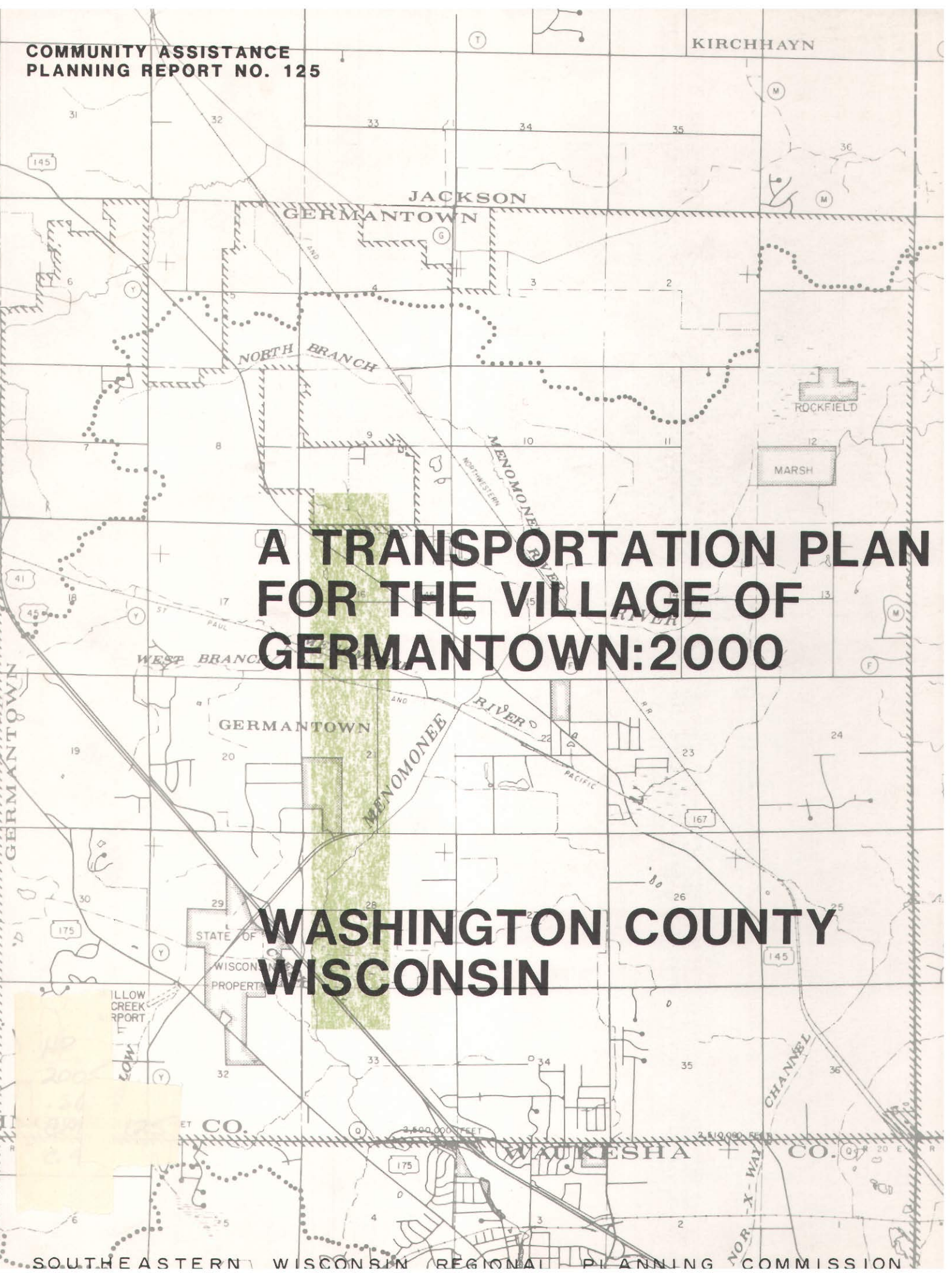




A TRANSPORTATION PLAN FOR THE VILLAGE OF GERMANTOWN:2000

WASHINGTON COUNTY WISCONSIN

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COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 125

A TRANSPORTATION PLAN FOR THE
VILLAGE OF GERMANTOWN: 2000
WASHINGTON COUNTY, WISCONSIN

Prepared by the
Southeastern Wisconsin Regional Planning Commission
P. O. Box 769
Old Courthouse
916 N. East Avenue
Waukesha, Wisconsin 53187-1607

The preparation of this report was financed in part through a planning grant from the U. S. Department of Transportation, Federal Highway Administration.

October 1985

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Outside Region \$5.00

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SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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October 21, 1985

Mr. Marshall D. Paust, President
Village of Germantown
N122 W17177 Fond du Lac Avenue
Village Hall
Germantown, Wisconsin 53022

Dear Mr. Paust:

In September 1984, the Village of Germantown requested the Southeastern Wisconsin Regional Planning Commission to prepare a transportation system plan for the Village. The Regional Planning Commission, working with an Advisory Committee of village officials, has now completed the report setting forth the desired transportation system plan, and is pleased to transmit it to you on behalf of the Advisory Committee. The plan recommends the arterial street and highway improvements necessary to permit traffic to move efficiently and safely within and through the Village of Germantown now, and as the Village continues to develop to the year 2000.

The recommended plan is based upon a careful analysis of existing and probable future transportation system needs in the Village. Considered in the analysis were the existing and planned land use development in the Village; the characteristics of the existing transportation facilities and services of the Village; the existing and probable future use of transportation facilities in the Village; and the land use and transportation system development objectives of the Village. Based upon these considerations, the existing and probable future arterial street and highway deficiencies in the Village were identified, alternative improvements proposed and evaluated, and a recommended plan developed. This plan was carefully reviewed and unanimously approved by the Advisory Committee on May 9, 1985, and recommended for adoption and implementation by the Village Plan Commission and Village Board. Implementation of the plan will provide the Village with the arterial street and highway system necessary to properly serve its existing and proposed development.

The Regional Planning Commission is appreciative of the assistance provided by the Village through the Village Administrator, Village Director of Public Works, and Village Engineer in the preparation of this plan. The Commission staff stands ready to assist the Village in presenting the recommended plan to the public, and to the Village Plan Commission and Village Board.

Sincerely,



Kurt W. Bauer
Executive Director

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Chapter I

INTRODUCTION

On September 4, 1984, the Village of Germantown Board of Trustees requested the Southeastern Wisconsin Regional Planning Commission to prepare a transportation system plan for the Village. This report presents that plan. As requested, the plan includes:

- Recommendations for the current and future classification of village streets by function including arterial, collector, and local streets and highways.
- Recommendations for needed improvements to the village arterial street system, including identification of major street widenings and new arterial facility construction.
- Recommendations for the cross-section and right-of-way for each segment of arterial street in the Village.
- Recommendations for the level and unit of government which should be responsible for each segment of street and highway within the Village.

Those plan recommendations which should be implemented immediately are identified, and the remaining recommendations are staged in five-year increments to the year 2000, consistent with expected needs and financial resources.

The recommended plan is based upon careful analysis of existing and probable future transportation needs in the Village, and upon evaluation of alternative improvements, including the option of simply maintaining the existing transportation system in the Village. In the evaluation of alternative improvements, the potential impacts on village economic and land use development were considered, as well as the impacts on the efficiency and safety of the village transportation system. Also considered in the evaluation of alternative transportation improvements was the disruption which may be caused by the improvements, and the costs attendant to the transportation improvements. The plan was prepared with the assistance of an Advisory Committee appointed by the Village President. The membership of this Committee is listed in Table 1 of this report.

STUDY AREA

The study area was the Village of Germantown and those small sections of the Town of Germantown and the City of Milwaukee which, together with the Village, comprise U. S. Public Land Survey Township 9 North, Range 20 East, as shown on Map 1. The Village comprises 34.33 square miles of the 36.11-square-mile survey township. The unincorporated Town of Germantown comprises 1.77 square miles of the survey township, and the City of Milwaukee the remaining 0.01 square mile.

Table 1

**VILLAGE OF GERMANTOWN
TRANSPORTATION PLAN ADVISORY COMMITTEE**

Robert A. Myers.....	Trustee, Village of Germantown
Jerome A. O'Connor.....	Administrator, Village of Germantown
Marshall D. Paust.....	President, Village of Germantown
Frank J. Riemer.....	Chief of Police, Village of Germantown
Lloyd L. Turner.....	Director, Department of Public Works, Village of Germantown
William Wetterau.....	Trustee, Village of Germantown

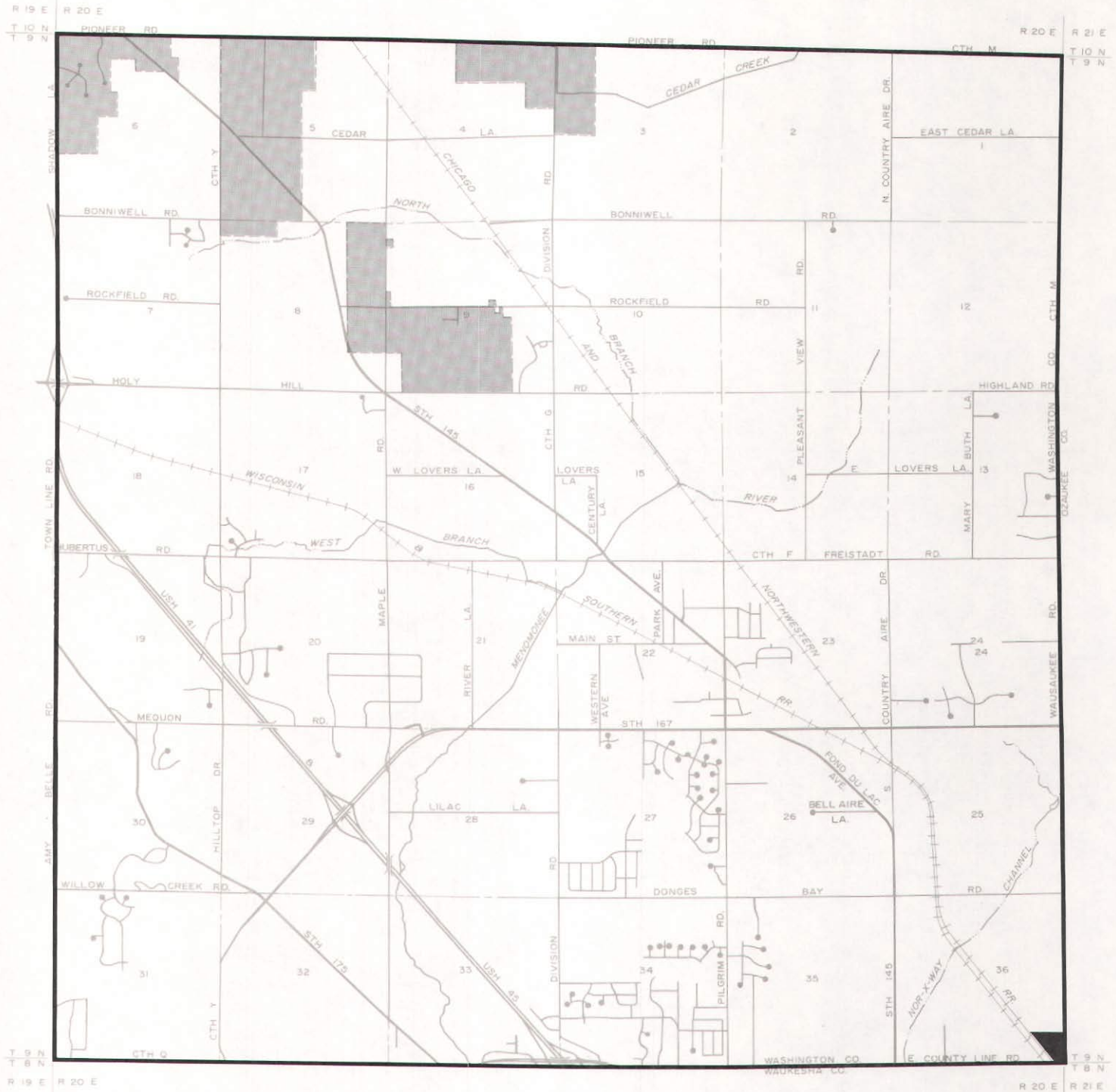
Source: SEWRPC.

REPORT FORMAT

This report presents a recommended transportation system plan for the Village of Germantown, together with the salient findings of the studies and analyses on which the plan is based. Following this introductory chapter, Chapter II presents a description of existing and planned land use development in the planning area. The historic development of the planning area is briefly described, along with the existing land use pattern in the planning area. Historic and probable future population and employment levels are presented, along with planned land use development in the study area. Chapter III presents a description of the existing transportation system of the study area. The existing street system is described with respect to functional, jurisdictional, and federal aid classification; cross-sections of the component facilities; intersection control and improvements; speed limits; railroads; and school crossings. Mass transit facilities serving the Village are also described. Chapter IV presents definitive data on the existing and probable future use of the transportation system 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 upon planned development of the Village and of the Southeastern Wisconsin Region. Chapter V presents objectives and standards used in the identification of existing and future transportation system deficiencies, and in the design and evaluation of alternative transportation system improvements. The objectives define the basic goals which are to be achieved by the village transportation system, and the standards provide a quantitative basis on which to relate those objectives to alternative system plans. Chapter VI describes the existing and anticipated future transportation problems of the Village and describes and evaluates alternative transportation improvements designed to abate those problems. The recommended plan for transportation improvements for the Village is also presented in this chapter. 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.

Map 1

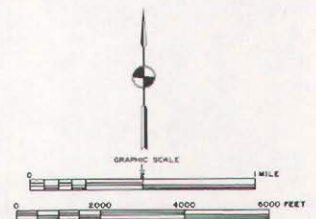
VILLAGE OF GERMANTOWN TRANSPORTATION PLAN STUDY AREA



LEGEND

- STUDY AREA BOUNDARY
- VILLAGE OF GERMANTOWN PORTION OF STUDY AREA
- TOWN OF GERMANTOWN PORTION OF STUDY AREA
- CITY OF MILWAUKEE PORTION OF STUDY AREA

Source: SEWRPC.



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Chapter II

EXISTING AND PLANNED LAND USE DEVELOPMENT

INTRODUCTION

This chapter describes the existing and anticipated future development of the Village of Germantown planning area as pertinent to transportation system planning and development. The existing development within the Village of Germantown largely establishes the current transportation needs of the Village. The existing and future development of the Village together largely establish the anticipated future transportation needs. This chapter begins with a brief discussion of the historic development of the Village of Germantown. A description of the existing land uses within the Village follows, along with a summary of existing and historic population and employment levels within the Village. Finally, population, employment, and land use demand forecasts are presented and land use plans for the Village are described.

HISTORIC URBAN DEVELOPMENT IN THE VILLAGE OF GERMANTOWN AND THE SOUTHEASTERN WISCONSIN REGION

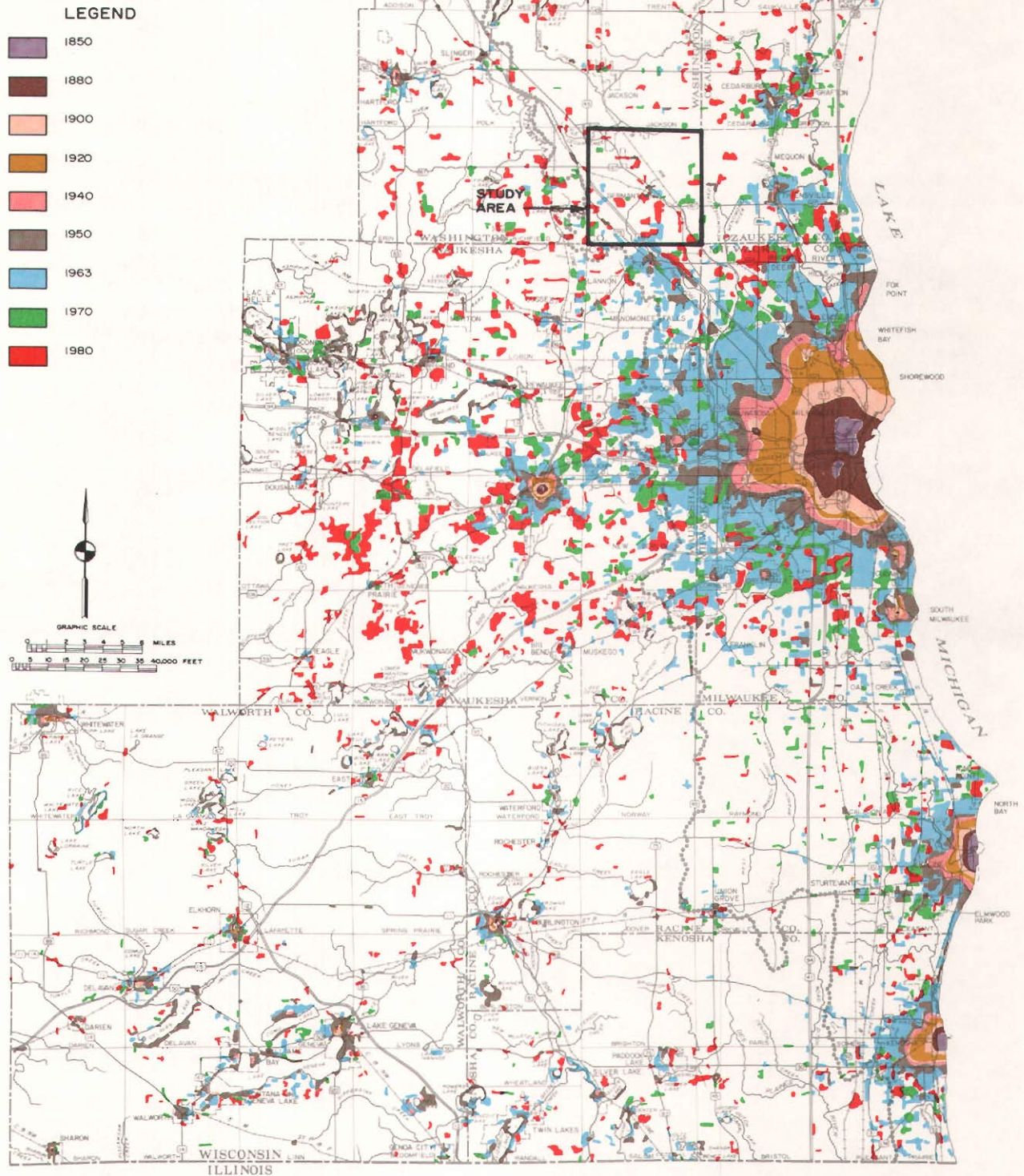
The first permanent European settlement in the seven-county Southeastern Wisconsin Region was a trading post established in 1795 on the east side of the Milwaukee River north of what is now Wisconsin Avenue. The movement of European settlers into the Region was well underway by 1830, and most of the cities and villages in the Region can trace their origins to trading posts established early in the nineteenth century. Completion of the U. S. Public Land Survey in the Region by 1836 and subsequent sale of public lands brought many settlers from New England, Germany, Austria, and Scandinavia.

By 1850 there were more than 113,000 people in the Region. Map 2 shows the many scattered developments existing in the Region at that time. In addition to the larger urban centers of Burlington, Kenosha, Milwaukee, Racine, Waukecha, and West Bend, traces of early development are evident in many of the smaller communities that exist in the Region today, including the Village of Germantown.

The early urban development of the Village of Germantown was centered near the intersection of Fond du Lac Avenue and Main Street. Between 1850 and 1950, additional urban development in the Village of Germantown occurred around this initial core of development at medium to high densities. This pattern of development was similar to the pattern which occurred in the entire Southeastern Wisconsin Region over this time period. From 1950 to 1963, substantial development occurred in the Village of Germantown. Some of this new development was concentrated around the initial core of development, but a substantial portion reflected the extension of development from the Village of Menomonee Falls northerly into Washington County. Also, some scattered urban development occurred throughout the Village, similar in pattern to the development which occurred in the Region over this same time period. Between 1963

Map 2

HISTORIC URBAN DEVELOPMENT IN THE VILLAGE OF GERMANTOWN AND THE SOUTHEASTERN WISCONSIN REGION



Source: SEWRPC.

and 1970, there was again substantial development in the Village, and, although some of this development was concentrated around the existing development in the Village, a large portion was scattered. Between 1970 and 1980, this pattern of scattered development continued, although some of the new development could be considered contiguous to existing development in that it was located between the original settlement area in the Village and the extension of development from the Village of Menomonee Falls.

EXISTING LAND USE DEVELOPMENT

The existing land use development in the Village of Germantown planning area as of 1980 is shown on Map 3 and summarized in Table 2. The planning area consists of 23,192 acres, or approximately 36 square miles. Of this total area, about 4,224 acres, or about 18 percent, were in urban use (residential, commercial, industrial, institutional, recreational, transportation, and utilities). The remaining 18,968 acres, or approximately 82 percent, were in rural use (agricultural and related open lands, woodlands, surface water, wetlands, and other open lands). Since 1975 about 540 acres of rural land were converted to urban uses.

Most of the developed lands in the village planning area were being used for residential purposes. In 1980 residential land use in the planning area accounted for approximately 50 percent of the developed urban area, but only about 9 percent of the total village area. About 370 of the approximately 540 acres of rural lands converted to urban use since 1975, or 69 percent, were converted to residential use.

Commercial land use in the planning area generally consists of retail and wholesale commercial establishments. In 1980 there were 75 acres of land in commercial land use, representing an increase of 15 acres over the 1975 total of 60 acres. This limited acreage in commercial land use--about 2 percent of the total land in urban use--indicates that some of the commercial needs of residents within the planning area are being met by commercial facilities located in nearby communities.

In 1980 industrial land uses occupied approximately 123 acres, or 0.4 percent of the planning area. This figure represents an increase of 41 acres over the 1977 total of 82 acres. Generally, this industrial land use acreage is concentrated in the Germantown Industrial Park.

Governmental and institutional land uses include governmental offices and facilities at all levels, churches and related facilities, and educational facilities. In 1980 such land uses accounted for approximately 137 acres, or 0.6 percent of the total planning area.

In 1980 recreational land uses accounted for 124 acres, or 0.9 percent of the planning area. This acreage represents only those publicly and privately owned lands presently improved for recreational use.

Transportation and utility land uses include lands devoted to streets, highways, railroad rights-of-way, and major electric power transmission rights-of-way. In 1980 these uses accounted for approximately 6.7 percent of the

Map 3

EXISTING LAND USE IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1980

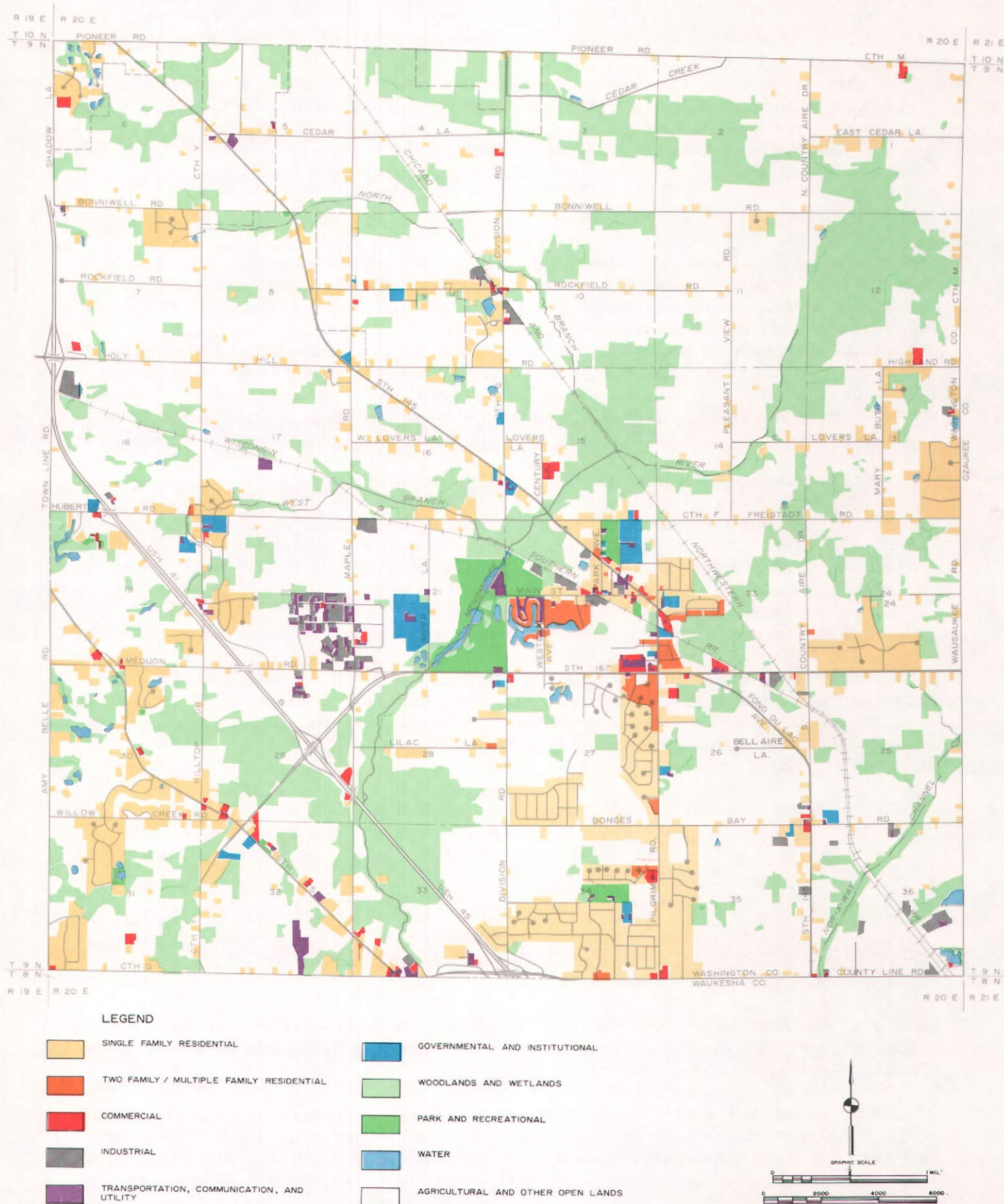


Table 2

EXISTING LAND USE IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1975 AND 1980

Land Use Category	Acres		Percent of Total (for 1980)	Difference 1975-1980	
	1975	1980		Acres	Percent
Urban					
Residential					
Single-Family ^a	1,509	1,897	8.2	388	25.7
Two-Family.....	10	29	0.1	19	190.0
Multiple-Family.....	60	75	0.3	15	25.0
Under Development.....	173	122	0.5	-51	-29.5
Subtotal	1,752	2,123	9.1	371	21.2
Commercial.....	78	96	0.4	18	23.1
Industrial.....	82	123	0.5	41	50.0
Governmental and Institutional.....	133	137	0.6	4	3.0
Park and Recreational.....	211	214	0.9	3	1.4
Transportation and Utilities					
Railroads.....	229	229	1.0	--	--
Freeways and Arterial, Collector, and Minor Streets.....	1,114	1,173	5.1	59	5.3
Utilities and Off-Street Parking.....	87	129	0.6	42	48.3
Subtotal	1,934	2,101	9.1	167	8.6
Subtotal--Urban Land Use	3,686	4,224	18.2	538	14.6
Rural					
Agricultural and Related Lands....	14,036	13,500	58.2	-536	-3.8
Woodlands.....	744	729	3.2	-15	-2.0
Water and Wetlands.....	3,725	3,597	15.5	-128	-3.4
Other Open Lands ^b	1,001	1,142	4.9	141	-14.1
Subtotal--Rural Land Use	19,506	18,968	81.8	-538	-2.8
Total	23,192	23,192	100.0	--	--

^aIncludes mobile homes.

^bIncludes unused land, landfills and dumps, and extractive uses.

Source: SEWRPC.

planning area and approximately 36 percent of all urban development. Streets and highways accounted for 1,173 acres, or about 5 percent of the planning area in 1975.

The agricultural and related open lands category includes all croplands, pasturelands, orchards, nurseries, and fowl and fur farms, as well as unused lands at the fringes of developing areas. Farm dwelling sites were classified as residential land use (urban) and assigned a site area of 20,000 square feet, and were thus excluded from the agricultural land use category. All other farm buildings have been included in the agricultural land use category. In 1980 agricultural and related open lands in the planning area totaled 13,500 acres, or approximately 58 percent of all lands in the area. This figure represents a net loss of 536 acres in this category since 1975. This decrease is due primarily to the conversion of rural land to urban uses.

The area within the planning area in woodlands, surface water, and wetlands has decreased slightly since 1975. In 1980 woodlands, surface water, and wetlands in the study area occupied a total of 4,326 acres, a decrease since 1975 of 143 acres. The area within the planning area in other open lands, or unused land, landfills, and extractive uses such as quarries totaled 1,142 acres, an increase of 41 acres since 1975.

Table 3

**VILLAGE OF GERMANTOWN PLANNING AREA POPULATION,
HOUSEHOLDS, AND EMPLOYMENT: 1960, 1970, AND 1980**

Area	1960	1970	1980	Average Annual Rate of Growth (percent)
Germantown Planning Area				
Population.....	4,606	7,390	10,998	4.5
Households.....	1,153	1,859	3,500	5.7
Employment.....	--	1,200 ^a	3,000	12.1
Washington County				
Population.....	46,119	63,839	84,848	3.1
Households.....	12,500	17,400	26,700	3.9
Employment.....	14,500	23,100	31,800	4.0
Southeastern Wisconsin Region				
Population.....	1,573,614	1,756,083	1,764,919	0.6
Households.....	465,900	536,500	628,000	1.5
Employment.....	647,900	753,700	884,200	1.6

^a Estimates of employment are for the year 1972.

Source: SEWRPC.

EXISTING POPULATION AND EMPLOYMENT

Table 3 presents historic and existing levels of population, households, and employment in the Village of Germantown planning area. Over the past two decades, population in the Village of Germantown planning area increased at an average annual rate of about 4.5 percent to 10,998 people in 1980. The number of households increased at an average annual rate of 5.7 percent to a level of 3,500 households in 1980. Employment in the Village of Germantown planning area increased at an average annual rate of about 12 percent over the past decade, to a level of about 3,000 jobs in 1980. These average annual rates of growth in the Village of Germantown planning area are substantially greater than those experienced in Washington County and the seven-county Southeastern Wisconsin Region, particularly for employment.

FUTURE LAND USE PLAN AND POPULATION AND EMPLOYMENT LEVELS

The land use plan for the Village of Germantown planning area, as adopted by the Village of Germantown Plan Commission and Village Board, would accommodate substantial growth in population and employment in the Village. To accommodate this growth, about 1,900 acres of land would be converted from rural to urban use by the year 2000. This rate of conversion of land would be slightly less than the rate experienced in the Village from 1975 to 1980. Table 4 indicates the future levels of population, households, and employment which would be accommodated in the Village of Germantown under the proposed land use plan, as well as the levels which would be accommodated in Washington County and in the Southeastern Wisconsin Region.

The adopted land use plan for the Village envisions residential growth to the year 2000 at rates which have historically occurred within the Village. The envisioned amount of future growth in commercial and industrial development,

Table 4

**VILLAGE OF GERMANTOWN PLANNING AREA POPULATION, HOUSEHOLDS,
AND EMPLOYMENT: 1960, 1970, 1980, AND PLANNED 2000^a**

Area	1960	1970	1980	2000	Historic Average Annual Rate of Growth to 1980 (percent)	Forecast Average Annual Rate of Growth 1980 to 2000 (percent)
Germantown Planning Area						
Population.....	4,606	7,390	10,998	30,000	4.5	5.1
Households.....	1,153	1,859	3,500	8,200	5.7	4.4
Employment.....	--	1,200 ^b	3,000	4,000	12.1	1.5
Washington County						
Population.....	46,119	63,839	84,848	143,000	3.1	2.6
Households.....	12,500	17,400	26,700	42,200	3.9	2.3
Employment.....	14,500	23,100	31,800	36,000	4.0	0.6
Southeastern Wisconsin Region						
Population.....	1,573,614	1,756,083	1,764,919	2,219,300	0.6	1.2
Households.....	465,900	536,500	628,000	739,400	1.5	0.8
Employment.....	647,900	753,700	884,200	1,016,000	1.6	0.7

^aThe Regional Planning Commission has recently updated and extended population forecasts to the year 2010. The Commission's new year 2010 forecast population for the Village of Germantown planning area is 22,200; for Washington County, 116,000; and for the Region, 1,872,200. The Commission's new forecasts also envision continuing declines in household size; as a result, the new year 2010 forecast for households for the Village of Germantown planning area is 8,200; for Washington County is 42,500; and for the Region is 772,700--all of which are about equal to the year 2000 forecasts. Therefore, extended and updated long-range travel forecasts to the year 2010 for the Village, when prepared by the Regional Planning Commission, would not be expected to be substantially different from the year 2000 forecasts presented in this report.

^bEstimates of employment are for the year 1972.

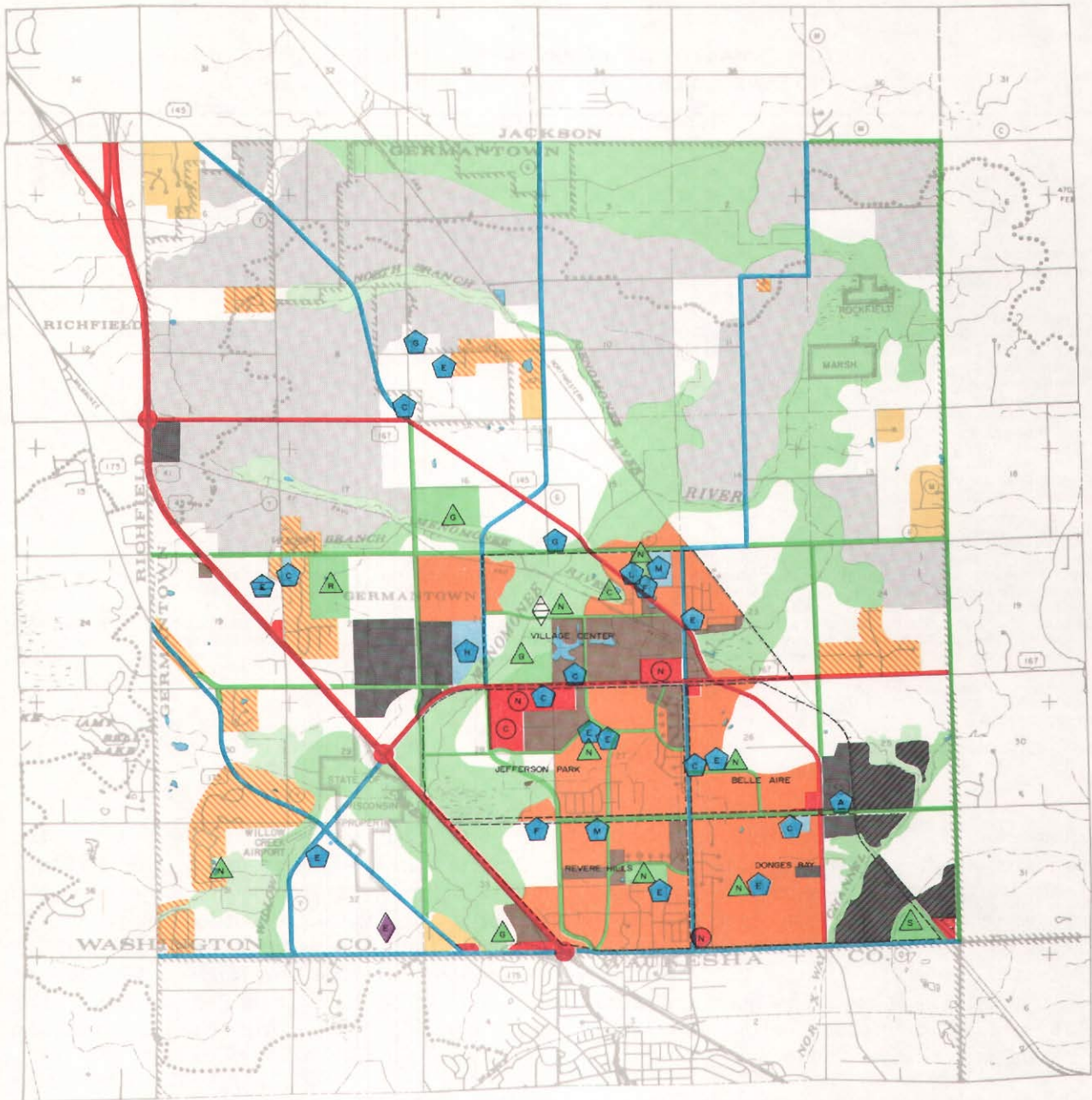
Source: SEWRPC.

however, is substantially less than that which occurred in the 1970's. The anticipated growth in the Village of Germantown is based upon the Village continuing to experience more rapid growth than Washington County and the seven-county Southeastern Wisconsin Region. The anticipated growth in the Village is also consistent with the regional land use plan for southeastern Wisconsin, which envisions only modest growth for the Region, and proposes a centralized land use pattern with new urban growth in the Region 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 Village of Germantown planning area under the Village of Germantown land use plan for the year 2000. The plan proposes an arrangement and intensity of land use which are attractive, 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 Village, which contain the best remaining elements of the Village's woodlands, wetlands, wildlife habitat areas, groundwater recharge and discharge areas, and areas having recreational and scenic value. The plan also recommends that intensive urban development not be permitted in the most productive farmland units remaining

Map 4

ADOPTED LAND USE PLAN FOR THE VILLAGE OF GERMANTOWN PLANNING AREA



LEGEND

SUBURBAN RESIDENTIAL
(0.2-0.6 DWELLING UNITS PER NET
RESIDENTIAL ACRE)

LOW-DENSITY URBAN
(0.7-2.2 DWELLING UNITS PER NET
RESIDENTIAL ACRE)

MEDIUM-DENSITY URBAN
(2.3-6.9 DWELLING UNITS PER NET
RESIDENTIAL ACRE)

HIGH-DENSITY URBAN
(7.0-17.9 DWELLING UNITS PER NET
RESIDENTIAL ACRE)

COMMERCIAL

NEIGHBORHOOD RETAIL AND SERVICE
CENTER

COMMUNITY RETAIL AND SERVICE
CENTER

GOVERNMENTAL AND INSTITUTIONAL
A SCHOOL, ADMINISTRATIVE OFFICES
B CHURCH
C ELEMENTARY SCHOOL
D MIDDLE SCHOOL
E HIGH SCHOOL
F VILLAGE OR TOWN HALL
G FIRE STATION
H LIBRARY



ELEMENTARY SCHOOL
(TO BE ABANDONED)



ELECTRIC POWER GENERATING PLANT



SEWAGE TREATMENT PLANT
(TO BE ABANDONED)



LIGHT INDUSTRY, WAREHOUSING AND
RESEARCH



HEAVY INDUSTRY



RECREATIONAL
R COUNTY PARKS
N NEIGHBORHOOD PARKS
G GOLF
C COMMUNITY PARKS
S SKI HILL



PRIMARY ENVIRONMENTAL CORRIDOR



PRIME AGRICULTURAL LAND

SECONDARY CORRIDOR AND OTHER
ENVIRONMENTALLY SIGNIFICANT LANDS

OTHER AGRICULTURAL AND
RURAL LANDS

WATER

HIGHWAY CLASSIFICATION

FREEWAY

STATE TRUNK NONFREEWAY

COUNTY TRUNK HIGHWAY

LOCAL TRUNK HIGHWAY

URBAN COLLECTOR STREETS

HIGHWAY-ARTERIAL INTERCHANGE

NEIGHBORHOOD UNIT BOUNDARY
AND NAME

BELLE AIRE



Source: SEWRPC.

within the village planning area. Lastly, 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.

The land use plan would direct nearly all new land use development in the Village to the area between the south-central portion of the Village and the southern corporate limits of the Village. The resultant contiguous area of development in the southeastern portion of the Village would permit the most economic provision of community utilities and services. In addition, it should permit the Village of Germantown to better develop its own identity, as there would be the potential for this area to have sufficient demand for its own community-level commercial and institutional centers, and to have 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. 36, A Land Use Plan for the Village of Germantown: 2000.

SUMMARY AND CONCLUSION

The historic pattern of urban development in the Village of Germantown reflects the pattern of urban development which has occurred throughout the Southeastern Wisconsin Region. In 1850, the Village of Germantown was one of many scattered cores of urban development existing within the Region. The early development of the Village of Germantown was centered near the intersection of Fond du Lac Avenue and Main Street. Between 1850 and 1950, all additional urban development in the Village occurred around this initial core of development at medium density. Between 1950 and 1963, substantial development occurred in the Village, but only a portion was concentrated in and around the original core.

A substantial portion of this new development reflected the northerly extension of development from the Village of Menomonee Falls into Washington County and the scattering of urban development throughout the Village. Between 1963 and 1970, a large portion of new development was scattered at low densities, a pattern which continued from 1970 to 1980.

The majority of lands in the Village of Germantown planning area--82 percent, or 18,968 acres--were still in rural use in 1980; that is, in agricultural and related open lands, woodlands, surface water, wetlands, and other open lands. Only about 4,224 acres, or about 18 percent, were in urban use. Between 1975 and 1980, about 540 acres of rural land were converted to urban use, about a 15 percent increase in urban use.

Over the past two decades, the levels of population, households, and employment in the Village of Germantown have increased at a much faster rate than those in Washington County and the seven-county Southeastern Wisconsin Region. Between 1960 and 1980, the population of the Village increased at an average annual rate of about 4.5 percent, to 10,998 people in 1980. The number of households increased at an average annual rate of 5.7 percent, to a level of 3,500 households in 1980. Employment in the village planning area increased at an average annual rate of about 12 percent over the past decade, to a level of about 3,000 jobs in 1980. Over the past two decades, the growth rates in population, households, and employment in Washington County have been under 4 percent, and under 2 percent in the seven-county Southeastern Wisconsin Region.

The adopted land use plan for the Village of Germantown for the year 2000 envisions accommodating substantial growth in population and employment in the Village. The adopted land use plan envisions residential growth in the Village to the year 2000 at rates which have historically occurred within the Village, or about 5 percent per year. The envisioned amount of future growth in commercial and industrial development, however, is substantially less than that which occurred in the recent past.

The land use plan would seek to direct nearly all new land use development in the Village to the area between the south-central portion of the Village and the Village's southern corporate limits. The resultant contiguous area of development in the southeastern corner of the Village would permit the most economic provision of community utilities and services and would permit the Village of Germantown to better develop its own identity.

Chapter III

EXISTING TRANSPORTATION SYSTEM

INTRODUCTION

This chapter describes the existing transportation system in the Village of Germantown planning area. A functional classification of the streets and highways in the Village is presented, together with a classification according to jurisdictional responsibility and federal aid eligibility. Also presented in this chapter is a brief description of the cross-section of each segment of the arterial element of the village 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 minimal public transit services currently provided in the Village of Germantown planning area are also described in this chapter.

FUNCTIONAL CLASSIFICATION

Any street and highway system must serve two important functions: moving traffic quickly and safely, and providing direct access to homes, businesses, and industries. These two functions are basically incompatible. Traffic cannot be moved efficiently or safely on a street which serves abutting land uses through multiple points of access. A street which carries 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 or grouping. At least three functional classifications of streets and highways should be recognized: 1) arterial streets; 2) collector streets; and 3) land access streets. Arterials 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 sub-areas of an urbanized area and through an urbanized area. Access to abutting property 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 or nonarterial streets. Collector streets are those streets or highways which are intended to serve as connections between the arterial street system and the land access street systems. In addition to collecting traffic from and distributing traffic to the land access streets, the collector streets usually have as 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 Village of Germantown planning area, as identified by the Regional Planning Commission staff, is shown on Map 5 and in Table 5. This classification considered the existing and proposed land uses to be served by the street and highway system and, for each segment of 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 was also considered.

The Wisconsin Department of Transportation has prepared a functional classification on a statewide basis. This classification, which is based primarily on the existing traffic volumes carried by each segment of street and highway, groups the streets and highways into one of four major types: principal arterial, minor arterial, collector, and local. This classification for the planning area, shown on Map 6, is used by the Wisconsin Department of Transportation for the annual allocation of local transportation aid funds to the Village and Town of Germantown. There are some differences between the functional classifications prepared by the Regional Planning Commission and those prepared by the Wisconsin Department of Transportation. The differences occur because certain facilities considered to be arterials by the Commission do not currently carry a high enough traffic volume to warrant classification as an arterial by the Department.

JURISDICTIONAL CLASSIFICATION

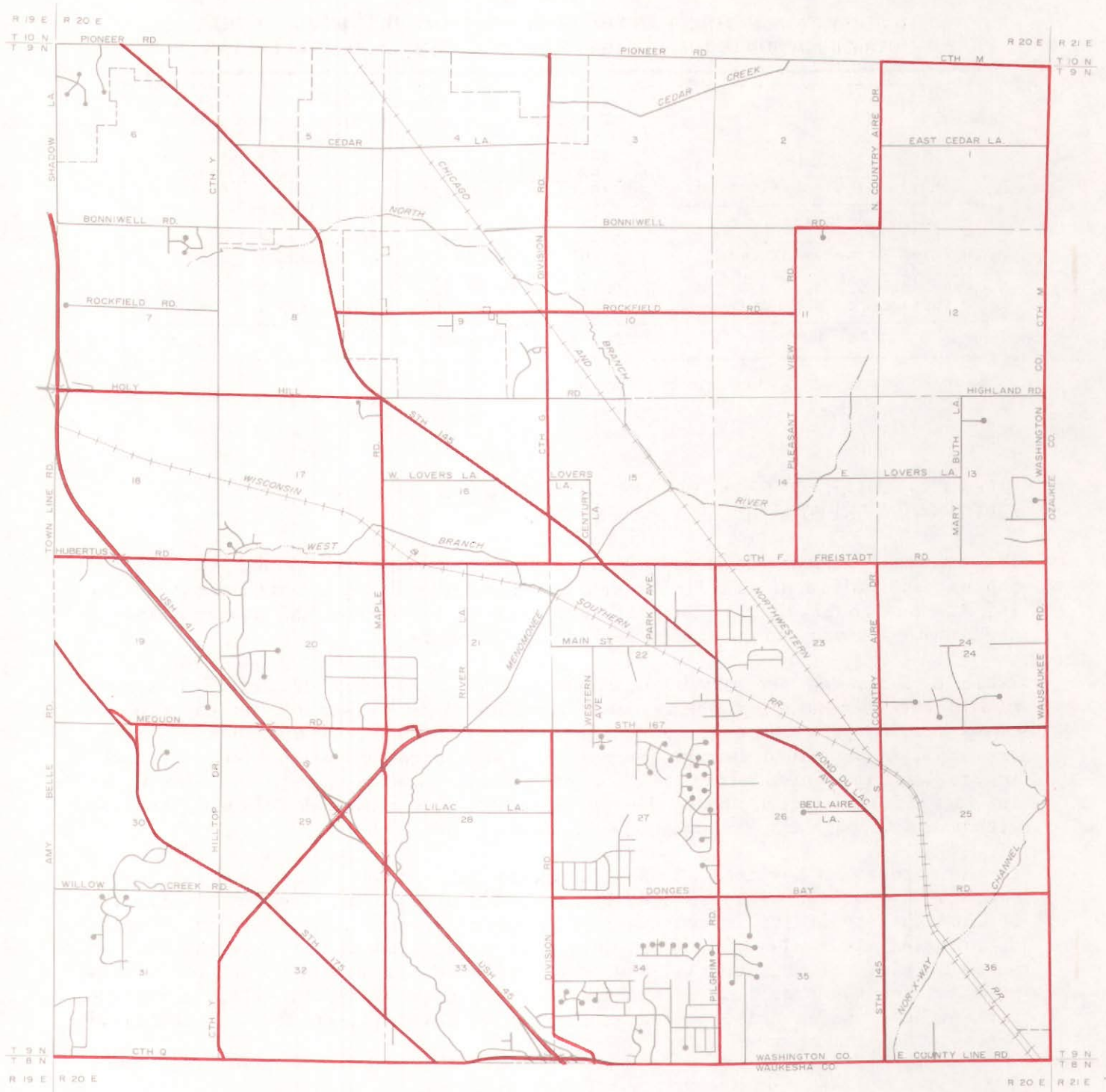
The arterial street element of the total street and highway system can be further divided by jurisdictional responsibility into state, county, and local trunk highways. The jurisdictional classification of a particular segment of arterial facility indicates which level of government--state, county, or local--has primary responsibility for its planning, design, construction, operation, and maintenance. Map 7 shows the jurisdictional classification of the streets and highways in the Village of Germantown planning area. Table 6 sets forth the distribution of street and highway system mileage by jurisdictional classification in the planning area.

FEDERAL AID SYSTEM

Also underlying the arterial highway system is a system of federal aid highway routes. The federal aid system designates those streets and highways which are eligible for federal funds to offset all or part of the cost of improvements. The federal aid system in the Village of Germantown is composed of a federal aid primary system and a federal aid urban system. Generally, only those streets and highways which are a part of one of these federal aid systems 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, the type of project, and the total amount of federal monies available. Those streets and highways included on the federal aid system in the Village of Germantown planning area are shown on Map 8. Table 7 indicates the distribution of the street and highway system mileage by federal aid system category in the Village of Germantown planning area.

Map 5

FUNCTIONAL CLASSIFICATION OF THE VILLAGE OF GERMANTOWN PLANNING AREA EXISTING STREET AND HIGHWAY SYSTEM AS DEFINED BY THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION



LEGEND

- ARTERIAL STREETS AND HIGHWAYS
- NON-ARTERIAL STREETS AND HIGHWAYS

Source: SEWRPC.

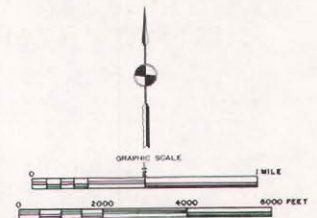


Table 5

**DISTRIBUTION OF STREET AND HIGHWAY SYSTEM MILEAGE BY FUNCTIONAL
CLASSIFICATION IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984**

Functional Classification	Wisconsin Department of Transportation Functional Classification for Aid Purposes		Southeastern Wisconsin Regional Planning Commission Functional Classification	
	Miles	Percent	Miles	Percent
Principal Arterial.....	14.51	11.1	--	--
Minor Arterial.....	36.52	28.1	--	--
Total Arterial Streets	51.03	39.2	69.06	53.1
Collector.....	8.76	6.7	--	--
Land Access.....	70.37	54.1	--	--
Total Local Streets	79.13	60.8	61.10	46.9
Total	130.16	100.0	130.16	100.0

Source: Wisconsin Department of Transportation and SEWRPC.

PHYSICAL CHARACTERISTICS OF THE EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM

The 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.

Table 8 indicates the pavement width for each section of arterial street within the Germantown 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 ditches. For each urban cross-section, any parking restrictions are noted; and for each rural cross-section, shoulder width is identified. Map 9 shows the roadway sections provided to carry traffic within and through the Village of Germantown.

In the more urban portions of the Village of Germantown, where arterial intersections are more closely spaced, the capacity of a roadway segment is limited by the capacity of its intersections with other arterials. The design capacity of arterial approaches to intersections is a function of not only the through pavement width of the arterial approach, but also the type of traffic control provided and the provision of special left- or right-turn lanes. Table 9 identifies these characteristics for each arterial intersection in the Village of Germantown planning area.

TRAFFIC CONTROL MEASURES ON THE EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM

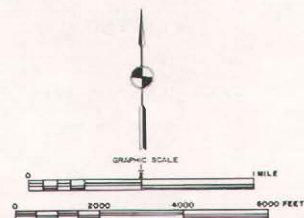
Signals and Stop Signs

The existing traffic signal and stop signs on arterial streets in the Village of Germantown planning area are identified in Table 9. Table 10 indicates the phasing, timing, and total cycle length for the one traffic signal in the

FUNCTIONAL CLASSIFICATION OF THE VILLAGE OF GERMANTOWN PLANNING AREA EXISTING STREET AND HIGHWAY SYSTEM AS DEFINED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION

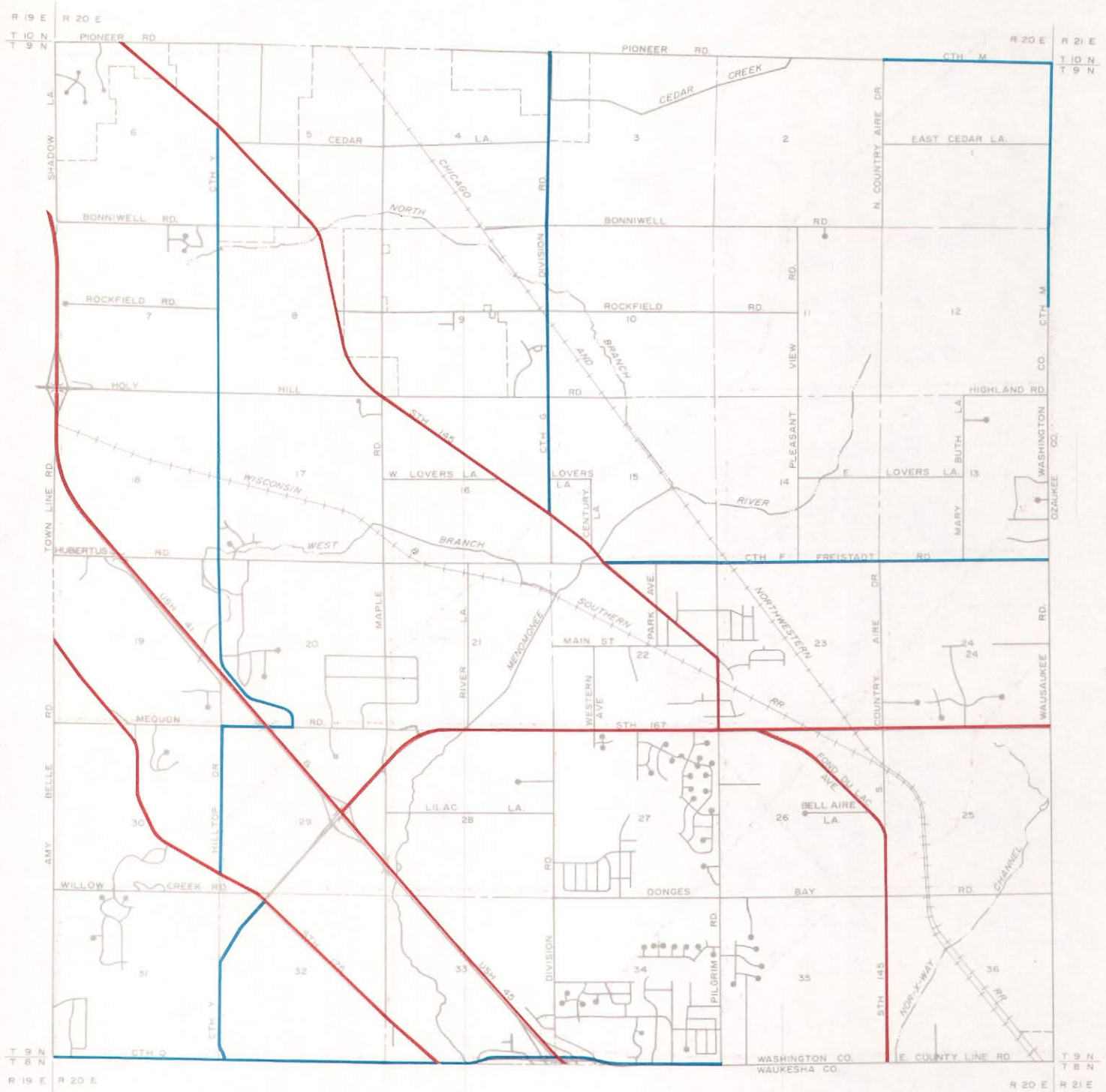


-  PRINCIPAL ARTERIAL
 MINOR ARTERIAL
 COLLECTOR
 LAND ACCESS STREETS



19

**JURISDICTIONAL CLASSIFICATION OF THE EXISTING VILLAGE OF
GERMANTOWN PLANNING AREA STREET AND HIGHWAY SYSTEM: 1984**



LEGEND

- STATE TRUNK
- COUNTY TRUNK
- LOCAL TRUNK

Source: Wisconsin Department of Transportation and SEWRPC

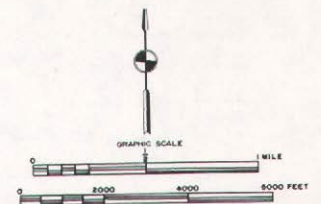


Table 6

**JURISDICTIONAL CLASSIFICATION OF THE STREET AND
HIGHWAY SYSTEM IN THE VILLAGE OF GERMANTOWN: 1984**

Municipality	Jurisdictional Classification (miles)			
	State Trunk Highway	County Trunk Highway	Local Street	Total
Village of Germantown.....	20.64	15.53	87.45	123.62
Town of Germantown.....	1.23	0.85	4.46	6.54
Total	21.87	16.38	91.91	130.16

Source: SEWRPC.

Table 7

**FEDERAL AID CLASSIFICATION OF THE STREET
AND HIGHWAY SYSTEM IN THE VILLAGE OF
GERMANTOWN PLANNING AREA: 1984**

Municipality	Federal Aid System (miles)		
	Primary	Urban	Total
Village of Germantown.....	6.18	59.18	65.36
Town of Germantown.....	--	1.91	1.91
Total	6.18	61.09	67.27

Source: SEWRPC.

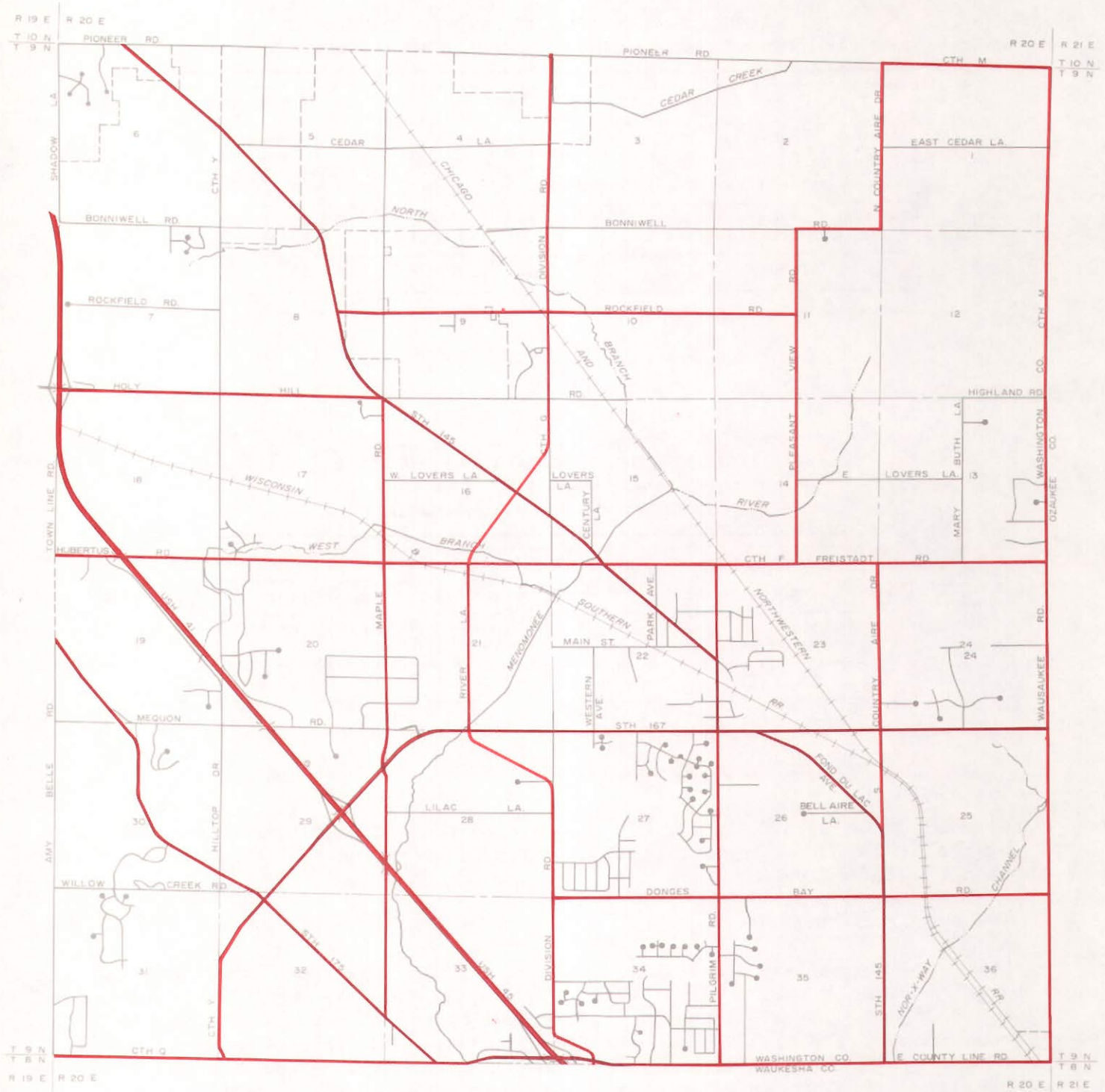
planning area, at STH 175 and CTH Q. A second traffic signal will be installed by the Wisconsin Department of Transportation in spring 1985 at the intersection of Pilgrim Road and County Line Road East.

Railway Crossing Protection

There are two railway lines in the Village of Germantown, one owned and operated by the Chicago & North Western Transportation Company (C&NW) and one owned by the State of Wisconsin and operated by the Wisconsin & Southern Railroad Company (WSOR). The railway lines traverse the Village in a generally northwesterly-southeasterly direction and are located at-grade. The two railway lines are located adjacent to each other between the Waukesha County line and STH 167. The C&NW railway line handles mainline freight traffic between Milwaukee and Fond du Lac, and has nine grade crossings with streets and highways within the Village. All of the seven arterial street and highway crossings are protected by either flashing signals or automatic crossing gates. The two nonarterial street crossings are protected only by crossbuck signs. The WSOR trackage handles local freight traffic between Milwaukee and the City of Horicon in Dodge County, as well as Soo Line Railroad Company freight trains between Milwaukee and Fond du Lac. The WSOR trackage has 10 grade crossings

Map 8

FEDERAL AID CLASSIFICATION OF THE EXISTING VILLAGE OF
GERMANTOWN PLANNING AREA STREET AND HIGHWAY SYSTEM: 1984



LEGEND

- FEDERAL AID PRIMARY SYSTEM
- FEDERAL AID URBAN SYSTEM

Source: Wisconsin Department of Transportation and SEWRPC.

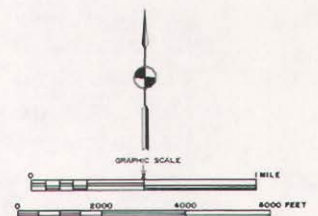


Table 8

**PHYSICAL CHARACTERISTICS OF THE ARTERIAL STREET AND HIGHWAY SYSTEM
OF THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984**

Arterial	Termini	Urban Cross-Section		Rural Cross-Section		
		Pavement Width (feet)	Parking Restrictions	Pavement Width (feet)	Shoulder Width (feet)	
					Inner	Outer
USH 41/45	South Corporate Limits to West Corporate Limits, Village of Germantown.....	--	--	Dual 36	6	10
STH 145 (Fond du Lac Avenue)	Village of Germantown South Corporate Limits to Bell Aire Lane.....	--	--	22	--	4
	Bell Aire Lane to STH 167 (Mequon Road).....	--	--	22	--	4
	STH 145 (Fond du Lac Avenue)-STH 167 Intersection to STH 167 (Mequon Road)-Pilgrim Road Intersection (concurrent with STH 167).....	--	--	22	--	10
	Pilgrim Road-STH 167 (Mequon Road) Intersection to Fond du Lac Avenue-Pilgrim Road Intersection.....	44	No parking at anytime (both sides)	--	--	--
STH 167 (Mequon Road)	Pilgrim Road to Pioneer Road.....	--	--	22	--	4
	Wausaukee Road to STH 145 (Fond du Lac Avenue).....	--	--	20	--	2
	Pilgrim Road to 0.20 Mile East of Mequon Road West.....	--	--	22-	--	10
	0.20 Mile East of Mequon Road West to USH 41/45.....	--	--	Dual 24	6	10
STH 175	CTH Q (County Line Road) to Village of Germantown West Corporate Limits.....	--	--	22	--	4
CTH F (Freistadt Road)	Wausaukee Road to 0.10 Mile West of Pilgrim Road.....	--	--	24	--	10
	0.10 Mile West of Pilgrim Road to STH 145 (Fond du Lac Avenue).....	44	No parking anytime (Park Avenue to a point 0.10 mile west of Pilgrim Road-south side of road)	--	--	--
	STH 145 (Fond du Lac Avenue) to 0.10 Mile South of Holy Hill Road.....	--	--	22	--	10
CTH G (Division Road)	0.10 Mile South of Holy Hill Road to Rockfield Road.....	44	--	--	--	--
CTH M (Pioneer Road)	Rockfield Road to Pioneer Road.....	--	--	22	--	10
CTH M (Wausaukee Road)	CTH M (Wausaukee Road) to N. Country Aire Drive.....	--	--	22	--	3
	0.50 Mile North of Highland Road to CTH M (Pioneer Road).....	--	--	22	--	2

Table 8 (continued)

Arterial	Termini	Urban Cross-Section		Rural Cross-Section		
		Pavement Width (feet)	Parking Restrictions	Pavement Width (feet)	Shoulder Width (feet)	
					Inner	Outer
CTH Q (County Line Road West)	USH 41/45 to 0.30 Mile West of USH 41/45.....	--	--	Dual 28	-- ^a	10
CTH Q (County Line Road West)	0.30 Mile West of USH 41/45 to Amy Belle Road.....	--	--	24	--	10
CTH Q (County Line Road East)	Pilgrim Road to Water Street.....	--	--	24	--	3
CTH Y (Lannon Road)	Water Street to USH 41/45.....	--	--	Dual 28	-- ^a	10
Bonniwell Road	CTH Q (County Line Road West) to STH 175.....	--	--	22	--	2
N. Country Aire Drive	N. Country Aire Drive to Pleasant View Road.....	--	--	18	--	1
S. Country Aire Drive	Bonniwell Road to CTH M (Pioneer Road).....	--	--	20	--	1
County Line Road East	STH 145 (Fond du Lac Avenue) to CTH F (Freistadt Road).....	--	--	24	--	3
Division Road	Wausaukee Road to Pilgrim Road.....	--	--	20	--	2
S. Division Road	Freistadt Road to STH 145 (Fond du Lac Avenue).....	--	--	22	--	0
Donges Bay Road	CTH Q (County Line Road East) to Wendy Lane.....	--	--	22	--	8
	Wendy Lane to STH 164 (Mequon Road).....	--	--	24	--	3
	Wausaukee Road to STH 145 (Fond du Lac Avenue).....	--	--	20	--	3
	STH 145 (Fond du Lac Avenue) to S. Division Road.....	--	--	24	--	6
Freistadt Road	STH 145 (Fond du Lac Avenue) to Division Road.....	--	--	26	--	2
	Division Road to CTH Y (Goldendale Road).....	--	--	24	--	2
Holy Hill Road	CTH Y (Goldendale Road) to USH 41/45.....	--	--	23	--	4
Hubertus Road	STH 145 (Fond du Lac Avenue) to USH 41/45.....	--	--	24	--	3
	USH 41/45 to Daalda Parkway.....	--	--	22	--	3
Lannon Road	Daalda Parkway to Town Line Road.....	--	--	24	--	3
	STH 175 to 0.39 Mile Northeast of STH 175.....	--	--	24	--	8
Maple Road	0.39 Mile Northeast of STH 175 to USH 41/45.....	--	--	Dual 24	5	10
	STH 175 to Fawn Lane.....	--	--	22	--	2
	Fawn Lane to Edison Drive.....	--	--	24	--	10
	Edison Drive to Freistadt Road.....	--	--	24	--	3
	Freistadt Road to STH 145 (Fond du Lac Avenue).....	--	--	24	--	1

Table 8 (continued)

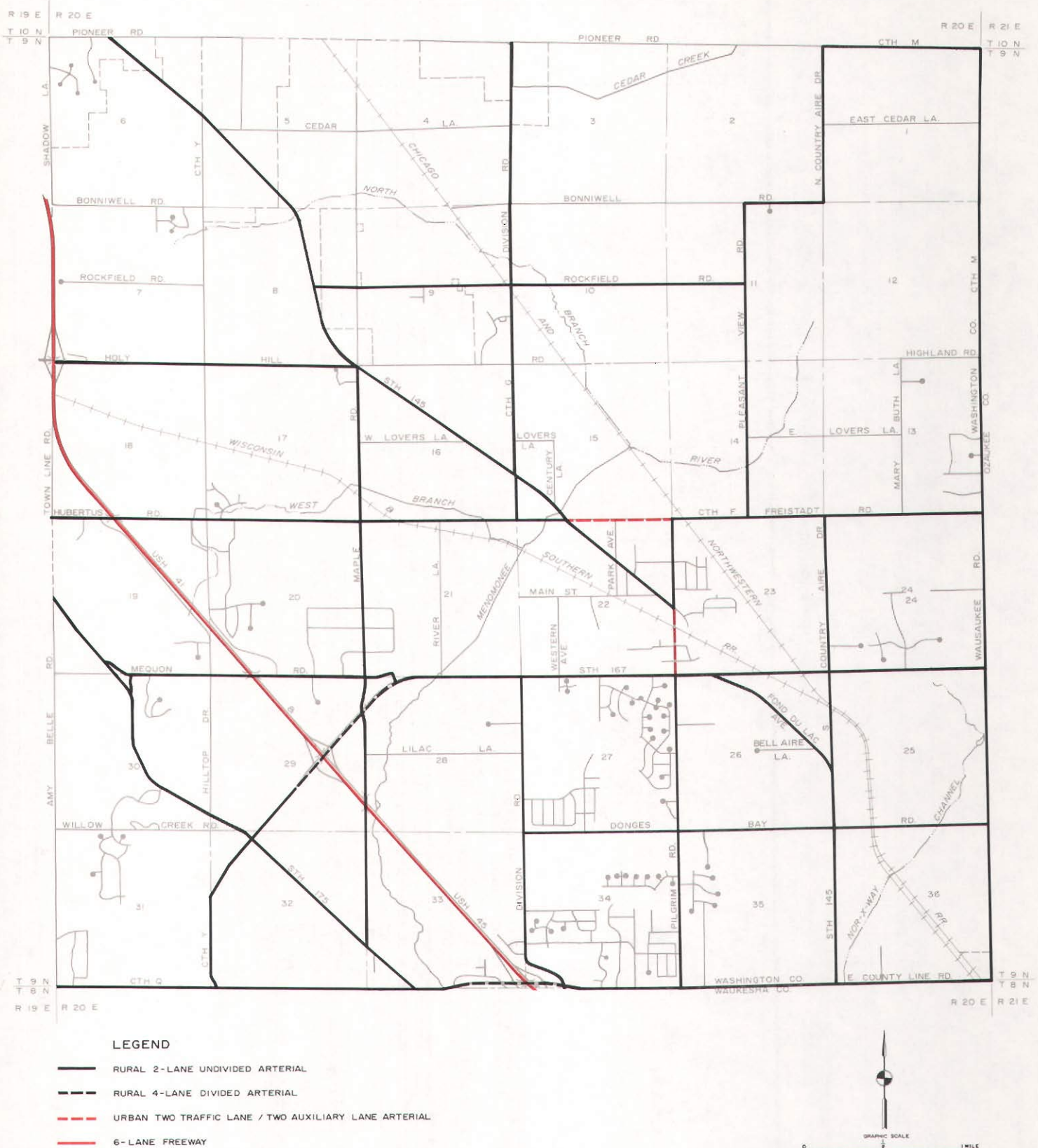
Arterial	Termini	Urban Cross-Section		Rural Cross-Section		
		Pavement Width (feet)	Parking Restrictions	Pavement Width (feet)	Shoulder Width (feet)	
					Inner	Outer
Mequon Road West	STH 167 (Mequon Road) to CTH Y (Goldendale Road North).....	--	--	22	--	5
	CTH Y (Goldendale Road North) to CTH Y (Hilltop Drive).....	--	--	22	--	2
Pilgrim Road	CTH Y (Hilltop Drive) to a Point 0.04 Mile West of Meeker Hill Lane.....	--	--	22	--	4
	CTH Q (County Line Road East) to Santa Fe Drive.....	--	--	24	--	2
	Santa Fe Drive to STH 145/167 (Mequon Road).....	--	--	22	--	8
Pleasant View Road	STH 145 (Fond du Lac Avenue) to CTH F (Freistadt Road).....	--	--	22	--	3
	CTH F (Freistadt Road) to Bonniwell Road.....	--	--	22	--	2
Rockfield Road	Pleasant View Road to CTH G (Division Road).....	--	--	22	--	5
	CTH G (Division Road) to 0.10 Mile West of CTH G (Division Road).....	--	--	28	--	4
	0.10 Mile West of CTH G (Division Road) to STH 145 (Fond du Lac Avenue).....	--	--	22	--	2
Wausaukee Road	County Line Road East to CTH F (Freistadt Road).....	--	--	24	--	3
	CTH F (Freistadt Road) to 0.50 Mile North of Highland Road.....	--	--	22	--	2

^a Curb on this side only.

Source: Wisconsin Department of Transportation and SEWRPC.

Map 9

EXISTING TRAFFIC LANES PROVIDED ON THE ARTERIAL STREET AND HIGHWAY
SYSTEM OF THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984



Source: Wisconsin Department of Transportation and SEWRPC.

Table 9

CHARACTERISTICS OF ARTERIAL INTERSECTIONS IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984

Facility	Arterial Intersection	Traffic Control	Special Intersection Treatment
STH 145	County Line Road East.....	Stop sign--two-way (County Line Road East)	Lane provided for eastbound right turns
	Donges Bay Road..... S. Country Aire Drive.....	Stop sign--two-way (Donges Bay Road) Stop sign--one-way (S. Country Aire Drive)	
	STH 167 (Mequon Road).....	Stop sign--one-way (STH 145 northbound)	Lane provided for eastbound right turns
	STH 167 (Mequon Road) and Pilgrim Road.....	Stop sign--four-way	Lane provided for right turns eastbound and northbound; bypass for westbound right turns; and two lanes approach southbound
	Pilgrim Road..... CTH F (Freistadt Road).....	Stop sign--four-way Stop sign--two-way (Freistadt Road)	Lane provided for northbound right turns and bypass provided for westbound right turns
	CTH G (Division Road).....	Stop sign--two-way (Division Road)	Lane provided for westbound right turns and bypass provided for southbound right turns
	Holy Hill Road and Maple Road.....	Stop sign--four-way (Holy Hill Road and Maple Road)	
	Rockfield Road..... Wausaukee Road..... S. Country Aire Drive.....	Stop sign--one-way (Rockfield Road) Stop sign--two-way (Wausaukee Road) Stop sign--two-way (S. Country Aire Drive)	
	S. Division Road.....	Stop sign--one-way (S. Division Road)	
	Mequon Road West.....	Stop sign--one-way (Mequon Road West)	
STH 167 (Mequon Road)	Maple Road..... CTH Q (County Line Road West).....	Stop sign--two-way (Maple Road) Traffic signal	Two lanes provided at each approach--used to bypass left-turning vehicles
	Maple Road..... CTH Y (Lannon Road).....	Stop sign--one-way (Maple Road) Stop sign--two-way (Lannon Road)	Lane provided for right turns at all approaches
	Mequon Road West (Meeker Hill Road).....	Stop sign--one-way (Meeker Hill Road)	Access from STH 175 to Mequon Road west via CTH F and Meeker Hill Road
	Wausaukee Road.....	Stop sign--two-way (Wausaukee Road)	Lane provided for northbound right turns
STH 167 (Lannon Road) STH 175	S. Country Aire Drive.....	Stop sign--one-way (S. Country Aire Drive)	
	Pleasant View Road.....	Stop sign--one-way (Pleasant View Road)	Lane provided for westbound right turns and lane provided to bypass eastbound left turns
	Pilgrim Road.....	Stop sign--one-way (Pilgrim Road)	
CTH F (Freistadt Road)	Wausaukee Road.....	Stop sign--two-way (Wausaukee Road)	
	S. Country Aire Drive.....	Stop sign--one-way (S. Country Aire Drive)	
	Pleasant View Road.....	Stop sign--one-way (Pleasant View Road)	
	Pilgrim Road.....	Stop sign--one-way (Pilgrim Road)	

Table 9 (continued)

Facility	Arterial Intersection	Traffic Control	Special Intersection Treatment
CTH G (Division Road)	Rockfield Road.....	Stop sign--two-way (Rockfield Road)	Lane provided to bypass northbound and southbound left turns
CTH M (Wausaukee Road)	Bonniwell Road..... Pioneer Road..... N. Country Aire Drive.....	Stop sign--one-way (Bonniwell Road) Stop sign--one-way (Wausaukee Road) Stop sign--three-way (Pioneer Road and Country Aire Drive northbound)	
CTH Q (County Line Road East)	Pilgrim Road.....	Stop sign--two-way (CTH Q)	
	S. Division Road/Cumberland Drive...	Stop sign--two-way (S. Division Road and Cumberland Drive)	Lane provided for northbound and southbound left turns and bypasses provided for eastbound and westbound right turns
CTH Q (County Line Road West)	CTH Y (Lannon Road).....	Stop sign--two-way (CTH Y)	
	Amy Belle Drive.....	Stop sign--two-way (Amy Belle Drive)	Lane provided for eastbound and westbound right turns and bypasses provided for northbound and southbound right turns
Bonniwell Road	N. Country Aire Drive..... Pleasant View Road.....	Right angle junction Stop sign--one-way (Pleasant View Road)	
County Line Road East Division Road S. Division Road Donges Bay Road	Wausaukee Road..... Freistadt Road..... Donges Bay Road..... Pilgrim Road.....	Stop sign--two-way (Wausaukee Road) Stop sign--one-way (Division Road) Stop sign--one-way (Donges Bay Road) Stop sign--two-way (Donges Bay Road)	Bypass provided for southbound right turns
Freistadt Road	Wausaukee Road.....	Stop sign--two-way (Donges Bay Road)	
Highland Road	Maple Road.....	Stop sign--two-way (Maple Road)	
Maple Road	Wausaukee Road.....	Stop sign--two-way (Highland Road)	
Pleasant View Road	Mequon Road West..... Rockfield Road.....	Stop sign--four-way Stop sign--one-way (Rockfield Road)	

Source: Wisconsin Department of Transportation and SEWRPC.

Table 10

**EXISTING TRAFFIC SIGNAL OPERATION
AT THE INTERSECTION OF STH 175 WITH CTH Q
(COUNTY LINE ROAD WEST) IN THE VILLAGE
OF GERMANTOWN PLANNING AREA**

Phase	Intersection (time in seconds)	
	Eastbound/ Westbound	Southeastbound/ Northwestbound
Green.....	14.0 (minimum); 40.0 (maximum)	14.0 (minimum); 40.0 (maximum)
Yellow.....	4.5	4.5
Red.....	45.5	45.5
Total	64.0 (minimum); 90.0 (maximum)	64.0 (minimum); 90.0 (maximum)

Source: Wisconsin Department of Transportation and SEWRPC.

with streets and highways within the Village, and one grade-separated crossing with USH 41. Seven of the eight arterial street and highway crossings are protected by flashing signals. The two nonarterial street crossings, as well as one of the arterial street crossings, are protected only by crossbuck signs. Neither of the railway lines carries passenger train traffic.

School Crossing Protection

Map 10 identifies the elementary, junior high, and senior high schools in the Village of Germantown planning area and the school crossing protection provided on arterial streets. This protection includes speed limits and adult crossing guards.

Speed Limits

Map 11 identifies the current speed limits on Village of Germantown planning area streets and highways.

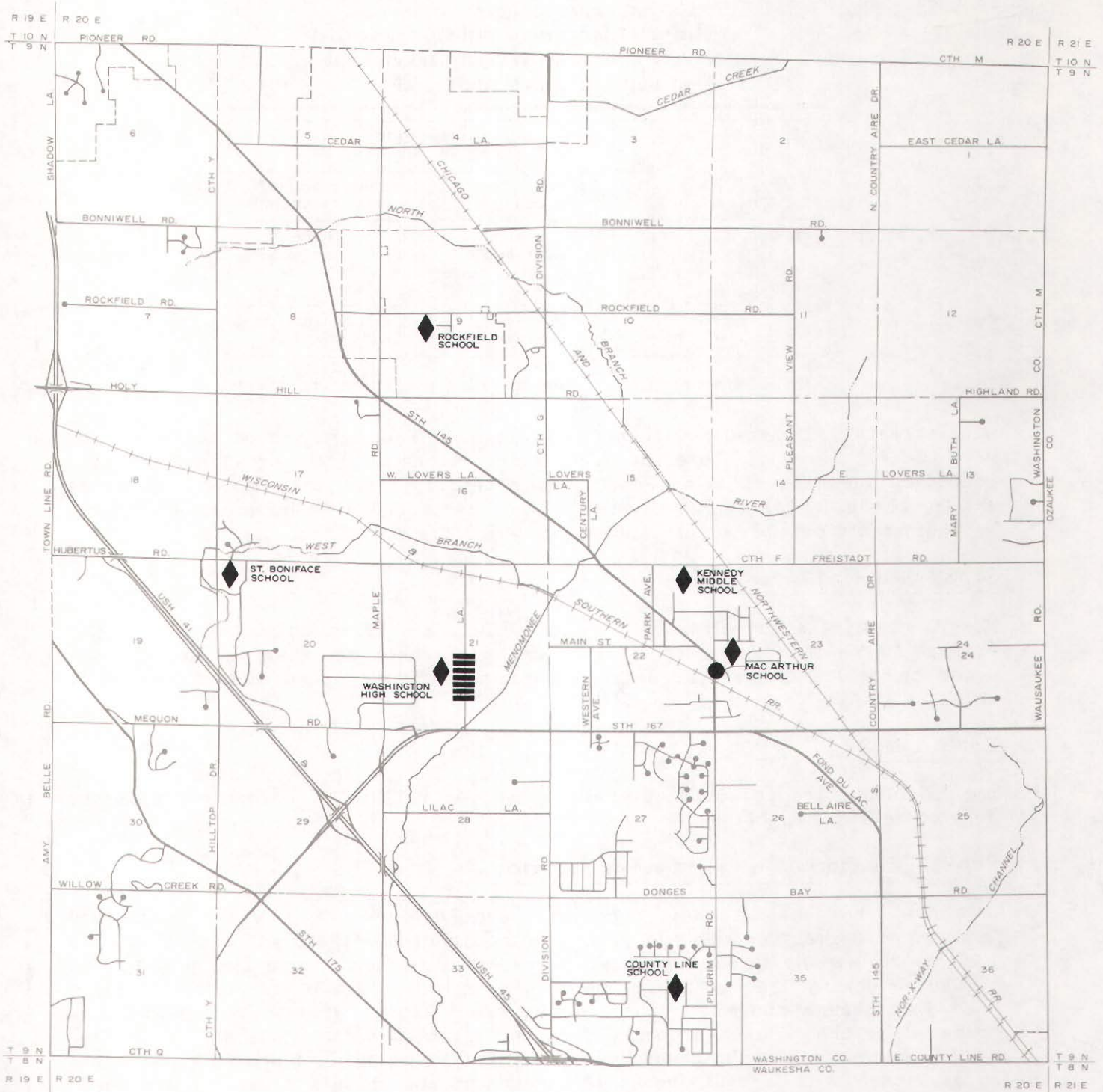
Public Transportation Facilities and Services

Currently, no public transit facilities and services are provided within the Village of Germantown. However, the southeastern one-third of the Village is located within the service area of a Freeway Flyer bus route operated by the Milwaukee County Transit System between a park-ride lot at the USH 41-Pilgrim Road interchange and the Milwaukee central business district. The route is operated by the Milwaukee County Transit System on a contract basis with Waukesha County, which subsidizes a portion of its operating expenses. Based upon surveys conducted in 1981, about 20 percent of the route's ridership are residents of the Village. The total ridership on the route during 1983 was about 64,100 revenue passengers.

The Village is also served by the specialized transportation program offered by the Washington County Office on Aging. The program provides door-to-door advance-reservation transportation service to elderly and handicapped county residents. This transportation service is provided within the Village of Germantown two days each week.

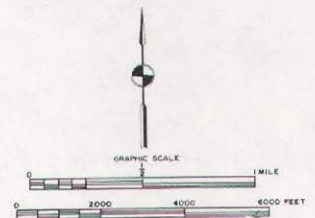
Map 10

**SCHOOLS AND ARTERIAL STREET SCHOOL CROSSING PROTECTION
IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984**



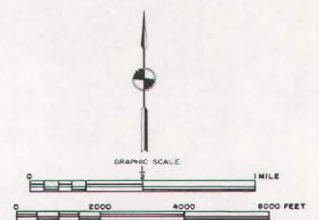
LEGEND

- ◆ SCHOOL
- ADULT CROSSING GUARD
- ▨ 15 MPH SPEED LIMIT WHEN CHILDREN ARE PRESENT



Source: SFWRPC.

**POSTED SPEED LIMITS ON VILLAGE OF GERMANTOWN
PLANNING AREA ARTERIAL STREETS AND HIGHWAYS: 1984**



SUMMARY

This chapter has presented information on the existing transportation system in the Village of Germantown planning area. Each segment of street and highway in the planning area has been classified according to function, jurisdictional responsibility, and federal aid eligibility. Also presented was cross-section and traffic control information for the arterial street element of the street system. A total of about 130 miles of streets and highways are located within the Village of Germantown planning area. A total of 69.1 miles, or 53 percent, are functionally classified as arterials, and 61.1 miles, or 47 percent, as collectors and land access streets. The arterial street element of the street and highway system serves principally to move traffic quickly and safely, while the collector and land access street element principally exists to provide direct access to homes, businesses, and industry. With respect to jurisdictional responsibility for the planning, design, construction, operation, and maintenance of streets and highways, the Village and Town of Germantown have jurisdictional responsibilities for 91.9 miles of local trunk highways, or 71 percent; Washington County has jurisdictional responsibility for 16.4 miles of arterial highways, or 13 percent of the arterial highways in the planning area; and the State of Wisconsin has jurisdictional responsibility for 21.9 miles of arterial highways, or 16 percent of the total arterial highway mileage in the planning area. Of the total street and highway system in the planning area, 67.3 miles, or 52 percent, are on the federal aid highway system.

No public transit facilities and services are presently provided in the Village of Germantown planning area. However, the southeastern one-third of the Village is located in the service area of a Freeway Flyer bus route operated by the Milwaukee County Transit System between a park-ride facility at the USH 41-Pilgrim Road interchange and the Milwaukee central business district.

Chapter IV

EXISTING AND FORECAST TRANSPORTATION SYSTEM USE

INTRODUCTION

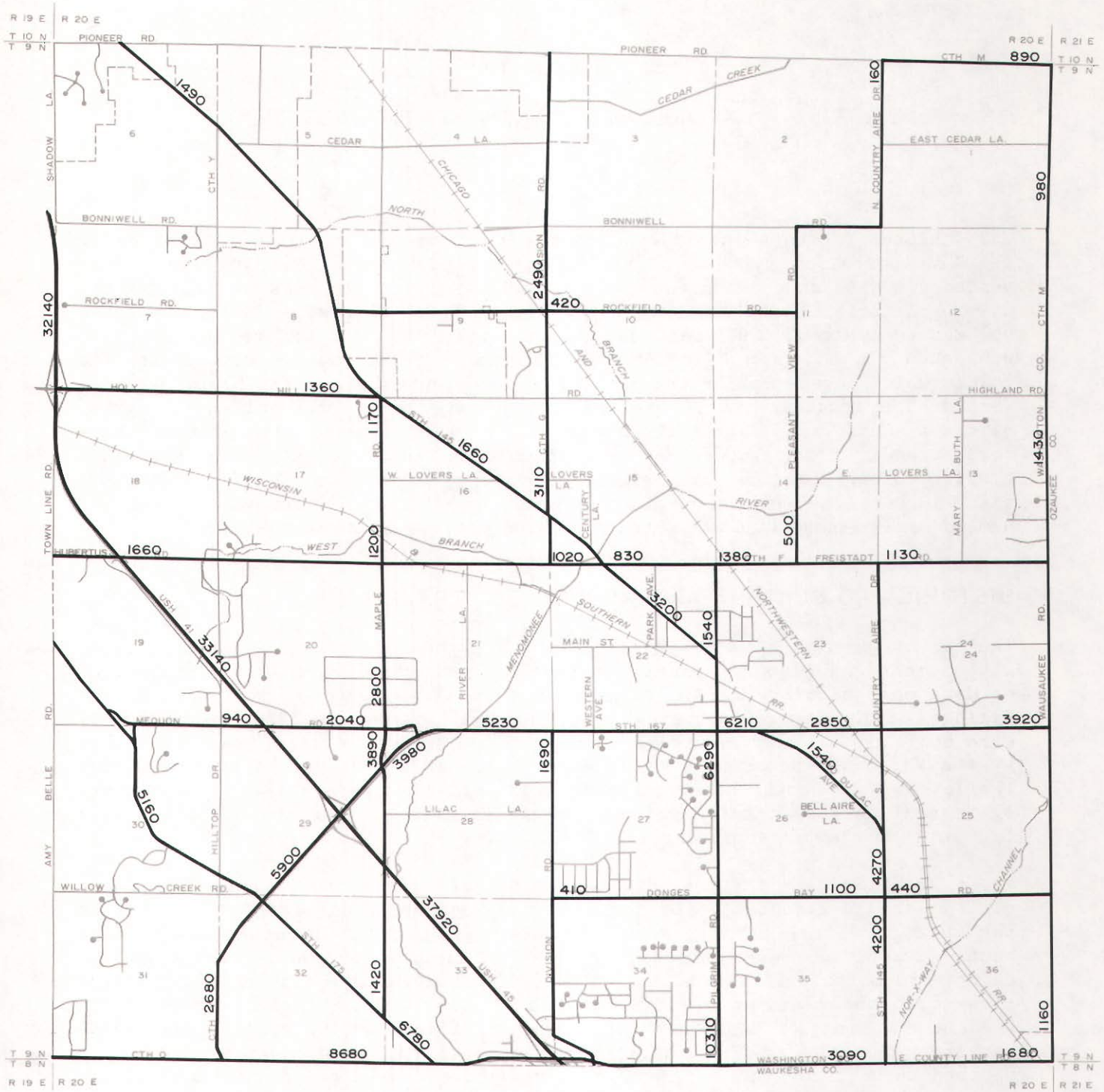
This chapter presents information on the existing and probable future use of the transportation system of the Village of Germantown planning area. Presented are data on the current average weekday traffic volumes on each segment of the arterial street and highway system. Data on the variation in those volumes by month of the year, day of the week, and hour of the day are also presented. In addition, data on the proportion of the average weekday traffic volume which occurs during the morning and evening peak traffic hours are presented. The greatest traffic demands are placed on the arterial street system of the planning area during these peak hours. This chapter also presents historic trends in average weekday traffic volumes, and forecast design year 2000 traffic volumes for the arterial street and highway system. The forecast traffic volumes are based upon the forecast population, employment, land use demand, and planned land use pattern for the Village of Germantown.

HISTORIC AND CURRENT ARTERIAL STREET TRAFFIC

The existing use of, and level of service on, the Village of Germantown arterial street and highway system can best be quantified through the collection of data on vehicular traffic volumes on that system. Accordingly, within the Village of Germantown 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 1965, the latest such counts being taken in 1983. Map 12 displays the 24-hour average annual weekday traffic volumes on the arterial street system of the Village of Germantown planning area in 1983.

These traffic volumes represent average annual weekday conditions. Such conditions are representative of traffic on a Tuesday, Wednesday, or Thursday in the spring or fall of the year. The Wisconsin Department of Transportation counts traffic volumes continuously at selected locations to determine hourly, daily, and monthly variations in volumes. The continuous count station located closest to the planning area is on Fond du Lac Avenue (STH 145) south of STH 74 in the Village of Menomonee Falls. This traffic counting station displays a pattern of variation in traffic flows typical of urban commuter routes in southeastern Wisconsin. Review of this variation can help explain the approximate monthly, daily, and hourly variation in weekday traffic on the Village of Germantown arterial street system. As shown in Figure 1, the traffic volumes at this location range from a high of 112 percent of the average annual weekday volume in August, to a low of 86 percent of the average annual weekday volume in January, with the months of March-May and October-November most closely approximating average annual weekday traffic volumes.

AVERAGE ANNUAL WEEKDAY TRAFFIC VOLUME ON THE ARTERIAL STREET
SYSTEM IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984



LEGEND

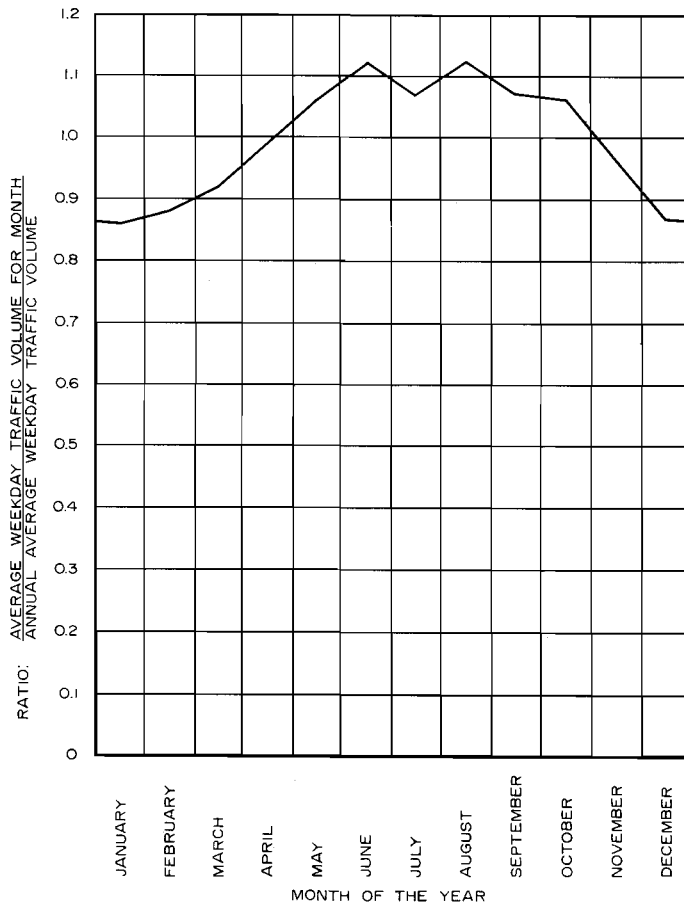
- ARTERIAL STREET
- 4200 AVERAGE WEEKDAY TRAFFIC VOLUME

*THREE, MORE CURRENT WEEKDAY TRAFFIC COUNTS WERE ALSO AVAILABLE FROM THE VILLAGE OF GERMANTOWN AND WISCONSIN DEPARTMENT OF TRANSPORTATION FOR JULY 1984: PILGRIM ROAD SOUTH OF MEQUON ROAD—7,100 VEHICLES; PILGRIM ROAD NORTH OF COUNTY LINE ROAD—11,000 VEHICLES; AND COUNTY LINE ROAD EAST OF STH 175—10,000 VEHICLES.

Source: Wisconsin Department of Transportation and SEWRPC.

Figure 1

**ESTIMATED AVERAGE MONTHLY VARIATION
IN WEEKDAY TRAFFIC VOLUMES
ON STH 145 SOUTH OF STH 74**

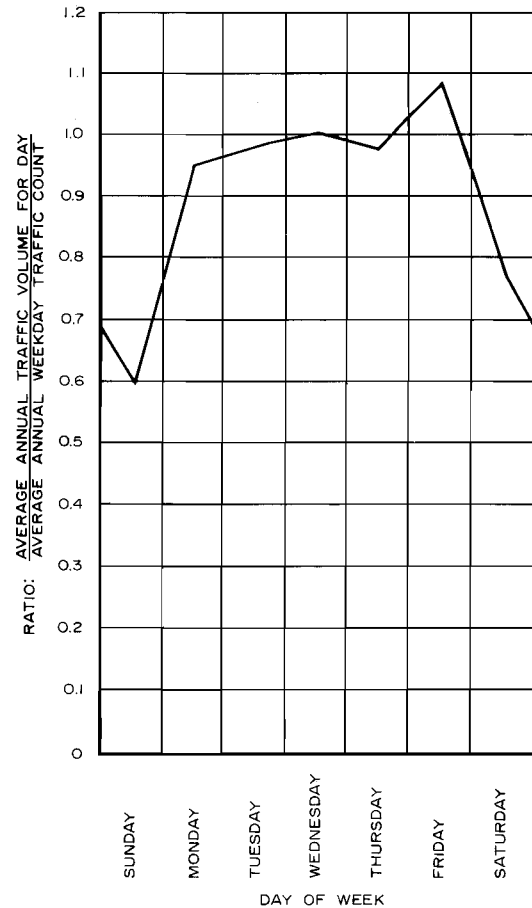


^a BASED UPON 1980 CONTINUOUS TRAFFIC COUNTS.

Source: Wisconsin Department of Transportation and SEWRPC.

Figure 2

**ESTIMATED AVERAGE DAILY VARIATION
IN TRAFFIC VOLUMES
ON STH 145 SOUTH OF STH 74**



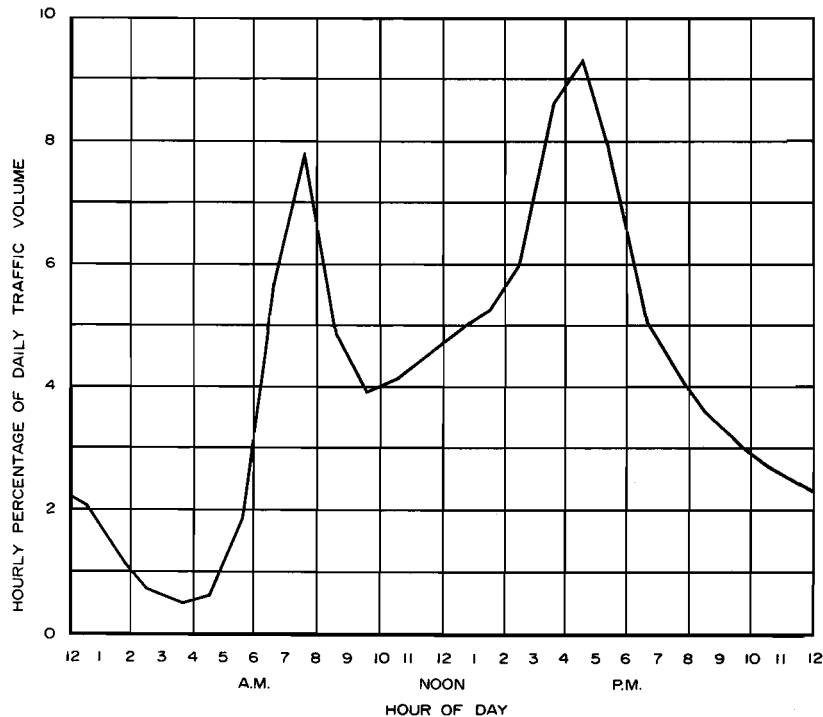
^a BASED UPON 1980 CONTINUOUS TRAFFIC COUNTS.

Source: Wisconsin Department of Transportation and SEWRPC.

The typical pattern of traffic volume over a week exhibits a gradual increase from Monday through Friday and, depending upon the type of travel route, either an increase on the weekend--as is typical of a route carrying recreational traffic--or a decrease--as is typical of a route carrying commuter traffic. As shown in Figure 2, the weekday traffic volume at this location ranges from about 5 percent less than the average weekday volume on Monday to about 8 percent greater than the average weekday volume on Friday. Saturday and Sunday traffic volumes at this location are approximately 21 to 40 percent below the average weekday traffic volume. The daily variation in vehicular travel may be attributed to increased tripmaking for social-recreational, personal business, and shopping purposes which typically occurs on Fridays, while the reduced weekend vehicular travel may be attributed to reduced work-oriented tripmaking.

Figure 3

ESTIMATED AVERAGE ANNUAL HOURLY
VARIATION IN TRAFFIC VOLUME
ON STH 145 SOUTH OF STH 74



^a BASED UPON 1980 CONTINUOUS TRAFFIC COUNTS.

Source: Wisconsin Department of Transportation and SEWRPC.

As shown in Figure 3, hourly traffic volumes are lowest during the late evening and early morning hours between 11:00 p.m. and 6:00 a.m., constituting from 1 to 2 percent of the average daily 24-hour volume. Traffic volumes then increase substantially with work and school travel to a morning peak of about 8 percent of the average daily traffic between 7:00 and 8:00 a.m. Traffic volume then declines to between 4 and 6 percent of the average daily traffic between 8:00 a.m. and 3:00 p.m. After 3:00 p.m., the greatest peaks in traffic are reached between the hours of 3:00 and 4:00 p.m. and 4:00 and 5:00 p.m. when, during each of these hours, over 8 percent of total daily traffic may be expected to occur. After 5:00 p.m. the volume of daily traffic may be expected to decline steadily to about 3 percent by 11:00 p.m., and then to between 1 and 2 percent until 6:00 a.m. This pattern of hourly traffic volume variation is typical of that of most arterial streets and highways in the Southeastern Wisconsin Region.

The percentage of total weekday traffic which occurs during the morning peak hour of 7:00 a.m. to 8:00 a.m. and evening peak hour of 4:00 p.m. to 5:00 p.m. on the arterial street system of the Village of Germantown planning area is shown on Maps 13 and 14, respectively. These hours represent the most demanding, regularly recurring conditions for traffic on village streets.

The historic trend in traffic volume between 1965 and 1983 in the Village of Germantown is shown in Table 11. The most substantial increase in traffic volume has occurred within the area surrounding and including the village industrial park. Over the past 20 years traffic volume in this part of the Village has increased a minimum of 10 percent each year. Within the south-central portion of the Village, the increase in traffic volume has also been substantial, averaging between 5 and 9 percent each year over the past two decades.

FORECAST TRAFFIC VOLUMES

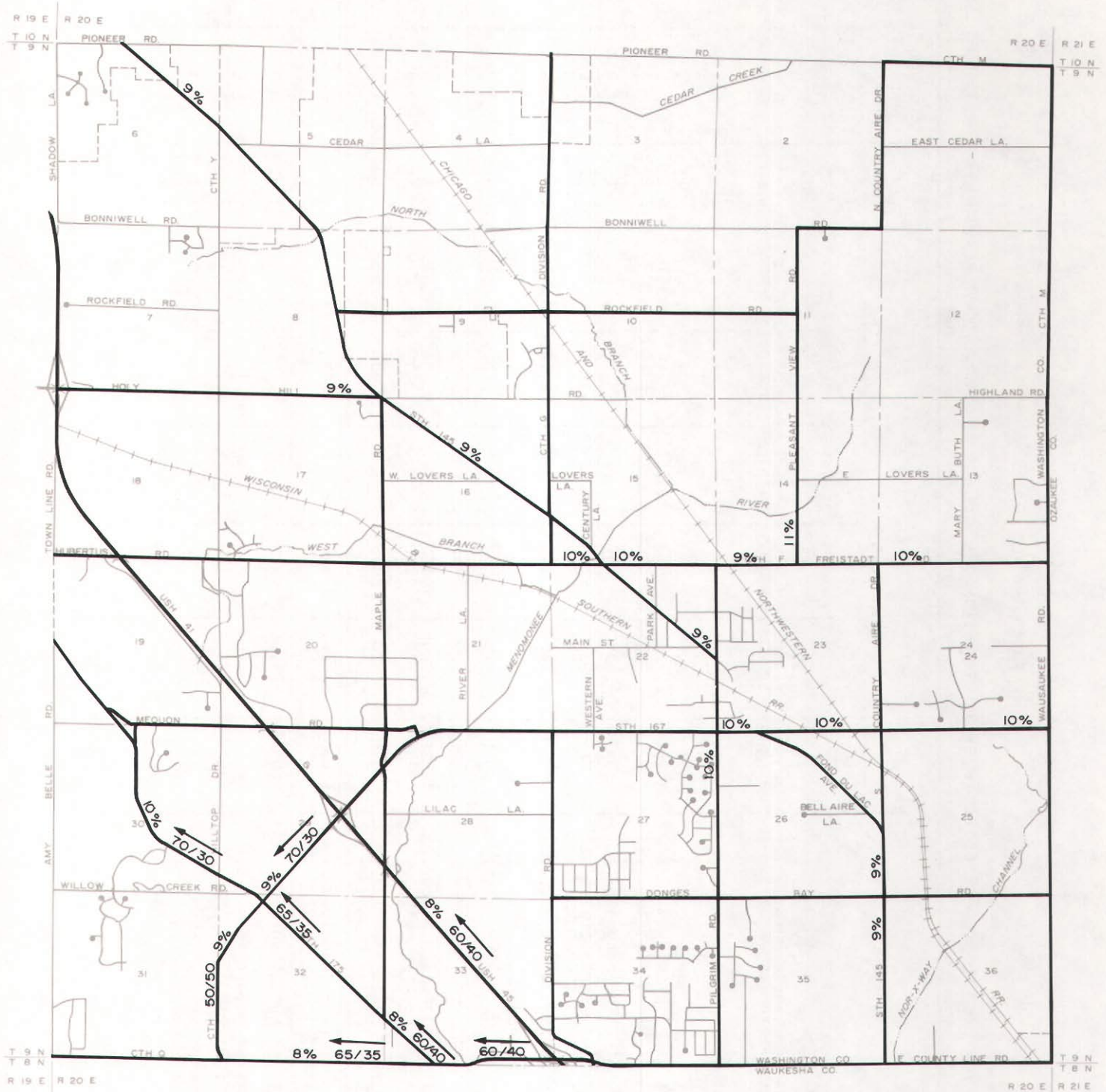
The probable year 2000 traffic volumes on the existing arterial street and highway system of the planning area are shown on Map 15. These volumes assume no improvements other than resurfacing or reconstruction and transportation systems management improvements to increase traffic capacity and safety at arterial intersections. These forecast volumes also assume that the extent and nature of future land use development in the Village will be in accordance with the adopted village land use plan, and, within the remainder of Washington County and the Southeastern Wisconsin Region, in accordance with the adopted regional land use plan. Map 16 shows the location of the proposed additional development in the Village of Germantown.

The forecast rate of traffic volume growth in the Village of Germantown is less than the actual rate experienced in the Village over the past 10 years. The arterial street traffic volume in the Village of Germantown is expected to nearly double by the year 2000, representing an average annual increase of only about 4 percent. Over the past 10 years, arterial street traffic volumes in the Village have nearly doubled, representing an annual rate of increase of about 5 to 9 percent. Slower future growth in traffic volume is expected in the Village over the next 20 years because factors which directly influence traffic generation in the Village--namely, the number of households and jobs in the Village--are expected to increase at slower rates over the next 20 years. The growth in traffic in the Village may be expected to be concentrated in the south-central portion of the village planning area because the additional development expected over the next 20 years is planned to be located primarily in this area.

SUMMARY

This chapter has quantified the existing use of the arterial street and highway system in the Village of Germantown. Current average annual weekday traffic volumes have been presented for each segment of the arterial system, and the monthly, daily, and hourly variations in those volumes have been presented. The estimated proportion of average weekday traffic which occurs during the morning and evening peak hours of traffic--7:00 to 8:00 a.m. and 4:00 to 5:00 p.m.--has also been presented, along with the proportion of traffic during those hours which travels in each direction on each arterial street. Generally, about 8 percent of the average weekday traffic volume occurs during the morning peak hour and about 10 percent during the evening peak hour. Also presented are data on the historic trends in traffic volumes on selected arterial streets in the Village of Germantown, and on forecast year 2000 traffic volumes. Arterial traffic in the Village has nearly doubled over the last 10 years, with an average annual increase of from 5 to 9 percent. Arterial traffic growth is expected to be less over the next 20 years,

ESTIMATED EVENING PEAK HOUR PROPORTION AND DIRECTIONAL SPLITS OF WEEKDAY TRAFFIC VOLUME ON VILLAGE OF GERMANTOWN ARTERIAL STREET SYSTEM: 1984



LEGEND

- ARTERIAL STREET AND HIGHWAY
- 10% PROPORTION OF TRAFFIC
- 60/40 DIRECTIONAL SPLIT
- PREDOMINANT FLOW

^aPEAK HOUR OCCURS BETWEEN 2:00 P.M.-3:00 P.M.

^bPEAK HOUR OCCURS BETWEEN 5:00 P.M.-6:00 P.M.

Source: SEWRPC.

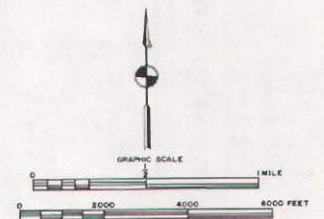


Table 11

HISTORICAL TRAFFIC VOLUME TREND ON SELECTED ARTERIAL STREETS IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1965 TO 1983

Arterial Street	Location	Average Weekday Traffic Volume							Average Annual Growth Rate 1965-1983	Average Annual Growth Rate 1974-1983
		1965	1968	1971	1974	1977	1980	1983		
County Line Road	West of Country Aire Drive.....	650	790	820	1,320	--	2,250	3,090	9.0	10.0
	West of Pilgrim Road.....	1,190	1,320	1,510	2,070	--	3,350	--	6.0 ^a	5.5 ^a
	West of STH 175.....	2,640	3,920	4,350	5,970	6,330	7,120	8,680	6.8	4.2
Donges Bay Road	West of Country Aire Drive (STH 145).....	380	440	--	410	610	930	1,100	6.1	11.6
W. Mequon Road	East of STH 145.....	1,150	1,640	1,660	1,750	--	2,640	2,850	5.1	5.6
	East of Pilgrim Road.....	1,900	2,480	2,430	3,150	3,560	3,870	6,210	6.8	7.8
	West of Division Road.....	550	810	--	--	4,080	4,090	5,230	13.3	--
Freistadt Road	West of Pilgrim Road.....	430	480	660	820	770	840	830	3.8	0.0
	West of STH 145.....	270	300	410	810	810	910	1,020	7.6	2.6
	West of Goldendale Road....	190	260	480	790	--	--	1,660	12.8	8.6
Holy Hill Road	West of STH 145.....	580	750	710	790	1,110	1,280	1,360	4.9	6.2
Pioneer Road	East of Country Aire Drive.....	420	490	590	610	--	730	890	4.2	4.3
Wausaukee Road	North of Freistadt Road....	390	600	630	850	--	1,350	--	7.1 ^a	5.3 ^a
Country Aire Drive	North of Donges Bay Road...	1,720	2,020	1,800	2,900	4,070	4,530	4,270	5.2	4.4
	South of Pioneer Road.....	170	230	220	230	240	270	--	2.6 ^a	0.0 ^a
Pleasant View Road	North of Freistadt Road....	270	320	410	450	450	530	500	3.5	1.8
Pilgrim Road	North of County Line Road.....	2,400	3,480	3,820	6,270	7,130	8,050	10,310	8.4	5.7
	South of Donges Bay Road.....	1,870	2,730	2,920	5,200	--	--	--	--	--
	South of Mequon Road.....	1,050	2,370	2,470	4,640	4,760	5,350	6,290	6.8	3.4
Division Road	South of Mequon Road.....	400	490	330	730	1,140	1,390	1,690	8.3	9.8
	North of STH 145.....	850	830	1,180	1,450	2,070	2,160	3,110	7.5	8.8
Maple Road	South of Mequon Road.....	220	390	370	1,860	2,860	3,160	3,890	17.3	8.5
	North of Mequon Road.....	240	390	--	--	--	2,800	2,800	14.6	--
	North of Freistadt Road....	200	350	390	830	--	880	1,200	10.5	4.2
STH 175	North of County Line Road.....	3,040	3,910	4,100	5,040	6,110	5,940	6,780	4.5	3.4
	West of Goldendale Road....	1,660	2,020	2,750	3,940	4,000	5,140	5,160	6.5	3.0

Table 11 (continued)

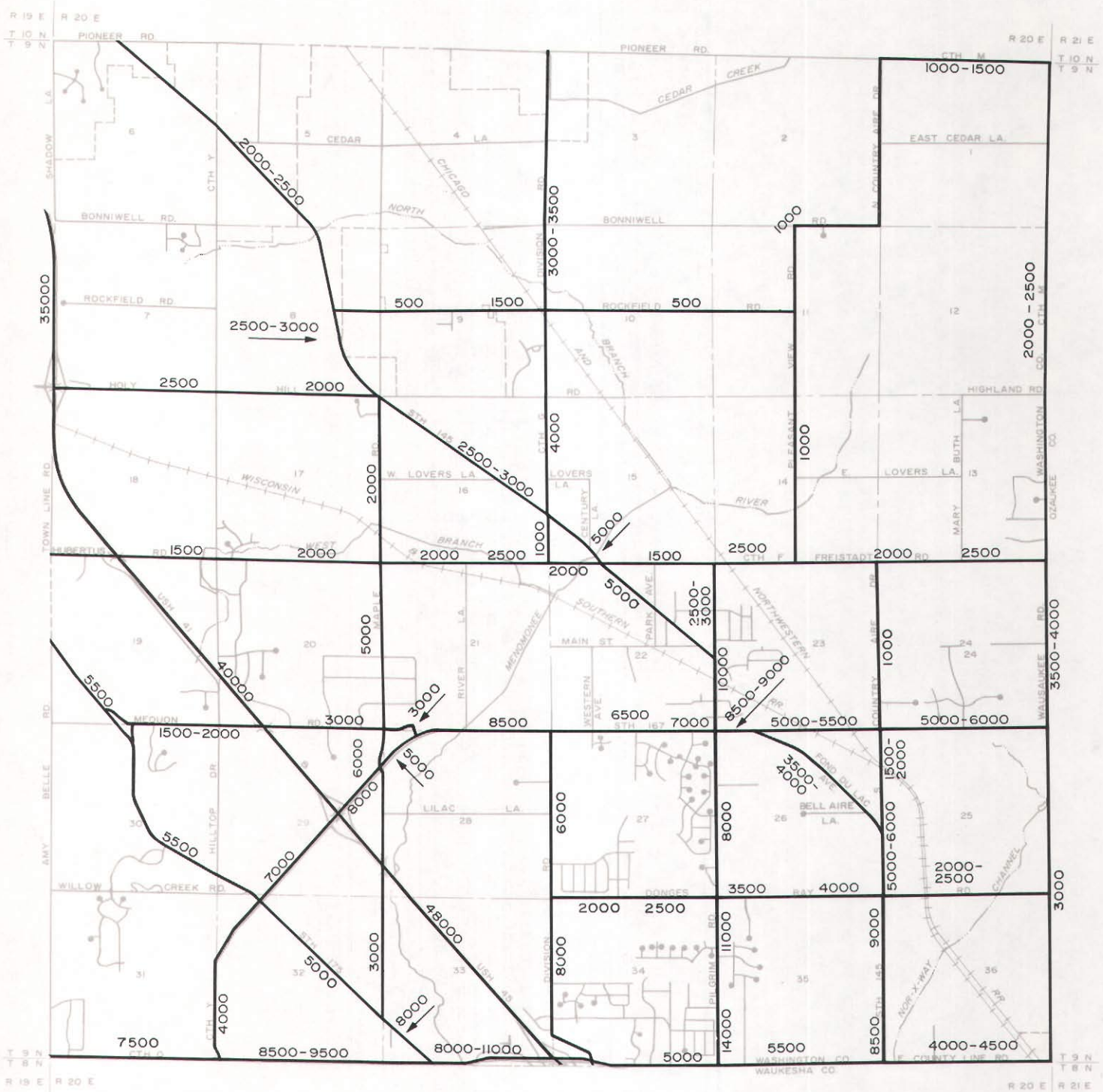
Arterial Street	Location	Average Weekday Traffic Volume							Average Annual Growth Rate 1965-1983	Average Annual Growth Rate 1974-1983
		1965	1968	1971	1974	1977	1980	1983		
USH 41/45	North of County Line Road.....	19,750	23,360	21,230	26,910	40,350	38,540	37,920	3.7	4.1
	North of Lannon Road.....	16,830	24,450	20,470	24,180	34,080	31,620	33,140	3.8	3.6
STH 145	South of Mequon Road.....	1,370	1,640	1,620	2,410	--	--	--	--	--
	South of Freistadt Road....	1,780	2,230	1,850	2,300	3,100	3,770	3,200	3.3	3.7
Lannon Road	South of STH 175.....	770	1,050	1,440	2,120	--	2,540	2,680	7.2	2.6
	North of STH 175.....	--b	--b	--	3,800	--	4,740	5,900	--	5.0
	West of Mequon Road.....	--b	--b	--	1,870	2,580	3,170	3,980	--	8.7

^aGrowth rate is calculated to the year 1980.

^bFacility was not yet constructed.

Source: SEWRPC.

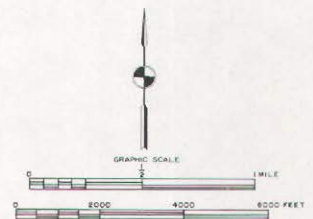
FORECAST AVERAGE WEEKDAY TRAFFIC VOLUMES ON THE
VILLAGE OF GERMANTOWN AREA ARTERIAL STREET SYSTEM: 2000



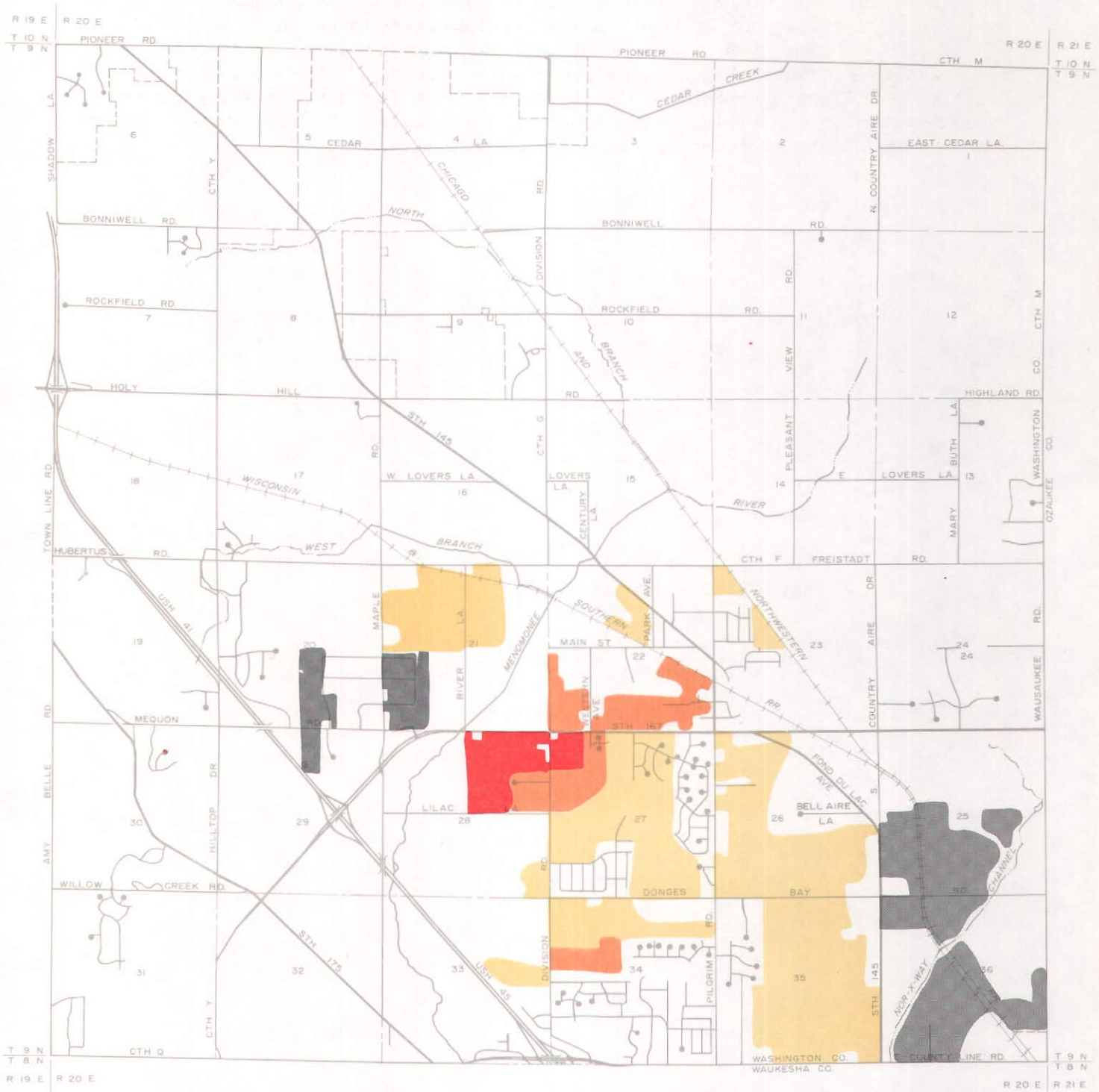
LEGEND

- ARTERIAL STREET AND HIGHWAY
4000 AVERAGE WEEKDAY TRAFFIC VOLUME

Source: SEWRPC.



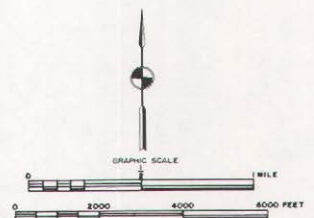
RECOMMENDED NEW LAND USE DEVELOPMENT UNDER THE ADOPTED
VILLAGE OF GERMANTOWN LAND USE PLAN: 1980 TO 2000



LEGEND

- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL

Source: SEWRPC.



increasing at an average annual rate of about 4 percent, nearly doubling by the year 2000. The future traffic growth is expected to be concentrated in the southern portion of the Village. These forecasts are based upon the forecast population and employment levels in the Village of Germantown and in the Southeastern Wisconsin Region, and the planned future land use pattern for the Village and Planning Region. The forecasts are for the existing arterial street system in the Village and assume no improvements to that street system over the next 15 years except resurfacing or reconstruction.

Chapter V

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--termed 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 Village of Germantown 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 Village of Germantown transportation system objectives and standards set forth herein and the previously adopted regional transportation system development 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 formally define the basic needs which transportation facilities and services should satisfy, such as personal mobility, economic efficiency, and environmental quality.

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.

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.

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 Village of Germantown 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 Village.
2. A transportation system which is economical and efficient, satisfying all other objectives at the lowest possible cost.
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.
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, as well as to the objective, and serves 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 12 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 village 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 Village and, therefore, that the objectives or standards 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 of the objectives and standards completely, and that 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 of the objectives and standards.

SUMMARY

This chapter has presented a set of transportation system development objectives, principles, and standards for the Village of Germantown developed by the Advisory Committee as a guide to the preparation and evaluation of alternative transportation system plans for the Village. 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 village 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 Village of Germantown transportation system plan is intended to meet, and the 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 Village of Germantown.

Table 12

VILLAGE OF GERMANTOWN 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 future development within the Village.

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 arterial 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.

Table 12 (continued)

STANDARDS

1. Arterial streets and highways should be provided at intervals of no more than one mile in each direction in urban medium-density areas; at intervals of no more than two miles in each direction in urban low-density and sub-urban 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 Village should be direct and understandable.
3. Rapid transit service connecting the Village to the Milwaukee central business district and to other major activity centers should be provided when sufficient ridership would exist to permit passenger fare revenues to equal or exceed at least 50 percent of service operating cost. Local transit service to provide access to and egress from the rapid transit service, and to connect village residents and activities, should, similarly, be provided when sufficient ridership exists to permit passenger fare revenues to equal or exceed 50 percent of total operating cost.
4. 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 provide 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 Village 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.

Table 12 (continued)

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.

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 Village's population to unacceptable noise levels.
8. The amount of energy utilized 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; and, as major features of the landscape, transportation facilities have a significant impact on the attractiveness of the total environment.

Table 12 (continued)

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:

Medium Density -	2.3 to 6.9 housing units per net residential acre (For example, an area which is single family on 65 x 100 feet to 100 x 200 feet lots)
Low Density -	0.7 to 2.2 housing units per net residential acre (For example, an area which is single family on lots of one-half to one-and-one-half acres)
Sub-urban Density -	0.2 to 0.6 housing units per net residential acre (For example, an area which is single family on lots of one-and-one-half to five-acres)

Source: SEWRPC.

Chapter VI

ALTERNATIVE AND RECOMMENDED PLANS

INTRODUCTION

This chapter presents the recommended transportation system plan for the Village of Germantown planning area and a summary of the analyses and evaluation of alternative transportation improvements attendant to that recommended plan. The first section of the chapter presents recommendations for the improvement and expansion of the arterial street and highway system in the Village of Germantown planning area. This section first identifies the existing and probable future transportation deficiencies of the village arterial street and highway system, then describes and evaluates alternative major improvements designed to resolve the identified deficiencies and meet the transportation system development objectives adopted for the Village. This first section concludes with the recommended arterial street widenings and new arterial facilities.

The next section of the chapter presents a recommended cross-section and right-of-way for each segment of arterial in the Village of Germantown planning area. Alternative urban and rural roadway cross-sections, including pavement widths and rights-of-way, are also described in this section.

The third section of this chapter identifies the level and unit of government which should be responsible for each segment of street and highway within the Village.

RECOMMENDED MAJOR TRANSPORTATION IMPROVEMENTS IN THE VILLAGE OF GERMANTOWN PLANNING AREA

This section of the chapter presents the major transportation improvements recommended for the Village of Germantown planning area. By definition, a major transportation improvement is either an arterial street widening which would provide for the addition of traffic lanes, or the construction of a new arterial facility.

Identification of Arterial Transportation Deficiencies

The need for major arterial improvements in the village 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 the transportation objectives and standards adopted for the village planning area. Three of the adopted standards are particularly useful in identifying the elements of the village arterial system which are deficient and, therefore, require major improvement. These standards require that a minimum spacing of arterials not be exceeded in the urban portion of the planning area; that urban arterial routings be direct; 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 in the Village. The three standards are listed below:

- Arterial streets and highways should be provided at intervals of no more than one mile in each direction in urban medium-density areas; and at intervals of no more than two miles in each direction in urban sub-urban-density areas.
- Arterial street routings should be direct and understandable in urban portions of the planning area.
- Arterial street traffic volumes should not be permitted to exceed arterial design capacity.

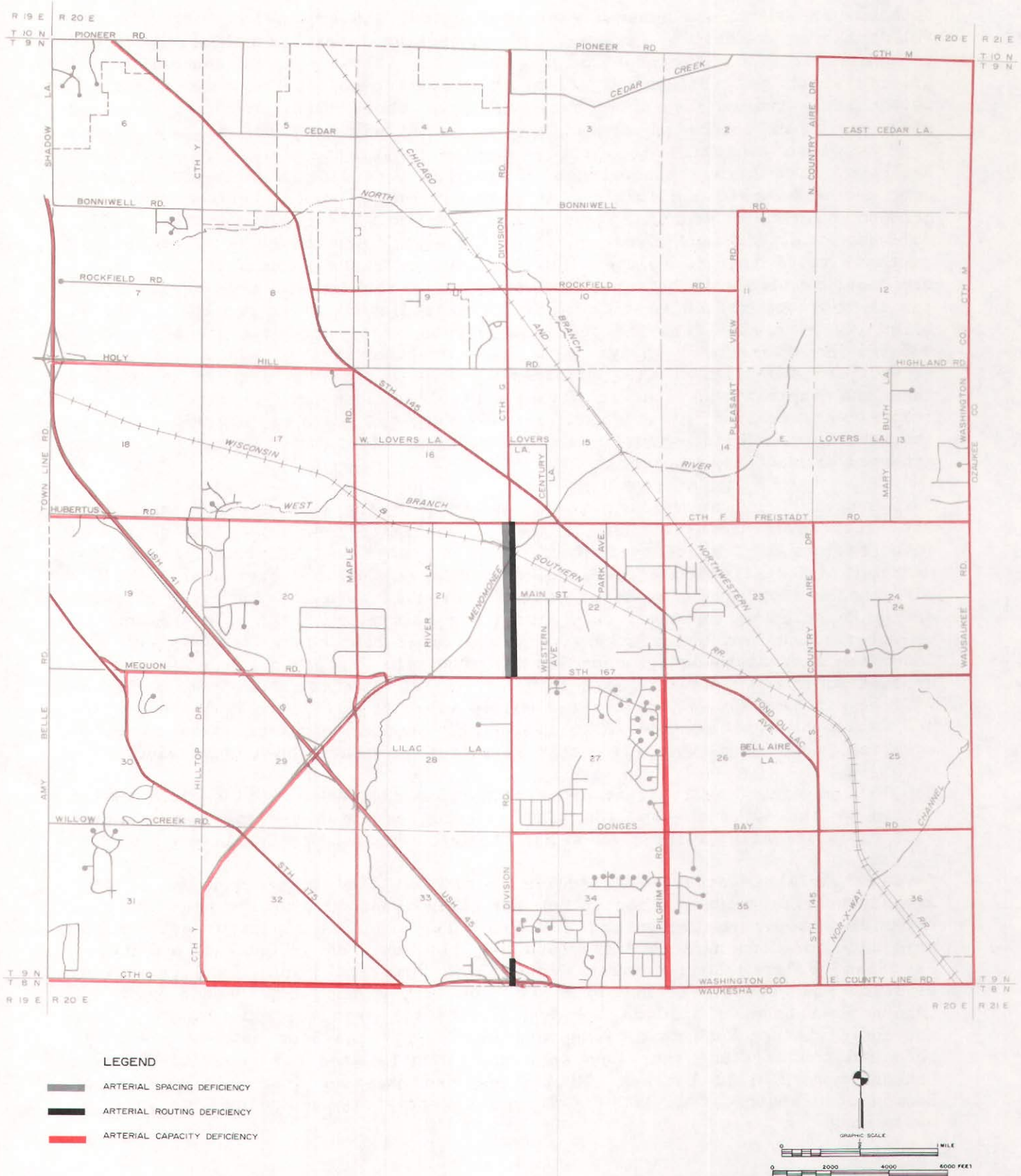
It is important to note that the standards requiring adequate spacing and direct routing of arterials are to be applied in the urban portions of the village planning area. Adequate spacing and convenient routing of arterials are essential to the support of urban development, and to the guidance of new urban development. The portion of the planning area which would currently be considered urban would generally be bordered by County Line Road to the south, Division Road to the west, Freistadt Road to the north, and Pilgrim Road to the east. Under planned future conditions, the portion of the planning area which could be considered urban would generally be bordered by County Line Road to the south, Maple Road to the west, Freistadt Road to the north, and Fond du Lac Avenue to the east.

Map 17 summarizes the existing arterial deficiencies as defined through application of the adopted standards. One arterial spacing deficiency was identified, located along the alignment of an extended Division Road between Mequon Road and Freistadt Road. Two arterial routing deficiencies were identified, both of which were located along Division Road. One routing deficiency was located along the alignment of an extended Division Road between Mequon Road and Freistadt Road, and the other was located along Division Road at its terminus with County Line Road. Two arterial capacity deficiencies were identified, one along Pilgrim Road between County Line Road and Donges Bay Road, and the other along County Line Road between STH 175 and Lannon Road (CTH Y).

The capacity deficiencies were identified by comparing the existing traffic volume on each arterial facility to its design capacity. Four basic types of arterial highways are currently provided in the Village of Germantown, as shown on Map 5 of Chapter III: two-lane arterial, four-lane undivided arterial, four-lane divided arterial, and six-lane freeway. The design capacities of these arterials per average weekday are considered to be 7,000 to 13,000 vehicles for two-lane arterials; 17,000 vehicles for four-lane undivided arterials; 22,000 to 25,000 vehicles for four-lane divided arterials; and 87,500 vehicles for a six-lane freeway. The improvement of an arterial should be considered when its traffic volume exceeds design capacity.

Nearly all segments of arterial in the village planning area are two-lane highways. The design capacity and warrant for improvement of a two-lane arterial is expressed as a range of 7,000 to 13,000 vehicles on an average weekday. The lower traffic volume warrant applies to rural highways. Rural highways typically have a cross-section which provides shoulders and roadside

EXISTING ARTERIAL SYSTEM DEFICIENCIES IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 1984



Source: SEWRPC.

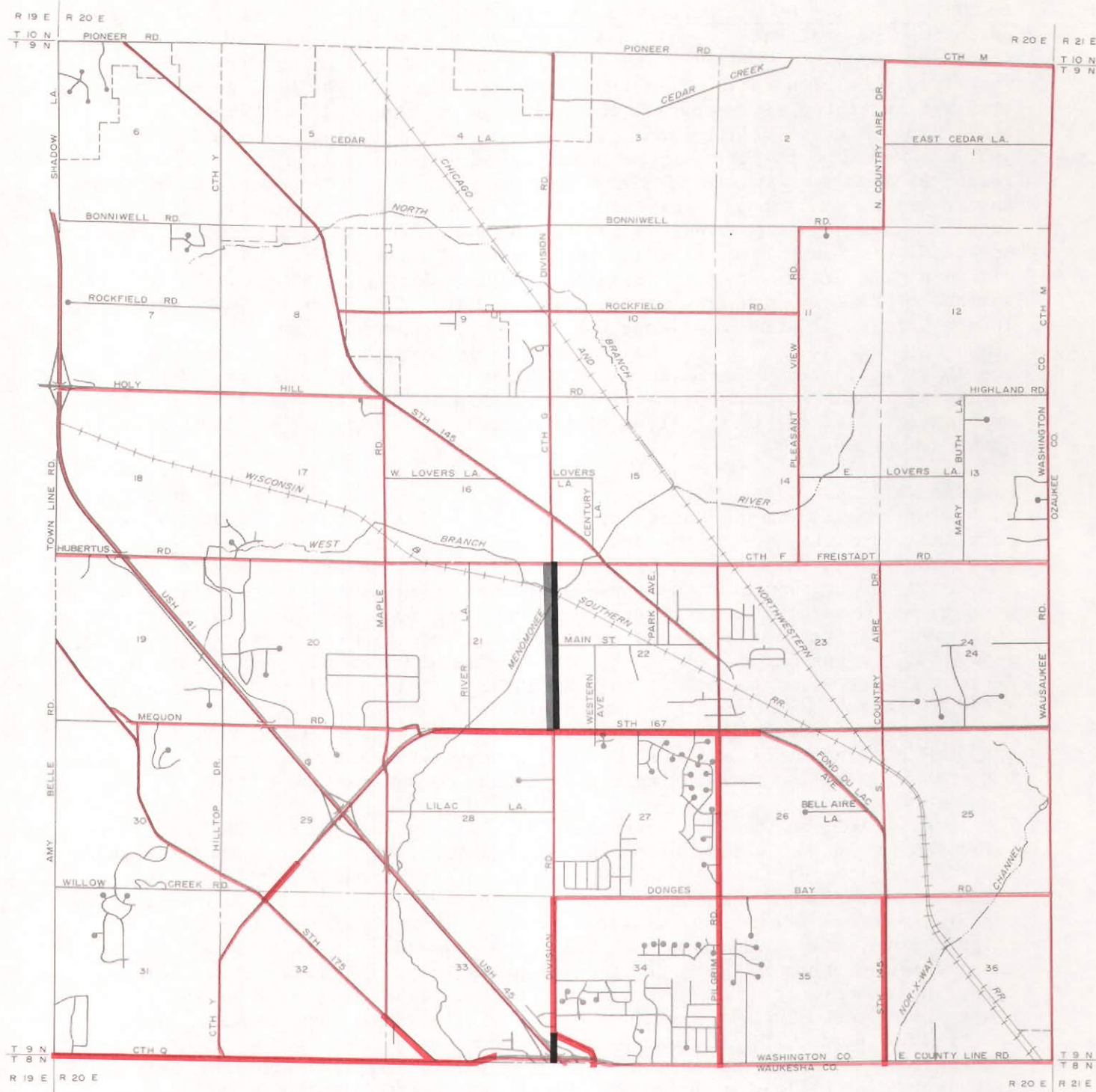
ditches. The shoulders generally are not paved, and may not accommodate the full width of a vehicle. No auxiliary or parking lanes are normally provided to permit traffic to bypass turning vehicles. This reduces the volume of traffic which can safely and efficiently be accommodated on rural highways, particularly two-lane rural highways in areas where turns are frequent, and where multiple points of access may be permitted along the highway. Rural highways also typically have a more peaked pattern of usage than do urban highways, with higher percentages of traffic occurring in the peak traffic hour and peak traffic direction. As a result, more peak traffic-period congestion results on rural highways at lower total average weekday traffic volumes. Rural highways also tend to have a higher percentage of truck traffic in their total traffic volume. The presence of trucks reduces highway design capacity, particularly on rural highways, as rural highways have higher speed limits than do urban highways, generally exceeding 35 miles per hour up to 55 miles per hour. Less traffic can generally be safely and efficiently accommodated on two-lane highways with higher speed limits. Also, the design capacity of stop sign-controlled arterial intersections is significantly less than the capacity of traffic signal-controlled arterial intersections, and stop sign-controlled intersections are more typical of rural arterial highway intersections, while signalized intersections are more typical of urban arterial highway intersections.

Most arterials in the Village of Germantown planning area are two-lane highways with rural cross-sections, higher speed limits, and stop sign-controlled intersections, which are typical of rural highways. In addition, those segments of arterial which either are located in an "urban" portion of the planning area now or may be expected to be located in such an area in the future can be expected to represent only short, one-half-mile to two-mile segments of an arterial highway which otherwise has a rural character. Consequently, the lower traffic volume design capacity of 7,000 vehicles per average weekday was applied to identify existing and future arterial capacity deficiencies in the village planning area. This traffic volume warrant of 7,000 vehicles per average weekday may be considered to represent a conservative estimate of deficiencies, and assures that all potential deficiencies have been identified.

Map 18 summarizes the forecast arterial deficiencies as defined through application of the adopted standards. The existing arterial spacing and arterial routing deficiencies identified on Map 17 would remain a problem in the future.

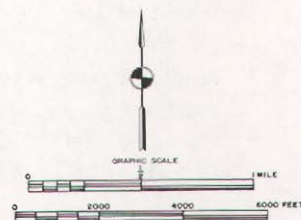
Seven arterial capacity deficiencies were identified based upon the average weekday traffic volumes forecast for the design year 2000 on the planning area arterial system, as presented in Chapter IV. Arterial capacity deficiencies were noted on Country Aire Drive (STH 145) between County Line Road and Donges Bay Road; Pilgrim Road between County Line Road and Mequon Road (STH 167); Division Road between County Line Road and Donges Bay Road; Mequon Road and Lannon Road between Fond du Lac Avenue (STH 145) and the existing four-lane section of Lannon Road east of Maple Road; County Line Road between Amy Belle Road and the existing four-lane section of County Line Road east of STH 175; Lannon Road (CTH Y) between STH 175 and the existing four-lane section of Lannon Road southwest of USH 41/45; and STH 175 between County Line Road and Maple Road.

FUTURE ARTERIAL SYSTEM DEFICIENCIES IN THE VILLAGE OF GERMANTOWN PLANNING AREA: 2000



LEGEND

- ARTERIAL SPACING DEFICIENCY
- ARTERIAL ROUTING DEFICIENCY
- ARTERIAL CAPACITY DEFICIENCY



Source: SEWRPC.

Arterial Deficiencies as Perceived by the Public: The definition of transportation deficiencies, particularly current transportation deficiencies, should be guided by the resident public's perceptions of such deficiencies. Therefore, the preparation of a transportation plan for the Village of Germantown was initiated with a public informational meeting held on October 2, 1984 at 7:30 p.m. in the Village Hall. The purpose of the meeting was to inform the public about the purpose and proposed scope of the study, and to solicit response thereto, with particular emphasis upon publicly perceived problems and potential solutions. More than 40 people attended the meeting, including local elected and appointed officials. Approximately 12 people made comments or asked questions. Three specific problem areas were identified by concerned citizens: the intersection of Pilgrim Road and County Line Road (CTH Q); the segment of Pilgrim Road from County Line Road (CTH Q) to Mequon Road; and the intersection of Fond du Lac Avenue (STH 145) and Donges Bay Road.

The intersection of Pilgrim Road and County Line Road (CTH Q) was identified as having congestion and safety problems. Suggested improvements to the intersection included the installation of traffic signals and changes in the intersection alignment.

Pilgrim Road from County Line Road (CTH Q) to Mequon Road was also identified as having congestion and safety problems, as well as problems associated with pedestrian crossing during the evening peak traffic period. Nuisance problems were also cited, including noise and speeding, particularly during late night and early morning hours. It was suggested that any improvement to Pilgrim Road be limited to adding an improved two-lane road with shoulders. It was also suggested that actions be taken to discourage additional traffic on Pilgrim Road and, if possible, reduce the existing traffic volumes on Pilgrim Road. Actions suggested to accomplish this included slowing traffic by lowering the speed limit and installing stop signs and traffic signals, prohibiting truck traffic and not permitting further commercial development along Pilgrim Road, and implementing other arterial street improvements which might attract traffic from Pilgrim Road such as improvements to Division Road.

The intersection of Fond du Lac Avenue (STH 145) and Donges Bay Road was identified as having two safety problems: inadequate sight distances, and the fact that trucks have difficulty turning at the intersection. A number of suggestions were made at the meeting to improve this intersection. It was suggested that emphasis be placed on the improvement of Fond du Lac Avenue (STH 145), Pilgrim Road, and Division Road. Specific suggestions were offered for the improvement of Division Road, including its extension through the entire Village, improvement of its access to the Fond du Lac Freeway (USH 41 and 45) at County Line Road (CTH Q), and the removal of its circuitous routing north of County Line Road (CTH Q). Another suggestion was to retain the right-of-way for the former Fond du Lac Avenue (STH 145) grade-separated crossing over the Milwaukee Road railway right-of-way in the Village so that an at-grade crossing could be provided in the future on Fond du Lac Avenue.

A suggestion was made that the transportation system be designed to better distribute existing traffic, as well as future traffic increases, over all arterials in the Village in order to minimize the concentration of adverse environmental impacts. However, concern was also expressed that any such distribution of traffic be clearly limited to arterial streets so that through traffic is not encouraged to use land access and collector streets. A

suggestion was also made that any road improvements be designed so as not to place any residence within the specified minimum setback from a roadway. Concern was raised about the pressures for additional road capacity created by additional urban development within the Village, and it was suggested that such additional development be limited to that which could be accommodated without further improvement of the arterial system. Concerns were expressed that the design and construction of village road improvements be such as to maintain the rural character of the Village, including use of rural as opposed to urban cross-sections, and limiting street lighting to major arterial street intersections. A related suggestion concerned the need for landscaping along arterial streets in the Village, and for right-of-way for road improvements to accommodate such landscaping. Another suggestion concerned the elimination of all overhead electric power and communication cables along arterials. The final area of concern expressed at the public meeting related to the financing of arterial street improvements, with a suggestion that new development in the Village be required to pay for such improvements.

Conclusion: Based upon the application of adopted transportation objectives and standards, and the review of public comment concerning village transportation problems and potential solutions, the following existing and future transportation deficiencies were identified:

Existing Deficiencies

- Inadequate arterial spacing.
 1. Division Road extended between Mequon Road and Freistadt Road.
- Indirect arterial routing.
 1. Division Road extended between Mequon Road (STH 167) and Freistadt Road.
 2. Division Road at its terminus with County Line Road (CTH Q).
- Inadequate arterial capacity.
 1. Pilgrim Road between County Line Road (CTH Q) and Donges Bay Road.
 2. County Line Road (CTH Q) between STH 175 and Lannon Road (CTH Y).

Probable Future Deficiencies

- Inadequate arterial spacing.
 1. Division Road extended between Mequon road and Freistadt Road.
- Indirect arterial routing.
 1. Division Road extended between Mequon Road and Freistadt Road.
 2. Division Road at its terminus with County Line Road.
- Inadequate arterial capacity.
 1. Fond du Lac Avenue (STH 145) between County Line Road and Donges Bay Road.
 2. Pilgrim Road between County Line Road and Mequon Road (STH 167).
 3. Division Road between County Line Road and Donges Bay Road.

4. Mequon Road (STH 167) between Fond du Lac Avenue (STH 145) and the existing four-lane section of Lannon Road east of Maple Road.
5. County Line Road between Amy Belle Road and the existing four-lane section of County Line Road east of STH 175.
6. Lannon Road (CTH Y) between STH 175 and the existing four-lane section of Lannon Road southwest of USH 41/45.
7. STH 175 between County Line Road and Maple Road.

In addition, village staff and the study advisory committee asked that resolution of a potential inadequate capacity problem on County Line Road between Fond du Lac Avenue (STH 145) and the existing four-lane divided section of County Line Road east of USH 41/45 be considered. Also, a potential sight distance problem at the intersection of Fond du Lac Avenue (STH 145) and Donges Bay Road was identified by a citizen at the public meeting.

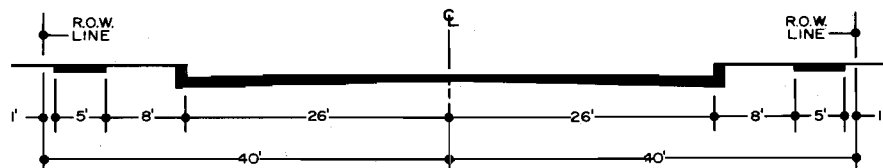
DESIGN AND EVALUATION OF ALTERNATIVE IMPROVEMENTS TO RESOLVE EXISTING AND FUTURE DEFICIENCIES

This section of this chapter presents an evaluation of alternative roadway improvements to address each identified existing and probable future roadway deficiency within the Village of Germantown. The proposed roadway improvements would convert existing roadway cross-sections to one of two types. In most cases, the existing roadway cross-section is a rural undivided roadway with two traffic lanes, partial-width shoulders, and open ditches bordering the roadway and shoulder. The proposed improvements would usually entail conversion to an undivided urban roadway, as shown in Figure 4, with two traffic lanes and two auxiliary/turning lanes, and with curb and gutter and storm sewer. Such improvements to an urban cross-section were proposed to eliminate deficiencies in the existing capacity of roadways located in the southeastern portion of the Village which are either in urban use or proposed for urban use. This proposed urban cross-section improvement could range in pavement width from the 52 feet shown in Figure 4 to 44 feet to achieve the increase in roadway capacity necessary to provide for efficient and safe traffic movement. A narrower width could be appropriate along roadways with adjacent urban development to minimize the impacts of the roadway improvement. The wider width may be necessary along roadways with higher traffic volumes which begin to approach the design capacity of the cross-section. In areas of the Village proposed to remain in rural use, the improvements would entail conversion to a rural roadway, as shown in Figure 5, with four traffic lanes, a median, shoulders, and open ditches. The divided facility is desirable in the rural areas where operating speeds are higher and safety considerations favor use of a median. The proposed cross-sections were reviewed by the Wisconsin Department of Transportation and the Village of Germantown Department of Public Works. Current standard cross-sections of the Village of Germantown Department of Public Works for all street types are shown in Appendix A.

At public meetings held throughout the course of the study, citizens suggested that the upgrading of the existing rural roadways to higher standard rural roadways be considered to resolve the deficiencies on rural roadways in areas of existing or proposed urban development, as well as conversion to urban roadway cross-sections, Figure 6 depicts such a higher standard rural roadway.

Figure 4

**PROPOSED CROSS-SECTION FOR UNDIVIDED URBAN ROADWAY
WITH TWO TRAFFIC LANES AND TWO AUXILIARY/TURNING LANES^a**



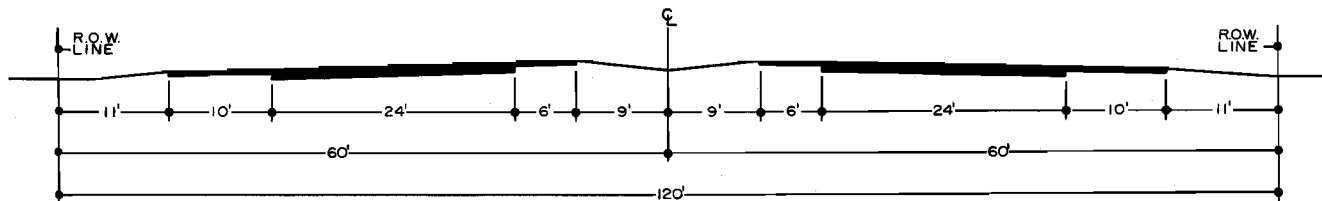
ESTIMATED CONSTRUCTION COST = \$1,205,000 per mile
(WITH PORTLAND CEMENT CONCRETE PAVEMENT)

DESIGN CAPACITY:
TWO TRAFFIC LANES AND TWO AUXILIARY LANES: 13,000 vehicles per day
PARKING PROHIBITED ON AUXILIARY LANES: 17,000 vehicles per day

^aTHE PROPOSED CROSS-SECTION COULD RANGE IN PAVEMENT WIDTH FROM THE 52 FEET SHOWN TO 44 FEET TO ACHIEVE THE INCREASE IN ROADWAY CAPACITY NECESSARY TO PROVIDE FOR EFFICIENT AND SAFE TRAFFIC MOVEMENT. THE NARROWER WIDTH COULD BE MORE APPROPRIATE ALONG ROADWAYS WITH ADJACENT URBAN DEVELOPMENT TO MINIMIZE THE IMPACTS OF THE ROADWAY IMPROVEMENT. THE WIDER ROADWAY WIDTH MAY BE NECESSARY ALONG ROADWAYS WITH HIGHER TRAFFIC VOLUMES WHICH BEGIN TO APPROACH THE DESIGN CAPACITY OF THE CROSS-SECTION.

Figure 5

PROPOSED CROSS-SECTION FOR DIVIDED RURAL ROADWAY WITH FOUR TRAFFIC LANES

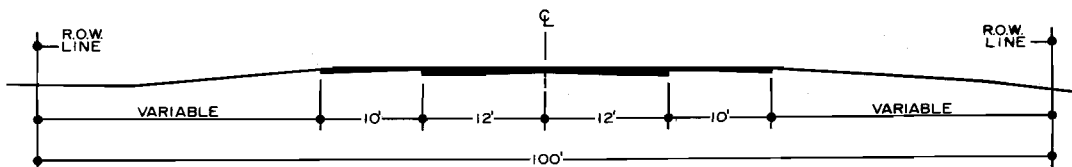


ESTIMATED CONSTRUCTION COST = \$972,000 per mile
(WITH PORTLAND CEMENT CONCRETE PAVEMENT)

DESIGN CAPACITY: 23,000 vehicles per day

Figure 6

POTENTIAL CROSS-SECTION FOR TWO-LANE UNDIVIDED RURAL ROADWAY



24-FOOT-WIDE BITUMINOUS
CONCRETE PAVEMENT

ESTIMATED CONSTRUCTION COST = \$375,000 per mile
DESIGN CAPACITY: 7,000 vehicles per day

Source: SEWRPC.

This roadway has some of the same disadvantages as the undivided urban roadway being considered. The pavement and shoulder width for the higher standard rural roadway is approximately 44 feet, in comparison to 44 to 52 feet for the urban roadway considered. The right-of-way required for the higher standard rural roadway of 100 feet is wider than the 80-foot-wide right-of-way required for the comparable urban roadway. The higher standard rural roadway, however, does not provide some of the advantages of the urban roadway. Most importantly, it does not provide the additional traffic-carrying capacity essential to resolve the identified existing and future capacity deficiencies and attendant congestion and safety problems. Also, while the shoulders of the rural roadway do provide auxiliary lanes for the use of vehicles in distress, they do not provide a suitable parking lane, bicycle lane, or turn lanes. In addition, the rural section, with its open ditches, would require culverts to permit access to abutting property which, as the Village fully develops to urban densities, would present continuing maintenance problems. The construction cost of the higher standard rural roadway, however, is estimated to be \$375,000 per mile, substantially less than the \$1,200,000-per-mile cost of an urban roadway. The additional cost for the urban section is for the provision of storm sewers to convey stormwater underground, the paving of the auxiliary lanes, the provision of sidewalks, and the use of concrete rather than asphalt pavement. Because the higher standard two-lane rural roadway would share some of the disadvantages of the improved urban roadway with the exception of cost, and yet would not provide some of the advantages, the construction of higher standard rural roadways in urban portions of the Village was not further considered.

Tables 13 through 21 provide an evaluation of the improvement of each identified segment of deficient roadway in the Village of Germantown. The proposed roadway improvement is compared to the alternative of maintaining the existing roadway's pavement and right-of-way width, construction costs, potential disruption, traffic impacts, and other impacts. The roadway segments include:

- County Line Road (CTH Q) from the Village of Germantown west corporate limits to the existing four-lane divided section west of USH 41/45.

Alternatives (see Table 13)

1. Maintain existing two-lane rural section and two-traffic-lane/two-auxiliary-lane urban sections.
2. Improve to four-lane divided rural section and two-traffic-lane/two-auxiliary-lane urban sections.

- County Line Road from the four-lane divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).

Alternatives (see Table 14)

1. Maintain existing two-lane rural section.
2. Improve to two-traffic-lane/two-auxiliary lane urban section.

- Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.

Alternatives (see Table 15)

1. Maintain existing two-lane rural section.
2. Improve to two-traffic-lane/two-auxiliary-lane urban section.

- Lannon Road from STH 175 to the existing four-lane divided section west of USH 41/45.

Alternatives (see Table 16)

1. Maintain existing two-lane rural section.
2. Improve to four-traffic-lane, divided rural section.

- STH 175 from County Line Road (CTH Q) to Maple Road.

Alternatives (see Table 17)

1. Maintain existing two-lane rural section.
2. Improve to two-traffic-lane/two-auxiliary-lane urban section.

- Fond du Lac Avenue (STH 145) from County Line Road to Donges Bay Road.

Alternatives (see Table 18)

1. Maintain existing two-lane rural section.
2. Improve to two-traffic-lane/two-auxiliary-lane urban section.

- Pilgrim Road from County Line Road to Mequon Road (STH 167).

Alternatives (see Table 19)

1. Maintain existing two-lane rural section.
2. Improve to two-traffic-lane/two-auxiliary lane urban section.

- The Division Road connection to County Line Road from 200 feet south of Wendy Lane to County Line Road.

Alternatives (see Table 20 and Figures 7 through 12)

1. Maintain existing two-lane rural connection.
2. Improve connection to urban roadway with two traffic lanes/two auxiliary lanes.
3. Improve to urban section and connect directly to USH 41/45 northwest-bound off-ramp and more directly to County Line Road.
4. Improve to urban section and connect directly to County Line Road and more directly to USH 41/45.
5. Improve to urban section and connect directly to County Line Road and USH 41/45 southeastbound on-ramp.

- Division Road from its connection to County Line Road (at Wendy Lane) to Fond du Lac Avenue (STH 145).

Alternatives (see Table 21 and Maps 19 through 22)

1. Maintain existing two-lane rural sections with discontinuous Division Road.
2. Improve to two-traffic-lane/two-auxiliary-lane urban section.
3. Improve to two-traffic-lane/two-auxiliary-lane urban section with new connecting roadways between Division Road and River Lane.
4. Improve to two-traffic-lane/two-auxiliary-lane urban section and extend Division Road between Mequon Road and Freistadt Road.

Table 13

**EVALUATION OF IMPROVEMENT OF COUNTY LINE ROAD (CTH Q) FROM WEST
VILLAGE LIMITS TO EXISTING FOUR-LANE DIVIDED SECTION WEST OF USH 41/45**

	Alternatives	
	Maintain Existing Pavement	Improve to Four-Lane Divided Rural Roadway From West Limits to Existing Four-Lane Urban Roadway and Continue Urban Roadway Section to Existing Divided Roadway Section
Pavement Width and Right-of-Way	<u>West limits to 600 feet west of STH 175</u> 24-foot-wide pavement (44-foot-wide pavement and shoulders) and 100-foot-wide right-of-way <u>600 feet west of STH 175 to 500 feet east of STH 175</u> 200-foot-wide taper to 52-foot-wide pavement with curb and gutter; 83-foot-wide right-of-way <u>500 feet east of STH 175 to existing four-lane divided section</u> 100-foot-wide taper to 24-foot-wide pavement (44-foot-wide pavement and shoulders) and 100-foot-wide right-of-way followed by taper to divided section	<u>West limits to 600 feet west of STH 175</u> Twin 24-foot-wide pavement (10-foot-wide outside shoulders with 30-foot-wide median and 120-foot right-of-way) with taper to urban section <u>600 feet west of STH 175 to 500 feet east of STH 175</u> Maintain existing section <u>500 feet east of STH 175 to existing four-lane divided section</u> 52-foot-wide pavement with curb and gutter and 80-foot-wide right-of-way followed by taper to divided section
Construction Costs	\$210,000 for resurfacing	\$2,536,000
Disruption	None	<u>West limits to 600 feet west of STH 175</u> <u>Pavement edge</u> (current distance to buildings is generally 60-100 feet) 27 feet closer each side <u>Additional right-of-way</u> 10 feet each side <u>600 feet west of STH 175 to 500 feet east of STH 175</u> No disruption <u>500 feet east of STH 175 to existing four-lane divided section</u> <u>Pavement edge</u> 4 feet closer each side <u>Additional right-of-way</u> None

Table 13 (continued)

	Alternatives	
	Maintain Existing Pavement	Improve to Four-Lane Divided Rural Roadway From West Limits to Existing Four-Lane Urban Roadway and Continue Urban Roadway Section to Existing Divided Roadway Section
Traffic Impacts	Existing roadway capacity of 7,000 average weekday traffic (awdt) is inadequate for existing 7,000 to 10,000 awdt and forecast 8,000 to 11,000 awdt Delay and congestion will result at Lannon Road as four-way stops and traffic signals are ultimately installed Delay and accidents will increase as through traffic is delayed for left- and right-turning vehicles at cross streets	Planned roadway capacity of 17,000 awdt is sufficient for safe and efficient movement of existing 7,000 to 10,000 awdt and forecast 8,000 to 11,000 awdt No congestion at arterial intersections No delay for through traffic as a result of right- and left-turning vehicles at cross streets or access points, as turn lanes are provided
Other Impacts	Costs may need to be borne solely by counties and municipalities ^a	All costs may be paid by counties and federal Department of Transportation

^aLocal governments, however, generally would be expected to pay for new sidewalks, new lighting, and utilities, including sanitary sewer and water supply.

Source: SEWRPC.

Table 14

**EVALUATION OF IMPROVEMENT OF COUNTY LINE ROAD FROM EXISTING
FOUR-LANE DIVIDED SECTION EAST OF USH 41/45 TO FOND DU LAC AVENUE**

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section with Two Lanes and Two Auxiliary/Turning Lanes
Pavement Width and Right-of-Way	20- to 24-foot-wide pavement (24- to 30-foot-wide pavement and shoulders) and 66- to 100-foot-wide right-of-way	52-foot-wide pavement with curb, gutter, and storm sewers; 80-foot-wide right-of-way
Construction Costs	\$97,000 for resurfacing	\$2,098,000
Disruption	None	<u>Pavement edge</u> (current distance to buildings is generally 80 to 100 feet, with a few 40-foot-wide distances) 11 to 14 feet closer each side <u>Additional right-of-way</u> 7 feet each side from Fond du Lac Avenue to Colonial Drive
Traffic Impacts	Existing roadway capacity of 7,000 average weekday traffic (awdt) may be marginally inadequate for forecast 5,000 to 7,000 awdt Some delay and congestion may result at intersections of Division Road, Pilgrim Road, and Fond du Lac Avenue as increasing traffic requires four-way stops and, ultimately, traffic signals at Division Road and Fond du Lac Avenue Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at cross streets and access points	Planned roadway capacity of 13,000 to 17,000 awdt will be sufficient for safe and efficient movement of forecast 5,000 to 7,000 awdt No congestion at arterial intersections No delay for through traffic as a result of left- or right-turning traffic at cross streets or access points Provide space for vehicles in distress, bicycles, and sidewalks
Other Impacts	Seventy-five percent of costs may be paid by federal Department of Transportation if improved to 22-foot-wide pavement with six-foot shoulders; otherwise, costs may have to be borne solely by local units of government	Seventy-five percent of costs may be paid by federal Department of Transportation

Source: SEWRPC.

Table 15

**EVALUATION OF IMPROVEMENT OF MEQUON ROAD (STH 167) FROM THE
FOUR-LANE DIVIDED SECTION OF LANNON ROAD EAST OF MAPLE ROAD**

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section With Two Traffic Lanes and Two Auxiliary/Turning Lanes
Pavement Width and Right-of-Way	22-foot-wide pavement (42-foot-wide pavement and shoulders) and 66- to 130-foot-wide right-of-way	52-foot-wide pavement with curb, gutter, and storm sewers; 80-foot-wide right-of-way
Construction Costs	\$156,000 for resurfacing	\$2,846,000
Disruption	None	<u>Pavement edge</u> (current distance to buildings is generally 60 feet) 5 feet closer each side <u>Additional right-of-way</u> 7 feet each side between Pilgrim Road and Fond du Lac Avenue 7 feet each side between Division Road and one-quarter mile west of Division Road <u>Property taking</u> 1 retail property because of widening of Mequon Road and straightening of intersection of Mequon Road and Fond du Lac Avenue
Traffic Impacts	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is inadequate for safe and uncongested movement of existing 5,200 to 6,200 awdt and projected 6,500 to 9,000 awdt Delay and congestion will result at Division Road and Fond du Lac Avenue as increasing traffic requires four-way stops and, ultimately, traffic signals at Division Road and Pilgrim Road Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross streets and access points	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of existing 5,200 to 6,200 awdt and projected 6,500 to 9,000 awdt No congestion at arterial intersections No delay for through traffic as a result of right- and left-turning vehicles at cross streets or access points, as turn lanes are provided Provide space for bicycles and sidewalks
Other Impacts	This alternative is probably infeasible as the Wisconsin Department of Transportation would consider this cross-section below acceptable standards for a state trunk highway under the forecast traffic volumes	All costs paid by state/federal Departments of Transportation ^a

^aLocal governments, however, generally would be expected to pay for new sidewalks, new lighting, and utilities, including sanitary sewer and water supply.

Table 16

EVALUATION OF IMPROVEMENT OF LANNON ROAD FROM STH 175 TO FOUR-LANE DIVIDED SECTION WEST OF USH 41/45

	Alternatives	
	Maintain Existing Pavement	Improve to Four Lane Divided Rural Cross-Section
Pavement Width and Right-of-Way	24-foot-wide pavement (40-foot-wide pavement and shoulders) and 140-foot-wide right-of-way (minimum)	Twin 24-foot-wide pavements (10-foot-wide outside shoulders with 30-foot-wide median) and 120-foot-wide right-of-way
Construction Costs	\$28,000 for resurfacing	\$389,000
Disruption	None	<u>Pavement edge</u> (current distance to buildings is 120 feet to north and 40 feet to south) 20 feet closer south side and 30 feet closer north side <u>Additional right-of-way</u> None
Traffic Impacts	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is marginally inadequate for safe and uncongested movement of existing 6,000 awdt and projected 7,000 awdt Delay and congestion will result at STH 175 as increasing traffic requires four-way stops and, perhaps ultimately, traffic signals	Planned roadway capacity of 23,000 awdt is sufficient for safe and efficient movement of existing 6,000 awdt and projected 7,000 awdt No congestion at arterial intersections
Other Impacts	Federal Department of Transportation and County may pay for 100 percent of costs	Federal Department of Transportation and County may pay for 100 percent of costs

Source: SEWRPC.

Table 17

EVALUATION OF IMPROVEMENT OF STH 175 FROM COUNTY LINE ROAD (CTH Q) TO MAPLE ROAD

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section With Two Traffic Lanes and Auxiliary/Turning Lanes
Pavement Width and Right-of-Way	<u>County Line Road to point 250 feet northwest (plus 150-foot-wide taper)</u> 52-foot-wide pavement with curb, gutters, and storm sewer; 66-foot-wide right-of-way <u>400 feet northwest of County Line Road to Maple Road</u> 22-foot-wide pavement (30-foot-wide pavement and shoulders) and 66-foot-wide right-of-way	52-foot-wide pavement with curb, gutter, and storm sewer 66-foot-wide right-of-way to 400 feet northwest of County Line Road, and 80-foot-wide right-of-way from there to Maple Road
Construction Costs	\$31,600 for resurfacing	\$596,000
Disruption	None	<u>Pavement edge</u> (current distance to buildings is about 50 feet) 11 feet closer each side from Maple Road to 400 feet northwest of County Line Road 0-11 feet closer between 250 feet and 400 feet northwest of County Line Road <u>Additional right-of-way</u> 7 feet east and west from 400 feet northwest of County Line Road to Maple Road <u>Property taking</u> 1 retail property (currently within existing right-of-way)
Traffic Impacts	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is marginally adequate for existing 6,800 awdt, and inadequate for forecast 8,000 awdt Delay and congestion will result at Maple Road as increasing traffic requires four-way stop Delay and accidents will increase as through traffic is delayed for right- and left-turning traffic at all access points along STH 175	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of existing 6,800 awdt and projected 8,000 awdt No congestion at Maple Road intersection No delay for through traffic as a result of right- and left-turning vehicles, as turn lanes are provided
Other Impacts	This alternative is probably infeasible as the Wisconsin Department of Transportation would consider this cross-section below acceptable standards for a state trunk highway under the forecast traffic volumes	All costs may be paid by state/federal Departments of Transportation ^a

^aLocal governments, however, generally would be expected to pay for new sidewalks, new lighting, and utilities, including sanitary sewer and water supply.

Table 18

EVALUATION OF IMPROVEMENT OF FOND DU LAC AVENUE (STH 145) FROM COUNTY LINE ROAD TO DONGES BAY ROAD

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section With Two Traffic Lanes and Two Auxiliary/Turning Lanes
Pavement Width and Right-of-Way	22-foot-wide pavement (30-foot-wide pavement and shoulders) and 66-foot-wide right-of-way	52-foot-wide pavement with curb, gutter, and storm sewers; 80-foot-wide right-of-way
Construction Costs	\$62,000 for resurfacing	\$1,211,000
Disruption	None	<u>Pavement edge</u> (current distance to buildings is generally 40 to 100 feet, with some 20-foot distances) 11 feet closer each side (to maintain current minimum setback, alignment should deviate from current centerline) <u>Additional right-of-way</u> 7 feet each side
Traffic Impacts	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is inadequate for safe and uncongested movement of projected 8,500 to 9,000 awdt Delay and congestion will result at County Line Road and Donges Bay Road as increasing traffic requires four-way stops and, ultimately, traffic signals at County Line Road Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross streets and access points	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,500 to 9,000 awdt No congestion at arterial intersections No delay for through traffic as a result of right- and left-turning vehicles at cross streets or access points, as turn lanes are provided Provide space for vehicles in distress, bicycles, and sidewalks
Other Impacts	State/federal Departments of Transportation may pay for 100 percent of costs, if resurfacing is completed prior to initiation of planned urban development, which is expected to add substantially to the use of this roadway segment ^a	State/federal Departments of Transportation may pay for 100 percent of costs if planned urban development, which would add substantially to the use of this roadway segment, has been initiated

^aLocal governments, however, generally would be expected to pay for new sidewalks, new lighting, and utilities, including sanitary sewer and water supply.

Table 19

EVALUATION OF IMPROVEMENT OF PILGRIM ROAD FROM COUNTY LINE ROAD (CTH Q) TO MEQUON ROAD (STH 167)

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section With Two Traffic Lanes and Auxiliary/Turning Lanes
Pavement Width and Right-of-Way	<u>County Line Road to Santa Fe Drive</u> 24-foot-wide pavement (28-foot-wide pavement and shoulders) and 66-foot-wide to 125-foot-wide right-of-way <u>Santa Fe Drive to Mequon Road</u> 22-foot-wide pavement (38-foot-wide pavement and shoulders) and 80-foot-wide right-of-way	52-foot-wide pavement with curb, gutter, and storm sewer; 80-foot-wide right-of-way. Parking prohibited on two auxiliary lanes for use by turning and through traffic
Construction Costs	\$131,000 for resurfacing	\$2,490,000
Disruption	None	<u>Option 1: Alignment on current centerline</u> <u>Pavement edge</u> (current distance to buildings is generally 50 to 80 feet) 12 feet closer east and west between County Line Road and Santa Fe Drive 7 feet closer east and west between Santa Fe Drive and Mequon Road <u>Additional right-of-way</u> 7 feet on east from County Line Road to Donges Bay Road and for 50 percent of parcels from Donges Bay Road to Mequon Road 7 feet on west for 50 percent of parcels from School Road to Donges Bay Road <u>Property taking</u> 1 residential property <u>Option 2: Alignment moved 7 feet to west from County Line Road to School Road</u> <u>Pavement edge</u> (current distance to buildings is generally 50 to 80 feet) 19 feet closer to west between County Line Road and School Road 12 to 19 feet closer to west between School Road and Santa Fe Drive 5 feet closer to east between County Line Road and School Road 5 to 12 feet closer to east between School Road and Santa Fe Drive

Table 19 (continued)

	Alternatives	
	Maintain Existing Pavement	Improve to Urban Cross-Section With Two Traffic Lanes and Auxiliary/Turning Lanes
		<u>Option 2 (continued)</u> <u>Pavement edge (continued)</u> 7 feet closer east and west between Santa Fe Drive and Mequon Road <u>Additional right-of-way</u> 7 feet on east and west for 50 percent of parcels from School Road to Donges Bay Road <u>Property taking</u> 1 residential property
Traffic Impacts	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is inadequate for safe and uncongested movement of existing 6,300 to 10,300 awdt and projected 8,000 to 14,000 awdt. Delay and congestion will result at County Line Road, Donges Bay Road, and Mequon Road as increasing traffic requires four-way stops and, ultimately, traffic signals at Donges Bay Road and Mequon Road Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross streets	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of existing 6,300 to 8,300 awdt and projected 8,000 to 14,000 awdt No congestion at arterial intersections No delay for through traffic as a result of right- and left-turning vehicles at cross streets or access points, as turn lanes are provided Provide space for vehicles in distress, bicycles, and sidewalks
Other Impacts	Costs probably would be borne solely by Village	75 percent of costs paid by federal Department of Transportation

Source: SEWRPC.

Table 20

**EVALUATION OF IMPROVEMENT OF DIVISION ROAD CONNECTION TO COUNTY LINE ROAD
(FROM COUNTY LINE ROAD TO 200 FEET SOUTH OF WENDY LANE)**

Alternatives	Pavement and Right-of-Way Width	Construction Costs	Disruption	Traffic Impacts	Other Impacts
Maintain Existing Pavement (see Figure 7)	22-foot-wide pavement (38-foot-wide pavement and shoulders) and 100-foot-wide right-of-way	\$184,000 for resurfacing	None	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is marginally insufficient for safe and uncongested movement of projected 8,000 awdt Delay and congestion will occur at County Line Road as increasing traffic requires four-way stops and, ultimately, traffic signals Indirection of one-half mile for all southbound-to-westbound and eastbound-to-northbound traffic; and of one-quarter mile for all freeway off-ramp to northbound traffic. Indirection in year 2000 will be about 560,000 vehicle miles, or about \$170,000 of vehicle operating costs per year	75 percent of costs paid by federal Department of Transportation
Improve to Urban Cross-Section with Two Traffic Lanes and Two Auxiliary/Turning Lanes (see Figure 8)	52-foot-wide pavement with curb, gutter, and storm sewer; 80-foot-wide right-of-way	\$337,000	Within existing right-of-way; no adjacent property	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,000 awdt Indirection of one-half mile for all southbound-to-westbound and eastbound-to-northbound traffic; and of one-quarter mile for all freeway off-ramp to northbound traffic. Indirection in year 2000 will be about 560,000 vehicle miles, or about \$170,000 of vehicle operating costs per year Provide space for bicycles and sidewalks	75 percent of costs paid by federal Department of Transportation
Improve to Urban Cross-Section with Two Traffic Lanes and Two Auxiliary/Turning Lanes and Straighten Alignment to Connect with Northwestbound USH 41/45 Off-ramp to County Line Road (see Figure 9)	52-foot-wide pavement with curb, gutter, and storm sewer; 80-foot-wide right-of-way	\$535,000	Additional right-of-way required between existing USH 41/45 on-ramp and Division Road; no adjacent property	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,000 awdt No congestion at County Line Road Indirection of one-quarter mile for all southbound-to-westbound and eastbound-to-northbound traffic. Indirection in year 2000 will be about 260,000 miles, or \$79,000 of vehicle operating costs per year Provide space for bicycles and sidewalks Between 500 and 1,000 additional vehicles per weekday could be diverted to this improved connection, principally from Pilgrim Road, and would require an improved Division Road connection to River Road, or the extension of Division Road	75 percent of costs paid by federal Department of Transportation

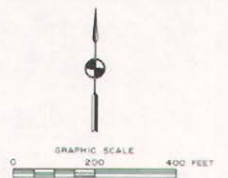
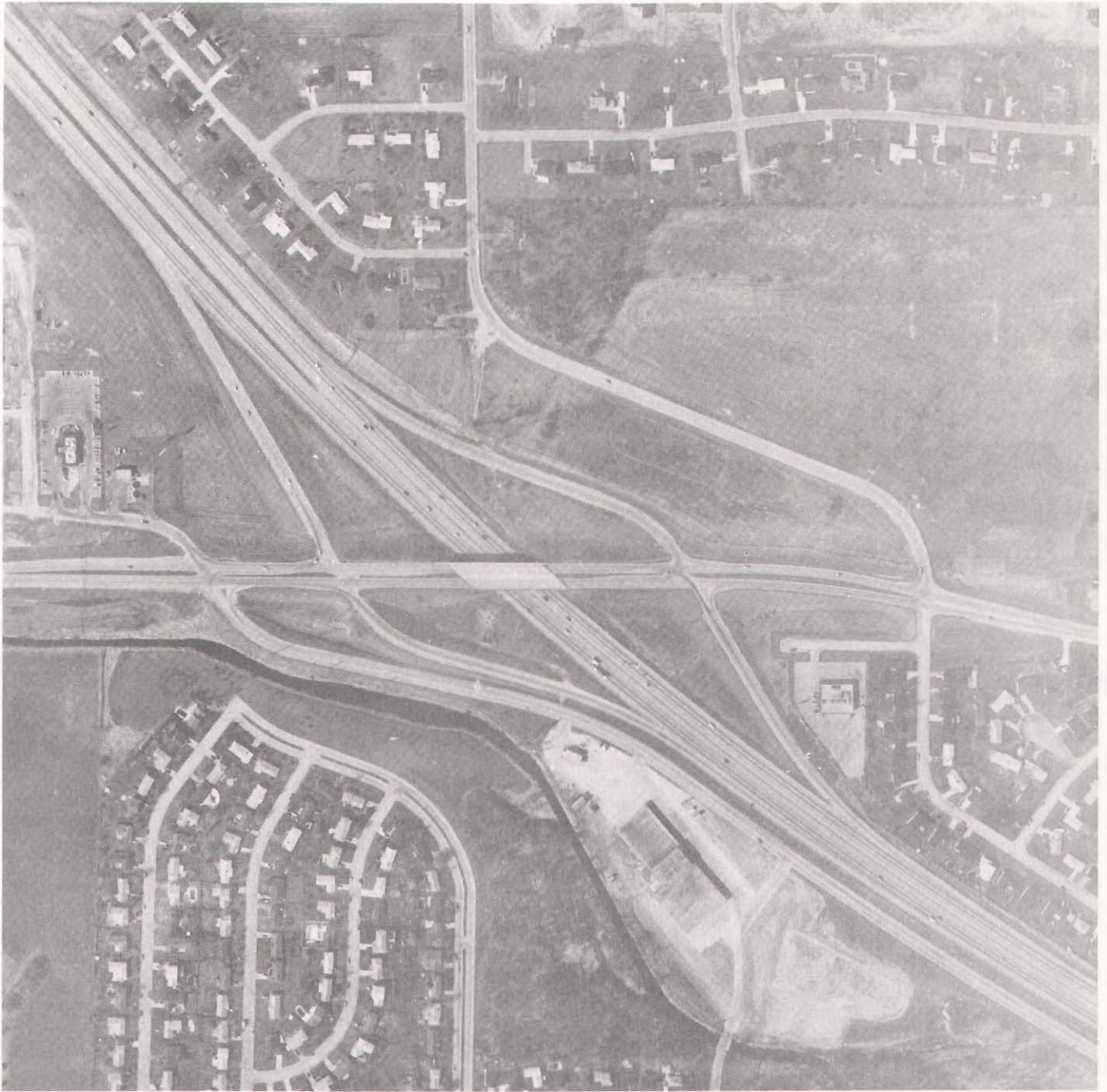
Table 20 (continued)

Alternatives	Pavement and Right-of-Way Width	Construction Costs	Disruption	Traffic Impacts	Other Impacts
Provide Direct Connections to USH 41/45 (see Figure 10)	26-foot-wide one-way pavements	\$1,055,000	1 residential property required; additional right-of-way required for connections between Division Road and USH 41/45 on- and off-ramps; no adjacent property	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,000 awdt Indirection of one-quarter mile for all westbound-to-northbound traffic and of one-fifth mile for all southbound-to-eastbound traffic. Indirection in year 2000 will be about 200,000 miles, or about \$60,000 of vehicle operating costs per year Provide space for bicycles and sidewalks New connection to USH 41/45 southeast-bound off-ramp may result in safety problems Between 500 and 1,000 additional vehicles per weekday could be diverted to this improved connection, principally from Pilgrim Road, and would require an improved Division Road connection to River Road, or the extension of Division Road	75 percent of costs paid by federal Department of Transportation
Provide Direct Connection to County Line Road and More Direct Connection to USH 41/45 Northwestbound Off-ramp (see Figure 11)	52-foot-wide pavement with curb and gutter	\$2,505,000 (minimum, depending upon difficulty in connecting to existing structure over freeway)	Additional right-of-way required for connection of Division Road; no adjacent property	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,000 awdt No indirection except at southbound free way on-ramp Provide space for bicycles and sidewalks Between 500 and 1,000 additional vehicles per weekday could be diverted to this improved connection, principally from Pilgrim Road, and would require an improved Division Road connection to River Road, or the extension of Division Road	75 percent of costs paid by federal Department of Transportation
Provide Direct Connection to County Line Road and USH 41/45 South-eastbound On-ramp and More Direct Connection to USH 41/45 Northwestbound Off-ramp (see Figure 12)	52-foot-wide pavement with curb and gutter	\$3,186,000 (minimum, depending upon difficulty in connecting to existing structure over freeway)	North of County Line Road, additional right-of-way required for direct connection to Division Road; no adjacent property 1 retail property (gas station) south of County Line Road required	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 8,000 awdt No indirection Provide space for bicycles and sidewalks Between 500 and 1,000 additional vehicles per weekday could be diverted to this improved connection, principally from Pilgrim Road, and would require an improved Division Road connection to River Road, or the extension of Division Road	75 percent of costs paid by federal Department of Transportation

Source: SEWRPC.

Figure 7

ALTERNATIVE FOR DIVISION ROAD CONNECTION: MAINTAIN EXISTING CONNECTION



Source: SEWRPC.

Figure 8

ALTERNATIVE FOR DIVISION ROAD CONNECTION: WIDEN EXISTING CONNECTION



LEGEND

 WIDEN TO URBAN ROADWAY

Source: SEWRPC.

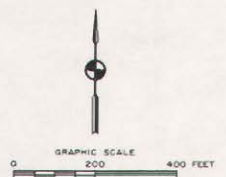
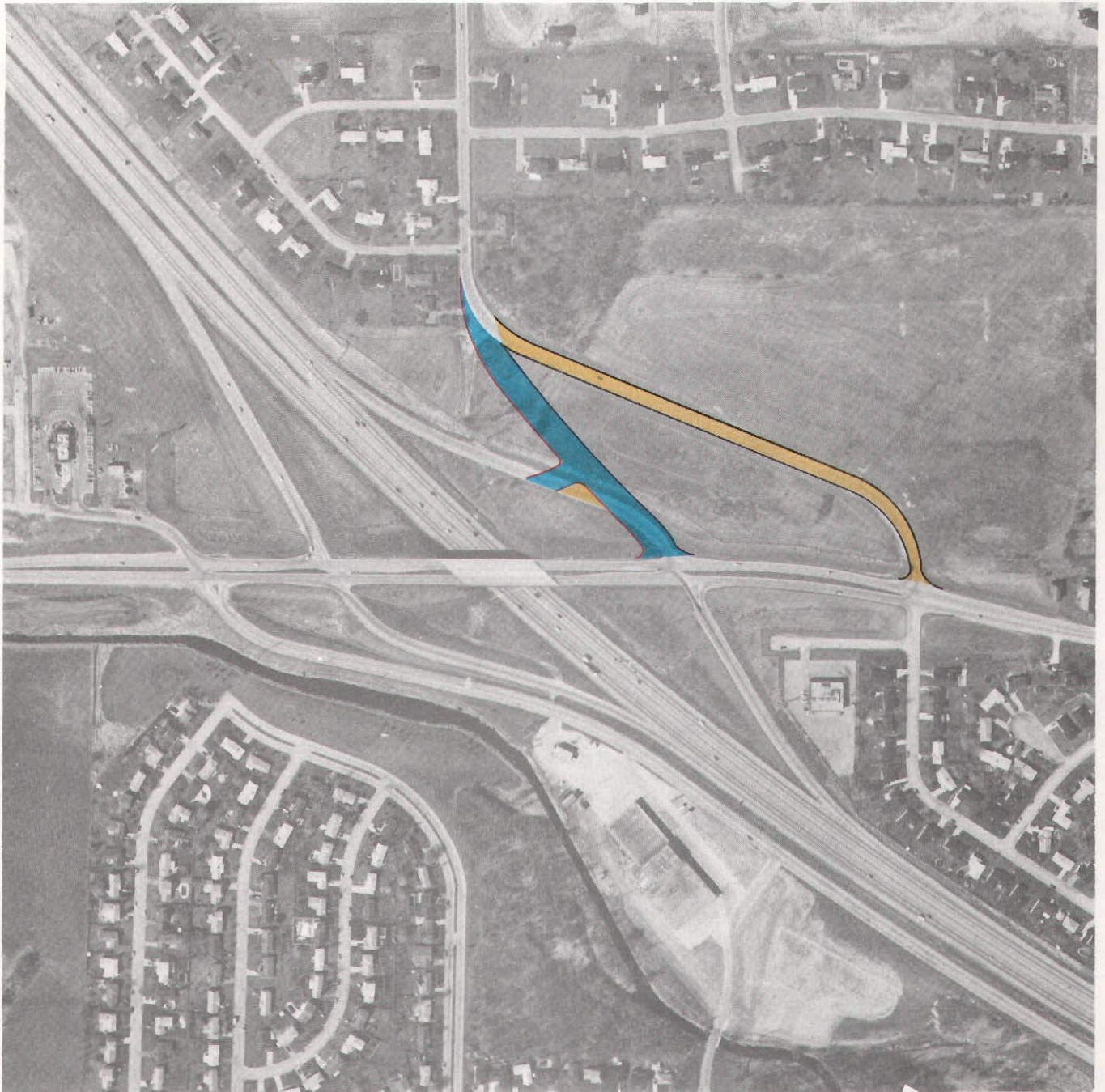


Figure 9

ALTERNATIVE FOR DIVISION ROAD CONNECTION: PROVIDE NEW
CONNECTION ALIGNED WITH USH 41/45 NORTHWESTBOUND OFF-RAMP



LEGEND

- REMOVE EXISTING ROADWAY
- NEW URBAN ROADWAY

Source: SEWRPC.

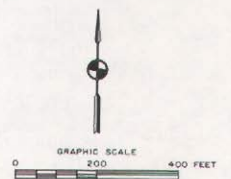
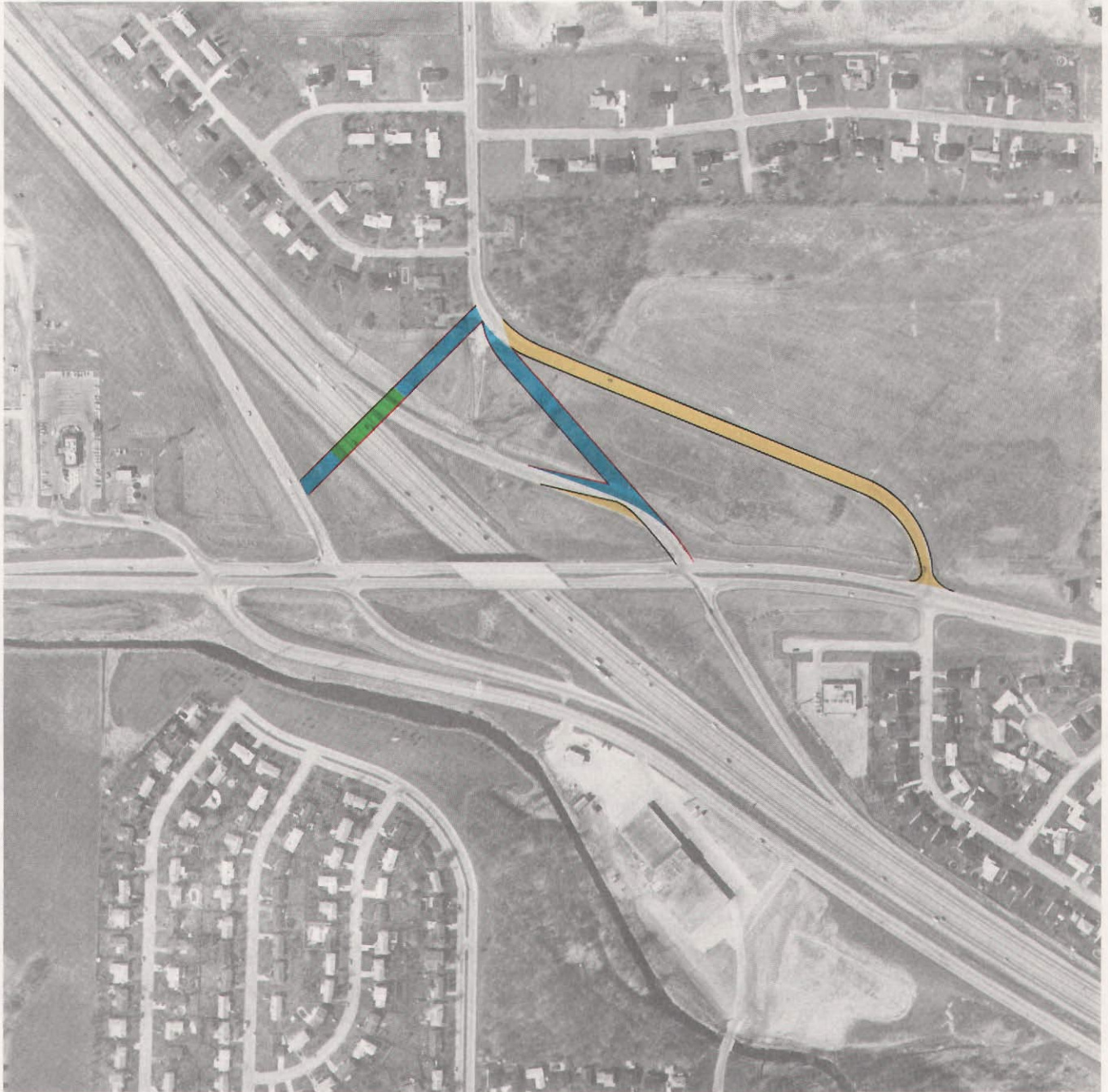


Figure 10

ALTERNATIVE FOR DIVISION ROAD CONNECTION: PROVIDE NEW CONNECTION WHICH DIRECTLY ALIGNS WITH NORTHWESTBOUND USH 41/45 OFF-RAMP AND SOUTHEASTBOUND USH 41/45 ON-RAMP



LEGEND

-  REMOVE EXISTING ROADWAY
-  NEW URBAN ROADWAY
-  NEW ROADWAY STRUCTURE

Source: SEWRPC.

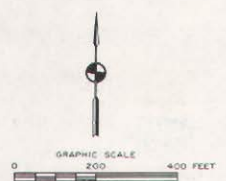


Figure 11

ALTERNATIVE FOR DIVISION ROAD CONNECTION: PROVIDE DIRECT CONNECTION TO COUNTY LINE ROAD



LEGEND

-  REMOVE EXISTING ROADWAY
-  NEW URBAN ROADWAY
-  NEW ROADWAY STRUCTURE

Source: SEWRPC.

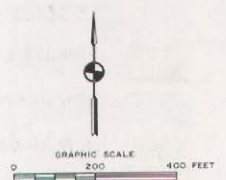
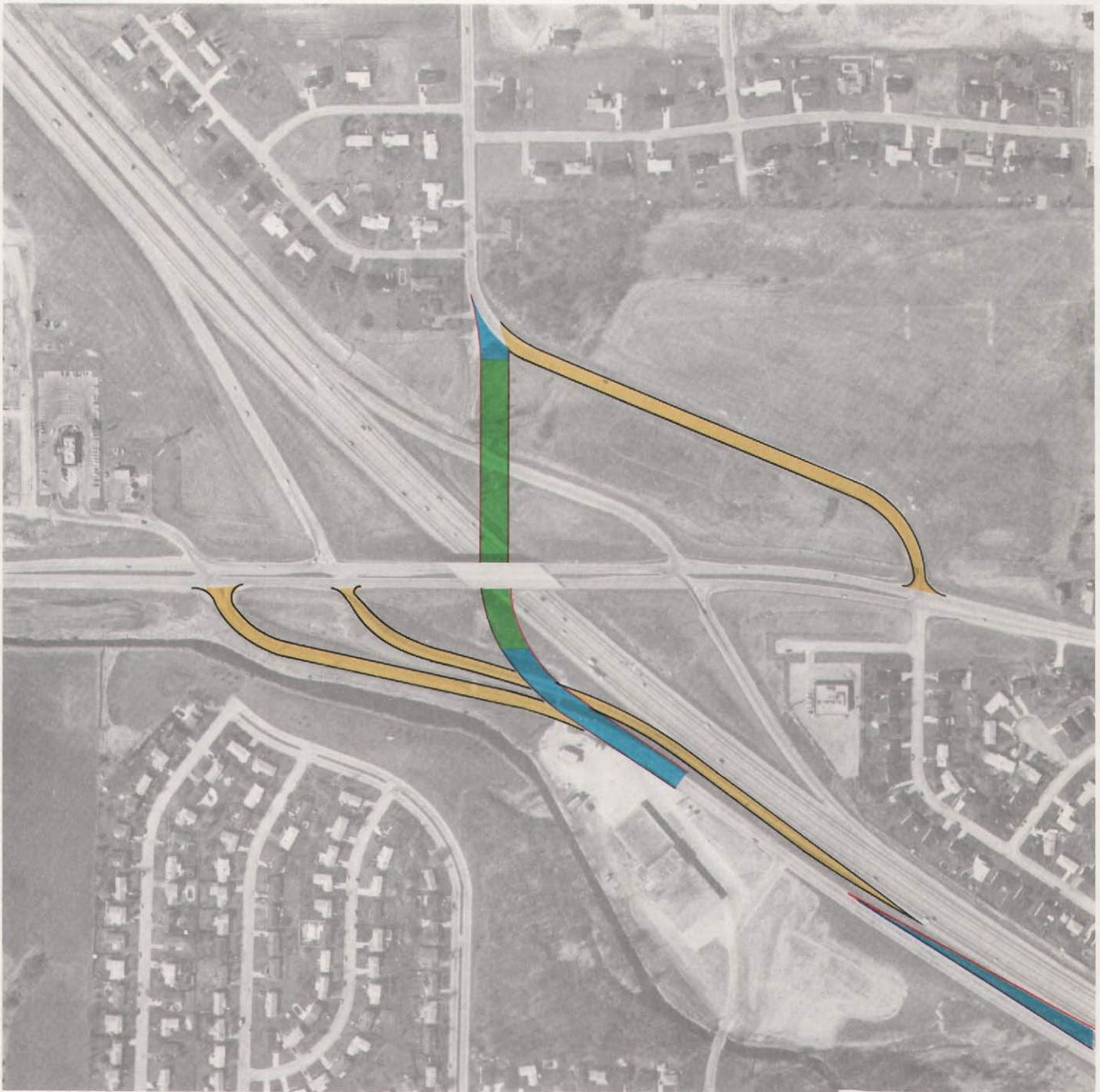


Figure 12

**ALTERNATIVE FOR DIVISION ROAD CONNECTION: PROVIDE DIRECT CONNECTION
TO COUNTY LINE ROAD AND TO SOUTHEASTBOUND USH 41/45 ON-RAMP**



LEGEND

-  REMOVE EXISTING ROADWAY
-  NEW URBAN ROADWAY
-  NEW ROADWAY STRUCTURE

Source: SEWRPC.

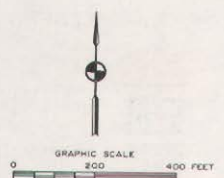


Table 21

**EVALUATION OF IMPROVEMENT OF DIVISION ROAD FROM ITS CONNECTION TO COUNTY LINE ROAD
(BEGINNING ABOUT 200 FEET SOUTH OF WENDY LANE) TO FOND DU LAC AVENUE (STH 145)**

Alternatives	Pavement and Right-of-Way Width	Construction Costs	Disruption	Traffic Impacts	Other Impacts
Maintain Existing Pavement (see Map 19)	<u>Division Road:</u> 200 feet south of Wendy Lane to Mequon Road 24-foot-wide pavement (30-foot-wide pavement and shoulders) and 50- to 66-foot-wide right-of-way <u>River Lane:</u> Mequon Road to Freistadt Road 24 foot-wide pavement (34-foot-wide pavement and shoulders) and 50- to 120-foot-wide right-of-way <u>Division Road:</u> Freistadt Road to Fond du Lac Avenue 22-foot-wide pavement (no shoulders) and 100-foot-wide right-of-way	\$205,000 for resurfacing	None	Existing roadway capacity of 7,000 average weekday daily traffic (awdt) is marginally insufficient for safe and uncongested movement of projected 6,000 to 8,000 awdt Delay and congestion will occur at Donges Bay Road and Mequon Road as increasing traffic requires four-way stops and traffic signals, respectively Delay and accidents will increase as through traffic is delayed for left- and right-turning traffic at all cross streets Indirection for traffic traveling along an extended Division Road will be one mile for each vehicle and will require four turns Provide space for vehicles in distress, bicycles, and sidewalks	75 percent of costs paid by federal Department of Transportation
Improve to Urban Cross-Section with Two Traffic Lanes and Two Auxiliary/Turning Lanes (see Map 20)	52-foot-wide pavement with curb, gutter, and storm sewers; 80-foot-wide right-of-way	\$3,789,000	<u>Division Road:</u> 200 feet south of Wendy Lane to Mequon Road Pavement edge (distance to buildings is generally 65 feet with some 20 feet) 11 feet closer each side <u>Additional right-of-way</u> 7 feet each side, except between Lilac Lane and one-quarter mile north of Lilac Lane, where 15 feet each side is required <u>River Lane:</u> Mequon Road to Freistadt Road Pavement edge 9 feet closer each side <u>Additional right-of-way</u> 15 feet each side only between Mequon Road and 400 feet north of Mequon Road <u>Division Road:</u> Freistadt Road to Fond du Lac Avenue Pavement edge 15 feet closer each side <u>Additional right-of-way</u> None	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 6,000 to 8,000 awdt No congestion at arterial intersections No delay for through traffic as a result of left- or right-turning vehicles, as turn lanes are provided Indirection for traffic traveling along an extended Division Road will be one mile for each vehicle and will require four turns Provide space for vehicles in distress, bicycles, and sidewalks	75 percent of costs paid by federal Department of Transportation
Improve to Urban Cross-Section with Two Traffic Lanes and Two Auxiliary Lanes and New Roadway Connections Between River Lane and Division Road (see Map 21)	52-foot-wide pavement with curb, gutter, and storm sewer; 80-foot-wide right-of-way	\$4,785,000	<u>Division Road:</u> 200 feet south of Wendy Lane to Old Farm Road Pavement edge (distance to buildings is generally 65 feet with some 20 feet) 11 feet closer each side <u>Additional right-of-way</u> 7 feet each side <u>New Roadway:</u> Old Farm Road to Mequon Road New 52-foot-wide pavement New 80-foot-wide right-of-way Would require approaching high-quality wetland/environmental corridor <u>River Lane:</u> Mequon Road to Freistadt Road Pavement edge 9 feet closer each side <u>Additional right-of-way</u> 15 feet each side only between Mequon Road and 400 feet north of Mequon Road <u>New Road:</u> Freistadt Road to Division Road (at about Lovers Lane) New 52-foot-wide pavement New 80-foot-wide right-of-way Would require taking of 80-foot-wide by 400-foot-wide strip of low-quality environmental corridor/wetland	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 6,000 to 8,000 awdt No congestion at arterial intersections No delay for through traffic as a result of left- or right-turning vehicles, as turn lanes are provided Indirection for traffic traveling along an extended Division Road would be one mile for each vehicle, but no turns would be required Between 500 and 1,000 current and future vehicles per average weekday would be diverted to an improved Division Road, principally from Pilgrim Road, and would require an improved Division Road connection to County Line Road Provide space for vehicles in distress, bicycles, and sidewalks	75 percent of costs paid by federal Department of Transportation More direct roadway would aid in design of street system Potential for planned commercial development on south side of Mequon Road between River Lane and Division Road could be reduced, and high bedrock could limit potential for any other development

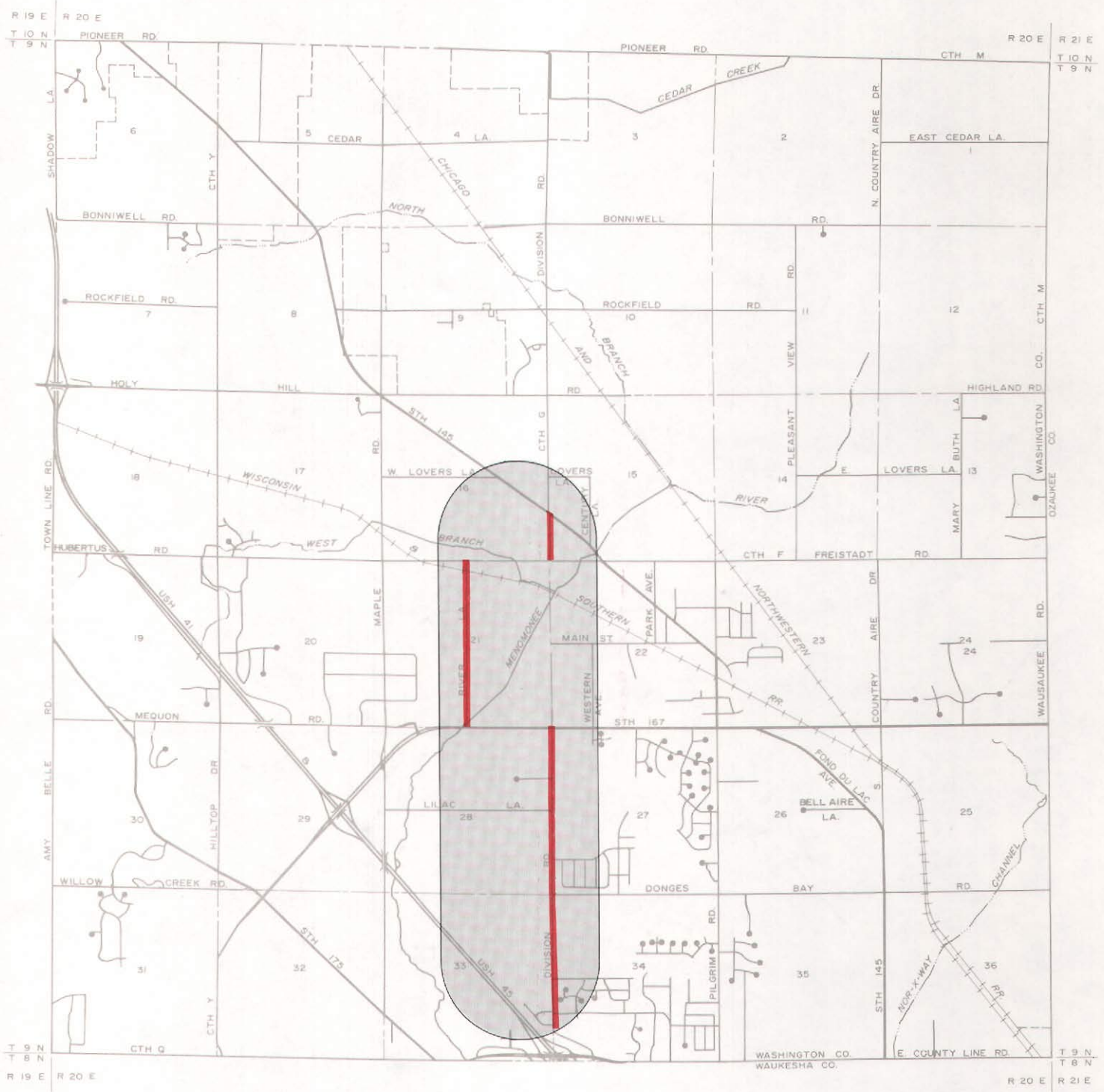
Table 21 (continued)

Alternatives	Pavement and Right-of-Way Width	Construction Costs	Disruption	Traffic Impacts	Other Impacts
Improve to Urban Cross-Section with Two Traffic Lanes and Two Auxiliary/Turning Lanes with New Extension of Division Road Between Mequon Road and Freistadt Road (see Map 22)	52-foot-wide pavement with curb, gutter, and storm sewer; 80-foot-wide right-of-way	\$4,674,000	200 feet south of Wendy Lane to Mequon Road <u>Pavement edge</u> (setback is generally 65 feet with some 20 feet) 11 feet closer each side <u>Additional right-of-way</u> 7 feet each side except between Lilac Lane and one-quarter mile north of Lilac Lane, where 15 feet each side is required <u>Mequon Road to Freistadt Road</u> New 52-foot-wide pavement New 80-foot-wide right-of-way Would require taking/redesign of two holes of Lake Park Golf Course Would require taking of an 80-foot-wide by 900-foot-wide strip of low-quality wetland/environmental corridor south of Main Street; and an 80-foot-wide by 1,600-foot-wide strip of high-quality wetland/environmental corridor north and south of Wisconsin & Southern Railroad Would require crossing of Menomonee River <u>Freistadt Road to Fond du Lac Avenue</u> <u>Pavement edge</u> 15 feet closer each side <u>Additional right-of-way</u> None	Planned roadway capacity of 13,000 to 17,000 awdt is sufficient for safe and efficient movement of projected 6,000 to 8,000 awdt No congestion at arterial intersections No delay for through traffic as a result of left- or right-turning vehicles, as turn lanes are provided No indirection and no turns Between 500 and 1,000 vehicles per average weekday could be diverted to an improved Division Road, principally from Pilgrim Road, and would require an improved Division Road connection to County Line Road Provide space for vehicles in distress, bicycles, and sidewalks	75 percent of costs paid by Federal Department of Transportation 75 percent of costs paid by Federal Department of Transportation Difficulty in obtaining permits for use of wetlands may be anticipated Direct roadway would aid in design of street system

Source: SEWRPC.

Map 19

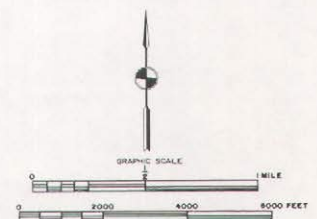
ALTERNATIVE FOR DIVISION ROAD FROM COUNTY LINE CONNECTION TO FOND DU LAC AVENUE: MAINTAIN EXISTING ARTERIAL



LEGEND

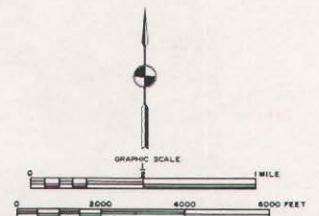
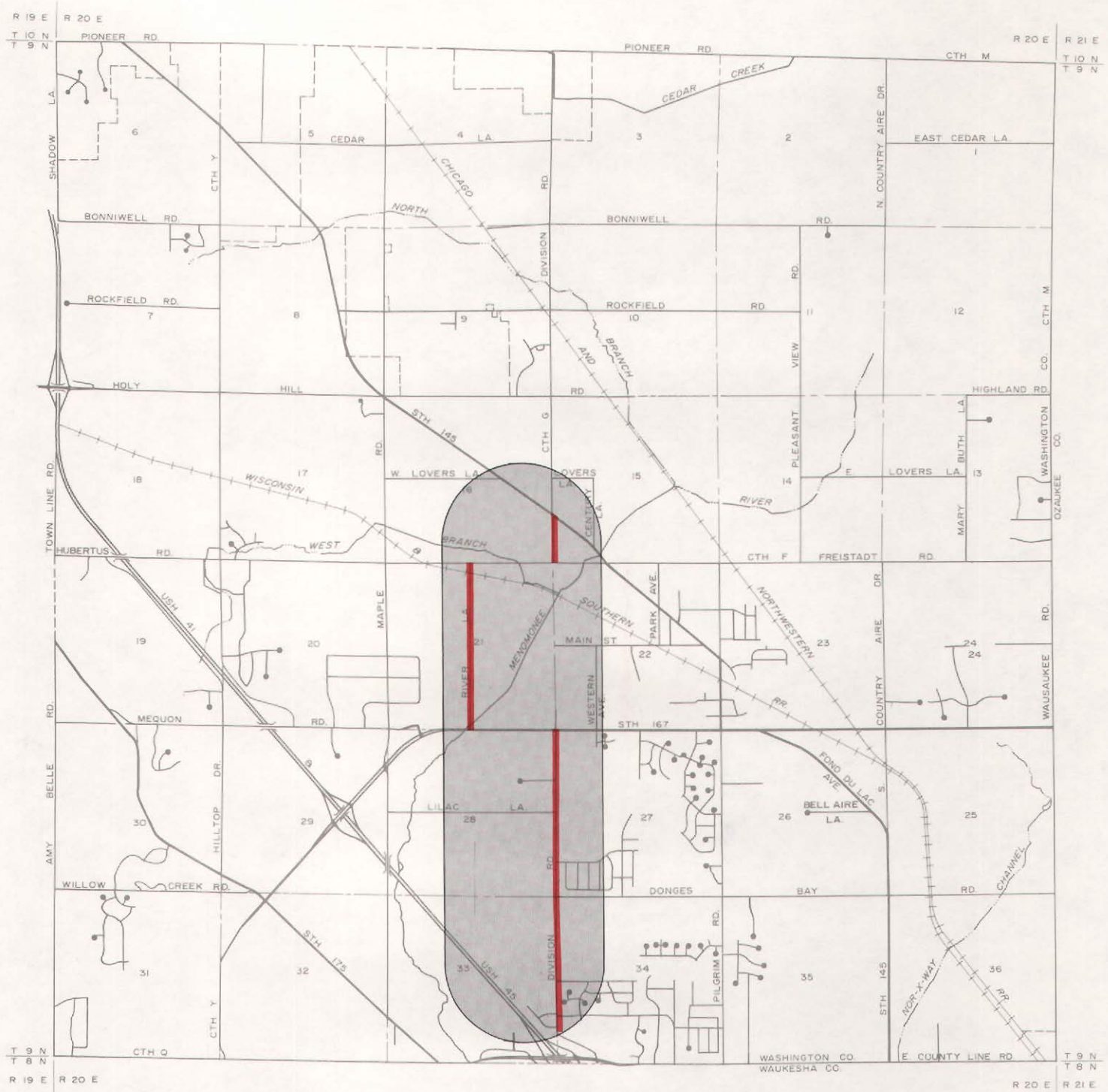
- DIVISION ROAD CORRIDOR
- RESURFACE EXISTING ARTERIAL

Source: SEWRPC.

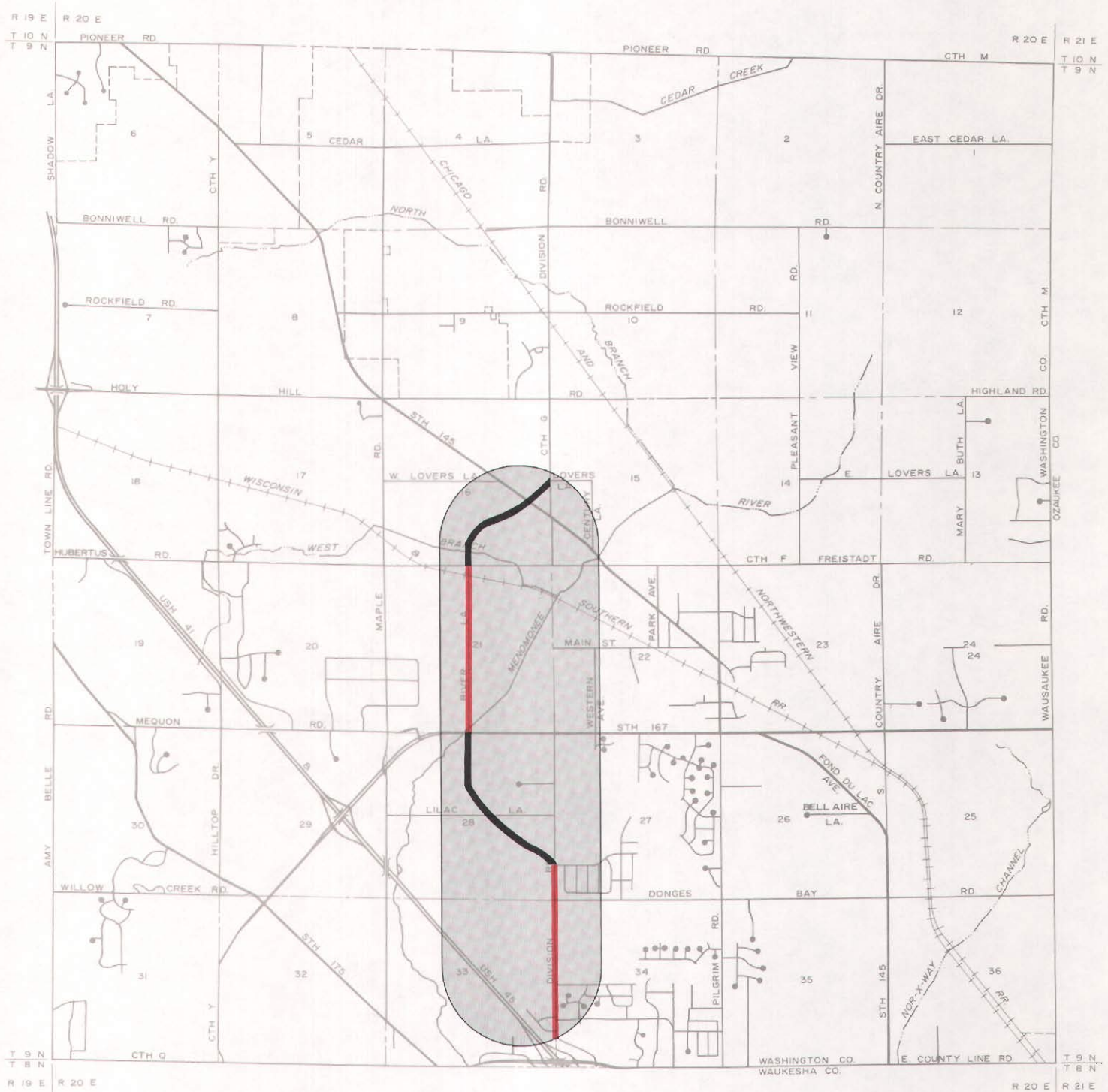


Map 20

ALTERNATIVE FOR DIVISION ROAD FROM COUNTY LINE CONNECTION
TO FOND DU LAC AVENUE: IMPROVE TO URBAN ARTERIAL

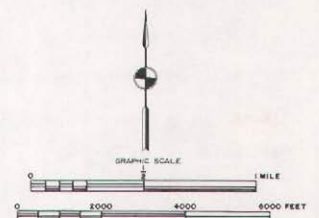


**ALTERNATIVE FOR DIVISION ROAD FROM COUNTY LINE CONNECTION TO FOND DU LAC AVENUE:
IMPROVE TO URBAN ARTERIAL AND CONNECT WITH NEW ROADWAY SEGMENTS TO RIVER LANE**

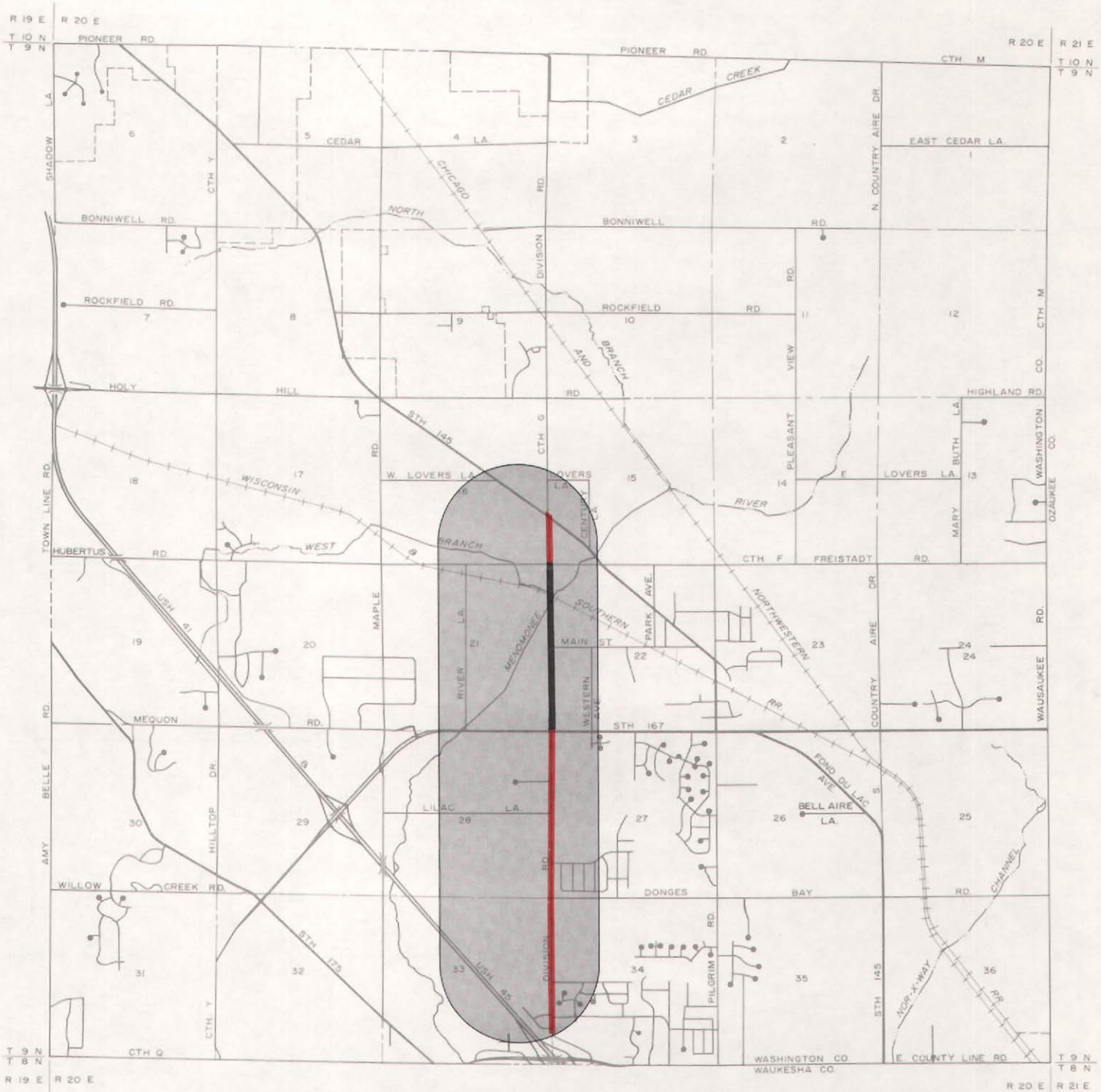


LEGEND

-  DIVISION ROAD CORRIDOR
-  IMPROVE TO URBAN ARTERIAL
-  NEW URBAN ARTERIAL

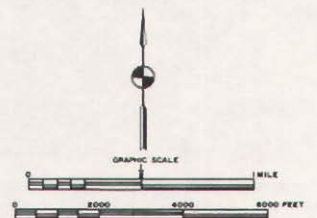


**ALTERNATIVE FOR DIVISION ROAD FROM COUNTY LINE CONNECTION TO FOND DU LAC AVENUE:
EXTEND AND CONNECT DIVISION ROAD TO PROVIDE CONTINUOUS ARTERIAL**



LEGEND

- DIVISION ROAD CORRIDOR
- IMPROVE TO URBAN ARTERIAL
- NEW URBAN ARTERIAL



Source: SEWRPC.

With respect to the following seven roadway segments, it is recommended that the accompanying alternative roadway improvements be implemented based upon consideration of costs, disruption, traffic impacts, and other impacts of the improvement and of the alternative of maintaining the existing pavements, and consideration of the need to serve existing development and accommodate proposed future development in a safe and efficient manner:

1. County Line Road (CTH Q) from the west corporate limits to the existing four-lane divided section west of USH 41/45.
 - Improve to four-lane divided rural section from west corporate limits to existing two-traffic-lane/two-auxiliary-lane urban section and extend urban section to existing four-lane divided rural section (see Table 13).
2. County Line Road from the four-lane divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).
 - Improve to two-traffic-lane/two-auxiliary-lane urban section (see Table 14).
3. Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section (see Table 15).
4. Lannon Road from STH 175 to the existing four-lane divided section west of USH 41/45.
 - Improve to four-lane divided rural section with median (see Table 16).
5. STH 175 from County Line Road (CTH Q) to Maple Road.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section (see Table 17).
6. Fond du Lac Avenue (STH 145) from County Line Road to Donges Bay Road.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section (see Table 18).
7. Pilgrim Road from County Line Road to Mequon Road (STH 167).
 - Improve to two-traffic-lane/two-auxiliary-lane urban section (see Table 19).

With respect to the connection of Division Road to County Line Road and USH 41/45, it is recommended that the alternative be implemented which would provide a more direct connection to County Line Road and a direct connection to the northwestbound off-ramp of USH 41/45. This improvement would substantially reduce traffic indirection, could have a beneficial impact on other village arterials, would have a reasonable construction cost for the benefits received, and could be eligible for state/federal funding (see Figure 9).

With respect to the potential section of Division Road from its connection to County Line Road (beginning at about Wendy Lane) to Fond du Lac Avenue (STH 145), it is recommended that the alternative be implemented which would provide an improved Division Road by connecting it with new roadways to River Lane, and by converting this entire arterial segment to an urban section. This improvement would resolve future congestion and safety problems on Division Road, would have the potential to have beneficial impacts on other village arterials, would aid in providing a more direct, continuous, and understandable street system in the Village, would minimize impacts on wetlands, and would encourage development west of Division Road on the south side of Mequon Road. The improvement, however, does have a substantial cost, still incorporates traffic indirection, and requires new right-of-way for the connecting roadway sections.

At its meeting of May 9, 1985, the Village of Germantown Transportation Plan Advisory Committee unanimously approved these staff recommendations, and adopted this transportation plan for the safe and efficient movement of traffic within and through the Village to the year 2000, thereby recommending the plan to the Village Board. The Advisory Committee also, by specific action, unanimously recommended the improvement of Pilgrim Road from County Line Road to Mequon Road (STH 167), and proposed that improvement of the road to an urban cross-section with a pavement width of 48 to 52 feet be considered. The Advisory Committee noted that the improvement of Pilgrim Road was an existing as well as future need, and that while other roadway improvements in the Village could slightly reduce the traffic on Pilgrim Road, they could not negate the need to improve Pilgrim Road.

The estimated funding requirements to the year 2000 for the nine deficient roadway segments are shown in Table 22 for the alternative of maintaining the existing pavement and the alternative of implementing the proposed improvements.

Funding requirements have been distributed among the levels and units of government affected under the proposed jurisdictional responsibility of highways in the Village of Germantown. The current jurisdictional classification of arterial highways in the Village of Germantown and Washington County has evolved over time. The Wisconsin Department of Transportation is currently urging changes in the state trunk highway portion of the Village of Germantown arterial street system. As part of its comprehensive planning function, the Commission has analyzed the need for changes in the jurisdictional responsibility of streets and highways, not only in Germantown but in all of Washington County and the entire Southeastern Wisconsin Region. In the early 1970's, the Commission conducted a jurisdictional highway study for Washington County at the request of the Washington County Board of Supervisors. The plan resulting from this study, SEWRPC Planning Report No. 23, A Jurisdictional Highway System Plan for Washington County, was adopted by the Washington County Board of Supervisors in July 1975, and by the Commission in September 1975. This jurisdictional highway plan was updated by the Commission when the Commission adopted an updated regional transportation system plan for the seven-county Southeastern Wisconsin Region in May 1978. The currently proposed jurisdictional responsibility for arterial streets within the Village of Germantown is shown on Map 23. The proposed changes from existing jurisdictional responsibilities, as shown on Map 7 of Chapter III, are summarized in Table 23. The jurisdictional highway system plan essentially assigns to each level of

Table 22

**ESTIMATED CONSTRUCTION FUNDING REQUIREMENTS
TO YEAR 2000 OF PROPOSED MAJOR ARTERIAL HIGHWAY
IMPROVEMENTS IN THE VILLAGE OF GERMANTOWN
ACCORDING TO PROPOSED JURISDICTIONAL RESPONSIBILITY**

Jurisdiction	Maintain Existing Pavements Alternative	Staff Recommended Improvements ^a
Federal/State ^b	\$482,300	\$14,128,900
Washington County.....	53,700	1,618,000
Village of Germantown.....	375,200	1,329,900
Other Municipalities and Counties.....	30,000	409,200
Total	\$941,000	\$17,486,000

^aCost estimates are based upon current highway funding formulas and assessments of likely federal/state participation as set forth in Tables 13 through 21.

^bThe Village of Germantown Federal Aid Urban (FAU) portion of these funds is \$168,800 for the maintenance alternative and \$3,990,200 for the improvement alternative. This compares to a currently available village FAU funding of \$516,700 and an expected additional funding of \$119,700 per year.

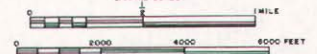
Source: SEWRPC.

government--state, county, and local--the responsibility for those arterial streets which it should most logically serve. The State is assigned those streets and highways which serve traffic between counties and which serve the longest trips, carry the heaviest volumes, provide the highest speeds, serve major land activity centers, and provide the lowest degree of land access. The local unit of government--for example, the Village of Germantown--is assigned those arterial facilities which principally serve traffic which has both origin and destination within the Village, and which serve the shortest trip lengths, carry the lowest amount of traffic, provide the lowest speeds, and provide the highest degree of land access. The county is assigned those facilities which serve traffic traveling between the municipalities of that county. It is the responsibility of the Village of Germantown to encourage Washington County to implement this adopted jurisdictional highway system plan.¹

Table 22 indicates that the costs of improving these nine deficient roadway segments are substantial for the Village of Germantown, particularly when compared to existing Federal Aid Urban (FAU) system resources available to the Village. The Village currently has available approximately \$516,700 in FAU funding and is allotted additional funding of approximately \$119,700 per year. Over the last three years, the Village has supplemented these federal resources with local funding of approximately \$175,000 per year for street construction.

¹Table A-1 of Appendix A of this report provides the estimated construction funding requirements under the current jurisdictional responsibility of highways in the Village of Germantown. The principal difference in the construction funding requirements under the existing and proposed jurisdictional classification of streets and highways in the Village of Germantown is the shifting of some costs from the state and local units of government to Washington County.

PLANNED JURISDICTIONAL RESPONSIBILITY FOR ARTERIAL STREETS AND HIGHWAYS IN THE VILLAGE OF GERMANTOWN: 2000



88

Table 23

**PROPOSED CHANGES IN ARTERIAL STREET JURISDICTIONAL
RESPONSIBILITIES IN THE VILLAGE OF GERMANTOWN**

Segment	Termini	Existing Jurisdiction	Proposed Jurisdiction
STH 145.....	Holy Hill Road to Pioneer Road	State	County
STH 175.....	County Line Road (CTH Q) to Amy Belle Road	State	County
CTH F.....	Wausaukee Road to Pleasant View Road	County	Local
CTH F.....	Pilgrim Road to STH 145	County	Local
CTH G.....	Lovers Lane to STH 45	County	Local
CTH M.....	Point one-half mile north of Highland Road to N. Country Aire Drive	County	Local
CTH Y.....	STH 175 to STH 145	County	Local
Bonniwell Road.....	Pleasant View Road to Country Aire Road	Local	County
E. County Line Road.....	Pilgrim Road to Wausaukee Road	Local	County
N. Country Aire Road.....	Bonniwell Road to Pioneer Road	Local	County
Holy Hill Road.....	STH 145 to USH 41/45	Local	State
Lannon Road.....	STH 175 to USH 41/45	Local	County
Pilgrim Road.....	E. County Line Road to Mequon Road	Local	County
Pilgrim Road.....	Fond du Lac Road to CTH F	Local	County

Source: SEWRPC.

Funding requirements for the improvement of these nine deficient roadway segments may be considered to be particularly substantial when the need to maintain the remaining arterials within the Village is considered. Table 24 provides an estimate of the total arterial street and highway construction costs within the Village to the year 2000 under the planned jurisdictional classification of streets and highways within the Village.² Cost estimates are provided for an alternative which would provide the recommended major improvements on the nine deficient roadway segments and simply maintain all other pavements within the Village; and for an alternative which would provide the recommended improvements on the nine deficient roadway segments, convert all arterials in the existing or future urban portions of the Village of Germantown to urban cross-sections, and maintain the existing pavements on all other arterials within the Village. A cost estimate for simply maintaining all village arterials is also provided.

²An estimate of total arterial street construction costs within the Village to the year 2000 under the current jurisdictional classification of highways is provided in Table B-2 of Appendix B of this report.

Table 24

**ESTIMATED CONSTRUCTION FUNDING REQUIREMENTS TO YEAR 2000 OF ALL ARTERIAL STREETS AND HIGHWAYS
WITHIN THE VILLAGE OF GERMANTOWN UNDER THE PROPOSED JURISDICTIONAL RESPONSIBILITY^a**

Jurisdiction	Maintain All Existing Pavements	Implement Improvements on Nine Deficient Roadway Segments, Convert Urban Roadways to Urban Cross-Sections, and Maintain All Other Pavements ^b	Implement Improvements on Nine Deficient Roadway Segments and Maintain All Other Pavements
Federal/State.....	\$2,753,300	\$23,952,400 ^c	\$16,399,900 ^c
Washington County.....	253,200	1,950,000	1,950,000
Village of Germantown.....	808,500	4,201,400	1,763,400
Other Municipalities and Counties.....	90,000	734,200	469,200
Total	\$3,905,000	\$30,838,000	\$20,450,000

^aCost estimates are based upon current highway funding formulas and assessments of federal/state participation as set forth in Tables 13 through 21.

^bThe arterial streets in the Village which would be converted from rural to urban cross-sections are shown on Map 19.

^cThe Village of Germantown Federal Aid Urban (FAU) portion of these funds is \$1,127,300 for the maintenance alternative; \$9,082,600 for the improvement alternative with urban conversion; and \$4,448,600 for the improvement alternative without urban conversion. This compares to a currently available village FAU funding of \$516,700 and an expected additional funding of \$119,700 per year.

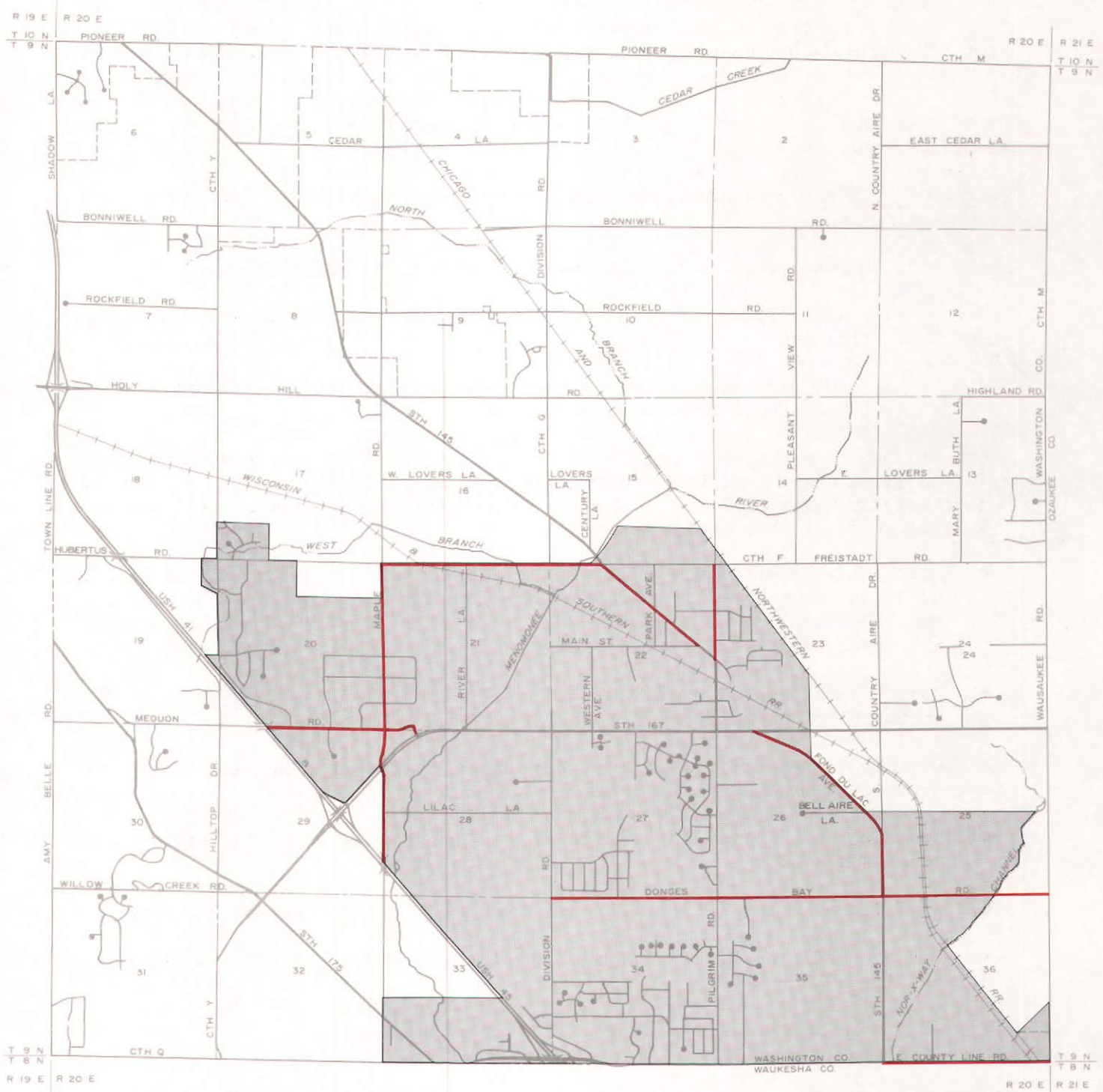
Source: SEWRPC.

Map 24 shows those arterials within the existing and/or future urban portion of the Village of Germantown which could be considered for conversion to urban arterials. The urban cross-section provided on these arterials could have the same pavement and right-of-way width as the cross-section proposed for the eight deficient roadway segments to be improved to an urban cross-section but, because of the reduced traffic on these arterials, the urban cross-section could be narrowed to a pavement width of 40 to 44 feet and a right-of-way width of 66 feet. The advantage of the urban cross-section is that it would reduce delay at arterial street crossings; would provide turn lanes at all cross streets and access points for right- and left-turning vehicles; would provide adequate space for vehicles in distress, bicycles, and sidewalks; and would eliminate dust from unpaved shoulders and convey stormwater in storm sewers rather than in open ditches. The disadvantage of the urban conversion is cost, as indicated in Table 24. The minimal urban cross-section is estimated to cost \$1,120,000 per mile, and maintaining existing pavements is estimated to cost \$60,000 per mile.

The aesthetics and design of the new urban cross-section and of the existing rural cross-section will both have support as well as opposition. Some citizens will believe that maintaining the rural cross-section provides a desired rural atmosphere in the community, even though densities in the area are definitely at urban levels. On the other hand, supporters of the urban cross-section will appreciate the provision of a parking lane, the provision of space for bicycles and sidewalks, and the conveyance of stormwater underground. Also, from a systemwide viewpoint, the conversion of arterials within the Village of Germantown to uniform standards will specifically identify the principal routes in the Village of Germantown and help the village arterial street system to be more understandable.

Map 24

ARTERIAL STREETS WITHIN THE VILLAGE OF GERMANTOWN WHICH ARE NOT PROPOSED FOR MAJOR IMPROVEMENT BUT COULD BE CONSIDERED FOR CONVERSION TO AN URBAN CROSS-SECTION



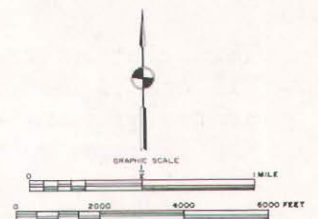
LEGEND



FUTURE URBAN PORTION OF VILLAGE



ARTERIAL FACILITIES WHICH SHOULD BE CONSIDERED FOR RECONSTRUCTION TO URBAN CROSS-SECTIONS



Source: SEWRPC.

Because of the substantial cost of arterial improvement and maintenance in the Village of Germantown over the next 15 years, priorities for the improvement of the nine deficient roadway segments need to be established. These priorities should be based on existing as well as future needs, and on the cost attendant to each improvement. The following priorities for improvement of the nine deficient roadway segments are recommended by the staff and were unanimously approved by the Village of Germantown Transportation Plan Advisory Committee:

Highest Priority--Improve immediately to meet substantial existing and increasing need.

- Pilgrim Road from County Line Road to Mequon Road (STH 167).

Second Priority--Improve within next 5 to 10 years to meet moderate existing and increasing need.

- Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.

Lowest Priority--Improve over next 10 to 15 years to accommodate traffic demand generated by planned urban development. (In the interim, it may be necessary and desirable to implement resurfacing improvements until planned urban development has been initiated.)

- County Line Road from Village of Germantown west corporate limits to the existing four-lane divided section west of USH 41/45. (The existing two-lane rural section between STH 175 and USH 41/45 may require immediate improvement as planned development is now being initiated.)
- County Line Road from divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).
- Division Road connection to County Line Road from 200 feet south of Wendy Lane to County Line Road.
- Division Road from its connection to County Line Road to Fond du Lac Avenue (STH 145).
- Fond du Lac Avenue (USH 41/45) from County Line Road to Donges Bay Road.
- Lannon Road from STH 175 to the existing four-lane divided section west of USH 41/45.
- STH 175 from County Line Road (CTH Q) to Maple Road.

SUMMARY

This chapter has presented a recommended transportation system plan for the Village of Germantown planning area. The arterial street and highway improvements recommended will permit traffic to move efficiently and safely within and through the Village of Germantown planning area as the Village continues to develop to the plan design year 2000. The need for improvements was estab-

lished by identifying existing and probable future deficiencies in the arterial street and highway system in terms of inadequate traffic-carrying capacity, indirect arterial routing, and inadequate arterial spacing.

The following existing and probable future deficiencies were identified:

- Existing and future inadequate arterial spacing.
 1. Division Road extended between Mequon Road and Freistadt Road.
- Existing and future indirect arterial routing.
 1. Division Road extended between Mequon Road and Freistadt Road.
 2. Division Road at its terminus with County Line Road.
- Existing inadequate arterial capacity.
 1. Pilgrim Road between County Line Road and Mequon Road (STH 167).
- Future inadequate arterial capacity.
 1. County Line Road between the existing four-lane divided section east of USH 41/45 and Fond du Lac Avenue (STH 145).
 2. County Line Road between the west corporate limits and the existing four-lane divided section west of USH 41/45.
 3. Division Road between County Line Road and Donges Bay Road.
 4. Fond du Lac Avenue (STH 145) between County Line Road and Donges Bay Road.
 5. Lannon Road (CTH Y) between STH 175 and the existing four-lane divided section of Lannon Road west of USH 41/45.
 6. Mequon Road between Fond du Lac Avenue (STH 145) and the existing four-lane divided section of Lannon Road east of Maple Road.
 7. Pilgrim Road between County Line Road and Mequon Road (STH 167).
 8. STH 175 between County Line Road and Maple Road.

Alternative arterial street and highway improvements were proposed and evaluated to resolve each identified deficiency. The proposed improvements would convert existing arterial cross-sections to one of two types. In all cases, the existing cross-section consisted of an undivided roadway with two traffic lanes, partial-width shoulders, and open ditches bordering the roadway and shoulder. In those portions of the Village currently in urban use, or proposed for urban use within the plan design period, the proposed improvements would entail conversion to an undivided urban facility of 44 feet to 52 feet in width, with two traffic lanes and two auxiliary/turning lanes, curb and gutter, and storm sewer. In those areas of the Village planned to remain in rural use within the plan design period, the proposed improvements would entail conversion to a divided rural facility with four traffic lanes, a median,

shoulders, and open ditches. The divided facility is desirable in the rural areas where operating speeds are higher and safety considerations favor use of a median. The proposed cross-sections were reviewed by the Wisconsin Department of Transportation and the Village of Germantown Department of Public Works.

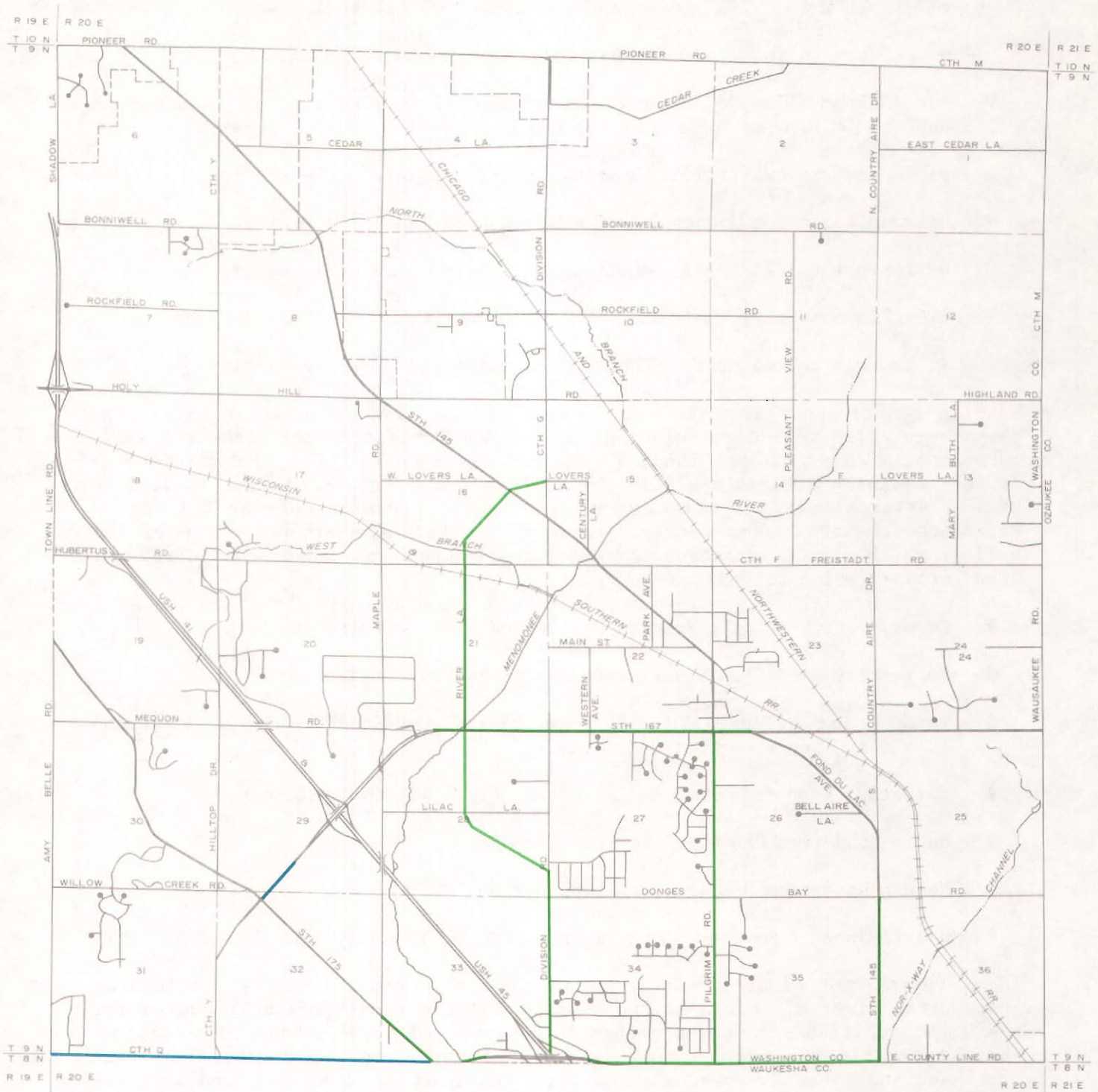
Also considered, along with simply maintaining the existing pavement, was the upgrading of the deficient rural roadways to higher standard two-lane rural roadways with full-width traffic lanes and shoulders. Because the higher standard rural roadway would share the disadvantages of the improved urban roadway with the exception of cost, and yet would not provide some of the advantages including, importantly, sufficient additional capacity to abate existing and probable future congestion, this alternative was not pursued further.

The improvement of each identified segment of deficient arterial roadway in the Village of Germantown was evaluated by comparing the proposed roadway improvement to the alternative of maintaining the existing roadway's pavement and right-of-way width and resultant potential disruption, construction costs, traffic impacts, and other impacts.

The following proposed arterial street and highway improvements as shown on Map 25 were recommended by the Commission staff and the Village of Germantown Transportation Plan Advisory Committee to serve existing development and to accommodate proposed future development in the Village of Germantown in a safe and efficient manner:

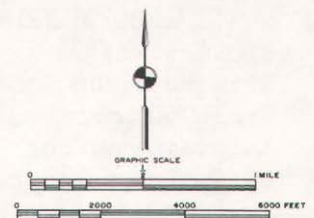
1. County Line Road (CTH Q) from the west corporate limits to the existing four-lane divided section west of USH 41/45.
 - Improve to four-lane divided rural section from west corporate limits to existing two-traffic-lane/two-auxiliary-lane urban section and extend urban section to existing four-lane divided rural section.
2. County Line Road from the four-lane divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).
 - Improve to two-traffic-lane/two-auxiliary-lane urban section.
3. Division Road connection to County Line Road and USH 41/45.
 - Improve to provide a more direct connection to County Line Road and a direct connection to the northwestbound off-ramp of USH 41/45.
4. Division Road from its connection to County Line Road (beginning at about Wendy Lane) to Fond du Lac Avenue (STH 145).
 - Improve Division Road by connecting it with new roadways to River Lane, and converting this entire arterial segment to a two-traffic-lane/two-auxiliary-lane urban section.
5. Fond du Lac Avenue (STH 145) from County Line Road to Donges Bay Road.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section.

**MAJOR IMPROVEMENTS UNDER THE STAFF-RECOMMENDED YEAR 2000
VILLAGE OF GERMANTOWN ARTERIAL STREET SYSTEM PLAN**



LEGEND

- MAJOR IMPROVEMENT TO URBAN TWO-TRAFFIC-LANE/ TWO-AUXILIARY-LANE SECTION (44 FT. TO 52 FT. PAVEMENT WITH CURB, GUTTER, AND STORM SEWER—80 FT. RIGHT-OF-WAY)
 - IMMEDIATE IMPROVEMENT OF PILGRIM ROAD AND COUNTY LINE ROAD BETWEEN STH 175 AND USH 41/45
 - IMPROVEMENT OF MEQUON ROAD WITHIN NEXT 5 TO 10 YEARS
 - IMPROVEMENT OF OTHER SEGMENTS BEYOND NEXT 5 TO 10 YEARS AS AREA DEVELOPS
- MAJOR IMPROVEMENT TO RURAL FOUR-LANE DIVIDED SECTION WITH MEDIAN
 - IMPROVEMENT BEYOND NEXT 5 TO 10 YEARS AS AREA DEVELOPS



Source: SEWRPC.

6. Lannon Road from STH 175 to the existing four-lane divided section east of USH 41/45.
 - Improve to four-lane divided rural section with median.
7. Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section.
8. Pilgrim Road from County Line Road to Mequon Road (STH 167).
 - Improve to two-traffic-lane/two-auxiliary-lane urban section.
9. STH 175 from County Line Road (CTH Q) to Maple Road.
 - Improve to two-traffic-lane/two-auxiliary-lane urban section.

Funding requirements for the improvement of the nine deficient roadway segments were estimated under existing and planned jurisdictional highway classifications, along with the funding requirements necessary for the maintenance of the remaining arterials within the Village and, if desired, the conversion of all arterials in the existing or future urban portions of the Village of Germantown to urban cross-sections. Arterials within the urban portion of the Village which are not proposed for major improvement and can be considered for urban cross-section conversion include:

- County Line Road from Fond du Lac Avenue (STH 145) to Wausaukee Road.
- Donges Bay Road from Division Road to Wausaukee Road.
- Fond du Lac Avenue (STH 145) from Donges Bay Road to Mequon Road and from Main Street to Freistadt Road.
- Freistadt Road from Fond du Lac Avenue (STH 145) to Maple Road.
- Maple Road from USH 41/45 to Freistadt Road.
- Mequon Road from USH 41/45 to Lannon Road.
- Pilgrim Road from Fond du Lac Avenue (STH 145) to Freistadt Road.

The pavement and right-of-way width of the urban cross-sections provided on these urban arterials could be the same as for the cross-section proposed for the eight deficient roadway segments to be improved to an urban cross-section. Reduced traffic demand on these segments, however, would permit the urban cross-section to be narrowed to a pavement width of 40 to 44 feet and a right-of-way width of 66 feet. The advantage of the urban cross-section is that it would reduce delay at arterial street crossings; would provide turn lanes at cross streets; could readily provide for bicycle use and sidewalks; and would eliminate dust from unpaved shoulders. The disadvantage is cost. The minimal urban arterial cross-section is estimated to cost \$1,120,000 per mile, and maintaining the pavement on the existing rural arterial cross-sections is estimated to cost \$60,000 per mile.

The costs of arterial improvement and maintenance in the Village of Germantown over the next 15 years are substantial, and may exceed available federal funds and historical expenditures of local funds. There is, therefore, a need to establish priorities for the improvement of the nine deficient roadway segments, and perhaps to defer some of these improvements to beyond the plan design year 2000 as the Village more fully develops. The priorities developed were based on existing as well as probable future needs, and on the cost attendant to each improvement. The following priorities for improvement of the nine deficient roadway segments were recommended by the staff and Advisory Committee:

Highest Priority--Improve immediately to meet substantial existing and increasing need.

- Pilgrim Road from County Line Road to Mequon Road (STH 167).

Second Priority--Improve within next 5 to 10 years to meet moderate existing and increasing need.

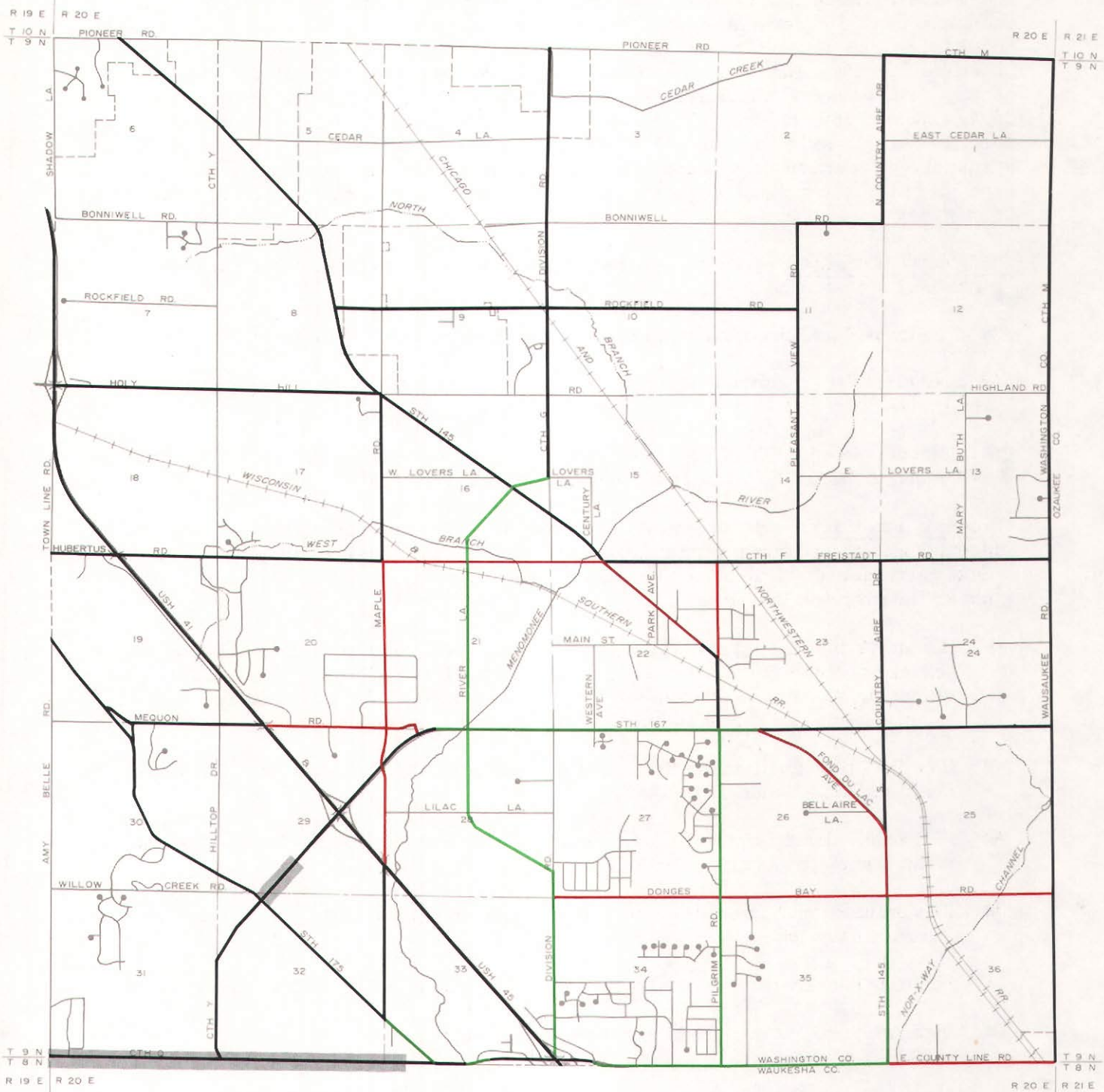
- Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.

Lowest Priority--Improve over next 10 to 15 years to accommodate traffic demand generated by planned urban development. (In the interim, it may be necessary and desirable to implement resurfacing improvements until planned urban development has been initiated.)

- County Line Road from Village of Germantown west corporate limits to the existing four-lane divided section west of USH 41/45. (The existing two-lane rural section between STH 175 and USH 41/45 may require immediate improvement as planned development has been initiated.)
- County Line Road from the existing divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).
- Division Road connection to County Line Road from 200 feet south of Wendy Lane to County Line Road.
- Division Road from its connection to County Line Road and Wendy Lane to Fond du Lac Avenue (STH 145).
- Fond du Lac Avenue (USH 41/45) from County Line Road to Donges Bay Road.
- Lannon Road from STH 175 to the existing four-lane divided section west of USH 41/45.
- STH 175 from County Line Road (CTH Q) to Maple Road.

Map 26 shows the Village of Germantown arterial street system plan recommended by the Commission staff and Village of Germantown Transportation Plan Advisory Committee, including proposed major arterial improvements, necessary resurfacing, and potential conversions of rural facilities to urban standards. Adoption and implementation of this plan will permit the safe and efficient movement of traffic within and through the Village and will support the planned development of the Village.

ADVISORY COMMITTEE- AND STAFF-RECOMMENDED YEAR 2000 VILLAGE OF GERMANTOWN ARTERIAL STREET SYSTEM PLAN



LEGEND

- MAJOR IMPROVEMENT TO URBAN TWO-TRAFFIC-LANE/TWO-AUXILIARY-LANE SECTION (44 FT. TO 52 FT. PAVEMENT WITH CURB, GUTTER, AND STORM SEWER—80 FT. RIGHT-OF-WAY)
 - IMMEDIATE IMPROVEMENT OF PILGRIM ROAD AND COUNTY LINE ROAD BETWEEN STH 175 AND USH 41/45
 - IMPROVEMENT OF MEQUON ROAD WITHIN NEXT 5 TO 10 YEARS
 - IMPROVEMENT OF OTHER SEGMENTS BEYOND NEXT 5 TO 10 YEARS AS AREA DEVELOPS
- MAJOR IMPROVEMENT TO RURAL FOUR-LANE DIVIDED SECTION WITH MEDIAN
 - IMPROVEMENT BEYOND NEXT 5 TO 10 YEARS AS AREA DEVELOPS
- CONSIDERATION OF CONVERSION TO URBAN SECTION WITH CURB, GUTTER, AND STORM SEWER
 - CONSIDER CONVERSION ONLY AS AREA FULLY DEVELOPS TO URBAN USE
- RESURFACING / RECONSTRUCTION

Source: SEWRPC.

Chapter VII

SUMMARY

INTRODUCTION

This report presents a recommended transportation system plan for the Village of Germantown. The plan recommends the arterial street and highway improvements necessary to permit traffic to move efficiently and safely within and through the Village of Germantown now and as the Village continues to develop to the year 2000. The preparation of the plan by the staff of the Regional Planning Commission was requested by the Village of Germantown Board of Trustees on September 14, 1984, and was guided by an Advisory Committee of village officials appointed by the Village President. That Advisory Committee, at a meeting held on May 9, 1985, acted unanimously to recommend the adoption and implementation of the plan as set forth in this report by the Village Plan Commission and Village Board.

The recommended plan is based upon careful analysis of existing and probable future transportation needs in the Village. The plan is based on existing and planned land use development in the Village; the characteristics of the existing transportation facilities and services in the Village; the existing and probable future use of transportation facilities in the Village; and the land use and transportation system development goals and objectives of the Village. Based upon these considerations, existing and probable future arterial street and highway deficiencies were identified; alternative improvements were proposed and evaluated; and a recommended plan was developed by the Advisory Committee and Regional Planning Commission staff.

EXISTING AND PLANNED VILLAGE LAND USE DEVELOPMENT

The geographic area considered in the preparation of the plan consisted of all of U. S. Public Land Survey Township 9 North, Range 20 East, a 36.1-square-mile area composed of the Village of Germantown, which occupies about 95 percent of the area; the Town of Germantown, which occupies nearly 5 percent of the area; and the City of Milwaukee, which occupies less than 1 percent of the area. About 29.5 square miles of the study area, or about 82 percent of the study area, were still in rural land uses in 1980, while about 6.6 square miles, or about 18 percent, were in urban land uses. The Village is a part of the expanding Milwaukee urbanized area and has experienced rapid conversion of land from rural to urban use, as indicated by rapidly increasing levels of population, households, and employment. From 1960 to 1980, the resident population of the Village increased at an average annual rate of about 4.5 percent, to 10,998 people in 1980. The number of households increased at an average annual rate of 5.7 percent, to 3,500 households in 1980. Employment in the Village of Germantown planning area increased at an average annual rate of about 12 percent over the past decade, to about 3,000 jobs in 1980.

The land use plan for the Village of Germantown for the year 2000, as adopted by the Village Plan Commission and Village Board, envisions further substantial growth in resident population and employment in the Village. The plan envisions that residential land use in the Village will continue to increase at the rate of about 5 percent per year to the plan design year. The plan envisions somewhat slower growth in commercial and industrial land use than that which has occurred in the recent past. Recent studies undertaken by the Regional Planning Commission of future population and employment change within the seven-county Southeastern Wisconsin Region indicate that the growth in resident population, households, and employment envisioned in the adopted land use plan for the Village remains likely, but may not be reached until the year 2005 or 2010.

The adopted village land use plan would seek to direct nearly all new land use development in the Village to the south-central and southeastern portions of the Village. The resultant concentrated area of development would permit the most economic provision of community utilities and services, would protect and preserve agricultural and environmentally significant lands in the Village and environs, and would permit the Village of Germantown to better develop its own identity.

EXISTING TRANSPORTATION FACILITIES AND SERVICES

In 1984, a total of 130.2 miles of streets and highways were located within the Village of Germantown planning area, with 69.1 miles, or 53 percent, functionally classified as arterials; and 61.1 miles, or 47 percent, functionally classified as collectors and land access streets. The arterial street element of the street and highway system is intended principally to move traffic efficiently and safely, while the collector and land access street element is intended principally to collect and distribute traffic, providing essential access to homes, businesses, and industry.

With respect to jurisdictional responsibility for the planning, design, construction, operation, and maintenance of the street and highway system, the Village and Town of Germantown in 1984 were responsible for 91.9 miles of local trunk highways, or 71 percent of the total street and highway system in the planning area; Washington County was responsible for 16.4 miles of county trunk highways, or 13 percent of the street system; and the State of Wisconsin was responsible for 21.9 miles of state trunk highways, or 16 percent of the system. Of the street and highway system in the planning area, 67.3 miles, or 52 percent, were on the federal aid highway system in 1984. While the resident population, household, employment, and urban land uses have been rapidly increasing, nearly all arterial streets and highways within the Village have remained two-lane rural cross-section highways with open ditches and only partial-width shoulders. The only exceptions to this in 1984 were the USH 41/45 freeway, which has a divided rural cross-section providing six traffic lanes and full shoulders; Pilgrim Road from Mequon Road to Fond du Lac Avenue, which has an urban cross-section providing two traffic lanes and two auxiliary lanes; and portions of County Line Road and Lannon Road in the immediate vicinity of the USH 41/45 freeway, which have divided rural cross-sections providing four traffic lanes with full shoulders.

No public transit facilities and services are presently provided within the Germantown area. However, the southeastern one-third of the Village is located in the service area of a "Freeway Flyer" express service bus route operated by the Milwaukee County Transit System between a park-ride lot located at the USH 41/45-Pilgrim Road interchange and the Milwaukee central business district.

EXISTING AND FORECAST ARTERIAL STREET USE

Annual average weekday traffic volumes were obtained for each segment of the village arterial street and highway system, and the typical monthly, daily, and hourly variations in those volumes were examined. The proportion of average weekday traffic which occurs during the morning and evening peak hours of traffic--7:00 to 8:00 a.m. and 4:00 to 5:00 p.m.--was also examined, along with the proportion of the peak hourly traffic traveling in each direction on each arterial facility. Generally, about 8 percent of the average weekday traffic volume was found to occur during the morning peak hour and about 10 percent during the evening peak hour.

Arterial street traffic in the Village has nearly doubled over the last 10 years, with an average annual increase of from 5 to 9 percent, depending upon the specific arterial facility. Arterial traffic growth may be expected to be somewhat less over the next 20 years under the village adopted land use plan, increasing at an average annual rate of about 4 percent, thus nearly doubling by the year 2000. This traffic growth is expected to be concentrated in the southern portion of the Village. These forecasts are based upon traffic simulation model studies of the forecast population and employment levels for the planning area, and the planned future land use pattern set forth in the adopted village land use plan. These forecasts are for the existing arterial street system in the Village and assume no improvements to that street system over the next 15 years except resurfacing and reconstruction, and intersection improvements to improve the traffic-carrying capacity and safety of the existing two-lane rural roadways.

OBJECTIVES AND STANDARDS FOR VILLAGE TRANSPORTATION

A set of transportation system development objectives and standards for the Village of Germantown was developed by the staff and Advisory Committee as a focus for the identification of existing and probable future arterial street and highway deficiencies in the planning area, and the design and evaluation of alternative arterial improvements. Four specific objectives were developed to define the basic needs which the arterial street and highway system of the area should attempt to meet: the need to provide an adequate level of arterial street and highway service; to minimize public and private costs of transportation in the Village; to minimize the disruption attendant to arterial street and highway system operation and improvement; and to provide arterial street and highway facilities which are aesthetically pleasing, as well as safe and efficient.

A total of 16 standards were developed to support the four objectives. These standards provide a quantitative means of identifying existing and probable future deficiencies in the arterial street and highway system, and of evaluating proposed improvements for the attainment of the objectives.

IDENTIFICATION OF EXISTING AND FUTURE ARTERIAL DEFICIENCIES

The need for major arterial improvements was established by identifying existing and probable future deficiencies in the arterial street and highway system of the planning area with respect to traffic-carrying capacity, arterial routing, and arterial spacing. The following deficiencies were identified:

- Existing and future arterial spacing.
 1. Need for a north-south arterial along Division Road alignment extended between Mequon Road and Freistadt Road to provide one-mile arterial spacing in an area of existing and planned urban medium-density development.
- Existing and future direct arterial routing.
 1. Division Road extended between Mequon Road and Freistadt Road.
 2. Division Road at its terminus with County Line Road.
- Existing arterial capacity.
 1. Pilgrim Road between County Line Road and Mequon Road (STH 167).
- Future arterial capacity.
 1. County Line Road between the existing four-lane divided section east of USH 41/45 and Fond du Lac Avenue (STH 145).
 2. County Line Road between the west corporate limits and the existing urban two-traffic-lane/two-auxiliary-lane section of County Line Road east of STH 175.
 3. Division Road between County Line Road and Donges Bay Road.
 4. Fond du Lac Avenue (STH 145) between County Line Road and Donges Bay Road.
 5. Lannon Road (CTH Y) between STH 175 and the existing four-lane divided section of Lannon Road west of USH 41/45.
 6. Mequon Road between Fond du Lac Avenue (STH 145) and the existing four-lane divided section of Lannon Road east of Maple Road.
 7. Pilgrim Road between County Line Road and Mequon Road (STH 167).
 8. STH 175 between County Line Road and Maple Road.

DESIGN AND EVALUATION OF ALTERNATIVE IMPROVEMENTS

Alternative arterial street and highway improvements were proposed and evaluated to resolve each identified deficiency. The proposed improvements would convert existing arterial cross-sections to one of two types. In all cases,

the existing cross-section consisted of an undivided rural roadway with two traffic lanes, partial-width shoulders, and open ditches bordering the roadway and shoulder. In those portions of the Village currently in or proposed for urban use within the plan design period, the proposed improvements would entail conversion to an undivided urban facility of 44 to 52 feet of pavement width, with two traffic lanes and two auxiliary turning lanes, curb and gutter, and storm sewer. In those areas of the Village planned to remain in rural use over the plan design period, the proposed improvements would entail conversion to a divided rural facility with four traffic lanes, a median, shoulders, and open ditches. The divided facility was considered desirable in the rural areas where operating speeds are higher and safety considerations favor use of a median. The proposed cross-sections were reviewed and approved by the Wisconsin Department of Transportation and the Village of Germantown Department of Public Works.

Also considered was the alternative of upgrading the deficient rural roadways to higher standard, two-lane rural roadways with full-width traffic lanes and shoulders. Because the higher standard rural roadway would not provide sufficient additional capacity to abate existing and probable future traffic congestion, this alternative was not pursued further in urban portions of the Village.

The improvement of each identified segment of deficient arterial roadway in the Village of Germantown was evaluated by comparing the proposed roadway improvement to the alternative of maintaining the existing roadway's pavement and right-of-way width and resultant potential disruption, construction costs, traffic impacts, and other impacts.

RECOMMENDED PLAN OF IMPROVEMENTS

The following proposed arterial street and highway improvements as shown on Map 25 of Chapter VI were recommended by the Commission staff and by the Advisory Committee to serve existing development in, and to accommodate the proposed future development of, the Village of Germantown in a safe and efficient manner:

1. County Line Road (CTH Q) from the west corporate limits to the existing four-lane divided section west of USH 41/45.
 - Improve 2.2 miles of existing two-lane undivided rural section to four-lane divided rural section from west corporate limits easterly to existing two-traffic-lane/two-auxiliary-turning lane urban section, and extend this urban section easterly 0.3 mile to existing four-lane divided rural section.
2. County Line Road from the four-lane divided section east of USH 41/45 to Fond du Lac Avenue (STH 145).
 - Improve 1.7 miles of existing two-lane undivided rural section to two-traffic-lane/two auxiliary-lane undivided urban section.

3. Division Road connection to County Line Road and USH 41/45.
 - Construct 0.2 mile of new two-traffic-lane/two-auxiliary-lane urban section roadway to provide a more direct connection to County Line Road and a direct connection to the northwest bound off-ramp of USH 41/45, as shown in Figure 9 of Chapter VI.
4. Division Road and River Lane from the connection of Division Road to County Line Road (at about Wendy Lane) to Fond du Lac Avenue (STH 145).
 - Construct 2.1 miles of new two-traffic-lane/two-auxiliary-lane urban roadway connecting Division Road and River Lane, and convert 1.0 mile of River Lane and 0.8 mile of Division Road to a two-traffic-lane/two-auxiliary-lane urban section to provide a continuous two-traffic-lane/two-auxiliary-lane urban north-south arterial route from County Line Road to Fond du Lac Avenue.
5. Fond du Lac Avenue (STH 145) from County Line Road to Donges Bay Road.
 - Improve 1.0 mile of existing two-lane rural roadway to two-traffic-lane/two-auxiliary-lane urban section.
6. Lannon Road from STH 175 to the existing four-lane divided section east of USH 41/45.
 - Improve 0.4 mile of existing two-lane rural roadway to four-lane divided rural section with median.
7. Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road to Fond du Lac Avenue.
 - Improve 2.3 miles of existing two-lane rural roadway to two-traffic-lane/two-auxiliary-lane urban section.
8. Pilgrim Road from County Line Road to Mequon Road (STH 167).
 - Improve 2.0 miles of existing two-lane rural roadway to two-traffic-lane/two-auxiliary-lane urban section.
9. STH 175 from County Line Road (CTH Q) to Maple Road.
 - Improve 0.4 mile of existing two-lane rural roadway to two-traffic-lane/two-auxiliary-lane urban section.

The cost of and funding requirements for the recommended major improvements were estimated under existing and planned jurisdictional highway classifications. The cost of and funding requirements for the maintenance of the remaining arterials within the Village, and for the conversion of all arterials in the existing and proposed urban portions of the Village to urban cross-sections, if desired, were also estimated. The estimated costs and funding requirements are set forth in Table 24 of Chapter VI.

The costs of the recommended nine arterial street and highway improvements, and of the maintenance of the other existing arterial facilities, were determined to be substantial, and potentially greater than the historical expenditures of federal, state, and local funds within the planning area. A need was therefore identified to establish priorities for the improvement of the nine deficient roadway segments, recognizing that perhaps some of these improvements would have to be deferred to beyond the plan design year 2000. The priorities developed were based on consideration of existing and probable future needs, and on the cost attendant to each improvement. The following priorities for improvement of the nine deficient roadway segments were recommended by the Advisory Committee:

Highest Priority--Improve as soon as possible to meet substantial existing and increasing need.

- Pilgrim Road from County Line Road to Mequon Road (STH 167)--2.0 miles. It was noted by the Advisory Committee that this improvement is essential to the continued sound development of the Village. It was also noted that, while other proposed improvements such as to Division Road and Fond du Lac Avenue could be expected to result in a reduction in traffic volumes on Pilgrim Road, neither the existing nor the long-range need for the improvement of Pilgrim Road would be diminished. Pilgrim Road was noted to be the most conveniently located arterial facility for use by residential and commercial development in the Village, and was expected to remain so in the future under the Village's adopted land use plan. The facility provides a convenient link from the existing and proposed urban area of the Village to the USH 41/45 freeway, and the most convenient link between the Village and the Village of Menomonee Falls, which attracts substantial traffic from the Village of Germantown.

Second Priority--Improve within next 5 to 10 years to meet moderate existing and increasing need.

- Mequon Road (STH 167) from the four-lane divided section of Lannon Road east of Maple Road westerly to Fond du Lac Avenue--2.3 miles.

Lowest Priority--Improve over next 10 to 15 years to accommodate traffic demand generated by planned urban development. In the interim, it may be necessary to resurface these roadways without a change in cross-sections until planned urban development has been initiated.

- County Line Road from the west corporate limits easterly to the existing four-lane divided section west of USH 41/45--2.2 miles. The existing two-lane rural cross-section between STH 175 and USH 41/45 may require immediate improvement, as planned development has been initiated--0.3 mile.
- County Line Road from the existing divided section east of USH 41/45 to Fond du Lac Avenue (STH 145)--1.7 miles.
- The Division Road connection to County Line Road beginning at about 200 feet south of Wendy Lane to County Line Road--0.2 mile.

- Division Road and River Lane from the Division Road connection to County Line Road to Fond du Lac Avenue (STH 145)--3.9 miles.
- Fond du Lac Avenue (USH 41/45) from County Line Road to Donges Bay Road--1.0 mile.
- Lannon Road from STH 175 to the existing four-lane divided section west of USH 41/45--0.4 mile.
- STH 175 from County Line Road (CTH Q) to Maple Road--0.4 mile.

Adoption and implementation of this recommended plan will provide for the safer and more efficient movement of traffic within and through the Village and will support the planned development of the Village.

APPENDICES

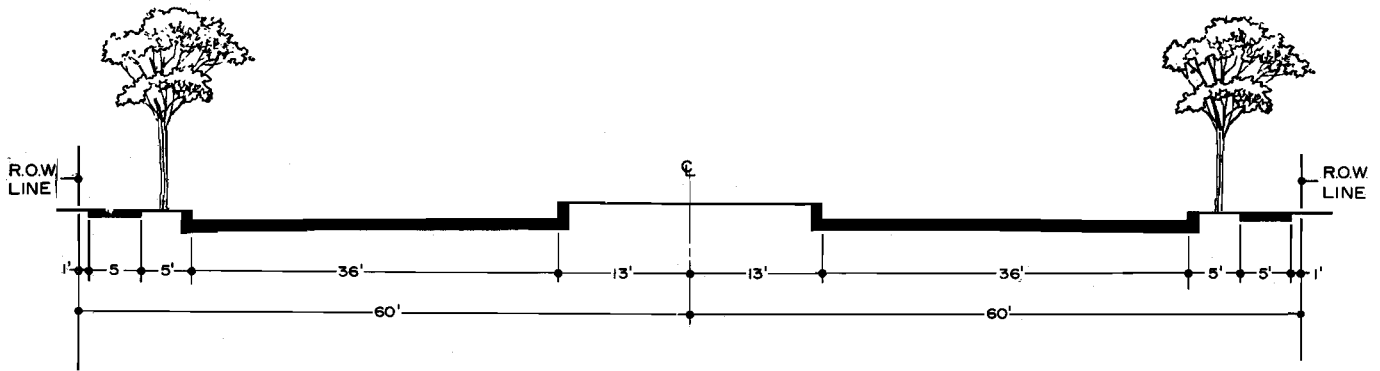
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Appendix A

VILLAGE OF GERMANTOWN DEPARTMENT OF PUBLIC WORKS STANDARD CROSS-SECTIONS

Figure A-1

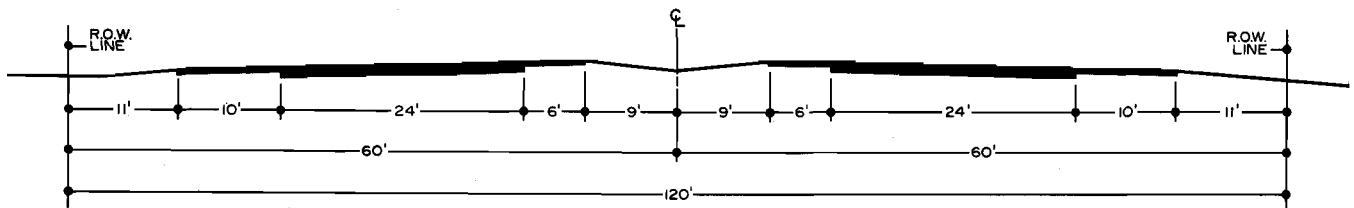
TYPICAL CROSS-SECTION: DESIRABLE FOUR-LANE DIVIDED ARTERIAL WITH TWO AUXILIARY LANES (URBAN)



Source: Village of Germantown Department of Public Works.

Figure A-2

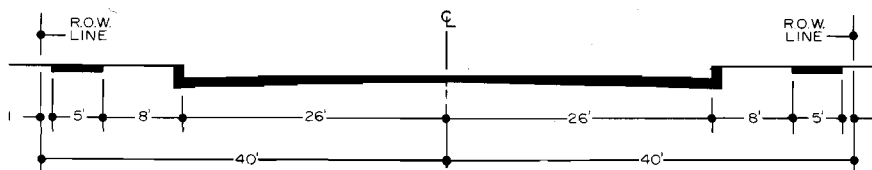
TYPICAL CROSS-SECTION: DESIRABLE FOUR LANE DIVIDED ARTERIAL (RURAL)



Source: Village of Germantown Department of Public Works.

Figure A-3

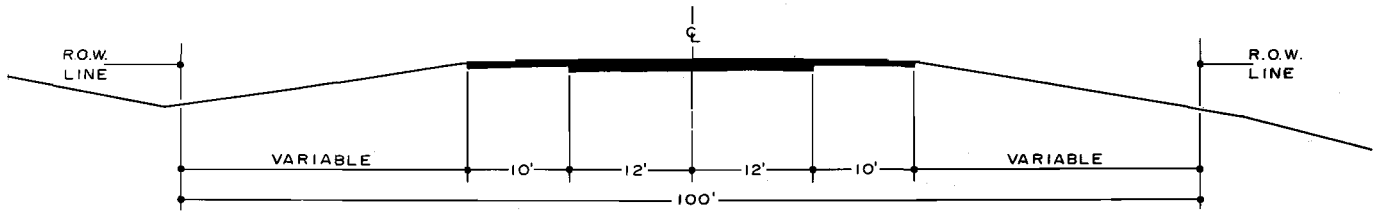
TYPICAL CROSS-SECTION: DESIRABLE TWO-LANE UNDIVIDED ARTERIAL WITH TWO AUXILIARY LANES (URBAN)



Source: Village of Germantown Department of Public Works.

Figure A-4

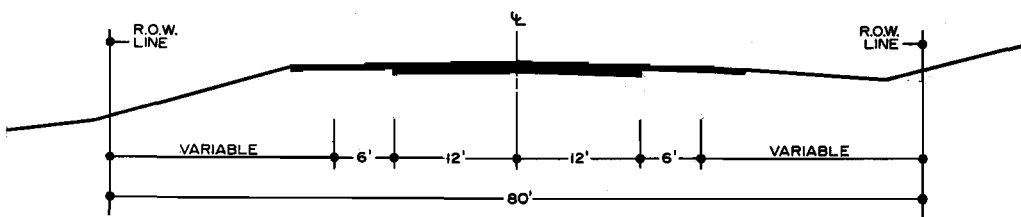
TYPICAL CROSS-SECTION: DESIRABLE TWO LANE UNDIVIDED ARTERIAL (RURAL)



Source: Village of Germantown Department of Public Works.

Figure A-5

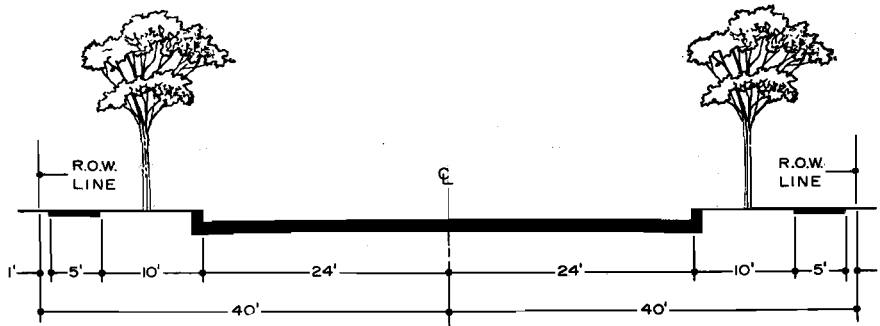
TYPICAL CROSS-SECTION: MINIMUM TWO-LANE UNDIVIDED ARTERIAL (RURAL)



Source: Village of Germantown Department of Public Works.

Figure A-6

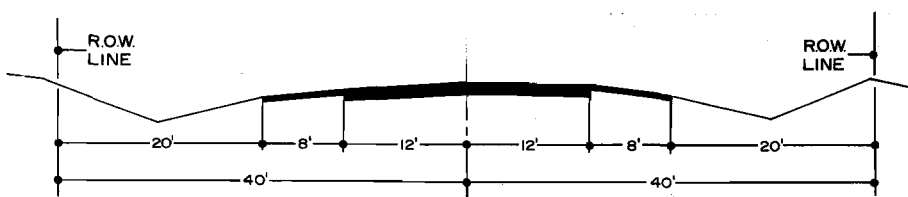
TYPICAL CROSS-SECTION: COLLECTOR STREET (URBAN)



Source: Village of Germantown Department of Public Works.

Figure A-7

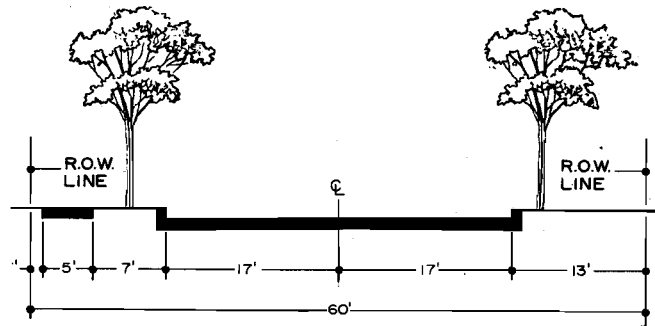
TYPICAL CROSS-SECTION: COLLECTOR STREET (RURAL)



Source: Village of Germantown Department of Public Works.

Figure A-8

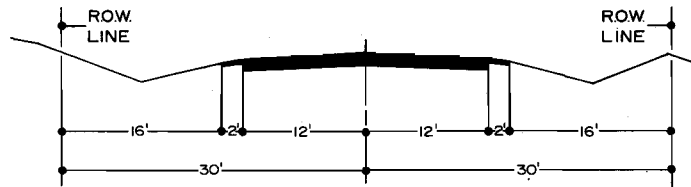
TYPICAL CROSS-SECTION: MINOR STREET (URBAN)



Source: Village of Germantown Department of Public Works.

Figure A-9

TYPICAL CROSS-SECTION: MINOR STREET (RURAL)



Source: Village of Germantown Department of Public Works.

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Appendix B

CONSTRUCTION FUNDING REQUIREMENTS FOR VILLAGE OF GERMANTOWN ARTERIAL FACILITIES

Table B-1

ESTIMATED CONSTRUCTION FUNDING REQUIREMENTS TO YEAR 2000 OF PROPOSED MAJOR ARTERIAL HIGHWAY IMPROVEMENTS IN THE VILLAGE OF GERMANTOWN ACCORDING TO CURRENT JURISDICTIONAL RESPONSIBILITY^a

Jurisdiction	Maintain Existing Pavements Alternative	Recommended Improvements ^b
Federal/State.....	\$582,100 ^b	\$14,277,900
Washington County	33,100	455,600
Village of Germantown.....	295,800	2,343,300
Other Municipalities and Counties.....	30,000	409,200
Total	\$941,000	\$17,486,000

^aCost estimates are based upon current highway funding formulas and assessments of federal/state participation as set forth in Tables 13 through 21 of Chapter VI.

^bThe Village of Germantown Federal Aid Urban (FAU) portion of these funds is \$230,500 for the maintenance alternative and \$7,030,600 for the improvement alternative. This compares to a currently available village FAU funding of \$516,700 and an expected additional funding of \$119,700 per year.

Source: SEWRPC.

Table B-2

ESTIMATED CONSTRUCTION FUNDING REQUIREMENTS TO YEAR 2000 OF ALL ARTERIAL STREETS AND HIGHWAYS WITHIN THE VILLAGE OF GERMANTOWN UNDER THE CURRENT JURISDICTIONAL RESPONSIBILITY^a

Jurisdiction	Maintain All Existing Pavements	Implement Improvements on Nine Deficient Roadway Segments, Convert Urban Roadways to Urban Cross-Sections, and Maintain All Other Pavements ^b	Implement Improvements on Nine Deficient Roadway Segments and Maintain All Other Pavements
Federal/State.....	\$2,908,600 ^c	\$24,156,900 ^c	\$16,604,400
Washington County.....	129,100	551,600	551,600
Village of Germantown.....	773,300	5,393,300	2,824,800
Other Municipalities and Counties.....	90,000	734,200	469,200
Total	\$3,905,000	\$30,838,000	\$20,450,000

^aCost estimates are based upon current highway funding formulas and assessments of likely federal/state participation as set forth in Tables 13 through 21 of Chapter VI.

^bThe arterial streets in the Village which would be converted from rural to urban cross-sections are shown on Map 24 in Chapter VI.

^cThe Village of Germantown Federal Aid Urban (FAU) portion of these funds is \$1,333,000 for the maintenance alternative; \$12,664,600 for the improvement alternative with urban conversion; and \$8,133,100 for the improvement alternative without urban conversion. This compares to a currently available village FAU funding of \$516,700 and an expected additional funding of \$119,700 per year.

Source: SEWRPC.