit all on-street parking Reconstruct to provide four-traffic-lane urban section with continuous left-turn lane and prohibit all on-street parking Reconstruct to provide four-traffic-lane divided urban section	Minor widening of existing two-traffic-lane/two-auxiliary-lane urban section to provide a four-traffic-lane undivided urban section and reconstruction of existing four-lane undivided urban section to provide a four-traffic-lane urban section with continuous left-turn lane and prohibit all on-street parking	1,700,000

Table 19 (continued)

Deficiency Type	Facility or Location	Segment Limits		Alternatives		
Capacity (continued)	Paradise Drive	USH 45	Main Street	<p>Maintain existing four-traffic-lane divided rural section, existing four-traffic-lane undivided urban section, and two-traffic-lane/two-o-auxiliary-lane urban section</p> <p>Maintain existing four-traffic-lane sections and reconstruct two-traffic-lane/two-auxiliary-lane urban section to provide four-traffic-lane undivided section with exclusive left-turn lanes at 7th Avenue and Main Street and prohibit all on-street parking</p> <p>Maintain existing four-traffic-lane sections and reconstruct two-traffic-lane/two-auxiliary-lane urban section to provide four-traffic-lane undivided section with continuous left-turn lane</p> <p>Reconstruct existing four-traffic-lane sections and two-traffic-lane/two-o-auxiliary-lane section to provide a four-traffic-lane divided urban section</p>	<p>Maintain existing four-traffic-lane sections and reconstruct two-traffic-lane/two-auxiliary-lane urban section to provide four-traffic-lane undivided section with exclusive left-turn lanes at 7th Avenue and Main Street and prohibit all on-street parking</p>	\$ 577,800
Total	--	--	--	--	--	\$12,664,100

^aThe adopted Washington County Jurisdictional Highway System Plan did identify the need for four traffic lanes on this segment of STH 33. However, that plan does not recommend a specific roadway cross-section, whereas specific roadway cross-sections, including a four-lane divided urban roadway from Schmidt Road to Trenton Road, are being recommended herein. At the end of 1993, design of the reconstruction of STH 33 between Schmidt Road and Trenton Road was under way. Responding to comments to minimize right-of-way acquisition received at public informational meetings, the Wisconsin Department of Transportation was considering a four-traffic-lane urban cross-section with a continuous center left-turn lane as the preferred roadway design option.

^bThe adopted Washington County Jurisdictional Highway System Plan did identify the need for four traffic lanes on this segment of Main Street. However, under that plan the provision of four traffic lanes was envisioned to be provided through the prohibition of parking. Minor widening from Walnut Street to Decorah Road and roadway reconstruction to provide four traffic lanes with a continuous left-turn lane from Decorah Road to Vine Street are being recommended herein.

Source: SEWRPC.

The segment of 7th Avenue between Decorah Road and STH 33 has long been identified as an arterial, dating back to the first-generation regional transportation system plan, adopted in 1966. Its status as an arterial was reaffirmed during: 1) a comprehensive study conducted in 1973 to prepare a jurisdictional highway system plan for Washington County, 2) the preparation of the second-generation regional transportation system plan in 1975, and 3) the reevaluation and update of the Washington County Jurisdictional Highway System Plan conducted in 1989.

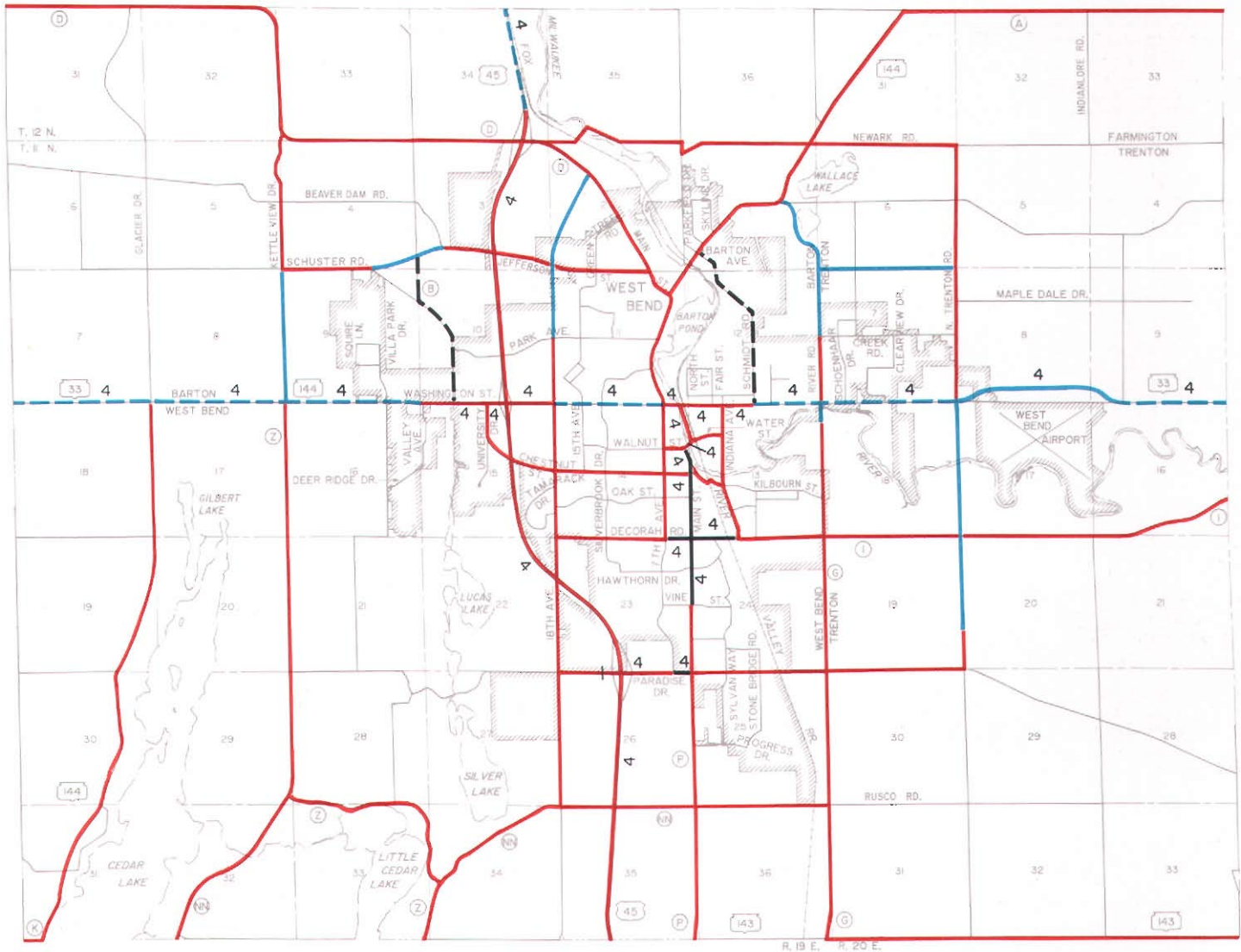
While 7th Avenue does penetrate a residential neighborhood south of Walnut Street, it also serves a number of institutional and commercial land uses between STH 33 and Walnut Street, including the City of West Bend's Public Library. It also forms the western boundary of the central business district. It currently carries average weekday traffic volumes ranging from

about 5,400 to about 9,700 vehicles. These volumes are well in excess of the threshold of 5,000 vehicles per average weekday at which a facility is generally considered to be functioning as an arterial.

The closing of Main Street in the early 1980s to all traffic between 7th Avenue and STH 33 and its reconstruction between Walnut Street and STH 33 as a shopping mall, with access at STH 33 limited to right-turning northbound traffic, eliminated Main Street as an arterial through the central business district. Some of the arterial traffic previously traveling on Main Street was diverted to 7th Avenue because it is the first street west of Main Street with continuity between STH 33 and Walnut Street. Thus, 7th Avenue is functioning as an arterial between STH 33 and Decorah Road. Given the existing street pattern, it may be expected that 7th Avenue will continue to function as an arterial.

Map 24

**ARTERIAL STREET AND HIGHWAY SYSTEM IMPROVEMENTS
RECOMMENDED TO ABATE ANTICIPATED FUTURE ARTERIAL SPACING AND
CAPACITY DEFICIENCIES IDENTIFIED IN THE CITY OF WEST BEND PLANNING AREA**

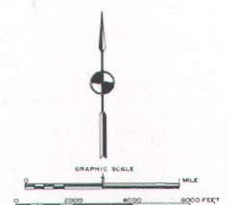


LEGEND

- ARTERIAL SYSTEM
- IMPROVEMENTS RECOMMENDED IN ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN ^a
 - WIDEN ON CURRENT ALIGNMENT TO PROVIDE ADDITIONAL TRAFFIC LANES
 - CONSTRUCT ON NEW ALIGNMENT
- IMPROVEMENTS RECOMMENDED BEYOND ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN ^a
 - WIDEN ON CURRENT ALIGNMENT TO PROVIDE ADDITIONAL TRAFFIC LANES
 - PROPOSED ADDITION TO THE ARTERIAL SYSTEM AS A LOCAL TRUNK HIGHWAY
- 4 NUMBER OF LANES (2 WHERE UNNUMBERED)

^a ADDITIONAL TRAFFIC LANES MAY BE PROVIDED VIA IMPLEMENTATION OF ON-STREET PARKING PROHIBITIONS AT SELECTED LOCATIONS WITHIN THE CITY OF WEST BEND

Source: SEWRPC.



Removal of the arterial traffic from 7th Avenue may be expected to be very difficult without implementation of a potentially controversial measure such as its closing or its conversion to one-way traffic operations. Further, the impacts of such a measure may be expected to be undesirable as well. The closing of 7th Avenue at STH 33, for example, may be expected to divert both arterial and nonarterial traffic to adjacent parallel land-access streets. Similarly, the conversion of 7th Avenue from two-way to one-way operation may be expected to divert about one-half the existing arterial and nonarterial traffic to adjacent parallel land-access streets, one of which must be designated one-way in the opposing direction and to which diverted traffic would most likely be directed. Thus each of these alternatives may be expected to result in more circuitous travel with an attendant increase in travel time and distance, fuel consumption, and air pollutant emissions, as well as diversion of arterial traffic to parallel land-access streets. While conversion to one-way operation generally results in a modest improvement in the traffic safety, it may also be expected to result in higher speeds, which would be considered undesirable in a residential neighborhood.

POTENTIAL ADDITIONAL CAPACITY DEFICIENCIES BECAUSE OF DEVELOPMENT BEYOND THE ADOPTED CITY OF WEST BEND AND REGIONAL LAND USE PLANS

As previously noted, the delineated urban service area for the City of West Bend contains sufficient area to accommodate nearly twice the urban land use development necessary to accommodate the year 2010 forecast household, population, and employment levels underlying the City of West Bend and regional land use plans. While full development within the urban service area is not anticipated by the year 2010, additional travel demand on the arterial system may be expected if development exceeds the forecast household, population, and employment levels underlying the City of West Bend and regional land use plans.

The increase in average weekday traffic volumes which may be anticipated as a result of the development within the urban service area beyond the adopted plan levels may be expected

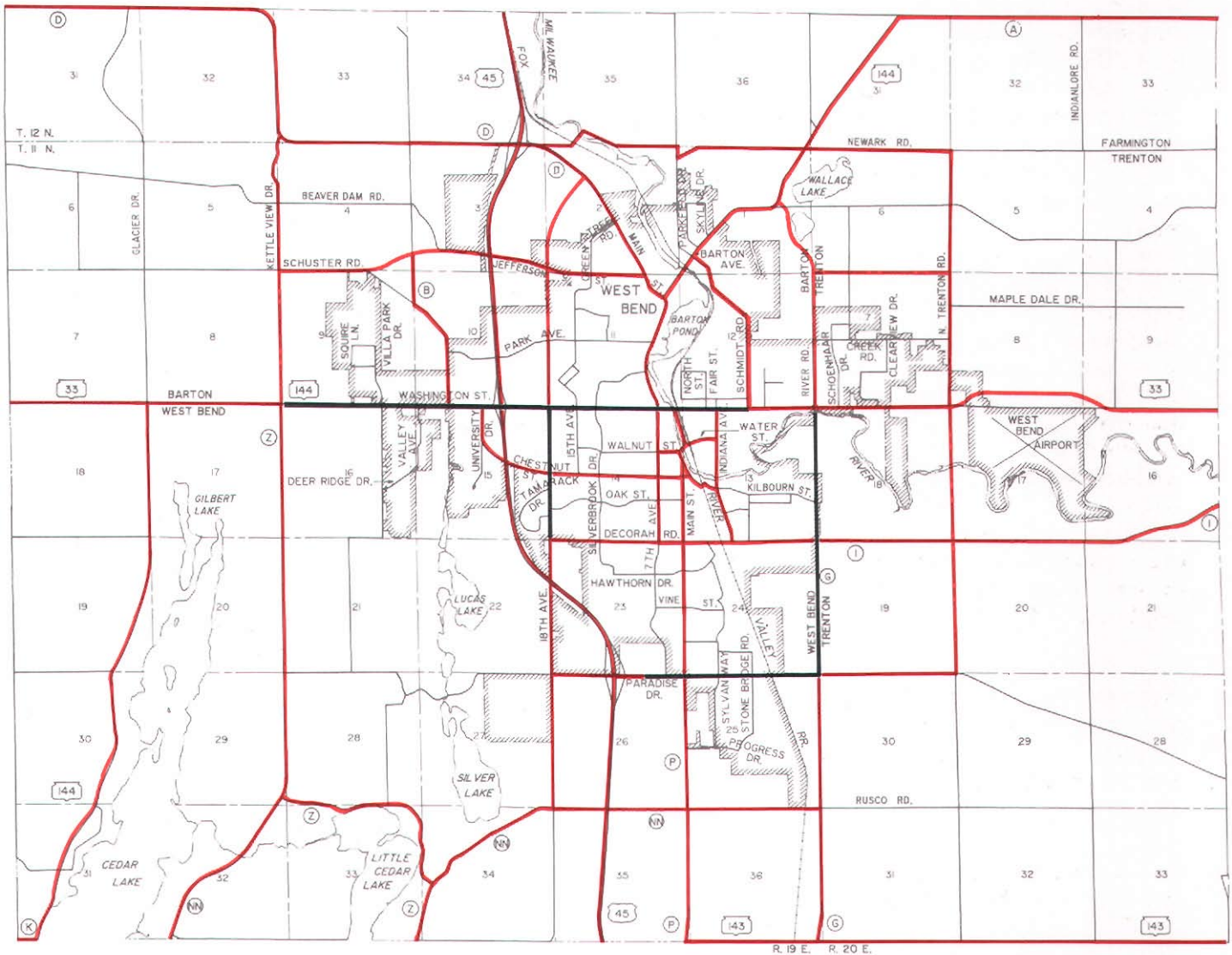
to exacerbate the capacity deficiencies previously identified under the planned level of development. Additional arterial segments may also be expected to carry traffic volumes in excess of their design capacities. These segments may be expected to include STH 33 between CTH Z and Schmidt Road, 18th Avenue between STH 33 and Decorah Road, CTH G and River Road between STH 33 and Paradise Drive, and Paradise Drive between USH 45 and CTH G. These segments are shown on Map 25.

Therefore, in order to achieve the planned objective of a transportation system which, through its location, capacity, and design, will effectively serve at an adequate level the land use pattern of the planning area, it may be anticipated that additional improvements will become necessary beyond those herein recommended. The abatement of these potential additional future arterial system deficiencies may be expected to require one or more of the following actions: 1) further capacity improvements to existing arterials beyond those currently being recommended, 2) the provision of new arterials, and 3) the provision of new freeway to surface arterial interchanges. It may be anticipated that some of the potential improvements which would be required to provide an adequate level of service for the anticipated average weekday traffic volumes under full development of all the lands within the urban service area are likely to prove to be infeasible. For example, the improvement of an existing four-lane divided facility to a six-lane divided facility with an additional traffic lane in each direction through a developed urban area may be expected to result in substantial disruption to existing development on both sides of the arterial.

Two alternative roadway improvements were considered to abate the capacity deficiency which may be expected on STH 33 between CTH Z and 18th Avenue if full development of the urban service area occurs. The first alternative considered was the provision of a new freeway interchange at Decorah Road. This alternative may be expected to divert very modest amounts of average weekday traffic from STH 33 east of USH 45. Diversion would not be expected west of USH 45 because of the lack of a direct connection south of STH 33 between 18th Avenue and CTH Z to the west. Further, the potential to provide such a connection in the

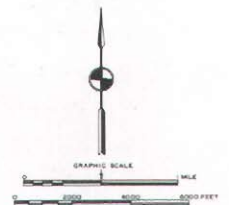
Map 25

POTENTIAL ADDITIONAL FUTURE ARTERIAL SYSTEM DEFICIENCIES UNDER FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES BASED ON FULL DEVELOPMENT WITHIN THE CITY OF WEST BEND URBAN SERVICE AREA



LEGEND

- POTENTIAL ADDITIONAL FUTURE ARTERIAL CAPACITY DEFICIENCY
- ARTERIAL SYSTEM



Source: SEWRPC.

future appears to be limited due to the topographic constraints, including lakes, wetlands, and slopes of 12 to 20 percent, and existing land use development, including a County park and a Girl Scouts of Milwaukee camp. Because this alternative is expected to provide only very modest traffic diversion and because of its high estimated cost, \$6.5 million, it is not recommended for further consideration.

The second alternative considered was the provision of a six-lane divided urban roadway. The advantage of this alternative is the provision of adequate roadway capacity to accommodate the probable future travel demand upon full development of lands within the City's urban service area. One disadvantage of this alternative is that the provision of an additional traffic lane in each direction may be expected to require an increase in right-of-way width to at least 130 feet. The increased width would probably cause substantial disruption to existing development on one or both sides of the arterial. At a minimum, this disruption may be expected to result in the loss of off-street parking and severe degradation of internal onsite traffic circulation within those properties abutting the north side of STH 33 west of USH 45 and abutting the south side of STH 33 east of USH 45. Dependent upon final design, including the need to provide exclusive turn lanes at intersections, as many as 13 existing structures would probably either be located within the required new right-of-way or virtually on the new right-of-way line, requiring acquisition and demolition. The estimated cost to construct this alternative is \$8.2 million. On the basis of the information available at this time, this alternative would mostly likely be recommended to resolve the probable capacity deficiency identified on this segment of STH 33 upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

Abatement of the capacity deficiency which may be expected on STH 33 between 18th Avenue and Schmidt Road upon full development of lands within the proposed urban service area may be expected to require the provision of a four-lane divided urban roadway. The advantage of this alternative is the provision of adequate roadway capacity to accommodate the probable future travel demand upon full development of lands

within the proposed urban service area. The disadvantage of this alternative is that the provision of a divided roadway may be expected to require a right-of-way width of at least 110 feet, resulting in substantial disruption to existing development on both sides of the arterial. At a minimum, an additional 15 feet of right-of-way would need to be acquired on each side of the roadway from 18th Avenue to a point about 300 feet west of the Milwaukee River. From that point to Schmidt Road, as much as 22 feet on each side of the roadway would be required. The acquisition of this right-of-way may also be expected to result in the acquisition and demolition of 49 existing structures probably either within the required new right-of-way or virtually on the new right-of-way line. Other disadvantages of this alternative include the prohibition of all on-street parking and a potential increase in U-turns at median openings. The estimated cost to construct this alternative is \$4.9 million. On the basis of the information available at this time, this alternative would most likely be recommended to resolve the probable capacity deficiency identified on this segment of STH 33 upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

Abatement of the capacity deficiency which may be expected on 18th Avenue between Decorah Road and STH 33 upon full development of lands within the City of West Bend urban service area may be expected to require the prohibition of all on-street parking and some attendant minor roadway widening to provide a four-traffic-lane undivided urban roadway. Additional widening at the arterial street intersections of STH 33, Chestnut Street, and Decorah Road to provide exclusive turn lanes may also be required. The advantage of this alternative is the provision of adequate roadway design capacity to accommodate the probable future travel demand upon full development of lands within the City's urban service area safely and efficiently. The disadvantages of this alternative include the loss of on-street parking and the need for additional right-of-way at the arterial street intersections to provide exclusive turn lanes. The estimated cost to construct this alternative is \$0.8 million. On the basis of the information available at this time, this alterna-

tive would most likely be recommended to resolve the probable capacity deficiency identified on this segment of 18th Avenue upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

Abatement of the capacity deficiency which may be expected on River Road/CTH G between Paradise Drive and STH 33 upon full development of lands within the proposed urban service area may be expected to require the provision of a four-traffic-lane undivided urban roadway. The advantage of this alternative is the provision of sufficient roadway design capacity to accommodate probable future travel demand upon full development of lands within the City's urban service area safely and efficiently. A disadvantage of this alternative is that the provision of a four-lane undivided urban roadway may be expected to require a right-of-way width of at least 80 feet, resulting in the need to acquire 14 feet of additional right-of-way from the Milwaukee River to a point 0.5 mile north of Decorah Road and from Decorah Road to Paradise Drive. Another disadvantage of this alternative is the need to prohibit all on-street parking. The estimated cost to construct this alternative is \$3.1 million. On the basis of the information available at this time, this alternative would most likely be recommended to resolve the probable capacity deficiency identified on this segment of River Road/CTH G upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

Abatement of the capacity deficiency which may be expected on Paradise Drive between USH 45 and CTH G upon full development of lands within the City of West Bend urban service area may be expected to require the provision of four traffic lanes. Two alternative roadway improvements were considered for the Paradise Drive segment between the end of the existing four-lane divided rural roadway approximately 1,250 feet east of USH 45 and Main Street. The first alternative considered was four traffic lanes with continuous left-turn lane five lane urban roadway requiring a minimum right-of-way width of 80 feet or a desirable width of 90 feet with a resulting need to acquire 14 to 24 feet of

additional right-of-way. The second alternative considered was a four-lane divided urban roadway requiring a minimum right-of-way width of 110 feet. The provision of a four-lane undivided urban roadway was considered for the segment of Paradise Drive between Main Street and CTH G. The advantage of these alternatives is the provision of sufficient arterial capacity to accommodate probable future travel demand upon full development of lands within the City's urban service area safely and efficiently.

There are currently a very limited number of access driveways located along the segment of Paradise Drive for which a five-lane undivided urban roadway with a continuous left-turn lane was considered. Further, a previous study of Paradise Drive between USH 45 and Main Street has recommended that direct access to abutting parcels from Paradise Drive be strictly limited.³ Because there are so few existing access driveways and because the City intends to limit additional access strictly, the need to separate left-turning traffic from through traffic along this roadway segment, the primary advantage of a five-lane undivided urban roadway, is obviated. Provision of such a cross-section may generate pressure for additional direct access, which in turn reduces roadway capacity and degrades traffic operations and safety. Therefore, this alternative improvement is not recommended for further consideration.

The disadvantages of providing a four-lane divided roadway are the need to acquire additional right-of-way and the potential increase in U-turns at median openings as a result of curtailed access to land uses abutting the opposing traffic lanes. Nearly all the additional right-of-way required is located between 7th Avenue and Main Street, with a strip five to 10 feet wide on the north side of Paradise Drive and a strip 22 feet wide on the south side to be acquired. This acquisition would displace three buildings from the south side of Paradise Drive. The potential for U-turns could be minimized if direct access between Paradise Drive and abutting lands is permitted only at median openings

³See SEWRPC Memorandum Report No. 25, Traffic Impact Study of Proposed Development along Paradise Drive between the USH 45 Bypass and S. Main Street, September 1987.

to collector or land-access facilities, which would then provide access to individual parcels. The estimated cost to construct this alternative is \$0.7 million. On the basis of the information available at this time, this alternative would most likely be recommended to resolve the probable capacity deficiency identified on this segment of Paradise Drive upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

The alternative improvement considered for the segment of Paradise Drive between Main Street and CTH G was the provision of a four-traffic-lane undivided roadway. Between Main Street and the Fox River Valley Railroad trackage, the provision of four traffic lanes may be expected to be accomplished through the prohibition of on-street parking and minor roadway widening. East of the Fox River Valley Railroad trackage, the existing two-lane rural roadway will require reconstruction to a four-lane undivided urban roadway. The advantage of this alternative is the provision of adequate roadway capacity to accommodate the probable future travel demand upon full development of lands within the City's urban service area. The disadvantages include the need to acquire right-of-way east of the Fox River Valley Railroad trackage and the loss of on-street parking. The estimated cost to construct this alternative is \$1.4 million. On the basis of the information available at this time, this alternative would most likely be recommended to resolve the probable capacity deficiency identified on this segment of Paradise Drive upon full development of lands within the proposed urban service area, a development scenario well beyond that envisioned in the adopted City and regional land use plans.

Summary and Conclusions

As previously noted, the proposed urban service area encompasses approximately twice as much area as necessary to accommodate the forecast levels of employment, households, and population underlying the adopted City and regional land use plans. Consequently, full development of lands within the proposed urban service area then may be expected to result in levels of probable future travel demand that would exceed the probable future travel demand attendant to the planned levels of employment, households, and population.

In order to provide City officials with an understanding of the impacts of full development within the proposed urban service area on the arterial street and highway element of the City's transportation plan, probable future travel demand forecasts under such conditions were prepared and attendant capacity deficiencies and roadway improvements needed to resolve these deficiencies identified.

Capacity deficiencies identified based on the adopted City and regional land use plans on STH 33 from CTH Z to Schmidt Road and on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street may be expected to be exacerbated under a full-development scenario. The roadway improvements required to resolve the capacity deficiencies on these segments under the full-development scenario would provide more capacity than would have to be provided to resolve the capacity deficiency attendant to future travel demand under the adopted City and regional land use plans. Roadway segments on which capacity deficiencies have been identified only under the full-development scenario include: 1) 18th Avenue between Decorah Road and STH 33, 2) River Road/CTH G between Paradise Drive and STH 33, and 3) Paradise Drive from Main Street to CTH G.

Given the information currently available, the specific roadway improvements that would most likely be recommended to resolve the capacity deficiencies attendant to the full-development scenario include: 1) a six-lane divided and a four-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue and between 18th Avenue and Schmidt Road, respectively, 2) a four-lane undivided urban roadway on 18th Avenue between Decorah Road and STH 33, 3) a four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33, and 4) a four lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to CTH G.

Consideration should be given by City officials to acquiring the necessary rights-of-way to accommodate the improvements identified to abate the capacity deficiencies attendant to the full-development scenario when acquiring rights-of-way for the less substantial improvements

identified to abate the capacity deficiencies based on levels of future travel demand attendant to the adopted City and regional land use plans. City officials may then deem it appropriate to acquire individual parcels anticipated to be necessary to accommodate the future arterial improvements as those parcels come on the market.

PUBLIC TRANSIT ELEMENT

It is important to recognize that this highway system plan has been prepared within the context of the adopted regional transportation system plan. That is, the highway system improvement and expansion recommended in the highway system element of the plan represents the improvements needed to meet the traffic demands from the adopted regional land use plan which may not be expected to be resolved with the substantial transit improvement and expansion and increased carpooling recommended in the aforementioned plan.

Thus, the public transit component of the year 2000 adopted regional transportation system plan envisions a substantially expanded and improved transit system. The public transit component of the plan envisions the development of a true areawide transit system with a rapid transit element to serve a wide variety of trips and provide a competitive and attractive alternative to the automobile. Planned transit service levels, as measured by the vehicle miles of transit service provided and the average speed of a transit trip, were proposed to be nearly twice as good as existing levels. The plan envisions more than a doubling of the existing level of transit use in Southeastern Wisconsin.

The public transit element of the transportation system plan was refined and detailed for West Bend planning area through the 1991 adoption of a transit system development plan for the City of West Bend and environs. This plan element refined the local service element of the year 2000 regional transportation system plan, which proposed that within Washington County regional bus-on-freeway service be provided over two routes and serve five stations, as well as collect and distribute passengers on route extensions into the City of West Bend and the Village of Germantown. The bus on freeway would connect not only with the Milwaukee central business district, but also with other express bus

routes of a planned areawide network of lines serving the Milwaukee urbanized area.

Under the adopted transit system development plan for the West Bend planning area, demand-responsive transit service is to be provided to the general public through the operation of a publicly subsidized shared-ride taxicab system. Service is provided to all trips within the City of West Bend and to existing development contiguous to the City between 6:00 a.m. and 10:00 p.m. Monday through Saturday and from 8:00 a.m. to 2:00 p.m. on Sundays and holidays. Selected operating characteristics which were projected for the first five years of operation of the transit system are set forth in Tables 20 and 21. The planned system has been implemented. Set forth in Table 22 is a comparison of selected 12-month actual performance characteristics with comparable forecast first-year characteristics. In addition to the operating costs, the City's transit system plan envisioned the need to acquire a fleet of taxicab vehicles and a dispatching radio system. The projected combined capital and operating expenditures for the first five years of the system's operation are set forth in Table 23.

It may be noted that, at the time the operating assistance projections were prepared, the Federal transit operating assistance program had been decreased from about 21.0 percent of the annual operating costs in the first year to about 14.0 percent in the last year and the State urban mass transit operating assistance program was limited to 38.5 percent of total operating costs. The level of funding available through the State transit operating assistance program has been increased to 42.0 percent. The level of funding available through the Federal transit operating assistance program has been increased to 28.0 percent of the total operating costs annually and is anticipated to remain at that level rather than decreasing. Thus, the combined Federal and State transit operating assistance programs, as currently structured, may be expected to fund 70.0 percent of the total operating costs of the transit system in the City of West Bend.

The existing public transit system should eventually be operated as a complement to the route extensions proposed as a part of the bus-on-freeway service linking the West Bend area to the greater Milwaukee area transit system.

Table 20

**PROJECTED RIDERSHIP ON THE RECOMMENDED SHARED-RIDE
TAXICAB SERVICE FOR THE CITY OF WEST BEND URBAN PLANNING AREA^a**

Operating Characteristic	Year				
	1992	1993	1994	1995	1996
Service Provided					
Total Annual Vehicle Hours	14,590	14,570	14,560	14,530	14,570
Total Annual Vehicle Miles	120,600	126,500	128,200	129,200	130,900
Revenue Passengers					
Average Weekday ^b	125	144	151	155	159
Total Annual	37,100	42,700	44,800	45,900	47,000
Per Vehicle Hour	2.5	2.9	3.1	3.2	3.2
Per Vehicle Mile	0.31	0.34	0.35	0.36	0.36
Per Capita ^c	1.5	1.7	1.7	1.7	1.7

^aThe Transit System Feasibility Study and Development Plan for the City of West Bend was prepared for the years 1992 to 1996, which, at the time the plan was prepared, were anticipated to be the first five years of operation. Thus the data presented may be considered representative estimates of the first five years of operation even though actual system operations began in 1993.

^bThe weekday ridership figures shown represent an average for an entire year. It may be expected that ridership on Saturdays, Sundays, and holidays would be lower than that for an average weekday. Similarly, average weekday ridership would be expected to vary over the course of the year, with higher ridership during periods of inclement winter weather than during summer months.

^cAssumes a resident population for the City of West Bend ranging from about 25,500 persons to about 27,000 in 1996.

Source: SEWRPC.

SUMMARY

A number of arterial spacing deficiency and arterial capacity deficiency problems were identified in the West Bend planning area based on forecast levels of population, households, and employment identified in the adopted City of West Bend and regional land use plans. One arterial spacing deficiency was identified on a route comprised of CTH B and County B between the proposed extension of Schuster Drive in the Town of Barton and STH 33 in the City of West Bend. A second arterial spacing deficiency was identified on Schmidt Road between STH 144 and STH 33. Capacity deficiencies were identified on STH 33 between University Drive and Schmidt Road, on Decorah Road between 7th Avenue and Indiana Avenue, on Main Street between Walnut Street and Vine Street, and on Paradise Drive between USH 45 and Main Street.

On the basis of forecast levels of travel demand derived from the plan design year 2010 levels of

population, households, and employment envisioned in the adopted City of West Bend and regional land use plans, capacity deficiencies were identified which may be expected to remain even after implementation of capacity improvements recommended in the adopted Washington County Jurisdictional Highway System Plan. Capacity deficiencies were identified on 1) STH 33 from University Drive to Trenton Road, 2) Decorah Road from 7th Avenue to Indiana, 3) Main Street from Walnut Street to Vine Street, and 4) Paradise Drive from USH 45 to Main Street.

A range of alternative roadway improvements was considered to abate these capacity deficiencies. Each of the alternatives was evaluated with respect to its potential to abate the anticipated capacity deficiency on the basis of the estimated cost and expected disruption attendant to its implementation. The alternative roadway improvements recommended were identified as those which best resolved the anticipated capacity deficiencies while simultaneously minimizing the estimated cost and disruption.

Table 21

**PROJECTED RIDERSHIP AND FINANCIAL PERFORMANCE ON THE RECOMMENDED
SHARED-RIDE TAXICAB SERVICE FOR THE CITY OF WEST BEND URBAN SERVICE AREA**

Operating Characteristic	Year ^a				
	1992	1993	1994	1995	1996
Annual Revenue Passengers	37,100	42,700	44,800	45,900	47,000
Service Cost ^b					
Total Annual Operating Expenses	\$219,900	\$230,300	\$192,600	\$200,200	\$209,400
Total Annual Operating Revenue ^c	46,400	53,400	56,000	57,400	58,800
Total Annual Operating Deficit	173,500	176,900	136,600	142,800	150,600
Sources of Required Public Funds					
Federal Operating Assistance ^d	46,800	44,200	31,400	30,000	28,600
State Operating Assistance ^e	84,700	88,700	74,200	77,100	80,600
Local Operating Assistance	42,000	44,000	31,000	35,700	41,400
Service Effectiveness					
Total Expense per Passenger	\$5.93	\$5.39	\$4.30	\$4.36	\$4.46
Total Revenue per Passenger	1.25	1.25	1.25	1.25	1.25
Total Deficit per Passenger	4.68	4.14	3.05	3.11	3.20
Percent of Expenses Recovered through Operating Revenues	21.1	23.2	29.1	28.7	28.1

^aThe Transit System Feasibility Study and Development Plan for the City of West Bend was prepared for the years 1992 to 1996, which, at the time the plan was prepared, were anticipated to be the first five years of operation. Thus the data presented may be considered representative estimates of the first five years of operation even though actual system operations began in 1993.

^bAssumes taxicab service would be provided from 6:00 a.m. to 10:00 p.m. Monday through Saturday, and from 8:00 a.m. to 2:00 p.m. on Sundays and holidays. One-way single passenger or first passenger fares were assumed to be \$1.00 for elderly or disabled, \$1.50 for students, and \$2.00 for adults with each "shared-ride" or additional passenger's fare \$0.75, \$1.00, and \$1.25, respectively. Ridership composition assumed to be 20 percent adult, 10 percent student, 70 percent elderly or disabled.

^cExpressed in projected "year of expenditure" dollars. Assumes annual 4 to 5 percent increase in operating expenses and no change in fares.

^dAssumes decline in Federal operating assistance funds available through the Federal Transit Administration from 27 percent of the total transit system operating deficit in 1992 to about 19 percent in 1996.

^eAssumes State funds available through the State urban transit operating assistance program to fund 38.5 percent of projected operating expenses. However, since the plan was prepared, the State funding level increased to 42 percent of the projected operating expenses.

Source: SEWRPC.

The capacity improvements recommended for STH 33 included the provision of a four-lane divided urban roadway from University Drive to 18th Avenue and from Schmidt Road to Trenton Road, the provision of a five-lane undivided urban roadway with a continuous center left-turn lane from 18th Avenue and 7th Avenue, and the provision of a four-lane undivided roadway from 7th Avenue to Schmidt Road. The

capacity improvement recommended for Decorah Road consists of the provision of a four-lane undivided urban roadway from 7th Avenue to Indiana Avenue. The capacity improvement recommended for Main Street from Walnut Street to Decorah Road includes the provision of a four-lane undivided urban roadway and from Decorah Road to Vine Street the provision of a five-lane undivided urban roadway with a

Table 22

**COMPARISON OF ACTUAL AND
FORECAST PERFORMANCE MEASURES FOR
THE CITY OF WEST BEND SHARD-RIDE TAXICAB
SYSTEM: JANUARY 21-DECEMBER 31, 1993**

Operating Characteristic	Actual 1993 (January 21 through December 31)	SEWRPC Forecast for Initial Year of Operation ^a
Ridership		
Average Daily Revenue Passengers		
Weekdays	196	125
Saturday	102	63
Sundays and Holidays	34	30
Total Revenue Passengers	54,117	37,100
Ridership Composition^b		
Adult (percent)	22	20
Student (percent)	13	10
Elderly or Disabled (percent)	65	70
Service Levels		
Total Vehicle Miles	184,500	120,600
Total Vehicle Hours	15,467	14,590
Response Time	17 minutes (average)	30 minutes (maximum)
Operating Costs and Revenues		
Total Operating Expenses	\$234,200	\$228,100 ^c
Total Passenger Revenue	57,800	46,400
Total Operating Deficit	176,400	181,700
Service Effectiveness and Efficiency		
Average Operating Speed	11.9	8.3
Passengers per Vehicle Mile	0.29	0.31
Passengers per Vehicle Hour	3.5	2.5
Operating Expense per Passenger	\$4.33	\$6.15
Operating Revenue per Passenger	\$1.07	\$1.25
Operating Deficit per Passenger	\$3.26	\$4.90
Percent of Operating Expenses Recovered through Operating Revenues	24.7	20.3

^aBased on data shown for 1992 in Tables 47 and 49 of SEWRPC Community Assistance Planning Report No. 189, *A Transit System Feasibility and Development Plan for the City of West Bend: 1992-1996*.

^bBased on type of fare paid.

^cThe Commission's forecast first year operating expense for the City's taxicab system was \$219,000 expressed in 1992 dollars. For comparison with actual 1993 operating costs, the 1992 forecast cost was increased by about 4 percent to represent first year costs in 1993 dollars.

Source: City of West Bend Department of Community Development and SEWRPC.

continuous center left-turn lane. The capacity improvement recommended for Paradise Drive consists of the provision of a four-lane undivided urban roadway with exclusive left-turn lanes from a point 1,250 feet east of USH 45 to Main Street.

If full development occurs of the City of West Bend urban service area, thereby exceeding the levels of employment, households, and popula-

tion envisioned in the adopted City and regional land use plans for the design year 2010, certain identified capacity deficiencies under the planned conditions may be expected to be exacerbated and additional capacity deficiencies may be expected as a result of increased travel demand. Previously identified capacity deficiencies on STH 33 from CTH Z to Schmidt Road and on Paradise Drive from a point approximately 1,250 feet east of USH 45 to Main Street may be expected to be exacerbated. Additional capacity deficiencies under conditions of full development were identified on 18th Avenue from Decorah Road to STH 33, on River Road/CTH G from Paradise Drive to STH 33, and on Paradise Drive from Main Street to CTH G.

Abatement of these capacity deficiencies may be expected to require roadway improvements beyond those required to abate the capacity deficiencies attendant to the planned levels of employment, households and population. Given the information currently available, the alternative roadway improvements which would most likely be recommended to abate the additional capacity deficiencies attendant to full development include: 1) a six-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue, 2) a four-lane divided urban roadway between 18th Avenue and Schmidt Road, 3) a four-lane undivided urban roadway on 18th Avenue between Decorah Road and STH 33, 4) a four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33, and 5) a four-lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to CTH G. It is further recommended that consideration be given to acquiring the necessary rights-of-way for these improvements when acquiring right-of-way for less substantial improvement projects identified to abate capacity deficiencies identified under the adopted City and regional land use plans or to acquire individual parcels anticipated to be necessary as they become available.

It is important to recognize that the highway element of the City of West Bend transportation system plan has been prepared within the context of the adopted regional transportation system plan. The public transit component of the year 2000 adopted regional transportation system plan envisions a substantially expanded and improved transit system, including the

Table 23

**PROJECTED DISTRIBUTION OF EXPENDITURES FOR THE RECOMMENDED
SHARED-RIDE TAXICAB SERVICE FOR THE CITY OF WEST BEND SERVICE AREA**

Year ^b	Transit System Expenditures ^a											
	Operating Subsidies				Capital Expenditures				Total Public Costs			
	Federal Share ^c	State Share ^d	Local Share	Total	Federal Share ^e	State Share	Local Share	Total	Federal Share	State Share	Local Share	Total
1992	\$ 46,800	\$ 84,700	\$ 42,000	\$173,500	\$160,500- \$171,200	--	\$42,800- \$53,500	\$214,000	\$209,100- 219,800	\$ 84,700	\$84,800- \$95,500	\$387,500
1993	44,200	88,700	44,000	176,900	--	--	--	--	44,200	88,700	44,000	176,900
1994	31,400	74,200	31,000	136,600	--	--	--	--	31,400	74,200	31,000	136,600
1995	30,000	77,100	35,700	142,800	--	--	--	--	30,000	77,100	35,700	142,800
1996	28,600	80,600	41,400	150,600	--	--	--	--	28,600	80,600	41,400	150,600
Total	\$181,000	\$405,300	\$194,100	\$780,400	\$160,500- \$171,200	--	\$42,800- \$53,500	\$214,000	\$341,500- \$352,200	\$405,300	\$236,900- \$247,600	\$994,400
Average Annual	\$ 36,200	\$ 81,100	\$ 38,800	\$156,100	\$30,000- \$32,300	--	\$8,100- \$10,100	\$ 40,400 ^f	\$66,500- \$68,500	\$ 81,100	\$46,900- \$48,900	\$196,500

^aExpressed in projected "year of expenditure" dollars. Assumes annual 4 to 5 percent increase in operating expenses and no change in fares.

^bThe Transit System Feasibility Study and Development Plan for the City of West Bend was prepared for the years 1992 to 1996, which, at the time the plan was prepared, were anticipated to be the first five years of operation. Thus the data presented may be considered representative estimates of the first five years of operation even though actual system operations began in 1993.

^cAssumes decline in Federal operating assistance funds available through the Federal Transit Administration from 27 percent of the total transit system operating deficit in 1992 to about 19 percent in 1996.

^dAssumes State funds available through the State urban transit operating assistance program to fund 38.5 percent of projected operating expenses. However, since the plan was prepared, the State funding level increased to 42 percent of the projected operating expenses.

^eAssumes 75 to 80 percent of eligible capital costs could be funded through Federal Transit Administration funding programs.

^fBased on the expected useful life of the operating equipment and facilities included in the recommended capital projects.

Source: SEWRPC.

development of a true areawide transit system with a rapid transit element. Planned transit service levels, as measured by the vehicle miles of transit service provided and the average speed of a transit trip, were proposed to be nearly twice as good as existing levels. The plan envisions more than a doubling of the existing level of transit use in Southeastern Wisconsin.

Within the City of West Bend a shared-ride taxicab system currently serves as the public transit element of the transportation system. Service is currently provided to all trips within

the City of West Bend and to existing development contiguous to the City from 6:00 a.m. to 10:00 p.m. Monday through Saturday and from 8:00 a.m. to 2:00 p.m. Sundays and holidays. This system should eventually be operated as a complement to the route extensions proposed as part of the bus-on-freeway service connecting the West Bend area to the greater Milwaukee area transit system. Within Washington County, bus-on-freeway service is proposed to operate over two routes and serve five stations, as well as to collect and distribute passengers on route extensions within the City of West Bend.

Chapter VI

RECOMMENDED TRANSPORTATION SYSTEM PLAN

INTRODUCTION

This chapter presents the recommended transportation system plan for the City of West Bend planning area. That plan consists of two elements: an arterial street and highway element and a public transit element. The first section of this chapter presents the arterial street and highway system for the planning area and a financial assessment of that element. The second section of the chapter presents the public transit element of the plan and a financial assessment of that element. The third section sets forth recommendations for plan implementation. The recommended transportation system plan for the West Bend planning area is based on the travel demand anticipated to be generated by the design year 2010 forecast levels of population, households, and employment underlying the adopted City and regional land use plans. The basic framework for the design of the arterial street and highway element of this plan was provided by the adopted year 2000 regional transportation system plan and particularly by the adopted Washington County Jurisdiction Highway System Plan. The basic framework for the public transit element of the plan was generally provided by the adopted year 2000 regional transportation system plan, and particularly by the adopted City of West Bend transit system development plan. The year 2010 City of West Bend Transportation System Plan is intended to serve to amend and refine the aforementioned regional transportation system plan and its more specific County and local elements.

Finally, it should be noted that the design of the arterial street and highway system plan was coordinated with the concurrent development by the Regional Planning Commission of a storm-water drainage plan for the City of West Bend. This was to ensure roadway cross-section compatibility, that is, rural cross-sections with open-ditch drainage or urban cross-sections with curb and gutter and storm sewers, with the underlying assumptions in the design of the storm water drainage plan.

THE RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM ELEMENT

The arterial street and highway element of the City of West Bend 2010 transportation system plan as recommended by the City of West Bend 2010 Transportation System Plan Advisory Committee is shown on Map 26. The plan envisions a proposed system of arterial facilities in the City of West Bend planning area that can meet existing and probable future traffic demands under the adopted City and regional land use plans. The plan identifies the location and configuration of the various facilities constituting the arterial system and recommends the number of traffic lanes required on each segment of the system. The plan also recommends the level of government which should be responsible for the construction, operation, and maintenance of each facility making up the arterial system.

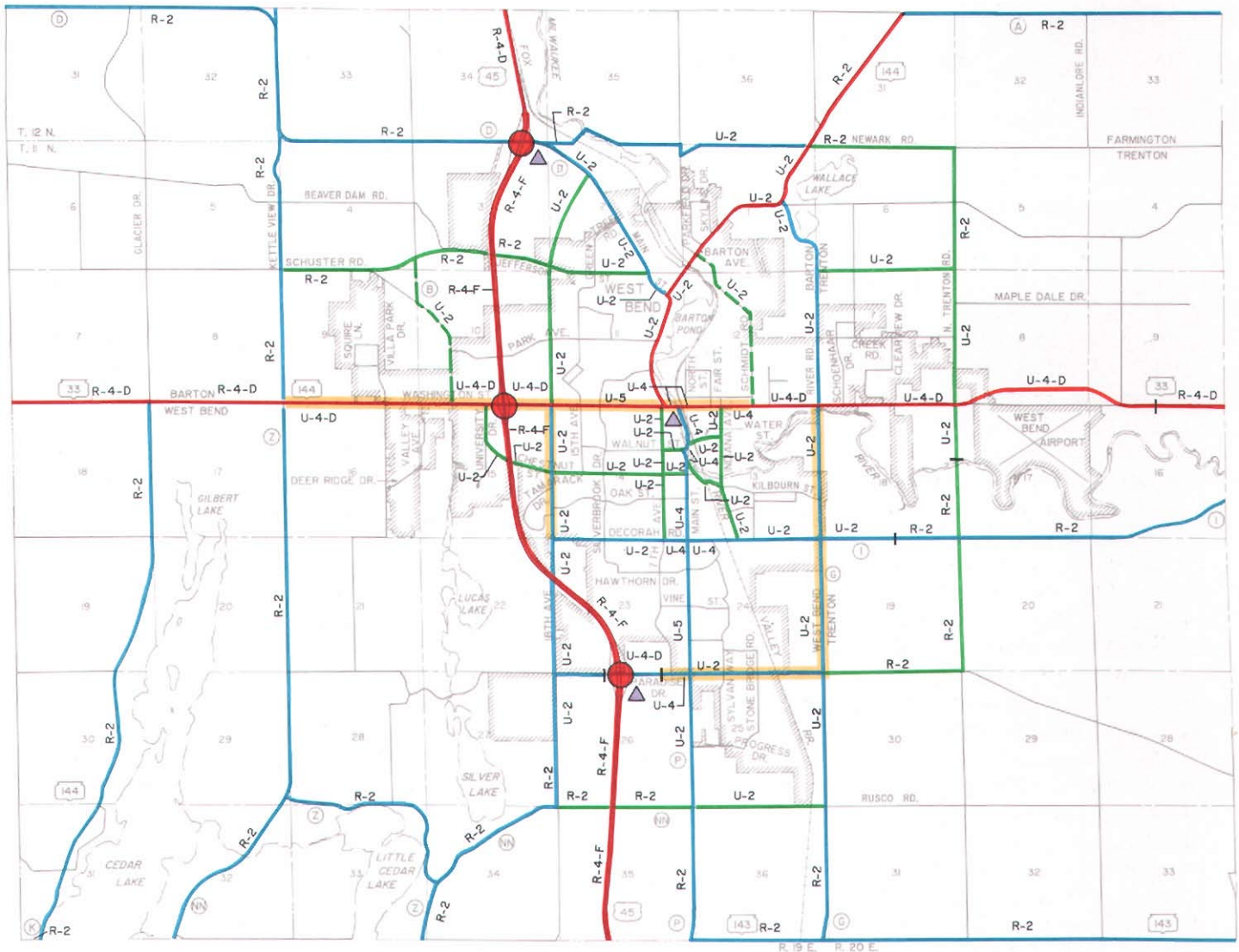
Map 26 also references the recommended roadway cross-section for each segment of the arterial street and highway system in the City of West Bend planning area. The roadway cross-sections referenced on Map 26 are shown in Appendix B.

The major capacity improvements recommended in the plan are shown on Map 27. These improvements include the widening of existing facilities to provide additional traffic lanes and the construction of new arterial facilities. The recommended major capacity improvements are set forth by jurisdiction in Table 24. Set forth in Table 25 is the suggested staging for the implementation of the recommended capacity improvements. The recommended changes in jurisdictional responsibility are shown on Map 28 and are listed in Table 26.

The recommended arterial street and highway system would include 87 miles of streets and highways. The recommended State trunk highway element of the plan would include 20 miles of arterial facilities, or about 23 percent of the planned arterial system. The recommended

Map 26

RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM IN THE
CITY OF WEST BEND PLANNING AREA BY JURISDICTIONAL CLASSIFICATION



LEGEND

RECOMMENDED ARTERIAL STREETS AND HIGHWAYS
IN THE WASHINGTON COUNTY JURISDICTIONAL
HIGHWAY SYSTEM PLAN

FREEWAY

- STATE TRUNK HIGHWAY
- INTERCHANGE

STANDARD ARTERIAL

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

RECOMMENDED ARTERIAL STREET AND HIGHWAY
ADDITIONS TO THE WASHINGTON COUNTY JURISDICTIONAL
HIGHWAY SYSTEM PLAN

- LOCAL TRUNK HIGHWAY
- ADVANCE RIGHT-OF-WAY ACQUISITION FOR
IMPROVEMENTS BEYOND THOSE SHOWN

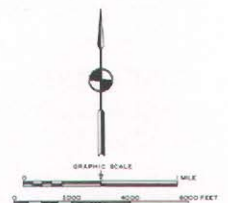
RECOMMENDED ROADWAY CROSS-SECTION

- R-RURAL
- U-URBAN
- 4-NUMBER OF TRAFFIC LANES
- F-FREEWAY
- D-DIVIDED ROADWAY
(UNDIVIDED UNLESS NOTED)
- R-4-D

RECOMMENDED PARKING LOT SITES

- ▲ PARK AND RIDE/PARK AND POOL

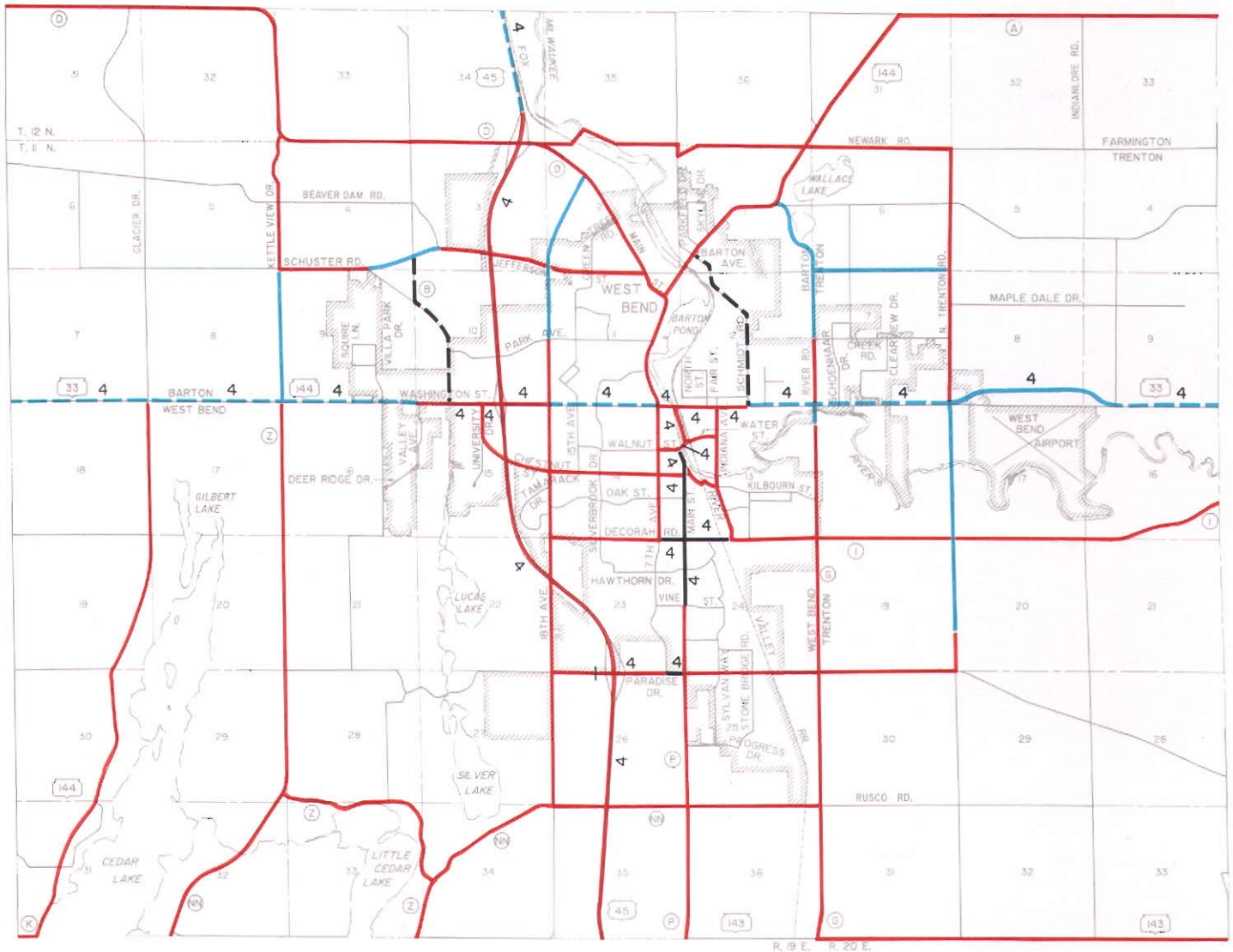
NOTE: THE NORTH RIVER ROAD ALIGNMENT IS SHOWN
TO THE WEST OF LAKE LENWOOD. A PRELIMINARY
ENGINEERING STUDY WILL DETERMINE WHETHER
THE ALIGNMENT WILL BE TO THE EAST OR WEST
OF LAKE LENWOOD.



Source: SEWRPC.

Map 27

**RECOMMENDED ARTERIAL STREET AND HIGHWAY SYSTEM
CAPACITY IMPROVEMENTS IN THE CITY OF WEST BEND PLANNING AREA**



LEGEND

— ARTERIAL SYSTEM

IMPROVEMENTS RECOMMENDED IN ADOPTED
JURISDICTIONAL HIGHWAY SYSTEM PLAN ^o

— WIDEN ON CURRENT ALIGNMENT TO
PROVIDE ADDITIONAL TRAFFIC LANES

— CONSTRUCT ON NEW ALIGNMENT

IMPROVEMENTS RECOMMENDED BEYOND ADOPTED
JURISDICTIONAL HIGHWAY SYSTEM PLAN ^o

— WIDEN ON CURRENT ALIGNMENT TO
PROVIDE ADDITIONAL TRAFFIC LANES

— PROPOSED ADDITION TO THE ARTERIAL
SYSTEM AS A LOCAL TRUNK HIGHWAY

4 NUMBER OF LANES
(2 WHERE UNNUMBERED)

^o ADDITIONAL TRAFFIC LANES MAY BE PROVIDED VIA IMPLEMENTATION OF
ON-STREET PARKING PROHIBITIONS AT SELECTED LOCATIONS WITHIN THE
CITY OF WEST BEND



Table 24

**CAPACITY IMPROVEMENTS RECOMMENDED UNDER THE ARTERIAL STREET AND HIGHWAY
ELEMENT OF THE CITY OF WEST BEND PLANNING AREA 2010 TRANSPORTATION SYSTEM PLAN**

Jurisdiction	Facility	Termini	Description
Existing Location (additional traffic lanes) State	USH 45	CTH D to northern planning area boundary	Widen from two- to four-traffic-lane divided roadway
	STH 33	CTH Z to CTH B	Widen from two- to four-traffic-lane divided roadway
	STH 33	18th Avenue to 7th Avenue	Widen from two- to four-traffic-lane with continuous left-turn lane
	STH 33	Schmidt Road to River Road	Widen from two- to four-traffic-lane divided roadway
	STH 33	Western planning area boundary to CTH Z	Widen from two- to four-traffic-lane divided roadway
	STH 33	River Road to Trenton Road	Widen from two- to four-traffic-lane divided roadway
	STH 33	Oak Road to eastern planning area boundary	Widen from two- to four-traffic-lane divided roadway
New Location (new roadway) State	STH 33	Trenton Road to Oak Road	Construct four-traffic-lane divided roadway on new alignment
County	Decorah Road	7th Avenue to Indiana Avenue	Widen from two- to four-traffic-lane undivided roadway
	Kettle View Drive	STH 33 to Schuster Road	Construct two lanes on new alignment
	Main Street	Vine Street to Decorah Road	Widen from four- to five-lane undivided roadway with four traffic lanes and continuous center left-turn lane
Local	Main Street	Decorah Road to Walnut Street	Widen from two- to four-traffic-lane undivided roadway
	Paradise Drive	A point 1,250 feet east of USH 45 to Main Street	Widen intersections to provide four-traffic-lane undivided roadway with exclusive left-turn lanes
	N. River Road extension	N. River Road to STH 144	Construct two lanes on new alignment
Local	18th Avenue extension	Park Avenue to CTH P	Construct two lanes on new alignment
	Jefferson Street extension	Trenton Road to N. River Road	Construct two lanes on new alignment
	Schuster Drive extension	Schuster Drive to Beaver Dam Road	Construct two lanes on new alignment
	Trenton Road extension	STH 33 to Maple Road	Construct two lanes on new alignment

Source: SEWRPC.

Table 25

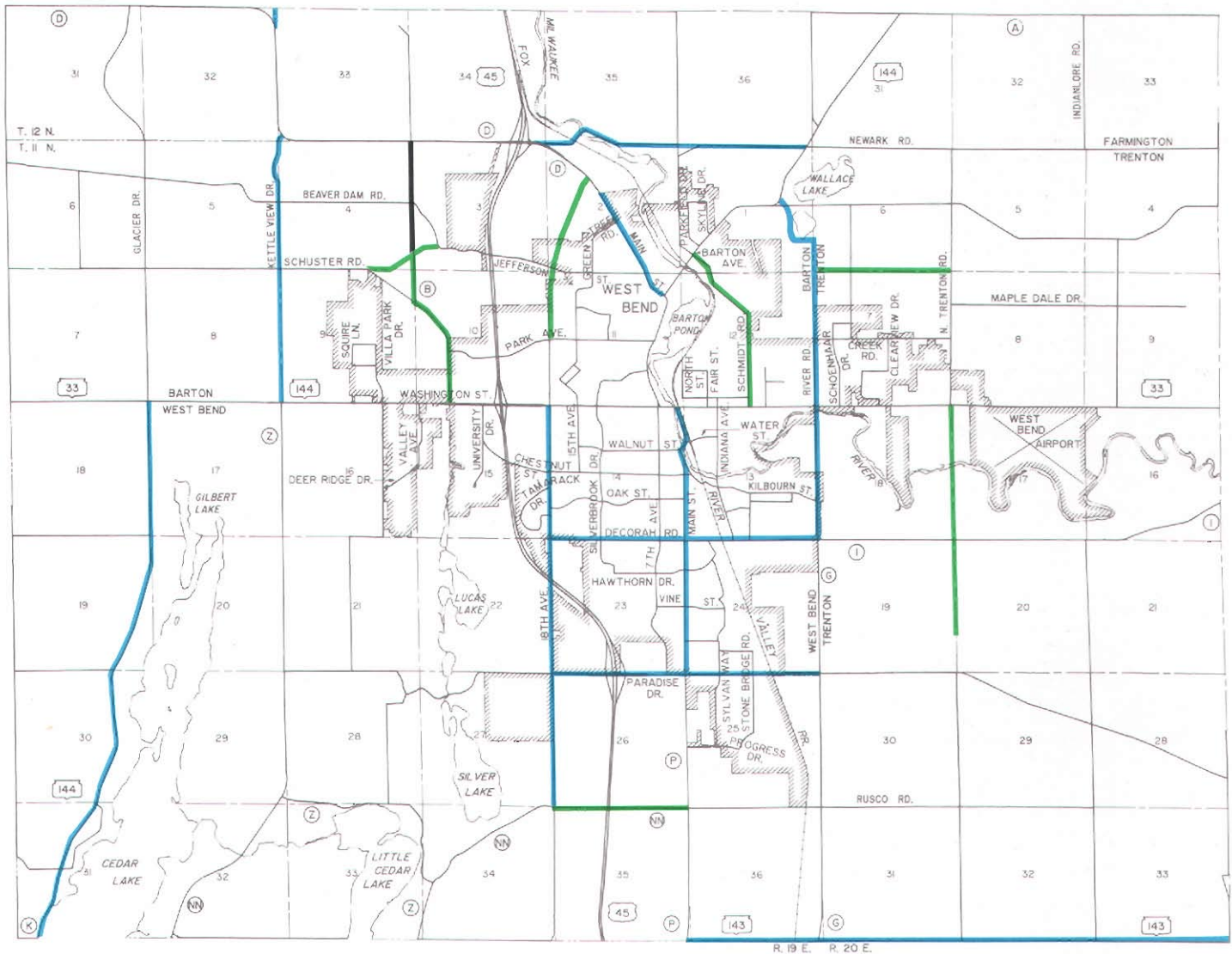
**SUGGESTED STAGING OF THE RECOMMENDED ARTERIAL STREET AND HIGHWAY
CAPACITY IMPROVEMENTS IN THE CITY OF WEST BEND 2010 TRANSPORTATION SYSTEM PLAN**

Years	Jurisdiction	Facility	Termini
1994-1995	State State	STH 33 STH 33	CTH Z to County B 18th Avenue to 7th Avenue
1996-2000	State State County County Local	USH 45 STH 33 Main Street Paradise Drive 18th Avenue	CTH D to northern planning area boundaries Schmidt Road to River Road Vine Street to Walnut Street A point 1,250 feet east of USH 45 to Main Street Park Street to Jefferson Street
2001-2005	State State County County Local	STH 33 STH 33 Decorah Road N. River Road extension 18th Avenue	Western planning area boundary to CTH E River Road to Oak Road 7th Avenue to Indiana Avenue N. River Road to STH 144 Jefferson Street to CTH D
2006-2010	State County Local Local Local	STH 33 Kettle View Drive Jefferson Street extension Schuster Drive extension Trenton Road extension	Oak Road to eastern planning area boundary STH 33 to Schuster Road N. River Road to Trenton Road Schuster Drive to Beaver Dam Road STH 33 to Maple Road

Source: SEWRPC.

Map 28

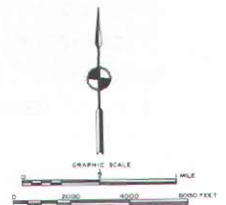
RECOMMENDED CHANGES IN JURISDICTIONAL RESPONSIBILITY ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE CITY OF WEST BEND PLANNING AREA



LEGEND

PLANNED TRANSFERS TO:

- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY
- LOCAL (NON-ARTERIAL) SYSTEM



Source: SEWRPC.

Table 26

**CHANGES IN HIGHWAY SYSTEM JURISDICTIONAL RESPONSIBILITY
UNDER THE CITY OF WEST BEND 2010 TRANSPORTATION SYSTEM PLAN^a**

Unit of Government ^b	Jurisdiction		Facility	From	To	Distance (miles)	Included in Washington County Jurisdictional Highway System Plan
	Planned	Existing					
Town of Barton	County trunk highway	New facility	Kettle View Drive extension	Schuster Drive	STH 33	1.00	Yes
	County trunk highway	New facility	N. River Road extension	City of West Bend	STH 144	1.10	Yes
	County trunk highway	Local trunk highway	Kettle View Drive	North study limit	CTH D	1.10	Yes
	County trunk highway	Local trunk highway	Kettle View Drive	CTH D	Schuster Drive	1.03	Yes
	County trunk highway	Local trunk highway	Newark Road/Lighthouse Drive . . .	CTH D	STH 144	2.05	Yes
	Local trunk highway	New facility	Schuster Drive extension	Schuster Drive	Beaver Dam Road	0.60	Yes
	Local trunk highway	New facility	18th Avenue	City of West Bend	CTH D	0.70	Yes
	Local nonarterial	County trunk highway	CTH B	CTH D	Schuster Drive extension	0.82	Yes
	Local trunk highway	County trunk highway	CTH B	City of West Bend	Schuster Drive extension	0.74	No
	Local trunk highway	Local nonarterial	County B	North corporate limit	STH 33	0.50	No
	Local trunk highway	Local nonarterial	Schmidt Road	STH 144	Town of Barton	0.92	No
	Local trunk highway	Local nonarterial	Schmidt Road	Town of Barton	STH 33	0.50	No
Town of Trenton	County trunk highway	State trunk highway	STH 143	CTH G	East study limit	1.00	Yes
	County trunk highway	Local trunk highway	S. River Road	STH 33	CTH I	0.10	Yes
	Local trunk highway	New facility	Jefferson Street extension	West town line	Trenton Road	1.03	Yes
	Local trunk highway	New facility	Trenton Road/Maple Road	STH 33	Maple Road end	1.75	Yes
Town of West Bend	County trunk highway	State trunk highway	STH 144	STH 33	CTH K	4.21	Yes
	County trunk highway	State trunk highway	STH 143	CTH P	CTH G	0.50	Yes
	County trunk highway	Local trunk highway	18th Avenue	CTH NN	City of West Bend	1.51	Yes
	County trunk highway	Local trunk highway	Decorah Road	18th Avenue	City of West Bend	0.08	Yes
	County trunk highway	Local trunk highway	S. River Road	STH 33	City of West Bend	0.19	Yes
	County trunk highway	Local trunk highway	Paradise Drive	18th Avenue	City of West Bend	0.51	Yes
	County trunk highway	Local trunk highway	Paradise Drive	City of West Bend	CTH G	0.30	Yes
	Local trunk highway	County trunk highway	CTH NN	18th Avenue	CTH P	1.02	Yes
City of West Bend	County trunk highway	New facility	N. River Road extension	Creek Road	North corporate limit	0.15	Yes
	County trunk highway	Local trunk highway	Island Avenue	STH 33	Main Street	0.35	Yes
	County trunk highway	Local trunk highway	S. River Road	CTH I	North corporate limit	0.50	Yes
	County trunk highway	Local trunk highway	N. River Road	STH 33	North corporate limit	0.64	Yes
	County trunk highway	Local trunk highway	N. Main Street	Green Tree Road	Barton Avenue	0.68	Yes
	County trunk highway	Local trunk highway	Paradise Drive	18th Avenue	East corporate limit	1.12	Yes
	County trunk highway	Local trunk highway	18th Avenue	South corporate limit	STH 33	1.58	Yes
	County trunk highway	Local trunk highway	Main Street	Island Avenue	Paradise Drive	1.69	Yes
	County trunk highway	Local trunk highway	Decorah Road	18th Avenue	CTH I	1.93	Yes
	Local trunk highway	New facility	18th Avenue extension	North corporate limit	Park Avenue	0.74	Yes
	Local nonarterial	County B	County B	North corporate limit	STH 33	0.50	No
	Local trunk highway	Local nonarterial	Schmidt Road	STH 144	Town of Barton	0.92	No
	Local trunk highway	Local nonarterial	Schmidt Road	Town of Barton	STH 33	0.50	No

^aThe jurisdictional transfers recommended should all be initiated as soon as possible because the transfers will promote implementation of the recommended plan improvement.

^bNo jurisdictional transfers were recommended in the City of West Bend planning area in the Town of Farmington.

Source: SEWRPC.

County trunk highway element of the plan would include 48 miles of arterial facilities, or about 55 percent of the planned arterial system. The recommended local trunk highway element of the plan would include 19 miles of arterial facilities, or about 22 percent of the planned arterial system. It may be noted that, under the plan, the total mileage of State trunk highways in the planning area would decrease from 26 to 20 miles, or by about 23 percent, and that the total mileage of County trunk highways would increase from 26 to 48 miles, or by about 85 percent.

Of the total 87 miles of the planned arterial system in the City of West Bend planning area, a total of 72 miles would require only preservation, defined as resurfacing or reconstruction for same capacity; eight miles would require improvement, defined as widening to provide additional traffic lanes; and seven miles would consist of new facilities. Of the eight miles of proposed improvement projects, seven miles, or 88 percent, would be on the planned State trunk highway system, and one mile, or the remaining 12 percent, would be on the planned County trunk highway system. Of the seven miles of

Table 27

**ESTIMATED COST TO THE YEAR 2010 OF THE RECOMMENDED
CITY OF WEST BEND 2010 ARTERIAL STREET AND HIGHWAY SYSTEM PLAN**

Item	Planned Arterial Mileage: Year 2010			
	State	County	Local	Total
Preservation ^a	12.8	44.8	14.3	71.9
Improvement ^b	7.2	1.0	--	8.2
Expansion ^c	--	2.1	4.8	6.9
Total	20.0	47.9	19.1	87.0

Item	Estimated Construction Cost			
	State	County	Local	Total
Preservation ^a	\$ 4,316,000	\$22,814,000	\$ 9,037,000	\$37,167,000
Improvement ^b	14,714,000	1,628,000	--	16,342,000
Expansion ^c	--	5,783,000	10,801,000	16,584,000
Total	\$19,030,000	\$30,225,000	\$19,838,000	\$69,093,000

^aAssumes that all existing arterial facilities in the urban service area with rural roadway cross-sections would be converted to urban cross-sections by the design year 2010.

^bWidening to provide additional traffic lanes on existing arterials.

^cConstruction of new arterial facilities.

Source: SEWRPC.

proposed new arterial facilities, two miles, or 29 percent, are on the County trunk element of the plan, and five miles, or 71 percent, are on the local trunk element of the plan.

Table 27 presents an estimate of the construction cost of the arterial street and highway element of the 2010 transportation system plan for the City of West Bend. The estimate of the cost assumes that all facilities which will require no improvement, that is, preservation, will be resurfaced once by the year 2010. In addition, it is assumed that all improvements on existing and new location would be implemented by the year 2010. The estimated total construction cost of the plan, to the year 2010, is \$69.0 million, including \$19.0 million for State trunk highways, \$30.2 million for County trunk highways, and \$19.8 million for local trunk highways. Of the \$19.8 million estimated for local trunk highways, only \$5.8 million or about 17 percent, is directly attributed to construction within the current City of West Bend corporate limits. The remaining \$14.0 million in estimated local trunk highway costs represents the anticipated invest-

ment in local trunk highways needed to serve urban growth in the West Bend area outside the current corporate limits of the City.

Federal funds should be available to help implement the recommended capacity improvements, as well as to resurface the facilities which comprise the planned arterial street and highway system. Within the City of West Bend planning area it may be anticipated that Federal aid for highway improvements and maintenance would probably be available from three Federal funding programs: 1) the Surface Transportation Program (STP), 2) the National Highway System Program (NHS), and 3) the Bridge Program. Of these three programs, STP funds are the most flexible in terms of range of the projects and facilities which are eligible. Project funding is on an 80 percent Federal-20 percent State or local cost-share basis for each of the three Federal funding programs. All facilities on the planned arterial street and highway system are eligible to be funded under STP, including those facilities nominated for the National Highway System.

The STP funds may be utilized for resurfacing, reconstruction, construction, and operational improvements on highways and bridges; on transit capital projects; on carpool, bicycle, and pedestrian projects; on highway and transit safety projects; on capital and operating costs for traffic monitoring and management; on transportation enhancement activities; on transportation control measures defined in the Clean Air Act Amendments of 1990; and on transportation planning, research and development, and technology transfer activities. Ten percent of the Statewide STP allocation must be set aside for safety construction activities, i.e., hazard elimination and rail-highway crossings. An additional 10 percent must be set aside for transportation enhancement activities.

The NHS funds also have a broad range of flexibility in terms of eligible projects. Generally, NHS funds may be spent only on routes designated as part of the NHS which, in the West Bend planning area, include STH 33 from the east planning area boundary to the west planning area boundary and USH 45 from the south planning area boundary to STH 33. The transfer of NHS funds to the STP is possible, although it may be anticipated that the demand to fund eligible projects on the NHS will exceed the funds available and thus such transfer may be considered unlikely. Project eligibility for NHS funding is generally the same as eligibility for STP funding except that transit capital projects are limited to construction activities and that transportation enhancement activities are not eligible.

Bridge Program funds may be utilized to replace or rehabilitate deteriorating bridges on any public road.

Table 28 presents an estimate of the annual cost of implementing the State trunk highway element of the plan of \$1.2 million. Table 28 also presents an estimate of the future funding for State trunk highways which is available on an annual basis within the planning area. As potential funding consists of discretionary funding, including Federal STP and NHS funds and State transportation funds, any estimate of the potential availability of future funding must be considered uncertain. The estimate of \$1.5 million is the proportionate planning area share of average funding for State trunk highway improvements in Washington County over the past three years. If it is assumed that the average

funding level would remain stable in constant dollars, there would be no funding shortfall.

Table 28 also presents an estimate of the annual cost of implementing the County trunk highway element of the plan of \$1.9 million. A potential source of funding other than local for the improvement of County arterials in rural areas is the Federal STP Rural program. A potential source of funding for local and County arterials in urban areas is the Federal STP Urban program. Another potential source of nonlocal funding is the State reimbursement of local transportation costs, which currently is 30 percent of County transportation costs, and 24 percent of city, village, and town transportation costs. For analytical purposes, it has been assumed that the STP Rural and STP Urban fund allocation would remain stable in constant dollars at the current 1995 level and the State reimbursement of local transportation costs would also remain at the current percentages. This results in an estimated availability annually of \$0.6 million in Federal and State funds for County trunk highways. The estimated local funding required for County trunk highways in the planning area, then, would be \$1.3 million in 1993 dollars.

Table 28 also provides an estimate for each local unit of government concerned of the costs of the local arterial element of the plan of \$1.2 million. The principal source of nonlocal funding for these local arterials is STP Urban and STP Rural funds. Given an estimated availability of \$0.3 million in Federal and State funds, the estimated required local funding for local units of government is \$0.9 million.

The estimated required annual County and local funding for plan implementation may be compared in Table 28 to the average annual expenditures by the local units of government in the West Bend planning area for street construction in the years 1989 and 1990 as reported to the Wisconsin Department of Revenue. It should be noted that these reported costs of road construction include both arterial and nonarterial facilities and have been reduced to reflect State reimbursement of a percentage of local costs. The estimated County funding of \$1.30 million annually required for plan implementation annually substantially exceeds the reported average annual County expenditure of \$50,000 for road construction in the study area. The estimated shortfall of \$1.25 million is due in part to the

Table 28

**ESTIMATED CONSTRUCTION FUNDING REQUIREMENTS TO YEAR 2010
OF ALL ARTERIAL STREETS AND HIGHWAYS WITHIN THE CITY OF WEST BEND
PLANNING AREA UNDER THE RECOMMENDED JURISDICTIONAL RESPONSIBILITY**

Unit of Government	Total Cost of Plan	Annual Cost	Federal and State Aids	Estimated Annual Local Funding ^a	Historic Average Annual Construction Expenditures ^b
State	\$19,030,000	\$1,198,400	\$1,453,500 ^c	--	--
County	30,225,000	1,889,100	605,700 ^d	\$1,283,400	\$ 52,000
Local					
Barton	4,093,000	255,800	63,600 ^e	192,200	--
Farmington ^f	--	--	-- ^e	--	800
Trenton	9,827,000	614,200	147,900 ^e	466,300	60,200
City of West Bend	5,823,000	363,900	142,400 ^e	221,500	1,098,000
Town of West Bend	95,000	5,900	5,700 ^e	200	--

^aDoes not reflect any potential funding obligation under the State's cost-share policy for State trunk highway improvement projects which carry at least 40 percent local traffic.

^bStudy area proportionate share of average local expenditures for years 1989 and 1990 as reported to Wisconsin Department of Revenue. Reduced by 30 percent for County and 24 percent for cities and towns to reflect State aid payments.

^cBased on number of planned State trunk arterial miles and the average per mile expenditure for all State trunk highways in Washington County in 1989, 1990, and 1991 of \$72,500 per mile.

^dBased on estimated study area proportionate share of STP Rural allocation to Washington County and State aids based upon current reimbursement of 30 percent of transportation costs for counties. By the end of 1994, it is anticipated that the County's STP Rural fund balance would be negative in the amount of about \$824,100. Based on the County's 1995 STP Rural allocation of about \$221,400, it would require four years to restore a positive fund balance. Although a negative fund balance would not preclude receipt of additional Federal aid, generally those projects advanced by communities with a positive fund balance would receive STP Rural funds first.

^eBased on STP Urban allocation to the West Bend urban area and State aids based upon current reimbursement of 24 percent of transportation costs for cities and towns. By the end of 1994, it is anticipated that the City and Town of West Bend would have negative STP Urban fund balances of \$767,400 and \$252,000, respectively. Based on the City's and Town's respective 1995 STP Urban allocations of about \$72,500 and \$5,700, it would require 11 years and 44 years respectively to restore a positive fund balance. Although a negative fund balance would not preclude receipt of additional Federal aid, generally those projects advanced by communities with a positive fund balance would receive STP Urban funds first.

^fThere are no local trunk arterials in the study area in the Town of Farmington.

Source: SEWRPC.

planned increase in County trunk arterials within the study area from about 26 miles to about 48 miles, either through the transfer of existing local trunk arterials to the County or the construction of new County trunk highways. Of the approximately 22 miles planned to be added to the County trunk arterial system in the study area, five miles require the construction of new facilities and one mile requires the reconstruction of an existing facility to provide additional

capacity at costs substantially greater than facility preservation. In combination, these factors will require an increase in County expenditures to achieve plan implementation.

The estimated local funding required for plan implementation of \$900,000 annually is less than the reported average annual local expenditures of \$1.2 million for road construction in the study area. The planned transfer of about 15 miles of

existing local trunk arterials to the County trunk arterial system may be expected to permit local units of government to reduce their arterial roadway related expenditures. The local units of government have been implementing improvement projects on the planned County trunk arterial system. A recent example of this would be the construction by the City of West Bend of the S. River Road structure over the Milwaukee River.

Although full development of the lands within the urban service area is not anticipated by the year 2010, additional travel demand may be expected on the arterial system if development exceeds the forecast household, population, and employment levels underlying the adopted City of West Bend and regional land use plans. The increase in average weekday traffic volumes attendant to development beyond the adopted plan levels may be expected to exacerbate the capacity deficiencies previously identified under the planned level of development on STH 33 between CTH Z and Schmidt Road. Additional arterial segments also expected to carry traffic volumes in excess of their design capacities include: 18th Avenue between STH 33 and Decorah Road, CTH G and River Road between STH 33 and Paradise Drive, and Paradise Drive between USH 45 and CTH G. In order to achieve the planned objective of a transportation system which, through its location, capacity, and design, will effectively serve at an adequate level of service the land use pattern of the planning area, it may be anticipated that additional improvements will become necessary beyond those herein recommended.

Given the information presently available, the specific roadway improvements that would most likely be recommended to resolve the capacity deficiencies attendant to the full development scenario include: 1) a six-lane divided and a four-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue and between 18th Avenue and Schmidt Road, respectively, 2) a four-lane undivided urban roadway on 18th Avenue between Decorah Road and STH 33, 3) a four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33, and 4) a four-lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to

CTH G. These roadway segments are shown on Map 26. It is recommended that City officials consider acquiring the necessary rights-of-way to accommodate the improvements identified to abate the capacity deficiencies attendant to the full development scenario when acquiring rights-of-way for the less substantial improvements identified to abate the capacity deficiencies based on levels of future travel demand attendant to the adopted City and regional land use plans. The estimated cost of such acquisition may be expected to be \$5.0 million, in addition to the costs necessary to implement the recommended improvements.

THE RECOMMENDED PUBLIC TRANSIT ELEMENT

The public transit component of the year 2000 adopted regional transportation system plan envisions a substantially expanded and improved transit system. The public transit component of the plan envisions the development of a true areawide transit system, with a rapid transit element to serve a wide variety of trips and provide a competitive and attractive alternative to the automobile. Planned transit service levels, as measured by the vehicle miles of transit service provided and the average speed of a transit trip, were proposed to be nearly twice as good as existing levels. The plan envisions more than a doubling of the existing level of transit use in Southeastern Wisconsin.

The public transit element of the transportation system plan was refined and detailed for West Bend planning area through the adoption in 1991 of a transit system development plan for the City of West Bend and environs. This plan element refined the local service element of the year 2000 Regional Transportation System Plan, which proposed that within Washington County regional bus-on-freeway service be provided over two routes and to serve five stations and to collect and distribute passengers on route extensions into the City of West Bend and the Village of Germantown. Of the five transit stations proposed for the County, two were proposed for the City of West Bend. One of the stations was proposed for the USH 45 interchange with Paradise Drive and the other was proposed for STH 33 in the central business district. Parking is proposed at each of these stations. Construction of the parking lot at the USH 45 interchange with Paradise Drive is programmed for

1995, with the lot being utilized for carpools until bus-on-freeway transit service is provided. In addition to the stations identified in the long-range regional transportation system plan, the Advisory Committee identified the USH 45 interchange with CTH D as a potential additional location for a carpool lot. These three locations are shown on Map 26. The bus-on-freeway service would connect with not only with the Milwaukee central business district, but also with other express bus routes of a planned areawide network of lines serving the Milwaukee urbanized area.

Local public transit service within the City of West Bend planning area is currently provided by a demand-responsive shared-ride taxicab system. Service is provided to existing development within the City of West Bend and to existing development contiguous to the City. Service is provided between 6:00 a.m. and 10:00 p.m. Monday through Saturday and 8:00 a.m. to 2:00 p.m. on Sundays and holidays. The cost of operating this system over the period 1993 through 1997 is estimated to be \$210,500 annually. Approximately \$54,400 in operating revenue is expected to be generated annually during that period or about 26 percent of the operating costs leaving a deficit of about \$156,000 annually.

Both Federal and State transit operating assistance funds may be expected to be available to offset the estimated operating deficit. Federal transit operating assistance funds should be available through the Federal Transit Administration's Section 18 program to fund 28 percent of the annual operating expenses, or about \$58,900 annually. State funds should be available through the State's urban mass transit operating assistance program to fund 42 percent of projected operating expenses or about \$88,400 annually through 1997. Thus, the local share of the transit operating expenses may be expected to approximate \$8,700 annually.

In addition to the operating expenses, an estimated \$214,000 in total capital expenses are expected to be incurred by the transit system between 1993 and 1997. While no State funds are available for transit capital costs, Federal funds, either Federal Transit Administration Section 3 or Section 18, may be expected to be available to fund 75 to 80 percent of eligible capital costs, respectively. With Federal funds estimated to be

\$160,500 to \$171,200, or \$32,100 to \$34,200 on an annual basis, the local share is expected to range between \$42,800 and \$53,500, or about \$8,600 to \$10,700 annually. Thus the total local share of the capital and operating costs to operate the existing local public transit system in the West Bend planning area is expected to range from \$17,300 to \$19,400 annually.

PLAN IMPLEMENTATION

The City of West Bend transportation system plan for the year 2010 refines and details the adopted Washington County Jurisdictional Highway System Plan and the year 2000 regional transportation system plan. It provides the City of West Bend and its environs with an integrated arterial system which may be expected to serve effectively the existing, and promote a desirable future, land use pattern, meeting the anticipated future travel demand at an adequate level of service; abate traffic congestion; reduce travel time and costs between component parts of the West Bend planning area, the County and the Region; and reduce accident exposure. It would serve 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 the planning area. It would also provide a basis for the more efficient planning and design of the total arterial street and highway system, for the efficient multi-jurisdictional management of that system, and for the attainment of the 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.

Because the West Bend transportation system plan refines and details the adopted Washington County Jurisdictional Highway System Plan and the regional transportation system plan, and because its implementation is largely dependent upon intergovernmental coordination and cooperation, plan implementation actions are set forth for the local, County, regional, State and Federal levels of government.

Federal Government

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 transportation system plan for the West Bend planning area.
2. Utilize the plan as a guide in administering and granting Federal aids for highway and transit improvements within the West Bend planning area.

State Level

Wisconsin Department of Transportation: It is recommended that the Wisconsin Department of Transportation:

1. Endorse the recommended transportation system plan and integrate the plan into the State long-range transportation system plan as a functional guide to transportation system development in the West Bend planning area, including the recommended improvement of STH 33.
2. Seek, in cooperation with the Washington County Board and appropriate local officials, the implementation of the jurisdictional transfers with respect to the State, County, and local trunk systems recommended in the transportation system plan.
3. Proceed with preliminary engineering, right-of-way acquisition, and facility construction to implement the recommended transportation system plan, including the improvement of STH 33.

Regional Level

Southeastern Wisconsin Regional Planning Commission: It is recommended that the Southeastern Wisconsin Regional Planning Commission act to adopt formally the recommended transportation system plan as an integral part of the master plan for the Region, constituting an amendment to the regional transportation plan and to the Washington County jurisdictional highway system plan.

County Level

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

1. Adopt the recommended transportation system plan as a functional guide to

transportation system development within the West Bend planning area.

2. Seek, in cooperation with the Wisconsin Department of Transportation and local units of government, the implementation of the jurisdictional transfers with respect to the State, County, and local trunk system recommended in the transportation system plan.
3. Proceed with preliminary engineering, right-of-way acquisition, and facility construction as necessary to implement the recommended transportation highway system plan.
4. Establish, with the approval of the municipalities as they are affected, a modified "official" map, pursuant to Section 80.64 of the Wisconsin Statutes, identifying the location and necessary right-of-way of all planned State and County trunk highways.
5. By resolution, petition the Wisconsin Department of Transportation to proceed with the planned improvement of STH 33, including as necessary the conduct of preliminary engineering; identification as candidate major projects; and enumeration, scheduling, and funding for construction.

Local Level

1. The City common council and town boards within the West Bend planning area should act to adopt the recommended transportation system plan as a guide to transportation system development within their areas of jurisdiction. It is further suggested that the respective local planning commissions adopt and integrate the recommended street and highway element of the transportation system plan into the local master plans and certify such adoption to their local governing body.
2. The City common council and town boards within the West Bend planning area should act to approve an official Washington County map prepared in conformance with the recommended jurisdictional highway system plan and establish local official maps, including thereon the State, County, and local trunk highway facilities.
3. The City common council and town boards within the West Bend planning area

should proceed with preliminary engineering, right-of-way acquisition, and facility construction to implement the recommended transportation system plan.

4. The City common council and town boards within the West Bend planning area should seek, in cooperation with the County Board and the Wisconsin Department of Transportation, the implementation of the jurisdictional transfers with respect to the State, County, and local trunk systems as recommended in the transportation system plan.
5. The City council and town boards should, by resolution, petition the Wisconsin Department of Transportation to proceed with the planned improvement of STH 33, including the conduct of necessary preliminary engineering; identification as necessary of the improvement as candidate major projects; and its enumeration, scheduling, and funding for construction.

The transportation system plan for the City of West Bend and environs, as documented in this report, does not contain a bicycle or pedestrian element. In accordance with newly adopted Federal guidelines, the Regional Planning Commission is to prepare a regional bicycle and pedestrian facility plan in calendar year 1994. That regional plan element will provide a framework for more detailed local planning. The City of West Bend may wish to consider refining and detailing, for the City of West Bend planning area, the regional bicycle and pedestrian plan following its completion.

SUMMARY

The recommended transportation system plan for the City of West Bend planning area has two elements: an arterial street and highway element and a public transit element. This plan is based on the travel demand anticipated to be generated by the design year 2010 forecast levels of population, households, and employment underlying the adopted City and regional land use plans. This plan was prepared within a framework provided by the regional transportation system plan, the Washington County Jurisdiction Highway System Plan, and the City of West Bend transit system development plan. The City

of West Bend 2010 Transportation System Plan serves to amend and refine the aforementioned regional transportation system plan and its more specific elements.

The City of West Bend 2010 transportation system plan identifies the location and configuration of each component of the arterial system, and recommends the number of traffic lanes required to meet existing and probable future traffic demands under the adopted City and regional land use plans. The plan also recommends the level of government responsible for the construction, operation, and maintenance of each component of the arterial system.

Capacity improvements recommended under the plan include widening of existing facilities to provide additional traffic lanes and the construction of new arterial facilities. The recommended major capacity improvements are set forth in Table 24 by jurisdiction. Set forth in Table 25 is the suggested staging for the implementation of the recommended capacity improvements. The recommended changes in jurisdictional responsibility are shown on Map 28 and are listed in Table 26.

The recommended arterial system would include 87 miles of streets and highways of which about 20 miles would be State trunk arterials. About 48 miles would be County trunk arterials, and about 19 miles would be local trunk arterials. State trunk highway mileage in the planning area would decrease from 26 to 20 miles and County trunk highway mileage would increase from 26 to 48 miles.

Of the total 87 miles of the planned arterial system about 72 miles would require only preservation, or resurfacing and reconstruction; eight miles would require improvement, or widening to provide additional traffic lanes; and seven miles would consist of new facilities. Of the eight miles of proposed improvement projects, seven miles would be on the State, and one mile would be on the County trunk highway system, respectively. Of the seven miles of proposed new arterial facilities, two miles would be on the County and five miles would be on the local trunk highway system, respectively.

An estimate of the construction cost for preservation, improvement or expansion of the arterial street and highway element of the 2010 transportation system plan is \$69.0 million, including

\$19.0 million for State trunk highways, \$30.2 million for County trunk highways, and \$19.8 million for local trunk highways.

Within the City of West Bend planning area, it may be anticipated that Federal aid for highway improvements and maintenance would likely be available from: 1) the Surface Transportation Program, 2) the National Highway System Program, and 3) the Bridge Program. The cost-share basis for all Federal funding programs is 80 percent Federal and 20 percent State or local.

The estimated annual cost of implementing the State trunk highway element of the plan is \$1.2 million. The estimated future funding available is \$1.5 million annually. As potential funding consists of discretionary funding, including Federal STP and NHS funds and State transportation funds, any estimate of the potential availability of future funding must be considered uncertain. Assuming that the average funding level remains stable in constant dollars, there would be no funding shortfall.

The estimated annual cost of implementing the County trunk highway element of the plan of \$1.9 million and the estimated future funding available is \$0.6 million annually. Potential sources of nonlocal funding for the improvement of county arterials in rural areas and for local and county arterials in urban areas are the STP Rural and STP Urban programs, respectively. Another potential source of nonlocal funding is the State's reimbursement of local transportation costs, currently 30 percent of county and 24 percent of city, village, and town transportation costs. It was assumed that the STP Rural and STP Urban funds would remain stable in constant dollars and the State reimbursement of local transportation costs would also remain at the current percentages. The estimated cost of the local arterial element of the plan of \$1.2 million. A source of nonlocal funding for these local arterials is STP Urban and STP Rural funds. The estimated required local funding for local units of government is \$0.9 million.

The estimated required annual County and local funding was compared to the average annual expenditures by the local units of government in the West Bend planning area for street construction for both arterial and nonarterial facilities, reduced to reflect State reimbursement of a percentage of local costs. The estimated County funding of \$1.30 million annually

required substantially exceeds the reported average annual County expenditures of \$50,000 for road construction by the County in the West Bend planning area. The estimated local funding of \$900,000 required annually is less than the reported average annual expenditure of \$1.2 million for road construction by local governments in the West Bend planning area.

The estimated County shortfall of \$1.25 million is due to a substantial increase in County trunk arterial mileage within the study area, from 26 to 48 miles, and to the fact that of the 22 additional miles, five miles will require the construction of new facilities and one mile will require the reconstruction of existing facilities to provide additional capacity. In combination these factors will necessitate a substantial increase in County expenditures. As existing local trunk arterials are transferred to the County trunk arterial system, approximately 15 miles of such transfers are planned, it may be anticipated that the level of arterial roadway expenditures by the local units of government would decrease proportionately to the level required to implement the plan.

Although full development of the lands within the urban service area is not anticipated by the year 2010, additional travel demand may be expected on the arterial system if development exceeds the forecast household, population, and employment levels underlying the City of West Bend and regional land use plans. Such an increase may be expected to exacerbate the capacity deficiencies previously identified under the planned level of development on STH 33 between CTH Z and Schmidt Road. Additional arterial segments may also be expected to carry traffic volumes in excess of their design capacities, including: 18th Avenue between STH 33 and Decorah Road, CTH G and River Road between STH 33 and Paradise Drive, and Paradise Drive between USH 45 and CTH G. As a result, it may be anticipated that additional improvements will become necessary beyond those herein recommended.

Given the information presently available, the specific roadway improvements that would most likely be recommended to resolve the capacity deficiencies attendant to the full development scenario include: 1) a six-lane divided and a four-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue and between 18th Avenue and Schmidt Road, 2) a four-lane undi-

vided urban roadway on 18th Avenue between Decorah Road and STH 33, 3) a four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33, and 4) a four-lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to CTH G. It is recommended that City officials consider acquiring the necessary rights-of-way to accommodate these when acquiring rights-of-way for the less substantial improvements identified to abate the capacity deficiencies based on levels of future travel demand attendant to the adopted City and regional land use plans, all at an estimated cost of \$5.0 million.

Within Washington County the public transit element of the regional transportation system plan proposed regional bus-on-freeway service be provided over two routes and serve five stations and to collect and distribute passengers on route extensions into the City of West Bend and the Village of Germantown. The bus on freeway would connect with the Milwaukee central business district and with other express bus routes of a planned areawide network of lines serving the Milwaukee urbanized area.

Local public transit service within the City of West Bend planning area is currently provided by a demand-responsive shared-ride taxicab system with service to existing development within and contiguous to the City, between 6:00 a.m. and 10:00 p.m. Monday through Saturday and 8:00 a.m. to 2:00 p.m. on Sundays and holidays. The cost of operating this system over the period 1993 through 1997 is estimated to be \$210,500 annually. Approximately \$54,400 in operating revenue is expected to be generated annually during that period, or about 26 percent of the operating costs, leaving a deficit of about \$156,000 annually. Federal and State transit operating assistance funds are available to fund 28 and 42 percent of the annual operating

expenses, respectively, or about \$58,900, and about \$488,400 annually, through 1997, respectively. Thus, the local share of the transit operating expenses may be expected to approximate \$8,700 annually.

An estimated \$214,000 in total capital expenses are expected to be incurred by the transit system between 1993 and 1997. Federal funds are expected to be available to fund 75 to 80 percent of eligible capital costs, or \$32,100 to \$34,200 annually. The local share is expected to range between \$8,600 and \$10,700 annually. Thus the total local share of the capital and operating costs to operate the existing local public transit system in the West Bend planning area is expected to range from \$17,300 to \$19,400 annually.

Because the West Bend transportation system plan refines and details the adopted regional transportation system plan and its elements and because its implementation is largely dependent upon intergovernmental coordination and cooperation, plan implementation actions were set forth for the local, County, regional, State and Federal levels of government. These actions included:

1. To endorse and utilize the plan as a guide for highway and transit improvements within the West Bend planning area and their funding.
2. Cooperatively to implement the jurisdictional transfers recommended in the transportation system plan.
3. To proceed with preliminary engineering for the recommended roadway improvement and expansion.
4. To establish a modified "official" map, identifying the location and necessary right-of-way of all planned State and County trunk highways.

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Chapter VII

SUMMARY

INTRODUCTION

This report presents a recommended transportation system plan for the City of West Bend and environs. The plan sets forth the arterial street and highway improvements necessary to permit traffic to move efficiently and safely within and through the West Bend planning area now and as the planning area continues to develop to the year 2010. The plan also includes a transit element. The preparation of the plan by the staff of the Regional Planning Commission was requested by the City of West Bend on April 25, 1991, and was guided by an Advisory Committee of City citizens and officials appointed by the Mayor. That Advisory Committee, at a meeting held January 12, 1994, acted by a vote of nine to one to recommend the adoption and implementation of the plan as set forth in this report by the City Plan Commission and City Council.

The recommended plan is based upon careful analysis of existing and probable future transportation needs in the West Bend planning area. The plan takes into account existing and planned land use development, the characteristics of the existing transportation facilities and services, the existing and probable future use of transportation facilities, and land use and transportation system development goals and objectives. Based upon these considerations, existing and probable future arterial street and highway deficiencies were identified; alternative improvements proposed and evaluated; and a recommended plan developed.

The study area considered in the preparation of the plan included all the City of West Bend and the Town of West Bend, as well as portions of the Towns of Barton, Farmington, and Trenton. The study area encompassed approximately 63 square miles, and is shown on Map 1 in Chapter I of this report.

The City of West Bend, based on 1989 corporate limits, comprises about 10.2 square miles, or about 16 percent of the total planning area. The Town of Barton comprises about 13.7 square miles, or about 21 percent of the planning area; the Town of Farmington about 3.1 square miles, or 5 percent of the planning area; the Town of

Trenton about 17 square miles, or 27 percent of the planning area; and the Town of West Bend about 19.4 square miles, or 31 percent of the planning area.

TRANSPORTATION SYSTEM DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS

A set of transportation system development objectives, principles, and standards was developed by the Advisory Committee as a guide to the preparation and evaluation of alternative transportation system plans. Four specific objectives were developed to define the basic needs which the arterial street and highway system should meet: 1) to provide an adequate level of arterial street and highway service; 2) to minimize public and private costs of transportation; 3) to minimize the disruption attendant to arterial street and highway system operation and improvement; and 4) to provide arterial street and highway facilities which are aesthetically pleasing.

Fifteen standards which support the four objectives provide important guidelines for subsequent transportation planning efforts, facility design efforts, and related plan implementation activities. The guiding objectives and supporting standards which the recommended West Bend planning area transportation system plan is intended to meet provide criteria by which implementation policies and programs can be designed to carry out the plan recommendations and ensure compatibility and consistency between transportation system improvements and land use development and redevelopment in the planning area.

LAND USE, SOCIO-ECONOMIC, AND TRAVEL CHARACTERISTICS OF THE STUDY AREA

Land Use

The historic pattern of urban development in the West Bend planning area is similar to the pattern of urban development which has occurred throughout the Southeastern Wisconsin

Region. Over the 100-year period from 1850 to 1950, urban development occurred in relatively tight, generally concentric, rings emanating outward from the central portions of the City of West Bend and the former Village of Barton. During the 1950s, changes occurred in the pattern of development, as urban development became discontinuous and diffuse, occurring in scattered enclaves throughout the surrounding rural areas in the Towns of Barton, Trenton, and West Bend. This scattered pattern of urbanization has been marked by lower overall population densities, a diffusion of both commercial and residential development, and increased use of shopping and service establishments outside the downtown area.

The recently completed land use plan for the West Bend planning area for the year 2010 envisions accommodating modest growth in population and employment. That plan envisions the conversion of about 2,596 acres of existing rural land uses to urban land uses in the planning area between 1990 and 2010. Of the 2,596 acres expected to be converted, 1,498 acres are envisioned to be converted for residential land uses, 62 acres for commercial development, 464 acres for industrial development, 156 acres for governmental and institutional development, and 416 acres for park and recreational development.

Because of the spatial distribution of lands currently developed and lands recommended in the recently adopted City of West Bend year 2010 land use plan to remain undeveloped, the majority of new development within the urban service area boundaries may be expected to occur south of Decorah Road or east of River Road, as shown in Map 5 in Chapter III of this report. The resulting contiguous area of development would permit the most economical provision of community utilities and services and an integrated pattern of arterial streets to serve it.

Population, Household, and Employment

Over the past two decades, the levels of population, households, and employment in the West Bend planning area have increased at a much faster rate than those in Washington County and in the seven-county Southeastern Wisconsin Region. Between 1960 and 1990 the population of the planning area increased at an average annual rate of about 2.9 percent, to about 33,700 people in 1990. The number of households increased at an average annual rate of

3.7 percent, to a level of 12,325 households in 1990. Employment in the planning area increased at an average annual rate of about 2.4 percent, to a level of about 17,200 jobs in 1990. By way of comparison, over the past three decades the growth rates in population, households, and employment have been under 3.7 percent in Washington County and under 1.5 percent in the seven-county Southeastern Wisconsin Region.

Travel Characteristics

In 1990, an estimated 108,600 total vehicle trips were made on an average weekday on the arterial street and highway system in the West Bend planning area. Of those vehicle trips, 55,000 trips, or 51 percent, were internal trips; 45,600 trips, or 42 percent, were internal/external trips; and 8,000 trips, or 7 percent, were through trips. By the forecast design year 2010, the total number of vehicle trips on an average weekday on the arterial street and highway system may be expected to approximate 134,300, an increase of about 24 percent over the 1990 level. The number of internal trips may be expected to increase by about 26 percent to 69,200 trips, the number of internal/external trips may be expected to increase by about 19 percent to 54,100 trips, and the number of through trips is expected to increase to 11,000 trips, or 38 percent.

EXISTING TRANSPORTATION SYSTEM

Existing Street and Highway Functional and Jurisdictional Classifications

In 1991, a total of 258.6 miles of streets and highways existed in the West Bend planning area. Each segment of this total street and highway network has been classified according to function, jurisdictional responsibility, and Federal aid eligibility. A total of 72.5 miles, or about 28 percent, are functionally classified as arterials, with the remaining 186.1 miles, or 72 percent, classified as collectors and as land-access streets. The State of Wisconsin has jurisdictional responsibility for 25.8 miles of the total highway mileage in the planning area, or about 10 percent of the total mileage, and about 36 percent of the arterial mileage. Washington County has jurisdictional responsibility for 26.4 miles of the total highway mileage in the planning area, or also about 10 percent of the total mileage, and about 36 percent of the arterial mileage. The remaining 206.4 miles of streets and

highways in the planning area are under the jurisdiction of the City of West Bend, the Town of Barton, the Town of Farmington, the Town of Trenton, and the Town of West Bend. The streets and highways under local jurisdiction comprise about 80 percent of the total street and highway mileage within the West Bend planning area and about 28 percent of the arterial mileage. All 72.5 miles of arterial streets and highways are eligible for Federal funding.

Physical and Operating

Characteristics of Existing Arterial System

An inventory of the physical characteristics of the existing arterial street and highway system was conducted as or part of the transportation system planning effort. This inventory collected data on the type of cross-section, the width of the pavement, and parking restrictions for each segment of the arterial system. The type of traffic control, that is, traffic signals or stop signs, at each arterial street intersection was identified, together with the railway and school crossing protection measures on the arterial street and highway system. Finally, data were collected on the posted speed limits on the arterial street and highway system.

Data on the existing and historic average weekday traffic volumes for the arterial streets and highways were collated. Forecast design year 2010 traffic volumes for the existing arterial street and highway system were prepared. These forecast volumes were based upon the recently adopted land use plan for the City and environs, a refinement of the new design year 2010 regional land use plan for Southeastern Wisconsin.

Existing Arterial System Deficiencies

Current arterial system deficiencies were identified using transportation system development objectives and standards adopted for the planning area and set forth in Chapter II of this report. Three of the standards are particularly useful in identifying deficiencies and, therefore, where improvement or system expansion were necessary. These standards require that a minimum spacing of arterials not be exceeded in the urban portion of the planning area; that urban arterials be direct in routing and alignment; and that arterial traffic volumes not be permitted to exceed arterial design capacity. Existing arterial spacing problems were identified in four corridors: 1) along the extension of 18th Avenue from Washington Street (STH 33)

north to N. Main Street (CTH D), 2) along Jefferson Street from 18th Avenue to N. Main Street (CTH D), 3) along Schmidt Road between STH 33 and Barton Avenue (STH 144), and 4) long North River Road extended from West Washington Street (STH 33) to Newark Drive and west along Newark Drive to STH 144. Four significant existing arterial capacity deficiencies were identified based on existing 1992 average weekday traffic volumes: 1) a segment of STH 33 from the western limits of the planning area to County B, 2) another segment of STH 33 from 18th Avenue to the eastern planning area boundary, 3) a segment of N. Main street (STH 144) from STH 33 to Park Street, and 4) a segment of Main Street between Vine Street and Walnut Street.

Probable Future Arterial System Deficiencies

Application of the arterial spacing standard to the increased areal extent of urban development proposed in the adopted year 2010 land use plan for the City of West Bend and environs resulted in the identification of four additional arterial spacing problems. These are: 1) along Kettle View Drive between Schuster Drive and CTH D; 2) along County B and CTH B between STH 33 and a new facility connecting Schuster Drive with Beaver Dam Road; 3) along a new facility about one mile north of, and parallel to, STH 33 between River Road and Trenton Road; and 4) along Paradise Road between CTH G and Maple Road. In addition, the extension of Kettle View Drive from STH 33 to Schuster Drive, Schuster Drive from Kettle View Drive and its extension to Beaver Dam Road along with Beaver Dam Road from the extension of Schuster Drive to 18th Avenue, and Maple Road from a point just north of Paradise Drive to STH 33 were identified not only as needed to resolve arterial spacing deficiency problems but also as missing arterial system segments resulting in travel indirection.

Potential future arterial capacity deficiencies were identified by comparing the current design capacity on each existing arterial street and highway segment to the forecast design year 2010 traffic volumes derived from the forecast levels of employment, households, and population envisioned by the City and regional land use plans. Potential future arterial capacity deficiencies identified within the study area included: 1) STH 33 between University Drive and Trenton Road, 2) Decorah Road between 7th Avenue and

Indiana Avenue, 3) Main Street between Walnut Street and Vine Street, and 4) Paradise Drive between USH 45 and Main Street.

Existing Public Transit System

An inventory of the existing transit service in and near the City of West Bend was also conducted. This service consists largely of specialized transportation services designed to serve the needs of the elderly and disabled population groups in and around the City of West Bend. A shared-ride taxicab system was initiated within the City of West Bend in January 1993, and serves as the public transit element of the transportation system. Service is currently provided for all trips within the City of West Bend and for trips to existing development in areas contiguous to the City from 6:00 a.m. to 10:00 p.m. Monday through Saturday and from 8:00 a.m. to 2:00 p.m. Sundays and holidays. Two additional transit services provided within the West Bend area were available for general public use in 1993, including the service provided by Greyhound Lines, Inc., operating an intercity bus route through the City of West Bend on a daily basis, and the taxicab service provided by Veteran's Cab in the City of West Bend.

Regional Transportation System Plan: 2000

The regional transportation system plan, adopted by the Commission in 1978, is a second-generation plan with three major components: arterial streets and highways, including freeways; public transit facilities and services; and transportation system management measures intended to meet the travel demands in the region to the year 2000. It is important to note that the regional transportation system plan is designed to serve the regional land use plan, and is a balanced plan, including highway, public transit, and transportation system management recommendations. Public transit improvements and transportation system management measures were emphasized to reduce the need for highway facilities. No one component was designed to provide all the needed transportation service anticipated for the year 2000.

In 1989, a new Washington County Jurisdictional Highway System Plan was adopted, refining and detailing the highway element of the adopted regional transportation system plan. The new jurisdictional highway system plan reflects changes which have occurred in the planning area since the adoption of the regional

transportation system plan with respect to land use development and related traffic patterns. The public transit element of the regional and county plans recommend the provision of bus-on-freeway service connecting the West Bend area to the greater Milwaukee area transit system. Such service is envisioned to operate over two routes and serve five stations, as well as to collect and distribute passengers on route extensions in the City of West Bend and the Village of Germantown.

ALTERNATIVE TRANSPORTATION SYSTEM IMPROVEMENTS TO ADDRESS EXISTING AND PROBABLE FUTURE DEFICIENCIES

Alternative Roadway Improvements to Abate Deficiencies under Plan Conditions

Based on forecast levels of travel demand derived from the plan design year 2010 levels of population, households, and employment envisioned in the adopted City of West Bend and regional land use plans capacity deficiencies were identified which may be expected to remain even after implementation of capacity improvements recommended in the adopted Washington County Jurisdictional Highway System Plan. Such capacity deficiencies were identified on: 1) STH 33 from University Drive to Trenton Road, 2) Decorah Road from 7th Avenue to Indiana, 3) Main Street from Walnut Street to Vine Street, and 4) Paradise Drive from USH 45 to Main Street.

Alternative roadway improvements were considered to abate these capacity deficiencies. Each of the alternatives was evaluated with respect to its potential to abate the anticipated capacity deficiency, estimated cost, and expected disruption attendant to its implementation. The alternative roadway improvements recommended were identified as those which best resolved the anticipated capacity deficiencies while simultaneously minimizing the estimated cost and disruption.

The capacity improvements recommended for STH 33 included the provision of a four-lane divided urban roadway from University Drive to 18th Avenue and from Schmidt Road to Trenton Road, the provision of a five-lane undivided urban roadway with a continuous center left-turn lane from 18th Avenue and 7th Avenue, and the provision of a four-lane undivided

roadway from 7th Avenue to Schmidt Road. The capacity improvement recommended for Decorah Road consists of the provision of a four-lane undivided urban roadway from 7th Avenue to Indiana Avenue. The capacity improvement recommended for Main Street from Walnut Street to Decorah Road includes the provision of a four-lane undivided urban roadway, and from Decorah Road to Vine Street the provision of a five-lane undivided urban roadway with a continuous center left-turn lane. The capacity improvement recommended for Paradise Drive consists of the provision of a four-lane undivided urban roadway with exclusive left-turn lanes from a point 1,250 feet east of USH 45 to Main Street.

Roadway Improvements Considered to Abate Deficiencies under Full Development

If full development occurs of the City of West Bend urban service area, thereby exceeding the levels of employment, households, and population envisioned in the adopted City and regional land use plans for the design year 2010, certain identified capacity deficiencies under planned conditions may be expected to be exacerbated and additional capacity deficiencies may be expected as a result of increased travel demand. Previously identified capacity deficiencies on STH 33 from University Drive to Schmidt Road and on Paradise Drive from a point approximately 1,250 feet east of USH 45 to Main Street may be expected to be exacerbated. Additional capacity deficiencies may be expected under full development conditions on STH 33 from CTH Z to University Drive, on 18th Avenue from Decorah Road to STH 33, on River Road/CTH G from Paradise Drive to STH 33; and on Paradise Drive from Main Street to CTH G.

Abatement of these capacity deficiencies may be expected to require roadway improvements beyond those required to abate the capacity deficiencies attendant to the planned levels of employment, households and population. Given the information presently available, the alternative roadway improvements which would most likely be recommended to abate the additional capacity deficiencies attendant to full development include: 1) a six-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue, 2) a four-lane divided urban roadway between 18th Avenue and Schmidt Road, 3) a four-lane undivided urban roadway on 18th Avenue between Decorah Road and STH 33, 4) a

four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33, and 5) a four-lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to CTH G. The plan recommends that consideration be given to acquiring the necessary rights-of-way for these improvements when acquiring rights-of-way for the less substantial improvement projects identified to abate the capacity deficiencies identified under the adopted City and regional land use plans; or when individual parcels anticipated to be necessary become available. The prohibition of on-street parking has been recommended on selected facilities to permit the required provision of additional travel lanes. The elimination of on-street parking may result in parking problems for abutting land owners. The City of West Bend has alleviated the negative impacts of eliminating on-street parking in the past by creating parking districts. Within these parking districts, lands abutting the segment of roadway on which parking is to be eliminated are acquired and off-street parking constructed to replace the on-street parking which is lost. The estimated cost to construct off-street parking ranges from \$1,600 to \$2,000 per stall.

RECOMMENDED TRANSPORTATION SYSTEM PLAN

Planned Arterial Street and Highway Improvements and Jurisdictional Changes

The recommended transportation system plan for the West Bend planning area has an arterial street and highway element and a public transit element. It is based on the travel demand anticipated to be generated by the design year 2010 forecast levels of population, households, and employment underlying the adopted City and regional land use plans. It was prepared within a framework provided by the regional transportation system plan, the Washington County Jurisdiction Highway System Plan, and the City of West Bend transit system development plan. The City of West Bend 2010 Transportation System Plan serves to amend and refine the aforementioned County and regional transportation system plans.

The transportation system plan identifies the location and configuration of each component of

the arterial system and recommends the number of traffic lanes required to meet existing and probable future traffic demands under the adopted City and regional land use plans. It also recommends the level of government responsible for the construction, operation, and maintenance of each arterial system component.

Capacity improvements recommended under the plan include widening of STH 33 from the west study area boundary to County B, and from 18th Avenue to the east study area boundary, of Decorah Road from 7th Avenue to Indiana Avenue, of Main Street from Walnut Street to Vine Street, and of Paradise Drive from a point 1,250 feet east of USH 45 to Main Street to provide additional travel lanes. Also recommended under the plan are the construction of the Kettle View Drive extension from Schuster Drive to STH 33, of 18th Avenue from Park Street to CTH D, of N. River Road from STH 144 to STH 33, of Trenton Road from STH 33 to Maple Road, of Schuster Drive from Schuster Drive to Beaver Dam Road, and of Jefferson Street from N. River Road to Trenton Road.

A number of changes in jurisdictional responsibility are recommended in the plan. Recommended jurisdictional transfers from the existing State trunk arterial system to the County trunk arterial system include STH 143 from CTH P to the east planning area boundary and STH 144 from STH 33 to the south planning area boundary. Recommended jurisdictional transfers from the existing local trunk arterial system to the County trunk arterial system include Kettle View Drive from CTH D to STH 33; 18th Avenue from STH 33 to CTH NN; Island Street, Water Street, and Main Street from STH 33 to Paradise Drive; Main Street from the Barton Town line to STH 144; River Road from STH 144 to Decorah Road; Newark Road from USH 45 to STH 144; Decorah Road from 18th Avenue to River Road; and Paradise Drive from 18th Avenue to CTH G.

Two existing County trunk highways are recommended to be transferred: CTH NN from 18th Avenue to CTH P to the local trunk arterial system and CTH B from the Barton Town line to Schuster Drive extended to the local arterial system and from Schuster Drive extended to CTH D to the nonarterial system.

The recommended arterial system would include 87 miles of streets and highways, including

about 20 miles of State trunk highways, about 48 miles of County trunk highways, and about 19 miles of local arterials. State trunk highway mileage in the planning area would decrease from 26 to 20 miles, while County trunk highway mileage would increase from 26 to 48 miles.

Of the total 87 miles of the planned arterial system, about 72 miles, or about 83 percent, would require only preservation, or resurfacing and reconstruction; eight miles, or about 9 percent, would require improvement, or widening to provide additional traffic lanes; and seven miles, or about 8 percent, would consist of new facilities. Of the eight miles of proposed improvement projects, seven miles would be on the State trunk highway system and one mile on the County trunk highway system. Of the seven miles of proposed new arterial facilities, two miles would be on the County trunk highway system and five miles on the local arterial system.

Estimated Annual Expenditures and Revenues of the Arterial Street and Highway Element

The construction cost for preservation, improvement, and expansion of the arterial street and highway element of the 2010 transportation system plan is estimated at \$69.0 million, including \$19.0 million on State trunk highways; \$30.2 million on County trunk highways; and \$19.8 million on local arterials. Within the West Bend planning area Federal aid for highway improvements and maintenance should be available from: 1) the Surface Transportation Program (STP), 2) the National Highway System Program (NHS), and 3) the Bridge Program. All facilities on the planned arterial street and highway system should be eligible for Federal funding provided on an 80 percent Federal-20 percent local, County, or State matching basis.

The estimated annual cost of implementing the State trunk highway element of the plan is \$1.2 million per year over the plan design period. The estimated future funding available from all sources is \$1.5 million per year. As potential funding consists of discretionary funding, including Federal STP and NHS funds and State transportation funds, any estimate of potential availability is uncertain. Assuming that the average Federal and State funding levels remain stable in constant dollars, there would be no funding shortfall for the implementation of the State trunk elements of the plan.

The estimated annual cost of implementing the County trunk highway element of the plan is \$1.9 million. Sources of Federal funding for the improvement of County arterials in rural areas and for local and County arterials in urban areas are the STP Rural and STP Urban programs, respectively. Another potential source of nonlocal funding is the State reimbursement of 30 percent of County transportation costs. This results in an estimated availability annually of \$0.6 million in Federal and State funds for County trunk highways. The estimated local funding required for County trunk highways in the planning area, then, would be \$1.3 million in 1993 dollars.

The estimated annual County cost of implementing the local arterial element of the plan is \$1.2 million. The principal sources of nonlocal funding for these local arterials are STP Urban and STP Rural funds and State reimbursement of 24 percent of city, village, and town transportation costs. Given an estimated availability of \$0.3 million in Federal and State funds, the estimated required local funding for local units of government is \$0.9 million.

The estimated required annual County and local funding for plan implementation was compared to the average annual expenditures by the County and local units of government in the West Bend planning area for street construction in the years 1989 and 1990 as reported to the Wisconsin Department of Revenue. The estimated County funding of \$1.30 million required annually for plan implementation substantially exceeds the reported average annual Washington County expenditure of \$50,000 for road construction in the study area. The estimated shortfall of \$1.25 million is due in part to the planned increase in County trunk arterials within the study area from about 26 to about 48 miles, either through the transfer of existing local trunk arterials to the County or the construction of new County trunk highways. Of the approximately 22 miles planned to be added to the County trunk arterial system in the study area, five miles require the construction of new facilities and one mile requires the reconstruction of an existing facility to provide additional capacity at costs substantially greater than facility preservation. In combination, these factors will require an increase in expenditures to achieve plan implementation.

The estimated \$900,000 annually required in local funding for plan implementation of is less than the reported average annual local expenditures of \$1.2 million for road construction in the study area. The planned transfer of about 15 miles of existing local trunk arterials to the County trunk arterial system may be expected to permit local units of government to reduce their arterial roadway related expenditures.

Potential Additional Capacity Improvements Attendant to Development beyond the Adopted City of West Bend and Regional Land Use Plans

Although full development of the lands within the urban service area is not anticipated by the year 2010, additional travel demand may be expected on the arterial system if development exceeds the forecast household, population, and employment levels underlying the City of West Bend and regional land use plans. As already noted, this increase may be expected to exacerbate the capacity deficiencies previously identified under the planned level of development on STH 33 between CTH Z and Schmidt Road. Additional arterial segments may also be expected to carry traffic volumes in excess of their design capacities. These include: 18th Avenue between STH 33 and Decorah Road, CTH G and River Road between STH 33 and Paradise Drive, and Paradise Drive between USH 45 and CTH G. As a result, it may be anticipated that additional improvements may become necessary beyond those herein recommended.

Given the information currently available, the specific roadway improvements that would most likely be recommended to resolve the capacity deficiencies attendant to the full development scenario include: 1) a six-lane divided and a four-lane divided urban roadway on STH 33 between CTH Z and 18th Avenue and between 18th Avenue and Schmidt Road, respectively; 2) a four-lane undivided urban roadway on 18th Avenue between Decorah Road and STH 33; 3) a four-lane undivided roadway on River Road/CTH G between Paradise Drive and STH 33; and 4) a four-lane divided roadway on Paradise Drive from a point about 1,250 feet east of USH 45 to Main Street and a four-lane undivided urban roadway from Main Street to CTH G. It is recommended that City officials consider acquiring the necessary rights-of-way to accommodate the improvements identified to abate the capacity deficiencies attendant to the

full development scenario when acquiring rights-of-way for the less substantial improvements identified to abate the capacity deficiencies based on levels of future travel demand attendant to the adopted City and regional land use plans. The estimated cost of such acquisition may be expected to be \$5.0 million, in addition to the costs necessary to implement the recommended improvements.

Planned Public Transit Element

Within Washington County, the public transit element of the regional transportation system plan proposed that regional bus-on-freeway service be provided over two routes, serve five stations, and collect and distribute passengers on route extensions into the City of West Bend and the Village of Germantown. The bus-on-freeway service would connect with the Milwaukee central business district and with other express bus routes of a planned areawide network of lines serving the Milwaukee urbanized area. Local public transit service within the City of West Bend planning area is currently provided by a demand-responsive shared-ride taxicab system serving existing development within and contiguous to the City between 6:00 a.m. and 10:00 p.m. Monday through Saturday and 8:00 a.m. to 2:00 p.m. on Sundays and holidays. Two transit station locations were identified in the City of West Bend under the long-range regional transportation system plan: 1) USH 45 at Paradise Drive and 2) STH 33 in the central business district. Parking would be provided at these stations. The Advisory Committee also identified USH 45 at CTH D as a potential location for a carpool lot.

Estimated Annual Expenditure and Revenues of the Public Transit Element

The cost of operating this system over the period 1993 through 1997 is estimated at \$210,500 annually. Approximately \$54,400 in annual operating revenue is expected to be generated during that period, or about 26 percent of the operating costs, leaving a deficit of about \$156,000 annually. Federal and State transit operating assistance funds are available to fund 28 and 42 percent of the annual operating expenses, respectively, or about \$58,900 and about \$88,400 annually, respectively, through 1997. Thus, the local share of the transit operating expenses may be expected to approximate \$8,700 annually.

An estimated \$214,000 in total capital expenses are expected to be incurred by the transit system between 1993 and 1997. Federal funds may be expected to fund 75 to 80 percent of eligible capital costs, or \$32,100 to \$34,200 annually. Accordingly, the local share of the cost may be expected to range between \$8,600 and \$10,700 annually. Thus, the total local share of the capital and operating costs to operate the existing local public transit system in the West Bend planning area may be expected to range from \$17,300 to \$19,400 on an annual basis.

Plan Implementation Actions

Because the West Bend transportation system plan refines and details the adopted regional transportation system plan and its elements, and because its implementation is largely dependent upon intergovernmental coordination and cooperation, plan implementation actions were set forth for the local, county, regional, State and Federal levels of government. These actions included:

1. To endorse and utilize the plan as a guide for highway and transit improvements and their funding within the West Bend planning area.
2. To implement cooperatively the jurisdictional transfers recommended in the transportation system plan.
3. To proceed with preliminary engineering for the recommended roadway improvement and expansion.
4. Establish a modified "official" map, identifying the locations and necessary rights-of-way of all planned State and County trunk highways.

Summary

Adoption and implementation of the City of West Bend transportation system plan recommended in this report would provide the City and environs with an integrated 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; 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 and public transit transportation,

and provide a sound basis for the establishment of long-range fiscal policies and for the systematic programming of arterial street and highway and public transit improvements within the study area. It would also provide a basis for the more efficient detailed planning and design of the total arterial street and highway system, for the efficient multi-

jurisdictional 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 and transit improvement, maintenance, and operating costs among the various levels and agencies of government concerned.

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APPENDICES

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Appendix A

LETTER FROM MR. DRICKEN TO MR. BAUER
REGARDING LENWOOD BEACH & CAMPGROUND

Lake

Lenwood

BEACH & CAMPGROUND

7053 Lenwood Drive West Bend, WI 53095

(414) 334-1335 or 338-6388

3-17-93

Kurt W. Bauer

Kurt,

Here is the letter I said I would be sending you. Please let me know if you can help me out in any way.

Thank you,

Mike Dricken

March 16, 1993

Kurt W. Bauer
Executive Director
SEWRPC

Kurt,

This letter is in reference to the proposed N. River Road extension to Highway 144 north.

I would like to express my concerns to you about the effect the proposed roadway would have on my business and the area. I was surprised at how much planning and layout was done without consulting the landowners that would be affected but I have since been assured that I will be consulted if planning for this project continues.

In the draft shown at the meeting on February 10th in City Hall, three proposed alignments were discussed. One of the routes was located east of Lake Lenwood--this would be the least disruptive of the three.

The other two would run in between Lake Lenwood and Rainbow Lake and would split up our property, in effect putting us out of business.

After some discussion with the group present and with Bob Beglinger from SEWRPC, it was decided to look at an option of locating the right-of-way west of our property for approximately 3/8 mile and then as it heads south, it would have to come onto our property as it would continue south for a 1/4 mile and then head south and east for 1/2 mile to connect with existing N. River Road.

This option would have less of an effect than splitting the business in two, but it would still impact greatly and render a good portion of the permanent housing units and a sizeable portion of the campground useless because of right-of-way location and of course considerable road noise.

I feel that a need has not been proven and traffic volume does not warrant this roadway being constructed. Also because of the topography of this area (northeast of West Bend in general), future growth in this area is limited.

The City of West Bend realizes substantial tourism revenue from this business every year and should take this into consideration when making these type of decisions.

The cost of this project would be prohibitive because of large expenses in trying to cross swamp lands and other terrain and also the costs of relocating our business and the residents involved. The business has been in the family since 1948 and we have no

intentions of selling out and/or relocating. (Obviously relocation on a private 20-acre lake is impossible.)

For these reasons and also the issues of soil conditions including items used for fill, swamps, ponds and environmental corridors, it seems to me there are other alternatives that should be pursued. Some might include:

- * From existing River Road and Creek Road west to existing Schmidt Road, then north and west to Highway 144. (The West Bend Company already uses Schmidt Road to head north.)
- * Use existing River Road north to Wallace Lake Road then west to Highway 144.
- * Use existing Trenton Road from Highway 33 north to Newark Drive (the planned east-west by pass on the north side of the City).

It seems to me that there are only a few people pushing for this road to go through and I am beginning to wonder why.

In closing, I think it would be in the best interest of the City of West Bend and SEWRPC to look at some of the more cost-effective and less disruptive options.

For Lake Lenwood Beach
and Campground and
Lenwood Rentals,

Mike Duckert

414-334-1335
7053 Lenwood Drive
West Bend, WI 53095

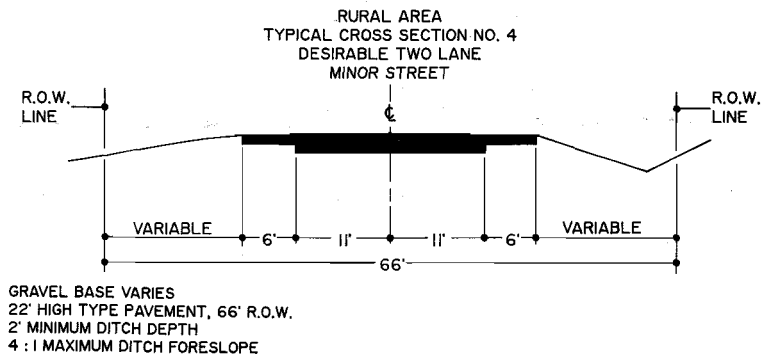
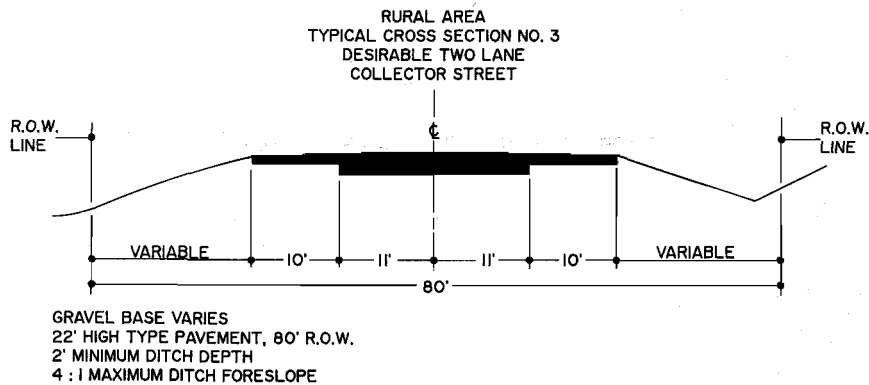
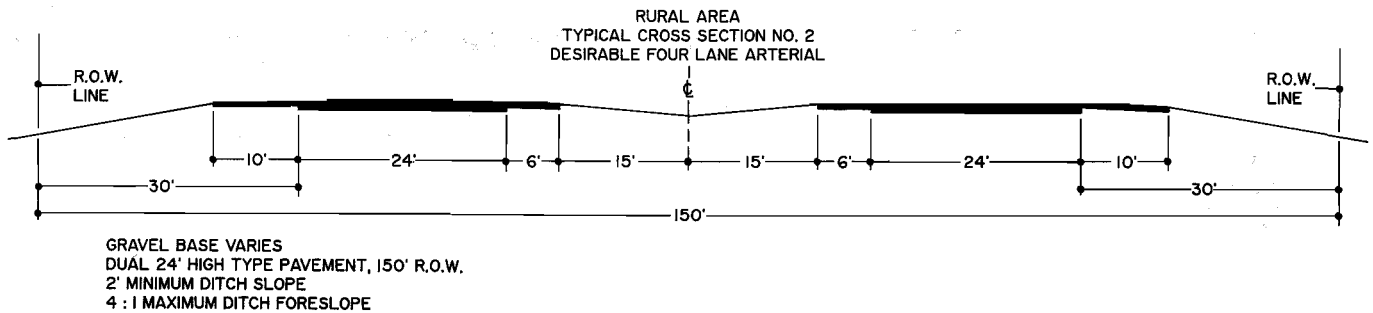
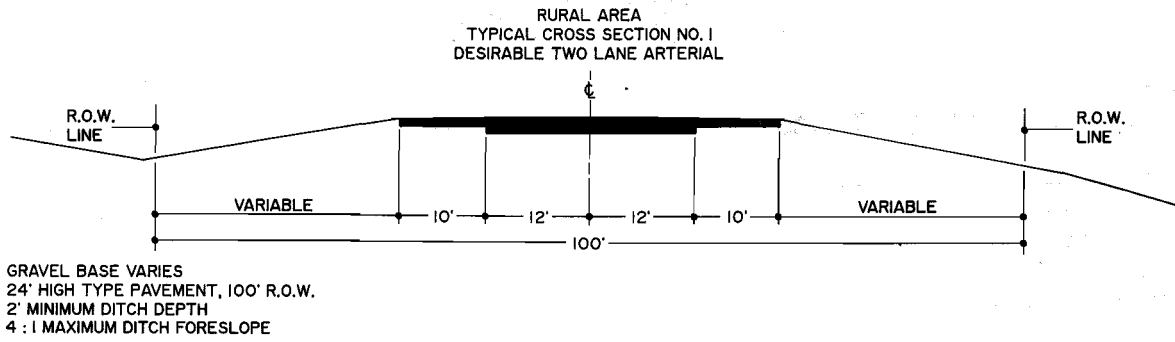
Copies to:

Kurt W. Bauer (SEWRPC)
Frank Scharrer (Washington County Highway)
Mary Panzer (State Representative)
Mike Miller (Mayor-West Bend)

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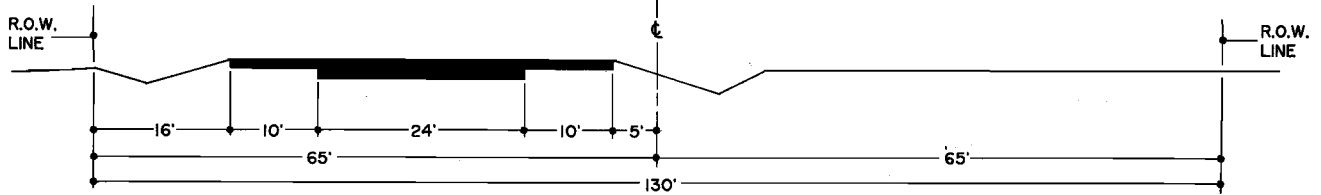
Appendix B

TYPICAL CROSS-SECTIONS FOR STREETS AND HIGHWAYS IN THE CITY OF WEST BEND PLANNING AREA^a



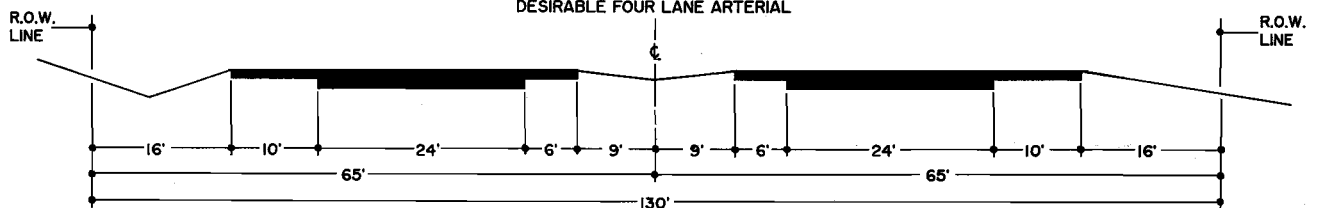
Appendix B (continued)

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



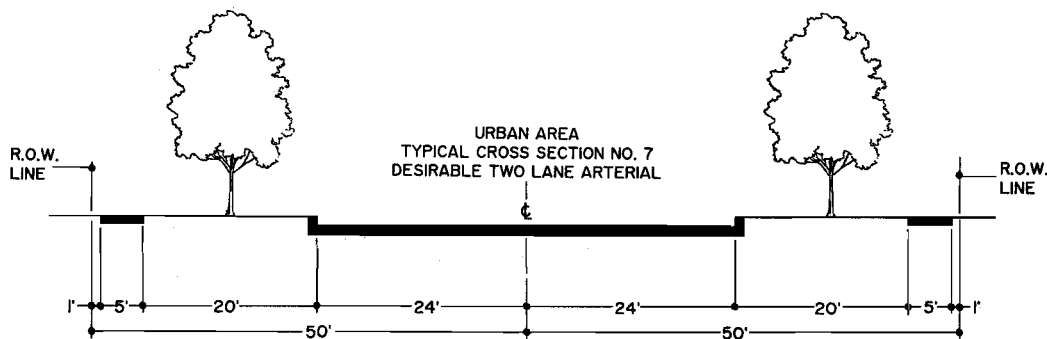
GRAVEL BASE VARIES
24' HIGH TYPE PAVEMENT, 130' R.O.W.
2' MINIMUM DITCH DEPTH
4 : 1 MAXIMUM DITCH FORESLOPE

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



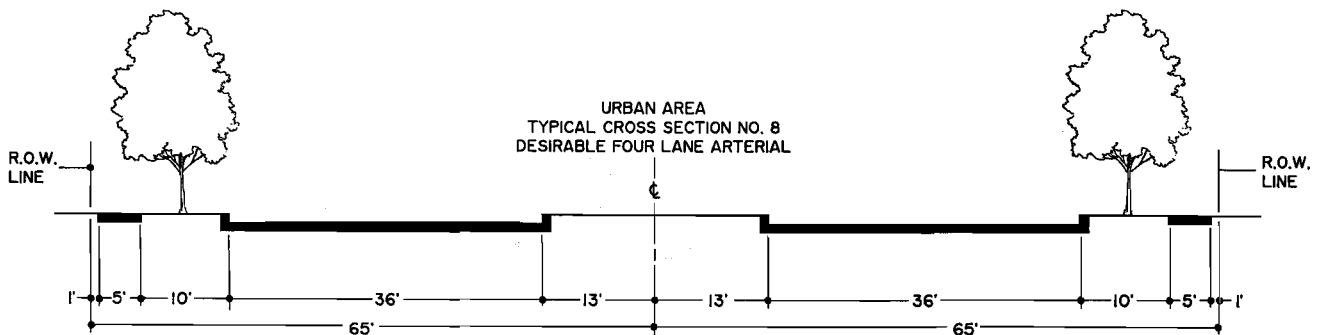
GRAVEL BASE VARIES
DUAL 24' HIGH TYPE PAVEMENT, 130' R.O.W.
2' MINIMUM DITCH SLOPE
4 : 1 MAXIMUM DITCH FORESLOPE

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



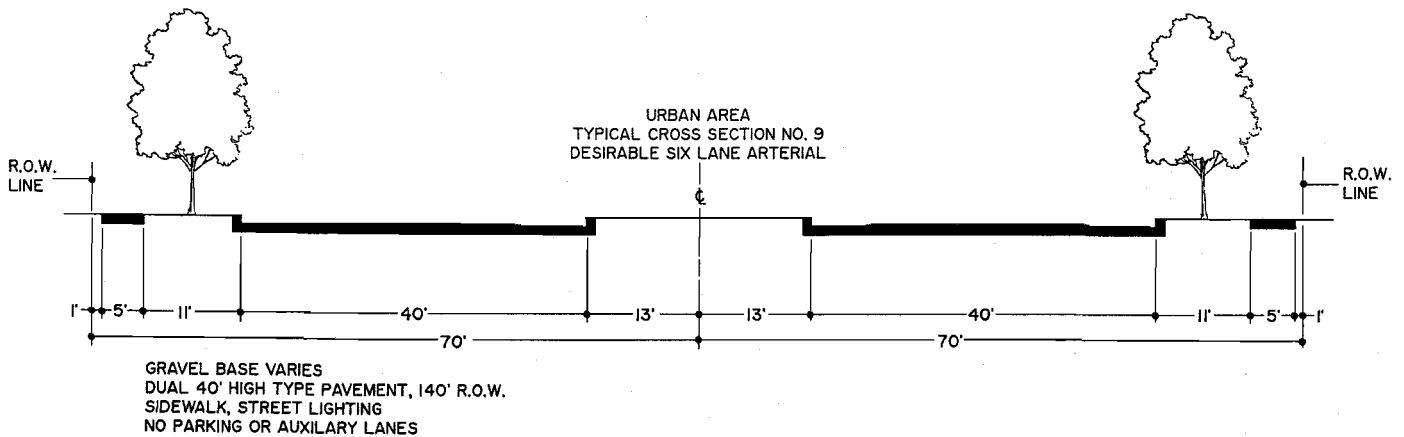
GRAVEL BASE VARIES
48' HIGH TYPE PAVEMENT, 100' R.O.W.
(ADDITIONAL R.O.W. MAY BE RESERVED
IN UNDEVELOPED AREAS)
SIDEWALK, STREET LIGHTING
TWO PARKING OR AUXILIARY LANES^b

URBAN AREA
TYPICAL CROSS SECTION NO. 8
DESIRABLE FOUR LANE ARTERIAL



GRAVEL BASE VARIES
DUAL 36' HIGH TYPE PAVEMENT, 130' R.O.W.
SIDEWALK, STREET LIGHTING
TWO PARKING OR AUXILIARY LANES

Appendix B (continued)



^aThe City of West Bend's preferred cross-sections shown are, in all cases, typical, and are subject to variations with regard to a number of considerations, including topography, vehicular and pedestrian traffic patterns and volumes, traffic and parking lane widths, right-of-way widths, and relation to adjacent land uses, such variations appropriately being the subject of further consideration under subsequent preliminary engineering studies. These cross-sections are shown in order to provide the appropriate jurisdictional agencies and local officials with an indication both of the amount of right-of-way that should be considered for reservation to accommodate the required number of traffic lanes, and of what pavement widths are being suggested as a point of departure for the preliminary engineering studies.

^bThe prohibition of parking would permit the provision of four travel lanes. This cross-section, with the addition of a 14-foot-wide center lane permitting continuous left turns, provides the basis of the five-lane urban cross-section.

Source: SEWRPC Planning Report No. 23, A Jurisdictional Highway System Plan for Washington County; The Land Use Management Plan, City of West Bend, adopted by the City Plan Commission on March 12, 1979; and the City of West Bend Engineering Department.