PLANNING REPORT NO. 10

A COMPREHENSIVE PLAN FOR THE KENOSHA PLANNING DISTRICT

VOLUME ONE

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HARLAND BARTHOLOMEW AND ASSOCIATES

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Planning Report No. 10

in two volumes

A COMPREHENSIVE PLAN FOR THE KENOSHA PLANNING DISTRICT

The preparation of this report was financed in part through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the Housing Act of 1954, as amended.

February, 1967

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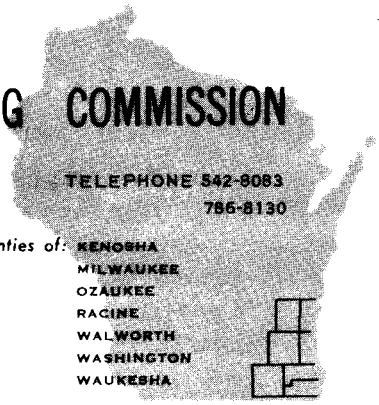

January 11, 1967

STATEMENT OF THE CHAIRMAN

Under contract to the City of Kenosha and the Towns of Somers and Pleasant Prairie, the Southeastern Wisconsin Regional Planning Commission, through its planning consultant, has completed a comprehensive planning program for the Kenosha Planning District. The ultimate purpose of this planning program was to provide the City and the Towns within the District with a comprehensive community development plan which would contain recommended proposals for land use, transportation, and those community facilities and utilities necessary to meet the needs of the District to the year 1990.

The final planning report consists of two volumes. This, the first volume, contains the findings and recommendations of the studies, analyses, forecasts, and planning proposals completed under the program, including specific recommendations for plan implementation. The second volume contains drafts of recommended implementation devices, such as the zoning, official map, and subdivision control ordinances and the capital improvements program.

The Kenosha Planning District program represents the first comprehensive community planning program to be carried out by the Southeastern Wisconsin Regional Planning Commission for a subregional area delineated on the basis of existing and anticipated intensive urban development. As such, it marks a significant advance in the efforts of local units of government to solve the growing problems of areawide development in southeastern Wisconsin on a voluntary, cooperative basis.

Urban growth and development will occur within the Kenosha Planning District in the years ahead whether or not this or any plan is adopted and followed. Without a plan, however, this growth will not only be disorderly and inefficient but may be ugly and may lead to further environmental deterioration.

It is hoped, therefore, that this report will help meet the desires of the people of the District for a safer, more healthful and pleasant environment and result in the development of a more efficient, orderly, and economical community.

Respectfully submitted,

George C. Berteau

George C. Berteau
Chairman

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PLANNERS ENGINEERS · LANDSCAPE ARCHITECTS
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February, 1967

Dr. Kurt W. Bauer, Executive Director
Southeastern Wisconsin Regional
Planning Commission
916 North East Avenue
Waukesha, Wisconsin

Dear Dr. Bauer:

We are pleased to submit our final report on the Kenosha Planning District program entitled A Comprehensive Plan for the Kenosha Planning District, comprised of two volumes, one containing the studies, analyses, forecasts and planning proposals and the second, the recommended implementation devices.

It was a particular pleasure to participate in this comprehensive planning program, as our firm had prepared the original plan for the Kenosha Community in 1925, which has had many of its major proposals successfully implemented.

This comprehensive plan presents both a challenge and an opportunity to the citizens and officials of the District to prevent disorder and inefficiency in the urban growth that will occur in the future and to promote a more pleasant environment for the people who are and will dwell within the District in the years ahead.

We wish to gratefully acknowledge the cooperation and assistance rendered by so many citizens and officials of the participating governmental agencies in connection with this work. Their time, review and comments were most appreciated.

Respectfully submitted,

HARLAND BARTHOLOMEW AND ASSOCIATES

By

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PREFACE

This publication is the first comprehensive community planning report prepared by the Southeastern Wisconsin Regional Planning Commission at the specific request of, and for a group of municipalities. The planning studies, plan proposals, and implementation recommendations were prepared by local planning and engineering staffs, Commission staff, and by a professional planning firm, Harland Bartholomew and Associates, under contract to the Commission.

The purpose of this report is threefold: First, it sets forth the findings of the population, economic activity, land use, transportation and natural resource inventories, analyses, and forecasts necessary as a basis for sound plan preparation. Second, it presents in textual and graphical form proposals for the use of land, for the development of an arterial street and highway system and for the development of those community facilities and utilities required to meet the future needs of the people who will live, work, shop, study and seek recreation in the City of Kenosha and Towns of Pleasant Prairie and Somers to the year 1990. Third, it recommends four devices necessary for implementation of these plans; a zoning ordinance, a land division ordinance, an official map ordinance, and a capital improvements program.

This planning report itself consists of two volumes. The inventory findings, forecasts and plan proposals are all contained in Volume One, while the implementation devices are contained in Volume Two of this report.

It should be noted that the plan proposals are not to be regarded as unchangeable, but rather as points of departure against which to evaluate development proposals as they are made within the District. The plans contained herein were formulated by the consultant and the Commission in very close cooperation with city and town officials and citizen representatives, and are thought to represent the best development objectives and course of action available to the community in light of present knowledge and conditions. Supplementation of the plans presented herein will require a continuing planning effort within the District, not only to maintain the plans current but to bring their weight to bear on development decisions. It will also require the continued close cooperation of the city and towns and of public and private development actions.

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Chapter I

INTRODUCTION

The Kenosha Planning District program represents the first comprehensive community planning program to be carried out by the Southeastern Wisconsin Regional Planning Commission for a subregional area delineated on the basis of existing and anticipated intensive urban development. Since this community plan is an extension of the regional planning program, an understanding of the need for, and objectives of, regional planning and the manner in which these needs and objectives are being met in Southeastern Wisconsin is necessary for a proper appreciation of the Kenosha Planning District program and its findings and recommendations.

Need for Regional Planning

Regional planning may be defined as comprehensive planning for a geographic area larger than a county but smaller than a state united by economic interests, geography, or common areawide development problems. The need for such planning has been brought about by certain important social and economic changes which, while national phenomena, have far-reaching impacts on the problems facing local government. These changes include: unprecedented population growth and urbanization; increasing agricultural and industrial productivity, income levels, and leisure time; generation of mass recreational needs and pursuits; increasingly intensive use and consumption of natural resources; development of private water supply and sewage disposal systems; development of far-flung electric power and communications networks; and development of limited access highway systems and mass automotive transportation.

Under the impact of these changes, entire regions, such as Southeastern Wisconsin, are becoming mixed rural-urban areas. This, in turn, is creating new and intensified areawide development problems of an unprecedented scale and complexity. Rural as well as urban people must increasingly concern themselves with these problems or face irreparable damage to their land and water resources.

The areawide problems which necessitate a regional planning effort in Southeastern Wisconsin all have their source in the unprecedented population growth and urbanization occuring within the Region. These areawide problems include among others: inadequate drainage and mounting flood damages, impairment of water supply and increasing pollution, underdeveloped sewerage and inadequate sewage disposal facilities, rapidly increasing demand for outdoor recreation and for park and open-space reservation, rapidly changing and unplanned land use, and inadequate transportation facilities. These problems are truly regional in scope since they transcend the boundaries of any one municipality and can only be resolved within the context of a comprehensive regional planning effort and through the cooperation of all levels of government concerned.

The Region

The Southeastern Wisconsin Planning Region, as shown on Map A, is comprised of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha counties in Southeastern Wisconsin. Exclusive of Lake Michigan, these seven counties have a total area of 2,689 square miles and together comprise about five percent of the total area of the State of Wisconsin. About 40 percent of the state's population, however, resides within these seven counties, which contain three of the five and one-half standard metropolitan statistical areas in the state. The Region contains approximately one-half of all the tangible wealth in the State of Wisconsin as measured by equalized valuation and represents the greatest wealth producing area of the state, about 42 percent of the state labor force being employed within the Region. It contributes about twice as much in state taxes as it receives in state aids. The seven-county Region contains 153 local units of government exclusive of school and other special purpose districts and encompasses all or parts of 11 major watersheds. The Region has been subject to rapid population growth and urbanization and from 1950 to 1960 accounted for 64 percent of the population increase of the entire state.

Geographically the Region is located in a relatively good position with regard to continued growth and development. It is bounded on the east by Lake Michigan, which provides an ample supply of fresh water for both domestic and industrial use, as well as being an integral part of a major international transportation network. It is bounded on the south by the rapidly expanding northeastern Illinois metropolitan region and on the west and north by the fertile agricultural lands and desirable recreational areas of the remainder of the State of Wisconsin. Many of the most important industrial areas and heaviest population concentrations in the Midwest are within 250 miles of the Region; and over 31 million people reside within this radius.

The Regional Planning Commission

The Southeastern Wisconsin Regional Planning Commission represents an attempt to provide areawide planning services for one of the large urbanizing regions of the nation. The Commission was created in August 1960, under the provisions of Section 66.945 of the Wisconsin Statutes, to serve and assist the local, state and federal units of government in planning for the orderly and economic development of southeastern Wisconsin. The role of the Commission is entirely advisory; and participation by local units of government in the work of the Commission is on a voluntary, cooperative basis. The Commission itself is composed of 21 citizen members, who serve without pay, three from each county within the Region.

The Commission, its committee structure, and its staff organization, together with its relationship to the Kenosha Planning District, are shown in Figure A.

Regional planning as conceived by the Commission is not a substitute for, but a supplement to, local planning. Its objective is to aid the local units of government in the solution of areawide development problems which cannot be properly resolved within the framework of a single municipality or a single county. As such, regional planning has three principal functions: areawide research; preparation of a framework of long-range plans for the physical development of the Region; and the provision of a center for the coordination of the many planning and plan implementation activities carried on by the vari-

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ORGANIZATIONAL STRUCTURE OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AND STAFF

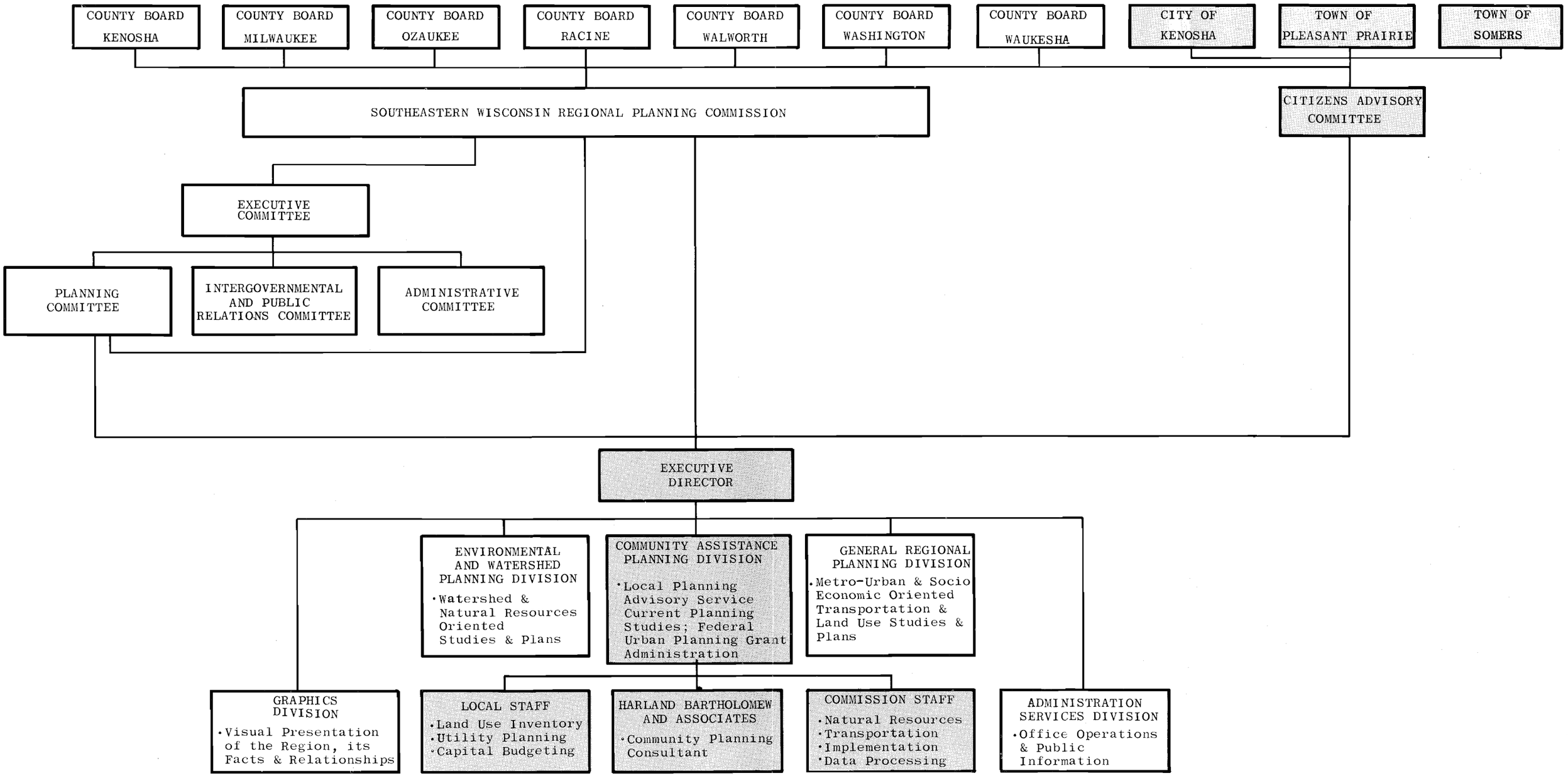

FIGURE A

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ous levels and agencies of government operating within the Region.

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

Initial Work Program

The initial work program of the Commission was directed entirely toward basic data collection. It included six basic regional planning studies which were initiated in July, 1961, and completed by July 1963: a statistical program and data processing study, a base mapping program, an economic base and structure study, a population study, a natural resources inventory, and a public utilities study.

Also as a part of its initial work program, the Commission adopted a policy of community planning assistance wherein functional guidance and advise on planning problems are extended to local units of government and through which regional planning studies are interpreted locally and regional plans may be integrated with local plans. Four local planning guides have been prepared to date under this community assistance program to provide municipalities throughout the Region with information helpful in the preparation of sound local planning and plan implementation codes and ordinances. These guides will aid in implementing regional as well as local plans and will further assist local public officials in carrying out their day-to-day planning functions. The subjects of these guides are: subdivision control, official mapping, zoning, and organization of local planning agencies. All include model ordinances, and all provide a framework for plan implementation through local land use control measures.

Land Use-Transportation Study

The first major work program of the Commission, which was actually directed toward the preparation of long-range development plans, was a regional land use-transportation study. This program was initiated in January of 1963, and has as its objective the preparation of two of the key elements of a comprehensive plan for the physical development of the Region: a land use plan and a transportation plan. The results of the inventory phase of this study, which has provided many important inputs to the Kenosha Planning District program, have been published under the titles SEWRPC Planning Report No. 7, Volume 1, Inventory Findings, 1963, Volume 2, Forecasts and Alternate Plans, 1990, and Volume 3, Recommended Regional Land Use and Transportation Plan, 1990.

Planning Districts

The Commission's planning program envisions the establishment of planning districts for the purpose of carrying the regional plans into the greater depth and detail necessary to provide a sound framework for local planning and for plan implementation. These planning districts consist of two types. The boundaries of the first type are delineated on a basis of topography or topographically related development problems. Examples of such districts include the Root River and Fox River Watersheds. The boundaries of the second type of planning district are delineated in relation to areas of intensive existing or anticipated urban development which have certain common problems such as the Kenosha Planning District.

These planning districts are intended to comprise rational planning units within the Southeastern Wisconsin Region and are not only intended to provide the basis for the preparation of areawide development plans in greater depth and detail but are also intended to provide an important basis for the implementation of the regional plans. This latter function is extremely important since the Commission is an entirely advisory body. It is only through cooperative interagency action that the regional plans will be implemented. The establishment of planning programs for such subareas of the Region as the Kenosha Planning District affords the Regional Planning Commission an excellent opportunity to coordinate overall regional planning programs with more detailed planning programs for subareas of the Region and thereby provide for the implementation of the regional plans through local action.

The Kenosha Planning District Program

This program was initiated upon the request of the City of Kenosha and the Towns of Pleasant Prairie and Somers. Late in 1962, the Commission staff met at the request of and with various local officials for the purpose of formulating a comprehensive planning program and a Federal Urban Planning Grant application for the District. The relationship of the District to the Region is shown on Map A.

Because of the importance of utilizing the inventories and materials previously prepared by the Commission, the necessity of achieving close coordination and integration between the district planning program and that of the Commission, and because of the necessity to prepare development plans which could be cooperatively adopted and jointly implemented by the city and towns comprising the District, the U. S. Housing and Home Finance Agency determined that the program should be administered by the Commission.

The Commission, therefore, prepared an outline for a comprehensive planning program for the District. A contract was executed between the Commission and the City of Kenosha and the Towns of Pleasant Prairie and Somers on May 18, 1964, governing the proposed work, and the Commission made application to the U. S. Housing and Home Finance Agency on December 24, 1963, for an Urban Planning Grant in partial support of such a program. Under the contract the Commission agreed to perform the work necessary to provide the District with a comprehensive community development plan and the City and Towns agreed to provide one-third of the cost of preparing such a plan, such local contribution to be composed of both

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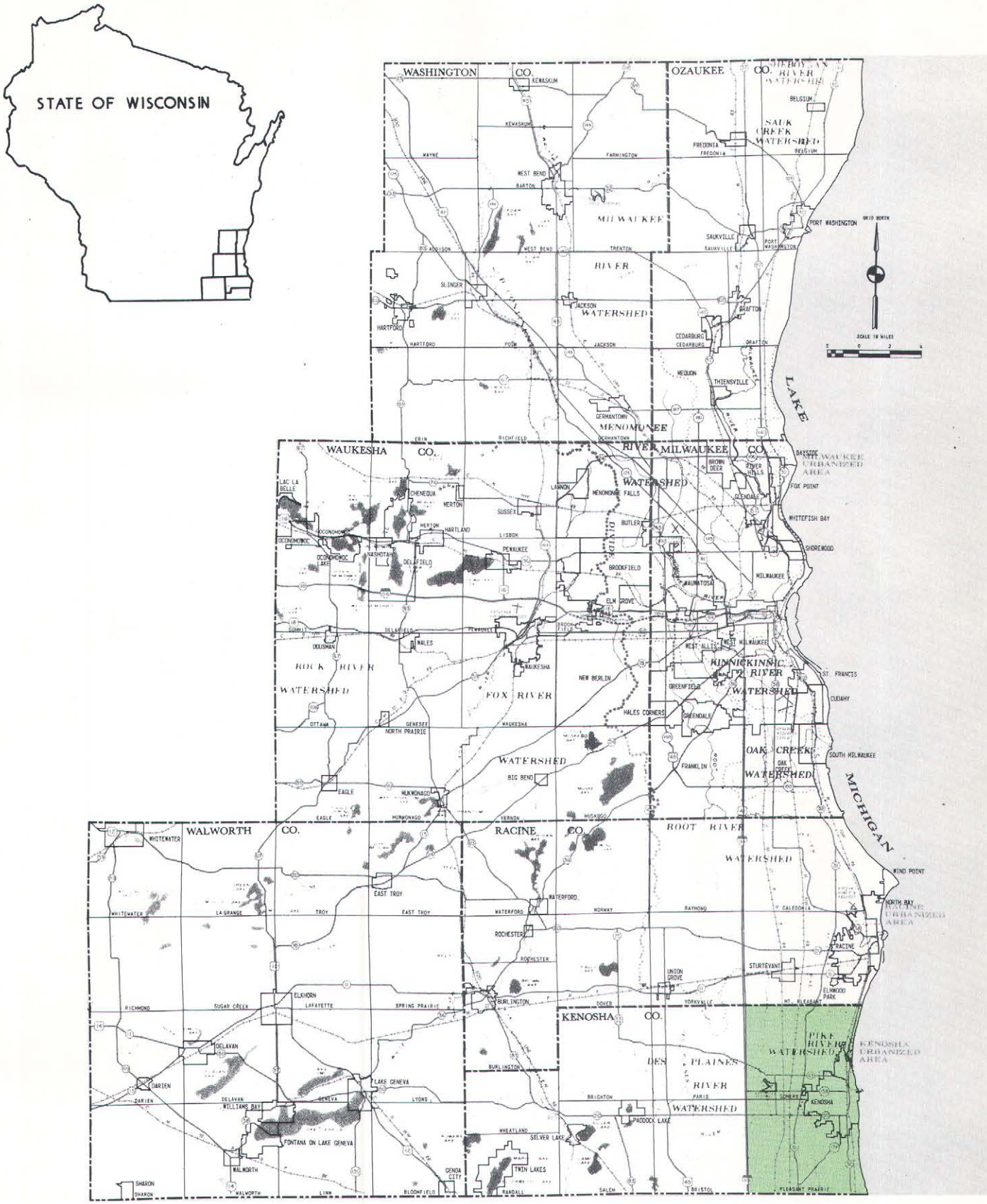
LOCATION OF THE KENOSHA PLANNING DISTRICT IN THE REGION



The Kenosha Planning District comprises 85.70 square miles of land and water area lying in Kenosha County between Interstate Highway "IH-94" and Lake Michigan.

MAP A

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cash and services with the federal government providing the two-thirds balance under the provisions of Section 701 of the Housing Act of 1954, as amended. The Commission then entered into a contract with the planning firm of Harland Bartholomew and Associates to provide comprehensive planning services for the District and to prepare the District plan. The firm had made the first comprehensive development plan for the City of Kenosha in 1925, a plan which had been extremely well received and implemented.

Program Purpose

The purpose of the District planning program is twofold: First, to provide the city and towns within the District with a comprehensive community development plan which would contain recommended proposals for land use, transportation system and those community facilities and utilities necessary to meet the needs of the District to the year 1990; and second, to carry the regional plans into greater depth and detail necessary for sound local planning and plan implementation.

Organization

The basic organizational structure for the study is shown in Figure A, consisting of a Citizen's Advisory Committee; local and Commission staffs and a planning consultant reporting to the Executive Director, who reports to the Commission. The Commission in turn serves the local units of government.

Citizen's Advisory Committee

A comprehensive community planning program necessarily requires public participation and for this purpose a Citizen's Advisory Committee for the District was created. This Committee is composed of nine members, three appointed by the Mayor of the City of Kenosha and three each by the Chairmen of the Towns of Pleasant Prairie and Somers. This committee advised and assisted the consultant and the Commission on the conduct of the planning program and served to keep the local governmental officials, legislative bodies and citizens informed on the content and progress of the program. (See Appendix A.)

This committee performed a most important function in familiarizing local leadership within the District with the study and plans and in generating and understanding of the objectives of the program. This Committee has proven to be a very active and valuable advisory body to the Commission staff and to public officials within the District throughout the conduct of the District planning program.

Staff

Local professional and technical staffs made significant contributions to the work program, and, indeed, without the active participation of these staffs the program would not have been possible. The City of Kenosha Planning Department provided a particularly valuable contribution to the work program through the preparation of the existing land use inventory for the entire District including land use identification, mapping, coding and measurement. The City of Kenosha Public Works and Water Utility Departments provided utility inventories and, through their engineering consultants, proposals for future water distribution systems, sanitary sewerage and sewage treatment facilities.

Many other local officials gave of their valuable time in assisting the consultant in the community facilities inventory and analysis and in the formulation of the capital improvement programs. Special acknowledgment is due the following for their careful review of the work and constructive comments thereon:

George E. Earley, Director, Simmons Library
Alvin Erdman, U. S. D. A., Work Unit Conservationist
John I. Erickson, Director, City Plan Commission
J. T. Gaffney, City Traffic Engineer
Jerome Gumbinger, Chief, City Fire Department
Donald K. Holland, Director, City Department of Public Works
Harold R. Mauer, Superintendent of Schools
O. Fred Nelson, Manager, City Water Utility
Frank Newman, Clerk, Town of Somers
Roger E. Prange, Clerk, Town of Pleasant Prairie
Joseph R. Sawicki, Director of Finance, City of Kenosha

By contract, the SEWRPC was responsible for the content and conduct of the District planning program. The administration of the contract and supervision of the planning work was performed by the Commission's Community Assistance Division. As a result of this administration and supervision, full use was made of the various data, materials, plan proposals and model ordinances prepared by the Commission or available from state and federal agencies. This resulted in a more thorough and comprehensive planning program than would otherwise have been possible under the terms of the contract with the consultant and the financing available. For example, the flood inundation lines delineated in the Flood Plain Information Report, prepared by the U.S. Army Corps of Engineers, for the Des Plaines River, were placed on all base maps for the District. Full cooperation and close coordination were also achieved, not only with the consultant and the local units of government, but also with various county and state agencies.

The Commission solicited and received careful review of and specific comments on all preliminary planning reports for the District by various affected state agencies, such as the State Conservation Department, the State Highway Commission, the State Department of Resource Development, and the State Aeronautics Commission. Review and comments were also received from the Lake County Regional Planning Commission, Lake County Transportation Study, U. S. Army Corps of Engineers, U.S. Soil Conservation Service through the State Conservationist, Lake Shore Transit-Kenosha, Inc., Kenosha County Park Commission, Kenosha County Highway Department, Chicago and Northwestern Railway Company and the University of Wisconsin.

The Commission staff was also directly responsible for certain phases of the planning program such as all keypunching of data onto cards and machine processing of the land use inventory data, the assignment of future traffic demand to, and the quantitative test and evaluation of the proposed transportation and major street plan, and the preparation of the natural resources inventory and analyses.

The private planning firm of Harland Bartholomew and Associates was specifically employed for the Kenosha Planning District program. By

contract, the consultant was responsible to the Commission for the preparation of a comprehensive community development plan for the District, including base map preparation; economic, population, natural resource and land use studies; forecasts; land use analysis and plan; transportation analyses and plan; community facilities analyses and plan; areawide capital improvement program; zoning and land division ordinances; and recommendations on organization for areawide planning; plan implementation and administration.

Therefore, this planning report is the joint effort of the consultant, the Commission, local officials and the District's Citizens Advisory Committee.

Method of Presentation

All studies, analyses, forecasts and plan proposals completed under the program were presented in seven preliminary reports as listed below:

Report Number 1 - Preliminary Natural Resources Report

Report Number 2 - Preliminary Population Report

Report Number 3 - Preliminary Economic Report

Report Number 4 - Land Use Analysis and Land Use Plan

Report Number 5 - Transportation and Major Street Plan

Report Number 6 - Community Facilities

Report Number 7 - Capital Improvement Program and Administration

These preliminary reports were intended to allow careful, critical review by public officials, agency staffs, the Citizens Advisory Committee, and other interested citizen groups and citizens within the District. Thus, this final report includes all corrections, additions and significant comments made by the many reviewing officials and citizens.

These revised studies, analyses, forecasts and plan proposals are documented and presented in Volume One of this report. The recommended implementation devices, such as the zoning, land division and official map ordinances and capital improvement programs as recommended for local adoption are presented in Volume Two of this report, copies of which are avialable from the Director, City Plan Commission, the Town Clerks of Pleasant Prairie and Somers and the SEWRPC.

Urban growth and development will occur within the Kenosha Planning District in the years ahead whether or not a plan is adopted and followed. Without a plan, however, this growth may not only be disorderly and inefficient, but may be ugly and may lead to further environmental deterioration.

It is hoped, therefore, that this report will help meet the desires of the people of the District for a safer, more healthful and pleasant environment and result in the development of a more efficient, orderly and economical community.

The photograph above shows the Des Plaines River as it crosses CTH 'ML' in the southwestern corner of the Kenosha Planning District. The extremely flat topography of the flood plain is evident and it is this flood plain that should be protected from urban development.

Chapter II

NATURAL RESOURCES

The natural resources of an area, its air, water, soils, minerals, vegetation and wildlife, are required at a certain level of both quality and quantity for the very sustenance of human life. Moreover, these resources must be maintained at more than marginal amounts and in more than marginal quality conditions if the best environment for human life is to be provided. For example, a high standard of living demands water in amounts and in quantity that is not only adequate for essential needs but also sufficient to serve as an amenity. While urbanization greatly changes the nature of the relationship of man to his natural environment, the nature of these changes, contrary to popular assumption, actually makes the supporting resource base, not less, but more important. Under the pressures of an increasingly affluent, mobile, urban population increasing demands are exerted upon the underlying and sustaining resource base, and the liabilities and assets inherent in that base become magnified in importance.

The Kenosha Planning District is an area in which the pressures of urbanization are placing even greater demands upon a limited natural resource base, with increasing danger of irreparably destroying that base through improper development. The purposes of this chapter are to describe the salient features of the natural resource base of the Kenosha Planning District, to identify potential dangers to and opportunities for the conservation and wise use of that base, and in this manner to avoid unreasonable private and public expenditures while providing the very best environment for human life and urban development within the District.

Climate

The predominantly continental climate of the District is partially modified by Lake Michigan. The effects of the lake are most pronounced in spring and early summer when prevailing winds are off the lake and less in winter when prevailing winds are westerly. The climatic effects of Lake Michigan are most pronounced within a relatively narrow band extending a few miles inland, and diminish quite rapidly with distance from the lake shore. Weather in the District is heavily influenced by northwestern pressure systems moving easterly across the continent and by southwestern pressure systems moving northeasterly across the continent.

Daylight varies in length from 15 hours, 20 minutes in late June to 9 hours, 3 minutes in late December. Four definite seasons give a wide variety of weather throughout the year. Winters are relatively cloudy and cold, usually beginning in November and lasting through March, although November and March are generally considered conditional months. The streams and small lakes in the District are generally frozen over from late November until early April. Changes in weather can be expected every two or three days from late fall through mid-spring.

Spring is slow in coming and is a mixture of warm and cold periods. Early spring is the time when low temperatures of winter are moderated rather than high temperatures becoming more frequent. The frequency of snowfall decreases until by the end of March rainfall is again the predominant form of precipitation for the first time since November. With advancing spring, the frequency of precipitation becomes less, but intensities increase. Mid and late spring are retarded by prevailing relatively cool northeasterly winds blowing off Lake Michigan.

Summers are fully developed and warm with several hot and humid periods. Fortunately, the humid periods usually last for only a few days. Cool periods may occur during any summer month. Dew, which is often heavy, forms on a majority of warm summer mornings.

Fall arrives suddenly and usually lingers on into late November. At this time of the year, relatively warm lake water tends to prevent nighttime temperatures from being as cold as those farther inland. Nearly every fall has one or more periods of Indian Summer when days are warm and hazy, skies generally cloudless, and nights cool. The change from fall to winter is often as abrupt as the change from summer to fall.

Temperature

There is great variation in temperature from season to season and often from day to day. Air temperatures lag about three weeks behind the solstices, resulting in July being the warmest month and January the coldest month. During the spring and early summer, a shift in wind from a westerly direction to one blowing off Lake Michigan frequently results in a 10° to 15° drop in daytime temperatures over a band extending a few miles inland from the lake shore. The number of days per year with temperatures of 90°F or higher has averaged 15, with totals in individual years ranging from none to more than 30. The number of days per year with temperatures of 0°F or lower has averaged 12, with totals in individual years ranging from more than 40 to less than 5. The average date of the last 32°F temperature in spring is May 1 and of the first in fall is October 15. These dates occur on the average about 10 days earlier in spring and about 10 days later in fall over a band extending two to three miles inland from the Lake Michigan shore. (See Table 1.)

The growing season, defined as the number of days between the last freeze in spring and the first in fall, has averaged 166 days in the western part of the District and about 174 days along the Lake Michigan shore. The depth of frost penetration into the ground is highly variable. During winters when snow cover occurs before the ground is frozen deeply and lasts all winter in depths greater than 10 inches, frost penetration averages only a few inches regardless of how cold the weather becomes. When snow cover occurs after the ground has frozen deeply, average penetrations have exceeded 36 inches. The ground usually begins to freeze in late November or early December and thaws about the first of April.

Precipitation

Precipitation is normally adequate for most agricultural purposes and for lawn watering, although some soil moisture deficiency usually occurs in July and August. Severe droughts affecting all crops, lawns, and ornamental shrubs are quite rare. Approximately 55 percent of the annual precipitation occurs in the five-month period from May through September. Snow is the prevalent form of precipitation from mid-November

Table 1

CLIMATOLOGICAL SUMMARY

Milwaukee, Wisconsin
1871 - 1965

	January	February	March	April	May	June	July
Temperature (Degrees F.)							
Mean							
Daily Maximum	28.3	30.4	39.5	52.2	63.3	73.4	79.2
Daily Minimum	13.8	16.1	25.6	36.5	45.6	55.4	62.3
Monthly	21.1	23.3	32.6	44.4	54.5	64.4	70.8
Extremes							
Record Highest	62	62	81	90	94	104	105
Record Lowest	-25	-24	-10	12	21	33	40
Precipitation (Inches)							
Mean Total	1.86	1.59	2.45	2.72	3.24	3.43	2.88
Maximum Monthly	5.38	5.39	5.53	7.09	9.56	10.03	7.66
Minimum Monthly	0.15	0.10	0.05	0.46	0.41	0.61	0.28
Maximum in 24 Hours	3.24	1.95	2.57	3.10	3.25	5.76	4.35
Snow							
Mean Total	12.2	10.4	9.8	1.9	0.1	0.0	0.0
Maximum Monthly	52.6	35.4	36.3	15.0	3.2	T	0.0
Minimum Monthly	0.7	1.6	T	0.0	0.0	0.0	0.0
Maximum in 24 Hours	16.7	20.3	14.3	14.0	3.2	T	0.0
Relative Humidity (Percentage)							
Midnight CST	75	76	82	76	74	78	81
6:00 A.M. CST	76	77	85	79	79	80	83
Noon CST	68	68	72	62	61	59	61
6:00 P.M. CST	72	72	76	65	60	61	64
Wind (Miles Per Hour)							
Mean Hourly Speed	13.0	13.0	13.7	13.6	12.5	10.6	9.7
Direction	WNW	WNW	WNW	NNE	NNE	NNE	SW
Fastest Wind Speed	62	58	73	66	72	57	59
Direction	W	NE	SW	SW	SW	S	W
Percent of Possible Sunshine	43	44	49	54	59	64	71
Degree Days (Base 65°F.)	1376	1193	1054	642	372	135	43

	August	September	October	November	December	Annual	Years of Record
Temperature (Degrees F.)							
Mean							
Daily Maximum	77.7	70.7	59.2	44.4	32.6	54.2	91
Daily Minimum	61.7	54.6	43.7	30.8	19.5	38.8	91
Monthly	69.7	62.7	51.5	37.6	26.1	46.5	91
Extremes							
Record Highest	101	99	89	77	63	105	95
Record Lowest	42	28	15	-14	-22	-25	95
Precipitation (Inches)							
Mean Total	2.85	3.15	2.27	1.99	1.69	30.12	95
Maximum Monthly	8.06	9.87	7.15	8.56	4.57	50.36	95
Minimum Monthly	0.29	0.18	0.09	0.11	0.08	18.69	95
Maximum in 24 Hours	4.05	5.28	2.60	2.74	1.93	5.76	95
Snow							
Mean Total	0.0	0.0	0.1	3.1	8.3	45.9	82
Maximum Monthly	0.0	T	2.4	18.4	30.7	93.3	61
Minimum Monthly	0.0	0.0	0.0	0.0	T	14.4	61
Maximum in 24 Hours	0.0	T	1.7	14.6	11.1	20.3	82
Relative Humidity (Percentage)							
Midnight CST	83	84	78	79	78	79	5
6:00 A.M. CST	87	87	81	81	80	81	5
Noon CST	62	64	65	67	73	65	5
6:00 P.M. CST	67	72	70	75	76	69	5
Wind (Miles Per Hour)							
Mean Hourly Speed	9.7	11.0	11.6	13.3	12.9	12.1	24
Direction	SW	SSW	SSW	WNW	WNW	WNW	14
Fastest Wind Speed	50	62	60	72	62	73	25
Direction	W	S	S	W	SW	SW	25
Percent of Possible Sunshine	67	61	58	43	40	56	25
Degree Days (Base 65°F.)	47	174	471	876	1252	7635	30

Source: U. S. Department of Commerce, Weather Bureau.

to the end of March. The seasonal snowfall averages 46 inches, with individual seasons having a range from less than 15 inches to more than 90 inches. Total precipitation averages 30.12 inches per year.

Other Elements

Thunderstorms occur on an average of 40 days per year, with individual years ranging between 25 and 50 days. June and July have more thunderstorms than other months, followed by August and then May. Hail falls on an average of only two days per year. May generally has more hail occurrences than any other month, followed by April, June and July. Hail large enough to damage crops and property is very rare.

Winds. Prevailing winds are northwesterly from November through March, northeasterly from April through June, and southwesterly from July through October. March and April are normally the windiest months, with average wind speeds of 14 miles per hour. Wind speeds, neglecting gusts, can be expected to reach 55 miles per hour at the 30-foot level and 45 miles per hour at the 10-foot level about once in two years. Wind speeds can be expected to reach 100 miles per hour at the 30-foot level and 85 miles per hour at the 10-foot level about once in 50 years.

Sunshine. Annual sunshine averages 56 percent of possible. Relative humidity usually varies from hour to hour, day to day, and season to season. Generally, it is highest near daybreak and lowest in early and midafternoon. Annual lake evaporation is estimated to be 28 inches with about 77 percent of the annual total occurring in the months of May through October. Table 1 presents a climatological summary of data gathered at Milwaukee, General Mitchell Field, a first order weather station. These data should closely approximate climatological conditions in Kenosha.

Air Pollution

Air pollution is defined as the presence in the air, through the activities of man, of substances in concentrations sufficient to interfere with human comfort, health or safety, or with the use and enjoyment of property. Some of the substances commonly identified with air pollution are nitrogen dioxide, nitrogen tri-oxide, sulfur dioxide, carbon monoxide, ozone, soot, fly ash, and soil particles. In recent years radioactive substances have been added to the list of pollutants. The science of air pollution detection is well-developed, but has not been generally applied in any significant degree to areas not having a serious air pollution problem, as indicated by frequent complaints of discomfort, deterioration of health and increasing incidence of pulmonary diseases, and deterioration of building materials, paint, rubber products, and nylon fabrics.

Under the auspices of the U. S. Department of Health, Education and Welfare, the City of Kenosha operates the only air pollution monitoring station in the Kenosha Planning District. This station is located at 625 W. 52nd Street at the site of the Kenosha Vocational School. An arithmetical average of sampling results comprising the published record is shown in Table 2, which indicates that, on a comparative basis, no serious air pollution problem presently exist in the Kenosha Planning District.

Table 2

COMPARATIVE RESULTS
OF
AIR POLLUTION MONITORING
1961-1963

Area Sampled	Average Suspended Particulate Matter(1) (Micrograms Per Cubic Meter)
All stations in Midwestern United States	145
All stations in State of Wisconsin	135
City of Milwaukee	151
City of Racine	149
City of Kenosha	115

Source: U. S. Department of Health, Education and Welfare, "Air Pollution Measurements of the National Air Monitoring Network", 1963.

The primary sources of air pollution in the District are refuse burning, stack fumes from residences, public buildings and industries, and automobile exhaust. Inasmuch as economic activity and population levels are anticipated to increase steadily in the foreseeable future, the total pollution load which would effect the District will probably also increase steadily. Topographic conditions, however, are not conducive to severe intensification of air pollution, and climatic conditions are generally favorable to dispersion of pollutants over Lake Michigan, under the influence of the prevailing westerly winds.

Exceptions occur during stagnant low pressure conditions and during the spring of the year when occasional easterly winds off cold Lake Michigan waters produce an inversion effect in the nearshore area. During such periods particulate matters reach their highest levels of concentration. In general, however, it may be concluded from the limited data available that the District neither has an existing air pollution problem nor the potential for such a problem in the near future.

Geology

The District lies within the eastern ridges and lowlands geomorphic province. Within this area, depositional action by a succession of glaciers has resulted in the blanketing of a mature drainage system developed in dolomitic bedrock formations over eons of time. This pre-glacial landscape, which was similar to the present "coulee" topography of southwestern Wisconsin, has been covered with glacial drift, alluvium, lake deposits, and windblown silts and sands. The distribution of this covering of sediments is shown on Map 1.

(1) Suspended particulate matter consists of particles of smoke, dust, and fumes and droplets of viscous liquid remaining in the air for varying periods of time and ranging from less than one micron (1/25,000 inch) to 100 microns.

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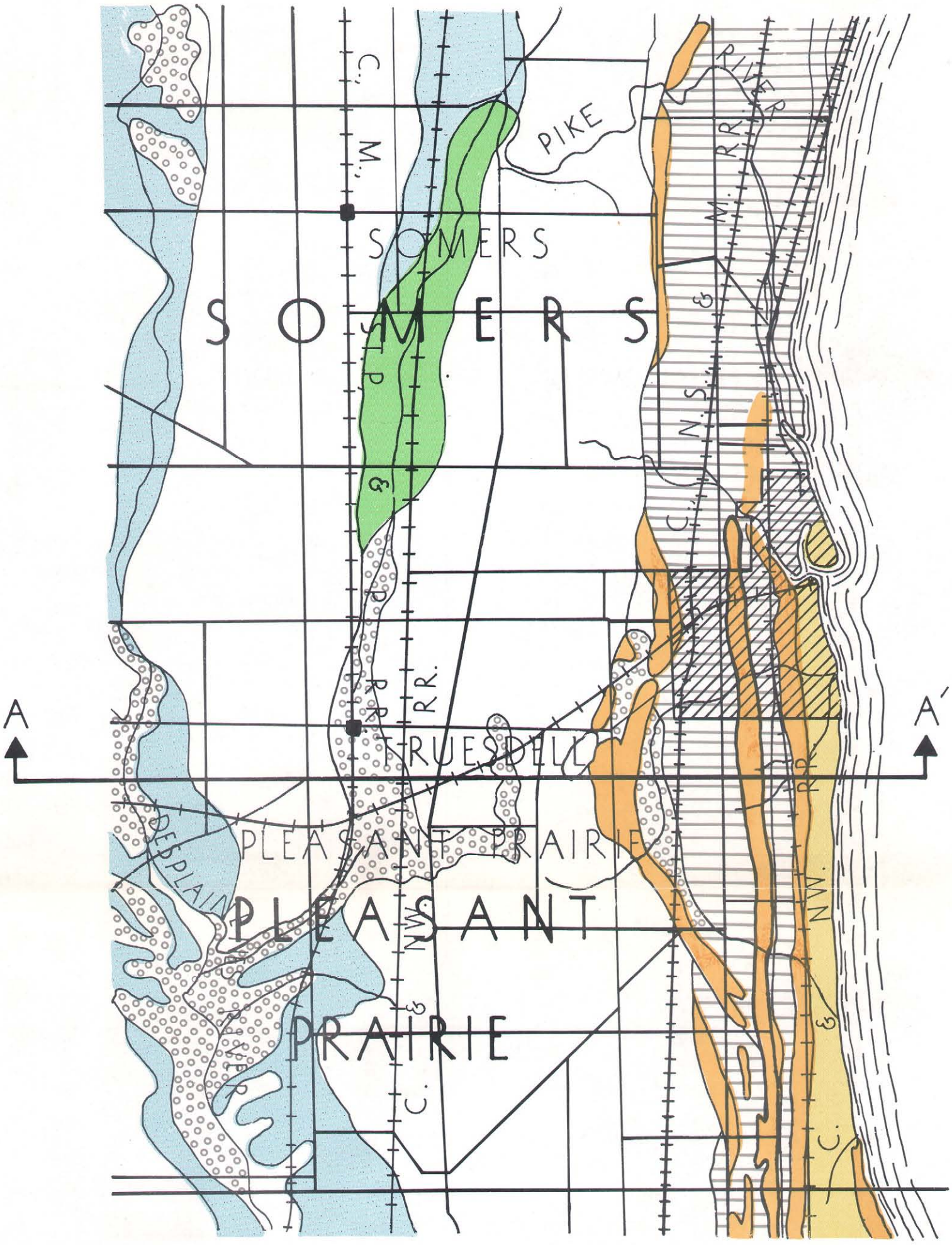

GENERALIZED SURFACE GEOLOGY

KENOSHA PLANNING DISTRICT

(AFTER WILLIAM C. ALDEN, 1918)

- PEAT AND MUCK
- LAKE TERRACE DEPOSIT
- BEACH SAND AND GRAVEL
- LANDS SUBMERGED BY GLACIAL LAKE CHICAGO
- OUTWASH SAND AND GRAVEL
- END MORAINES
- GROUND MORAINES
- A A' SECTION - SEE FIGURE 1

MAP 1

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

1 ½ 0 1
SCALE IN MILES

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Two prominent north-trending end moraine hills control the existing immature drainage pattern. The end moraines rise up to 80 feet in elevation above the inter-morainal valleys in which lake, stream, and glacial waters have deposited sediments. The hill land lying west of the City of Kenosha is an end moraine which has served to limit the geographical extent of the large post-glacial lakes which formerly occupied the Lake Michigan Basin. Although fluctuating considerably in elevation during its long history, one of those lakes, Lake Chicago, remained at certain elevations for sufficient periods of time to allow the formation of prominent wave-cut cliffs, terraces, and bars of sand and gravel. Three distinct Lake Chicago stages can be recognized within the District: (1) the Glenwood stage at elevations 630 to 635 feet above mean sea level, (m.s.l.); (2) the Calumet stage at elevations 614 to 618 feet m.s.l.; (3) and the Toleston stage at about 600 feet m.s.l. The present mean water surface of Lake Michigan lies at about 580 feet m.s.l., some 50 feet lower than the peak stage recorded by those sedimentary deposits marking the maximum water level of the extensive post-glacial Lake Chicago.

Within the District the sedimentary rocks which underlie the surficial sediments do not appear at the surface, being buried by up to 300 feet of sediments. The sequence of laying, the geologic age, the generalized thicknesses, and the lithologic type of formation of the sedimentary rocks are shown on Map 1 and Figure 2.

A significant feature of the sedimentary rock underlying the District is that generally permeable rock units, such as sandstones, are found between, or under less permeable rock units, such as shales. Also, it is significant that the sedimentary rocks slope toward Lake Mighigan. Both conditions contribute to the formation of natural underground reservoirs of artesian-waters.

Minerals

In comparison with other portions of Wisconsin, the District is relatively mineral "poor". There are no deposits[2] of metaliferous minerals and sand, and gravel deposits are generally inferior to those found in the Fox (Illinois) River Valley west of the District. Common to Wisconsin in general, the District contains no known deposits of coal or of petroleum. The dolomites and shales which underlie the drift may offer some potential for mining for construction materials, but on the basis of present knowledge, no large-scale development can be anticipated, nor encouraged.

In cooperation with the Wisconsin Geological and Natural History Survey, the geological staff of the State Highway Commission of Wisconsin has surveyed the District and has identified sand and gravel deposits having significance for highway construction and maintenance purposes. The locations of these deposits are shown on Map 2, and pertinent related data are presented in Table 3.

Of the sites shown on Map 2, only sites 1, 2, and 6 have been developed and are presently providing aggregate to a predominantly local market. Sites 3, 4, 5, 7 and 8 are undeveloped deposits offering only a limited potential for development, as it appears that extraction of minerals would interfere considerably with other existing and planned land uses. Site 8, for example, is presently a tree plantation. Extraction at sites 3, 4 and 5 could interfere significantly with existing demands for urban land uses.

In summary, it may be concluded that the sand and gravel supply in the District is quite limited and development should be planned very carefully so that the existing deposits can be utilized to the fullest extent practicable, in consideration of other long-range land use requirements.

Soils

Soils and their properties exert a strong influence on the manner in which land within the District is used. Soils are an irreplaceable resource and mounting pressures upon land are constantly making this resource more and more valuable. Therefore, a need exists in any comprehensive planning program to examine how soils can best be used and managed.

> "This requires an area-wide soil suitability study which maps the geographic locations of the various kinds of soils; identifies their physical, chemical and biological properties; and interprets these properties for land use and public facility planning. The resulting comprehensive knowledge of the character and suitability of the soils can be extremely valuable in every phase of the planning process. Soils information can comprise a prime input into the preparation of planning standards; the analysis of existing land uses; plan synthesis, test, and evaluation; and, perhaps most important of all, plan implementation."[3]

This type of survey and analysis has not only been completed for the District but for the entire seven counties in the southeastern Wisconsin Region by the U. S. Department of Agriculture Soil Conservation Service under a cooperative agreement with SEWRPC. These survey maps are available for the entire region and the results of this survey and analysis have been published in SEWRPC Planning Report No. 8, Soils in Southeastern Wisconsin. This survey and analysis has been invaluable in the preparation of the District land use, transportation and community facilities plans. The continued use of this soil information in the detailed planning process by the City of Kenosha and the Towns of Pleasant Prairie and Somers is of even more importance.

Special soil suitability maps have been prepared for use in the District's planning program for the following six potential land uses:

(2) A mineral deposit is defined as a deposit of useful, or potentially useful minerals, rocks, or naturally occurring materials.

(3) Quote from Planning Report No. 7, Land Use-Transportation Study, Inventory Findings 1963, Volume One, by SEWRPC, May, 1965, Chapter IV, Page 52.

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FLOW DURATION CURVE

DES PLAINES RIVER AT WIS. ILL. STATE LINE

WATER YEARS 1946-1956

DRAINAGE AREA 133 SQUARE MILES

MEAN DAILY DISCHARGE C.F.S.

1000 9 8 7 6 5 4 3 2 100 9 8 7 6 5 4 3 2 10 9 8 7 6 5 4 3 2 1.0 9 8 7 6 5 4 3 2 0.1

0 20 40 60 80 100

PERCENT OF TIME EQUALLED OR EXCEEDED

NOTE: CURVE SYNTHESIZED USING U.S.G.S. FLOW DURATION DATA OF GURNEE, DES PLAINES, AND RIVERSIDE, ILL. STREAM GAGING STATIONS

FIGURE 2

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1947

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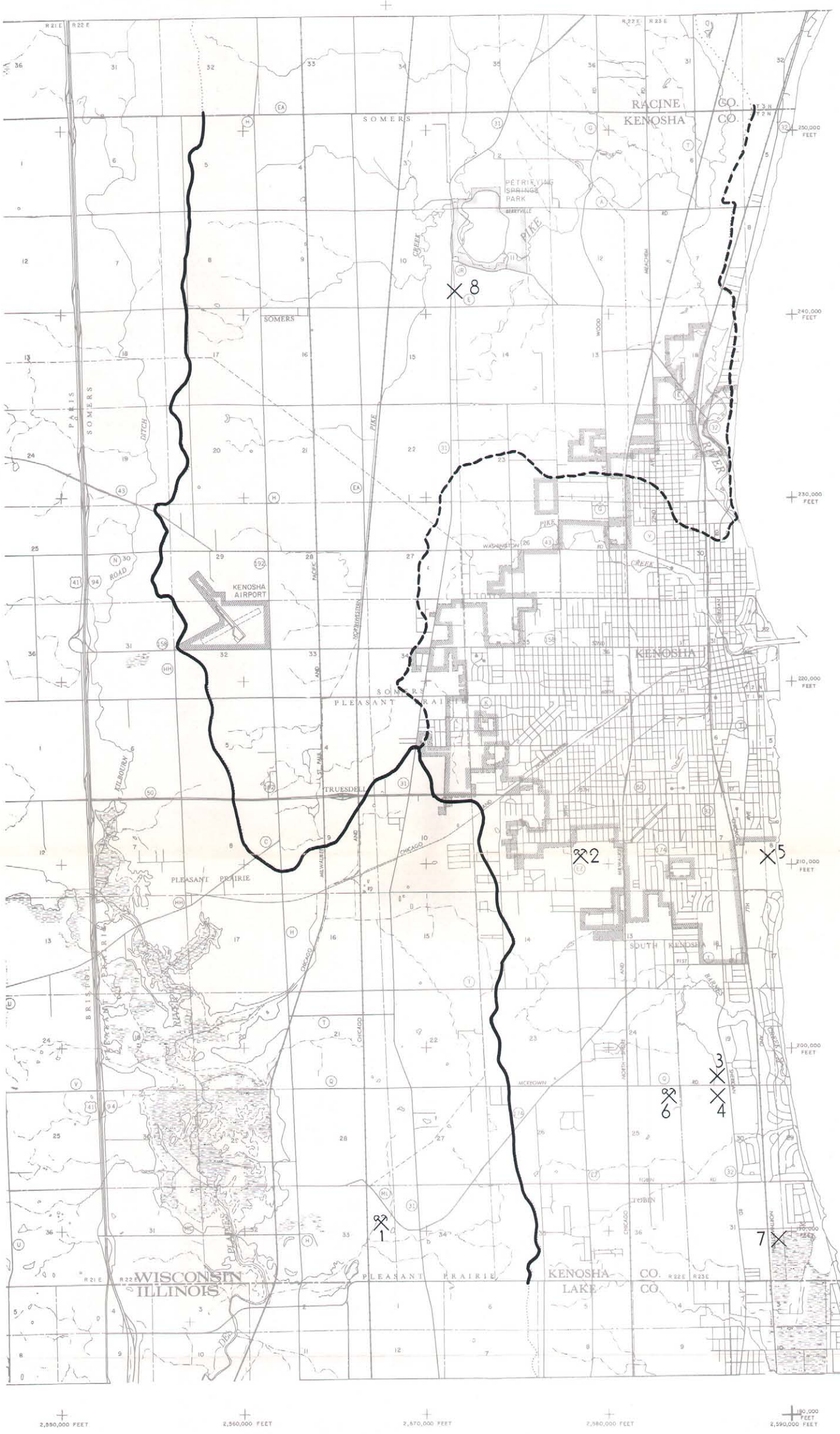

SAND AND GRAVEL DEPOSITS

SOURCE: STATE HIGHWAY COMMISSION OF WISCONSIN AND THE WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY

- DEVELOPED DEPOSIT
- UNDEVELOPED DEPOSIT
- 1 NUMBERS REFER TO INDEX LISTED ON TABLE 3
- SUBCONTINENTAL DIVIDE
- MAJOR DRAINAGE BASIN BOUNDARY

MAP 2

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS JANUARY 1967 MISSOURI

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Table 3

SELECTED FACTS ON SAND AND GRAVEL DEPOSITS

Deposit Number	Location	Type of Material Available	Estimated Reserves In Cubic Yards	Remarks on Usage
1	0.3 mile southwesterly of CTH ML; SE ¼ of the NE ¼, Sec. 33, T.1 N., R.22E.	Claybound gravel.	30,000	Clay limits useability
2	0.1 mile east of CTH EZ; NW ¼ of the SW ¼, Sec. 12, T.1 N., R.22E.	Clean, fine gravel.	90,000	Recommended for fine aggregate and winter sand
3	Immediately northwest of the intersection of STH 32 and CTH Q in the SE ¼ of the SW ¼, Sec. 19, T.1 N, R.23E.	Clean fine sand.	100,000	Suitable for winter sand
4	0.1 mile west of STH 32 and south of CTH Q in the E ½ of Sec. 30, T.1 N., R.23E.	Sand.	150,000	Suitable for winter sand
5	Immediately south of and contiguous to the City of Kenosha Sewage Treatment Plant in the NW ¼ of the SW ¼, Sec. 8, T.1 N., R.23E.	Clean well-sorted sand.	720,000	Suitable for winter sand
6	0.2 mile south of CTH Q in the NE ¼ of the NE ¼ of Sec. 25, T.1 N., R.22E.	Gravelly sand.	95,000	Suitable for winter sand
7	Immediately east of STH 32 and south of Chiwaukee Road in the NW ¼ of the SE ¼, Sec. 31, T.1 N., R.23E.	Clean fine sand.	120,000	Suitable for winter sand
8	Immediately east of STH 31 and N of CTH E in the SW ¼ of the SW ¼ of Sec. 11, T.2 N., R. 22E.	Poorly sorted silt, sand and gravel.	350,000	Suitable for subgrade construction without washing

Source: Geological Staff of the State Highway Commission in cooperation with the Wisconsin Geological and Natural History Survey.

Agriculture

The area of the District that is suitable for agricultural development is significant. Map 3 indicates that the great majority of land has slight or very slight limitations for this type of land use. The only large areas having moderate or severe and very severe limitations for agriculture are just south of Petrifying Springs Park, along the west edge of the District in the Des Plaines River area and its adjacent flood plain, and in the southeast section known generally as the Carol Beach area. Even in these areas the major portions have only moderate limitations for agricultural development.

Large Lot Residential Without Public Sewer

The soil suitability for this type of development is almost identical to the condition found for small lot development without public sewer service. There are a very few areas that have suitable conditions (See Map 4) and some of these are undesirable for other reasons. For example, the areas shown as suitable near the Des Plaines River may, in fact, be unsuitable because of the flood plain area.

Small Lot Residential Without Public Sewer

Map 5 clearly indicates a problem with respect to allowing small lot residential developments to occur without having service by public sewer facilities. Practically all of the land in the District available for future residential development has severe and very severe limitations for development unless it is served by a public sewer system. This means that areas proposed for residential development using septic tanks will be small in number and should be carefully checked to insure the proper soil conditions. Without adequate methods of supervision by public agencies, serious problems could develop.

Residential Development With Public Sewers

The vast majority of land available for residential development has only slight and very slight or moderate limitations so long as a public sewer system serves the area (See Map 6). In spite of this fact, there are areas having severe and very severe limitations that are likely to be urbanized in the near future. These areas offer, in many cases, opportunities for development as parks and open spaces, or incorporation into environmental corridors which should be protected against future intensive uses.

Industry

Map 7 indicates perhaps the most serious problem regarding soil suitability in the Kenosha Planning District. About 50 percent of the land available for future development for industrial purposes has severe and very severe limitations for this type of development. This, of course, poses a difficult problem for an area actively engaged in industrial development. It means essentially that expenses are going to be incurred preparing the land for industrial uses or these expenses will be transmitted to industries in the form of increased costs for foundations, etc. Very little area is actually classified as having slight and very slight limitations.

Recreation

The planning of areas for recreational uses offers a great deal more lattitude than most other uses. There are, of course, many areas that have severe and very severe limitations for recreational uses, but these can be avoided because of the large amounts of land suitable for this type of use (See Map 8). Many of the patterns formed by the suitable lands can be effectively integrated into the detailed design of future neighborhoods. Because of their importance to sound community development, the soil survey maps and the various analyses relating to soil suitability have been integrated into and adapted to various implementation devices prepared for the District, such as the zoning and land division ordinances.

Beach Erosion

Since 1847, it has been recognized that during irregularly spaced intervals of wet weather and high lake levels, the beach cliff [4] in the Kenosha area has been generally receding. In recent years the rate of recession has been reduced significantly and even halted in places through the construction of protective structures. Nevertheless, public concern exists over any possible loss of such high value real estate as Lake Michigan shoreland. Thus, an investigation of the cause-and-effect relations affecting beach erosion over time was carried out in order to appraise trends for long-range planning purposes. The investigation consisted of an examination of the characteristics of the Kenosha beach and consideration of the factors which are contributing to its erosion.

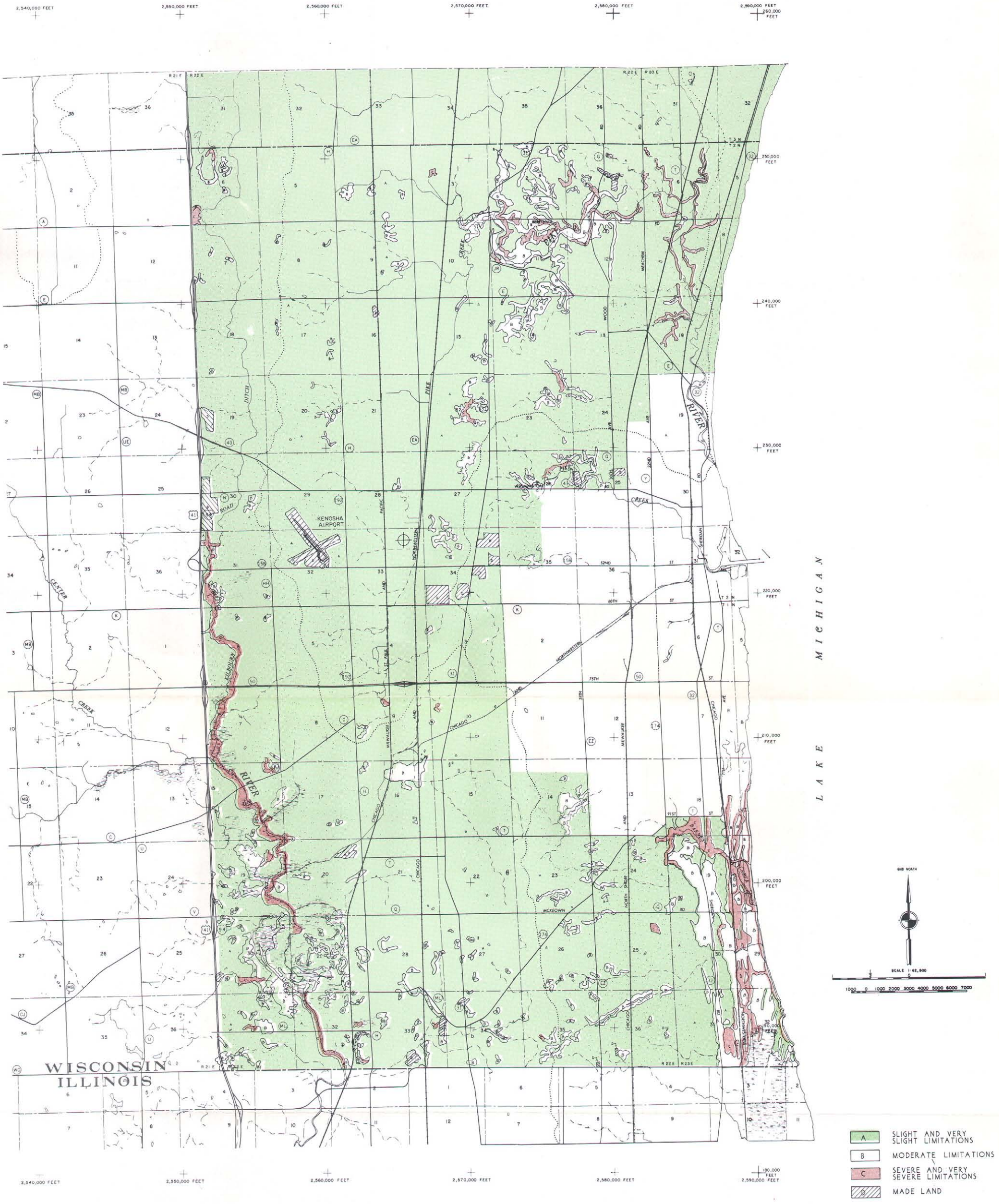
Description of the Beach

The Kenosha Planning District has twelve miles of shoreline on Lake Michigan. This shoreline is characterized by a generally straight alignment in a north-south direction with few crenulations. The general smoothness of the shoreline and the open mouths of the tributary streams, unoccluded by bay-mouth bars, mark it as a shoreline of degradation, that is, as a beach which is gradually being eroded and is therefore receding.

The primary objects of wave action differ in composition from the northern part of the District to the south. As shown in the picture below, the northern beach has a gravelly berm and clayey bluffs extending up to 35 feet in height. The height of cliff face decreases steadily southward so that it is about 20 feet high at the northern limits of the City of Kenosha and 5 to 10 feet high at the Illinois State line. South of the mouth of Pike Creek, the beach is very sandy in both the cliff and berm. All along the beach, and especially prevalent in the area north of Pike Creek, numerous protective structures, such as groins and riprap, have been erected to modify or to halt erosion of the berm and cliff.

About 30 percent of the shoreline in the District is in public ownership, and most of this land is included in the City of Kenosha park system. Most of the northern beach is owned privately and has been developed for high value residential use. A similar situation prevails south of the city, but several scattered sections of the beach remain undeveloped.

(4) By definition a beach consists of three parts: (1) a foreshore berm upon which waves always act, (2) the backshore berm which receives considerable wave action, and (3) the beach cliff which is occasionally affected by waves.



SOIL SUITABILITY FOR AGRICULTURE

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

MAP 3

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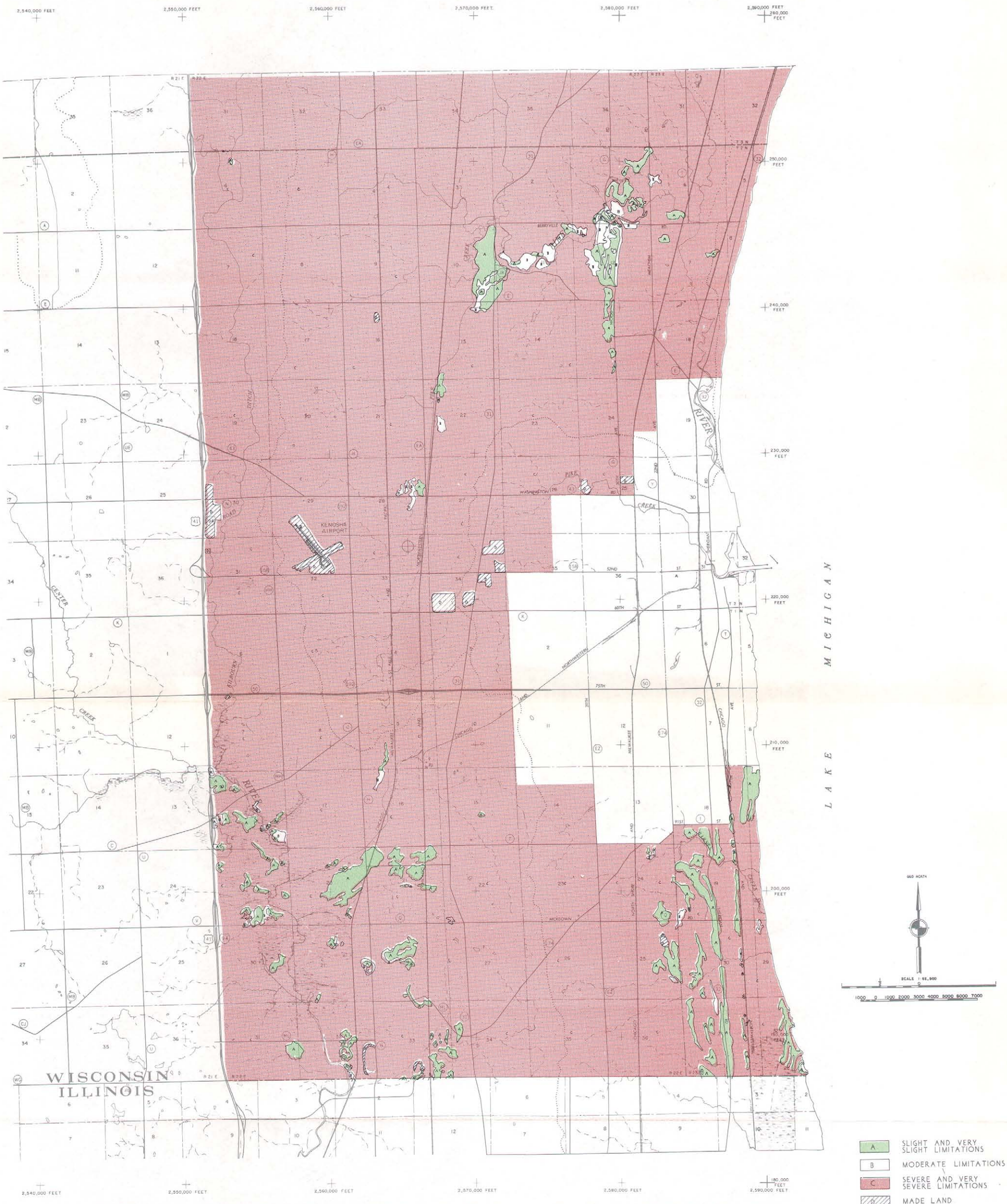

SOIL SUITABILITY FOR RESIDENTIAL DEVELOPMENT WITHOUT PUBLIC SEWER ON LOTS OF MORE THAN ONE ACRE

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

The preparation of this map was financed in part through an urban planning grant from the Housing and Home Finance Agency under the provisions of Section 701 of the Housing Act of 1954, as amended.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

JANUARY 1967

MAP 4

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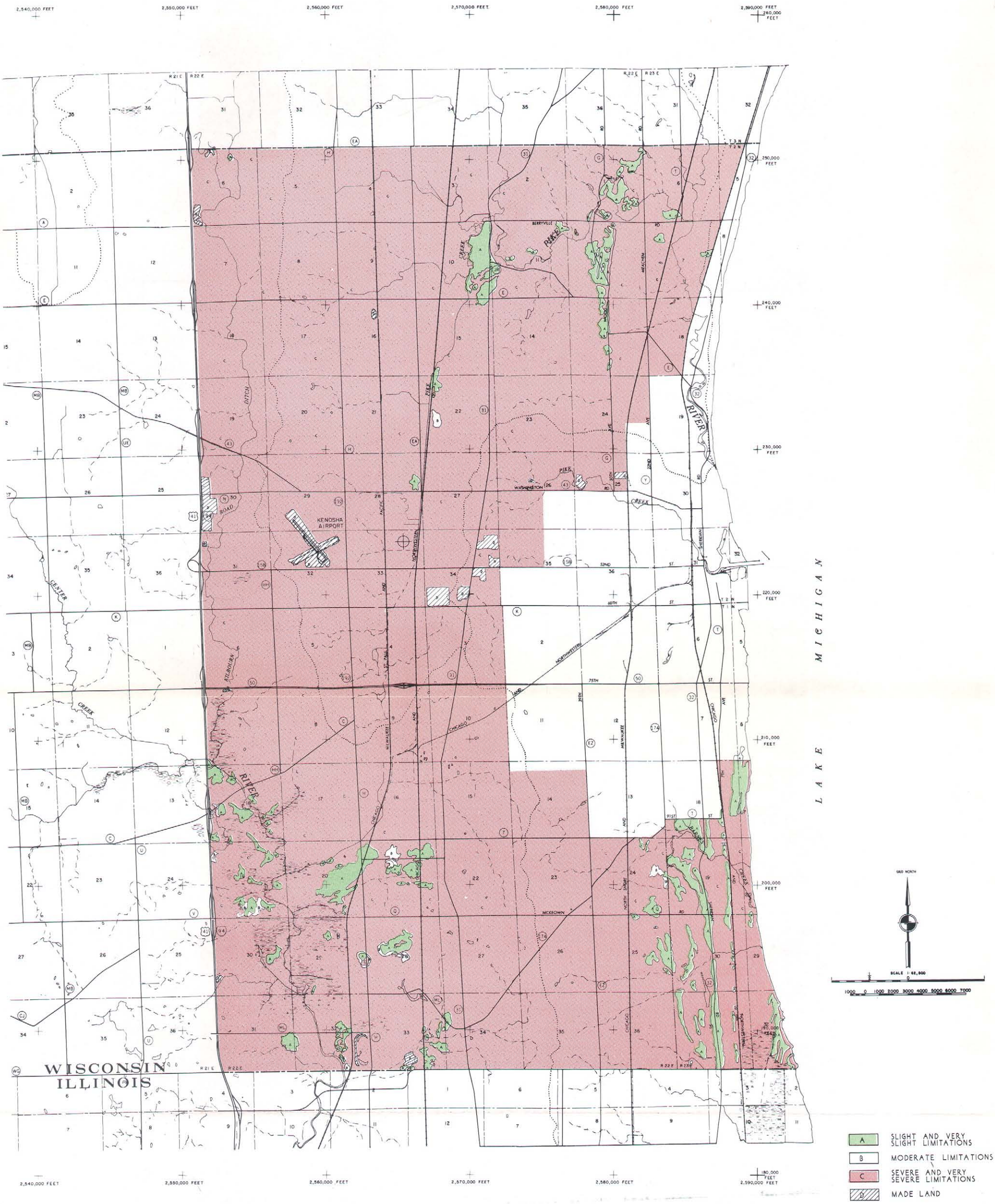

SOIL SUITABILITY FOR RESIDENTIAL WITHOUT PUBLIC SEWER ON ONE ACRE LOTS OR LESS

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
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MAP 5

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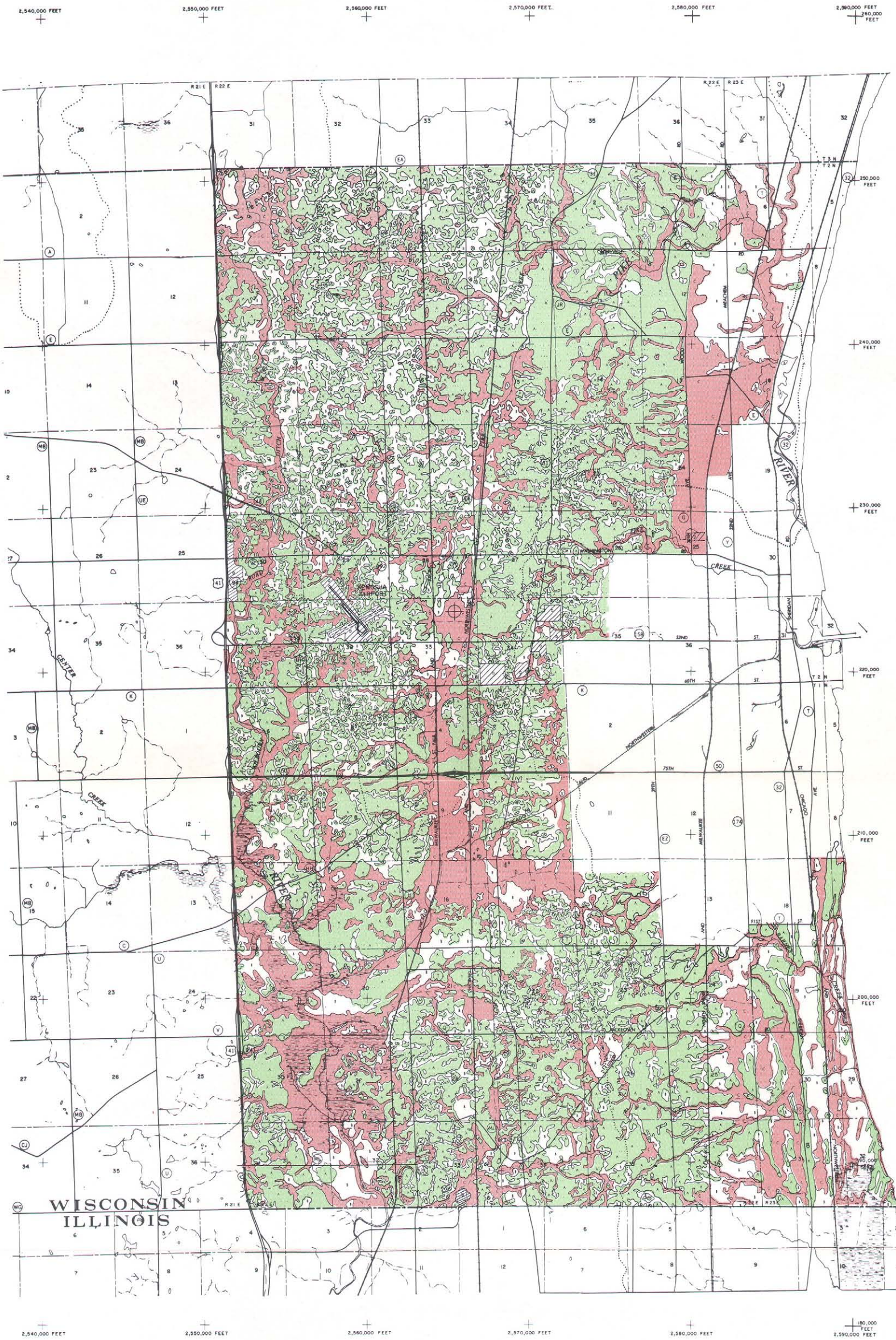

SOIL SUITABILITY FOR RESIDENTIAL DEVELOPMENT WITH PUBLIC SEWERS

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
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JANUARY 1967

MAP 6

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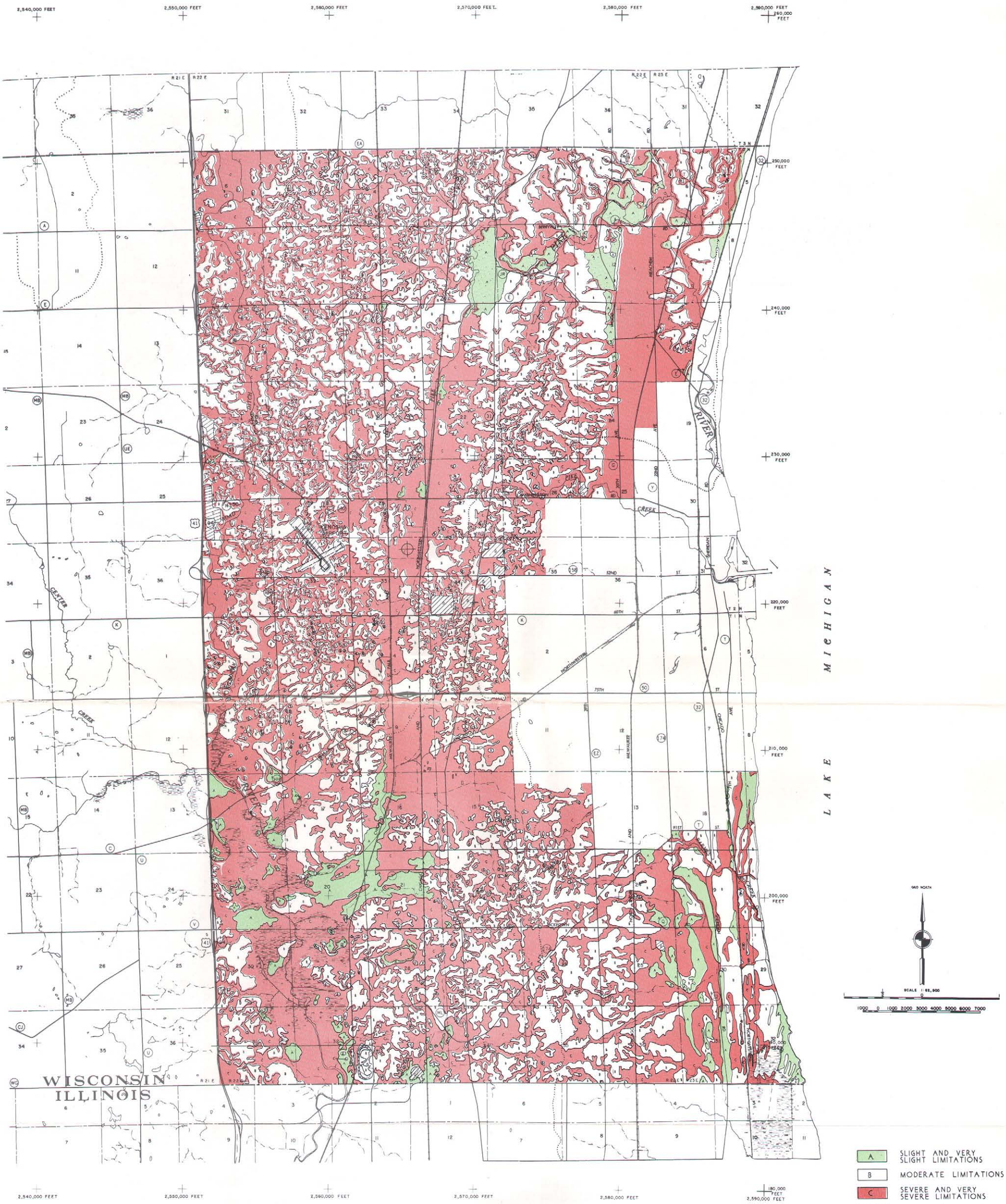

SOIL SUITABILITY FOR INDUSTRIAL DEVELOPMENT

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1963

MAP 7

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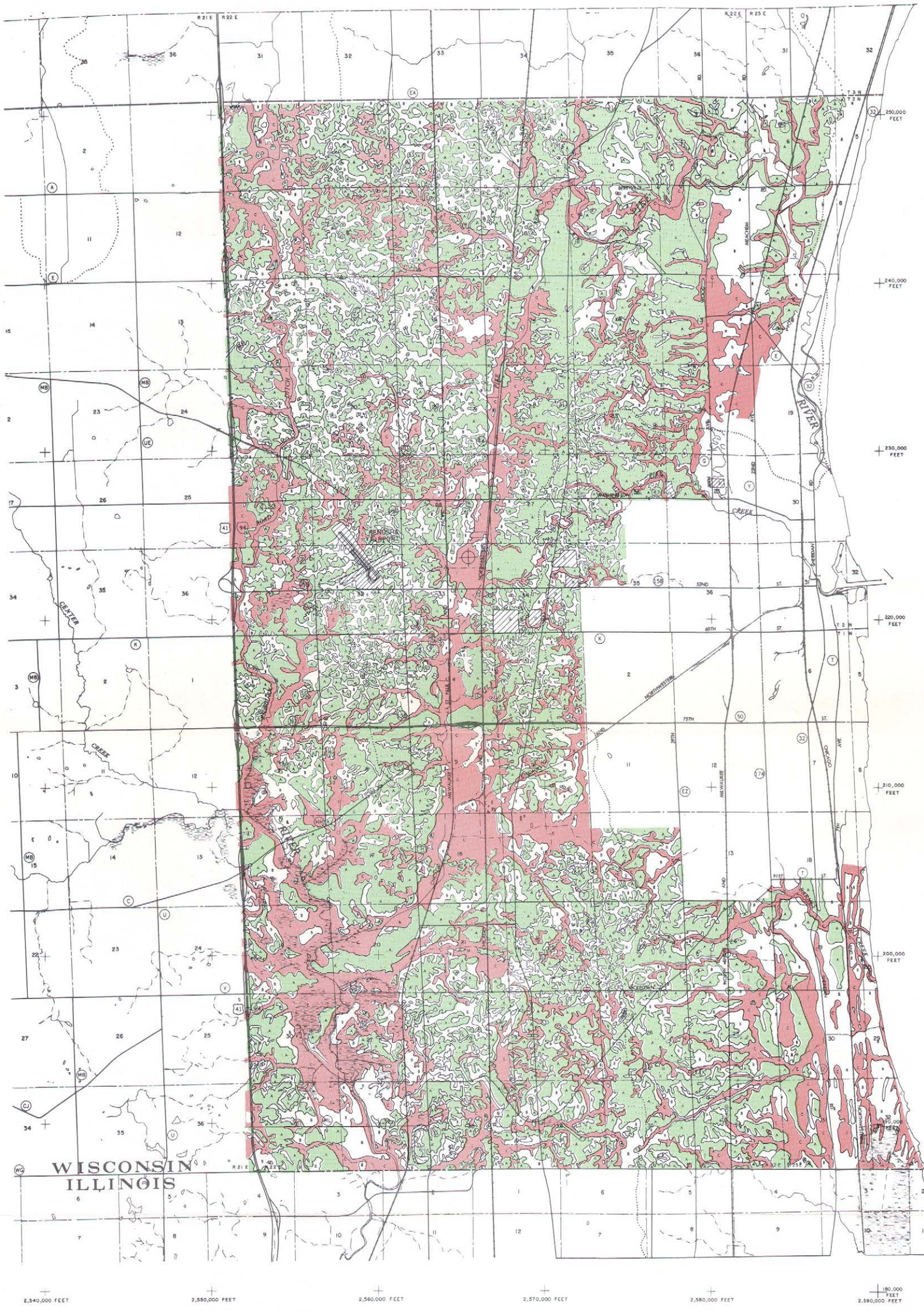

SOIL SUITABILITY FOR RECREATIONAL USES

INCLUDES PARKS, PLAYGROUNDS, ATHLETIC FIELDS, PICNIC AREAS AND GOLF COURSES

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

The preparation of this map was financed in part through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the Housing Act of 1954, as amended.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

MAP 8

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Erosion

Two primary causes of beach erosion exist within the District. A relatively minor cause of cliff erosion is hydrostatic pressure from ground water. A field survey of the clayey bluffs along the northern shore revealed that minor slumpage of the cliffs was occurring, apparently in response to lubrication of clayey soils by ground water seepage.

By far, the major source of beach erosion, however, is wave action from Lake Michigan, acting continually upon the berm to wash away smaller sized rock particles such as sand and silt, and undercut and wash away the cliff during high water. The intensity of such erosion is dependent upon wind speed and direction and upon the elevation of the water level of Lake Michigan.

Wind Effect on Waves. The record (Milwaukee Weather Station) of storms with winds over 25 miles per hour for 18 hours duration or longer for the 20-year period 1928-47 shows a total of 29 storms, of which 25 were associated with westerly winds. From an analysis of wind data, it is estimated that waves up to 13 feet in height with a period of seven to nine seconds may be expected to occur in this vicinity, in deep water, about once each year. A 13-foot wave in deep water would be attenuated in the shallow water offshore of the District so that only a five to six foot wave would strike the shore.

Lake Levels. The elevations of Lake Michigan water levels are also an important factor in beach erosion, with the most severe erosion occurring when high water levels and major storms are concordant in time. Analysis of the long-term (1860-1966) water level record of Lake Michigan reveals both seasonal and long-term fluctuations in water levels over a relatively narrow range of elevations. Seasonally, water levels are lowest during the winter months and highest during July and August because of the cumulative effects of spring snowmelt and summer precipitation. The recorded maximum change in average monthly stages during any one year is only 2.3 feet. Lake levels also rise and fall somewhat steadily over 10 to 15 year periods. The duration and sequence of this rise and fall is too unorderly for the identification of any predictable cycles. The maximum and minimum monthly stages of record are, respectively, 581.9 in June of 1886 and 575.4 feet (according to the International Great Lakes Datum of 1955) in January of 1965. The most recent period of exceptionally high stages occurred during 1951-53 when cliff recession proceeded at a rapid rate. Lake levels in 1966 were at a generally low stage but barring improbable events, such as drastic climatic changes or major export of lake water, high levels will undoubtedly re-occur within the span of only a few years.

Recognition and alarm at the rate of cliff recession in the area of the Kenosha Planning District has led to three separate studies by the U. S. Army Corps of Engineers.(5) These studies were directed at determining the best method of preventing further erosion, stabilizing existing beaches, and of restoring and creating new beaches. General trends in beach erosion were revealed in these studies and are pertinent to this report, although it must be recognized that the past may not always be an accurate guide to the future in this instance because beach-protective structures applied during recent decades have in places reduced the historic rate of cliff recession. During the period of record (1872 to 1953), the Kenosha beach cliff receded at an average annual rate of about two feet per year along the north shore above Pike Creek, and at a rate of about four feet per year along the south shore. The general trend of cliff recession since 1904 is depicted on Map 9. Although attention focuses upon the cliff portion of the beach, because of its potential effect upon land uses, it must be remembered that erosion also acts on the berm, which is popularly termed the "beach". A field survey of the composition of the berms during 1966 showed them to be generally "lean" north of the city, containing little of the fine particles of sand and gravel which make a desirable recreational resource. South of the city, it is apparent that considerable erosion of the berm has occurred because the "beach" is narrow and slopes steeply even though it is composed primarily of sand.

Erosion Control and Related Measures. Many possible techniques can be applied to protect the berm and the cliff which together comprise the beach. Rock groins and jetties are commonly constructed to extend pier-like out from the shore and disrupt the longshore drift and the onshore refraction waves. Also, shore areas can be protected by seawalls and riprap. A non-structural protection device consists of artificially nourishing the beach with sand. All of these measures have been or are being applied to the erosion problem in the District. Numerous groins and related protective structures have been constructed along the north beach and have apparently been effective in halting erosion. In fact, small beaches of accretion can be noted against several of the groins indicating that the north beach, at least under low water conditions, may actually be building. South of Pike Creek, however, where the beach is especially prone to erosion, a serious erosion problem still exists. There protective structures are widely spaced and no active local agencies, such as the Harbor and Park Commissions of the City of Kenosha, exist to undertake public works of protection. In addition, no detailed engineering plan has been attempted for this portion of the District.

In 1955, the Army Corps of Engineers released a report on the city portion of the beach.(6) The report included the recommendations set forth in Table 4. A significant fact about this plan is that it was accompanied by an official policy statement by the Corps of Engineers to the effect that protective projects in the area could not be recommended for federal cost sharing because of an unfavorable benefit-cost ratio (0.7 at 2½ percent interest). In an explanatory note, it was pointed out that recreational benefits resulting from construction or restoration of protective beaches were not evaluated "...as representatives of the City of Kenosha have indicated

(5) House Document No. 88, 83rd Congress, 1st Session, Rivers and Harbors Report. County of Racine, Wisconsin - Beach Erosion Control Study, U. S. Army Corps of Engineers, Beach Erosion Board.

House Document No. 273, 84th Congress, 2nd Session, Rivers and Harbors Report, City of Kenosha - Beach Erosion Control Study, U. S. Army Corps of Engineers, Beach Erosion Board.

House Document No. 28, 83rd Congress, 1st Session, Rivers and Harbors Report. Illinois Shore of Lake Michigan Beach Erosion Control Study, U.S. Army Corps of Engineers, Beach Erosion Board.

(6) House Document No. 273, 84th Congress, 2nd Session, Rivers and Harbors Report. "City of Kenosha, Wisconsin Beach Erosion Control Study", U.S. Army Corps of Engineers, Beach Erosion Board.

Table 4

BEACH EROSION CONTROL PLAN FOR
THE CITY OF KENOSHA

Item No.	Place of Execution	Recommendation
1	Alford Park	Maintenance of existing groin system.
2	Pennoyer Park	Construction of stone revetment for 650-foot reach of shore.
3	Kennedy Park	Reconstruction of 1,620 feet of old breakwater.
4	Simmons Island Park	Reconstruction and extension southerly of a rubble mound to protect 425 feet of shore. An alternative plan of steel sheet pile wall to be used for the southerly 125 feet of this reach.
5	Simmons Manufacturing Co. and Lake Front Park and Stadium	Reconstruction of 2,570 feet of breakwater.
6	Eichelman Park	Reconstruction of 250 feet of low concrete seawall and riprap along the entire length of 748 of seawall. Reconstruction of 670 feet of offshore breakwater.
7	Eichelman Park to 75th Street	Maintenance and reconstruction of existing stone revetment.
8	Southport Park	Construction of stone revetment for 2,090 feet of shore. An alternative plan provides for reconstruction of groin system and protective beach of artificial fill for northerly 1,700 feet of problem area and revetment of stone for southerly 390 feet.

BEACH EROSION

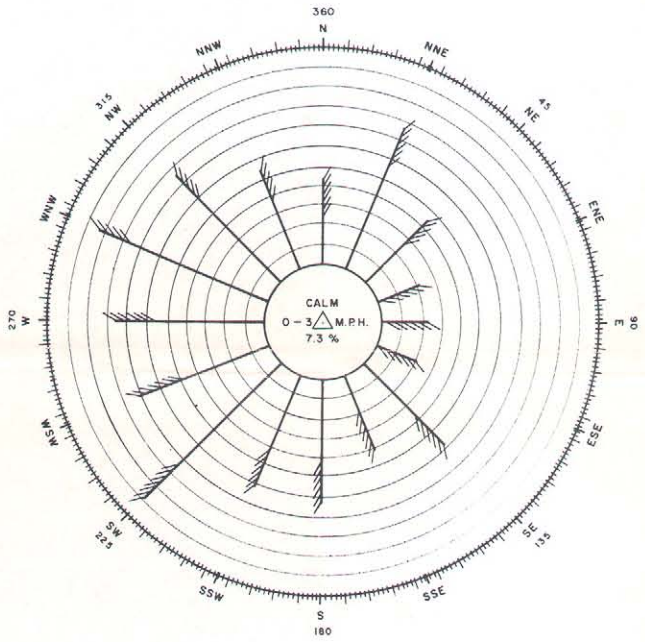
BEACHLINES	YEAR	ANNUAL MEAN HIGHWATER
———	1904	579.0
.....	1937	576.5
- - - - - -	1950	577.5
———	1963	576.0

DIRECTION OF LITTORAL DRIFT

SOURCE: 1904 - U.S.G.S.
OTHERS - AERIAL PHOTOS

LAKE MICHIGAN

WIND ROSE
FOR GENERAL MITCHELL FIELD
MILWAUKEE, WISCONSIN



EACH BARB INICATES 2 M.P.H. AVERAGE WIND SPEED

4 3 2 1 0 4
SCALE OF WIND PERCENTAGES

Source: Information compiled by SEWRPC from records of Milwaukee County Department of Public Works, Airport Division and the U.S. Weather Bureau.

GRID NORTH

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

MAP 9

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION — KENOSHA PLANNING DISTRICT — HARLAND BARTHOLOMEW AND ASSOCIATES

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that (other) existing beach areas...afford adequate bathing facilities." The Corps did recommend, however, that local governmental units make their own economic and fiscal analyses and act accordingly.

Some of the recommended erosion control measures have subsequently been implemented by the City of Kenosha Departments of Water and Public Works. It is to be noted however, that this accomplishment does not nullify the necessity of detailed engineering planning for erosion control on other portions of the north beach and on the south beach.

Water Resources

Water is perhaps the singularly most important natural resource required to sustain population growth and urbanization. Interest must focus in this respect on both the quantitative and qualitative aspects of water, for it is as important to have the right kind of water as enough water. In the Kenosha Planning District in recent years, there has been increasing concern over deterioration in the quality of the water resources. Accordingly, emphasis has been given in this report to water quality conditions, and consideration of the general hydrologic characteristics of the District is followed by a section on water quality. For convenience, non-quality problems are also separated from water quality problems and are discussed under the hydrologic conditions.

Source and Occurrence of Water Resources

The primary sources and occurrences of water within the District are: Lake Michigan, surface streams and associated wetlands, farm ponds, and two ground water reservoirs. The distributional system of all but the ground water modes of occurrence are shown on Map 10. Precipitation is the ultimate source of all water available to the District, and this is adequate to meet all but certain seasonal irrigation needs. Lake Michigan water levels are dependent upon the precipitation occurring on the lake and on a tributary drainage area which includes parts of five states and Canada.

Precipitation occurring on the Des Plaines River watershed, Pike River watershed and minor areas tributary to Lake Michigan, largely determines the volume of runoff available to sustain the rates and levels of streamflow, farm ponds, and wetlands. Precipitation in, and within a few tens of miles of the District, is the main source of ground water recharge. Unlike streams and surface impoundments, however, the natural ground water reservoirs contain accumulations of hundreds, or even thousands of years of annual contributions from rainfall and thus their levels are not as greatly affected by seasonal or even several years of drought, as are the surface water levels.

Distribution of Surface Water Resources

The distribution of the natural surface drainage units within the District is of considerable importance to planning for physical development. As shown on Map 10, the land area of the District comprises parts of three of the 12 major watersheds of the southeastern Wisconsin Region: The Des Plaines River watershed, the Pike River watershed, and minor areas directly tributary to Lake Michigan, including Barnes Creek and Pike Creek.(7) Statistical data on area distributions are presented in Table 5.

Ground Water Distribution and Levels

Because of a lack of adequate data, it is not feasible to show the horizontal and vertical distribution of ground waters within the District. However, there is sufficient empirical evidence to support the conclusion that ground waters underlie essentially all the District, occurring in particular abundance in a shallow aquifer composed of drift and Silurian dolomites and in the Cambrian sandstones. The generalized thicknesses and configuration of these water-bearing formations are shown in Figure 1 in the geology section.

The quantitative aspects of ground water levels are presently being studied in a comprehensive ground water investigation being conducted by the U. S. Geological Survey. This study will undoubtedly reveal much valuable interpretive information not now available to the general public. From the information available now, it appears that ground water levels are relatively stable in the shallow aquifiers consisting of the drift and dolomites and declining a few feet per year in the deeper sandstone aquifiers.

Streamflow Levels

Only a few measurements of streamflow have been obtained within the District, and most of these were taken at times of low flow. Estimates of the rate of flood flow of the Des Plaines River have been made by accepted engineering methods. At the Wisconsin-Illinois state line, the range in the flow of the Des Plaines River, the largest stream in the District, has varied from zero during drought conditions to about 4,000 cubic feet per second during flood conditions. From regional frequency studies, the long-term mean daily flow of the Des Plaines River at the Wisconsin-Illinois state line is estimated to be about 10 cfs.

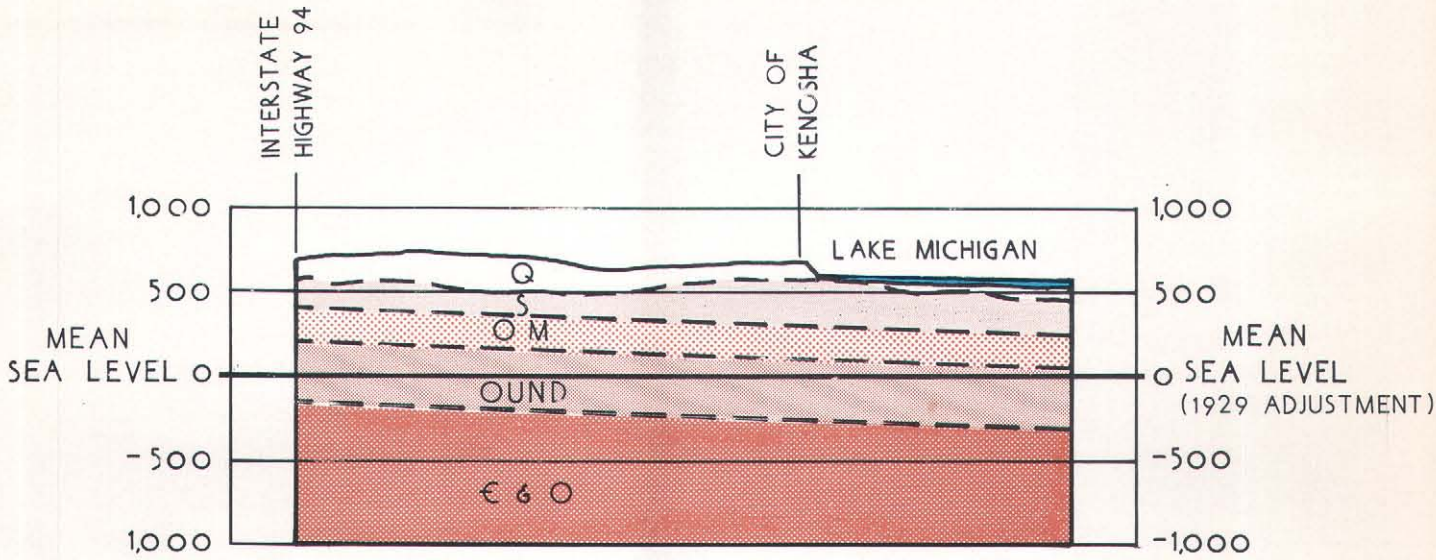
Although streamflow measurements are lacking for the Des Plaines River in Wisconsin, long-term streamflow records of the U. S. Geological Survey are available for stations on the Des Plaines River at Gurnee, Des Plaines and Riverside, Illinois. Utilizing the streamflow data from these three U.S.G.S. stations, a flow duration curve has been synthesized for the Des Plaines River at the Wisconsin-Illinois state line (See Figure 2).

Because of the very small tributary drainage areas involved, it is not possible within the scope of this study to similarly estimate flow ranges for the Pike River, Pike Creek, and Barnes Creek, but it is known that these streams are perennial and only during extreme drought conditions do flows diminish to zero.

Effect on the Subcontinental Divide on Water Resources

Of great significance to water resources planning in the Kenosha Planning District is a subcontinental divide which traverses the District in a generally northwesterly-southeasterly direction. This divide separates the District, as well as the Region, into two major drainage

(7) There are two Pike Creeks within the District: one a north-flowing tributary of Pike River and the other a direct tributary of Lake Michigan within the City of Kenosha. As used above the term refers to the Pike Creek which flows through the City of Kenosha.



GENERALIZED GEOLOGIC SECTION

KENOSHA PLANNING DISTRICT

(AFTER F.T. THWAITES - 1957)

- PLEISTOCENE AND RECENT UNCONSOLIDATED MATERIALS
- DOLOMITE OF SILURIAN AGE
- MAQUOKETA SHALE
- PLATTEVILLE DECORAH AND GALENA FORMATIONS UNDIFFERENTIATED
- SANDSTONES OF CAMBRIAN AND ORDOVICIAN AGES

SOURCE: WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY
SECTON AA' (SEE MAP 1)

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT
CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

FIGURE 1

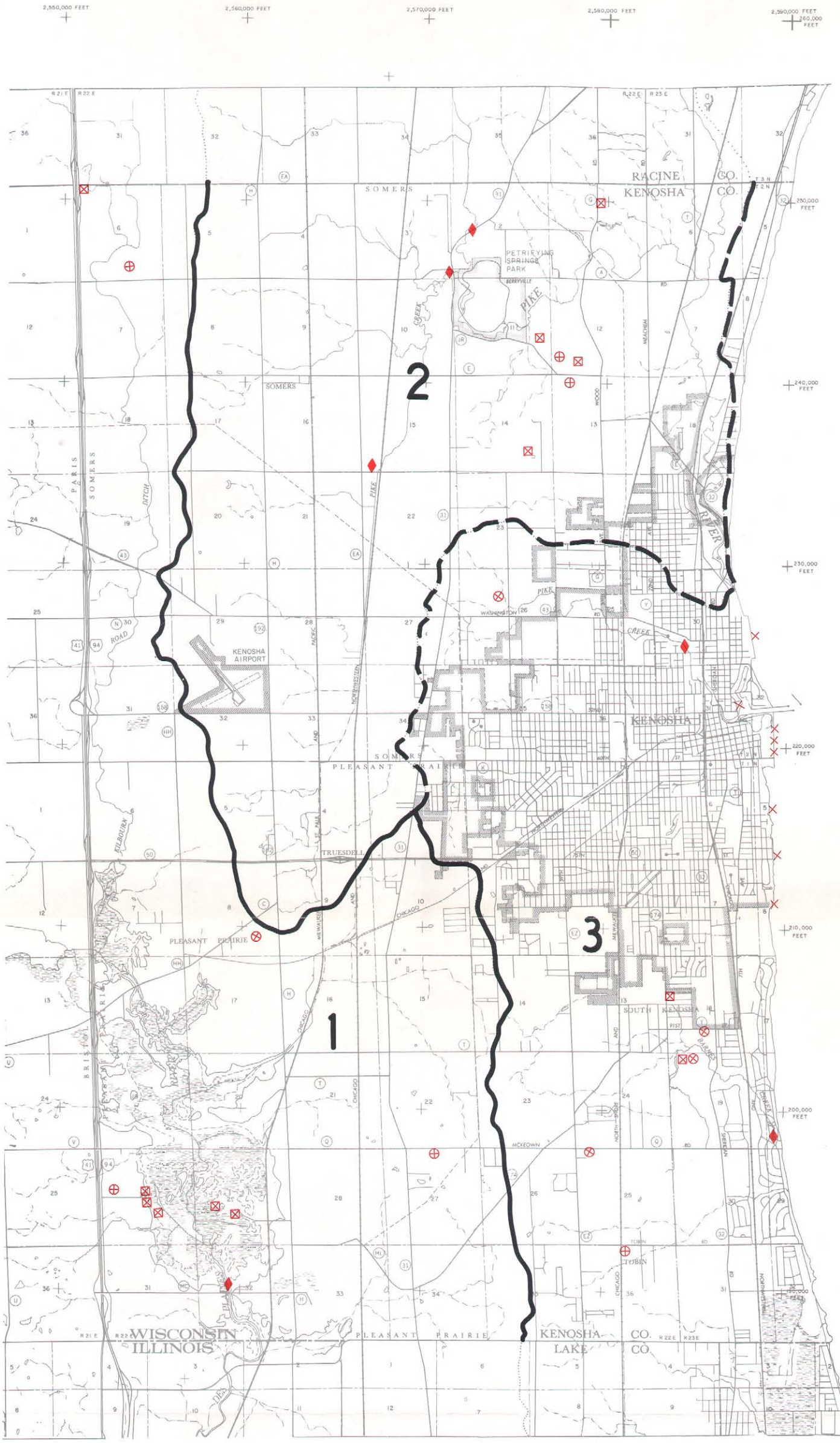
Table 5

EXTENT OF WATERSHEDS WITHIN THE CIVIL DIVISIONS OF THE DISTRICT

Civil Division	Area Within Des Plaines River Watershed	Area Within the Pike River Watershed
City of Kenosha	.02	1.70
Town of Somers	6.49	25.61
Town of Pleasant Prairie	21.93	2.68
Totals	28.44	29.99

Civil Division	Minor Tributary Area With Direct Runoff to Lake Michigan	Subtotal, Area Tributary to Lake Mighigan	Total Area
City of Kenosha	11.19	12.89	12.91
Town of Somers	3.39	29.00	35.49
Town of Pleasant Prairie	12.70	15.38	37.31
Totals	27.28	57.27	85.71

Note: All data expressed in square miles.



SURFACE WATER RESOURCE FEATURES

- SUBCONTINENTAL DIVIDE
- MAJOR DRAINAGE BASIN BOUNDARY
- PERRENNIAL STREAM
- INTERMITTENT STREAM
- WETLANDS
- PONDS, LESS THAN 1 1/2 ACRES IN AREA
- PONDS, MORE THAN 1 1/2 ACRES IN AREA
- COMBINED SEWER OUTFALL
- SEWRPC WATER QUALITY SAMPLING STATION

1 DES PLAINS RIVER WATERSHED

2 PIKE RIVER WATERSHED

3 MINOR AREAS TRIBUTARY TO LAKE MICHIGAN

MAP 10

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
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SAINT LOUIS, MISSOURI

JANUARY 1967

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areas; an easterly portion which drains to the Atlantic Ocean via the St. Lawrence River, and a westerly portion which drains to the Gulf of Mexico via the Mississippi River. This divide is an important consideration in the planning and design of water-related public utility systems in the District, especially the water supply and sanitary sewerage facilities. Chapter X of SEWRPC Technical Report No. 2, Water Law in Southeastern Wisconsin, concerns itself with the legal problems of interbasin water diversions and states:

> "The traditional common-law riparian doctrine, which for the most part is still in effect in Wisconsin, forbade the transfer of water between watersheds. This was regarded as a non-riparian use of water and often gave rise to a per se violation. It must be recognized, however, that states via legislative action can and have created exceptions to this doctrine. Major interbasin diversions have on occasion taken place in the Great Lakes area. A prominent example is the diversion of water from the Lake Michigan-St. Lawrence River drainage basin to the Mississippi River drainage basin via the Chicago and Illinois Rivers, commonly known as the 'Chicago diversion', but adds 'Such diversions are not made, however, without great legal difficulty.'"

The summary of the chapter from which these quotes were taken goes on to say:

> "There appears to be a number of major obstacles in the way of any large-scale inter-watershed stream diversion project which might be contemplated in the Region. They include the rights of two major groups of riparians - those from whom and those to whom water would be diverted; the problems of state consent, injury to 'public rights' in navigable waters, and the narrow language of Wisconsin Statutes 30.18; and lastly, the tactical legal climate in which Wisconsin finds itself vis-a-vis this issue and the Chicago diversion. This is not to suggest that large multipurpose inter-watershed stream and/or lake diversions can never occur, but at present in Wisconsin they must be considered most improbably from a practical and legal standpoint."

The foregoing comments indicate that in planning for the development of the District any urbanization west of the subcontinental divide which involved interbasin water diversion should be avoided. This philosophy has been incorporated into the preparation of both the recommended regional and District land use plans.

Flooding Characteristics

Flooding is a natural and generally frequent characteristic exhibited by streams receiving more overland runoff than they can store or transport. In flooding, waters spill over stream banks and are stored temporarily in adjacent lowland areas known as floodways and floodplains. The number of times a given flood height is reached, on the average, is called the flood frequency, and it can be used to express the probability with which a given area of land may be expected to be flooded. At the request of the SEWRPC, flood stage frequency relationships have been determined and flood inundation maps prepared by the U. S. Army Corps of Engineers for the Des Plaines River watershed (See Map 11). This map reveals that about four square miles of the District may be expected to be inundated by a flood having a recurrence interval of 100 years, and, that only a slightly smaller area has been flooded by the historical flood of record (Spring, 1938), a 50-year event. It is shown further that even a 10-year recurrence interval flood would cause a widespread inundation of the extensive wetlands lying in the Des Plaines River portion of the District.

Flooding of the Des Plaines River is a product of topographic and climatic factors. The gradient of the stream is very gentle, about two feet per mile, and the floodplains are wide and nearly flat. The District climate is conducive to the accumulation of snowfall and sudden springtime melting. Under these conditions, the existing channels are hydraulically inadequate to prevent inundation of the Des Plaines River floodplains. These floodplain areas must be protected from urban development if large future expenditures of public funds for flood control facilities are to be avoided.

Detailed hydrologic and hydraulic studies have not been performed on Pike River, Barnes Creek, and Pike Creek - areas which unlike the Des Plaines watershed are intensively urbanizing. Generally, however, it may be concluded that urbanization in the tributary drainage areas of those streams will accelerate the rate of and will increase the total quantity of runoff in these streams. Fortunately, however, the lower portions of these streams are all incised into the ancestral Lake Chicago sediment beds so that a rather large channel space is available for transport of floodwaters. The intensification of flooding will probably become most troublesome in the middle and upper reaches of Pike Creek and Pike River where a large channel is not naturally provided.

Water Uses

Water problems arise when beneficial uses are impaired or prohibited. As a guide to physical planning, the SEWRPC has established the following ten beneficial use categories for water resources:

1. Municipal (public) Water Supply.
2. Industrial Water Supply.
3. Cooling.
4. Waste Assimilation.
5. Agricultural Water Supply.
6. Irrigation.
7. Preservation and Enhancement of Fish and Wildlife.
8. Recreation.
9. Navigation.
10. Aesthetics.

The order of the above listing does not indicate a priority of right or preference. Because of environmental conditions and man-made adjustments, one body of water is seldom called upon to serve all these uses. It must be recognized further that the providence of certain uses quite naturally interferes with other uses, and this conflict over uses is the ultimate source of all water problems.

Presently, Lake Michigan water is available to most of the District's residents for domestic

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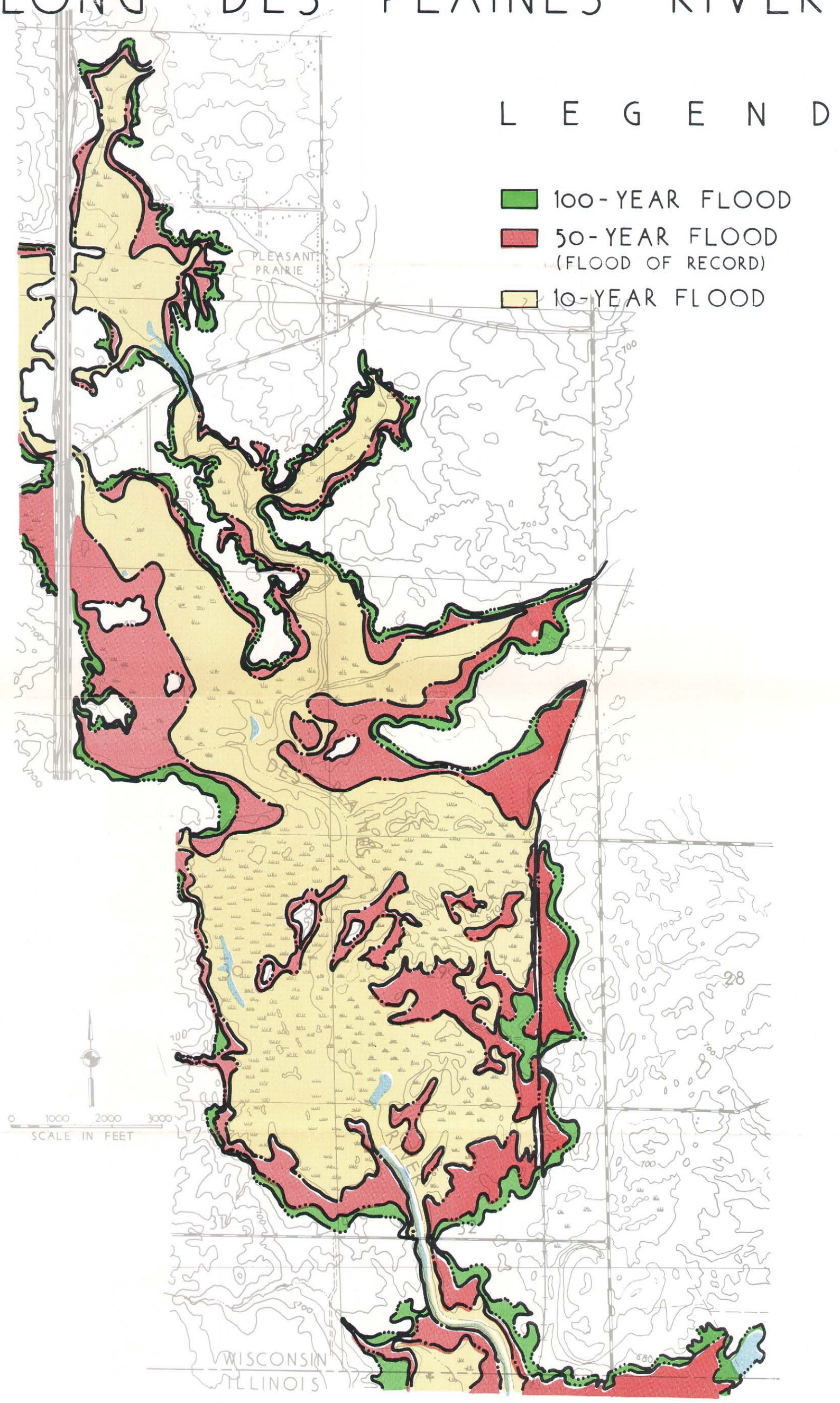
FLOOD STAGE FREQUENCY ALONG DES PLAINES RIVER



SOURCE: UNITED STATES ARMY CORPS OF ENGINEERS - CHICAGO DISTRICT

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS: CIVIL ENGINEERS: LANDSCAPE ARCHITECTS
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MAP 11

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and municipal uses through the City of Kenosha water system. Industries are both self-supplied, from deep wells which draw from the deep sandstone aquifers, and supplied from Lake Michigan through municipal services. All rural and certain suburban users depend upon ground water supplies for domestic uses. All water bodies within the District provide some degree of usefulness to fish, wildlife, and livestock. Especially important in this regard are the wetlands.

Irrigation uses are met by withdrawals from the Pike and Des Plaines River and from well water extractions. An apparently significant but as yet unassessed demand for water-oriented recreation and aesthetics is exerted on all the perennial waterways, on farm ponds, and on Lake Michigan. Excluding Lake Michigan, commerical navigation and hydro-power uses are not practiced within the District. To the detriment of practically all other uses, the surface waters of the District are being used increasingly for waste transport, dilution, and assimilation.

Water Quality

Water quality can be measured in terms of many possible parameters used to indicate its physical, chemical, and biological condition. Taste, odor, color and temperature are among the more important physical parameters; magnesium and calcium concentrations in solution are among the more important chemical parameters; and the number and kind of living organisms in a water, as indicated by the concentration of coliform bacteria, is among the more important biological parameters. Because of the high costs involved, planning investigations seldom involve water quality sampling and testing for more than a few standard parameters and are usually restricted in scope, geographic and time coverage. To obtain an understanding of the existing quality of waters in the District it was necessary to review studies performed by five agencies: the U. S. Geological Survey (USGS), the Wisconsin Geological and Natural History Survey, the Health Department of the City of Kenosha, the State Committee on Water Pollution, and the Southeastern Wisconsin Regional Planning Commission (SEWRPC) itself.

The Wisconsin Geological and Natural History Survey and the USGS have collected and analyzed considerable information on the quality of ground water in the District. A detailed summary of these data are to be published in a forthcoming report on ground-water conditions in Racine and Kenosha Counties, including the District area. Previous reports[8] have shown the ground waters of the District to be hard to very hard with high concentrations of calcium and carbonate and with the total dissolved solids in the drift, Siluran dolomites, and deep aquifers averaging, respectively, about 300, 400, and 500 parts per million. Except for hardness, which presents no unmanageable problem, the ground waters of the District must be rated as excellent in quality for practically all purposes except boiler feed and certain select food processing uses which demand low concentrations of carbonate, calcium, sulfate, and iron. The ground water found in the deep aquifer constitutes a very good source of supply because of its constant and relatively low temperature, generally constant bio-chemical quality, naturally low bacteria count, and a degree of protection from possible radioactive contamination. The ground water found in the shallow aquifer of drift and dolomite is in places highly vulnerable to pollution from septic tank effluent, urban and rural storm water runoff, and improper dumping and filling operations. Experience elsewhere[9] has shown that once polluted, rehabilitation of ground aquifers may be a very long and difficult process.

During 1961-1965 an intensive survey of waters in the shoreland area of Lake Michigan, within the District, were carried out by the Health Department of the City of Kenosha under the direction of Robert L. Olson, Bacteriologist. The purpose of this survey was to reveal the suitability of the lake waters for swimming and related water-contact recreation. A very significant portion of the report[10] is quoted herewith:

> "The overall results of data compiled from a total of 1,280 water samples collected at the Kenosha beaches during a five-year period confirms a worsening pollution problem. The association of this pollution with raw sewage is corroborated by the presence of two bacterial groups, fecal coliforms and fecal streptocci, whose natural environment is the intestinal tract of man and other warm blooded animals. An increase of all sewage indicator bacteria after a rainfall reveals the adverse effect of the effluent from the combined sewer outfalls on the bacterial quality of the beaches."

The report recommends that the Kenosha bathing beaches be posted to inform the public of the potential hazard to their health occasioned by any water contact sports in the beach area during and for 48 hours after the termination of any period of precipitation which exceeded 0.1 inch. If the recommendations are followed, the bathing beaches of the District may be unusable during much of the swimming season, since there is within the District a 70 percent probability of precipitation in amounts equal or exceeding 0.1 inch occurring every six days during the summer. Places of outfall from combined storm-sanitary sewers are shown on Map 10. The progressive deterioration of lake water quality conditions in the area is emphasized by the data shown in Figure 3, reproduced from the Olson report.

The bacterial pollution which is interfering with the recreational usage of the Lake Michigan shore has fortunately not evidenced itself yet in Lake Michigan at the site of intake to the municipal water system. Problems have, however, been experienced in filtering micro-organisms from Lake Michigan water, but the occasional presence of large concentrations of micro-organism (largely silica secreting) is not taken as evidence of pollution. Obviously continued pollution in littoral zones from combined sewers, effluent discharge, and runoff could conceivably lead to degradation of the so-called "deep water"

(8) See especially: Weidman, Samuel and Schulz, Alfred R., 1915, The Underground and Surface Water Supplies of Wisconsin.

(9) See Contamination of Underground Water in the Bellevue Area, Ground Water Geology Section, Ohio Division of Water, Columbus, Ohio, 1961.

(10) Olson, Robert L., A Bacteriological Survey of Lake Michigan Bathing Beaches, Kenosha, Wisconsin, 1965.

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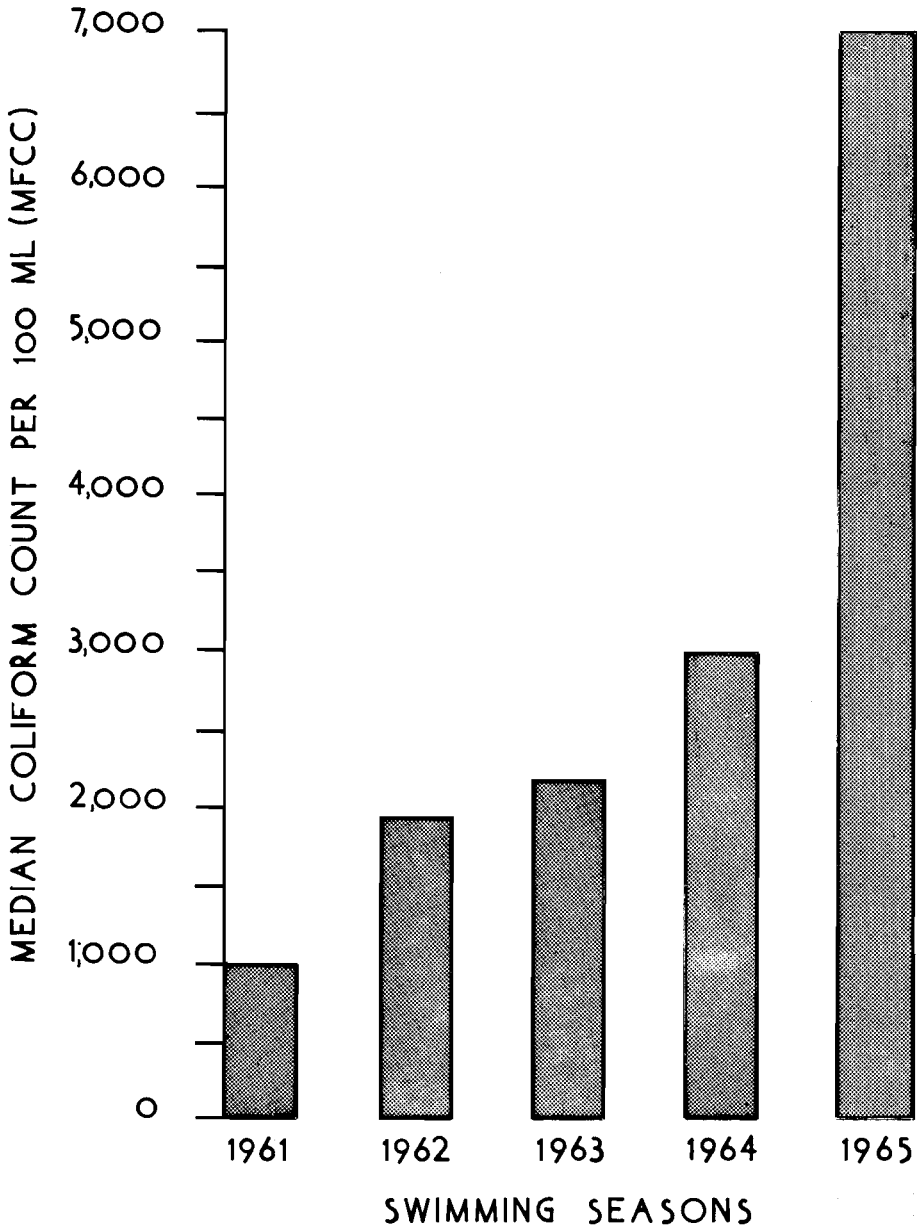
COLIFORM DENSITIES OBSERVED IN LAKE MICHIGAN WATERS AT THE CITY OF KENOSHA BATHING BEACHES 1961 - 1965



SOURCE: SEE FOOTNOTE 10

FIGURE 3

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quality of Lake Michigan necessitating more intensive and elaborate treatment of water withdrawn for municipal use. Results of a representative sample of Lake Michigan Water are shown in Table 6.

Table 6

QUALITY OF LAKE MICHIGAN WATER
AT CITY OF KENOSHA SUPPLY INTAKE

August, 1966

Parameter	Concentration in Parts Per Million
Carbonate	110
Calcium	36
Chloride	4.7
Fluoride	0.1
Hardness	134
Iron	0.04
Magnesium	10.6
Manganese	0.04
Nitrite	0.004
Nitrate	0.5
Sodium	3.9
Sulfate	20
Total dissolved solids	144

Source: City of Kenosha Water Utility

As compared to ground water and Lake Michigan water, stream water quality within the Region is much more variable, diurnally, seasonally, and annually. Similarly to the littoral waters of Lake Michigan, however, there are indications of a trend toward a marked deterioration of the qualities of stream-waters within the District, with a resultant impairment of beneficial uses. This evidence is both indirect and direct. Significant indirect evidence attesting to deterioration in the biological condition of the perennial streams is the fact that Pike River, the two Pike Creeks, and the Des Plaines River once offered a fishery of several species of game fish. This fishery has now been destroyed on all but the Des Plaines River and there only the Northern Pike species have survived to offer some sport fishing. The accumulation in the Petrifying Springs Park reservoir of 40,000 cubic yards of silt within 15 years is also indirect evidence of the high silt pollution load carried by the Pike River.

Direct evidence of a deterioration of the quality of stream waters is provided by surveys and analyses by the State Committee on Water Pollution[11,12] and the SEWRPC.[13] The Committee on Water Pollution and the State Board of Health conducted an extensive water pollution investigation in 1954-55 and performed many chemical, physical, bacteriological, and biological analyses of the District waters. The results of the analyses indicated that: two sources of wastes from the Village of Union Grove were polluting the Des Plaines River, partially treated wastes from the Village of Sturtevant were polluting the Pike River; effluent from septic tanks and kraut packing wastes from the Village of Somers were flowing through tile drains to pollute the Pike River; a Kenosha manufacturing firm was polluting Pike Creek in the City of Kenosha by discharging oil wastes through a storm sewer; and the City of Kenosha and the towns of Pleasant Prairie and Somers were cited for the inadequate and ineffective operation of sewage disposal plants and pumping stations causing the discharge of raw sewage into surface watercourses. Subsequently, it was reported by the Committee on Water Pollution that all of the foregoing sources of pollution were remedied. In a follow-up survey by the Committee in 1962 it was discovered, however, that unsatisfactory water quality conditions still existed within the District, in the Pike River below the Village of Sturtevant and in Pike Creek (tributary to Pike River) below the unincorporated community of Somers.

A detailed stream water quality study was carried out within the Southeastern Wisconsin Region by SEWRPC during 1964-1965, and this study included a sampling program at stations within the District, as shown on Map 10. This study involved the collection of stream water samples on a monthly basis over a 14-month period at each of seven sampling stations and analyses of these samples for about 30 physical and biochemical parameters, including silica, iron, manganese, calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, chloride, nitrite, nitrate, detergents, dissolved solids, hardness, noncarbonate hardness, calcium hardness, magnesium hardness, alkalinity, specific conductance, hydrogenion, color, turbidity, biochemical oxygen demand, dissolved oxygen, coliform bacteria, and temperature. The results of these analyses are not reprinted herein but have been published in SEWRPC Technical Report No. 4.

A review of the SEWRPC analyses validates the following conclusions:

1. In their natural state the stream waters of the District were hard, fertile waters subject to algae bloms - especially when ponded. At certain times of the year, even before historic settlement, the streams of the District dwindled to mere trickles during periods of dry weather and a possibility of fish kills existed.

2. As artificially modified by human activities, the stream water of the District has been further enriched to the point of serious pollution and the low flows of the streams reduced to zero during prolonged dry weather. Because of inadequate dissolved oxygen content, the District streams will not support game fish life; because of the occasional development of septic conditions in certain streams, residential dwellers are repelled, not attracted, to waterways; because of extremely high bacterial counts, streams are generally unsafe for water-contact sports of any kind.

The above conclusions are emphasized and supported by SEWRPC data which is summarized in Table 7. These data show the critical values of key parameters in terms of minimums, maximums, and averages, and the District's streams are ranked in comparison to the quality in the 44 streams of the Southeastern Wisconsin Region. It

(11) State (Wisconsin) Committee on Water Pollution. Report of Investigation of Pollution of Surface Waters in the Fox (Ill.), Des Plaines, and Root River Basins, and Lake Michigan Water from Above Racine to the Wisconsin-Illinois Line, January 28, 1955.

(12) State (Wisconsin) Committee on Water Pollution. Report on a Field Investigation of Surface Water Quality in Southeastern Wisconsin Conducted in the Summer of 1962, January, 1963.

(13) SEWRPC Tecnical Report No. 4, Water Quality Conditions in Southeastern Wisconsin, 1966.

Table 7

SELECTED DATA ON WATER QUALITY CONDITIONS IN THE DISTRICT
(BASED ON SEWRPC SURVEY, 1964-1965)

Stream	Chlorides		Dissolved Solids	
	Rank In Region[14]	Average Concentration	Rank In Region[14]	Average Concentration
Barnes Creek	25th	40	27th	575
Des Plaines River	28th	50	36th	700
Pike Creek (trib.)	32nd	65	33rd	620
Pike Creek	41st	130	22nd	515
Pike River	31st	65	29th	600

Stream	Dissolved Oxygen			Coliform Bacteria		
	Rank In Region[14]	Average Concentration	Minimum Concentration	Rank In Region[14]	Average Concentration	Maximum Concentration
Barnes Creek	9th	13.5	6.7	18th	14,700	88,000
Des Plaines River	25th	8.6	2.1	13th	8,100	32,000
Pike Creek (trib.)	33rd	6.0	0.4	32nd	35,000	330,000
Pike Creek	23rd	7.1	3.5	40th	130,000	740,000
Pike River	38th	5.3	0.1	44th	260,000	1,800,000

Note: Coliform bacteria is reported in MFCC per 100 ml.; other ions are reported in parts per million.

(14) Ranking among 44 streams within the seven county, Southeastern Wisconsin Region. A rank of 1st indicates the best water quality conditions found within the Region in terms of the specific parameter and beneficial use considerations. Correspondingly, a rank of 44th indicates the worst conditions found in the Region.

is to be especially noted that: with the exception of Barnes Creek, dissolved oxygen has been found in the District's waters in concentrations at far below the 4.0 parts per million required for a game fishery and the prevention of septic conditions; coliform bacteria, in both average and maximums, far exceeds the upper limit of 2,400 required for swimming and the 5,000 required for boating and wading. Clearly the stream waters of the District are badly polluted and becoming more so.

The SEWRPC analyses also indicate that the undesirable water quality conditions in the streams of the District are primarily of man-made origin. An in-field survey of the District confirmed the presence of visible odorous evidence of discharge of septic tank effluent through drain tiles. The placement of septic tanks on unsuitable soils, the inefficient or improper operation of waste treatment plants, combined sewers, urban storm runoff, with its oils and salts, and rural runoff with its fertilizers and exotic chemicals are all contributary to the decay and destruction of the District stream water resources.

Forests and Woodlands

At the time of settlement by Europeans, the District was covered by eastern hardwood forests interspersed with considerable expanses of natural prairie. Practically all of these forests, primarily of oak and hickory, have been cut over several times and in much of the District have been removed altogether so that only minor vestiges remain to show the pattern of the original forests and associated woodlands.

A recent state forest inventory(15) indicates that Kenosha County does not possess forest resources commensurate with those of its neighboring counties. Of the seven Southeastern Wisconsin Region counties, it ranks next to last in the area devoted to commercial forest land, having only 11,300 acres. Only smaller and much more highly urbanized Milwaukee County, with 4,600 acres of commercial forest land, has a lower total. Translated into terms of usable forest land as a percentage of total land area, Kenosha County ranks sixth within the Region with only 6.5 percent of its area remaining in forest cover.

Forest resources are especially limited in the Kenosha Planning District where the pressures of urbanization and farming have cuased conversion of forest lands to other uses. Approximately 65 percent of the county commercial forest land is heavily grazed and within the District a problem of over grazing has been identified with dairying. The practice of mixing pasturing and forestry is considered undesirable by forestries for a number of reasons, including the following:

1. Shade grown roughage is less nutritious and less palatable than that grown in open sunlight.

2. Cattle may consume undesirable plants.

3. Cattle often consume or harm young trees and stifle reforestation.

4. The ground becomes compacted and denuded of cover, contributing to soil erosion, increased runoff, and decreased retention of rainfall.

The solution to these problems appears to lie with the private land owner. Where the land will produce a greater return as a woodlot, it should be protected from livestock use in order to assure realization of maximum timber returns. Conversely, where additional pasture is required, and soils and other conditions warrant, the land should be cleared for such use. Care should be taken, however, to be selective in cutting so as to leave any fine stands of trees suitable for aesthetic, recreation, shade and windbreak purposes.

Map 12 indicates the best remaining forest and woodland coverages within the District having a high aesthetic value and which, as such deserve protection. The map is based on the woodland analyses prepared for the SEWRPC by the Forestry Division of the Wisconsin Conservation Commission. The best remaining aesthetic woodland areas of the District tend to be associated with streams and wetlands. The Barnes Creek area, for example, contains a medium stock stand of trees suitable for recreation use. Petrifying Springs Park, the site of the finest forest in the District, has fortunately already been reserved for the public enjoyment. Similar action should be taken to protect and enhance other selected wooded areas throughout the District. The District streams would benefit by having tree-lined banks to afford shelter for wildlife, shade and points of scenic interest. Similarly, some mature oak and hickory stands now lying in the path of urbanization could be preserved for aesthetic purposes. The Comprehensive Plan includes appropriate recommendations for these areas.

The only commercial forest remaining in the Planning District lies in the southwestern corner of the Town of Pleasant Prairie adjoining the Des Plaines wetlands. In addition to its commercial value, this forest provides cover for game, and further provides a scenic approach to the City of Kenosha from Interstate Highway 94. Because of the low volume of annual harvest of merchantable timber in the District and increasing competition, it would not appear realistic to institute large-scale commercial forest conservation measures or to seek a larger market for wood in the District. The light cuttings which do occur should be undertaken with the objective of improving stand quality. Fuel wood and fence post wood obtained in this manner should serve to satisfy the needs of the immediate Kenosha market area.

Fish and Wildlife

The Kenosha Planning District exhibits a relative scarcity of fish and wildlife resources, except for pheasants which are well adapted to the habitat of the District. Density of pheasants in the District approach that of the best areas in Wisconsin. Many environmental factors in the District interfere seriously with the maintenance of fish and wildlife resources. These include: lack of cover, the flat open landscape, water pollution, and the increasing pressures of urbanization. Because of urbanization and related high land values, there are neither any existing state game conservation areas within the District nor plans by the state to acquire such areas. This does not, however, prevent development of the better wetlands for private fee

(15) Forest Resources of *Thirteen* Counties in Southeastern Wisconsin, Publication No. 35, Wisconsin Conservation Department, 1958.

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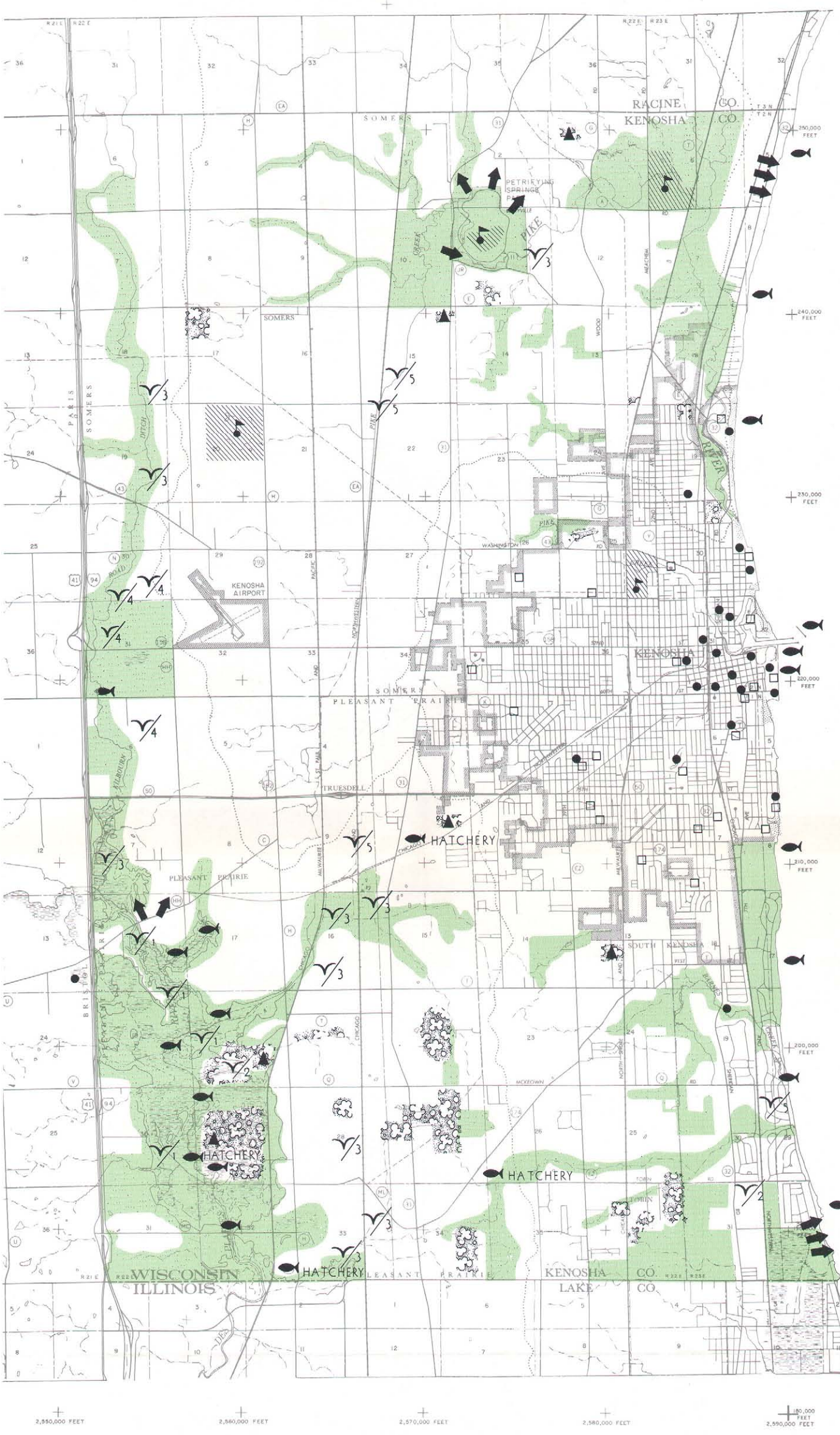

SIGNIFICANT PARK AND RECREATIONAL SITES

- HISTORIC SITE
- GOLF COURSE
- PRIVATE RECREATIONAL SITE
- KENOSHA CITY PARK
- PUBLIC BEACHES
- WILDLIFE / HUNTING AREA (WITH RANK)
- FISHING AREA (HATCHERIES NOTED)
- TOPOGRAPHIC OR SCENIC INTEREST
- ENVIRONMENTAL CORRIDOR
- AESTHETIC WOODLAND

MAP 12

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION, OF THE HOUSING AND HOME FINANCE AGENCY, UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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hunting. In fact, the proximity to centers of population would seem to enhance the potential for realization of a profit from such prime habitat areas as the wetlands in the Des Plaines River flood plain. Map 12 indicates the best game habitat areas remaining within the District, located primarily in the southern part of the District. Animals common to the best remaining game habitat areas are pheasant, rabbit, deer, squirrel, raccoon and fox. Some of the better game habitat areas are managed as private fee game farms. Certain marshy areas shown on the map are particularly suited to water fowl and game birds. Muskrat and mink are common fur bearers found in the better wetlands and along stream bottoms of the District.

Wildlife recreation is centered on the wetlands and lakeshore areas, but all farmland and even the developing suburbia furnishes hunting and wildlife observation opportunities. The best remaining opportunities for nature study within the District are presented by the dunes area in the Town of Pleasant Prairie on the Lake Michigan shore and by the Petrifying Springs park area in the Pike River watershed in the Town of Somers.

The shores of Lake Michigan and immediate off-shore areas are part of an important migration route for waterfowl. Several species of diving ducks winter along the shore and are frequently observed near the Kenosha harbor and in the outfall area of the Kenosha sewage treatment plant. The Des Plaines bottomlands furnish important resting and feeding areas for migrating ducks and geese. Unless considerable effort is made to provide cover, forage and breeding areas, which is unlikely in the face of impending urbanization, it appears that residents of the District will in the future have to seek hunting and fishing opportunities outside of the District. There, management areas administered by the Wisconsin Conservation Department already total over 3,080 acres, and an acquisition goal of 2,568 additional acres has been set for achievement by 1975.[16] In its portion of Lake Michigan (measured to the center of the lake), the Kenosha Planning District has a fish resource area which totals 480 square miles and is of some commercial importance, although commercial fishing is no longer as active as it was when lake trout were more prevalent. Currently, two commercial fishing operations consisting of three boats are Kenosha-based. Their catch consists mainly of alewives and other "trash" species which are sold for fertilizer and to pet food firms and mink ranches. Yellow perch is the principal human food fish caught, along with chubs, herring and smelt. Very few lake trout and whitefish are caught. The whitefish has not been common in the District throughout the period during which records have been kept. On the other hand, lake trout were an abundant fish, the numbers of which were tragically reduced by the sea lamprey. The ravages of the lamprey have been greatly reduced now by a massive long-range control program. Improvement in lake trout populations may be expected as a result. In order to meet competition and maximize their catch, Lake Michigan fishermen have begun to introduce otter trawls. With the less-efficient gill net equipment in use, the 1959 catch stood at nearly 200,000 pounds. In 1962, the Port of Kenosha reported 1,840,680 pounds of fish caught.[17]

For lake sport fishing, about three miles of shoreline and 12 acres of harbor area are available for public use, all in the City of Kenosha. Sport fishing is primarily shore-associated, since the shallow water fishes are more readily caught with hook and line than are the deep water fish. The lake bottom off Kenosha County slopes to a depth of about six fathoms (36 feet) two miles off shore and reaches a maximum depth of 522 feet near the center of the lake. Consequently, most lake anglers fish from Kenosha Harbor breakwaters and piers rather than boats. Dredging maintains the harbor and its entrance at a depth of 27 feet. The usual catch consists of perch, ciscoes, bullheads, suckers and carp. American smelt are taken in dip nets during their spawning runs in the spring. Suckers are taken about the same time. Perch, a shallow water fish, is most popular and may be hooked by anyone, with no license being required.

The following is a summary description of the remaining fish and wildlife resources in the Kenosha Planning District, based on the Wisconsin Conservation Commission survey of surface water resources.[18]

Private Hatcheries - There are four private fish hatcheries in the District, all located in the Town of Pleasant Prairie in Sections 10, 26, 29 and 32. Other fish resources are minimal, consisting mainly of bullheads and pan fish. Prime fishing areas are depicted on Map 12.

Barnes Creek - No management is considered at present since the stream receives overflow from septic tanks. The spring sucker run was once an important resource.

Des Plaines River, Center Branch - Managed only for forage fish since it is intermittent near its source in dry years. One impoundment of less than one acre exists in Section Two of Bristol Township west of the District. There are no remaining wetlands along the stream of value to fisheries. Prior to improved drainage of the wetlands along this stream for agricultural purposes, much value was realized from the excellent duck hunting it offered.

Des Plaines River, East Branch - Managed only for forage fish due to intermittency and irregularity of flow. There are 76.5 acres of marshy wetland along the stream, most of it in the Kenosha Planning District. In the spring when the water level is high, northern pike use these areas for spawning.

Des Plaines River, Main Branch - Managed in its lower portions for northern pike and forage fishes. "Rough fish", such as carp, are common in larger sections of the river. Almost all the stream prior to the entry of its other branches is ditched and straightened. Northern pike use much of the 851 acres of marsh adjacent to the stream. These marshes have also been important duck hunting areas and winter cover for pheasants.

(16) Messrs. Clifford E. Germain, District Game Manager, Wisconsin Conservation Department, and Francis Paulin, District Fish Manager, Wisconsin Conservation Department.

(17) L. W. Wiegert, Great Lakes Commercial Fishing Statistical Report, Wisconsin Conservation Department, 1962.

(18) Surface Water Resources of Kenosha County, Pages 15-17.

Kenosha South Creek - No management has been considered since this stream is used primarily as a storm sewer through the city, receiving effluent from several industries, and is littered with debris. It was originally known as Jerome Creek.

Lower Pleasant Prairie Ditch - Rough fish and northern pike enter this stream in spring. An impoundment exists in Section 20 of some three to four acres, which was intended for trout rearing by its owner. Recent interviews with Mr. Weller, the owner, indicate no further plans for improvements. Over 95 percent of the stream is ditched. About 50 acres of marsh lie in the headwaters of this small stream.

Pike Creek - No management is possible since much of this stream is channeled through storm sewers, and its base flow consists mainly of effluent from various urban land uses. It enters Lake Michigan at Kenosha Harbor, adding to the pollution problem and the fish kill which periodically halts perch fishing.

Pike River - The stream is managed for forage fish primarily since the water level fluctuates greatly and both tributaries are ditched and fed by effluent from various industries along their banks. The spring sucker run is an important resource on this stream. The river has aesthetic value as it flows through the county park and adjacent folf course, and a city park in Kenosha. During midsummer, base flow is maintained by upstream effluent, particularly from the Town of Somers. Further stagnation problems arise when the stream flows over the lake terrace and disappears into the sandy soils. West of the sand belt, near its headwaters, there are 14 acres of marsh adjoining this stream where there are good hunting areas, particularly where wooded. These have been indicated on Map 12.

Upper Pleasant Prairie Ditch - Rough fish and small pan fish are found near the outlet of this stream, and in spring northern pike enter the ditch to spawn. There are no impoundments here at present.

During the period 1959-65, 24 farm ponds were constructed and stocked with fish, bringing the total number of farm ponds in the District to 78. These ponds provide some very good fishing for a large number of people. Only the three ponds in Section 29 of Pleasant Prairie are operated as private fish hatcheries. Map 12 shows the location of all ponds that were constructed with federal aid and stocked with fish from a federal fish hatchery.

In summary, the Kenosha Planning District can claim only a minimum number of remaining areas where good fish and wildlife resources exist, and many of those are on private lands. One notable exception is the lakefront which offers good to excellent fishing. With the prospect of continuing urbanization, the opportunity for continued utilization of these invaluable recreational resources will diminish markedly unless growth is properly planned and controlled so that the usual pressures for wetland drainage, destruction of cover, and pollution of streams, can be held to minimum levels. The important wildlife problems of the District may be summarized as a continuing loss of wetlands and hedgerow cover; and a continuing loss of game habitat and restriction of hunting opportunities due to increasing urbanization.

Recreation and Open Spaces

The various sites of historic, scientific and recreational interest in the Kenosha Planning District are shown on Map 12. Information pertaining to some of these sites is also contained under other headings in this report.

Of special significance to the planning of parks and related open spaces in the District is the recently published SEWRPC Technical Report No. 1.(19) This report identifies one park site of 200 acres in the Des Plaines Valley as one of the ten best sites remaining in Kenosha County. In addition, some 15 other potential sites are singled out throughout the District. Most of these are included within the primary environmental corridors delineated in the study. Each site has been field checked and evaluated for its recreational potential on the basis of topography, scenic and scientific interest, water features, vegetation or wildlife.

Map 12 shows the location, extent, type and quality of each recreational resource cited. As may be expected, the City of Kenosha contains the greatest concentration of developed recreational attractions, with its many historical sites and the well developed park system. These local facilities are generally of high quality, satisfying a variety of recreational needs such as picnicking, golfing, swimming, hiking, and team sports. Remaining recreational resources are scattered throughout the District, their location bearing little relation to urban settlement patterns. Except for the limited recreation space provided at schools, there are few parks outside of the City of Kenosha to serve either present or future population.

Careful consideration should be given to the manner in which open space may be used within the District as a design element to delineate future neighborhood growth and to provide opportunities for outdoor recreation. Park and open-space land reservation is one of the important devices available to urban areas which can be used to shape growth patterns. In Wisconsin, there are both state and federal aid programs available to assist the county and local units of government in the purchase and development of open space lands. The SEWRPC has prepared a Regional Open-Space Land Acquisition Agreement whereunder signatories are eligible for 50 percent federal aid toward the acquisition of park and open-space lands.

The abandoned North Shore Railroad land offers possible footpath and bridle trail access into several wooded areas where parks could be located. Other railroad rights-of-way and utility easements similar to that adjoining the two power lines could be developed for greater recreational use. Environmental corridors can be better served with access roads and trails, shelters, and lookout points. Stream banks throughout the District are now virtually ignored, unkept and uninviting. Cooperation between the proper public and private interests is again prerequisite for enhancing this recreation potential.

(19) Potential Parks and Related Open Spaces, 1964.

The elementary school should form the nucleus of residential neighborhoods in the future. Harvey Elementary School shown in the photograph above, has a relatively good location with respect to its service area. However, the one important feature not available for surrounding residents is a small park adjacent to the school facility.

Chapter III

POPULATION

The intent of the population study is to provide background information for subsequent planning analyses and, ultimately, development proposals in the comprehensive plan. In addition, the information in this report will be helpful in reaching considered decisions with respect to the conflicting demands for land use which will inevitably occur. This can best be understood by considering that planning for new or expanded residential areas, community facilities, public utilities, shopping areas, and traffic arteries, is very much a function of the existing and projected size, characteristics and location of the District's population. This chapter will serve as a basic background study for subsequent chapters dealing with the type, size and location of proposed land uses and attendant facilities.

Historic Trends

Over the past 115 years, the population of the District, while consistently increasing, has tended to do so at widely fluctuating rates. For purposes of analyses and comparison, the 115 year span for which population data is available has been broken down into four major time periods.

1850 - 1900

Between 1850 and 1900, the population of the District rose by 202.8 percent, from 5,094 persons in 1850 to 15,426 persons in 1900. During the same period, population increased much faster in the Region, the State of Wisconsin, the East North Central Region of the United States and the nation as a whole (See Table 8). Kenosha County experienced a rate of population growth which was lower than that of the District, as almost all the County population growth occurred within the District.

These differing rates of population growth are related to the pace of economic activity in these areas during the 1850-1900 period, the rapid expansion of the economy being a prime factor fostering the heavy migration into the respective areas. The East North Central Region was at this time in history, rapidly becoming the western extension of the "Industrial Belt" centered in the Boston-New York-Pittsburgh area. The State of Wisconsin during the 1850-1900 period was undergoing a widespread economic boom as a result of the rapid growth of her logging and dairying industries. As for the Region, rapid growth in the 1850-1900 period was influenced by the economic birth of Milwaukee as a midwestern industrial center of increasing importance. In contrast, the District had not yet experienced any major increase in economic activity and, therefore, did not attract large numbers of settlers.

1900-1930

This 30-year period was one of extremely rapid population growth in the District. Over this period, the population rose more than 250 percent, from 15,429 in 1900 to 55,274 in 1930. The District's rate of increase was far above that of the County, Region, State or Nation (See Table 8).

Similar to the 1850-1900 population shifts, the source for the 1900-1930 growth was to be found in the level of economic activity. Starting in the 1890's, the District began to develop its industrial base. Promoted by increased port activity and the creation of large manufacturing plants, employment in the District rapidly advanced, which in turn served to attract new settlers to the area. Over the same period, the economic growth of the Region, State and East North Central Region had entered a more mature phase with a leveling of their rates of increase.

1930-1940

The economic depression of the 1930's acted as a depressant upon population growth throughout the nation as birth rates fell. The patterns of domestic migration were halted and even reversed as urban areas ceased to receive the migrants from the rural hinterlands. Compared with the Region, State or Nation, the District experienced a low rate of population growth, 0.4 percent (See Table 8). (This low rate was a result of the harsh impact of the depression upon the District economy and populace, and resultant outmigration.)

1940 - 1960

This period was one of rapid population growth in the District. From 56,298 in 1940, population increased by 51.6 percent to 85,325 in 1960. The District rate of increase exceeded that of the Region, the State, the East North Central Region and the Nation, and was exceeded only by Kenosha County. The second half of this period, 1950-1960, witnessed the major share of the population growth. Of the almost 30,000 increase between 1940 and 1960, almost 20,000 came during the 1950-1960 decade (See Table 8).

Economics again played a significant role locally during the World War II and post war period. Industrial employment in Kenosha rose sharply, first due to wartime production and subsequently due to the expansion of American Motors. These were prime factors influencing the substantial migration of persons into the area.

1960 - 1965

In 1964, an estimated 96,170 persons resided in the District, an estimated increase of 11,170 persons over the 1960 population.

Preliminary 1965 population projections for the Region, prepared by the SEWRPC, show a population of 1,718,000. Since 1960, the District has increased its share of the Region's population, from 5.4 percent in 1960 to 5.5 percent in 1964.

Within the District

Within the District, the City of Kenosha has historically accounted for the largest share of the total population. The city population stood at 3,455 in 1850, 11,606 in 1900, then increased to 50,262 in 1930 and to 67,899 by 1960. While the city rate of increase was greater than that of the Towns of Somers or Pleasant Prairie during the 1850-1920 period, the reverse has been true since that time. Moreover, the recorded figures understate the actual changes inasmuch as the city has achieved much of its growth by annexing portions of Somers and Pleasant Prairie. Even after annexation, the town areas have recorded large increases in population since 1950 (See Table 9).

Table 8

POPULATION TRENDS, 1850 - 1960

Year	United States	East North Central	Wisconsin	S.E.W. Region	Kenosha Planning District	Kenosha County
1850	23,191,876	4,523,260	305,391	113,389	5,094	10,734
1860	31,443,321	6,926,884	775,881	190,409	6,667	13,900
1870	38,558,371	9,124,517	1,054,670	223,546	7,045	13,147
1880	50,155,783	11,206,668	1,315,497	277,119	7,883	13,550
1890	62,947,714	13,478,305	1,693,330	386,774	9,810	15,581
1900	75,994,575	15,985,581	2,069,042	501,808	15,426	21,707
1910	91,972,266	18,250,621	2,333,860	631,161	26,376	32,929
1920	105,710,620	21,475,543	2,632,067	783,681	44,586	51,284
1930	122,775,046	25,297,185	2,939,006	1,006,118	55,274	63,277
1940	131,669,275	26,626,342	3,137,587	1,067,699	56,298	63,505
1950	151,325,798	30,399,368	3,434,575	1,240,618	66,105	75,238
1960	179,323,175	36,225,024	3,952,771	1,573,620	85,325	100,615
Percent Change						
1850-1900	227.7	253.4	577.5	342.6	202.8	102.2
1900-1930	61.6	58.2	42.0	100.4	258.3	191.5
1930-1940	7.2	5.3	6.8	6.2	1.9	0.4
1940-1950	36.2	36.0	26.0	47.1	51.6	58.4
1950-1960	18.5	19.2	15.1	26.8	29.1	33.7
1900-1960	135.9	126.6	91.0	213.6	453.1	363.5

Source: U.S. Census of Population, SEWRPC Planning Report No. 4.

Table 9

POPULATION TRENDS IN THE KENOSHA PLANNING DISTRICT, COMPONENT MUNICIPALITIES, AND KENOSHA COUNTY
1850 - 1960

Year	City of Kenosha	Pleasant Prairie	Somers	Kenosha Planning District	Kenosha County
1850	3,455	959	680	5,094	10,734
1900	11,606	1,776	2,044	15,426	21,707
1910	21,371	3,217	1,788	26,376	32,929
1920	40,472	2,030	2,084	44,586	51,284
1930	50,262	3,457	3,046	55,274	63,277
1940	48,765	3,892	3,641	56,298	63,505
1950	54,368	6,207	5,530	66,105	75,238
1960	67,899	10,287	7,139	85,325	100,615
Percent Change					
1850-1900	235.9	85.2	200.6	202.8	102.2
1900-1930	333.1	94.7	49.0	258.3	191.5
1930-1940	3.0	12.6	19.5	1.9	0.4
1940-1950	39.2	264,3	96.1	51.6	58.4
1950-1960	24.9	65.6	29.1	29.1	33.7
1900-1960	485.0	479.2	249.3	453.1	363.5

Source: U.S. Census of Population, SEWRPC Planning Report No. 4.

Components of Change 1950-1960

The District's population increase is the result of two growth components: natural increase and migration. An understanding of the proportionate importance of these factors in the District growth is important to sound community development decisions.

Natural Increase

Natural increase is the growth attributable to the normal excess of births over deaths. In the District, natural increase accounted for an estimated 60 percent of the 1950-1960 increase, or 11,634 persons. A detailed analysis and description of the components of the natural increase in the District birth and death numbers and rates is of limited value because of basic data limitations. Discussions held with local hospital officials indicate that birth data published[20] for the city includes many births where the parents were temporary residents of the District and either were not counted as residents during the taking of the 1960 Census or had subsequently left the District. Therefore, while Table 10 indicates and compares birth and death rates, the figures for the city are estimates.

In preparing estimates of the 1950-1960 natural increase, the published birth rate of 28.7 (number of births per 1,000 population) in 1960 was adjusted downward by computing a rate determined by the number of births for the 1950-1960 period which could be traced to the permanent population. This estimate of births for the 1950-1960 period was also necessary to permit computation of the estimated in-migration of persons under nine years of age. The births during the 1950-1960 period were estimated at approximately 18,600 for an average annual birth rate of 24.6 per thousand. Deaths were estimated at 6,750 for an average annual birth rate of 24.6 per thousand. Deaths were estimated at 6,750 for an average annual rate of 9.0 per thousand. A few general statements, therefore, can be made concerning birth rates.

1. The District's birth rate between 1950 and 1960 more closely approached the Region's rate and, therefore, increased at a rate faster than the Region. (See Table 10.)

2. The regional birth rate was slightly below that of the State in 1950, but somewhat above that of the State in 1960.

3. The State birth rate exceeded the national rate in both 1950 and 1960.

4. Death rates declined in the District, Region, State, and Nation between 1950 and 1960. The District death rate was similar to that in the Region in 1950 and slightly below it in 1960 and was below the national rate in both 1950 and 1960.

Migration

Over 7,500 persons (40 percent) of the Kenosha Planning District 1950-1960 population increase was attributable to net in-migration (See Table 11). Estimated net in-migration in the District was proportionately lower than in Kenosha County, but higher than in the Region as a whole. Over 42 percent of the County 1950-1960 increase was due to net in-migration while, in the Region, migration accounted for about 33 percent of the total increase. Although some 50 percent of the in-migrants to the Region were already residents of Wisconsin[21], a different situation prevailed in the District. Between 1955 and 1960, 66 percent of the District net in-migration was attributable to persons coming from states other than Wisconsin. This is not unusual when the geographic setting of the District is considered. Since in-migration is related to increases in employment, it is natural to expect the District to attract persons from a wide area which would naturally include Lake and McHenry Counties in Illinois. Moreover, during the 1950's as the American Motors Corporation employment needs have grown, workers have been recruited nationally from various parts of the East North Central Region and even from as far away as Alabama.

With respect to the migration into the District between 1950 and 1960, it should be noted that during the 1945-1960 period Wisconsin has ranked in the lower fifth in terms of employment growth relative to all other states. Within the State, declines in the western and northern sections have been partially offset by gains in the seven-county Region and portions of the Fox River Valley. One result of this imbalance in the State economy is that the Region, including the Kenosha Planning District, has been absorbing a considerable amount of surplus labor from other parts of Wisconsin. Some of the surplus labor, transient at first, has now become settled permanently in the area.

Well over one-third of the persons who moved into the Planning District between 1950 and 1960 were between the ages of 20-34, the prime labor force age group. An additional 30 percent were under 14 years of age. Within the District, the effect of in-migration was that some 10 percent or more of the persons in every age group between 10 and 39 in 1960 were in-migrants. The mobility characteristics of the County, District, and District components are shown on Table 12.

Because of annexations between 1950 and 1960, it is difficult to determine the details of migration movements for the three municipalities within the District. However, the area which in 1950 was then circumscribed by the corporate boundaries of the City of Kenosha was unaffected by any meaningful level of migration. The bulk of the net in-migration for the decade accrued to areas in the District which were outside the city.

Population Characteristics

Age Group Distribution

The distribution of population by age group has been determined by both natural increase and migration. While the total population of the District increased by about 29 percent between 1950 and 1960, absolute numbers and rates of change varied considerably within each age group (See Tables 13, 14, 15 and Figure 4). Generally the following changes in population took place during the 1950-1960 period:

(20) State of Wisconsin, Division of Vital Statistics.

(21) U.S. Census of Population - 1960 - (P (1)) 51C General Social and Economic Characteristics, SEWRPC Report No. 4.

Table 10

BIRTH AND DEATH RATES IN 1950 AND 1960

	Birth Rate[1]		Death Rate[2]	
	1950	1960	1950	1960
Kenosha City[3]	22.3	25.8	9.6	8.9
Kenosha Planning District[4]	22.3	25.8	9.6	8.9
Kenosha County	23.2	27.5	9.3	8.5
SEW Region	23.4	26.2	9.6	9.1
State	24.2	25.2	9.8	9.6
Nation	24.1	23.7	9.6	9.5

Notes: (1) Number of births per 1,000 population.
(2) Number of deaths per 1,000 population.
(3) Adjusted.
(4) Estimated.

Source: Wisconsin State Board of Health and SEWRPC Planning Report No. 4.

Table 11

POPULATION BY AGE GROUP AND ESTIMATES OF NET MIGRATION IN THE KENOSHA PLANNING DISTRICT 1950 AND 1960

	1950	1955 Theoretical	1960 Theoretical	1960 Actual	Estimated Net Migration Number	Estimated Net Migration % Age Group
Under 5 Years	7,146	8,300	9,740	10,355	615	5.9
5 - 9	5,532	7,115	8,264	9,048	784	8.7
10 - 14	4,218	5,520	7,099	7,917	818	10.3
15 - 19	4,050	4,203	5,501	6,111	610	10.0
20 - 24	4,913	4,026	4,178	5,164	986	19.1
25 - 29	5,551	4,879	3,998	5,019	1,021	20.3
30 - 34	5,352	5,510	4,843	5,724	881	15.4
35 - 39	4,789	5,300	5,456	6,054	598	9.9
40 - 44	4,199	4,719	5,222	5,633	411	7.3
45 - 49	4,041	4,102	4,610	4,986	376	7.5
50 - 54	4,171	3,893	3,952	4,322	370	8.6
55 - 59	3,923	3,942	3,679	3,822	143	3.7
60 - 64	3,101	3,602	3,619	3,497	-122	-3.5
65 - 69	2,247	2,714	3,152	3,197	45	1.4
70 - 75	1,430	1,846	2,229	2,239	10	0.4
75 and Over	1,442	1,745	2,197	2,237	40	1.8
Total	66,105		77,739	85,325	7,586	8.9

Source: U. S. Census of Population and Harland Bartholomew and Associates

Table 12

MOBILITY CHARACTERISTICS OF THE POPULATION

1960

Residence in 1955	City of Kenosha	Somers	Pleasant Prairie	Total Planning District	Kenosha County
Population Five Years Old and Over in 1960	60,050	6,111	9,088	75,249	88,295
Same House as in 1960	30,413	2,913	4,291	37,617	44,588
Different House in United States	28,516	3,119	4,669	36,304	42,140
Same County	20,457	1,734	2,719	24,910	27,063
Different County	8,059	1,385	1,950	11,394	15,077
Same State	3,203	691	554	4,448	5,395
Different State	4,856	694	1,396	6,946	9,682
Abroad	673	40	56	769	851
Moved, Residence in 1955 Not Reported	448	39	72	559	716

Source: U. S. Census of Population

Table 13

POPULATION OF THE KENOSHA PLANNING DISTRICT,
BY AGE GROUP, IN 1950 AND 1960

	Males		Females		Total	
	1950	1960	1950	1960	1950	1960
Under 5	3,666	5,286	3,480	5,069	7,146	10,355
5 - 14	4,998	8,631	4,752	8,334	9,750	16,965
15 - 24	4,397	5,903	4,566	5,372	8,963	11,275
25 - 34	5,358	5,410	5,545	5,333	10,903	10,743
35 - 44	4,410	5,842	4,578	5,845	8,988	11,687
45 - 54	4,110	4,590	4,102	4,718	8,212	9,308
55 - 64	3,760	3,630	3,264	3,689	7,024	7,319
65 and over	2,485	3,672	2,634	4,001	5,119	7,673
Totals	33,184	42,964	32,921	42,361	66,105	85,325

Source: United States Census of Population

Table 14

AGE GROUP DISTRIBUTION OF THE POPULATION
1950 AND 1960

	By Percent							
	Kenosha Planning District		Kenosha County		SEW Region		Wisconsin	
	1950	1960	1950	1960	1950	1960	1950	1960
Under 5	10.8	12.1	10.9	12.2	10.2	12.1	10.8	11.9
5 - 9	8.4	10.6	8.4	10.8	7.8	10.6	8.7	10.8
10-14	6.4	9.3	6.5	9.3	6.5	8.8	7.5	9.4
15-19	6.1	7.2	6.3	7.1	6.4	6.6	7.0	7.2
20-24	7.4	6.1	7.3	6.0	7.5	6.0	7.1	5.6
25-29	8.4	5.9	8.3	5.9	8.2	6.4	7.5	5.7
30-34	8.1	6.7	7.9	6.6	7.8	6.9	7.2	6.2
35-39	7.2	7.1	7.2	6.9	7.6	6.9	7.1	6.4
40-44	6.4	6.6	6.4	6.5	7.1	6.4	6.6	6.1
45-49	6.1	5.8	6.2	5.8	6.6	6.0	6.1	5.9
50-54	6.3	5.1	6.2	5.0	6.2	5.4	5.8	5.3
55-59	5.9	4.5	5.9	4.5	5.5	4.8	5.2	4.8
60-64	4.7	4.1	4.8	4.1	4.6	4.2	4.5	4.3
65-69	3.4	3.7	3.4	3.7	3.4	3.5	3.5	3.8
70-74	2.2	2.6	2.2	2.7	2.2	2.6	2.5	2.9
75 and Over	2.2	2.6	2.3	2.7	2.4	2.8	3.0	3.5
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: United States Census of Population

Table 15

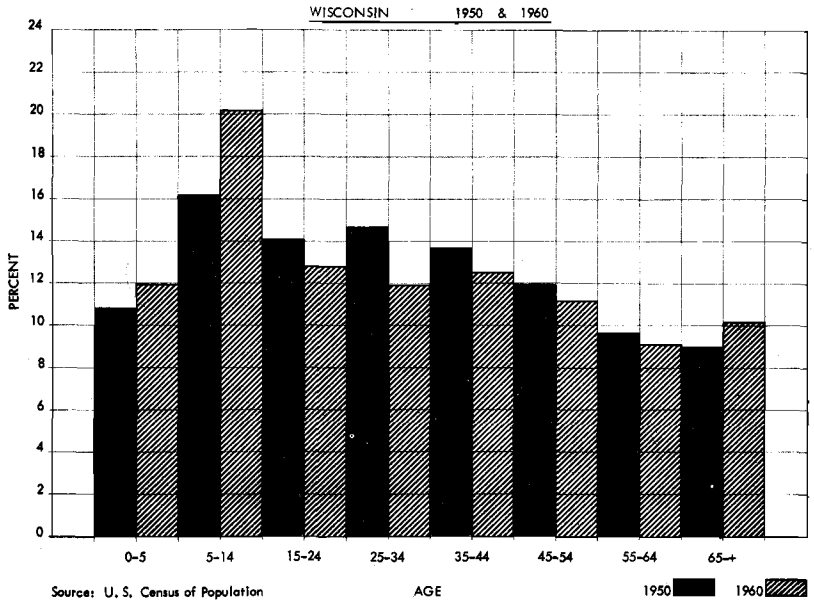
POPULATION DISTRIBUTION BY AGE GROUP
1950 AND 1960

Age Group	Kenosha		Somers		Pleasant Prairie	
	1950	1960	1950	1960	1950	1960
	(NUMBER)					
Under 5	5,623	7,849	735	987	788	1,519
5 - 14	7,663	13,215	955	1,517	1,132	2,233
15 - 24	7,316	8,873	803	929	844	1,473
25 - 34	8,962	8,323	903	945	1,038	1,475
35 - 44	7,451	9,452	712	876	825	1,359
45 - 54	6,848	7,558	637	724	727	1,026
55 - 64	6,060	6,096	454	549	510	674
65 and Over	4,445	6,533	331	612	343	528
Total	54,368	67,899	5,530	7,139	6,207	10,287
	(BY PERCENT)					
Under 5	10.3	11.5	13.3	13.8	12.7	14.8
5 - 14	14.1	19.5	17.2	21.3	18.3	21.7
15 - 24	13.5	13.1	14.5	13.0	13.6	14.3
25 - 34	16.5	12.3	16.3	13.2	16.7	14.3
35 - 44	13.7	13.9	12.9	12.3	13.3	13.2
45 - 54	12.6	11.1	11.5	10.1	11.7	10.0
55 - 64	11.1	9.0	8.2	7.7	8.2	6.6
65 and Over	8.2	9.6	6.0	8.6	5.5	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

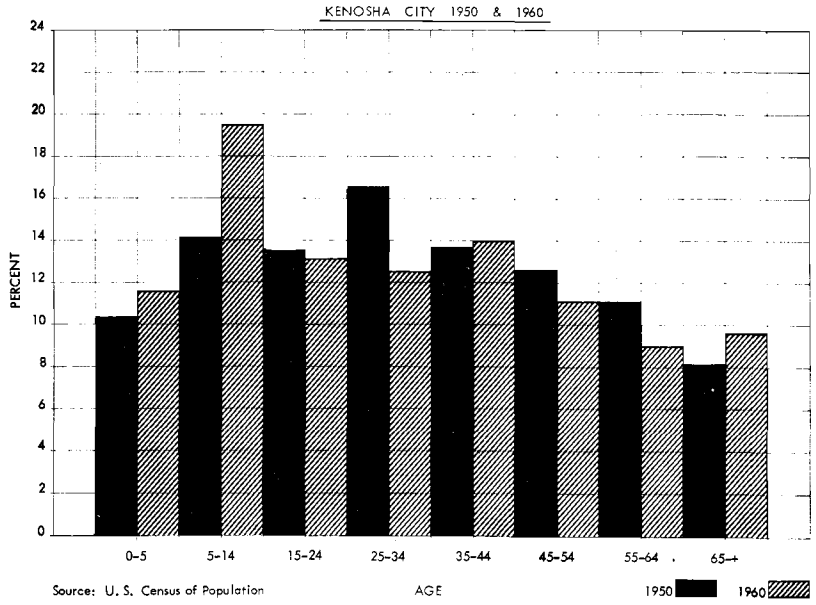
WISCONSIN 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

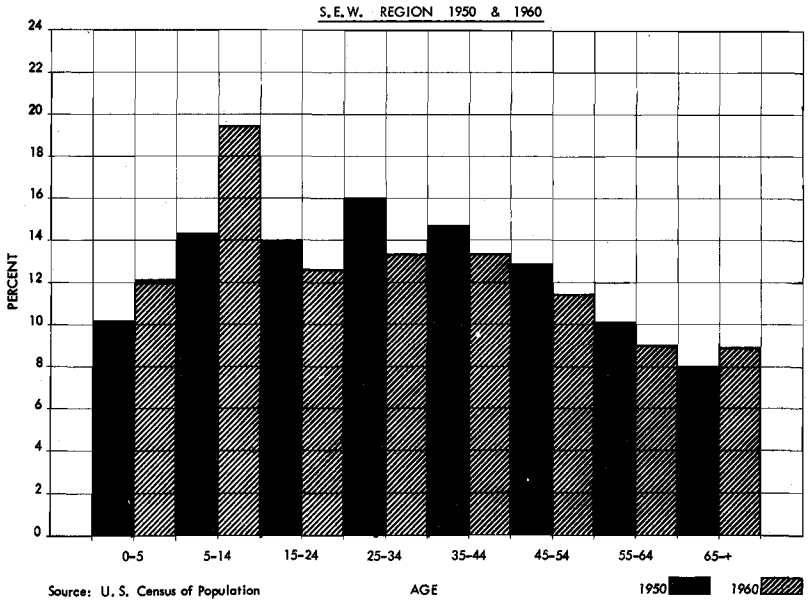
KENOSHA CITY 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

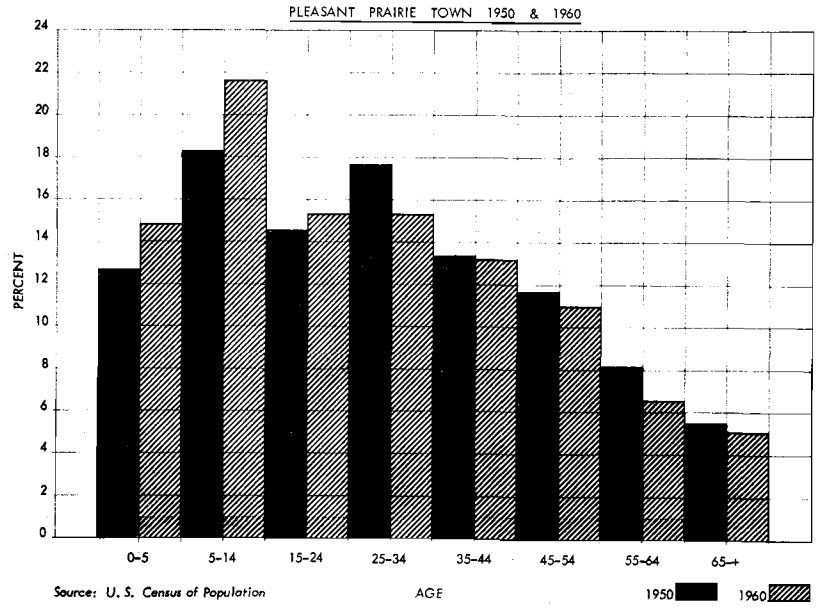
S.E.W. REGION 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

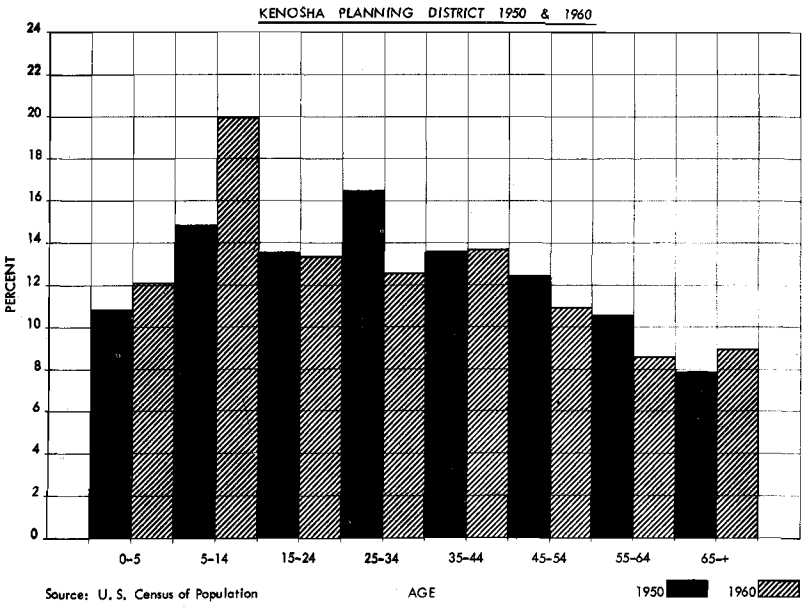
PLEASANT PRAIRIE TOWN 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

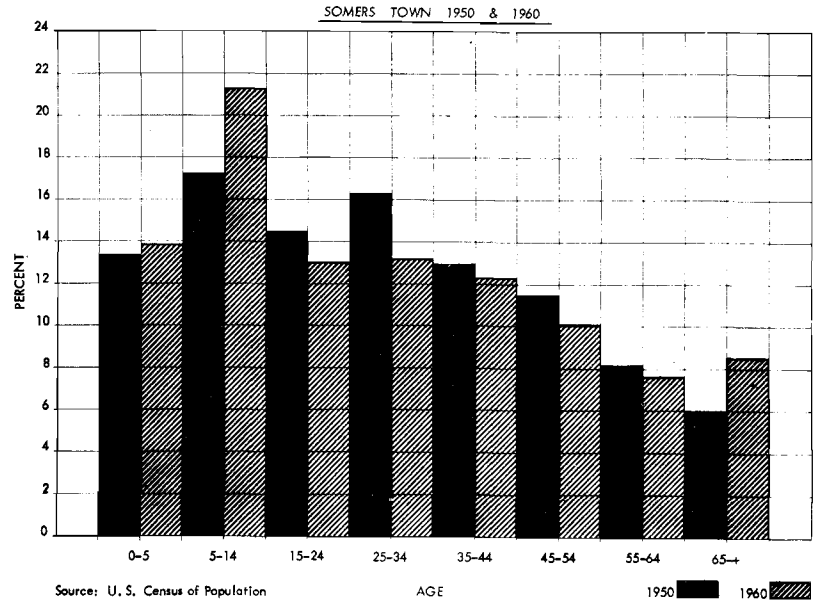
KENOSHA PLANNING DISTRICT 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION IN

SOMERS TOWN 1950 & 1960



Source: U. S. Census of Population

CHANGING AGE COMPOSITION OF POPULATION

1950 AND 1960

FIGURE 4

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

The preparation of this map was financed in part through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the Housing Act of 1954, as amended.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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1. The working age population (20-64) declined from 60.5 percent to 51.9 percent of total population. Comparable shifts occurred in the County and Region.

2. The percentage of persons "under 14" increased substantially, from 25.6 percent in 1950, to 32.0 percent in 1960. Comparable shifts occurred in the County and Region.

3. The "65 and over" group increased slightly from 7.8 percent in 1950 to 8.9 percent in 1960. With only minor variations, similar shifts occurred in the County and Region. Statewide, the "65 and over" group increased to over 10 percent in 1960 from nine percent in 1950.

4. The age group "19 and under" registered the largest numerical gains. Of the total District increase of 19,200 persons, 65 percent, or 12,485 persons, was attributable to gains in these age groups. For the Region, the total population increase for these age groups was also 65 percent, while in Kenosha County, the comparable figure was 61 percent.

5. Increases were registered in all other age groups except for the 25-29 and 55-59 groups where actual declines occurred. By comparison, declines in specific age group population levels in the Region and Kenosha County occurred in the 25-29 group only. The decline in the number of persons aged 25-29 is basically a reflection of the very low birth rates of the 1930-1937 depression years.

6. The "65 and over" age groups increased by 2,554 persons, or 13 percent of the District total increase, between 1950 and 1960. By comparison, gains in this age group accounted for 13 percent and 12 percent respectively in the County and Region.

When compared with statewide shifts, the District age group population changes show a greated upward shift in the "19 and under" age groups and a smaller upward shift in the "65 and over" group.

While many minor differences exist between the State and the District age group distribution, the most important consideration is that the 1960 District distribution reflected the influence of net in-migration while State age group distribution reflected the influence of net out-migration. Between 1950 and 1960, the State experienced a net out-migration of over 53,000 persons. These divergent migration movements tend, therefore, to exaggerate the difference between the age group population distribution of the District and the State.

Sex Distribution

In the District, males tend to outnumber females in all age groups below 34, while females outnumber males in all age groups above 35. Table 16 shows the ratio of males to females in the District by age group for 1950 and 1960.

The ratio of males to females rose fractionally in the District from 100.8 males per 100 females in 1950 to 101.4 males per 100 females in 1960. By comparison, the ratio in the County rose from 101.9 in 1950 to 102.0 in 1960. In the Region, the ratio shifted from 98.0 in 1950 to 97.3 in 1960. The differences between the District ratio and that for the Region are chiefly due to two factors: (1) the much greater amount of male-oriented employment in the District; and (2) the substantial amount relative to the District of female-oriented jobs in Milwaukee County. This tends to shift the Region's distribution more towards females. The influence of employment orientation is highlighted when the comparison of the ratios for the 15-24, 25-34, and 35-44 age groups is made.

The District ratios tend to be higher indicating more males per females in the 15-44 age group.

The ratios tend to decline in the "65 and over" group indicating a smaller number of males per 100 females. This is a widespread condition in most urban and rural non-farm areas. Not only do females tend to outlive males, but frequently they will migrate to urban areas after the loss of their spouse to be closer to friends, relatives, and medical services.

Ethnic and Racial Composition

In 1960, slightly over 90 percent of the District population was native born. Although this percentage was lower than for the Region or the State, the difference was insignificant (See Table 17). In 1960, 98.8 percent of the District population was white with 1.2 percent non-white. Between 1950 and 1960, the non-white population in the District increased fractionally from 0.4 percent to 1.2 percent of total population and numerically from 274 to 1,054 persons. Comparatively, the District has a smaller fraction of non-whites in its population than the Region or the State.

Educational Levels

The average level of educational attainment for residents of the District increased between 1950 and 1960. However, while exceeding the County level, the District level ranked below the average level in the Region. Between 1950 and 1960, the estimated median number of school years completed increased from 9.2 to 10.0 for males and from 9.8 to 10.6 for females in the District. Comparable figures for the County were 8.9 to 9.8 years for males and 9.6 to 10.6 years for females, and for the Region, 9.4 to 10.8 years for males and 9.7 to 11.1 years for females. Statewide, the figures were 8.8 to 9.8 years for males and 9.1 to 10.9 years for females.

Table 18 shows, in greater detail, a comparison of educational attainment levels for the various areas. The tabular data indicates the relatively lower ranking of the District with respect to high school and post high school training. The District also ranked higher than the Region and State in the percentage of persons having no schooling at all. The educational attainment mixture of the District is, in some ways, a reflection of the type of economic activity in the area. Kenosha has a very large number of

Table 16

RATIO OF MALES TO FEMALES, BY AGE GROUP
1950 AND 1960

	Kenosha Planning District	
	1950	1960
Under 5	105.3[1]	104.3
5 - 14	105.2	103.6
15 - 24	96.3	109.9
25 - 34	96.6	100.9
35 - 44	96.3	99.9
45 - 54	100.2	97.3
55 - 64	115.2	98.4
65 and Over	94.3	91.8
Average	100.8	101.4

	SEW Region		State of Wisconsin	
	1950	1960	1950	1960
Under 5	104.8	103.5	104.7	104.1
5 - 14	103.6	104.3	104.4	104.2
15 - 24	92.4	90.8	97.4	94.8
25 - 34	99.4	95.0	97.8	99.4
35 - 44	96.9	97.0	100.6	97.2
45 - 54	100.6	96.8	103.3	99.7
55 - 64	104.7	97.4	104.6	98.9
65 and Over	88.1	82.9	96.9	88.7
Average	98.0	97.3	101.1	98.9

Note: [1] 105.3 Males Per 100 Females.

Source: U. S. Census of Population.

Table 17

COLOR AND NATIVITY OF THE POPULATION
1950 AND 1960

	Kenosha Planning District		Kenosha County	
	1950	1960	1950	1960
TOTAL POPULATION	66,105	85,325	75,238	100,615
White				
Number	65,831	84,271	74,954	99,525
Percent of Total	99.6	98.8	99.6	98.9
Nonwhite				
Number	274	1,054	284	1,090
Percent of Total	0.4	1.2	0.4	1.1
Native Born(2)				
Number	N.A.(1)	77,546	40,089	91,869
Percent of Total	-	90.9	80.1	91.3
Foreign Born(2)				
Number	N.A.(1)	7,779	9,950	8,746
Percent of Total	-	9.1	19.9	8.7
	SEW Region		Wisconsin	
	1950	1960	1950	1960
TOTAL POPULATION	1,240,618	1,573,614	3,434,575	3,951,777
White				
Number	1,214,763	1,499,662	3,392,690	3,858,903
Percent of Total	97.9	95.3	98.8	97.6
Nonwhite				
Number	25,855	73,952	41,885	92,874
Percent of Total	2.1	4.7	1.2	2.4
Native Born(2)				
Number	727,901	1,471,045	2,007,432	3,780,966
Percent of Total	86.6	93.5	90.3	95.7
Foreign Born(2)				
Number	112,553	102,569	214,991	171,519
Percent of Total	13.4	6.5	9.7	4.3

Notes: (1) N.A. - Not Available.
(2) 1950 Data for Persons over 21 Only.

Source: 1960 and 1950 Census of Population.

Table 18

EDUCATIONAL ATTAINMENT STATUS OF THE POPULATION
1950 AND 1960

	Kenosha Planning District		Kenosha County		SEW Region		State of Wisconsin	
	1950	1960	1950	1960	1950	1960	1950	1960
Number of School Years Completed	3.1	3.0	2.7	2.7	1.0	1.3	1.1	1.0
Some Elementary Schooling	13.6	16.4	20.7	16.2	18.7	14.9	20.9	16.8
Completed Elementary School	29.2	21.4	24.6	22.4	26.8	21.7	29.9	24.9
Some High Schooling	21.2	22.8	20.0	22.4	15.4	18.4	13.5	15.7
Completed High School	21.6	25.0	20.7	24.8	22.6	27.0	20.4	26.2
Some College	5.3	6.6	5.6	6.9	7.2	9.0	7.3	8.7
Four or more Years of College	4.9	4.7	4.5	4.6	6.3	7.7	5.4	6.7
School Years not Reported	1.3	-	1.3	-	2.0	-	1.9	-
Totals[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Median School Years Completed								
Male	9.2[2]	10.0[2]	8.9	9.8	9.4	10.8	8.8	9.8
Female	9.8	10.6	9.6	10.6	9.7	11.1	9.1	10.9

Notes: (1) Totals may not equal 100.0 percent due to rounding.
(2) Medians for the city were used to represent the planning district medians.

Source: United States Census of Population

production or blue collar jobs and, by comparison, a much smaller number of white collar jobs. The educational levels required of blue collar workers attracted to the District are such that they place little emphasis on more than a high school education. This is changing as the figures in Table 18 indicate. Of the District's residents, 6.6 percent completed some college in 1960 compared with 5.3 percent in 1950. Twenty-five percent completed high school in 1960 compared with 21.6 percent in 1950.

The impending construction of the University of Wisconsin-Parkside, the recent construction of the Kenosha Area Technical Institute, and recent additions to Carthage College will be factors encouraging a more rapid increase in future average educational levels in the District. At the same time, local industry needs should shift towards greater demand for workers with at least a high school education. The combination of a demand for better educated workers and the greater availability of local facilities for higher learning should tend to increase local educational levels over the next two decades.

Households

It is estimated that between 1950 and 1960, the number of households in the Kenosha Planning District increased by a larger percentage than did the population. The 25,221 households in the District in 1960 represented an increase of more than 31 percent over the estimated 19,170 households in 1950. By comparison, population increased by 29 percent. This difference in rate of change was attributable to the following factors:

1. Increase in new household formation as the World War II and Korean War constraints on new housing were removed.

2. Trend towards earlier marriages. Yound persons in the 1950's exhibited a tendency to marry and set up households at an earlier age.

3. Tendency for more elderly couples to maintain their own household, as personal income from Social Security and private pensions increased.

Persons residing in households increased from an estimated 97.7 percent of the population in 1950 to 98.7 percent of the population in 1960. The average size of households in the District decreased from an estimated 3.38 in 1950 to 3.34 in 1960. By comparison, the average household size in the Region in 1960 was 3.30 while the State's figure was 3.36. In 1960, Kenosha County had an average household size of 3.36 persons.

Population Estimates

Previous sections of the chapter indicated that the District population has traced a moderately rapid growth pattern, especially in the years since 1940. The analysis indicated further that in-migration was an important factor in the District population increase, influencing not only the level but also the age group composition. The influence of economic activity was also mentioned with respect to the relationship, over the decades, between local employment opportunities and local in-migration. The following chapter analyzes the economy of the District and contains projections of future employment levels. These employment projections were used to develop projections of the District population.

The projections of population are based upon the following assumptions which both establish the theoretical foundations for the projections and also permit, if necessary, future re-evaluation should unforeseen conditions occur to make any of the assumptions invalid:

1. The current market structure of the domestic automobile industry will not alter greatly over the next 25 years.

2. No major change will occur which may alter the present patterns of economic activity in the East North Central Region and the Milwaukee and Chicago areas.

3. The general level of employment in the District should increase by an annual average rate of between 2.0 and 2.7 percent per year over the 1965-1990 period.

4. The fertility rate[22] in the District will drop from an estimated 37.5 persons under five per 1,000 persons aged 20-44 in 1960 to 34.1 between 1960-1970, but will increase thereafter to 41.2, the rate prevailing in the 1955-1960 period.

5. Net in-migration will continue over the 1965-1990 period. The levels of migration will assume proportions similar to those of the 1950-1960 period.

Methodology

To project the District population, the following methodology was employed:

1. The existing 1960 population was "survived" ahead by five-year intervals using current survival tables (CPR, Series P-25 Number 286, July, 1964; U.S. Department of Commerce).

2. Persons under five, the equivalent of new births during each five-year period, were estimated by applying the calculated fertility rates 34.1, 1960-1970; 41.2, 1970-1985, to the "survived" population aged 20-44.

3. In-migration was accounted for as follows:

   The District number of in-migrants, 1950-1960, was estimated using cohort survival techniques and comparing the results with the actual 1960 population distribution. In-migration estimates by age group were thus derived. Over the 1960-1985 period, the previously derived survived population was built up by

(22) This rate is the ratio of the number of children under 5 years of age to the number of persons in the 20-44 age group. It has been used to derive future births because of the ease of incorporation into the cohort-survivial-migration method of population projection.

age group by inserting in-migration data by age group and by five-year intervals.

4. Finally, the projected total population figures for the District were compared with preliminary projections of Kenosha County and the Region which were prepared by SEWRPC and with State projections prepared by the State Department of Resource Development. This comparison indicated that a reasonable relationship existed between the District projections, Regional projections, and State projections.

Estimates

The population estimates indicate that by 1990, an estimated 181,000 persons will be residing in the Kenosha Planning District. This represents a doubling of the District population in the thirty-year period from 1960 to 1990 (See Table 19).

The estimates for the District show a rate of increase in the post-1970 period which is comparable to the 1950-1960 rate, 29 percent per decade. The District 1960-1970 rate is below these rates, 22 percent. This is based upon the present tendency of birth rates to drop from their mid-1950's high. This situation should change after 1970 due to a very substantial increase in the District of persons in the age groups of prime child-bearing years (See Table 19a & 19b).

The estimates are not precise forecasts, but are predicated upon the assumptions which condition the derivation. These assumptions may not hold completely over the full projection period so that the actual population figures may vary somewhat from the projected figures. Projections are important because they indicate the general direction, magnitude, and type of population growth that will probably take place within the District. The projections indicate that from 1,000.0 persons per square mile in 1960, the average density in the district should double to 2,000.6 by 1990.

Households

The projections of population have been adjusted to reflect household projections. These projections assume that: (a) as in the past, approximately 99 percent of the District population will reside in households; (b) the average household size will tend to approximate 3.3 persons (this conforms generally with national projections which show average household sizes dropping slightly between 1965 and 1970 but generally returning to the 1960 figure(23)); and (c) the average age at which persons marry will tend to remain at the present age which is 18 for women and 21 for men.

The projections of households for the District are as follows:

1960	-	25,221
1965	-	28,333
1970	-	31,878
1975	-	36,424
1980	-	41,484
1985	-	47,909
1990	-	54,848

(23) CPR, Series P-20, No. 123, April, 1963 - Bureau of the Census, Washington , D.C.

Table 19

POPULATION ESTIMATES FOR THE KENOSHA PLANNING DISTRICT, KENOSHA COUNTY, SEW REGION AND STATE

1950-2000

	1950	1960	1965	1970	1975
Kenosha Planning District	66,105	85,325	94,444	105,200	120,200
Kenosha County	75,238	100,615	112,000	125,000	139,000
District/County	87.9	84.8	84.3	84.1	86.5
SEW Region	1,240,618	1,573,620	1,718,000	1,870,000	2,035,000
District/Region	5.3	5.4	5.5	5.6	5.9
State of Wisconsin	3,434,575	3,952,771	4,224,000	4,461,000	4,744,000
SEW Region/ State	36.1	39.8	40.7	41.9	42.9

	1980	1985	1990	2000
Kenosha Planning District	137,900	158,100	181,000	-
Kenosha County	157,000	177,000	202,000	-
District/ County	87.8	89.4	89.6	
SEW Region	2,223,000	2,435,000	2,678,000	
District/Region	6.2	6.5	6.8	
State of Wisconsin	5,091,000	-	-	6,406,000
SEW Region/State	43.7	-	-	-

Source: 1950, 1960 U. S. Census of Population Wisconsin Projections - State Department of Resource Development, SEW Region and Kenosha County Projections - SEWRPC Unpublished Projections - Kenosha Planning District Projections - Harland Bartholomew and Associates.

Table 19a

POPULATION PROJECTIONS, BY AGE GROUP

	1960		1965		1970		1975	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 5	10,355	12.1	9,917	10.5	10,835	10.3	15,626	13.0
5- 9	9,048	10.6	10,672	11.3	10,310	9.8	11,179	9.3
10-14	7,917	9.3	9,350	9.9	11,151	10.6	10,698	8.9
15-19	6,111	7.2	8,406	8.9	9,678	9.2	11,659	9.7
20-24	5,164	6.1	6,611	7.0	8,942	8.5	10,217	8.5
25-29	5,019	5.9	5,572	5.9	7,154	6.8	9,376	7.8
30-34	5,724	6.7	5,289	5.6	5,996	5.7	7,452	6.2
35-39	6,054	7.1	5,856	6.2	5,576	5.3	6,251	5.2
40-44	5,633	6.6	6,139	6.5	5,996	5.7	5,770	4.8
45-49	4,986	5.8	5,667	6.0	6,207	5.9	6,130	5.1
50-54	4,322	5.1	4,911	5.2	5,681	5.4	6,130	5.1
55-59	3,822	4.5	4,061	4.3	4,734	4.5	5,409	4.5
60-64	3,497	4.1	3,494	3.7	3,787	3.6	4,447	3.7
65-69	3,197	3.7	3,022	3.2	3,156	3.0	3,366	2.8
70-74	2,239	2.6	2,644	2.8	2,525	2.4	2,644	2.2
75 & Over	2,237	2.6	2,833	3.0	3,472	3.3	3,846	3.2
Total	85,325	100.0	94,444	100.0	105,200	100.0	120,200	100.0

	1980		1985		1990	
	Number	Percent	Number	Percent	Number	Percent
Under 5	18,341	13.3	21,501	13.6	23,892	13.2
5- 9	16,134	11.7	18,814	11.9	22,082	12.2
10-14	11,722	8.5	16,600	10.5	19,186	10.6
15-19	11,032	8.0	12,174	7.7	16,652	9.2
20-24	12,273	8.9	11,541	7.3	12,670	7.0
25-29	10,756	7.8	12,648	8.0	12,127	6.7
30-34	9,791	7.1	11,067	7.0	13,213	7.3
35-39	7,722	5.6	9,960	6.3	11,403	6.3
40-44	6,343	4.6	7,905	5.0	10,136	5.6
45-49	5,792	4.2	6,482	4.1	7,964	4.4
50-54	6,206	4.5	5,692	3.6	6,516	3.6
55-59	5,930	4.3	5,850	3.7	5,611	3.1
60-64	5,102	3.7	5,533	3.5	5,430	3.0
65-69	3,861	2.8	4,585	2.9	5,068	2.8
70-74	2,896	2.1	3,320	2.1	3,982	2.2
75 & Over	3,999	2.9	4,427	2.8	5,068	2.8
	137,900	100.0	158,100	100.0	181,000	100.0

Source: 1960 U. S. Census of Population, Projections by Harland Bartholomew and Associates.

Table 19b

PROJECTION OF SCHOOL AGE POPULATION

Age Group	1960	1965	Percent Change	1970	Percent Change	1975	Percent Change
5 - 12	14,083	16,683	+18.5	16,781	+ 0.6	17,945	+ 6.9
13 - 15	4,130	5,103	+23.6	5,830	+14.2	6,274	+ 7.6
16 - 18(1)	3,723	5,105	+37.1	5,688	+11.4	7,153	+25.8
Total	21,936	26,891	+22.6	28,299	+ 5.2	31,372	+10.9

Age Group	1980	Percent Change	1985	Percent Change	1990	Percent Change
5 - 12	23,601	+31.5	29,301	+24.1	34,280	+16.3
13 - 15	6,480	+ 3.3	8,501	+31.2	10,455	+23.0
16 - 18(1)	6,738	- 5.8	7,415	+10.0	10,289	+38.8
Total	36,819	+17.4	45,217	+22.8	55,024	+21.7

(1) Derived from 1960 Distribution of Population, by One Year Age Group within the 15-19 Age Group.

Source: U. S. Census of Population, 1960 and Harland Bartholomew and Associates.

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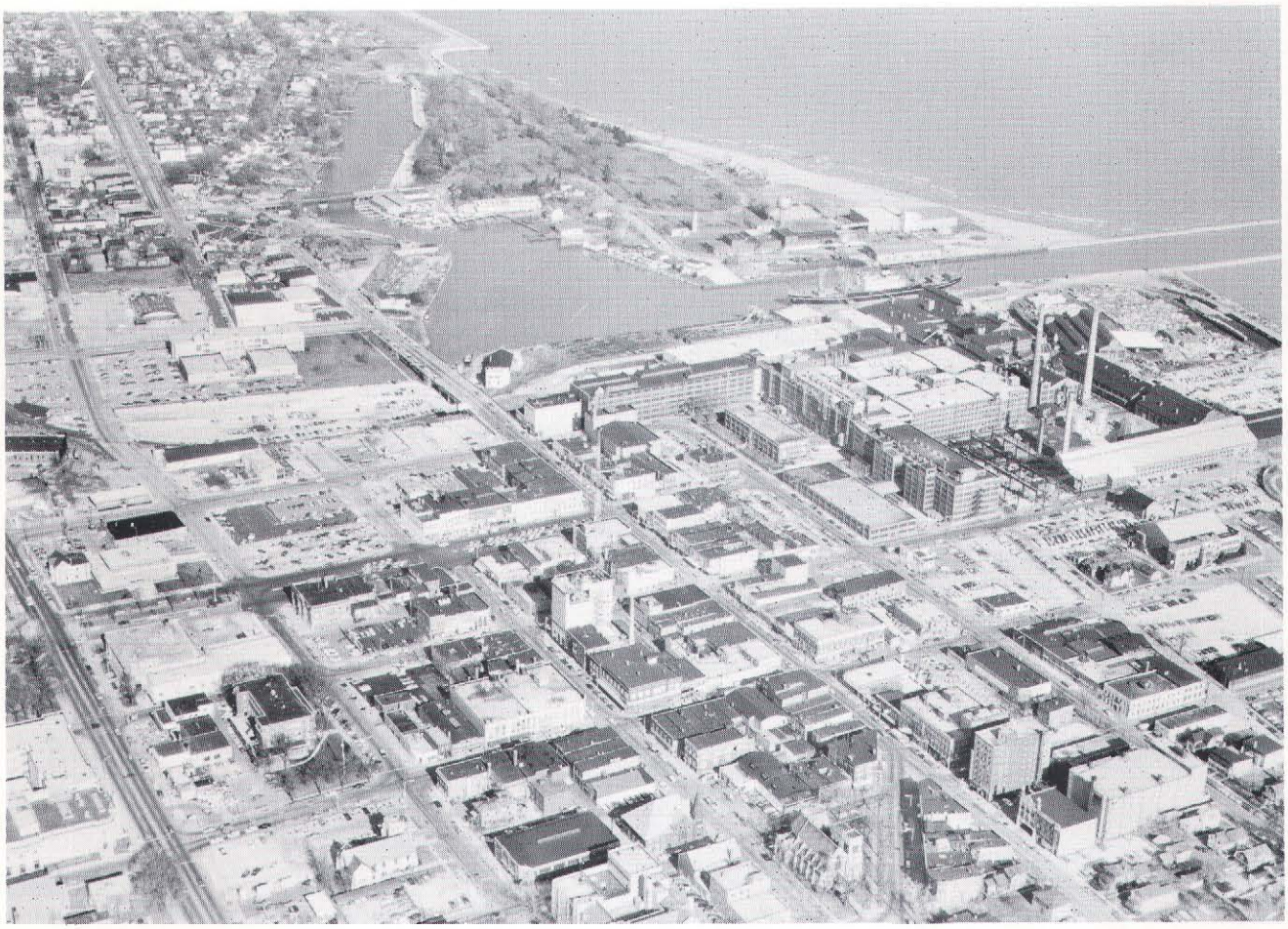

The photograph above shows most of the many different types of land uses found in the Kenosha District. These uses include residential, commercial, industrial, parks, and the lakefront in the photograph looking over the central business district to the northeast.

Chapter IV

ECONOMY

The intent of the economic study is to provide a description, analysis, and understanding of economic activity in the District, both historically and by comparison with other areas. Emphasis is given to producing an appreciation of those basic causal factors which have tended to and should continue to produce both employment and income growth for District residents. This chapter provides background information for subsequent planning analyses and development proposals in the comprehensive plan. In addition, the projections of employment are helpful in reaching decisions on the conflicting demands upon land use which will inevitably occur.

Throughout the report, data on employment and establishments, when noted as pertaining to the Kenosha Planning District, are actually Kenosha SMSA (county) data. The general unavailability of data for the District, plus the fact that Kenosha District employment accounts for between 85 and 95 percent of SMSA employment, makes the use of SMSA data in lieu of District data both necessary and generally reliable.

Economic Structure and Trends

Manufacturing is the backbone of the economy in the Kenosha Planning District. District-wide employment shifts of either a seasonal, cyclical, or secular long-run nature have all been almost entirely attributable to causes originating in the manufacturing sector. While the District's current economic structure is different from that of the pre-World War II period, manufacturing, and basically durable goods manufacturing, still dominates.

History(24)

The factors that promoted industrialization of the District prior to 1900 were existant of especially fertile farm lands; early settlement of the southeastern section of Wisconsin; Lake Michigan's importance as a waterway; establishment of excellent rail facilities; nearness of Chicago, the nation's largest interior market area; and location of the District midway between the industrial areas of Chicago and Milwaukee.

Kenosha owes much of its early development to its fine harbor facilities and agricultural hinterland. In 1850, the area known as Southport was chartered as a city and named Kenosha. New England farmers populated the area and established the early agriculturally-oriented industries. Prior to the 1900's, local industry, in addition to farming, included: retail trade, produce and metals, wholesaling and shipping, sawmills and grist mills. The construction of a new harbor in the city in 1884 initiated the development of additional industries. Wheat farming declined in the area and shipping also declined as the lead mines in Southwestern Wisconsin were gradually depleted.

After 1900, manufacturing expanded rapidly in the District as the Simmons Bedding Company, the Chicago and Rockford Hosiery Company, and the Nash Auto Company started local operations. The production requirements of World War I doubled employment in the District and high levels of employment prevailed until the depression of the 1930's. Following the initial recovery in 1937, the District's economy boomed during World War II. Conversion of automobile plants to aircraft production, and food processing equipment plants to shell production, led to an increase in employment, which peaked in 1944 with an addition of some 6,000 workers in manufacturing industries. Employment subsequently declined gradually until the war's end. Reconversion to civilian production was rapid and, except for the nationwide slump of 1948-49, employment was high throughout the Korean War. In March of 1953, an all-time high (since surpassed) of 29,000 non-agricultural workers was reached. Since the mid-1950's, employment, although fluctuating widely, has tended to move upward. While the Simmons Company, employment of 1,500, and the Quaker Stretcher Company, employment of 125, left the District between 1959 and 1961, the expansion of American Motors during and since the late 1950's more than offset these losses.

Manufacturing

Although decreasing somewhat, manufacturing employment, as a percent of total District employment, has stayed above 50 percent. This percentage is high even by comparison with the manufacturing dominated Milwaukee or Chicago areas. In 1963, manufacturing employment in the District was 22,382 (See Table 20). This represented an increase of over 60 percent, or 8,572 jobs from 1954.

The District's manufacturing industry is large-firm oriented. One firm alone employs over 70 percent of all employees while seven firms account for some 90 percent, all but one in the durable group. Therefore, less than 10 percent of the manufacturing firms employ approximately 90 percent of the manufacturing employees.

The durable goods sector, accounting for 94 percent of employment in 1963 has achieved virtually all the 1954-1963 growth. Employment in this sector rose from 12,548 in 1954 to 21,082 in 1963. Nondurable goods employment, however, increased slightly from 1,261 in 1954 to 1,303 in 1963. (See Table 21.)

There was a net increase of 13 firms in the manufacturing sector between 1954 and 1963. The durable group accounted for an increase of 9 firms, with nondurables accounting for 4 new firms (See Table 22). Virtually all of the new firms had, and still have, moderate to small employment levels. Overall employment shifts in the District's manufacturing sector have been attributable to either expansions or cutbacks by existing firms or closing of older firms.

Wages paid by manufacturing firms increased between 1954 and 1963, by some 125 percent, $77,782,316. In the durable goods sector, accounting for over 89 percent of wages paid in manufacturing in 1963, there was an increase of over 138 percent in wage and salary payments, while the nondurable goods sector registered an increase of less than 10 percent (See Table 23).

In addition to providing an exceptionally large percentage of District employment, local manufacturing has two additional distinguishing features. Contrary to national and regional trends, production workers in the District have

(24) Source: Kenosha - Its Economic Life and Related Aspects, No. 2, 4, Bureau of Community Development University Extension Division, University of Wisconsin, 1954; Area Manpower Guidebook BLS No. R-174, U. S. Department of Labor, Washington, D.C., 1957.

Table 20

ESTIMATED ANNUAL AVERAGE EMPLOYMENT BY INDUSTRY
IN THE KENOSHA SMSA - 1959-1963

Industry	1959	1960	1961	1962	1963
Total Civilian Labor Force	37,220	39,388	40,578	39,609	43,130
Unemployed	835	1,282	3,310	1,373	1,303
Employed	36,385	38,107	37,242	38,236	41,815
Nonfarm Wage and Salary Employment	33,295	33,610	32,387	33,650	37,532
Manufacturing	20,635	21,221	17,467	20,057	22,382
Durable	19,145	19,839	16,123	18,749	21,082
Primary Metals	1,860	1,708	1,680	1,835	1,850
Fabricated Metals	1,290	1,282	1,255	1,323	1,305
Machinery	585	578	825	895	955
Other Durable	15,405	16,271	12,360	14,704	16,999
Nondurable	1,991	1,382	1,325	1,300	1,303
Food and Kindred	270	267	330	360	372
Printing, Publishing	355	330	360	342	340
Other Nondurable	865	785	638	598	593
Construction	1,475	1,632	1,768	1,155	1,640
Transportation and Utilities	1,185	1,928	1,747	1,660	1,625
Trade	3,440	3,950	4,821	4,100	4,366
Finance, Insurance, Real Estate	475	512	657	678	627
Service and Miscellaneous	2,430	2,445	3,498	3,483	3,783
Government	1,835	1,893	2,447	2,517	3,067
Self-Employed, Family and Domestic	2,610	2,793	3,110	3,166	3,200
Farm	1,800	1,733	1,757	1,420	1,088

Source: Labor Market Letter, Kenosha Labor Market, Wisconsin State Employement Service.

Table 21

EMPLOYMENT BY INDUSTRY - FIRST QUARTER AVERAGE
KENOSHA SMSA 1954-1963

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
All Industries	20,443	23,634	27,616	21,013	21,168	25,670	29,406	24,718	26,790	29,659
Manufacturing	15,556	18,151	21,529	14,855	14,967	19,075	21,483	17,594	19,916	22,147
Food and Kindred Products	137	150	147	145	287	274	293	320	343	347
Textile Mill Products	1,035	960	1,036	999	831	857	718	599	546	521
Apparel, Etc.	3	7	11	23	9	14	13	22	14	14
Lumber and Wood Products	124	123	10	8	37	57	49	53	63	50
Furniture and Fixtures	3,329	3,535	4,043	3,357	2,621	1,948	1,833	391	226	96
Printing, Publishing, Etc.	306	337	309	300	300	337	327	339	314	312
Chemicals and Allied Products	131	130	75	95	80	76	82	63	34	43
Primary Metal Industries	1,975	1,939	2,128	1,959	1,716	1,796	1,817	1,597	1,768	1,833
Fabricated Metal Products	689	652	710	770	1,193	1,302	1,350	1,219	1,320	1,364
Machinery (Except Electrical)	1,051	1,098	1,383	1,628	367	359	383	342	842	870
Electrical Machinery, Etc.	7	12	16	21	507	453	600	519	8	7
Transportation Equipment	6,701	9,128	11,581	5,463	6,961	11,540	13,950	12,058	14,162	16,406
All Other Manufacturing Industries	67	79	78	87	57	63	67	72	277	284
Transportation, Communication and Utilities	588	801	900	756	902	1,440	1,863	1,084	1,161	1,252
Wholesale Trade	435	507	595	616	562	582	577	583	412	462
Retail Trade	2,275	2,417	2,656	2,759	2,700	2,748	3,172	3,028	2,866	3,327
Finance, Insurance and Real Estate	231	239	275	293	281	305	345	385	402	420
Service Industries	810	873	877	1,004	982	1,012	1,095	1,111	1,196	1,231
Agriculture, Forestry and Fishing	2	3	5	2	2	3	4	6	4	6
Mining	28	35	25	26	25	22	19	17	16	24
Contract Construction	518	608	754	703	746	749	847	910	816	790

Source: Employment and Wages Covered by Wisconsin's U.C. Law, Wisconsin State Employment Service.

Table 22

NUMBER OF REPORTING UNITS FOR EMPLOYMENT - FIRST QUARTERS
KENOSHA SMSA 1954-1963

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
All Industries	495	517	561	637	643	660	677	710	716	746
Manufacturing	70	74	74	75	80	79	79	79	81	83
Ordinances and Accessories	--	--	--	--	1	1	1	1	--	--
Food and Kindred Products	8	9	9	8	13	11	12	11	12	13
Textile Mill Products	2	2	2	2	2	2	2	2	2	2
Apparel, Etc.	1	1	1	1	1	1	1	1	1	1
Lumber and Wood Products	2	2	1	1	3	4	3	3	3	3
Furniture and Fixtures	5	6	6	6	4	4	4	4	5	7
Printing and Publishing	8	9	9	9	9	9	9	9	9	9
Chemicals and Allied Products	3	3	3	3	3	3	3	3	2	1
Primary Metal Industries	4	5	4	4	4	4	4	4	4	4
Fabricated Metal Products	7	7	8	9	10	10	10	11	11	12
Machinery (Except Electrical)	20	19	20	20	18	19	19	18	20	19
Electrical Machinery, Etc.	1	1	1	1	4	3	3	2	1	1
Transportation Equipment	4	4	4	4	3	3	3	3	3	3
All other Manufacturing Industries	5	6	6	7	5	5	5	7	8	8
Transportation, Communication, and Utilities	19	20	22	23	23	24	25	25	23	27
Wholesale Trade	38	42	49	53	47	48	47	48	51	52
Retail Trade	188	191	208	245	254	257	265	281	283	301
Finance, Insurance and Real Estate	17	17	19	23	21	22	25	25	28	29
Service Industries	52	52	62	80	83	84	91	98	98	102
Agriculture, Forestry and Fishing	1	1	1	1	1	1	1	1	1	1
Mining	3	3	3	3	3	3	4	4	4	4
Contract Construction	107	117	123	134	131	142	140	149	147	147

Source: Employment and Wages Covered by Wisconsin's U.C. Law, Wisconsin State Employment Service.

Table 23

ESTIMATED ANNUAL WAGE AND SALARY PAYMENTS
KENOSHA SMSA 1954-1963
(In Million Dollars)

	1954	1955	1956	1957	1958	1959	1960
All Industries	76.6	99.3	120.4	90.8	95.8	145.1	168.6
Manufacturing	61.7	81.2	98.8	69.2	72.8	117.1	133.0
Durable Goods:	55.6	75.1	92.4	62.8	66.2	109.9	126.2
Lumber & Wood Products	0.4	0.4	*	*	0.2	0.2	0.2
Furniture & Fixtures	13.0	13.7	17.6	14.5	11.8	9.9	10.0
Primary Metal Industry	8.2	9.0	11.0	9.8	8.5	9.8	10.2
Fab. Metal Products	3.3	3.3	3.9	4.3	7.1	8.2	8.3
Machinery (Exc. Elec.)	5.0	6.7	8.0	9.6	2.1	2.1	2.3
Elec. Machinery, etc.	*	*	*	0.1	2.8	2.7	3.7
Transportation Equip.	25.3	41.6	51.4	24.0	33.3	76.5	91.1
All Other Mfg. Ind.	0.2	0.3	0.4	0.5	0.3	0.4	0.4
Non-Durable Goods:	6.1	6.1	6.4	6.4	6.6	7.3	6.8
Food & Kindred Prod.	0.5	0.5	0.5	0.5	1.2	1.1	1.4
Textile Mill Prod.	3.8	3.6	4.1	4.0	3.5	3.8	3.4
Apparel, etc.	*	*	*	0.1	*	0.1	*
Printing & Publishing	1.3	1.5	1.4	1.4	1.4	1.9	1.6
Chemical & Allied Prod.	0.5	0.6	0.3	0.4	0.4	0.4	0.3
Transp. Comm. & Utilities	2.1	3.5	3.8	3.4	4.7	8.7	13.0
Wholesale Trade	1.9	2.2	2.6	2.8	2.2	2.5	2.8
Retail Trade	6.4	6.9	8.3	8.3	8.6	9.0	10.3
Finance Ins. & Real Estate	0.8	0.9	1.0	1.2	1.1	1.3	1.5
Service Industries	1.6	1.6	1.9	2.1	2.2	2.4	2.9
Agr., Forestry & Fishing	*	*	*	*	*	*	*
Mining	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Contract Construction	2.0	2.8	4.0	3.6	4.0	4.0	5.0

	1961	1962	1963	Period Change Dollars	Period Change %
All Industries	130.6	154.9	172.7	+96.1	+122.5
Manufacturing	100.2	124.5	139.5	+77.8	+126.1
Durable Goods:	93.7	117.9	132.9	+77.3	+139.0
Lumber & Wood Products	0.2	0.3	0.3	- 0.1	- 25.0
Furniture & Fixtures	1.8	1.1	0.5	-12.5	- 61.5
Primary Metal Industry	8.8	11.0	11.5	+ 3.3	+ 40.2
Fab. Metal Products	8.1	9.0	9.2	+ 5.9	+178.8
Machinery (Exc. Elec.)	2.1	5.8	6.1	+ 1.1	+ 22.2
Elec. Machinery, etc.	5.2	*	*	*	*
Transportation Equip.	66.8	89.0	103.9	+78.6	+310.7
All Other Mfg. Ind.	0.6	1.7	1.4	+ 1.2	+600.0
Non-Durable Goods:	6.5	6.6	6.6	+ 0.5	+ 8.2
Food & Kindred Prod.	1.5	1.6	1.8	+ 1.3	+260.0
Textile Mill Product	3.0	2.9	2.8	- 1.0	- 26.3
Apparel, etc.	0.1	0.1	0.1	*	*
Printing & Publishing	1.7	1.9	1.8	+ 0.5	+ 38.5
Chemical & Allied Prod.	0.3	0.1	0.2	- 0.3	- 60.0
Transp., Comm. & Utilities	6.5	7.6	7.6	+ 5.5	+261.9
Wholesale Trade	2.8	2.1	2.4	+ 0.5	+ 26.3
Retail Trade	10.3	10.1	12.1	+ 5.7	+ 89.1
Finance Ins. & Real Estate	1.6	1.8	1.9	+ 1.1	+137.5
Service Industries	3.1	3.4	3.8	+ 2.2	+137.5
Agr., Forestry & Fishing	*	*	*	*	*
Mining	0.1	*	0.1	-	-
Contract Construction	6.0	5.3	5.2	+ 3.0	+160.0

* Less than $50,000.

Source: Employment and Wages Covered by Wisconsin U. C. Law, Wisconsin State Employment Service.

not declined as a percentage of total manufacturing workers. As Table 24 shows, the ratio of production workers to total workers in manufacturing has actually increased in the District since 1954 from 76.9 in 1954 to 81.9 in 1962. In the other areas shown in the table, a reverse trend is evident. Moreover, production workers in the District have increased in number while the reverse has been true in the other areas shown.

Value added per worker has grown steadily within the District's manufacturing sector. In fact, it approximately doubled between 1954 and 1962. Table 24 shows that, not only is value added per worker substantially higher in the District, but it has increased far more rapidly by comparison with the other areas. Value added is the dollar value of the net product of goods and services during the year noted. Its significance for the District is that it indicates the following:

1. Local manufacturing is characterized by a great deal of materials transformation which adds value to the final product;

2. Workers productivity is relatively high but this also reflects the capital intensiveness of industries particular to the District;

3. The value of output could be expanded with a minimum expansion in employment under existing technology.

Published capital expenditures data are both incomplete and infrequent. Discussions held with representatives of leading manufacturing firms in the District did yield the following information on local new investment. American Motors Corporation's new capital investments in the District have amounted to well over $35,000,000 since the late 1950's and tend to dwarf all other private investment figures. However, relative to their size, Tri-Clover Division of Ladish Company, Eaton Manufacturing Company, Dynamatics Division and Anaconda American Brass Co., have all made substantial capital outlays in the postwar period. Tri-Clover and Eaton have expanded several times during this period and Anaconda's plant is currently the most modern brass mill in the United States. Snap-On Tools Corporation, while not expanding plant facilities, has maintained a policy of constantly improving production equipment, as have many other local manufacturing firms.

Nonmanufacturing

Nonmanufacturing employment in the District has tended to both fluctuate less severly than manufacturing employment and to increase at a faster pace. Between 1953 and 1963, covered (employees in establishments covered by the Wisconsin Unemployment Compensation Law) nonfarm nonmanufacturing wage and salary employment increased by some 6,300 or 72 percent (See Table 21). Even with that growth, the nonmanufacturing sector of the District's economy is still "underrepresented", or a deficit area. The District's manufacturing sector has typically been rather small due to the particular nature of the District's manufacturing complex; a few large firms, large variations in employment and a sizable number of nonresident workers employed in the area (over 5,000 per day), plus the proximity of the commercial districts of Chicago and Milwaukee, and the relative absence of rapid population growth locally until the last decade. Nonmanufacturing employment in the District, in 1963, came to 40.4 percent of total employment. By comparison, this percentage was 58.7 in the Milwaukee SMSA, and 51.9 in the Racine SMSA.

The nature of District manufacturing has been and is a basic factor contributing to the smallness of the local business oriented service sector. Small firms cannot afford to maintain their own service departments, e.g., financial, legal, advertising, and thereby usually rely upon the purchase of these services from separate local firms. This type of situation is not prevalent in the District. Many of the service functions which develop in Milwaukee or Chicago, which serve the needs of a multitude of firms, are not prominent in the District. Firms such as Snap-On Tools Corporation, Eaton Manufacturing Company, Anaconda American Brass Company, American Motors, Ladish Company, and others maintain their own service departments and do not generate much demand for outside business services.

Retail employment underwent substantial growth between 1954 and 1963, (See Tables 20 and 21). Personal business services, finance insurance and real estate also exhibited strong upward employment trends. These industry groups, combined with government, have been the more rapidly expanding nonmanufacturing industries in the District. Since 1959 alone, some 2,700 jobs have been added in these sectors.

Construction employment has tended, as is typical for the industry, to fluctuate widely from year to year. Employment in the industry has tended to follow, with some lagging, the trend of building permits issued in the District. Peak years have been 1956 - 7,255 permits, 1960 - 9,000 permits and 1961 - 7,160 permits. Transportation and utilities employment has fluctuated widely due to the decline in railroad employment and a large increase but eccentricity of truck transportation employment in response to output of American Motors.

Tracing covered employment trends, the number of establishments and wage and salary payments have increased in the nonmanufacturing sector particularly in services, finance and retail trade. Since 1954, an estimated 175 additional firms have been created in these industries.

Projects now underway will further boost employment in the nonmanufacturing sector and tend to make it less of a "deficit" sector. Several new private and public office buildings are now under construction. In 1965, the new Sears Shopping Center opened with some 200,000 square feet of floor space. These activities will tend to broaden and deepen the nonmanufacturing sector in services rendered, employment and payroll.

Basic Sector

The District's economic structure can be conceived as consisting of two major areas; a basic or externally-oriented sector and a nonbasic or internally-oriented sector. The externally-oriented sector, in terms of employment size, is by far the larger of the two and comprises those firms whose markets for products made or services rendered lie outside the District. These firms are considered basic in that by selling to more distant markets they attract a flow of income to the District in the form of receipts. These receipts are in turn, disbursed mainly to local employees or firms. This income

Table 24

VALUE ADDED BY MANUFACTURE - 1954-1962

	1954	1958	1960	1962
Kenosha SMSA				
Total Employees	15,113	15,436	21,258	20,499
Production Workers	11,618	12,269	17,611	16,798
Percent of Total	76.9	79.5	82.8	81.9
Value Added ($1,000)	122,125	164,285	279,950	296,404
Value Added per Worker	8,081	10,643	13,169	14,459
Milwaukee SMSA				
Total Employees	183,816	180,758	199,059	193,414
Production Workers	135,712	126,193	134,896	132,245
Percent of Total	73.8	69.8	67.8	68.4
Value Added ($1,000)	1,652,603	1,731,176	1,974,154	2,090,663
Value Added per Worker	8,990	9,577	9,917	10,810
Wisconsin				
Total Employees	465,464	428,735	465,784	469,684
Production Workers	354,917	319,992	340,053	344,301
Percent of Total	76.3	74.6	73.0	73.3
Value Added ($1,000)	4,607,466	3,979,434	4,620,216	5,059,738
Value Added per Worker	9,898	9,281	9,919	10,773
ENC States				
Total Employees	4,459,829	4,084,360	4,492,218	4,419,716
Production Workers	3,489,654	3,028,034	3,235,691	3,187,902
Percent of Total	78.2	74.1	72.0	72.1
Value Added ($1,000)	40,376,670	41,143,565	47,679,362	51,996,028
Value Added per Worker	9,053	10,073	10,614	11,765
United States				
Total Employees	16,098,635	15,995,814	16,726,109	16,777,734
Production Workers	12,372,002	11,644,213	12,178,965	12,138,768
Percent of Total	76.9	72.8	72.8	72.4
Value Added ($1,000)	129,460,538	141,980,197	161,136,038	177,899,621
Value Added per Worker	8,042	8,876	9,634	10,603

Source: United States Census of Manufacturers

flow, in turn, is re-spent locally for goods and services required by local residents. In a real sense the externally-oriented sector supports most of the internally-oriented sector.

In the District, as of 1963, externally-oriented, or basic, employment amounted to roughly 21,600 jobs, or approximately 50 to 55 percent of estimated total District employment. By comparison, in 1960 estimated basic employment in the Region, accounted for some 40 percent of total employment.

While the ratio of externally-oriented employment to total employment in the District is rather high compared with the Region, it is not unusual when compared with other similar industrial areas dominated by one or a few very large firms. Numerous pulp and paper, mining and other automobile industrial areas in Wisconsin share with the District a very high ratio of basic employment to total employment.

Determination of basic industries in the District was based upon:

1. Interviewing several representative firms;
2. Discussion with local public officials;
3. Discussion with local bankers and realtors;
4. Analysis of production data furnished by SEWRPC;
5. Analysis of other published data; and
6. Establishing a criteria of industry sales of over 50 percent to consumers outside the District.

The District's basic industries are as follows:

- Textile mill products
- Primary metals
- Fabricated metals
- Machinery
- Transportation equipment

These are all manufacturing industries. There may be firms in other manufacturing industries that could be considered as basic firms but the above-listed industries incorporate the bulk of the District's basic employment.

Textile Mill Products

One firm, Coopers Inc., accounts for almost all the employment in this basic industry. The firm's markets and source of materials lie outside the District and include many parts of the nation. The major products are knit underwear and sportswear. Kenosha is Coopers' national headquarters and the firm maintains branch plants in several other states. Employment in the textile mill products industry has declined substantially since 1954; 1,035 in 1954, 521 in 1963. Wage and salary payments have similarly declined.

Primary Metals

Again, one firm accounts for most employment in the industry. Anaconda American Brass Company employed approximately 1,300 people, of an industry total of 1,833, in 1963. Other firms in the industry are MacWhyte Company, Arneson Foundry Inc., and Kenosha Brass and Aluminum Foundry. The markets of these firms are predominantly external, taking in Milwaukee and Chicago as major areas. The products (brass and copper sheet, tubing, rods, wire, castings, steel and iron castings) of these firms are used in the manufacture of electrical machinery, transportation equipment, nonelectrical machinery and in the construction and mining industry.

All these are heavily represented in the Milwaukee-Chicago area.

District employment trends in the primary metals industry have been generally stable. Employment went from 1,975 in 1954, to 1,716 in 1958, down to 1,597 in 1961, and then up to 1,833 in 1963. Most of the fluctuation has been attributable to firms other than Anaconda, whose employment remained almost constant between 1950 and 1963.

Primary metals employment in the state has exhibited similar long-run trends, increasing from 24,600 in 1954 to 25,600 in 1963. In the Region, the industry trend has been upward. Employment increased from 17,700 in 1954 to an estimated 21,100 in 1963. This indicates that the Region's primary metals industry has experienced greater growth than the District's. This is to be expected inasmuch as, nationally, the brass and copper subsector of the primary metals industry has been subject to severe competive forces both from other metals and plastics (See Table 25).

During the course of company interviews, it was learned that the major local firm in this industry has completely modernized its operation and now has the most modern brass mill in the United States. New product development research is carried on locally, developing new uses for the metals. Other factors brought out were that the relatively high local wage rates were not a local handicap but rather that the absence of a market area directly to the east, due to Lake Michigan; and relatively high personal and corporate state taxes could be listed as factors tending to inhibit further local industrial growth.

Fabricated Metals

Two firms, Snap-On Tools Corporation and Tri-Clover Division of Ladish Company, account for the major share of this industry's employment in the District. The Frost. Company is an additional large employer in the industry. A variety of products are made in the industry and include tools for professional mechanics, testing equipment, stainless steel tubing, couplings and plumbing trim. As with products made, end users are also diverse and include the dairy and beverage industry, toilet preparations industry, sanitary equipment industry, diesel engine industry, and the maintenance departments of a host of additional industries. Market areas are almost entirely outside the District and take in the Chicago-Milwaukee and Minneapolis-St. Paul areas and, for some firms, the international market.

District employment in the fabricated metals industry has shown a strong upward trend increasing from 689 in 1954 to 1,364 in 1963, an increase of almost 98 percent. By comparison, industry employment in the state remained fairly stable, going from 33,000 in 1954 to 34,000 in

Table 25

EMPLOYMENT IN SELECTED MANUFACTURING INDUSTRIES
1955 - 1963

Industry	1955	1956	1957	1958	1959	1960	1961	1962	1963
Textile Mill Products									
Kenosha SMSA	960	1,036	999	831	857	718	599	546	521
SEW Region	-	-	-	-	-	-	-	-	-
Wisconsin	8,100	8,000	7,500	6,600	7,200	6,900	6,500	6,500	6,300
Primary Metal Industries									
Kenosha SMSA	1,939	2,128	1,959	1,716	1,796	1,817	1,597	1,768	1,833
SEW Region	-	21,900	-	18,100	-	19,400	19,000	20,800	21,100
Wisconsin	26,200	28,500	27,800	23,500	26,400	24,600	23,700	25,400	25,600
Fabricated Metal Products									
Kenosha SMSA	652	710	770	1,193	1,302	1,350	1,219	1,320	1,364
SEW Region	-	17,800	-	16,300	-	18,300	17,500	18,400	18,400
Wisconsin	33,500	34,200	32,600	30,800	33,100	33,800	32,300	34,100	34,500
Machinery									
Kenosha SMSA	1,110	1,399	1,649	874	812	983	861	850	877
SEW Region	-	103,800	-	89,900	-	99,700	95,500	98,300	100,300
Wisconsin	137,300	147,700	144,100	128,100	139,000	141,400	135,200	132,500	145,300
Transportation Equipment									
Kenosha SMSA	9,128	11,581	5,463	6,961	11,540	13,950	12,058	14,162	16,406
SEW Region	-	23,000		23,700	-	33,400	26,800	33,800	35,200
Wisconsin	35,100	33,500	33,600	34,500	45,200	48,400	39,000	44,700	46,900

Source: Employment and wages covered by U C Law, Wisconsin State Employment Service, SEWRPC Planning Report No. 3 and Employment Earnings, U. S. Department of Labor.

1963. In the Region, fabricated metals employment increased from 16,000 in 1954 to an estimated 18,400 in 1963, an increase of 9 percent. Annual wage and salary payments in the industry almost tripled in the District, between 1954 and 1963, rising from $3.3 million to $9.2 million.

Much of the increase in fabricated metals employment in the District can be traced to the Tri-Clover Division of Ladish Company. The firm has undergone several expansions since the early fifties in both plant, equipment and employment. Furthermore, it anticipates employment increase of between five and ten percent throughout the 1965-1975 period. This is a result of the growing volume of customers who subsequently require more frequent replacement of equipment now made by Tri-Clover. The cyclical nature of the industry has also been offset to a large degree as end users have gone into year-round production.

While Snap-On Tools Corporation has neither increased employment nor substantially expanded plant facilities, the firm has constantly adapted the most modern production equipment and methods. All of the firm's research and development programs are carried on locally, Kenosha being the firm's national and international headquarters.

Nationally, the fabricated metals industry has been subject to competition from plastics. During the course of local establishment interviews, it was learned that District firms have been meeting this competition and have, for some items, made use of plastics and coated metals. Here, as in almost every other industry group where interviews were taken, mention was made of the excellence of the Kenosha Area Technical Institute. When questioned, all firms indicated that the school has been a tremendous asset to the District's industrial community.

Machinery

Due to occasional changes in the standard industrial classification of firms, the electrical and nonelectrical machinery industries have been combined for purposes of analyses.

Although in 1963 there were some 20 firms in the industry group, one, the Dynamatic Division of Eaton Manufacturing Company, accounted for approximately 75 percent of the total industry employment of 877. Famco Machine Company and G & H Products Corporation are other major firms in the industry. Little of the output of this industry is sold locally, as most firms are oriented to the Milwaukee-Chicago area markets and other portions of the manufacturing belt stretching eastward to Boston. Products made are of a wide variety and include metal saws and shears, presses, pumps, motors, various types of power drive units, and special industrial machinery. End users are the transportation equipment industry, dairy and beverage, machine and tool including construction, mining, aerospace industries, and plastic fabrication industry.

Employment in the industry, within the District, declined from 1,058 in 1954 to 877 in 1963. While employment has tended to fluctuate rather widely from year to year, greater stability is now being felt locally. Historically, the machinery industry has been characterized by strong cyclical variations, as the products of the industry are made for other industries who sell directly to the household consumer. Variations in the level and composition of household consumption expenditures, leading to increases or decreases in final product output, and new investments in plants and equipment, have always been magnified in the machinery industry.

As brought out in local interviews, some machinery firms have broadened their product base and thereby have avoided the fluctuating purchasing patterns of any one particular end-user industry. Secondly, some local firms have moved into the plastics fabrication field, thereby both reducing inordinate attachment to the metals field and also attaching themselves to a rapidly growing industry. Thirdly, end-users have tended to become larger and, at the same time, more conscious of the need for more frequent replacement of machinery used in production. In contrast to the smaller firms, they buy new equipment rather than used equipment.

By comparison, machinery employment in the District has trailed far behind that for the state or the Region. Between 1954 and 1963, machinery industry employment in Wisconsin rose from 129,600 to 145,300 while, for the Region, employment rose from 91,000 to an estimated 100,300 (See Table 25). Machinery industry wage and salary payments have risen in the District. These payments, $5,055,000 in 1954 rose to $6,126,000 in 1963, an increase of 21 percent.

The growing uses of automated production processes and numerical control are of importance in the machinery industry. Their influence can affect both the market for automated and numerically controlled machinery and the level of employment. Local machinery firms indicated that it has not been uncommon for employment to increase as the introduction of automated equipment leads to more market penetration and greater output by the particular firm. Additionally, numerical control seems to have applicability in only certain industries which, currently, exclude many of the mass producing, undifferentiated products industries. The technological advances expected over the coming decade, therefore should not presumably, have any harsh effects upon the District's machinery industry.

Transportation Equipment

The more prominent and, in terms of employment and income, the most important basic industry in the District is the transportation equipment industry. American Motors Corporation dominates the industry. Moreover, the firm accounts for approximately 78 percent of total basic employment in the District and over 40 percent of total estimated District employment. Markets for the firm's product, Rambler automobiles, are both national and international. While the Kenosha plant is the firm's major plant and the largest single employing plant in Wisconsin, a stamping plant employing 8,900 is situated in Milwaukee and corporate headquarters are in Detroit. Since the mid 1950's transition from Nash to American Motors, the firm has acquired and modernized the former Simmons Company plant and substantially added plant facilities. These plant acquisitions and expansions added approximately 3,000,000 square feet of floor space, and over 4,000 employees, with an investment of well over $40,000,000. Employment has fluctuated widely, yet has tended to increase sizably since 1954, (See Table 21). Over the nine-year period from 1954 to 1963, employment increased by 9,700 jobs, over 144 percent. By comparison, transportation equipment employment in the state increased from 31,200 in 1954 to 46,900 in 1963, an increase of 50 percent.

In the Region, transportation equipment industry employment increased by 65 percent. As with employment, the transportation equipment industry has been the major factor in the rise in District wage and salary payments. As seen in Table 23, estimated annual average wage and salary payments in the industry increased by $78.5 million between 1954 and 1963, more than a 300 percent increase accounted for over 80 percent of total wage and salary payments made to covered employees in the District, increased their dominance of total wage and salary payment in both dollar amounts and percent share.

The industry's, mainly American Motors', influence upon the District's economy is evidenced in other areas. Some 20 percent of the total assessed value of real property in the City of Kenosha is traceable to American Motors, as is roughly 14 to 20 percent of receipts from the personal and real property tax. Local interviews indicated that both the substantial fiscal 1963 increase in local and state share tax revenues, and the subsequent sizable fiscal 1964 decrease, were basically a function of the income statements returned by American Motors to the State of Wisconsin.

The firm has completed its disposition of households from the Bonnie Home tract so that, if the need should arise, there would be available for expansion purposes, a cleared tract in excess of 100 acres.

The fortunes of the firm have tended to vary since the mid 1950's. The company's share of domestic passenger car production has increased from 1.7 percent in 1954 to 7.2 percent in 1959 and 1960, and then decreased to 5.1 percent in 1964 (See Table 26). Output has similarly fluctuated, which explains the year-to-year variations in local plant employment.

Port of Kenosha

Many of the activities centered around the receipt and shipment of goods in the Port are basic activities. The Port has been operative since 1840, with several shifts in commodities handled taking place since then. The opening of the St. Lawrence Seaway in the late 1950's gave a tremendous boost to local Port activity as foreign vessels appeared. Even with the limitations imposed by berth storage space and channel depth, since 1959 the Port has experienced substantial increases in tonnage handled. Between 1959 and 1963 total tonnage handled increased from 4,166 tons to 79,992 tons. Payroll at the Port doubled in 1961, increasing from $220,291 to $467,027, while real estate taxes paid increased from $33,426 to $40,022.

In 1963, the Port secured a Volkswagen contract to act as port of foreign entry for an estimated 15,000 cars per year destined for the mid-western market. Recently, this contract was not renewed due to limitations of storage space at the Port. While dredging has recently been completed to deepen the Port to a 25-foot depth and thereby enable larger seaway vessles to dock, storage and handling space must be increased.

The future of the Port, at least regarding any substantial increase over present activities, depends in part upon increasing loading and storage facilities and the competitive position of Port Kenosha with respect to other seaway ports on the western shores of Lake Michigan.

Relationship Between Sectors

The foregoing analysis supports the finding that only a small to moderate amount of interdependency exists between most of the District's industries. The basic manufacturing industries draw little in the way of materials from the balance of the manufacturing group or from the District's business service industries. On the other hand, the internally-oriented sector of the economy is in large measure dependent upon the basic sector in that basic income is transmitted via the household sector to the retail service group in the form of sales and receipts. However, roughly 25 percent of all jobs in the District are held by workers commuting into the area. This percentage is even higher in the District's basic industries so that some of the income-generating effects of the basic sector are not ultimately transmitted to the balance of the District's economy.

Some indication of the relationship between the two sectors can be obtained by comparing the trend of employment between the sectors. Although employment in internally-oriented industries has tended to grow slightly faster than other sectors since 1959, the ratio of external to internal employment has changed from 1:09 in 1959 to 1:1 in 1963. The ratios for 1959 and 1963 indicate that a change of one in employment in the externally-oriented sector could generally produce at least a similar employment change in the internally-oriented sector of the economy.

Labor Force

The labor force is composed of all those residents of the District either holding jobs or actively seeking employment. Changes in the labor force, total and compositional, reflect changes which have occurred within the District's economy.

General

Some 34,242 residents, or 40.1 percent of the population, constituted the District's labor force in 1960 (See Table 27). Males in the labor force numbered 24,363 (56.7 percent of the total male population) while female members numbered 9,879 (23.3 percent of the total female population). As a proportion, males accounted for over 71 percent of the District's labor force. While the District's overall labor force participation rate of 40.1 percent was comparable with the Region's rate of 40.5 percent, significant differences appear in the male-female rates. The District's rate for males, 56.7 percent, is greater than the Region's male rate of 55.6 percent, while the District's rate for females, 23.3 percent, is below the Region's female rate of 25.9 percent. Both the above average participation rate for District males and the below average rate for District females are a reflection of the industrial structure of Kenosha; heavy orientation to durable goods manufacturing jobs for males.

It is not possible to trace the District's shifts in labor force components because no 1950 labor force data are available for the towns. Therefore, city data is used as a substitute to gauge the general trend.

While the city's population increased by 25 percent between 1950 and 1960, the labor force grew by only 13 percent, as the participation

Table 26

PRODUCTION OF PASSENGER CARS IN DOMESTIC PLANTS

1946-1964

Year	Passenger Car Production - U. S. Plants		
	Total	American Motors	A.M. Percent of Total
1946	2,149,635	193,409	9.0
1947	3,510,744	217,058	6.2
1948	3,871,173	262,740	6.8
1949	5,083,266	285,054	5.6
1950	6,628,598	331,798	5.0
1951	5,306,418	254,473	4.8
1952	4,323,603	228,440	5.3
1953	6,132,244	212,427	3.5
1954	5,507,417	95,182	1.7
1955	7,950,377	161,790	2.0
1956	5,806,756	104,185	1.8
1957	6,120,029	114,084	1.9
1958	4,247,427	217,332	5.1
1959	5,599,492	401,446	7.2
1960	6,703,108	485,745	7.2
1961	5,522,019	372,485	6.7
1962	6,943,334	454,784	6.5
1963	7,644,377	480,365	6.3
1964	7,746,000	393,410	5.1

Source: Automobile Manufacturers Association.

Table 27

LABOR FORCE CHARACTERISTICS
1950 AND 1960

	City of Kenosha		District	Region
	1950	1960	1960	1960
Population	54,368	67,899	85,325	1,573,614
Male	27,148	33,921	42,964	775,985
Female	27,220	33,978	42,361	797,629
Civilian Labor Force	24,497	27,631	34,242	636,901
Male	18,043	19,373	24,363	431,611
Female	6,454	8,258	9,879	206,300
Labor Force Participation Rate	45.1	40.7	40.1	40.5
Male	66.5	57.1	56.7	55.6
Female	23.7	24.3	23.3	25.9
Employed	23,988	26,863	33,245	612,723
Male	17,728	18,973	23,838	415,124
Female	6,260	7,890	9,407	197,599
Unemployed	509	768	997	24,174
Male	315	400	525	16,487
Female	194	368	472	7,687
Percent Females of Total Labor Force	26.3	29.9	28.9	32.3

Source: U.S. Census of Population, SEWRPC Planning Report No. 4.

rate fell from 45.1 percent to 40.7 percent (See Table 27). The region underwent a similar shift, as population increased by 26.8 percent, the labor force increased by 18.2 percent, and the participation rate declined from 43.4 percent in 1950 to 40.5 percent in 1960. As a component of the city's labor force, females increased from 26.3 percent in 1950 to 29.9 percent in 1960, as their participation rate rose. A similar trend prevailed in the Region.

Employment increased by 12 percent between 1950 and 1960, with female employment achieving the greater increase - 1,630 jobs out of a total increase of 2,875. Similarly, female employment in the Region accounted for over 52 percent of total employment growth.

At the same time that unemployment was rising in the city, the female unemployment rate increased from 3.1 percent in 1950 to 4.5 percent in 1960, while male unemployment rates only increased from 1.7 percent to 2.1 percent.

Industry Attachment

Manufacturing, particularly durable goods, dominates the industry group distribution of the District's resident labor force. As of 1960, 17,211 persons, or 51.8 percent of the labor force, were employed in manufacturing (See Table 28). The durable goods sector accounted for over 88 percent of employment in manufacturing and for over 45 percent of total employment. Services and retail trade, respectively, accounted for 15.8 percent and 14.4 percent of total employment. No other industry grouping provided employment for more than four percent of the employed labor force. Comparison with the Region's industry group distribution indicate the following:

1. Manufacturing, and especially durable goods, is dominant for the Region's resident labor force, accounting for over 45 percent of total employment, compared with 31 percent for the Region, itself an area much oriented to durable goods industry.

2. Tertiary activities (trade, services, finance) are under-represented in the District. Together they account for 31.8 percent of total employment, compared with 38.6 percent in the Region.

As with general labor force trends, it is necessary to use city data to estimate 1950-1960 trends.

The major shifts were as follows:

1. The tertiary group achieved the greatest employment gains of the total 10-year rise of 2,975 jobs, accounting for over 58 percent or 1,683 jobs.

2. Construction employment rose substantially from 660 to 942, an increase of over 42 percent.

3. Public administration employment rose by 30.0 percent from 781 in 1950 to 1,015 in 1960.

4. Manufacturing employment declined fractionally from 14,025 in 1950 to 13,970 in 1960. Within the group, durables gained slightly while nondurables dropped more sharply.

5. The more rapid growth of the tertiary sector was instrumental in the rise in female employment and labor force participation as this sector is primarily female employing.

Except for the fractional decline in manufacturing, labor force industry group trends in the city were generally paralleled by trends in the Region.

Occupation

The influence of the dominant industry of the District, durable goods manufacturing, is again made evident by the occupational distribution of the employed labor force. Male blue collar workers, numbering 15,244, constituted almost 64 percent of all male workers (See Table 29). By comparison, for the Region, the comparable percentage was 53.8 percent. Nationally, blue collar workers in 1960 accounted for less than 50 percent of total male employment. Even within the manufacturing oriented East North Central States Region, blue collar workers in 1960 accounted for 50.4 percent of total employment.

Among female workers, the clerical and kindred group was the largest single occupation category with 2,719 workers, or 28.9 percent, followed by the operatives and kindred group with 1,840 workers, or 19.6 percent.

An overall comparison of the District's male and female occupational distribution with that of the Region shows the following as a percentage of total employees.

1. Far fewer professional, technical, managerial and officials, male workers in the District than in the Region.

2. Far more male and female operatives and kindred workers in the District than in the Region.

3. Fewer female clerical and sales workers in the District than in the Region.

As with the analysis of general and industry group labor force trends, to estimate 1950 through 1960 occupational shifts, data for the City of Kenosha must be used. The most pronounced occupational shifts were as follows:

1. Male professional, technical kindred employment increased by 376 jobs or 39 percent.

2. Blue collar occupations among males actually declined slightly from 67.4 percent to 66.1 percent of total employment.

3. Service work among females increased by 386 jobs, or 80.8 percent.

4. Clerical and sales work among females rose by 623 jobs, or 25 percent.

Commutation

In 1960, some 26,306 persons, or 83.5 percent of those members of the District's labor force reporting their place of work, worked in the City of Kenosha (See Table 30). An additional 1,525 persons (4.8 percent) worked in the balance of Kenosha County. 2,081 persons, or 6.6 percent, reported Lake County, Illinois as their

Table 28

INDUSTRY DISTRIBUTION OF THE RESIDENT EMPLOYED LABOR FORCE - 1960

	City of Kenosha				Planning District		SEW Region	
	1950		1960		1960		1960	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Agriculture, Forestry and Fisheries	70	0.3	86	0.3	399	1.2	13,268	2.2
Construction and Mining	660	2.8	942	3.5	1,367	4.1	29,552	4.8
Manufacturing	14,025	58.5	13,970	52.0	17,211	51.8	253,292	41.3
Durable	12,053		12,368		15,272		188,569	
Nondurable	1,972		1,602		1,939		64,723	
Transportation and Utilities	918	3.8	1,005	3.7	1,289	3.9	35,507	5.8
Wholesale Trade	402	1.7	395	1.5	471	1.4	18,747	3.1
Retail Trade	3,370	14.0	3,865	14.4	4,599	13.8	90,184	14.7
Finance, Insurance and Real Estate	423	1.8	502	1.9	515	1.5	23,001	3.8
Services	3,135	13.1	4,251	15.8	5,030	15.1	104,326	17.0
Public Administration	781	3.3	1,015	3.8	1,156	3.5	22,686	3.7
Industry Not Reported	204	0.9	832	3.1	1,208	3.6	22,160	3.6
Total	23,988	100.0	26,863	100.0	33,245	100.0	612,723	100.0

Source: United States Census of Population

Table 29

OCCUPATIONAL DISTRIBUTION OF THE RESIDENT EMPLOYED LABOR FORCE - 1960

	Planning District				SEW Region			
	Males		Females		Males		Females	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Professional, Technical, and Kindred	1,599	6.7	1,131	12.0	44,239	10.7	22,846	11.6
Farmers and Farm Managers	188	0.8	4	-	7,177	1.7	389	0.2
Managers, Officials, and Proprietors	1,774	7.4	265	2.8	38,797	9.3	5,895	3.0
Clerical and Kindred	1,420	6.0	2,719	28.9	30,470	7.3	65,858	33.3
Sales Workers	1,087	4.6	844	9.0	28,114	6.8	18,580	9.4
Craftsmen, Foremen, and Kindred	5,445	22.8	115	1.2	94,428	22.7	2,881	1.5
Operatives and Kindred	8,338	35.0	1,840	19.6	105,156	25.3	32,387	16.4
Private Household Workers	22	-	355	3.8	383	-	7,879	4.0
Service Workers	1,215	5.1	1,595	17.0	21,113	5.1	29,063	14.7
Farm Laborers and Foremen	115	0.5	21	0.2	3,395	0.8	808	0.4
Laborers	1,461	6.1	92	1.0	24,031	5.8	1,190	0.6
Occupation Not Reported	1,174	4.9	426	4.5	17,821	4.3	9,823	5.0
Total	23,838	100.0	9,407	100.0	415,124	100.0	197,599	100.0

Source: United States Census of Population

Table 30

RESIDENT LABOR FORCE OF THE KENOSHA PLANNING DISTRICT
1960

Places of Work	Total District	
	Number	Percent
Kenosha City	26,306	83.5
Balance of Kenosha County	1,525	4.8
Racine City	702	2.2
Balance of Racine County	232	0.7
Milwaukee City	143	0.5
Balance of Milwaukee County	40	0.1
Waukesha County	-	-
Chicago City, Illinois	212	0.7
Balance of Cook County, Illinois	110	0.3
Lake County, Illinois	2,081	6.6
McHenry County, Illinois	5	-
Balance of the Chicago (SMSA)	8	-
Walworth County	8	-
Elsewhere	120	0.4
Places Not Reported	1,110	
TOTAL	32,602	

Source: Unpublished PH-4 Tables, U.S. Census of Population

place of work, while some 934 persons (2.9 percent) reported Racine County as their place of work.

While commutation to work for District residents, at least as of 1960, was not very extensive, the patterns do point out the degree of interrelationship or regionality of the Milwaukee-Chicago corridor. Commutation patterns, of both residents of the District and persons traveling there to work, are spread throughout this entire corridor and tend to both remove economic insularity, and yield a greater choice of employment for all.

The absence of any substantial out-commutation of workers from the District indicate that the local economy is certainly adequate, as far as number of jobs, to support its resident population. Using 1960 data showing resident commutation to work, and estimates of local employment, it is estimated that, as of 1960, roughly 6,000 persons came into the District to work while some 5,200 residents work outside the District.

Income

The distribution of family income is both an important indicator of the general level of well-being and a strong determinant of the demand for consumer items such as housing, automobiles, furniture and apparel.

With a 1959 median family income of $7,035, the Planning District ranked well above the Region, the State and the nation (See Table 31). The District has a smaller percentage of families in the under $3,000 class (9.2 percent) and a higher percentage in the $10,000 and over class (21.4 percent) than either the Region, State or nation. Slightly less than forty percent of the District's families were in the income classes above $8,000 in 1959. This type of income distribution generally indicates that "discretionary income" that is income available for other than the more basic household needs - is substantial.

Within the District, income levels are highest in the Town of Pleasant Prairie with a median family income of $7,360 in 1959, and lower in the Town of Somers which had a median family income of $6,708. Low-income families, and families at the subsistence level, are more prevalent in the Somers area. Yet, even there, the number of families in the income classes below $4,000, 15.7 percent, is only fractionally higher than the comparable Region percentage of 15.5 and only slightly higher than the comparable District figure of 13.6 percent.

A comparison between the District and the State's income distribution shows the following (See Table 31):

1. Much lower percentage of families in the District earning under $5,999.
2. Much greater percentage of District families in the $6,000 and over income classes.
3. Median family income in the District, $7,040, almost 19 percent greater than that for the State.

Unavailability of 1949 family income data for Somers and Pleasant Prairie makes a comparison of 1949 to 1959 family income group shifts for the District impossible. However, using City of Kenosha data, a general picture can be obtained of income group shifts between 1949 and 1959.

The more pronounced 1949-1959 shifts, in constant 1959 dollars of purchasing power, were as follows:

1. Decline of 67 percent in the number of families in the $2,000 - $3,999 group.
2. Decline of 63 percent in the number of families in the $4,000 - $4,999 group.
3. Increase of 184 percent in the number of families in the $6,000 - $9,999 group.
4. Increase of 383 percent in the number of families earning over $10,000.

Income growth seems to have been less pronounced for the families in the under $2,000 group. The number of families within this income group declined by only 5.5 percent between 1949 and 1959. This indicates that a number of families, approximately five percent in 1959, were generally unaffected by the widespread increases of family income during the 1949 to 1959 period.

When city income shifts are compared with the Region's income shifts, the city experienced a smaller percent decline in the number of families earning under $4,000, and the city experienced a greater increase in the number of families earning between $6,000 and $6,999, $4,000 to $4,999, and over $10,000.

Family Expenditures

Family expenditures are separated into two groups; expenditures for current consumption and expenditures for other purposes such as, gifts, contributions and life insurance.

Spending for current consumption, generally between 65 and 80 percent of family income, can be further broken down into durable and nondurable goods, and services.

It is extremely difficult to obtain precise data on family current consumption expenditures by specific geographic area. However, by using estimating techniques, it is possible to construct a reasonable facsimile of the level and composition of consumption expenditures within the District. The resulting consumption estimates are useful in that they give some indication of the general amounts of money being spent locally, or potential available for local spending, and for what purposes. Briefly, the technique used was to estimate District total personal income and disposable income for current consumption for 1960 and then apply a current consumption distribution prepared by the Bureau of Labor Statistics(25) for cities in the North Central Region (See Table 32). The data indicate the large percentage of spending channeled into food - 26 percent, housing - 29 percent, auto purchase and operation - 12 percent and clothing - 13 percent.

(25) BLS Report Number 237-35, Mag., 1964, Consumer Expenditures and Income, Bureau of Labor Statistics, Washington, D.C.

Table 31

NUMBER OF FAMILIES BY INCOME CLASSES - 1949 AND 1959

	Number of Families									
	City of Kenosha				Somers		Pleasant Prairie		Total District	
	1949		1959		1959		1959		1959	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than $ 1,000	650	4.5	364	2.1	21	1.2	63	2.4	448	2.0
1,000 - 1,999	855	5.9	602	3.4	74	4.3	44	1.7	720	3.3
2,000 - 2,999	2,345	16.1	686	3.9	91	5.2	77	2.9	854	3.9
3,000 - 3,999	4,280	29.4	791	4.5	86	5.0	79	3.0	956	4.4
4,000 - 4,999	2,590	17.8	1,101	6.2	164	9.5	157	6.0	1,422	6.5
5,000 - 5,999	1,560	10.7	2,274	12.9	216	12.5	320	12.3	2,810	12.8
6,000 - 6,999	850	5.9	2,908	16.5	303	17.5	440	16.9	3,651	16.6
7,000 - 7,999			2,292	13.0	221	12.7	346	13.3	2,859	13.0
8,000 - 8,999	910	6.3	1,629	9.2	139	8.0	343	13.1	2,111	9.6
9,000 - 9,999		*	1,172	6.7	91	5.2	177	6.8	1,440	6.6
10,000 - 14,999	500	3.4	2,845	16.2	267	15.4	415	15.9	3,527	16.1
15,000 and Over			949	5.2	60	3.5	148	5.7	1,157	5.3
TOTAL	14,835	100.0*	17,613	100.0	1,733	100.0	2,609	100.0	21,955	100.0
Median Income	$3,758		$7,035		$6,708		$7,360		$7,040	

	Number of Families					
	SEW Region				State of Wisconsin	
	1949		1959		1959	
	Number	Percent	Number	Percent	Number	Percent
Less than $ 1,000	19,225	6.0	8,814	2.2	37,457	3.8
1,000 - 1,999	21,380	6.7	13,948	3.5	61,528	6.2
2,000 - 2,999	45,950	14.3	17,826	4.5	72,758	7.4
3,000 - 3,999	80,875	25.2	21,266	5.3	84,591	8.6
4,000 - 4,999	54,965	17.1	31,745	8.0	110,034	11.2
5,000 - 5,999	35,875	11.2	53,104	13.3	137,131	13.9
6,000 - 6,999	19,345	6.0	58,287	14.6	124,087	12.6
7,000 - 7,999			48,678	12.2	96,810	9.8
8,000 - 8,999	21,600	6.7	37,817	9.5	70,989	7.2
9,000 - 9,999			27,602	6.9	49,812	5.0
10,000 - 14,999	12,470	3.9	57,761	14.5	101,436	10.3
15,000 and Over			22,359	5.6	39,962	4.1
TOTAL	311,685	100.0*	399,207	100.0	986,595	100.0
Median Income	$3,840		$6,906		$5,926	

Source: U. S. Census of Population

*Does not add to 100.0 percent due to increase not reported.

Table 32

ESTIMATED 1960 EXPENDITURES FOR CURRENT CONSUMPTION
KENOSHA PLANNING DISTRICT, 1950, 1960

	1960		North Central Region	
	Thousands of Dollars	Percent	1950	1960
Estimated Expenditures for Current Consumption	175,808	100*	100	100
Food and beverages	44,831	26	31	26
Tobacco	3,165	2	2	2
Housing	50,281	29	27	29
Shelter, household operations	42,546	24	20	24
Housefurnishings, equipment	7,736	4	7	5
Clothing, materials, services	21,976	13	12	10
Personal care	5,274	3	2	3
Medical care	11,603	7	5	7
Recreation	6,681	4	5	4
Reading and education	4,571	3	1	2
Auto purchase and operation	20,921	12	12	14
Other transportation	2,461	1	2	1
Other expenditures	4,044	2	1	2

Note: * Totals do not equal 100 percent due to rounding.

Source: BLS Report No. 237-35, May, 1964. Consumer Expenditures and Income, Bureau of Labor Statistics, and Harland Bartholomew and Associates.

The data in Table 32 should be viewed as showing reasonable estimates of the actual current consumption expenditures of District families and do not purport to precisely describe amounts actually spent.

Table 32 shows the general 1950 to 1960 shifts among items included in current consumption spending. While these data are for the entire North Central Region they are also applicable to the District. Spending for food, clothing and furniture declined as a percent of total spending while shelter (current spending for purchase excluding mortgage payments, and rent), medical and personal care, and automobile purchase and operation, increased as a percent of total spending. While these spending shifts are functions of increasing income levels, more unpredictable factors such as taste and technology have been of importance.

Published retail sales data describe actual transaction amounts within the District and can be used to make general determinations of net flows of local spending for retail items after adjustments are made.

In constant dollars of 1963 purchasing power, retail sales in the City of Kenosha (no data available for the District) increased from $83,341,000 in 1954 to $84,119,000 in 1958 and to an estimated $105,903,000 in 1963. Table 33 shows retail sales both for the city and the SMSA. These sales figures, when compared with estimates of District income available for retail purchases and to the spending estimates shown in Table 32, indicate that there is a general net outward flow of spending in the District. As of 1960, an estimated $118,000,000 of District personal income, or 51.3 percent, was available for retail spending. In the same year, retail sales in the city were estimated at $100,778,000, some 15 percent below potential. This comparison understates the gap because some city sales are made to residents of portions of Kenosha County outside the District. Therefore, as of 1960, at least 15 percent of District personal income available for retail purchasing and probably money, flowed out to other areas. On a more limited basis, current consumption estimates for food, (See Table 32), when compared with retail sales, also show a net outflow of spending. Some $36,000,000 in food and beverage sales were recorded in the city, while an estimated $44,000,000 were spent by District residents. On the other hand, auto sales and operation came to $24,000,000 as recorded in the city, compared with some $20,900,000 of current consumption estimates. Furniture and house furnishings had sales of $5,000,000 in 1960 compared with $7,700,000 of estimated current consumption expenditures.

Estimates of Future Employment

The methodology employed in making estimates of future District employment is described in the following text. Calculations were made to determine the average annual rates of change by specific industry groups over the 1954 to 1963 period. It was necessary, due to changes in employment by industry coverage and industry definition, to use several sets of employment figures. These annual rates were then compared with State rates published by the National Planning Association, in its Regional Economic Projections Series. Careful attention was given to employment projections for the Region contained in SEWRPC Planning Report No. 3, projections of employment contained in the Milwaukee Community Renewal Program Study, and projections contained in the Chicago study prepared by Corplan Associates of ITT Research Institute. Specific industry rates of average annual change were chosen, based upon reasonableness and their relationship to past District trends brought out in the analysis.

In addition, projections of employment in basic industries were used to estimate employment for the other industries. Results were carefully checked against those estimates described by applying specific industry rates. The resulting figures showed that the ratio of externally oriented to internally oriented jobs in the District should change from its present 1:1.0 ratio to an estimated 1:1.4 in 1975 and 1:1.9 by 1990. There is a substantial degree of mechanics implicit in the estimates which is unavoidable due to the inability of realistically foretelling the nature of industry 25 years hence.

Employment Projections, 1975-1990

District employment is expected to increase from an estimated 40,000 in 1964 to 58,000 in 1975 and to 97,000 by 1990.

The externally oriented, or basic sector, is projected to increase from 19,500 in 1964 to 24,500 by 1975 and to 34,000 by 1990. The balance of the District's employment should increase from 20,300 in 1964 to 33,600 in 1975 and to 63,400 by 1990. Table 34 shows these changes and shows rates of increase.

There are several assumptions upon which the estimates are made. These are listed as follows:

1. The current market structure of the domestic automobile industry will not alter greatly during the next 25 years.

2. Whether or not American Motors moves its Milwaukee stamping operations to Kenosha, and expectations are that it will, local plant employment will increase.

3. No major change will occur which would alter the present patterns of economic activity in either the East North Central Region or the Milwaukee-Chicago subregion.

4. Technological changes will not affect employment in the District in a manner unsimilar to the past decade.

Within the basic sector transportation equipment employment is expected to undergo more rapid growth relative to the other basic industries. Primary metals and textile mill employment is expected to remain generally stable over the projection period, with machinery and fabricated metals undergoing moderate growth.

Within the internally oriented sector, trade is expected to increase rapidly, as are services, finance and government. The unallocated to industry self-employed sector is also expected to increase rapidly.

The estimates of future employment present an economic structure which is somewhat more diverse than at present. The basic sector should account for a smaller fraction of total employment, which would lend more cyclical stability to District employment. Additionally, more service functions will be performed locally and the outward flow of retail expenditures should tend to diminish with the trade, service and government sectors expanding in response to continued population growth.

Table 33

RETAIL SALES - KENOSHA SMSA AND CITY
1954-1963

(In Thousand of 1963 Dollars)

	1954				1958			
	SMSA		City		SMSA		City	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent
Total	$96,949	100.0	$83,341	100.0	$101,170	100.0	$84,119	100.0
Food	26,037	26.9	22,447	26.9	26,792	26.5	23,683	28.2
Eating and Drinking	9,386	9.7	6,513	7.8	9,822	9.7	6,629	7.9
General Merchandise	6,053	6.2	(D)		8,576	8.5	8,001	9.5
Apparel	6,241	6.4	(D)		6,138	6.1	(D)	
Furniture and House Appliances	5,613	5.8	5,531	6.6	4,518	4.5	4,363	5.2
Automotive	14,852	15.3	14,050	16.9	15,093	14.9	13,301	15.8
Gas Station	6,369	6.6	5,508	6.6	6,820	6.7	5,315	6.3
Lumber Building Hardware	9,129	9.4	6,515	7.8	8,104	8.0	4,503	5.4
Drug Store	3,036	3.1	(D)		3,329	3.3	3,160	3.8
Other Retail Stores	10,233	10.6	7,909	9.5	11,978	11.8	(D)	

	1960				1963			
	SMSA		City		SMSA		City	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent
Total	$124,480	100.0	$103,150	100.0	$129,423	100.0	$105,903	100.0
Food	32,394	26.0	28,536	27.7	32,848	25.4	28,656	27.1
Eating and Drinking	12,067	9.7	8,064	7.8	12,827	9.9	8,346	7.9
General Merchandise	13,387	10.8	12,541	12.2	14,827	11.5	13,818	13.0
Apparel	7,382	5.9	7,380	7.2	7,158	5.5	7,156	6.8
Furniture and House Appliances	5,269	4.2	5,082	4.9	5,360	4.1	5,154	4.8
Automotive	19,892	16.0	17,467	16.9	21,585	16.7	18,766	17.7
Gas Station	8,593	6.9	6,652	6.4	8,855	6.8	6,730	6.3
Lumber Building Hardware	10,042	8.1	5,506	5.3	10,147	7.9	5,367	5.1
Drug Store	4,141	3.3	3,925	3.8	4,131	3.2	3,899	3.7
Other Retail Stores	-	-	-	-	11,685	9.0	8,011	7.6

Note: (D) Withheld

Source: U. S. Census of Business - Retail Trade, Sales Management

Table 34

EMPLOYMENT PROJECTIONS BY MAJOR SECTOR,
KENOSHA PLANNING DISTRICT, 1964-1990

Industry	1964	1970	1975	Change 1964-1975 Number	Change 1964-1975 Percent
Externally Oriented (Basic)	19,512	22,012	24,557	5,045	+25.9
Internally Oriented	20,313	26,813	33,586	13,273	+65.3
External/Internal	1:1.0	1:1.2	1:1.4		
TOTAL EMPLOYMENT	39,825	48,825	58,143	18,318	+46.0

Industry	1980	1985	1990	Change 1975-1990 Number	Change 1975-1990 Percent
Externally Oriented (Basic)	27,000	30,000	33,984	9,427	+38.4
Internally Oriented	41,000	51,000	63,425	29,839	88.8
External/Internal	1:1.5	1:1.7	1:1.9		
TOTAL EMPLOYMENT	68,000	81,000	97,409	39,266	+67.5

Industry	Change 1964-1990 Number	Change 1964-1990 Percent	Average Annual Rate of Growth 1964-1990
Externally Oriented (Basic)	14,472	+74.2	2.1
Internally Oriented	43,112	+212.2	4.5
External/Internal			
TOTAL EMPLOYMENT	57,584	+144.6	3.5

Source: Wisconsin State Employment Service and Harland Bartholomew and Associates.

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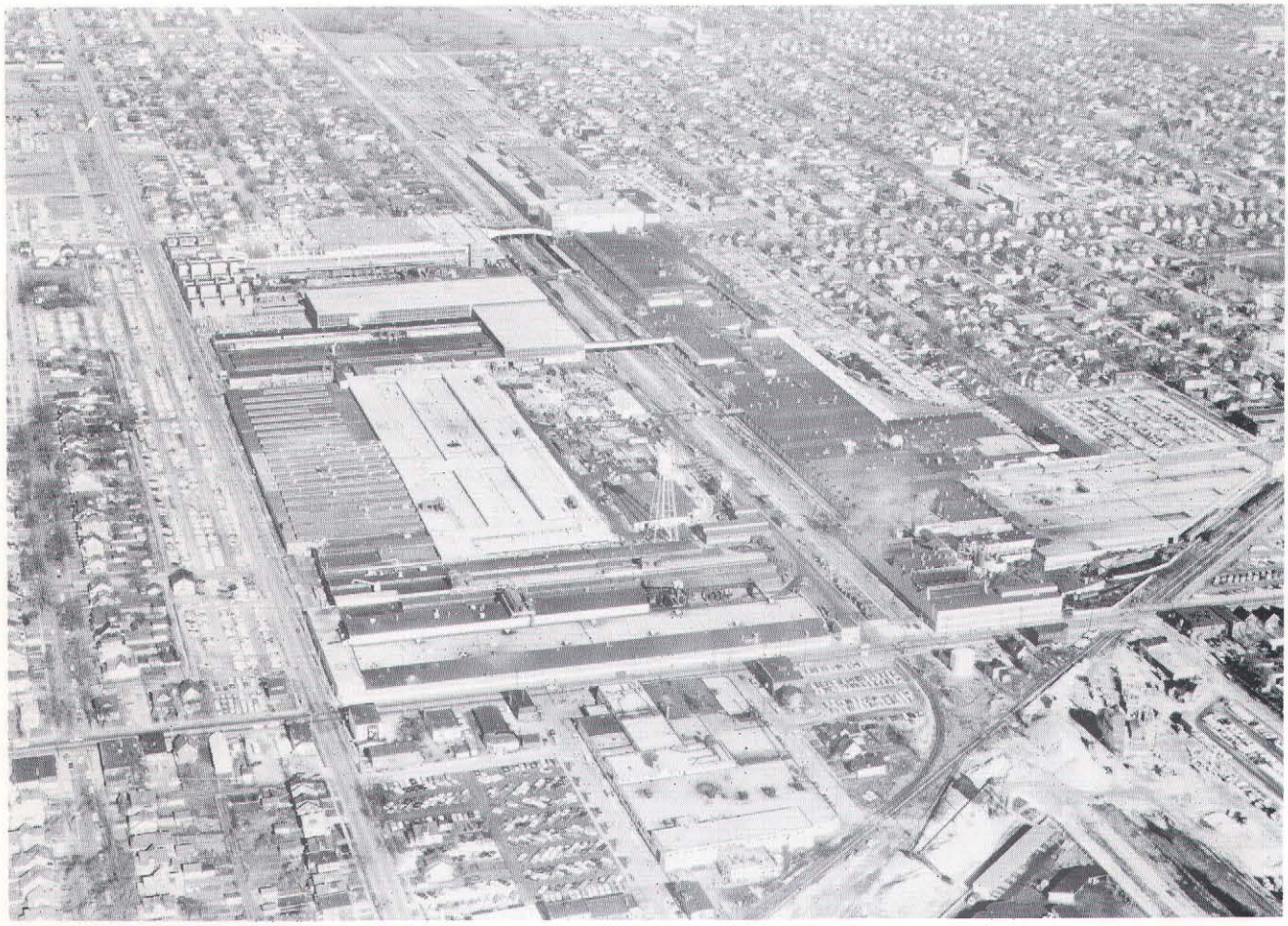

Large industrial plants such as American Motors, Inc., shown in the photograph above provide a large number of jobs to the economy of the District. Both new industrial concerns and expansion of existing businesses are necessary to strengthen the local economy and keep pace with the requirements of a growing population.

Chapter V

LAND USE

The Kenosha Planning District is an intregal part of a dynamic and growing urban region - the most rapidly developing area in the State of Wisconsin and the fourth fastest growing region in the United States. Extensive new developments resulting from this growth in the form of buildings, streets, and public facilities will have a marked affect upon the future environment of the District. It is essential that the quality and relationship of this new growth be properly guided, not only on a regional basis but also at the local or District level of development. This clearly indicates the need for a carefully devised Comprehensive Plan designed to guide the development of the District during the next twenty-four years or until 1990. This does not imply that planning should stop after the twenty-four year period mentioned as planning is a continuing process.

Fundamental to a Comprehensive Plan is the development of a land use plan showing the general arrangement of the residential, commercial, industrial, public and semi-public and other land uses required to serve the anticipated future population. Quantitative analyses of the amount of land used for these various purposes in the District are of some assistance in projecting the amount of land area that will be required to serve the future population. Knowing these land areas, it is possible to develop an "ideal" plan showing their optimum arrangement in relation to the site of the city.

Such an "ideal" plan, however, would be of limited practical value. The existing city and surrounding development that comprise the District is already here and must be taken into account. It will be transformed gradually into the future urban area by the addition of many parts, alteration of certain parts and the replacement of other parts. Thus, to be of any real usefulness, the land use plan must be predicated upon a gradual transformation of the present land use pattern. The plan must take into account the existing conditions and what may be practically built in relation to these conditions within the various portions of the community.

Policies concerning the extension of utilities and services and construction of public improvements should be based upon achieving the land use plan. In this way, the District's future development may be guided, uneconomical location of population minimized or avoided and urban facilities and services provided with the greatest economy and efficiency.

The welfare of a community is affected directly by its arrangement on its site. The basic arrangement of the District's commercial, residential and public areas in turn is influenced by topographic and soil conditions, by the location of centers of employment, by the physical facilities that have been developed in the past such as the railroads, and by the availability of essential public services and utilities. In the past, American communities have given but little thought to the necessity of exercising some measure of direction over the basic urban pattern. Some have been developed extremely compactly and more congested than they need to be, other communities have spread widely and occupy extremely large land areas which endeavor to serve with such facilities as sewer and water at great public expense. Through comprehensive planning it is possible to direct the normal process of community building so that the basic arrangement is spacious, balanced and efficient.

Character of Present Development

General. The past urban development of the Kenosha Planning District has been relatively compact and quite similar to the pattern of development found in other cities located along Lake Michigan (See Map 13). This is particularly true of the area bounded by the lakefront, 22nd Street, the old North Shore Railroad, 52nd Street, 47th Avenue, and 80th Street.

The location of the Chicago and Northwestern Railway tracks along the west edge of the original town of Southport had the effect of forcing development north and south along the lakefront. However, as the city grew this "barrier" was soon breached and development took place to the west. The freight line facilities of this railroad extending to the southwest have also had an effect on community development. The diagonal route of the railroad has created some difficulties in that the street and lot pattern is not adjusted to the diagonal alignment and numerous small fragments of land were created that are difficult to use. In many cases, no logical breaking point occurs between the industrial uses normally located along the railroad and the residential uses. This has been a source of numerous land use conflicts. The abandonment of the old North Shore Railroad has relieved a similar situation and portions of the right-of-way are now in private ownership.

The general pattern of development in the District beyond the intensely urbanized area is similar to that found in other areas - scattered, large-lot surburban homes and farm houses located along transportation routes in the rural areas.

Although the Interstate Highway has influenced development in many communities, its total affect has not yet been realized in the District. Its location, while sufficiently far removed from the rapidly urbanizing area of the District, is still close enough to provide convenient access and opportunities for commercial activity.

The two north-south routes of the railroads in the center of the District have had no marked affect on the development pattern as yet. The potential for future industrial sites along these routes is extremely good and the location of an additional expressway planned near these facilities will ultimately provide a more direct link in the Chicago, Waukegan, Kenosha, Racine, Milwaukee corridor.

Recent Trends of Development. The most recent trends of residential development have been located to the south and west of the intensively developed portion of the District (See Map 14). This drawing shows generalized areas of residential and commercial development from the late 1950's to the present time. While development in the residential areas is by no means complete, the areas indicated are those where the most active development has occurred. There have been, of course, many other residences built in scattered locations throughout the District which have not been shown because they do not form anv significant pattern.

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DIAGRAMMATIC LAND USE 1964

- SINGLE FAMILY RESIDENTIAL
- TWO FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- RETAIL AND SERVICES
- WHOLESALE AND STORAGE
- MANUFACTURING
- RECREATION
- TRANSPORTATION COMMUNICATION AND UTILITIES
- INSTITUTIONS AND GOVERNMENT SERVICES
- SWAMPS, MARSHES AND WETLANDS
- WATER AREA
- AGRICULTURE, VACANT

MAP 13

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

The preparation of this map was financed in part through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the Housing Act of 1954, as amended

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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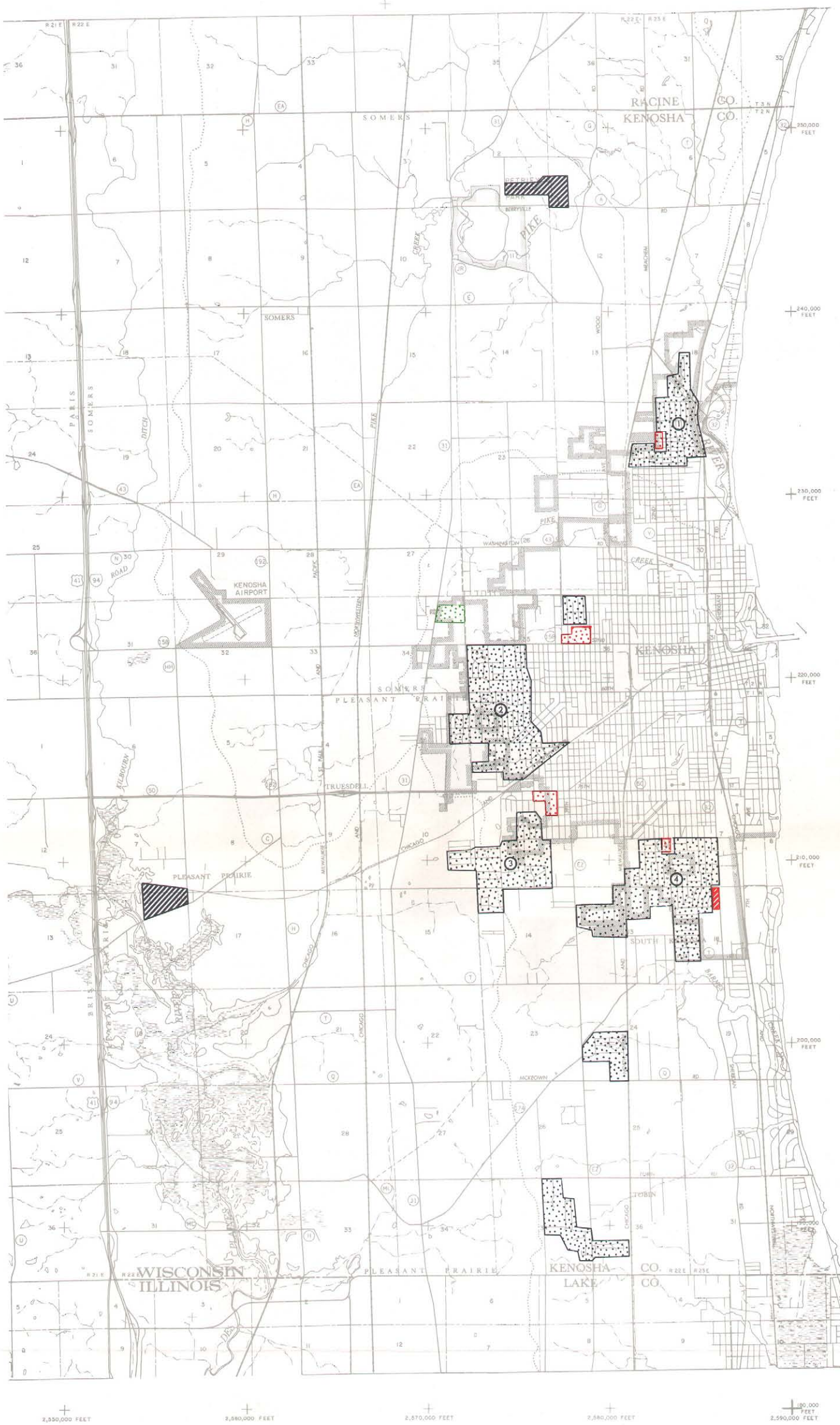

RECENT DEVELOPMENT TRENDS

L E G E N D

- AREAS OF ACTIVE RESIDENTIAL GROWTH
- EARLY STAGES OF RESIDENTIAL GROWTH
- AREAS OF RECENT COMMERCIAL GROWTH
- EARLY STAGES OF COMMERCIAL GROWTH
- AREAS OF RECENT INDUSTRIAL GROWTH

MAP 14

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

JANUARY 1967

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Areas numbered 1,2,3, and 4 are immediately adjacent to existing intensively developed sections of the city proper while the remaining smaller areas represent a continuation of scattered growth patterns of the past. These outlying areas are a good example of the types of development which can cause severe problems in providing services. Even though they may have adequate services provided now in their early stages of development, as the area around them continues to develop, generally in a similar manner, the result in future years will be a hodgepodge of sanitary sewer systems, wells or small water districts or storm water protection districts designed to serve small, often unrelated areas. In many cases, as time passes, the central city or a metropolitan agency is asked to "pick up the pieces" of this puzzle. This usual result is a far more expensive system of services than would normally have been required if the growth and urbanization had been controlled through the judicious use of zoning control and properly timed service extensions.

Another potentially troublesome problem could result in the growing together of areas 3 and 4, particularly the southeast area of 3 and the southwest area of 4. Judging by past and current trends in the area, no attempt has been made to subdivide the resulting "island" of vacant land. The only way to insure adequate future service facilities and prevent possible overloading because of excessive demands is through adequate zoning enforcement which can establish a limit on the density of development. This is true, not only in this isolated example, but throughout the fringe areas of this urbanization, and clearly indicates the importance of cooperation between all governmental agencies in the District.

While there have been only four significant commercial development areas completed in recent years, they have all been placed in strategic locations designed to serve not only existing population, but future population as well. The same can be said of the fifth area developing on Sheridan Road south of 85th Street. All of these developments have been a departure from the old strip commercial development found along major transportation routes and represent enterprises founded on sound locational advantages. These compact areas are the types of commercial development that should be encouraged in the future.

Land Use Areas. In spite of the rapid urbanization that has occurred in the District in the last few years, agriculture and related uses remain the predominant land use accounting for almost 61 percent of the total District area of 54,904 acres (See Table 35). This table summarizes for each civil division and the District as a whole, the acreage used by each of the ten major and 52 minor land use classifications shown. The next highest land use acreage total is devoted to residential purposes which accounts for 7,409 acres and represents about 13.5 percent of the total land area in the District. Open lands and water area and transportation, communication and utilities account for the next highest amounts of land used with 10.8 percent and 9.8 percent respectively. The smallest total acreage used by any of the ten major categories is the 27 acres used by non-durable manufacturing firms and represents less than one percent of the total land area.

The rapid urbanization to the south of the city is further exemplified by the amount of land devoted to residential uses by the towns. The Town of Pleasant Prairie has more than twice as much residential acreage as does the Town of Somers. The table also indicates that the Town of Pleasant Prairie has 900 acres of undeveloped residential land that is primarily platted but not yet developed. The largest of these areas is known as the Carol Beach area.

Most of the remaining data presented in Table 35 is as might be expected except in the recreation category where the Town of Somers has about 50 percent more land used than does the City of Kenosha. This is accounted for by Petrifying Springs Park's location in the Town of Somers.

In the residential category almost 74 percent of the land is developed for single-family purposes. Another 20 percent of the land is devoted to undeveloped or platted, but not used, residential land. The other types of residential uses occupy the remaining six percent of land in the category.

Of the 315 acres of land in the District used by commercial enterprises, approximately 30 percent is occupied by service establishments while 27 percent is devoted to commercial recreation uses. The commercial amusement group accounts for another 15 percent of the land used by this category while the least amount of land, two percent, is used by the neighborhood retail and service group.

In the three industrial categories, 58 percent of the land is used by heavy industries and 37 percent is used by wholesale and storage uses. Interestingly, 46 percent of the heavy industry category is devoted to the manufacture of transportation equipment and 72 percent of the wholesale and storage category is devoted to open storage. Both of these facilities are largely operated by American Motors Corporation.

Over 65 percent of the land used by the uses in the transportation, communication and utilities category is occupied by local, collector and arterial street rights-of-way. Railroad rights-of-way occupy the next largest land use in this category with 766 acres or 14 percent of the land area.

Institutional uses, both local and district, occupy almost 82 percent of the land used by the activities in the institutional and government service category while cemeteries account for another 13 percent.

In the recreation category, 52 percent of land used is occupied by district public recreational uses (Petrifying Springs Park), 27 percent is used by local public recreational facilities and the remaining 21 percent is used by private and other types of activities.

Croplands and pasturelands are by far the most dominant land use in the agriculture category occupying more than 92 percent of the area.

Swamps, marshes, wetlands and other unused lands account for about 54 percent of the total acreage used by the open lands and water area category. General woodlands account for another 25 percent (1515.19 acres) of the land area in this category.

Table 36 shows a comparison of the land use areas in the Kenosha District with those of the

Table 35

EXISTING LAND USE DATA
Kenosha Planning District

Type of Land Use	City of Kenosha	Town of Pleasant Prairie	Town of Somers	Kenosha Planning District
RESIDENTIAL				
Single-Family	2,335.92	1,936.09	1,200.11	5,472.12
Two-Family	318.33	5.20	0.55	324.08
Multiple-Family (High Rise)	2.00	0.27	-	2.27
Multiple-Family (Low Rise)	63.69	4.23	-	67.92
Mobile Home	24.52	31.92	15.40	71.84
Vacant (Undeveloped)	440.61	900.31	130.14	1,471.06
Sub-Total	3,185.07	2,878.02	1,346.20	7,409.29
RETAIL AND SERVICES				
Neighborhood	0.35	2.99	3.10	6.44
Community Retail	19.07	-	-	19.07
Community Services (Offices)	73.44	11.57	9.18	94.19
Commercial Recreation	52.69	17.47	15.33	85.49
Highway	16.56	1.21	0.62	18.39
Non-Office Services	23.96	0.52	1.43	25.91
Hotels, Motels	3.23	5.26	9.29	17.78
Commercial Amusement	6.69	26.83	14.86	48.38
Sub-Total	195.99	65.85	53.81	315.65
WHOLESALE AND STORAGE				
Open	37.01	55.33	60.37	152.71
Enclosed	43.01	5.52	11.30	59.83
Sub-Total	80.02	60.85	71.67	212.54
MANUFACTURING, NON-DURABLE				
Food and Kindred Products	7.20	-	1.24	8.44
Apparel and Kindred Products	2.69	-	-	2.69
Printing, Publishing and Allied Industries	4.95	-	-	4.95
Chemical and Allied Products	10.92	-	-	10.92
Sub-Total	25.76	-	1.24	27.00
HEAVY INDUSTRY AND EXTRACTIVE				
Lumber and Wood Products	10.90	1.61	-	12.51
Stone, Clay and Glass Products	11.85	4.06	-	15.91
Primary Metals	33.87	-	-	33.87
Fabricated Metal Products	48.26	3.23	1.48	52.97
Machinery (Fxcept Electrical)	1.52	0.64	-	2.16
Electric Machinery Equipment and Supply	6.00	-	0.83	6.83
Transportation Equipment	152.67	-	0.48	153.15
Miscellaneous Durable Goods	1.44	-	1.40	2.84
Extractive	-	34.83	16.81	51.64
Sub-Total	266.51	44.37	21.00	331.88
TRANSPORTATION, COMMUNICATION AND UTILITIES				
Rail, Bus and Ship Terminals	11.07	-	1.64	12.71
Railroad Right-of-Way	146.36	354.31	265.44	766.11
Railroad Yards	-	46.88	-	46.88
Airports	145.09	-	-	145.09
Local and Collector Street Right-of-Way	1,321.80	804.47	387.42	2,513.69
Arterial Street Right-of-Way	146.76	415.46	439.93	1,002.15
Freeway and Expressway Right-of-Way	-	69.20	155.98	225.18
Truck Terminals	116.82	5.29	5.76	127.87
Off-Street Parking	178.93	15.93	30.83	225.69
Communication and Utility Facilities (Not Offices)	30.76	101.82	178.55	311.13
Sub-Total	2,097.59	1,813.36	1,465.55	5,376.50
INSTITUTIONS AND GOVERNMENT SERVICES				
Local Institutional	166.73	63.27	31.11	261.11
District Institutional	145.69	120.80	89.31	355.82
Municipal Governmental Services	25.82	0.41	-	26.23
County, State and Federal Government Services	9.37	4.23	0.74	14.34
Cemeteries	84.81	10.34	0.74	95.89
Sub-Total	432.42	199.07	121.90	753.39
RECREATION				
Local Public	302.82	4.21	6.35	313.38
District Public	134.56	-	480.11	614.67
Private and Other	26.31	11.44	209.55	247.30
Sub-Total	463.69	15.65	696.01	1,175.35
AGRICULTURE AND RELATED				
Croplands and Pasture	519.06	15,257.53	17,310.87	33,087.45
Orchards and Plant Nurseries	7.51	54.74	206.06	268.32
Fowl and Fur Farms	0.03	10.57	19.74	30.34
Other	0.14	-	-	0.14
Sub-Total	526.74	15,322.85	17,536.66	33,386.25
OPEN LANDS AND WATER AREA				
Lakes, Rivers, Streams and Canals	30.14	95.60	54.43	180.17
Swamps, Marshes and Wetlands	61.69	2,493.99	628.70	3,184.38
Unused	334.88	491.77	180.41	1,007.06
Land Fill and Dumps	4.21	8.20	16.92	29.33
General Woodlands	-	1,049.56	465.73	1,515.29
Sub-Total	430.92	4,139.12	1,346.19	5,916.23
TOTALS	7,704.71	24,539.14	22,660.23	54,904.08

Notes: All data expressed in acres.

For a detailed description of the methods and procedures used in the Land Use Survey, see Appendix B.

Source: Harland Bartholomew and Associates Compilation - Data Assembly, City of Kenosha, Computer Tabulation, SEWRPC.

Table 36

AREA OCCUPIED BY EXISTING LAND USES (Comparison)

Type of Use (2)	Area in Acres (1)	Percent of Total Area	Percent of Developed Area: Kenosha Planning District	Percent of Developed Area: Average of Compared Cities*
Single-Family Residential	5,544	10.1	39.2	29.7
Two-Family Residential	324	0.6	2.3	1.7
Multiple-Family Residential	70	0.1	0.5	0.9
Commercial	316	0.6	2.2	2.9
Light Industrial	668	1.2	4.7	1.8
Heavy Industrial	356	0.7	2.5	7.0
Railroads	813	1.5	5.8	5.7
Public and Semi-Public	898	1.6	6.5	16.5
Parks and Recreation	1,175	2.1	8.3	4.0
Streets and Alleys	3,967	7.3	28.0	29.8
TOTAL DEVELOPED AREA	14,131	25.8	100.0	100.0
Agriculture and Related Uses	33,386	60.8		
Open Lands and Water Area	7,387	13.4		
TOTAL AREA	54,904	100.0		

Notes: (1) Rounded to nearest whole acre.
(2) See Appendix C for Categories used for this analysis.

* Comparative data, "Land Use Surveys in Nine Cities in the 50,000 to 100,000 Population Class" by Harland Bartholomew and Associates. See Appendix D for list of cities.

Source: Harland Bartholomew and Associates Compilation.

average of nine other cities in the 50,000 to 100,000 population class. Column 2 shows the percentages of the total District area represented by each of the 12 categories listed. Only 25.8 percent of the total area in the District has been occupied by some active urban use, while the remaining 74.2 percent remains in agricultural use or is open land or water. Although the area of the District is somewhat larger than most of the areas covered by the surveys in the comparison cities, this has no particular bearing on this analysis as the comparison is made in terms of the percentage of developed land occupied by the various uses - a common denominator.

There are four categories where differences occur that warrant comment. In the Kenosha Planning District more than 30 percent more land has been devoted to the development of single-family residential uses than in the average of the comparison. Even the city data, considered separately from the towns, produces a ratio of 37 percent, considerably higher than the average. The large lots in the outlying portions of the towns and in the fringe of development around the city have an effect of increasing this ratio. In addition, the trend to larger lot sizes in most subdivisions would have the same effect.

A second difference can be noted in the light industry and heavy industry categories. However, when analyzed collectively, the apparent large differences are not so great. The percentage of developed land occupied by all industrial land in the Kenosha District would be 7.2 as compared with 8.8 percent of the comparison cities.

The third major difference occurs in the public and semi-public category where the percentage represented by the average of the comparison cities is more than two and one-half times greater than that of the local area. The Kenosha area has no very large open areas such as colleges or universities occupying large sites in some of the comparison cities. The location of the new University of Wisconsin campus in this area will probably make up a great deal of this difference and perhaps even surpass it entirely.

The Kenosha District uses more than twice as much land for parks and recreation than the average of the comparison cities represents. This is accounted for by Petrifying Springs Park, the two country clubs, and the fine city park system along the lakefront. This should not be viewed as a stop sign for acquisition of park land, however. The great majority of the park land along the lakefront was acquired during the 1920's, either during or as a result of recommendations made in the city's original plan completed in 1925.

> "One primary feature of the Kenosha park system obviously should be the lake front parks. The city has reserved all too few waterside areas. Simmons Playground will be eventually a very useful lake park. Eichelmann Park, when completely filled will also render valuable service to the central section of the city. In addition to these, ... the city should acquire larger areas, both north and south of the city. The sites most desirable are not likely to be available a few years hence. If Kenosha wishes to secure lake front parks where they will be of value, it must act quickly. No better use of the city's borrowing power can be conceived than that of saving bits of the lake shore for all Kenosha citizens for all time." (26)

Land Use and Population Ratios. There is a definite relationship between the population of an urban area and the amount of land used for urban purposes. This relationship is generally expressed as the number of acres of land used per 100 persons of the community's population. Table 37 shows the land use and population ratios for the Kenosha Planning District and the average of the nine comparison cities used in the previous comparison study.

In the District, the total ratio of land used per 100 persons of population is only two percent lower than that of the average of the nine other cities. The largest variations occur in the single-family residential and public and semi-public categories. In these categories the differences amount to 30 percent and 160 percent respectively, and show the similarity of results of the previous comparison study.

Land Use Arrangement

Residential Uses. As in most urban areas, single-family homes are the dominant urban land use in the District. They are found in great numbers in virtually every section of the city proper and in some cases immediately adjacent to or within the central business district itself. With the exception of some of the newer subdivisions and areas shown on Map 14, there are no large areas in the city that might be termed a homogenious neighborhood of single-family homes. In addition, all of the older residential sections have two-family or multiple dwellings, and isolated commercial or industrial uses scattered throughout the residential sections.

The most densely developed residential area is found in the older part of the city, generally bounded by the central business district, Washington Road, the old North Shore Railroad and 65th Street. This area around the central business district contains the greater portion of the two-family and multiple dwellings. Although new rental residential units have built on the outskirts of the city, particularly in the northwest section, two-family and multiple dwellings have shown a tendency to concentrate in the areas close to the central business district. In the older parts of the city there is hardly a block completely occupied by either multiple dwellings or two-family dwellings and only one block occupied completely by both types of residential uses. For the most part, they are universely found intermingled with single-family homes in locations where the most intensive use can take advantage of the greater open space provided by the single-family homes.

In the outlying areas of the District, most of the dwellings are on typically large lots that could be termed acreage. There are areas where several houses have been built near one another to form a strip along the roads. There are a few new subdivisions that have been platted in recent years but as yet these are scattered also and form no particular pattern. Several large trailer courts are also located in the District, the heaviest concentration located along Sheridan Road near 85th Street.

(26) The City Plan of Kenosha, Wisconsin, 1925, by Harland Bartholomew, St. Louis, Missouri.

Table 37

LAND USE AND POPULATION RATIOS (Comparison)

Type of Use(1)	Acres of Land Used Per 100 Persons: Kenosha Planning District	Average of Compared Cities*	Variation - District to Compared Cities
Single-Family Residential	5.76	4.46	+ 1.30
Two-Family Residential	0.34	0.25	+ 0.09
Multiple-Family Residential	0.07	0.14	- 0.07
Total Residential	6.17	4.85	
Commercial	0.33	0.44	- 0.11
Light Industrial	0.69	0.27	- 0.42
Heavy Industrial	0.37	1.04	- 0.67
Railroad	0.85	0.85	-
Total Industrial	1.91	2.16	
Public and Semi-Public	0.93	2.48	- 1.55
Parks and Recreation	1.22	0.60	+ 0.62
Total Open Space	2.15	3.08	
Streets and Alleys	4.13	4.46	- 0.33
Total Developed Area	14.69	14.99	- 0.30

Notes: (1) See Appendix C for categories used for this analysis.

* Comparative Data, "Land Use Surveys in Nine Cities in the 50,000 to 100,000 Population Class" by Harland Bartholomew and Associates. See Appendix D for list of cities.

Source: Harland Bartholomew and Associates Compilation.

Commercial Uses. To aid in the analysis of commercial and industrial land use patterns, Map 15 has been prepared, showing the locations of these uses as recorded by the land use survey. This map also shows industrial areas in use at the time of the plan preparation in 1925 and outlines those areas where industrial zoning was recommended in the plan. Pertinent comments regarding major problems are also indicated.

Scattered Developments. The residents of all sections of the district should have some commercial facilities within reasonable access of their homes. The major problem in the district related to this philosophy is that the population group being served is too small. In other words, the scattered developments for the most part are isolated stores serving no more than a few hundred people in a very small area rather than a center of a few acres in size serving perhaps one-half of a neighborhood. An example of this type development can be seen in the Washington Park-South neighborhood.

Strip Developments. This type of development occurs when frontage property along both sides of a major street is "overzoned" for commercial use, thereby creating more land than is actually needed. This presents a greater opportunity for commercial uses to spread out rather than to benefit each other by grouping their activities at one location. Each of these separate stores then creates its own parking problems, and traffic conflicts that extend far beyond the boundaries of the individual property involved. The two areas of primary concern in this respect are on Sheridan Road - one is to the north in the North Lake Shore neighborhood and the other to the south involving the Sheridan Road Industrial District. The area to the south offers the greatest problem for solution but can best be solved by solidifying the strip so that it cannot expand in an east-west direction and providing small sites for light industrial uses along the railroad.

Encroachments. Another problem actually associated with the previously discussed situations is encountered when these scattered stores and strip developments begin to prosper and accordingly look for additional space for parking and store remodeling. They then begin to encroach upon the surrounding property, usually residential, which begins to deteriorate as the land becomes more important for expansion. Unfortunately, the problem never stops entirely but continues sparodically as long as the store remains occupied. In general, there are not enough properly located centers of sufficient size at the present time to adequately serve as true convenience centers.

Table 38 shows the amount of occupied and vacant floor area of commercial and industrial uses in each civil division and in the District as a total. The city data accounts for about 84 percent of all retail and service floor area with a total of 3,547,000 square feet of space. Of this total, about 10.7 percent is vacant or unused which is slightly above average. Of serious concern is the fact that almost 96 percent of all vacant commercial floor space is located in the central business district of the city. The towns have a total of 660,500 square feet of floor space available with only 6.8 percent vacant, a more normal level of vacancy.

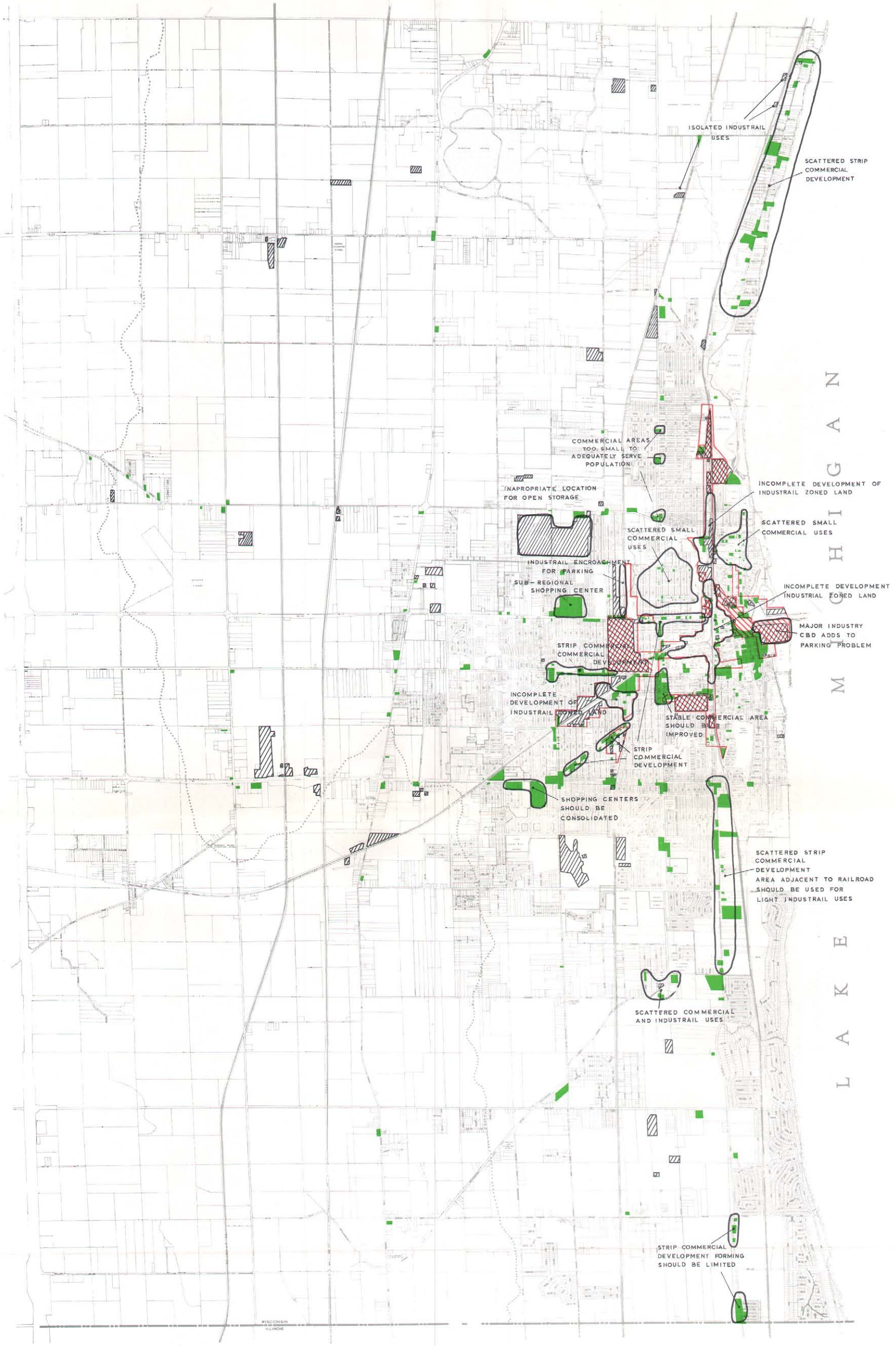
In the city's commercial categories, three main uses occupy 69.3 percent of the total occupied floor space. These same uses, recreation, services and retail, occupy 53 percent and 65 percent respectively of the used floor space in the towns of Pleasant Prairie and Somers. For the District as a whole, these three categories occupy 67 percent of the occupied floor space and 68 percent of the total floor space available.

Uses Along IH-94. There are a total of 11 grade separations along IH-94 in Kenosha County, only three of which offer direct access from the Interstate Highway to the intersecting roads which provide service to areas east and west of the highway. These three major access points are located at STH-43, 158 and 50. The eight remaining routes that intersect with IH-94 have indirect access to the highway from the frontage roads paralleling the route. Appendix E contains a listing of the intersections and a brief discription of the development presently found in each quadrant at the various routes.

A review of this list shows no major commercial businesses along the east side of IH-94 whereas the west side has major centers at "43" and "50" with smaller commercial uses at two other locations. With the exception of the gas station currently nearing completion at "C", the east side has no new commercial uses whereas the west side has several. The potential for the development of the east side of IH-94 would seem to be at least the equal of the west side with major commercial facilities (motel, restaurant and gas station facilities) locating at STH-43 and STH-50 in the immediate future and supporting facilities eventually locating at the other intersections. Future zoning should encourage this philosophy.

Industrial Uses. The plan prepared in 1925 attempted to provide sufficient areas for industrial use by recommending areas to be zoned for that purpose. Both the industrial uses existing at that time and the areas proposed for industrial zoning are shown on Map 15. A comparison of these areas with industrial uses existing at the time of the recent land use survey show a few areas of similarity where industrial uses are still in operation at the same location. Further comparison indicates a great number of instances where new industrial uses have occupied areas reserved for that purpose in the original plan. To have achieved such a goal over such a long period of time is a considerable accomplishment. However, the industrial pattern of the District is not without problems. These problems are quite similar to those involving commercial land use and include those described briefly as follows:

Compact Development. The 1925 plan indicates that the larger industrial areas were perpetuated and provision was made for expansion, principally along the railroad where land had already been occupied or had been subdivided into small parcels. As a result, almost all of the land within the city at that time which was adjacent to the railroad was zoned for that purpose, probably in the hope that some of the existing development not industrial in character would be removed. The problem concerning compactness of development is that all of the areas have not been filled in by new industrial uses and the result is that most of the areas that have not been occupied by industry contain deteriorating housing. Much of this deterioration is due to the influence of the adjoining and sometimes surrounding industrial development. To further compound the situation, recent industrial uses have had a tendency to locate in fringe areas of the urbanized section of the District.



COMMERCIAL AND INDUSTRIAL LAND USE PATTERN

AREAS USED BY INDUSTRY - 1925

INDUSTRAIL ZONING PROPOSED - 1925

EXISTING INDUSTRY - 1964

EXISTING COMMERCE - 1964

MAP 15

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

SCALE 1:62,500

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Table 38

COMMERCIAL AND MANUFACTURING
BUILDING FLOOR AREA (1)

Kenosha Planning District

	City of Kenosha		Town of Pleasant Prairie	
	Used	Vacant	Used	Vacant
Retail and Services				
Neighborhood	8,000	-	26,300	-
Community Retail	805,400	5,700	-	-
Community Services (Offices)	793,200	-	150,700	-
Commercial Recreation	833,100	30,000	133,500	2,300
Highway	441,700	1,400	23,900	-
Non-Office Services	380,700	500	2,200	-
Hotels, Motels	92,100	-	189,800	-
Commercial Amusement	154,200	-	11,100	-
Sub-Total	3,508,400	37,600	537,500	2,300
Wholesale and Storage				
Open	-	-	15,200	-
Enclosed	29,100	-	22,700	-
Sub-Total	29,100	-	37,900	-
Manufacturing, Non-Durable				
Food and Kindred Products	119,900	-	-	-
Apparel and Kindred Products	65,200	-	-	-
Printing, Publishing, Allied Ind.	160,300	-	-	-
Chemical and Allied Products	198,000	-	-	-
Sub-Total	643,400	-	-	-
Heavy Industry and Extractive				
Lumber and Wood Products	218,700	-	15,000	-
Stone, Clay and Glass Products	37,400	-	70,100	-
Primary Metals	977,900	-	-	-
Fabricated Metal Products	802,600	-	52,600	-
Machinery (Except Electrical)	289,400	-	5,900	-
Electric Machinery Equip. and Supply	28,900	-	-	-
Transportation Equipment	12,272,300	-	-	-
Miscellaneous Durable Goods	29,900	-	-	-
Extractive	-	-	-	-
Sub-Total	14,657,100	-	143,600	-
Total	18,838,000	37,600	719,000	2,300

	Town of Somers		Kenosha Planning District	
	Used	Vacant	Used	Vacant
Retail and Services				
Neighborhood	6,200	2,200	40,500	2,200
Community Retail	-	-	805,400	5,700
Community Services (Offices)	31,600	-	975,500	-
Commercial Recreation	45,800	-	1,012,400	32,300
Highway	1,400	-	467,000	1,400
Non-Office Services	6,900	-	389,800	500
Hotels, Motels	11,200	-	293,100	-
Commercial Amusement	15,400	-	180,700	-
Sub-Total	118,500	2,200	4,164,400	42,100
Wholesale and Storage				
Open	-	-	15,200	-
Enclosed	60,300	400	112,100	400
Sub-Total	60,300	400	127,300	400
Manufacturing, Non-Durable				
Food and Kindred Products	25,200	-	145,100	-
Apparel and Kindred Products	-	-	165,200	-
Printing, Publishing, Allied Ind.	-	-	160,300	-
Chemical and Allied Products	-	-	198,000	-
Sub-Total	25,200	-	668,600	-
Heavy Industry and Extractive				
Lumber and Wood Products	-	-	233,700	-
Stone, Clay and Glass Products	-	-	107,500	-
Primary Metals	-	-	977,900	-
Fabricated Metal Products	5,800	-	861,000	-
Machinery (Except Electrical)	-	-	295,300	-
Electric Machinery Equip. and Supply	1,200	-	30,100	-
Transportation Equipment	20,000	-	12,292,300	-
Miscellaneous Durable Goods	2,400	-	32,300	-
Extractive	-	-	-	-
Sub-Total	29,400	-	14,830,100	-
Total	233,400	2,600	19,790,400	42,500

Note: (1) All Area Expressed in Square Feet.

Source: Harland Bartholomew and Associates Compilation - Data Assembly, City of Kenosha - Computer Work, SEWRPC

Encroachment. Here the conflict is the same as in the commercial pattern. The industries gradually become successful and need land for expansion purposes and must, of necessity, acquire residential property or move to a new location. This encroaching trend can work in the opposite manner also when land reserved for industrial expansion and use is crowded or invaded by residential developments. Traffic and parking requirements are often the first to suffer in these instances.

Location. Extreme care must be taken in locating and adequately protecting industrial sites. Inappropriate location of industrial uses can lead to the problems already illustrated. In addition, when industrial uses are located irrespective of each other or their surrounding neighbors, they tend to scatter with no apparent pattern, thereby increasing the number of conflicts. Some of the scattering shown on Map 15 is unavoidable such as that caused by extractive uses, but a majority of this could have been prevented. The only area of recent industrial growth, other than scattered sites, has been the city's Industrial District shown on Map 14.

The amount of floor area devoted to occupied and vacant uses by manufacturing in the District totals 15,626 square feet, about 98 percent of which is located within the City of Kenosha (See Table 38). The towns of Pleasant Prairie and Somers have only about two percent of the total floor space available in the District. Of the three categories of industrial floor space indicated in Table 38, the heavy industry category represents 95 percent of the total floor space available, none of which was vacant at the time of the survey. The majority (83.8 percent) of this space was occupied by the transportation equipment industry, primarily American Motors Corporation. The next largest occupants of floor space were occupied by primary metals (6.6 percent) and fabricated metal products (5.8 percent) industries.

In the wholesale and storage category, almost 88 percent of the floor area was enclosed rather than open.

In the non-durable manufacturing category only a little more than three percent of the total floor space was located outside the City of Kenosha. The representative percentages of the category are 21.7, 24.7, 24.0, and 29.6 percent in the order of their listing in Table 38.

Figure 5 indicates the percentage of first work trips per day to a manufacturing use in the District by direction. Table 39 indicates the actual data derived from unpublished statistics developed by the SEWRPC in the transportation study.

Table 39

DISTRIBUTION OF FIRST WORK TRIPS TO MANUFACTURING USES

Place of Origin of Trip	Number of Daily Trips	Percent of Total
Within the Kenosha District	13,124	71.1
Remainder of Kenosha County	899	4.9
Racine County	2,290	12.4
Remainder of SEW Region	494	2.6
Outside of SEW Region	1,671	9.0
Total	18,478	100.0

As expected, work trips originating within the District itself account for the greatest percentage (71.1) of all trips with trips originating in Racine County accounting for 12.4 percent of all trips. Trips originating outside the Region, almost all of which are probably from Illinois, account for 9.0 percent of the total, while trips from the remainder of Kenosha County and from other points within the Region account for a total of 7.5 percent of the total work trips to manufacturing uses in the District.

Institutional and Governmental Service Uses. In most urban areas, the public and semi-public uses do not form any significant pattern of development other than a large tract of land used by a college or university, hospital, or cemetery. However, in the Kenosha District, there are three developments in this category that should be protected and concentrated. The first is the Carthage College-St. George Cemetery complex along the east side of Sheridan Road in the north-central section of the District. Although these facilities are unrelated in function and separated by Alford Park Drive, they do present a significant land area in this category. Alford Park, located along the lakefront in the same area adds further to the overall spatial beauty.

Another public and semi-public complex is located near the University of Wisconsin Extension Center on STH-43 east of 39th Avenue. To the south of the highway, union facilities are located in a modern building while to the east of the Center the area is occupied by the Brookside Home for the Aged, Willowbrook Sanitarium and the new facilities of the Kenosha Area Technical Institute. In addition to these facilities which are located on sizeable sites giving a spacious appearance, the area to the north and west of the Center contains a wetland area. This area should be reserved and protected against urbanization and intensive use. The entire complex then can become even more attractive than it is at present.

The third area of intensive use in this category involves the civic center in the western portion of the central business district. The development of this area was one of the major recommendations of the City Plan of 1925 and has been almost completely developed according to the Plan. It encompasses such public and semi-public uses as the courthouse, jail, Bradford High School, Post office, city hall, museum, and the Police Department Building, a recent addition. All of these facilities make an ideal civic center complex that should be protected, improved, and expanded. There are of course, many other public and semi-public uses scattered throughout the Planning District, ranging in size from churches located on a normal city lot to a cemetery, encompassing more than 92 acres of land.

Recreational Uses. The most significant recreational facility in the District is Petrifying Springs Park. This park has most of the desirable facilities in a regional park and is undoubtedly one of the finest parks in the entire area surrounding the Southeastern Wisconsin Region, a fact supported by the heavy user traffic originating in Illinois as determined by studies conducted by officials of the park.

For the most part, private, or semi-private recreational facilities are small. The two exceptions are both 18-hole golf courses - Maplecrest Country Club in the northwest section of the district and the Kenosha Country Club in the

northeast section of the district. With the exception of these three aforementioned areas, there are no other significant recreational facilities in the unincorporated section of the District.

The lakefront park system developed over the years by the City of Kenosha, is truly significant. Although the system is not entirely contiguous, the section reaching north from Simmons Island Park through Lakeview Park, Pennoyer Park, and Alford Park represents a significant development and should be protected. This section of lakefront parks blends with Carthage College and St. George Cemetery at its northern terminus to form an outstanding open space system. Additional parks along the lake to the south of the central business district include Lakefront Park, Eichelman Park, and Southport Park. Although Eichelman Park and Southport Park are several blocks apart, the intervening development is reasonably spacious and does not detract from the overall appearance. The only parks of substantial size not on the lakefront are Washington Park and Lincoln Park. Both of these facilities are well developed and are a credit to the community. The remaining parks in the area are very small and serve a relatively small number of people.

Agricultural Uses. This category of land use comprises 61 percent of the land area in the district and includes such uses as croplands, pasturelands, orchards, nurseries and fowl and fur farms. The agricultural uses specifically include activities such as dairy, livestock and field crop farms. The agricultural land remaining in the District accounts for almost 30 percent of the total agricultural land in Kenosha County and slightly more than three percent of the Region's total land area in this category. As in most other urban areas throughout the country most of the urbanization occurs at the expense of agricultural land. The problem of rapidly depleting supplies of soils suitable for agricultural purposes is not so prevalent in the Kenosha Planning District as it is in many urban areas. Practically all of the soil adjoining the urbanizing area is suitable for agricultural development. This does not mean however, that this type of land use should be allowed to disappear from the District. Agricultural employment for example, accounts for about 12,000 jobs and more than 84 million dollars worth of income to the Region and should be maintained for economic, environmental and aesthetic reasons with careful attention given to the preservation of existing agricultural uses wherever possible.

Open Lands and Water Areas. Of the total land area in the Kenosha District, only about 10.8 percent is classified in this category (5,916 acres), and only 180 acres are classed as lakes, rivers, streams or canals. There are however in additional 3,184 acres of land in swamps, marshes or wetlands. Overall, this indicates that approximately 57 percent of the category total is "wet". In the entire District, there are only 28 parcels containing approximately 160 acres of land or more, and more than one-half of these are very close to that size (See Map 16). The location of these parcels is quite normal, however. Only six are east of Highway 31 and only one is within what is termed the urbanized area. Although the study does not indicate tracts less than 160 acres in size there are a rather sizeable number containing between 80 and 160 acres. The base map used for this study is a composite of the 1"=400 foot scale and 1"=200 foot scale maps prepared as a part of the base mapping program for the District. Further inspection of the lot and parcel boundaries shown indicate that the majority of land divisions have taken place in the Town of Somers resulting in some awkward boundaries and land divisions.

Population Distribution-1964

The distribution of the population in the Kenosha Planning District is shown on Map 17 and was derived from the land use survey data. The population pattern is quite compact and relatively dense in the older sections of the city with the highest density located within one mile of the central business district. The density of the population reduces gradually as the distance from the central area of the City of Kenosha increases, a typical pattern of distribution in rapidly growing urban areas. Although the distribution of population in the outskirts of the City of Kenosha is sparse, the distribution is extremely scattered south of 85th Street, west of STH-31, and north of STH-43 and west of the old North Shore Railroad.

Population Density-1964

The density of population is of major planning significance. The present density (See Map 18) indicates the number of persons per net residential acre by major unit areas in the District. These areas represent neighborhoods as indicated by the Neighborhood Boundary Map shown on Map 19.

Table 40 has been prepared to show the estimated 1964 population and density for each of the neighborhoods. Similar data has been developed for 1990 as well as the population change anticipated between 1964 and 1990. The densities range from a low of 1.0 persons per net residential acre in the Alford Park neighborhood to a high of 69.2 persons per net residential acre in the central business district in 1964. For ease of interpretation, the densities have been grouped into three major categories as shown on Map 18. These density ranges have been devised by the SEWRPC.

Future Land Use Areas

The estimated future land use ratios (See Table 41) indicate that the ratio of acres of developed land to each 100 persons will increase from 14.69 to 17.33 by 1990. This represents an increase of about 18 percent and indicates that while the District's developed land now totals 14,131 acres, an additional 17,244 acres of land will be used for some active urban purpose by 1990. Another comparison indicates that the expected population increase of 88 percent will produce the need for 122 percent more land than is presently being used. While this may seem to be a direct contrast to the principle of saving land, there are several reasons for this which cannot be overlooked.

In the single-family residential category, the ratio is expected to increase from 5.76 to 7.83 by 1990. There are two main factors responsible for this situation. For the past several years there has been a trend toward larger residential lots. In and near many larger metropolitan centers throughout the country, this trend is still increasing. In addition, there are an increasing number of homes being built on acreages in the outlying areas which have caused and will continue to cause this ratio to increase.

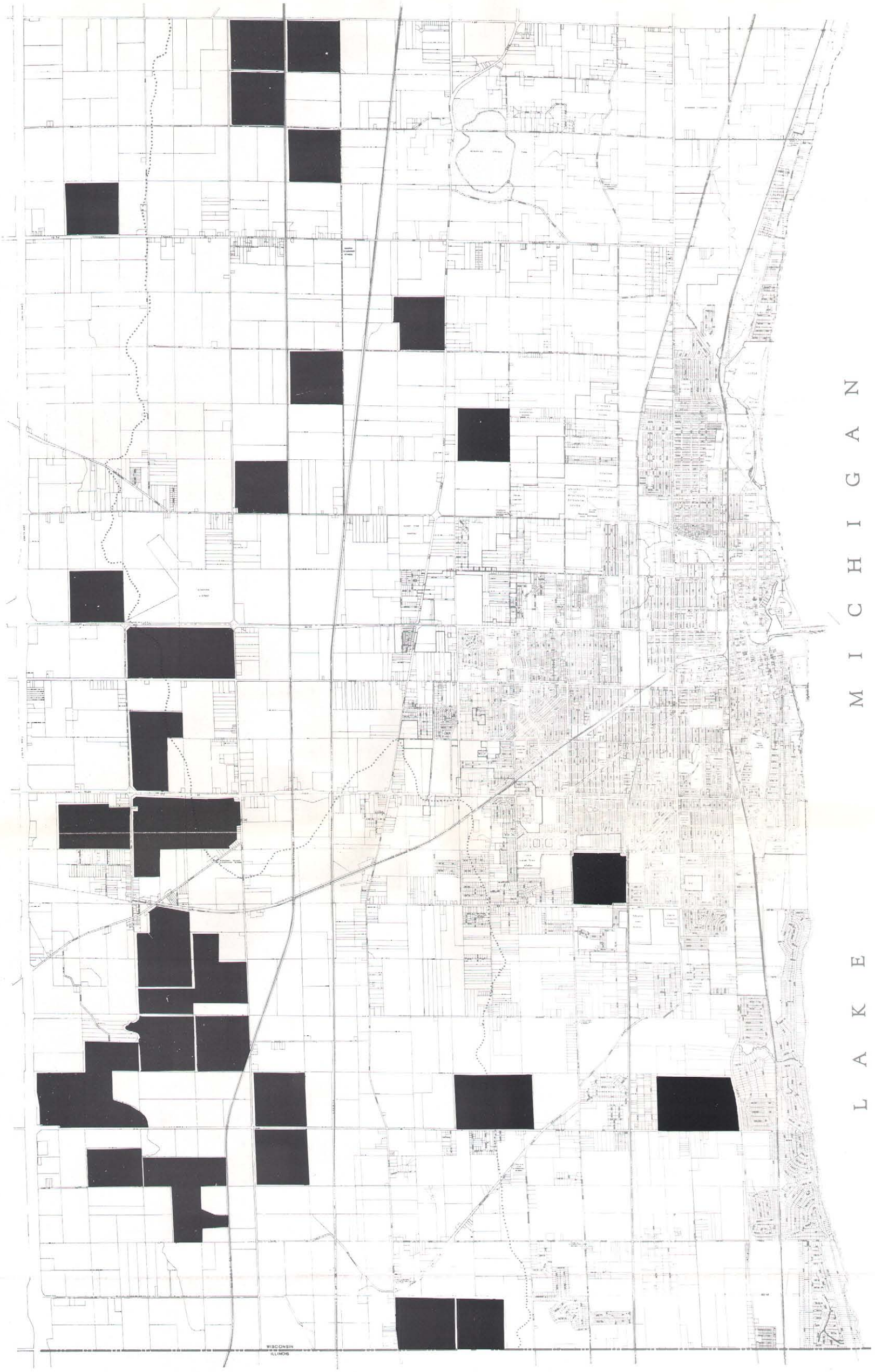
Table 40

ESTIMATED POPULATION AND DENSITY - 1964 and 1990

Neighborhood	Estimated 1964 Population	1964[1] Population Density	Estimated Population Change	Estimated 1990 Population	1990[1] Population Density
North Lake Shore	2,500	9.5	+ 560	3,060	10.5
Country Club	340	6.5	+ 1,300	1,640	2.0
University Park	440	4.1	+ 1,770	2,210	3.1
4	300	3.1	+ 960	1,260	2.4
5	250	6.3	+ 100	350	5.1
6	100	4.9	+ 50	150	4.3
7	230	4.9	+ 5,120	5,350	13.1
Strawberry Hills	250	3.8	+ 6,480	6,730	12.7
Birch Road West	50	6.4	+ 3,140	3,190	19.7
Birch Road East	130	5.1	+ 1,600	1,730	16.5
Alford Park	10	1.0	- 10	-	-
Harvey East	3,190	21.7	+ 470	3,660	21.7
Harvey West	1,790	19.9	+ 3,160	4,950	21.7
Lakeview Park	1,810	31.3	+ 80	1,890	32.5
Grant East	2,740	22.9	+ 200	2,940	23.5
Grant West	820	19.6	+ 880	1,700	19.6
Willowbrook	810	6.9	+ 5,290	6,100	12.2
Highview	40	3.8	+ 5,010	5,050	13.7
22	90	4.9	+ 4,990	5,080	13.6
23	50	5.3	+ 250	300	2.9
24	490	7.8	+ 500	990	4.6
25	120	6.0	+ 250	370	3.9
26	40	4.2	+ 250	290	3.4
Sunset Ridge	270	6.3	+ 4,150	4,420	14.1
Kenosha Land	750	7.8	+ 3,950	4,700	14.3
Wilson	1,500	14.7	+ 630	2,130	17.7
Washington Park West	820	26.0	+ 200	1,020	28.4
Washington Park South	2,210	26.9	- 380	1,830	26.9
Washington Park East	4,390	32.7	- 630	3,760	32.7
Union Park	4,160	53.4	+ 520	4,680	60.0
C.B.D.	2,260	69.2	- 1,660	600	40.0
Frank	3,990	57.5	- 1,790	2,200	40.0
40	1,830	66.5	- 1,830	-	-
McKinley	2,600	27.3	- 160	2,440	27.3
Strange	2,600	16.0	+ 860	3,460	16.8
Johnson	330	6.7	+ 1,290	1,620	20.2
44	70	3.9	+ 100	170	5.3
45	20	3.8	+ 150	170	3.4
46	380	6.4	+ 150	530	5.0
47	30	5.0	+ 100	130	5.5
Green Bay Road	610	6.2	+ 2,780	3,390	13.6
Forest Park	4,870	18.9	+ 1,630	6,580	13.7
Fairview	2,210	28.4	-	2,210	28.4
Roosevelt Park	2,730	30.7	-	2,730	30.7
Columbus	3,290	47.7	- 1,030	2,260	32.3
St. Joseph's	2,620	30.0	- 90	2,530	30.0
Milltown	3,730	52.6	- 580	3,150	45.0
Lincoln Park	2,730	39.1	-	2,730	39.1
Kemper Hall	2,750	29.1	+ 350	3,100	31.0
Southport	3,450	18.1	+ 120	3,570	18.1
Sunnyside	2,500	25.1	+ 60	2,560	25.3
Lincoln Road	2,290	23.6	+ 70	2,360	23.5
Red Arrow	1,970	15.8	+ 1,050	3,020	16.9
Newman Park	2,050	24.4	+ 780	2,830	25.0
Elmwood Park	2,810	15.2	+ 3,950	6,760	20.8
Whittier	540	5.4	-	540	5.4
71	410	5.3	+ 250	660	4.3
72	780	4.3	+ 1,990	2,770	2.6
West Part 82	40	4.2	+ 20	60	3.8
McKeon Road	300	4.2	+ 3,320	3,620	12.0
Forest Haven	960	5.4	+ 5,350	6,310	12.3
Highland Park	2,210	12.4	+ 2,090	4,300	13.9
Rolling Meadows	320	5.3	+ 3,320	3,640	11.7
Sheridan Road Industrial District	410	15.5	- 410	-	-
Carol Beach North	470	7.6	+ 4,110	4,580	20.6
Carol Beach South	1,130	15.2	+ 4,210	5,340	74.2
Tobin Road	690	8.7	+ 610	1,300	11.2
Green Tree	570	5.2	+ 700	1,270	4.8
Prairie Lane	400	3.6	+ 400	800	4.2
Pleasant Homes	830	10.5	+ 450	1,280	11.5
West Part 85	250	3.6	-	250	3.6
84	100	10.1	+ 100	200	5.1
83	100	5.2	+ 50	150	4.4
Totals	96,170		84,830	181,000	

Note [1]Density Expressed in Persons Per Net Residential Acre.

Source: Harland Bartholomew and Associates Compilation and Estimates



STUDY OF VACANT LAND IN SINGLE OWNERSHIP

160 ACRES AND LARGER

MAP 16

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

SCALE 1:62,500
1 MILE
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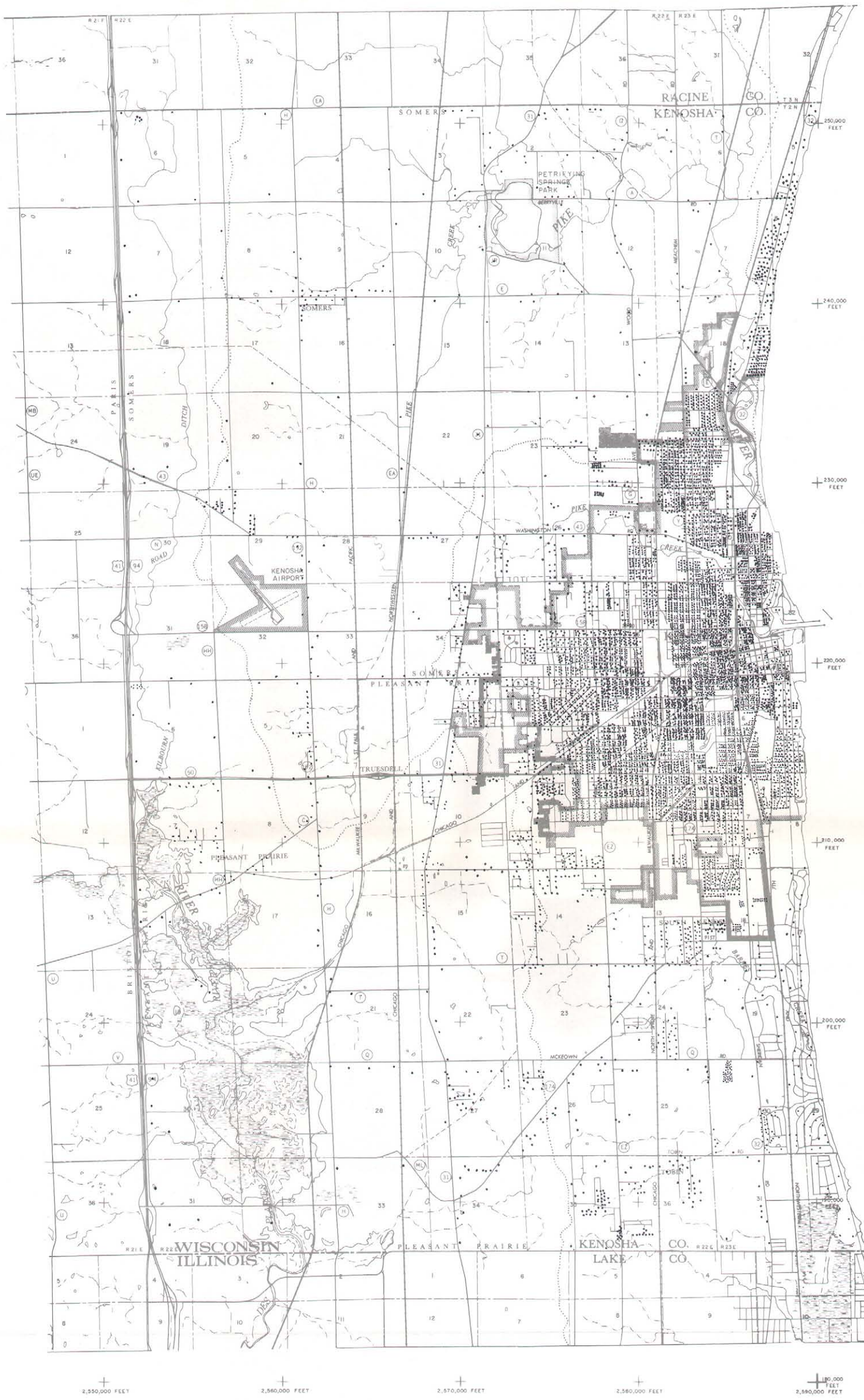

POPULATION DISTRIBUTION 1964

• ONE DOT EQUALS 10 PERSONS

MAP 17

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION	THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.	KENOSHA PLANNING DISTRICT CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS	HARLAND BARTHOLOMEW AND ASSOCIATES CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS SAINT LOUIS, MISSOURI JANUARY 1967

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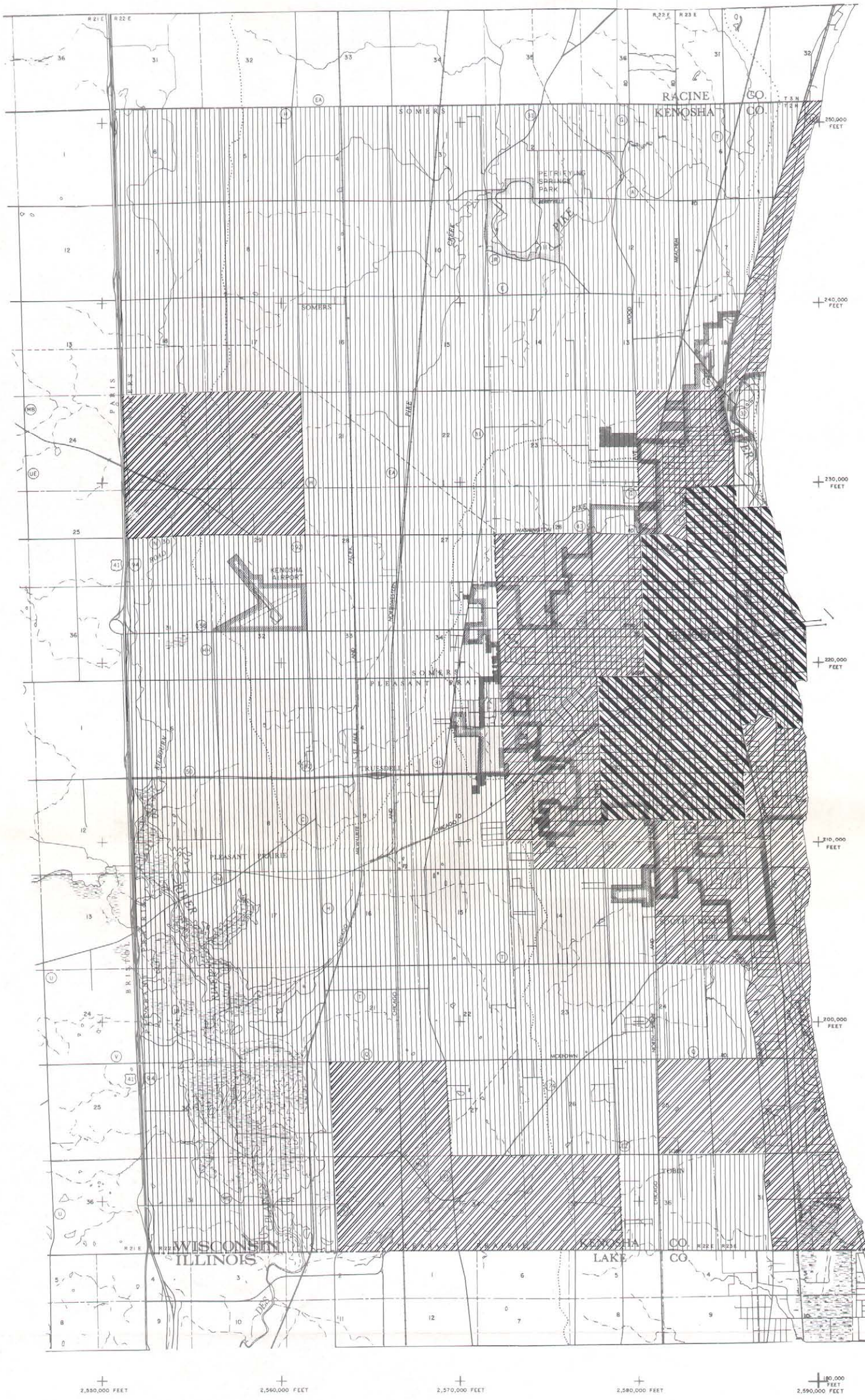

POPULATION DENSITY 1964

HIGH DENSITY RESIDENTIAL
OVER 22.8 PERSONS PER NET RESIDENTIAL ACRE

MEDIUM DENSITY RESIDENTIAL
7.3-22.8 PERSONS PER NET RESIDENTIAL ACRE

LOW DENSITY RESIDENTIAL
LESS THAN 7.3 PERSONS PER NET RESIDENTIAL ACRE

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

JANUARY 1967

MAP 18

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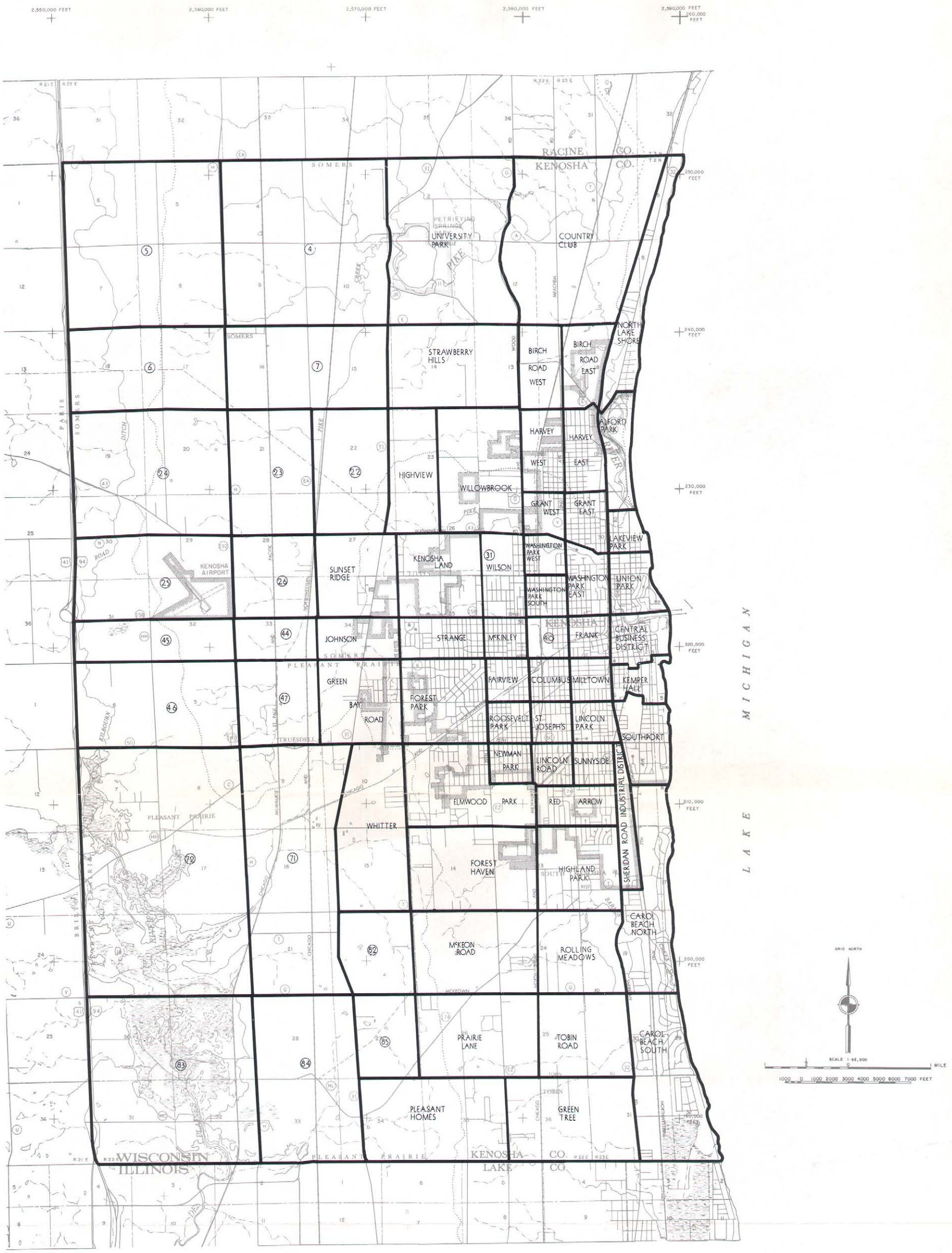

NEIGHBORHOOD BOUNDARIES

NAMES SHOWN ARE SUGGESTED ONLY FOR ILLUSTRATIVE PURPOSES

MAP 19

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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Table 41

ESTIMATED FUTURE LAND USE RATIOS

Type of Use	Acres of Land Per 100 Persons 1964		Acres of Land Per 100 Persons Estimated 1990
Single-Family Residential	5.76		7.83
Two-Family Residential	0.34		0.35
Multiple-Family Residential	0.07		0.20
Retail and Services	0.33		0.60
Wholesale and Storage	0.22)		
Manufacturing, Non-Durable	0.03)	0.59	1.10
Heavy Industry and Extractive	0.34)		
Transportation, Communication and Utilities	1.71		1.40
Institutions and Government Services	0.78		1.00
Recreation	1.22		1.35
Streets (2)	3.89		3.50
Total Developed Area	14.69		17.33
Estimated Population	96,170		181,000

Type of Use	Acres of Land Used 1964(1)		Acres of Land Used Estimated 1990	Estimated Vacant Land to be Occupied
Single-Family Residential	5,544		14,181	8,637
Two-Family Residential	324		633	309
Multiple-Family Residential	70		362	292
Retail and Services	316		1,086	770
Wholesale and Storage	212)	)		
Manufacturing, Non-Durable	27)	570)	1,991	1,421
Heavy Industry and Extractive	331)	)		
Transportation, Communication and Utilities	1,637		2,534	897
Institutions and Government Services	753		1,810	1,057
Recreation	1,175		2,443	1,268
Streets (2)	3,742		6,335	2,593
Total Developed Area	14,131		31,375	17,244

Notes: (1) Rounded to nearest whole acre.
(2) Includes all street rights-of-way.

Source: Harland Bartholomew and Associates Compilation and Estimates.

The first trend has even been transmitted to two-family and multiple-family residential requirements. A few years ago, it was not uncommon to find new multiple dwellings occupying 70-80 percent of their lot areas. This was found to be impractical because high-density dwellers demanded open space for yards and outdoor activities much the same as people living in single-family homes. Now the trend is toward these buildings occupying 30-50 percent of the lot area, thereby requiring more land. This same type of trend toward using more land has been evident in the retail and service uses and industrial uses. The factors relating to the increased ratios in these categories involve increased floor areas, parking requirements, circulation of traffic, loading of goods and equipment and landscaping of sites. The amount of land used by the commercial activities necessary to serve the anticipated 1990 population are expected to triple from 316 acres presently to 1,086 acres. In the combined industrial categories the amount of land required is expected to increase about three and one-half times by 1990.

In the transportation, communication and utilities category, the ratio is expected to decrease from 1.71 to 1.40 during the planning period. Rail lines are already established with little likelihood of major track extensions other than industrial spurs, etc. The rights-of-way of streets will be more closely related to traffic carrying requirements than heretofore and will result in a decreasing ratio in this category also. The reduction will amount to about 10 percent.

The size of sites for institutions and government service structures is also increasing although at not so rapid a pace as in other categories. Hospitals, schools, churches, libraries and similar uses are being planned on more appropriate lot sizes and causing a resultant increase in land use. The Kenosha Planning District has a fine basic system of parks with which to begin planning toward 1990. Additional lakefront parkland should be acquired if the aesthetic values of Lake Michigan are to be preserved for all the population and not just a few.

Desirable Neighborhood Characteristics

For many years the residents of cities throughout the country have associated the location of their dwelling units with sections of the city-called neighborhoods. These neighborhoods have various sizes, shapes, populations, origins and even destinations. Early settlements in our larger cities had neighborhoods established by certain ethnic groups desiring or being required to live in close proximity to one another. These areas still exist in cities today. Various elements of a city's growth and expansion such as streets, parks, railroads and businesses to a large extent have been responsible for the continued formation of neighborhoods. The community pride and association developed as the result of living in a particular neighborhood is important to our social background and culture and should be encouraged to continue and prosper. The following is a review of some of the more desirable physical characteristics of a sound neighborhood.

Each of the neighborhoods in the Kenosha Planning District should provide and maintain an attractive character decade after decade. Each residential neighborhood should be such a good place in which to live and raise children that when a structure becomes obsolete it will be practical to remove it and build a new residence on the same site. A neighborhood should be so attractive that families would have no desire to move away after a few years to find a new home in a new neighborhood. There should be stability of occupancy and value in all residential neighborhoods. The following essential features should be an integral part of each neighborhood:

1. It should be of sufficient size to maintain and protect its own environment. The area ordinarily contributory to an elementary school is a desirable neighborhood size.

2. It should be provided with all utilities and essential facilities including a combined school and community center and properly located shopping districts.

3. There should be adequate parks and recreational areas in each neighborhood; ordinarily ten percent of the neighborhood area should be devoted to this purpose.

4. It should have definite and recognizable boundaries, such as major streets, railroads, marked changes in land use or natural barriers.

5. Arterial highways, major thoroughfares and other traffic carriers should go around, not through or across neighborhoods. Access to schools, parks, community centers and shopping facilities necessary to serve a neighborhood should be both safe and convenient to adults and children.

6. It should be free of blighted or obsolete housing, unpaved, rough or dusty streets, odor, and noise, nonconforming uses, hazardous traffic, monotony of development and street layout and unsightly and unsanitary conditions.

Obviously, this list of desirable characteristics cannot be applied to each of the Districts' neighborhoods. These characteristics can, however, serve as goals and guidelines toward which the residents of any neighborhood in the District can individually or collectively strive to attain. Within this framework of criteria, the following neighborhood analysis has been conducted. The neighborhoods selected for this study are those existing neighborhoods where development is, for the most part, complete, and where various problems exist or some unique development has occurred. Therefore, the analysis should be viewed with the idea that it delineates problems that can be corrected over a period of time as the District continues not only new growth but the rehabilitation of older areas.

Housing in the District is the responsibility of the entire area. Improvement in housing and neighborhood conditions can be achieved only be concerted community action applied to six major aspects as outlined below:

1. To guide and regulate new subdivisions so that new neighborhoods are created with adequate public facilities, good design and layout, sound arrangement of lots and maximum amenities;

2. To protect existing good neighborhoods through the enforcement of an adequate building and housing code, strict zoning regulations, and all other means that would prohibit or prevent the encroachment of undesirable uses;

3. To conserve - bring back - the older developments that are showing signs of blight;

4. To remove substandard housing or to raise such housing to minimum standards through strict and consistent enforcement of adequate housing laws;

5. To rehabilitate and improve blighted areas through the removal of the substandard houses in such areas and to provide adequate parks and other facilities, utilities, traffic improvements, etc., and

6. To completely clear and redevelop obsolete areas.

The individual working alone can do very little to accomplish these objectives. The need is for a community policy and a program of housing improvement that can enlist the cooperation and support of every citizen and civic organization in the area.

Neighborhood Boundaries

Some 91 analysis zones were used as a basis with which to select neighborhood boundaries for the District. The names shown for some of the neighborhoods are only for illustrative purposes and were selected using some well-known features of the neighborhood, such as a school, street, park, subdivision or similar means of identification. Part of a community action program for example, should be the selection of a permanent neighborhood name by the residents of the area involved.

To further assist in the development of statistics for each of the neighborhoods, Table 42 was prepared. This table shows the acreage used for each of the ten major land use categories in all of the neighborhoods delineated on Map 19. The analysis zones which contributed to the composition of each neighborhood are shown in Appendix F.

Existing Housing Conditions

Number and Type of Dwelling Units

The total number of dwelling units in the City of Kenosha increased by slightly more than 22 percent between 1940 and 1950. (See Table 43). The effects of the rapid growth of the late 1950's becomes apparent in the total increase in dwelling units shown between 1950 and 1960 when 6,175 units were added, an increase of almost 38 percent. The single-family unit was responsible for more than 92 percent of the growth experienced in the 1950-1960 period. This is further exemplified by the fact that the single-family unit represented only about one-half of all units in 1940 and 1950, but had increased to 62.3 percent in 1960. Since the year 1960, however, records reveal a much more rapid increase in the number of two-family and multiple-family units being constructed. The increase of units in these two categories accounted for slightly more than 50 percent of the units constructed between 1940 and 1950, probably owing to shortage of housing during and after the war and the conversion of many large single-family residences.

Occupancy of Housing Units

From the data presented in Table 43, it is apparent that the residents of the Kenosha area prefer to live in single-family housing. A dwelling of this type provides maximum light and air, close at hand recreation space, particularly for small children, and encourages stability of population and citizen interest in community affairs. From a low of only 42.8 percent of all dwellings in 1940, the owner occupied percentage of total units has increased to 65.1 percent in 1960. Center occupied units have obviously shown a corresponding sharp decrease from a 1940 level of 54.3 percent to the 1960 level of 32.6 percent. The percentage of vacant units, although fluctuating, has shown a general decrease.

Age of Dwelling Units

Table 44, from the 1960 Census of Housing, shows the age of dwelling units reported at that time. Data included is for the Kenosha Urban area as described by the U. S. Census.

Table 44

AGE OF DWELLING UNITS

Year Structure Built	Number	Percent
1939 or earlier	12,914	66.2
1940 to 1949	2,161	9.6
1950 to 1954	2,813	12.5
1955 to March, 1960	2,638	11.7
TOTAL	22,526	100.0

The above data indicates that 24.2 percent or one-fourth of the total structures are less than 16 years old. Another 9.6 percent are between 16 and 26 years old. The great majority, 66.2 percent, are more than 26 years old. Assuming an average useful building life of 50 years, based upon normal maintenance procedures being performed at reasonably frequent intervals, it is evident that the urban area will be faced with a very high percentage of obsolete housing in the not too distant future. With two-thirds of the urban areas dwelling units more than 25 years old, this means that about one-half their useful life has gone by while the remaining portion will serve during the planning period of 1966 to 1990.

Condition of Housing Units

The present residential development in the District is the result of many years of building activity. The provision of housing has primarily been made by private individuals and many of the present residential structures in the area were created prior to the adoption of regulatory measures. In the natural course of events many of the older dwellings have been converted to multiple dwellings. As a result, some sections of the area are in danger of losing value and attractiveness as residential areas.

As evidenced by the data in Table 44, the City of Kenosha has an unusually high percentage of housing reported in sound condition. This indicates the pride of ownership generally prevalent throughout the entire area. This is due largely to the characteristics of the ethnic groups which originally settled in this area. This does not mean and should not be interpreted in a manner than would indicate that the city will not have a housing problem in future years. As indicated previously, there is a large number of dwelling units that have already served approximately one-half their useful life. Kenosha is indeed fortunate that such a low percentage of buildings are in a dilapidated condition. The normal condition of housing in most urban areas of similar size indicates a dilapidated condition in about 7-10 percent of the structures. These buildings generally require clearance as the expenditures required to place them in sound condition cannot be justified. The problem then is

Table 42

NEIGHBORHOOD LAND USE DATA(1) - 1964

Neighborhood	Residential	Retail and Services	Wholesale and Storage	Manufacturing Non-Durable	Heavy Industry & Extractive	Transportation, Communication, Utilities	Institutional & Governmental Services	Recreation	Agriculture and Related	Open Land(2) and Water	Total
North Lake Shore	264.57	40.54	0.25	-	0.83	84.78	6.87	1.08	85.57	93.74	578.23
Country Club	52.43	1.04	4.05	-	9.43	100.09	-	141.88	1,438.71	262.25	2,009.88
University Park	106.61	0.54	-	-	-	106.65	-	380.46	1,061.08	220.28	1,875.62
4	98.18	0.06	-	-	7.38	105.09	2.63	-	2,162.74	187.66	2,563.74
5	39.47	0.28	-	-	-	130.64	0.86	-	2,181.27	72.92	2,425.44
6	20.40	-	-	-	-	101.71	-	-	1,051.62	47.59	1,221.32
7	47.26	2.33	9.93	1.24	-	88.02	9.24	-	1,082.21	23.76	1,243.99
Strawberry Hills	65.70	0.17	-	-	-	32.61	0.74	-	805.81	129.95	1,034.98
Birch Road West	7.79	0.45	12.91	-	1.40	52.61	-	1.49	243.82	14.39	334.86
Birch Road East	25.44	2.20	1.51	-	-	9.20	-	-	240.25	44.43	323.03
Alford Park	10.18	3.12	0.39	-	8.48	44.80	109.23	76.07	-	53.21	305.48
Harvey East	147.20	1.75	3.06	-	6.99	97.79	8.44	17.48	0.56	29.08	312.35
Harvey West	90.87	0.73	-	-	-	56.74	1.24	1.34	149.27	26.66	326.85
Lakeview Park	57.95	1.51	-	-	-	44.90	11.19	34.94	-	1.53	152.02
Grant East	120.12	2.86	0.90	0.20	11.98	61.56	4.39	-	0.17	5.88	208.66
Grant West	41.82	2.92	4.73	1.44	-	47.47	-	9.33	34.86	19.55	162.12
Willowbrook	116.87	0.45	16.01	-	-	43.44	51.11	-	583.75	165.57	977.20
Highview	10.50	-	-	-	-	31.46	-	-	532.67	15.15	589.78
22	18.44	-	-	-	-	68.38	-	-	785.61	-	872.43
23	9.46	0.35	-	-	-	55.44	-	-	918.80	-	984.05
24	62.59	1.06	1.18	-	1.34	107.98	1.91	163.41	1,479.10	38.30	1,856.87
25	20.09	0.68	0.14	-	0.14	215.68	-	-	952.18	53.73	1,242.64
26	9.39	-	11.06	-	0.48	56.30	-	-	581.12	2.64	660.99
Sunset Ridge	43.35	1.44	1.44	-	10.79	25.22	53.51	-	407.28	38.29	581.32
Kenosha Land	209.93	3.36	14.89	-	0.22	216.55	20.63	7.67	260.53	131.82	846.03
Wilson	76.21	11.12	3.39	-	1.25	152.05	42.83	-	0.24	46.75	333.84
Washington Park West	31.51	0.54	0.45	-	0.14	29.50	7.17	83.80	-	6.92	160.03
Washington Park South	82.33	3.88	9.56	-	9.76	51.25	3.36	-	-	0.73	160.87
Washington Park East	134.16	7.60	1.85	14.92	2.46	62.58	7.19	34.63	-	3.94	269.33
Union Park	77.93	13.70	15.79	1.52	-	76.36	13.90	50.65	-	14.33	264.18
C.B.D.	32.66	32.65	1.86	0.46	54.49	57.69	28.24	29.46	-	4.47	241.98
Frank	69.44	5.81	3.26	1.05	-	62.05	5.89	4.45	-	4.84	156.79
40	27.51	4.42	-	2.98	94.84	30.70	1.05	-	-	0.50	162.00
McKinley	95.20	4.61	-	-	0.31	53.90	6.93	0.01	0.01	-	160.97
Strange	165.01	3.29	0.37	-	0.59	81.59	32.08	7.04	-	35.46	325.43
Johnson	36.69	1.06	0.06	-	-	30.02	-	-	205.00	40.58	313.41
44	21.68	-	-	-	-	17.57	-	-	261.92	3.30	324.47
45	5.23	0.37	-	-	-	44.33	-	-	526.19	40.68	616.80
46	59.89	5.74	-	-	-	95.04	8.90	-	1,018.12	104.87	1,292.56
47	7.35	0.34	3.68	-	12.01	86.42	0.41	-	529.34	23.60	663.14
Green Bay Road	74.74	0.24	-	-	-	47.33	-	-	314.36	37.83	474.51
Forest Park	329.24	18.41	0.91	-	-	167.95	20.53	6.68	170.87	123.36	837.85
Fairview	78.19	5.90	18.47	1.98	7.87	51.29	-	0.11	-	2.44	166.25
Roosevelt Park	88.97	6.60	0.26	0.23	-	48.79	6.88	8.42	-	1.85	162.00
Columbus	68.96	12.78	3.09	0.06	7.41	65.40	5.11	-	-	1.55	164.36
St. Joseph's	87.37	2.86	3.44	0.82	3.12	43.69	7.82	-	-	13.58	162.70
Milltown	70.92	6.63	2.83	-	33.61	43.91	2.80	-	-	0.52	161.22
Lincoln Park	69.88	1.63	0.21	0.10	0.43	41.01	10.11	38.23	-	6.98	168.58
Kemper Hall	94.66	4.28	0.80	-	0.11	50.82	26.42	12.42	-	7.76	197.27
Southport	185.30	2.01	0.27	-	1.12	51.03	55.23	29.25	-	21.33	345.54
Sunnyside	99.59	3.47	-	-	-	49.29	6.44	1.70	-	3.60	164.09
Lincoln Road	97.08	3.12	1.42	-	-	44.39	0.34	4.67	-	9.17	160.19
Red Arrow	125.29	11.47	0.80	-	10.07	84.13	5.45	3.48	-	75.33	321.02
Newman Park	81.95	1.37	0.14	-	-	39.84	-	4.39	-	32.63	160.32
Elmwood Park	201.05	8.97	23.90	-	10.58	142.23	33.17	2.68	314.30	70.13	807.01
Whittier	121.82	1.09	0.39	-	2.15	91.82	0.28	4.90	652.30	92.59	967.34
71	77.68	1.80	16.75	-	-	191.32	4.10	0.52	1,878.17	116.71	2,281.03
72	180.23	5.08	0.29	-	0.08	185.95	2.62	-	2,349.72	1,080.12	3,804.09
West Part 82	8.99	-	-	-	-	23.17	-	-	548.06	31.36	611.58
McKeon Road	63.61	0.88	-	-	-	58.26	93.31	-	621.91	135.52	973.49
Forest Haven	189.57	0.69	-	-	-	54.72	1.09	-	538.74	192.86	977.67
Highland Park	178.79	19.09	0.27	-	2.17	78.32	27.73	-	237.78	98.72	644.87
Rolling Meadows	73.75	0.75	-	-	3.31	16.58	0.98	-	405.06	126.40	626.83
Sheridan Road Industrial District	26.49	22.03	14.92	-	0.65	52.68	-	12.42	-	125.36	254.55
Carol Beach North	71.26	-	-	-	-	145.62	-	-	-	605.75	822.63
Carol Beach South	118.69	1.80	-	-	-	163.49	1.38	1.57	236.30	501.89	1,025.12
Tobin Road	67.48	0.72	-	-	13.43	11.79	-	-	517.81	47.91	660.17
Green Tree	109.43	9.06	-	-	-	46.34	0.86	-	617.84	216.66	1,000.19
Prairie Lane	111.58	0.27	1.03	-	-	69.15	14.20	-	673.16	103.74	972.10
Pleasant Homes	79.12	0.23	-	-	-	66.22	1.39	-	988.75	155.64	1,291.35
West Part 85	86.78	-	-	-	-	46.55	-	-	329.09	105.48	568.36
84	9.91	0.57	-	-	-	92.64	-	-	1,095.13	165.88	1,364.13
83	19.24	0.68	-	-	-	133.43	3.84	-	1,312.99	1,102.84	2,563.02
Totals	5,938.23	315.65	212.54	27.00	331.88	5,376.50	753.39	1,175.35	33,386.25	7,387.29	54,904.08

Notes: (1) All Data in Acres.

(2) Includes Undeveloped Residential.

Source: Harland Bartholomew and Associates Compilation - Data Assembly, City of Kenosha
- Computer Work, SEWRPC

Table 43

CHARACTERISTICS OF HOUSING

City of Kenosha

Type of Housing	1940 Number	1940 % of Total	1950 Number	1950 % of Total	1960 Number	1960 % of Total
Single-Family	6,820	51.1	8,326	50.9	14,042	62.3
Two-Family	4,676	35.0	5,397	33.0	5,428	24.1
Multiple-Family	1,825	13.7	2,626	16.1	2,709	12.0
Other	29	0.2	2	0.0	347	1.6
Total	13,350	100.0	16,351	100.0	22,526	100.0
Occupancy of Housing						
Owner-Occupied	5,709	42.8	9,520	58.2	14,675	65.1
Renter-Occupied	7,251	54.3	6,582	40.3	7,334	32.6
Vacant	390	2.9	249	1.5	517	2.3
Total	13,350	100.0	16,351	100.0	22,526	100.0
Condition of Housing						
Sound	(Data not		15,817	96.8	20,005	88.8
Deteriorating	comparable		(Not Used-1950)		2,057	9.1
Dilapidated	with 1950		303	1.7	464	2.1
Not Reported	and 1960)		231	1.5	-	-
Total			16,351	100.0	22,526	100.0

Source: U.S. Census of Housing, 1940, 1950, and 1960.

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not necessarily one of clearance, although there are areas where this would be the case, but rather the solution is one of rehabilitation and code enforcement. Code enforcement in the area is absolutely necessary if Kenosha is to prevent being flooded with a tremendous number of homes reaching the end of their useful life at approximately the same time.

Effects of Poor Housing

Areas containing poor housing are expensive to the city, both financially and socailly. Studies of many American cities have indicated that obsolete and blighted areas require so many services - including additional health, welfare and relief in addition to the other public services - and provide so little revenue because of their low value that they must be subsidized by other types of tax paying property. This subsidy is paid by the better residential areas and by commercial and industrial property.

There is a relationship between poor housing and incidences of both crime and disease. All three of these are basically attributable to low income. Poor housing contributes to poor health because of overcrowding, inadequate sanitation and inadequate protection against the elements. Further, poor housing and a poor neighborhood environment are strong factors in the development of crime and delinquency.

Good housing, of course, could not be expected to eliminate crime, accidents or disease. However, children that are raised in a sound environment are healthier and better adjusted than those raised in a poor environment. Where the community can improve the environment for all its people, it can be expected to develop better citizens and thereby reduce both crime and disease. The improved housing has been shown to improve the health and morals of adults also, but the effect of the environment upon the child should be of paramount importance to the community.

Neighborhood Analysis

North Lake Shore

This neighborhood is a long narrow strip between the Chicago and Northwestern Railway and Lake Michigan, north of Carthage College. It is primarily residential in character and at the time of the survey all residences were single-family units. Recently, plans were announced for a few multiple-family units in the area. Sheridan Road traverses the entire neighborhood from north to south and its pattern of development is typical of unplanned areas - scattered commercial establishments of all types with no formal pattern or grouping. This type of development causes numerous parking and traffic problems and generally has a deleterious effect on surrounding development. The residential area west of Sheridan Road has been developed in a few places with platted subdivisions while the area east of the road has generally been developed without proper platting and contains long narrow lots with no standard setbacks, widely ranging lot sizes and shapes and poor use of the lakeshore beauty. The area is served by the Berryville School which is reasonably well located. There are no public parks in the neighborhood with recreational areas being limited to commercial enterprises or private beaches. The area generally has a poor overall appearance with its future potential already having been missed as few areas remain that have sufficient size for planned effective development.

Alford Park

This neighborhood has a unique characteristic in that it contains almost no population. Alford Park along the lake, Carthage College and St. George Cemetery all combine to make an unusual open space setting, that should be protected from any future violations by other uses. The small amount of commerce and industry in the southwest corner of this neighborhood is sufficiently isolated from the three open space uses by Sheridan Road so as not to be a deterrent to the aesthetic quality of the area. There are some corrective measures that could be instituted immediately, however. The fill areas in the cemetery that can be seen from Alford Park Drive should be cleaned up as they have an extremely ugly appearance and detract from the neighborhood.

Lakeview Park

This neighborhood has developed to a high density level and is not served by an elementary school. Pennoyer Park and the northern section of Lakeview Park provide park facilities. The area also contains St. Catherine's Hospital and is almost completely developed. A few commercial outlets along Washington Road provide service to shoppers. The northwest portion has developed almost entirely with single-family homes, while the remainder of the neighborhood is scattered with two-family and multiple-family homes. Since the neighborhood is quite complete in its development, the area has little potential for future growth. The area west of Sheridan Road has experienced some basement and street flooding during heavy rains.

Union Park

The 1960 Census shows 16 blocks had more than 25 percent of their total structures in a deteriorating condition. A recent survey indicated that this total had increased to about 36 equivalent blocks. This neighborhood has poor street design in some areas and generally has made ineffectual use of Simmons Island Park and the view of the park, use of the marina and its adjoining commercial development. There are also mixed land uses, poor platting procedures, no definition of the commercial area, and conflicts with industries and the adjoining railroad. The neighborhood, in spite of its apparent problems, is well located with respect to several aspects - primarily the lakefront, park area and the central business district - and has the highest potential of any neighborhood in the District. Although detailed neighborhood planning is not within the scope of this study, the following comments are given to indicate the type of potential offered by this area. The area should eventually be cleared of existing development to permit freedom of design for the new facilities. The new development could include an expanded and enlarged marina with a full compliment of modern facilities, high rise apartments designed to overlook the marina, park and lake, a replatting of streets to prohibit through traffic, a completely new commercial center designed to provide service to both the residents of the area and the marina facilities, integral park system and a school. Such a development could become a main attraction of the District and if designed properly could be unique throughout the area.

Central Business District

The central business district in Kenosha has most of the same problems characteristic of cities in this population class. These can be summarized as follows: not well defined, vacant

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DETERIORATING HOUSING

REHABITABLE HOUSING

CONSERVATION HOUSING

NEW HOUSING

EXISTING HOUSING

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT
CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
ST. LOUIS, MISSOURI CHICAGO, ILLINOIS

FIGURE 6

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stores, absentee ownership, close to a large industrial facility, upper stories vacant, poor traffic pattern, no high-rise apartments to attract residents, has lost two major retail department stores to outlying developments and generally has not met the competition of shopping centers. A few new store remodeling projects have been completed and others are in process, but these and a few potted trees along the street are not going to be sufficient to retain its level of importance to the entire district as well as the City of Kenosha. Additional problems include the need for new or expanded facilities for City Hall, the Library, and the Museum, and the need for more close-in parking facilities. The entire central business district should be the subject of a much more detailed study that would provide a complete analysis of the problems and a plan for the improvement of the entire area. There is an area of only 560,400 square feet devoted to off-street parking facilities in the central area. Assuming an area of 350 square feet per car necessary for parking space and aisle space, this indicates a total of only about 1,600 off-street spaces, far below the normal condition to be expected.

Kemper Hall

This neighborhood is served by Durkee School and three small parks - Bain, Baker and Eickelman - which are well located to serve the population of the area. The development in this neighborhood is almost complete and includes outstanding public and semi-public uses such as Kemper Hall Girls School, Kenosha Hospital, the County Historical Society, and SPEBSQSA Headquarters. Mixed residences of all types are found throughout the neighborhood with the exception of the area east of 4th Avenue, which is entirely single-family in character. There are only a few commercial uses in the area and the majority of these are found along Sheridan Road which traverses the center of the neighborhood from north to south. Some instances of poor platting are found near the railroad, but could be alleviated with rehabilitation and renewal which is necessary in the same general area. In addition, there are areas in the southwest section of the neighborhood that experience flooding basements and streets during heavy rains.

Southport

The Southport neighborhood is almost completely developed and contains two cemeteries, a school, Southport Park and the city's Water Protection Plant. These public and semi-public and recreation uses occupy almost 50 percent of the land area of the neighborhood. The small cemetery south of the school should be preserved and beautified to provide an attraction rather than an eyesore. The area west of Sheridan Road contains examples of poor platting and street pattern, mixed residential uses and needs rehabilitation although spot clearance is necessary in some isolated cases. Commercial development is primarily located at 75th Street and 7th Avenue in a small development. The scattered commercial uses along Sheridan Road should be isolated so as to prohibit the strip development found in the other areas of the District. Flooding basements and streets are reported at various locations throughout the neighborhood, but they do not appear in any great concentration and occur only during heavy rains.

Milltown

In 1960, the Census indicated deteriorating conditions in six blocks of this neighborhood; primarily located to the east of American Brass Company, the influence of these areas has caused some 16 blocks to be classified as deteriorating by a general survey. The full range of rehabilitation tools will be necessary to correct the situation. There are all types of mixed land uses along the Chicago and Northwestern Railway tracks on the east boundary. Although the street pattern is affected by the size and location of the American Brass Company plant, it has the effect of forcing north-south traffic to use major streets rather than dispersing throughout the neighborhood. No schools or parks are located in the area which forces residents to use facilities in adjoining neighborhoods, generally overloaded before the influx of additional population. Two substantial commercial developments are located in this neighborhood; one in the east-central section and the other in the west-central section. Both have similar problems surrounding their locations such as little or no off-street parking facilities, traffic congestion and encroachment of expanding businesses on adjacent residential areas.

Frank

The most significant problem in this neighborhood is the railroad and its associated industrial uses which divide the area into almost equal parts. This fact more than any other will probably result in the formation of two distinctly separate areas as industry along the railroad expands in the future to widen the gap between the residential areas. In 1960, the Census showed about 11 blocks in a deteriorating condition. The adverse influence of this unchecked growth has resulted in the general deterioration of the entire neighborhood and will require almost all of the renewal facilities available to correct the situation. The school is located in the south-central part of the neighborhood, while Columbus Park is located in the northwest section. element plus additional space for expanding businesses has caused encroachment on residential uses. Additional commercial uses are scattered in the neighborhood, primarily along Roosevelt Road. The neighborhood is split by two elements; the old North Shore Railroad right-of-way and Roosevelt Road. As in many other areas along its route, the old right-of-way could be put to some active use such as park or recreation area needed in the neighborhood. The high density character of development has produced a neighborhood of mixed residential types, ten blocks of which were recorded as deteriorating in the 1960 Census. The influence of these areas has caused eight additional blocks to fall into this category. The Columbus School is located in the center of this area, although occupying an extremely small site. Most of the area north and west of Roosevelt has reported flooding of streets and basements during heavy rains.

St. Joseph

The high density residential section lying east of the old North Shore Railroad represents a reasonably sound and stable area with mostly single-family homes and a scattering of two-family and multiple-family homes. A growing tendency exists for a conversion of some of the older, large single-family dwellings into a type of multiple dwelling income property. Although St. Joseph's High School occupies a large site in the east-central section, the neighborhood contains no elementary school or parks. The section west of the old North Shore property contains mixed land uses, poor platting and street pattern and

encroachments by some of the small industries in the area. The northern one-half of this small area should be cleared of residences.

Roosevelt Park

This neighborhood contains two parks, Bullamore and Roosevelt, and is centered on Roosevelt School. The residential development is primarily single-family in character and has developed into a reasonably sound and stable high density. Substantial commercial development has occurred on Roosevelt Road at 30th Street and at 39th Street, with scattered commercial uses between these eastern and western extremities of the neighborhood. Another commercial development is located at the intersection of 75th Street. Most of the residents of this neighborhood report instances of flooding basements and streets during and following heavy rain storms.

Fairview

The Chicago and Northwestern freight line facilities cut diagonally through this neighborhood and, together with the rather substantial industrial development along its route, completely isolates the southeast section from the remainder of the neighborhood. In the future, the southeast section should probably best be considered a part of the Roosevelt Park neighborhood to the south, as students in the area attend Roosevelt School. The north-west section of the neighborhood has no school or park within its boundaries and students living in the area attend McKinley School to the north. In this neighborhood, development has been almost complete as is the case with most neighborhoods in the central section of the city. Commercial development has occurred primarily in a strip along 60th Street. In 1960, the census showed seven blocks with deteriorating structures. This total has now reached about ten blocks and shows evidence of further "creeping" in the north-east section of the neighborhood where numerous persons have reported flooding streets and basements during and after heavy rain storms.

Community Action Areas

The neighborhood analysis contained in the preceding portion of this report has indicated, in broad terms, the extent of the areas' housing problem. A major cause of this problem has been the neglect on the part of the community in the past. Community attention should now be focused upon improvement of these housing conditions and preservation of their recurrence. The land use plan proposes an arrangement of land uses by broad areas. In some areas, the uses proposed differ from those now in the area, whereas in other cases a more intensive use would be made of the same area. In still others, blighted, substandard or obsolete conditions would be replac- The area is almost completely developed with a mixture of all types of residences with a majority in multiple dwelling structures and the resultant high density. Commercial facilities are generally scattered along 52nd Street and are mixed with residences, industry, and public and semi-public uses creating a confusing and unattractive appearance.

Washington Park-East

This almost completely developed, high density neighborhood is beset with practically all of the problems and causes generally found in an older deteriorating section of a city. In 1960, the equivalent of about 16 blocks had deteriorating conditions exceeding 25 percent of the total number of structures involved. The total number of blocks involved now is about 20. Some of the causes for the conditions found in this neighborhood include undesirable heavy industry, a deep ravine in the eastern section, poor original platting in the south and east sections, gradual conversion of single-family units to two-family and multiple family dwellings, mixed land uses in the eastern and southern sections, poor street patterns near the ravine, no park areas serving the high density population and scattered commercial and strip commercial development. A rather high intensity of street and basement flooding is evident throughout most of the northwestern section of the neighborhood. The measures needed to rehabilitate this neighborhood include spot clearance, rehabilitation, conservation and code enforcement.

Grant-East

This neighborhood has developed to a high density character and contains Grant Elementary School. Industrial uses are found along the old North Shore Railroad and in the northeast section where a narrow strip of residences has been choked between the industry and the Chicago and Northwestern tracks. Rehabilitation of these residences will almost surely be necessary in the near future. Although most residences in this neighborhood are single-family in character, some two-family residences and other mixed uses, commerce, light and heavy industry are located along the railroad on the east edge. Lot sizes and two-family residences have led to the high density character of the neighborhood.

Grant-West

The Grant-West neighborhood has developed in a medium density manner to about 60 percent of its potential. The only vacant land of any real significance is located in a contiguous strip along the western edge of the neighborhood. The major difficulty of the neighborhood is that it contains no elementary school facilities. This forces the children of the neighborhood to cross heavily travelled 22nd Avenue. The situation is somewhat relieved by the fact that crossing guards assist the children. Future development of the vacant land should be for single-family residences.

Harvey-East

This neighborhood is almost completely developed to a medium density character and is served by two parks along the eastern edge. Commercial service to the neighborhood is provided by a shopping center on 22nd Avenue between 20th and 22nd Streets and by a few stores at the southwestern corner of the neighborhood on 22nd Avenue at 31st Street. Almost all of the residential units are single-family homes. Harvey Elementary School serves the area and is located in the northern part of the neighborhood.

Harvey-West

Only about 30 percent of this neighborhood has been developed, primarily with single-family homes. There are no park facilities in this neighborhood. Future park facilities could be provided utilizing portions of the old North Shore Railroad right-of-way. The vacant land should continue to be developed for single-family homes. As in the Grant-West neighborhood, school

facilities are located across 22nd Avenue to the east.

Willowbrook

This neighborhood contains several public and semi-public uses - the University of Wisconsin Extension Center, Willowbrook Sanitarium, Brookside Home for the Aged, a small cemetery, the new facilities of the Kenosha Area Technical Institute and the 60-acre site of a future junior and senior high school complex. The development of residences to the present time has been composed of single-family units as it will probably continue to be in the future. The proximity to the Extension Center does lend part of the neighborhood to multiple dwelling developments, however, and the area should urbanize rapidly. Hillcrest School is just to the north and could easily serve new development. A significant wetland is located to the north and west of the Extension Center and should be protected from urbanization. A park could be located in conjunction with this area to serve the surrounding population.

Washington Park - West

The majority of the land development in this neighborhood is devoted to park use. There is no school directly serving the area, although Wilson School is not too distant for most of the children living in the area. This neighborhood should actually be expanded to the west to include the residential area just west of 30th Avenue. The old North Shore right-of-way traverses the neighborhood and presents a barrier to active cooperation of uses between the residential area and the park area. The rather large "necessary evil" in the form of the power substation is unsightly, but could be made more attractive through the planting of shrubs and trees. Commercial development is limited to the northeast corner of the neighborhood, a rather inconvenient location to residents insofar as pedestrian traffic is concerned.

Washington Park - South

This neighborhood is also adversely effected by the old North Shore and industry along its eastern edge. Industry is gradually encroaching as expansion becomes necessary on the residential uses, and the problem is complicated by the fact that the area is almost fully developed in a high density character. A school is located in the neighborhood but its location in the extreme southeast corner makes access difficult. This is further complicated by the school's location at the intersection of two major streets, a practice avoided in present site location criteria. The area contains a mixture of single-family and two-family homes with very few multiple-family units. Commercial uses are scattered along 52nd Street and mixed with residential, industrial and public and semi-public uses creating a confusing pattern. The 1960 Census indicated five blocks had more than 25 percent of their total structures in a deteriorating condition. Now this total has increased to about 11 blocks with evidence of scattered substandard units that should be removed, and a large number of homes that should be rehabilitated.

"40"

This neighborhood is dominated by the American Motors Corporation's main plant which has gradually expanded over the years and has acquired some residential property for employees parking space. In 1960, the Census showed seven blocks deteriorating; a recent general survey indicated the area affected now totals 17 blocks. The area has developed to a high density level with no school or park and should eventually be entirely cleared for industrial expansion purposes.

Columbus

The Columbus Neighborhood contains the majority of the most intensely developed section of the "Uptown" shopping area. This area, located at the intersection to three major streets, has the typical problems of most developments of this type - traffic, parking and space for expansion. Although traffic movement is somewhat aided by the wide pavement of 22nd Avenue, the intensity of shopping development and the slow movement of potential shoppers searching for a parking space tend to reduce the overall effect. Off-street parking space is limited and the need for this ed by new uses of a higher standard. The land use plan can readily guide new construction into areas proposed for growth; however, the transformation of the older areas will require stronger measures. Public actions under the urban renewal processes are recommended and explained in Appendix G.

Map 20 shows the location of blocks having more than 25 percent of their total structures in a deteriorating condition as determined by the 1960 Census of Housing. In order to determine the effect of time and the influences of these areas delineated in 1960, a "windshield" survey was made of the development near and around these areas and in some sections of the District suspected of having deteriorating conditions. The survey was not intended to precisely locate possible renewal or rehabilitation project boundaries, but rather to indicate general area of concern which should be the subject of further intensive neighborhood analysis and planning. The areas deemed deteriorating as a result of this survey have been enclosed in various areas with notes indicating appropriate action suggested. The District's future urbanized area has been classified into three general categories as described in the following text. Figure 6 shows some of the various housing conditions in the District.

Urban Renewal Areas

These are areas in which the physical condition of the structures has become deteriorated because of obsolescense or poor initial development, resulting in a total urban environment that is unsatisfactory. Some of the structures within these areas are substandard and many of the other structures are in various stages of deterioration. These are the areas in which various urban renewal programs should be employed and from which urban renewal projects should be selected.

Conservation Areas

These are the existing areas in which conditions are generally satisfactory and in which there are few substandard conditions.

Objectives and Principles

Prior to the advent of planning in the United States, little thought was applied to controlling the character and direction of urban growth. The pattern of urban development was largely determined by the topography of the site, water

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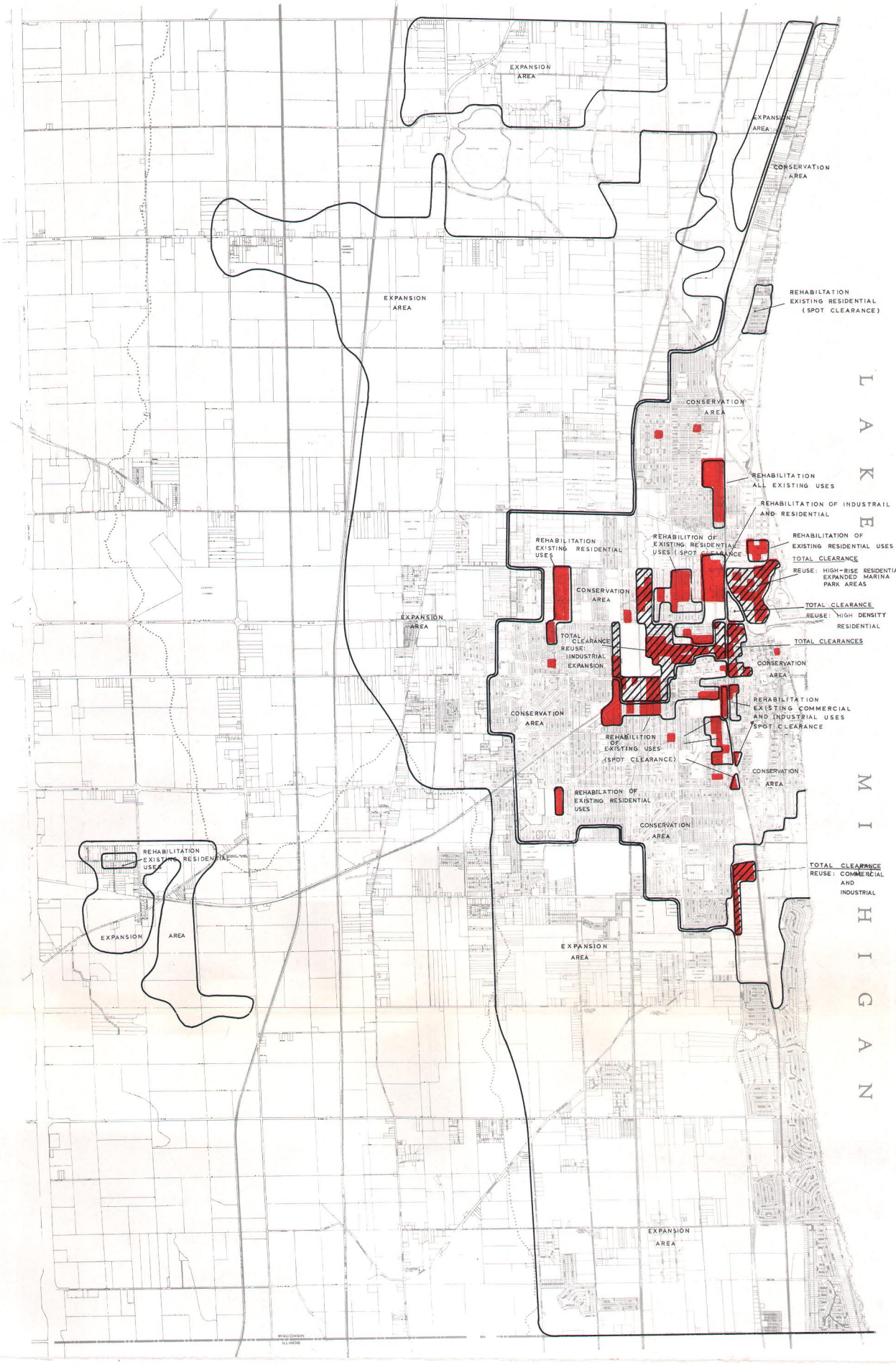

COMMUNITY ACTION AREAS

25% - 100% OF BUILDING DETERIORATING

CLEARANCE AREA

SOURCE: U.S. CENSUS OF HOUSING 1960

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT
CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
ST. LOUIS, MISSOURI CHICAGO, ILLINOIS

MAP 20

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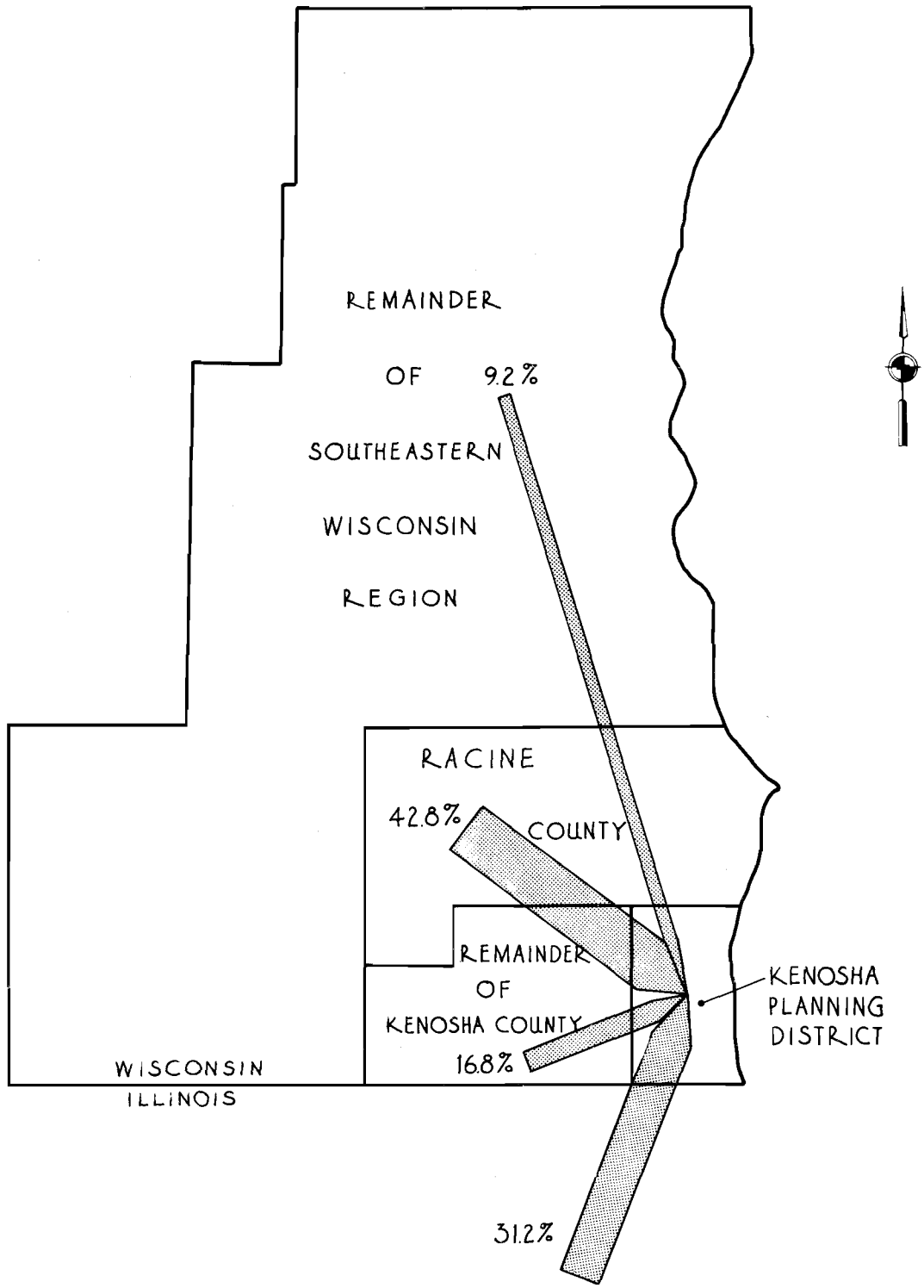
PERCENTAGE DISTRIBUTION OF FIRST WORK TRIPS TO KENOSHA PLANNING DISTRICT (EXCLUDES TRIPS ORIGINATING IN KENOSHA PLANNING DISTRICT)



SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

FIGURE 5

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areas, the sometime haphazard location of commercial and industrial centers, and the efforts of real estate speculators. Because of this lack of direction, some areas unsuitable for land use have been developed; other areas are unduly congested, while still other sections are so sparsely settled that public facilities and services can only be supplied at great expense.

The central business district, as well as most industrial areas, is firmly established in the Kenosha District and could not be altered substantially even if it were desirable. Future industrial sites, the location and size of small commercial centers, future residential areas, and related schools, parks and other public improvements can, however, through proper planning, be directed into a balanced, integrated and efficient pattern.

The land use plan should establish certain objectives and principles which, if followed, will guide future development and create an efficient and desirable community pattern. The Southeastern Wisconsin Regional Planning Commission has developed eight land use planning objectives and supporting principles. In addition, a comprehensive list of standards has been developed to assist in the land use planning procedure leading to the development of three alternate land use plans for the region. These three plans are referred to as the Controlled Existing Trend, Corridor, and Satellite Plans. The eight objectives and their supporting principles are listed in the following:(27)

Objective #1

A balanced allocation of space to the various land use categories which meets the social, physical, and economic needs of the region's population.

Principle. The planned supply of land set aside for any given use should approximate the known and anticipated demand for that area.

Objective #2

A spatial distribution of the various land uses which result in a compatible arrangement of land uses.

Principle. The proper allocation of uses to land can avoid or minimize hazards and dangers to health, safety, and welfare, and maximize amenities and conveniences in terms of accessibility to supporting land uses.

Objective #3

A spatial distribution of the various land uses which will result in the protection, wise use, and development of the natural resources of the region.

Principle. The proper allocation of uses to land can assist in maintaining an ecological balance between the activities of man and the natural environment which supports him.

Soils - Principle: The proper relation of urban and rural land use development to soils can serve to avoid many environmental problems; aid in the establishment of better regional settlement patterns; and promote the wise use of an irreplaceable resource.

Inland Lakes and Streams - Principle: Inland lakes and streams aid in the recharge of ground water aquifiers and in the maintenance of ground water tables in surrounding soils; contribute to the atmospheric water supply through evaporation; provide a suitable environment for desirable and sometimes unique plant and animal life; provide the population with opportunities for certain scientific, cultural and educational pursuits; constitute prime recreational areas; and provide a desirable aesthetic setting for certain types of land use development.

Wetlands - Principle: Wetlands support a wide variety of desirable and sometimes unique plant and animal life; assist in the stabilization of lake levels and stream flows; trap and store plant nutrients in runoff, thus reducing enrichment of surface waters and obnoxious weed and algae growth; aid in the recharge of ground water and aquifiers and in the maintenance of ground water tables in surrounding soils; reduce storm water runoff and provide areas for flood water impoundment and storage; reduce stream sedimentation; and provide the population with opportunities for certain scientific, educational, and recreational pursuits.

Woodlands - Principle: Woodlands assist in maintaining unique natural relationships between plants and animals; reduce storm water runoff; aid in the recharge of ground water acquifiers and the maintenance of ground water tables in surrounding soils; contribute to the atmospheric water supply through transpiration; aid in reducing soil erosion and stream sedimentation; provide the resource base for the forest product industries; provide the population with opportunities for certain scientific, educational and recreational pursuits; and provide a desirable aesthetic setting for certain types of land use development.

Wildlife - Principle: Wildlife, when provided with a suitable habitat, will provide the population with opportunities for certain scientific, educational and recreational pursuits; provide a food source; aid significantly in controlling harmful insects and other noxious pests; and provide an economic resource for the fur and fishing industries.

Objective #4

A spatial distribution of the various land uses which is properly related to the supporting transportation, utility, and public facility systems to assure the economic provision of utility and municipal services.

Principle. The transportation and public utility facilities, and the land use pattern which these facilities serve and support are mutually interdependent in that the land use pattern determines the demand for and loadings upon transportation and utility facilities and these facilities, in turn, are essential to and form a basic framework for land use development.

Objective #5

The development and conservation of residential areas within a physical environment that is healthy, safe, convenient and attractive.

(27) Planning Report No. 7 - Volume Two, Alternate Plans and Forecasts 1990, Chapter II, by the SEWRPC.

Principle. Residential areas developed in neighborhood units can assist in stabilizing community property values; preserving residential amenities, and promoting efficiency in the provision of public and community service facilities; can best provide a desirable environment for family life; and can provide the population with improved levels of safety and convenience.

Objective #6

The preservation and provision of a variety of suitable industrial and commercial sites, both in terms of physical characteristics and location.

Principle. The production and sale of goods and services are among the principal determinants of the level of economic vitality in any society, and the important activities related to these functions require areas and locations suitable to their purpose.

Objective #7

The preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability, give form and structure to urban development, and provide the basis for the ultimate attainment of a balanced year-round outdoor recreational program providing a full range of facilities for all age groups.

Principle. Open space is the fundamental element required for the preservation, wise use, and development of such natural resources as soil, water, woodlands, wetlands and wildlife. It provides the opportunity to add to the physical, intellectual, and spiritual growth of the population; it enhances the economic and aesthic value of certain types of development; and is essential to outdoor recreational pursuits.

Objective #8

The preservation of land areas for agricultural uses in order to provide for certain special types of agriculture, provide a reserve for future needs, and insure the preservation of those unique rural areas which provide wildlife habitats, and which are essential to the shape and order of urban development.

Principle. Agricultural areas, in addition to providing food and fibre, contribute significantly to maintaining the ecological balance between plants and animals; provide locations proximal to urban centers for the production of certain food commodities which may require nearby population concentrations for an efficient production-distribution relationship; and provide open spaces which give form and structure to urban development.

Environmental Corridors

One of the most important tasks performed by the SEWRPC as a part of the regional land use planning effort was the identification and delineation of those areas of the Region in which concentrations of scenic, recreational, and cultural resources occur and which, therefore, should be preserved and protected. These elements include: (1) lakes, rivers, and streams and their natural flood plains; (2) wetlands; (3) forests and woodlands; (4) wildlife habitat areas; (5) rough topography; (6) significant geological formations; and (7) wet or poorly drained soils. In addition to these integral parts of the natural resource base, there are four additional elements which, although not directly natural resources as such, are closely related to that base. They are: (1) existing outdoor recreation sites; (2) potential outdoor recreation and related open space sites; (3) historic sites and structures; and (4) significant scenic areas or vistas.

When the seven primary natural resource elements were delineated on a map of the region, they were found to appear in linear patterns which can be thought of as environmental corridors, a terminology first expressed in Wisconsin in a report on Recreation by the Department of Resource Development in November, 1962. A large majority of the four resource-related elements, when delineated, fall within the environmental corridor pattern. (See Map 12.)

The necessity of preserving and protecting these environmental corridors from the encroachments of the rapidly urbanizing areas in the Region and specifically the Kenosha District cannot be reasonably disputed. As a result, the SEWRPC has assigned the designation of primary environmental corridor to areas covering 473.6 square miles of land in the Region. The primary corridor is defined as an area containing at least three of the foregoing 11 natural resource and resource-related elements. Areas having less than three of the elements are termed secondary environmental corridors. This represents 17.6 percent of the Region's total land area and obviously portrays a firm conviction of philosophy in preserving these areas. To further illustrate their importance, the areas delineated as primary environmental corridors are considered inviolate and are identical in configuration on each of the three alternate land use plans prepared by the SEWRPC. This has a greater degree of significance as each of the three plans is based on a vastly different philosophy of the future arrangement of land in the Region.

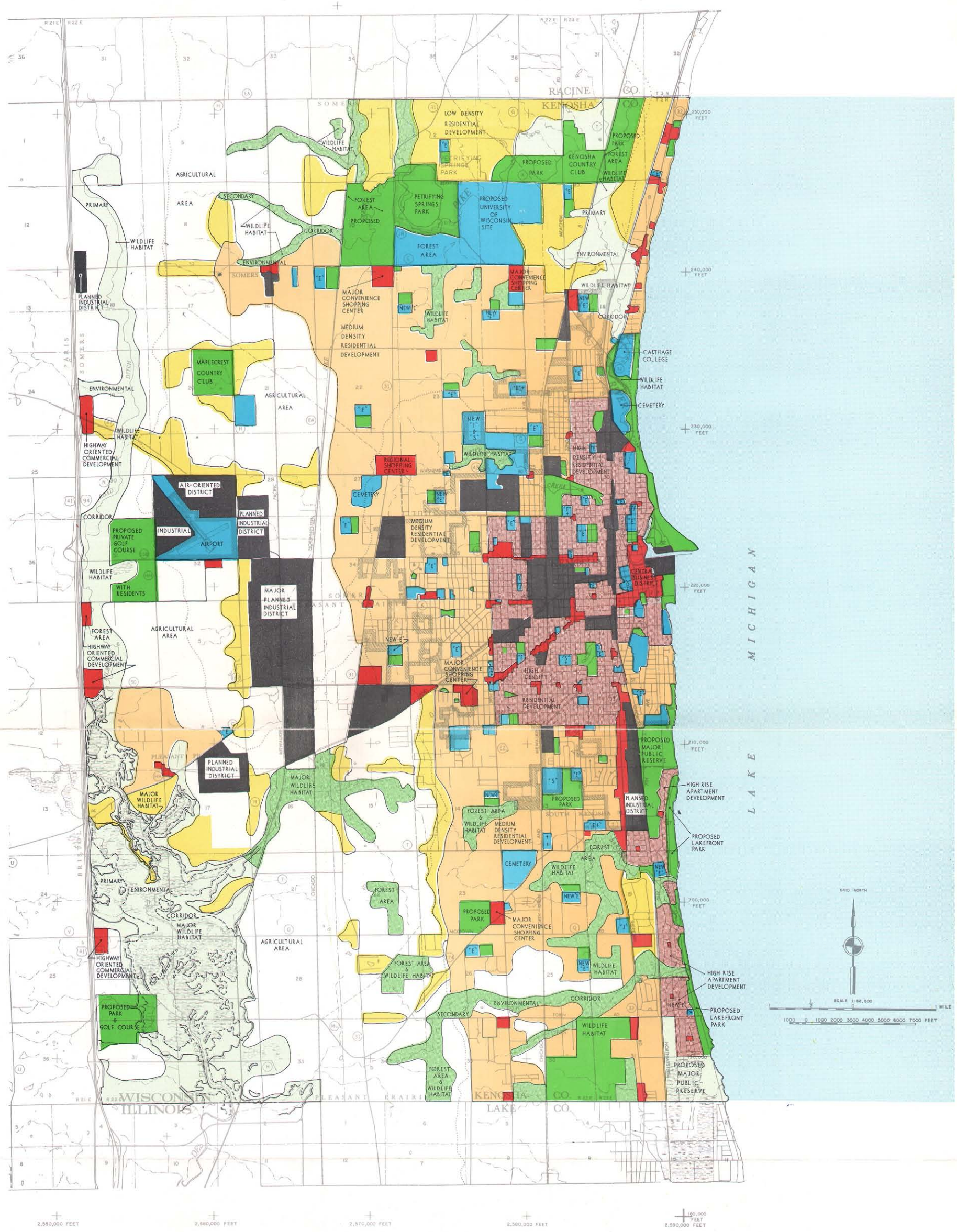
Land Use Plan

The proposed land use plan (See Map 21) indicates the general arrangement of residential, commercial, industrial, public and semi-public, recreational and open space uses required to serve the District's estimated 1990 population of 181,000 persons. The land use plan presented in this portion is based on the concept of controlling the existing development trends of the District. (See Appendix H for a list of review meetings held during the development of the land use plan.)

General

In general, the urban pattern should be more spacious than in the past, but still compact and not broken by large tracts of vacant land. The development should also be balanced as this type of pattern will provide a greater dispersion of traffic and economies in public services. With adequate area available for future development, the population need not be too dense; however, it should avoid the danger of being too sparse or too scattered since an extremely low population density greatly increases the per family cost of public services and facilities.

It is quite likely that there will be a sharp line between the "urban" and "rural" elements in the future. The urban development will more likely fade gradually into the countryside except in the area south of STH-50 along the subcontinental divide where the magnitude of urban



LAND USE PLAN

- LOW DENSITY RESIDENTIAL
  LESS THAN 7.3 PERSONS PER NET RESIDENTIAL ACRE.
- MEDIUM DENSITY RESIDENTIAL
  7.3 - 22.8 PERSONS PER NET RESIDENTIAL ACRE
- HIGH DENSITY RESIDENTIAL
  MORE THAN 22.8 PERSONS PER NET RESIDENTIAL ACRE.
- RETAIL AND SERVICES
- MANUFACTURING
- GOVERNMENTAL & INSTITUTION
  E - ELEMENTARY + - PAROCHIAL
  J - JUNIOR HIGH
  S - SENIOR HIGH
- 100 YEAR FLOOD
- 10 YEAR FLOOD
- PARK & RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- AGRICULTURAL & VACANT

MAP 21

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH A FEDERAL GRANT FROM THE HOUSING AND HOME FINANCE AGENCY, UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954, AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

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service "across" this line could produce a more clearly defined break. Many of the residences in the rural areas, because of economic considerations, will be urban in nature, with members of the family employed in urban industrial and commercial activities. Density in the rural positions of the urban area, however, should be kept as low as possible. Maximum advantage should be obtained from the area's lakefront location to preserve and enhance its appearance.

Residential Uses

The land use plan shows three categories of residential use; (1) high density (22.8 persons or more per net residential acre); (2) medium density (7.3 to 22.8 persons per net residential acre); and (3) low density (7.3 persons or less per net residential acre). (A net residential acre is defined as an acre of land devoted entirely to residential uses.) Two separate low density categories have been taken into account for purposes of future zoning control but they are not delineated on the land use plan. These would include plans where minimum lot areas allowed would vary from one acre to five acres in size.

The plan assumes that public sanitary sewer service would be provided to all high and medium density areas and to those low density areas in the extreme northern section of the District. Ordinarily, this latter service might not be possible, but services will have to be provided to the University of Wisconsin-Parkside campus site and extensions to this major system become much more feasible.

In the southern portion of the District the area of residential development is generally confined by the subcontinental divide, while in the northern portion the western boundary is the Chicago and Northwestern Railway freight line facilities. The proposed plan provides a total of approximately 18,850 acres of residential land of which 2,800 acres are in the high density range; 13,100 acres are in the medium density range and the remaining 2,950 acres are devoted to low density development. Thus, the plan makes ample provision for the estimated future residential area, which should occupy about 18,650 acres. In other words, the plan is generous to the point that a portion of the area shown in urban residence use will not be fully developed by the time the population reaches a total of 181,000 persons.

The type of development proposed by the plan for residential areas is commonly referred to as the planned neighborhood unit concept (See Appendix I). These neighborhoods should be bounded by major streets and be centered upon an elementary school and neighborhood park. Neighborhood shopping facilities should be provided at major street intersections with traffic circulation designed to go around and not through the neighborhoods. In order to accomplish this objective, residential streets should be narrow and discontinuous in order to discourage heavy or fast through traffic.

It is not necessary for an entire neighborhood to be developed with single-family homes. Properly arranged combinations of single-family homes, duplexes and multiple dwellings may be placed in each neighborhood, although careful attention should be given to the location of these uses. While satisfactory locations in outlying areas may be provided for rental-residential uses such as duplexes and apartment buildings, particularly in areas adjacent to shopping centers or major centers of employment, most of the two-family and multiple dwellings will and should probably continue to locate near the center of the city.

One of the most important proposals of the land use plan affecting residential uses involves the area along the lakefront from 85th Street south to 122nd Street. This area was originally platted many years ago as a single-family development and although several homes are now scattered throughout the area, full potential of the land has never been realized. The largest single reason for this, of course, was that public sanitary sewer service was never extended to the area. The type of development proposed by the land use plan would involve complete revision of the area into a high rise, high density area with parks along the lakefront and small commercial centers located at strategic points for service to residents of the area. Schools would also be located in the area. If developed with an overall plan as a guide, this area could be similar to the type of development along the lakefront in Chicago. The public ownership of the lakefront property would also enable proper protective measures to be taken to protect and slow the current slumping problems in the area. This area of lakefront is currently receding at the rate of about six feet per year. The value of such an entire development of high density buildings would make protection expenditures more beneficial and more feasible. Eventually all of the lakefront property should be acquired.

Commercial Uses

The land use plan proposes a somewhat different approach to the provision of commercial facilities than has been the past experience in the Kenosha area although recent trends have been more in tune with modern planning goals. In the past, the only major commercial service was provided by thecentral business district. Recently, however, major department stores have left their downtown locations for new shopping centers located in the outlying areas. Neither of these centers alone presents a threat to the security of the central area but together form considerable competition for trade from the population. The 181,000 residents expected by 1990 cannot possibly be served by the present facilities. To alleviate this problem, the plan proposes a total of 1,260 acres of land for commercial uses thereby meeting the estimated need for 1990.

Primarily there would be two major regional shopping centers - one at the existing central business district and a new shopping center at the intersection of STH-31 and STH-43, encompassing about 70 acres. The remainder of the new commercial facilities would be strategically placed throughout the area as indicated on the proposed plan and could be referred to as convenience centers. One of the basic objectives of the area should be to undertake the measures necessary to retain the importance of the central business district as the center of the Planning District. It should, however, retain this position through its competitive energy and not by arbitrary prevention of the construction of competing centers by zoning actions. The smaller shopping areas should be designed to meet the convenience needs of residential areas and provide grocery stores, drug stores, filling stations, etc. Such facilities preferably should be grouped together into centers providing ample parking areas and interfering as little as possible with adjacent residential uses.

The plan also recognizes that there will be the normal intensification of development in commercial "strips" already in existence but these should be limited and controlled.

Industrial Uses

The location of transportation facilities such as railroads, major highways and the lake will influence industrial locations in the future as it has in the past. Modern industries need large areas for their one-level operations, for adequate off-street parking and loading facilities, landscaping and expansion. Many industrial processes have been improved and the emission of smoke, gas, dust and noise has been eliminated or greatly reduced, so that they are not as objectionable as they were some years ago. The land use plan provides for industrial sites which are more than adequate in area and have convenient access and reasonably pleasant surroundings.

Industries can advantageously be placed in outlying locations, with the advantage of reversing the traffic flow at peak hours. All new industrial growth should not, however, be located in outlying districts as many of the older industrial areas should be redeveloped for the newer types of industries. Such a location is proposed in the land use plan along Sheridan Road between 78th Street and 91st Street. This particular area is ideally suited to small establishments either just starting business or to businesses which are too cramped somewhere else but do not require a great deal of space for their operations. In addition to these types of industrial locations, several are offered in the plan in areas occupied by deteriorating residences which should be removed to allow existing industries to expand.

About 3,250 acres of land has been indicated for industrial pruposes by the land use plan. Against a projected need of only 2,500 acres this might be thought of as a gross over-provision of industrial land. However, the process of industrial growth, and especially the deversification so essential to the District's economy, is a highly competitive market. Those communities that have a selection of possible sites to offer a prospective industry, all other factors being equal, generally fare better than those who have not allowed enough latitude in their projections. The plan proposed for the Kenosha District offers industrial sites that are primarily oriented to water, rail, highway, and air transportation or a combination of these facilities. Proper and timely extension of provision of service facilities to these various areas must be practiced to avoid putting an excessive amount of land on the market at the same time and producing a scattering of developed sites. The largest and probably most important of the industrial areas is proposed to the west of the future urbanized area in the central portion of the District. One of the most important facets of industrial development is that each of the areas should be planned to offer a variety of different site areas. Quite obviously, this area is best suited to large sites and most of these should be oriented to this particular location.

Public and Semi-Public Uses

The estimated need for future land in this category is about 2,150 acres while the land use plan provides for a total of approximately 2,300 acres of land for this use. The site for the new University of Wisconsin-Parkside Campus in the northern section of the District dominates this category with an area of 690 acres. This area is particularly scenic and should make an excellent site for the university. Other large sites include a 60 acre site for a proposed junior and senior high school, the 70 acre site occupied by Carthage College, and the 92 acre site occupied by a cemetery in the south-central section of the District. There are of course, numerous somewhat smaller public and semi-public uses scattered throughout the District. These include existing schools, churches, cemeteries, and various public buildings. In addition, the land use plan illustrates the tentative locations of proposed schools and parks.

Park, Recreation and Open Space Uses

As indicated previously, the Kenosha District already has a fine system of parks to serve as a basis for the continued development of recreation areas that will be required by the estimated 1990 population. Additional scenic areas within the community and, particularly substantial parts of the lakefront, should be preserved and enhanced as part of the park system. Neighborhood parks should be developed in conjunction with elementary schools. Public and semi-public uses such as churches, institutions, clubs and golf courses provide the community with necessary open spaces. When there are large areas such as these in outlying locations, possible combination with a greenbelt around the city should be encouraged. Such an opportunity exists in the Kenosha Planning District and should not be allowed to go unnoticed.

The importance of the environmental corridors has already been explained and the primary corridors as proposed by the SEWRPC have been incorporated into the land use plan with certain modifications as determined by the analysis of their location. In addition to the primary corridors, a rather extensive scattering of secondary corridors was in evidence and these also have been incorporated into the land use plan. The analysis process also indicated several modifications of the location of these corridors. Although there are a few instances of isolated natural resource or resource-related elements, most of these areas have been included in the various corridor systems.

The anticipated need for park and recreational purposes in the District amounted to about 2,440 acres. The proposed land use plan reserves a total of approximately 3,010 acres for this purpose, a more than ample provision. There are six major park areas proposed in the land use plan. Three are located in the northern section of the District, two of which flank the Kenosha Country Club and the other, west of Petrifying Springs Park. A proposed private combination golf course and residential area southwest of the airport and a large park in the southwest corner of the District are located in the western portion of the area while a major public preserve area is located along the lakeshore adjacent to the Chicago and Northwestern Railway facilities south of the City's Water Protection Plant. The latter area is one of real significance as it includes some sand dunes and the recession of the shoreline has revealed remains of an old forest and many Indian artifacts. This area could become an interest point of unusual value if preserved and protected. There are 25 neighborhood park sites proposed to be developed in conjunction with future elementary schools as well as other parks at selected locations such as the

park proposed as a part of the overall redevelopment of the Carol Beach area.

There are three primary environmental corridors shown on the land use plan. They are as follows: (1) The western corridor reaching along almost the entire west boundary of the district and involving the flood plain of the Des Plaines River. The plan also shows the areas near the river that would be flooded by storms or once in ten and once in 100 years intensity. These areas have been honored by the plan and no new intensive urban development is proposes to encroach upon those areas.

(2) The northeast corridor actually begins by surrounding the proposed new park west of STH 31 and north of CTH E and includes Petrifying Springs Park, the site of the new university, the two parks proposed adjacent to the Country Club and the club itself, and then turns south to encompass the flood plain of the Pike River, Carthage College, St. George Cemetery, the complex of parks along the lakefront and terminates by surrounding the Simmons Island Park. This corridor could truly become one of the finest systems of its kind in the Region.

(3) The last remaining wet prairie in the State of Wisconsin and one of the last in the entire Midwest is located in the extreme southeastern corner of the District. This is a truly outstanding area of cultural and scenic value and should be preserved and protected against encroachment so as to provide an endowment for the benefit of future generations. A private, national organization, the Nature Conservancy, has already expended funds acquiring part of this area. This practice should be continued by interested local agencies as well, to insure total acquisition.

The total land area proposed for inclusion by the primary corridors amounts to about 5,800 acres or 10.7 percent of the total land area of the Planning District. The secondary corridors account for another 2,760 acres or 4.8 percent bringing the total land area in environmental corridors to 8,560 acres, representing 15.5 percent of the District's total area. It is extremely doubtful if the resources of the District will ever be in a position to acquire by purchase all of this land. This, however, is not particularly important so long as control through adequate regulation of development is maintained. This aspect will be examined in greater detail in the Parks and Recreation portion of the Community Facilities Study.

Practically all of the remaining area in the District, not used for an urban purpose, can be devoted to agricultural uses. The Kenosha area is extremely fortunate in this respect, because while the land to be urbanized will be taken out of crop production, that which remains can still be actively used for this purpose. Such is not always the case in our urbanizing areas.

Population Distribution - 1990

The pattern envisioned for the development expected to occur over the next 24 years is indicated on Map 22. A much more dispersed type of residential development is proposed with a very extensive growth to the south and northwest. A somewhat more scattered growth is forecast in the extreme southern section of the District. In actuality, the resulting pattern of development will be even more of a linear pattern than presently exists though it will cover a much wider area.

Population Density - 1990

The future pattern of population density would call for an increase in the total area developed at the high density level of more than 22.8 persons per net residential acre (See Map 23). This would be occasioned by the previously mentioned lakeshore development and smaller areas as yet not completely developed. Generally, the high density areas have been maintained in their normal position close to the central business district with the medium density areas spread out from the center north and south with the major low density areas still further removed from the urban center.

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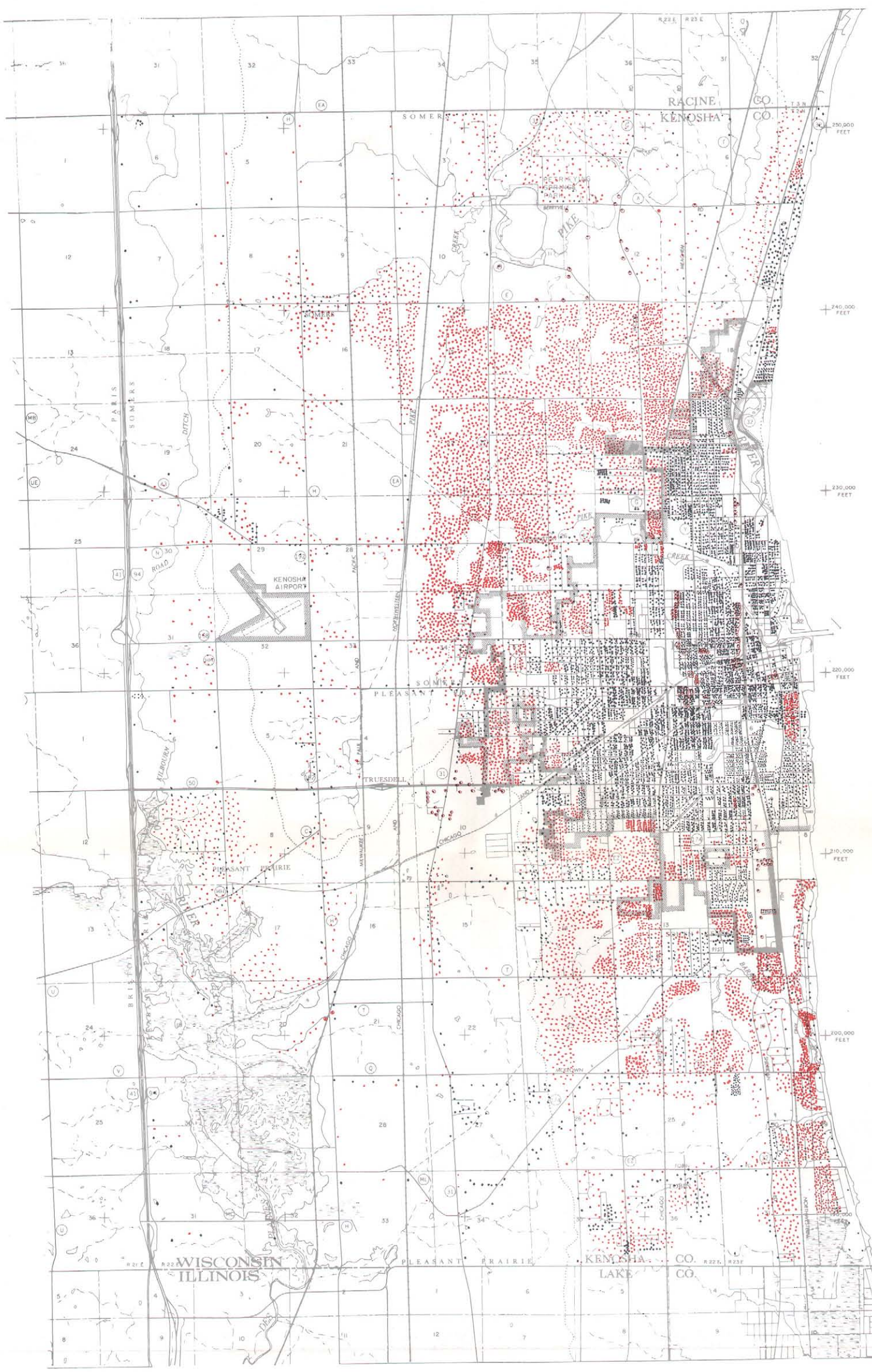

POPULATION DISTRIBUTION 1990

- ONE DOT EQUALS 10 PERSONS - 1964
- ONE DOT EQUALS 10 PERSONS - 1990
- POPULATION TO BE REMOVED

MAP 22

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

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SAINT LOUIS, JANUARY 1967 MISSOURI

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POPULATION DENSITY 1990

HIGH DENSITY RESIDENTIAL
OVER 22.8 PERSONS PER NET RESIDENTIAL ACRE

MEDIUM DENSITY RESIDENTIAL
7.3-22.8 PERSONS PER NET RESIDENTIAL ACRE

LOW DENSITY RESIDENTIAL
LESS THAN 7.3 PERSONS PER NET RESIDENTIAL ACRE

MAP 23

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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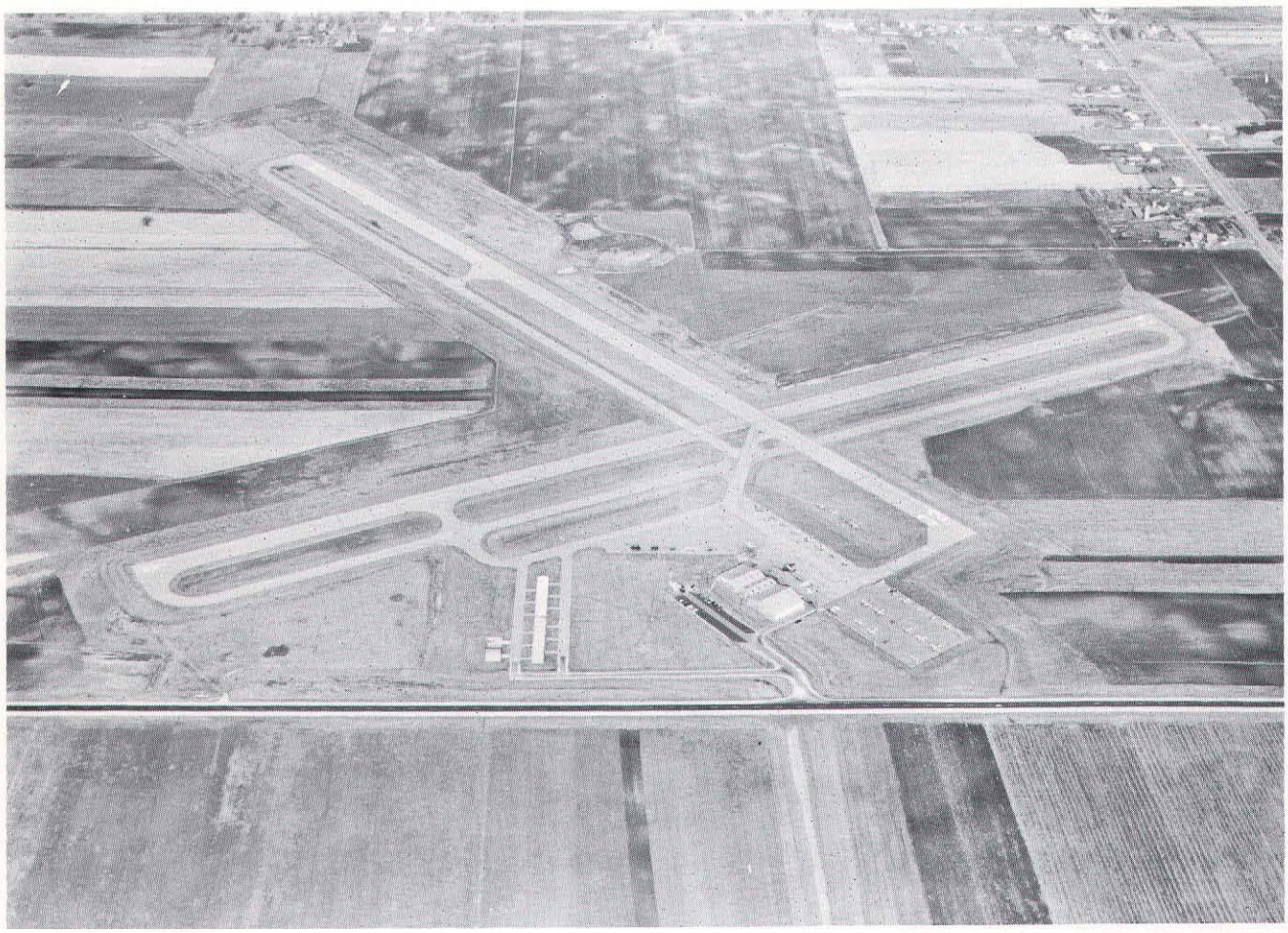

The steady increase of private flying in addition to the potential for industrial development and its associated use of airplanes near the airport, makes the Kenosha Municipal Airport an important segment of the overall District Transportation System.

Chapter VI

TRANSPORTATION

Transportation - although not the only consideration in providing for man's welfare - plays a predominant role in the life of an urban area. Adequate transportation facilities are necessary for the well-being of any community, and the provision of adequate transportation facilities should be of major concern in planning for a community's needs. The movement of persons and goods to and from such places as work, shopping, home, and recreation requires the development of an efficient transportation system. Inadequate transportation facilities can stifle growth whereas economical and convenient transportation facilities can stimulate an otherwise static growth pattern.

Because of the importance of transportation, the analysis of future needs should be based upon sound and extensive factual data for the area involved. In a rapidly growing area such as the Kenosha Planning District, long-range planning is necessary to insure that planned improvements actually can be provided to adequately accommodate immediate needs as well as foreseeable future needs. Such transportation demands for a specific community must be inter-related not only with the surrounding area and other communities nearby, but also with requirements for the region involved. Such a study has been undertaken by the Southeastern Wisconsin Regional Planning Commission, of which the City of Kenosha and the towns of Pleasant Prairie and Somers are participating units of government. The study contained in this chapter is a detailed analysis of the transportation facilities of the Kensoha District and has been coordinated with studies of the Southeastern Wisconsin Regional Planning Commission. Of extreme importance, is the fact that a plan, once prepared, must also be kept up to date in order to insure that maximum potential benefits can be derived by the public from following the plan.

Airport

Although the Kenosha Municipal Airport is not provided with commercial passenger service, it does serve a most important function - that of a base for private planes and for substantial shipments of freight cargo. Both of these aspects are expected to increase substantially in the future and for this reason the airport must keep pace with existing and future requirements.

Existing Conditions

The Kenosha Municipal Airport occupies 145 acres on a site about one and one-half miles east of Interstate 94 on the north side of STH-158. STH-192 (88th Avenue) forms an eastern border to the site. The topography of the entire area is generally flat and the field elevation has been established at 729.50 feet. Both runways are paved to a 75 foot width and are equipped with medium intensity lighting spaced at 200-foot intervals. Additional runway data is shown in Table 45.

The administrative section of the airport is located in the smaller of two hangar buildings and occupies about 1,200 square feet of floor space of the 7,200 square feet of building area. The administration area comprises the lounge area, airport manager's office, and office facilities of a private flying service. The remainder of this hangar and all of the larger buildings (10,000 square feet of area) are used for repair and storage facilities for aircraft. A paved parking apron 150 feet by 80 feet, immediately to the northeast of these two buildings serves as a parking and loading-unloading area. The terminal area is well located with respect to the runways and taxiways. Although the airport does not have a separate terminal building as such, the necessity for such a structure is considerably reduced by the lack of commercial airline service and the existing facilities should be adequate for a number of years. Map 24 shows the layout of the present airport facilities and recommended improvements. It also shows a possible scheme for the development of an industrial subdivision adjacent to existing airport property.

The following data furnished by the Airport Manager and the Kenosha Chamber of Commerce indicates the vast increased use of the airport facilities since its completion in 1959. The number of based planes has increased from 4 in 1960 to 60 in 1966 and the number of takeoffs and landings has increased from 33,000 between June 1, 1965 and July 1, 1965 to 36,500 between June 1, 1966 and July 1, 1966.

Table 46

AIR FREIGHT

Year	Number of Pounds
1963	229,388
1965	254,180
1965, June - 70 shipments	29,426
1966, June - 95 shipments	43,547

Source: Kenosha Chamber of Commerce

In the past year, takeoffs and landings at the airport have increased more than 10 percent. Air freight activity increased about 11 percent from 1963 to 1965, and the June monthly comparison between 1965 and 1966 shows an increase of about 48 percent (See Table 46).

Future Use

There is every reason to anticipate that the use of the Kenosha Municipal Airport will substantially increase in the future. Although it is unlikely commercial passenger service will ever be provided, the close proximity of major airports at Milwaukee and Chicago relieves this situation. The overall growth of the area should, however, attract many additional private aircraft. The growth of private flying in the country is increasing at a substantial rate. The activity centering around private flying in the Kenosha area has indicated a still faster rate of growth as evidenced by the fact that the number of locally based planes increased from four to 60 in less than six years. Although it is doubtful that such a vigorous trend will continue, certainly a substantial growth should be anticipated.

A completely new and as yet locally unexplored resource holds additional promise for growth at the airport - that of the airport industrial subdivision. The increasing reliance on air transportation has promoted industry to seek new sites on or adjacent to airports. The growth of the airport industrial subdivision, particularly in the last 10 years, has followed closely the tremendous increase in air travel, especially private flying by businessmen.

At the present time there are about 200 airport industrial subdivisions in various stages

Table 45

EXISTING AIRPORT DATA

NAME KENOSHA MUNICIPAL AIRPORT

AREA 145.09 ACRES - CONSTRUCTION COMPLETED 1959

RUNWAY DATA

DIRECTION	LENGTH	BEARING	SURFACE
NE-SW	3,300'	N63-50E	Hard
NW-SE	3,600'	S36-13E	Hard

LIGHTING

RUNWAYS Medium-Intensity

TAXIWAYS Low-Intensity

BUILDINGS

ADMINISTRATION-HANGAR 7,200 Sq. Ft.

HANGAR 10,000 Sq. Ft.

BASED PLANES 60 HANGAR SPACE 40 Planes (varies)

TIE-DOWN SPACE 40 Planes

Fire Fighting provided by Town of Somers

Snow Removal Equipment available at Airport

Source: Airport Manager

AIRPORT PLAN

LEGEND

- EXISTING PAVED RUNWAY
- PROPOSED PAVED RUNWAY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- CLEAR ZONE BOUNDARY

MAP 24

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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JANUARY 1967

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of development in the United States. A number of inter-related factors have influenced their development and are listed as follows: (1) Certain industries have found proximity to airports economically advantageous since air freight suits their distribution needs; (2) businesses tend to see a prestige location in the complex of architecturally distinguished facilities often located at modern airports; (3) level, open ground away from highly developed areas is also well suited to the needs of the new large-scale, horizontal industrial facilities; (4) the presence of an effective highway system designed to serve the airport also provides direct access to nearby industrial districts; and (5) utilities and other services designed to serve the airport are also available to these industrial districts. With reference to Item 4, the Kenosha Municipal Airport is located midway between the existing IH-94 and the proposed new industrial highway to be located in the corridor between STH-31 and the Chicago and Northwestern Railway freight line tracks.

In addition to the usual zoning controls in effect, protective covenants, deed and lease restrictions and development standards control the type, character, and appearance of the development. Approval of plans and specifications prior to construction is typically included in such documents as well as restrictions on preferred or prohibited uses, height, building setbacks, construction materials, signs, parking and loading areas, outside storage and operations, various nuisances such as noise, glare, smoke, electronic interference, landscaping and ground care and fire and safety hazards. All of these elements help provide an area that is well planned, efficiently operated and a definite benefit to the area.

Airport Plan

Map 24 shows the general improvements recommended for the airport. Of primary importance is the extension of the NW-SE runway from 3,600 feet to 5,000 feet. At the same time this runway should be widened to 150 feet. These improvements will make the airport and the proposed industrial subdivision more attractive to prospective industries because of its ability to accommodate all of the corporate jet aircraft contemplated to be in service during the next 10-15 years. Those industrial sites located within the line of sight between runway ends should be developed in a latter stage. The provision of a control tower to regulate takeoffs and landings will be a necessity as development intensifies. Although the airport recently did accommodate a pure-jet aircraft of the type generally used by these corporations, the present runway length is not considered adequate for normal use by this type aircraft. The taxiway adjacent to this runway should be extended. This extension of the NW-SE runway would of course necessitate the acquisition of approximately 35 acres of land to the north-west of the present site. Extreme care should be used in allowing residential development near the airport because of the noise created by jets.

The airport plan also recommends the eventual construction of additional tee-hangars to the west of the administration area and the construction of a new hangar southeast of the largest existing hangar. The parking apron serving the hangar area would also be extended approximately doubling its present size. Another improvement, to be installed in the near future, is a non-directional homer, a system which allows instrument approach to the airport without radar equipment.

Air Space Requirements

In addition to the ground space occupied by the facilities at the airport site, there are also air space requirements affecting the operation of the airport which must be taken into consideration. The following is a brief description of these air space requirements.

The Airport Plan shows a clear zone in the shape of a trapezoid at the end of each runway. Ideally, no structure should be erected within this area and it should preferably be used for agricultural purposes or the growing of crops that would not interfere with flight operation.

There are two circles suspended over the airport which are centered on the airport reference point. These two circles describe a giant bowl in the air. The bottom of this bowl is a horizontal plane 150 feet about the field elevation and has a radius of 10,000 feet. Stacks, towers, buildings, etc., should not project through this plane. Beginning at the outside edge of this plane and sloping upward at a ratio of one foot rise in elevation for each 20 feet in outward direction, is a conically shaped surface forming a band 5,000 feet in horizontal width, the outside edge of which has an elevation 400 feet above field elevation. Penetration of this surface should be prevented.

There are two other types of surfaces that extend up into the air from the ends of the runways. These are approach zones and transitional surfaces from the approach zones. Buildings, towers, etc., must be prevented from obstructing these imaginary ramps. Off the ends of the runways, the approach zones are in the shape of a trapezoid, the smaller end of which begins 200 feet from the end of the runway where it is 500 feet wide, and widens to 2,500 feet at a distance of 10,000 feet from the point of beginning or 10,200 feet from the end of the runway. It rises on a slope of one foot vertically for each 40 feet horizontally. Next to the trapezoidal approach zone on each side is a transitional surface having a seven-to-one slope extending to the intersection with the horizontal and conical surfaces, and beyond the conical surface extends 5,000 feet horizontally from the edges of the approach surfaces.

Harbor

The Port of Kenosha has been handling cargo of various types for the past 122 years. Although early shipments consisted mainly of farm products, the activities of today's port include shipments of a wide variety of goods. During the period 1900-1920 the port enjoyed a rebirth with a large volume movement in hides and tanbarks for the N.R. Allen Tannery Company and exported automobiles to the east coast by the Nash Motors Co. The depression period of the 1930's took its toll here as in most areas and traffic all but ceased except for such low value bulk commodities as coal and sand.

A second rebirth took place in 1954 when the decision was reached to develop a port capable of exploiting the ocean-borne commerce expected with the completion of the St. Lawrence Seaway. The Harbor Commission determined at that time that the most suitable and economically feasible method of improvement would be one in which the

development and control would be a matter of municipal policy while the actual operation of the port would be handled by private industry. This decision resulted in a long-term lease arrangement with a private operator, Jupiter Kenosha, Incorporated.

Existing Conditions

Table 47 has been prepared to show various data relative to the Port of Kenosha. At the present time the Port has 3,935 feet of available dock length, of which 72 percent is steel faced. The remaining dock facilities that are not steel faced are located along the west side of the turning basin. Almost all (86 percent) of the dock length is hard surfaced. Of the total 694,580 square feet of storage space available, only about 14 percent is covered, which presents one of the port's critical needs - that of more covered storage space. The smallest of the two covered storage areas is located in a building alongside the north side of the channel and has unlimited floor loading capacity. This building was built in 1958 at a cost of $109.250. The larger building, located on the south side of the channel was originally one of many owned by private industry and has a floor loading limit rated as moderate. All of the facilities along the north and south sides of the channel are fenced, lighted and guarded and generally regarded as being in good to excellent condition.

Table 48 shows a record of shipping data for the period 1958 through 1965. The low point in the period indicated occurred in 1958 when only four ships visited the port and total tonnage handled amounted to 973.2 tons. Exports amounted to more than twice the amount of imports. The high point in the period occured in 1963 when 117 ships visited the Port and carried 77,776.6 tons of cargo. Export tonnage in 1963 was more than three times the import tonnage handled. Since the 1963 season, total cargo tonnage handled at the Port of Kenosha has declined by about 28 percent - imports falling by 63 percent and exports lower by 17 percent.

A tabulation of the various types of cargoes handled at the port during the period 1961-1965 is shown in Table 49. Although the 11 categories of commodities shown represent composites of many types of cargoes they do present a reasonably diverse listing of goods handled at the Port.

Of the 11 categories shown on Table 49, five showed increased activity in 1965 compared with 1961. The largest increase in tonnage occurred in the flour category which showed a gain from 1,731 tons in 1961 to 15,077 tons handled in 1965. The largest loss in tonnage handled occurred in the animal products' inedible category which declined from 12,420 tons in 1961 to 3,525 tons in 1965, a 72 percent reduction. The wheat flour category also lost considerably, over 62 percent.

Port Potential

In November, 1964, a report titled "Port Development Study" by EBS Management Consultants, Incorporated was completed and presented to the Board of Harbor Commissioners. The purpose of this study was to determine the feasibility of a harbor development program and to outline such a program. This section of the report reviews the findings and recommendations of that report.

> "The future of Great Lakes shipping is beclouded by the existence of factors presently favoring rail transportation to tidewater ports. A short shipping season, longer in-transit time, dangerous navigation, and the absence of adequate two-way traffic, for many overseas points will continue to present obstacles to the expansion of Great Lakes overseas shipping.
>
> In addition to the above are the man-made factors of discriminatory rail rates, indifference (and often resistance) to change in established shipping patterns and relationships on the part of shippers, agents and forwarders and the reluctance on the part of U.S. steamship lines to accept business at lower than historical profit margins. As to the last of these factors, it appears that foreign flag lines and tramp steamers, which can better accept marginal profits in order to utilize their equipment, will continue to dominate Great Lakes shipping in the future unless American lines change their present policies.
>
> It is the consensus of all with whom we talked that Great Lakes shipping will continue to grow, but the rate and nature and direction of this growth seem yet to be shrouded in the mystery which so often accompanies new and radical economic developments of this character."(28)

From the above it would appear that the St. Lawrence Seaway has not had the rapid success hoped for. Although it has brought increased activity to Great Lakes ports, the changes have been slow but rather steady as opposed to "overnight" increases.

The report further mentions that the Port of Kenosha has a number of tangible competitive factors which favor its future growth and factors of equal force working against that growth. These are discussed as follows.

"Favorable Factors

1. In our opinion, the most important single factor supporting the past growth of the Port of Kenosha is that local traffic which has been provided by American Motors Corporation. This availability of cargoes of automobiles has created an incentive for ships to call at Kenosha. With these ships calling, additional cargoes have been attracted. If this tonnage is assured for the future, the Port can seek to build on a known "bread-and-butter" volume, giving it a significant advantage over other small ports.

2. The mistakes which have been made in the establishment of the Calumet Harbor and the limitations which now surround operations at Navy Pier will continue to impede the growth of Chicago as a port. In particular, until more convenient bulk fluid handling facilities are established in the Chicago area, the port of Kenosha should enjoy a good traffic in oils, tallows, and greases. The Port of Milwaukee is establishing heating and pumping facilities, which will bring new competition, but by continuing its high service level, Kenosha should be able to hold on to its present traffic in these commodities.

(28) "Port Development Study for the Port of Kenosha", November 6, 1964, by EBS Management Consultants, Inc., Page 6, Summary.

Table 47

EXISTING HARBOR DATA

Data	North Side Channel	South Side Channel	West Side Turning Basin
Dock Length	985'	1,850'	1,100'
Steel Faced	Yes	Yes	No
Dock Surface	Hard	Hard	Hard (south half)
Dock Condition	Excellent	Good	Fair
Draft Alongside Dock	21'	21'	16'
Covered Storage Area	14,400'	80,500'	None
Floor Load	Unlimited	Moderate	Bulk Dock
Uncovered Storage Area	74,680	525,000	174,240
Guarded	Yes	Yes	No
Fenced	Yes	Yes	No
Lighted	Yes	Yes	No
Number Loading Docks (trucks)	9	6	None
Heavy Lift Facilities	None	None	None
Rail Facilities	No	Yes	No
Shipping Season (Generally)		April 15 - November 25	
Turning Basin Diameter		600'	
Tugboat Service (Equipped for Fire Fighting)			

Source: Jupiter Kenosha, Inc.

Table 48

SHIPPING DATA - PORT OF KENOSHA

Year	Number of Ships	Tonnage		
		Import	Export	Total
1958	4	320.5	652.7	973.2
1959	41	4,405.07	10,344.65	14,749.72
1960	67	5,811.34	28,819.40	34,630.74
1961	76	2,767.53	46,511.36	49,278.89
1962	94	12,943.28	57,353.63	70,296.91
1963	117(1)	18,296.48	59,480.12	77,776.60
1964	92	9,213.86	61,123.12	70,336.98
1965	70	6,794.49	49,439.59	56,234.08

Note: (1)Plus Barge

Source: Harbor Commission, City of Kenosha

Table 49

IMPORT AND EXPORT TONNAGE
BY COMMODITY - PORT OF KENOSHA

Commodity	1961	1962	1963	1964	1965
Animal Oil and Fats, Edible	5,432	8,309	5,740	9,187	6,427
Dried Milk	1,677	1,766	1,978	1,640	-
Animal Products, Inedible	12,420	10,180	8,535	12,039	3,525
Wheat Flour	20,722	18,329	10,652	5,664	7,822
Flour, Flour-grain	1,731	2,037	4,636	12,215	15,077
Animal Feeds	-	3,426	-	-	-
Iron and Steel Products	1,553	8,670	-	3,163	3,365
Motor Vehicles	1,303	5,725	20,295	5,518	5,885
Chemicals (Furfural)	-	-	4,402	2,198	2,328
Military	-	-	16,615	10,185	7,168
All Others	1,713	1,547	3,693	2,896	6,345

Source: Jupiter Kenosha, Inc.

3. A reputation for excellent service in the face of some rather severe facilities limitations is enjoyed by the Port. The shippers with whom we talked were consistant in their praise of the attitude of the Port in trying to provide the highest service. Where traffic has been diverted from the Port, the cause in most instances has been one of facilities inadequacy. This reputation can only be extremely helpful in seeking new customers and cargoes and should make up in some measure for other shortcomings with which the Port is burdened.

4. Aggressive leadership on the part of the Harbor Commission and the local Port operators have been largely responsible for the fast growth which the Port has enjoyed despite the obstacles which we have enumerated. These men have been quick to seek government cargoes to provide an additional source of income even though there are difficulties surrounding the handling of such cargoes. Larger neighboring ports have been indifferent to most of this business and Kenosha stepped into the competitive void that was created. In addition, investigations of new sources of revenue are made on almost a continuous basis and have included considerations of tank form operations, a grain elevator, cattle shipping facilities, and import and storage of asbestos for a large nearby manufacturer. It is impossible to quantitatively evaluate the progress which this aggressiveness can produce in the future, but neither can the progress of the Port which has been made in the past be discounted when looking to the future.

Unfavorable Factors

1. The absence of a large population and industrial complex with significant demands for products of the world to lure ships to Kenosha and the absence of large export tonnages stand as the immutable and limiting factors to the future growth of the Port.

2. The proximity of the large ports of Chicago and Milwaukee with their greater number of sailings and more extensive facilities, diverts the tonnages of shippers in the area who might otherwise be attracted to the Port.

3. Physical limitations of the Port in terms of channel width, turning basin radius and depth of water make the Port unpopular with some seamen. The correction of the depth problem will unquestionably make the Port more attractive to steamship companies, but the other factors will continue to limit the activity which the port can expect. (This factor has now been alleviated greatly with the recent dredging of the basin and channel to a depth of 27 feet. H.B.&A.)

4. Limited berth space, inadequate transit sheds and a lack of adequate open storage space often make it inconvenient or impossible to service vessels on a timely basis and have caused some tonnages to be diverted. These have also acted to restrict efforts to attract additional cargoes as the existing facilities are taxed at present cargo levels."(29)

In general, the future growth potential of the Port of Kenosha is restricted by physical plant limitations and certain economic factors, both of which can only be partly corrected. In addition, there will probably continue to be a trend toward concentration of overseas shipping at four or five major Lakes' cities.

(29) Ibid (28), Pages 16-18

If the smaller ports are to continue to actively participate in this world trade, it will be necessary to seek out and develop to the fullest potential, unique capabilities with respect to specialty-type cargoes. This business should require the development of a special type of handling know-how. Continuing attention should be focused on the possibilities which might be developed in widening the scope of commodities handled.

The previously mentioned report concluded by recommending what was termed a minimum port development program. This program is discussed in the following section of this report.

Harbor Plan

The EBS report recommended the construction of a 75,000 square foot warehouse on a land fill project to be located immediately south of the south pier and project into the lake. The land fill project would encompass about 216,000 square feet of "made land". This project is of utmost importance and should be initiated as soon as possible. It is currently being actively considered by local officials.

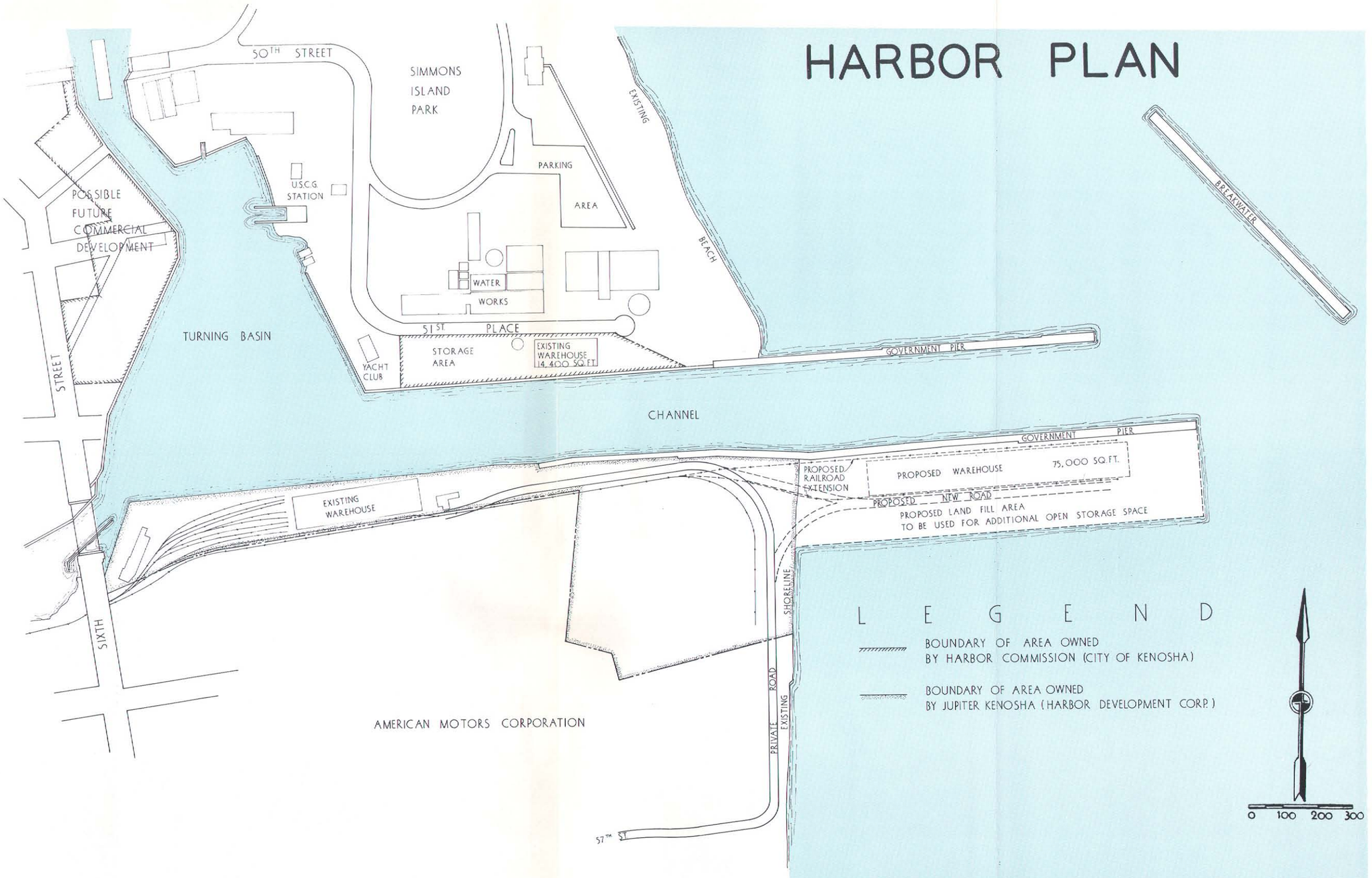
The harbor plan shown on Map 25 enlarges this idea to a land fill project involving approximately 287,500 square feet of made land in the same area. This proposal seeks to not only provide needed land for the warehouse facility, but also for much needed open storage space. This new dock facility could replace the facility along the west side of the turning basin which is at best difficult of access. The construction of new dock facilities alongside the south government pier would also allow the possibility of developing the property along the west side of the turning basin for commercial purposes - perhaps a water-oriented venture such as a motel-marina complex with restaurant facilities, etc.

The EBS report also mentioned the possibility of developing more convenient bulk fluid handling facilities. These facilities were to have been located along the west side of the turning basin but problems developed in the procurement of easements and in the meantime modern facilities have been completed in Milwaukee. Further ventures into this field now seem unwarranted of success. A small grain elevator was also mentioned as a possibility. Again, since the report was made, Calumet Harbor has been dredged to a depth of 27 feet allowing for bigger vessels to make use of existing grain storage facilities which have heretofore been standing idle. The impact of the use of these facilities will have to be carefully assessed prior to any development expenditures made in this area also.

Transit

At one time in this country's history, the trolley was the most important means of transportation. As time passed this method of transportation was replaced by automobiles and buses that could offer a greater degree of flexibility. For those who could not afford the luxury of an automobile or did not desire to own one, the bus had a special significance. It was primarily used for intra-city travel and proved quite successful over the years. The continuing ease of availability and corresponding increase in the number of automobiles finally had its toll on the bus riders and passengers and revenues began to decline. This decline became so prevalent that many companies were forced to reduce service and

HARBOR PLAN



SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS JANUARY 1965 MISSOURI

MAP 25

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eventually discontinue service altogether. Some affected cities took over operation of the transit facilities and have been able to provide service but these operations generally do not break even financially. This decline of revenue passengers on intra-city routes has become quite a serious problem and in fact, the decline on this type of service has been more than replaced on inter-city routes - the reverse of the situation of only a few years ago.

Existing Conditions

The Kenosha Planning District is served by three bus companies. They are: (1) Lakeshore Transit - Kenosha Inc., which provides local service to the City of Kenosha and inter-urban service to downtown Racine; (2) Greyhound Bus Lines which provides inter-urban service to cities throughout the country; and (3) Wisconsin Coach Lines, Inc., which provides service between Kenosha and Milwaukee.

Inter-Urban Scheduling

Lakeshore Transit - 12 round trips between Racine and Kenosha Monday through Friday - reduced schedule on Saturday.

Greyhound - 3 round trips between Chicago and Milwaukee Monday through Firday - 2 trips on Saturday and Sunday.

Wisconsin Coach - 12 round trips between Kenosha and Milwaukee daily.

Terminal Facilities

There are two separate terminal locations in the District. One, located at 2316 Roosevelt Road, serves the Greyhound Bus Lines and the Wisconsin Coach Lines in a small building housing a travel agency. The other serves Lakeshore Transit-Kenosha Inc., facilities and is located at 609 56th Street. Both facilities are little more than stopping places for bus routes and offer little in the way of conveniences for the passengers.

The local service provided by the Lakeshore Transit-Kenosha, Inc., is good and buses generally operate on schedules involving headways of 15, 20 and 30 minutes throughout the normal daylight hours. The routes used by the various lines are shown on Map 26. Based upon generally accepted standards of providing bus routes within one-quarter mile walking distance of the population in high density areas and one-half mile walking distance of the population in medium density areas, the local bus routes effectively serve approximately 79,700 persons or 83 percent of the total population in the District, a very satisfactory level of service.

Table 50 is a tabulation of the equipment owned by the Lakeshore Transit-Kenosha, Inc.

Table 50

TRANSIT EQUIPMENT

Number	Type	Model Year	Passenger Capacity
20	Diesel	1948 & 1952	36
10	Gas	1945 & 1948	44
2	Gas	1961	Used for Handicapped Children Transportation to School

Source: Lakeshore Transit - Kenosha, Inc.

Table 51 shows the volume of bus passengers carried on the local lines since 1961:

Table 51

VOLUME OF TRANSIT PASSENGERS

Year	Passengers
1961	2,396,840
1962	2,329,376
1963	2,231,091
1964	2,134,408
1965	2,039,322

Source: Kenosha Chamber of Commerce

The data shown indicates the local trend is similar to the national trend. In Kenosha the number of revenue passengers has declined by 14.9 percent since 1960, an average annual decrease of about 3 percent. Another fact which compounds the situation is that local bus company officials estimate that school age children account for about 48 percent of the total passengers carried. The trend of decreasing revenue passengers and increasing auto registrations is very evident in the Southeastern Wisconsin Region also.

In order to give further definition to the part played by the transit system in the overall transportation system, the following data can be cited. In 1963, there were 1,600 transit passengers' trips to the Kenosha central business district. This is contrasted with 6,200 auto passenger trips and 14,300 auto driver trips to the downtown area. Thus, transit passenger trips accounted for only 7.2 percent of all person trips by these three modes of travel to the central area. As might be expected, the commercial and governmental and institutional land use categories generated the greatest number of internal transit trips throughout the District - 3.0 and 2.9 trips per net acre of land use respectively. (30)

(30) Planning Report No. 7, "Land Use-Transportation Study," Inventory Findings 1963, Volume One by SEWRPC, May, 1965, Chapter VIII, Page 161, Table 98.

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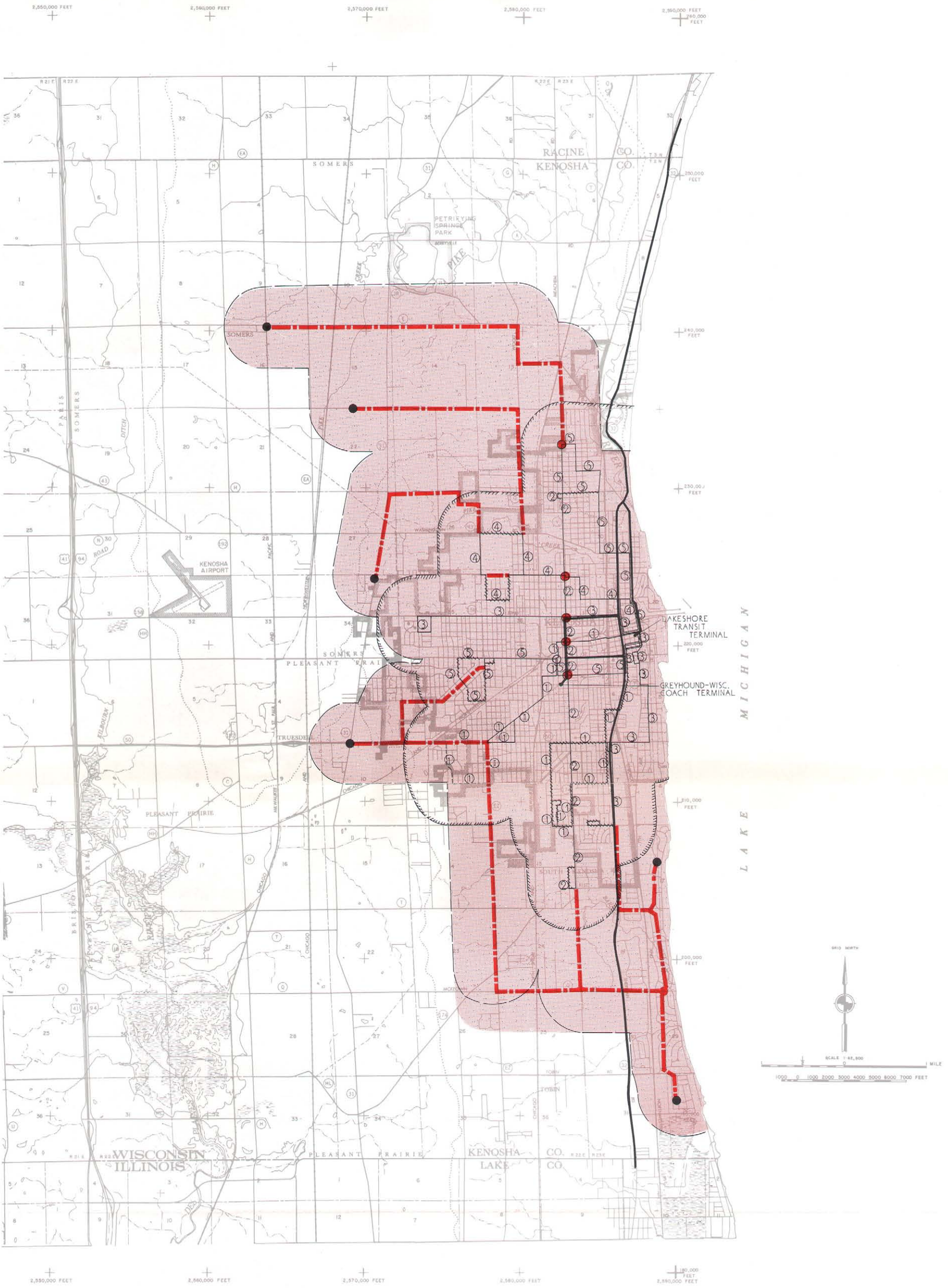

BUS ROUTES

L E G E N D

- ① RED LINE ROUTE
- ② ORANGE LINE ROUTE
- ③ BLUE LINE ROUTE
- ④ BROWN LINE ROUTE
- ⑤ GREEN LINE ROUTE
- INTER-URBAN SERVICE
- LIMITS OF ½ MILE SERVICE AREA OF EXISTING SYSTEM
- PROPOSED FUTURE SERVICE ROUTE
- EXISTING ROUTE TO BE ABANDONED
- LIMITS OF ½ MILE SERVICE AREA OF PROPOSED SYSTEM
- PROPOSED TRANSFER POINTS
- PARTIAL SERVICE
- CONTINUOUS SERVICE DURING HOURS OF OPERATION
- END OF ROUTE

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

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MAP 26

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Within the central business district itself internal transit trips were generated as shown in Table 52.

Table 52

TRANSIT TRIPS PER NET ACRE

Developed Residential	Commercial	Industrial	Governmental & Institutional
1.7	17.6	0.9	20.7

Source: Ibid (30) Page 162, Table 101

While the bulk of personal travel within the District and the Region is now made by auto, mass transit remains a vital element in providing transportation service, especially to the central business district. Knowledge of the present characteristics of transit travel and of factors influencing the travelers persent choice of mode is essential to the development of a transportation plan. Tables 53 and 54 serve to further the characterization of persons using transit facilities.

Table 53

PERCENTAGE DISTRIBUTION OF TRANSIT RIDERS BY AGE GROUPS

Age Group	Percentage
0-14	28
15-19	30
20-29	6
30-44	8
45-64	18
65 and Over	10
Total	100

Source: Ibid (30) Page 166, Table 106

Table 54

PERCENTAGE DISTRIBUTION OF TRANSIT TRIPS BY AUTO OWNERSHIP CATEGORY

Autos Owned Per Household	Transit Trips	Average of SEW Urbanizing Areas
0	21	41
1	56	47
2	18	11
3 or More	5	1
Totals	100	100

Source: Ibid (30) Page 167, Table 107

A comparison of the data in Table 53 with similar data for the urbanizing areas of Racine and Milwaukee reveals that in Kenosha the two youngest age groups account for 58 percent of the transit riders while they account for only 38 percent and 27 percent respectively in the other two areas. In addition, about 67 percent of all transit riders were female.

Table 54 shows that 77 percent of the transit riders own only one car as opposed to the average of the urbanizing areas in the Region of 88 percent owning one car. Also, the Kenosha area is responsible for twice as many transit trips by owners of 2 or more cars as is the average of the urbanizing areas in the Region.

In each of the urbanizing areas, about 50 percent of the total transit trips were made by persons from households with annual incomes in the $4,000-$8,000 range. About 25 percent of the total was made by persons from households with annual incomes of less than $4,000. Only about four percent from households with annual incomes of over $12,000. Generally, these percentages compared favorably with the proportion of total households in each income range.

Transit Service to Existing Commercial and Industrial Areas.

Generally, the existing transit routes effectively serve the present commercial and industrial areas of the urbanized portion of the District (See Map 27). There are some areas which are not directly served but they are in outlying sections of the district where the absence of sufficient population does not warrant transit service. Almost all of the major centers are served, especially those near the central business district.

At the present time the area has no specifically marked truck routes. While this provides more than adequate access to any and all commercial and industrial areas it also allows this heavy traffic to use any route to travel from one place to another. Quite naturally this route would most likely be the shortest available whether it traversed a residential neighborhood or some other section of town where this type of traffic is unwanted. This type of heavy traffic can be unwanted for two primary reasons: (1) aesthetic, that is, residential neighborhoods should not be traversed by truck traffic because of excessive noise, fumes, etc; and (2) maintenance, that is, most residential streets are not or should not be constructed to the same construction standards as major streets for example. They do not normally and should not carry the same high volume movements and, therefore, can be built to a lesser standard.

The proper method of controlling the routes of truck traffic in the District is through the use of an established truck route system utilizing major streets for the most part. There are of course, commercial and industrial establishments that are not located on or immediately adjacent to a major street. In this instance, the trucks should use the marked truck routes to a point closest to their destination and then use whatever street system is available to make their deliveries. This is the system proved to be quite effective. The proposed truck route system is shown on Map 27. This map also shows the proposed bus routes and indicates their serviceability to existing and proposed commercial and industrial areas.

Transit Plan

Insofar as inter-urban transit routes are concerned, no new routes are proposed in the plan (See Map 26). The present routes utilize Sheridan Road (STH-32) to the north and south through the District and this should continue to be an adequate route. However, the separation of inter-urban terminal facilities is not desirable. These terminal facilities should be joined in one

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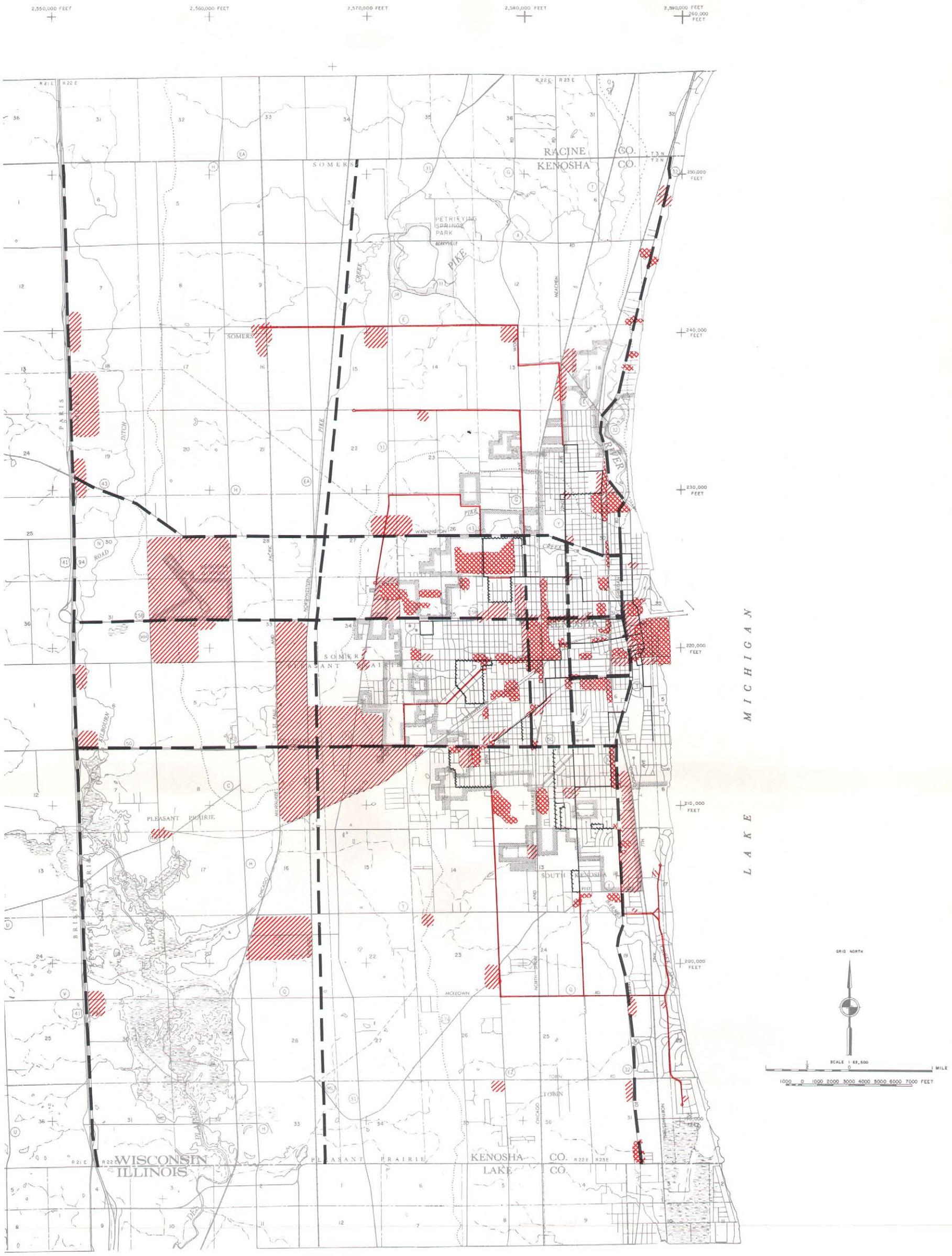

BUS AND TRUCK ROUTES

COMMERCIAL AND INDUSTRIAL SERVICE STUDY

L E G E N D

- EXISTING BUS ROUTE
- PROPOSED BUS ROUTE
- EXISTING ROUTE TO BE ABANDONED
- EXISTING COMMERCIAL AND INDUSTRIAL AREA
- PROPOSED COMMERCIAL AND INDUSTRIAL AREA
- PROPOSED TRUCK ROUTE

MAP 27

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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JANUARY 1967

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new common facility, preferably located in the central business district. This would also offer an opportunity to provide an adequate terminal facility for intra-urban as well as inter-urban passengers. The two routes along 52nd and 60th streets between Sheridan Road and the existing terminal on Roosevelt Road could

For the most part the new local transit routes proposed in the plan represent extensions of existing routes which are well suited to present needs. There are also some revisions in present routing to provide better service to areas that are now undeveloped. The local transit plan described briefly in the following text, would provide service to an estimated 154,520 persons or about 85 percent of the population estimated for 1990.

The northern section of the Green Line would be extended from its present termination at Pershing Boulevard north along 22nd Avenue and west along 12th Street to the Milwaukee Road tracks. This extension would not only serve residents of the northern portion of the District, but also serve the University of Wisconsin-Parkside Campus. The western section of the Green Line would be extended southwesterly to 75th Street and 51st Avenue. The existing Brown Line would be extended in two branches; the first, north and west to 18th Street just west of STH-31, and the second generally west through a northern loop to STH-31 and 45th Street. The western section of the Blue Line would remain as it exists at present.

The southern section of the Blue Line, however, would be extended south and east to serve the high density development in the Carol Beach North and Carol Beach South neighborhoods. The southwest section of the Red Line would be extended west from its present terminus at 75th Street and Roosevelt Road to 75th Street and STH-31, and south along 39th Avenue to about 100th Street. The south section of the Red Line could be discontinued. The Orange Line presently operates along 22nd Avenue as a connector or cross-town route. Its function would remain the same in the proposed transit plan except that it would be extended north and south to better serve this capacity. In the detailed planning process that follows, local bus stops should be provided approximately 660 feet apart and maximum operating headways should not exceed one hour.

Railroad

In many areas railroads have played a significant part in the shape or form of the urban setting. They have let the way to forming commercial and industrial centers and themselves formed classification yards for their own use. They have meant important jobs and skills for workers. They have for some time past and will for some time in the future, carry a major share of the nation's goods from one place to another. Although the number of railroad passengers carried now is generally declining and has in fact forced cancellation of service on some lines, the railroads have played an important part in the transport of people from one place to another.

Conversely, railroads have brought certain problems to these areas as well. In their early stages of development the steam locomotive was a noisy, dirty and somewhat dangerous piece of equipment. The right-of-way required for tracks was often acquired without regard to surrounding development, the result often being a complete division of a homogeneous neighborhood. The crossing of major traffic arteries supplied a serious point of confluct for automobiles, and the elevation of certain facilities, sound as it is from several viewpoints, creates a kind of "Chinese Wall" that is a barrier to any kind of homogeneous development that may have existed. The withdrawal of facilities or the discontinuance of service has also meant serious economic loss to some small communities and hindered their expansion.

A review and analysis of the conditions affected by railroads and their facilities must be included in any study concerned with overall transportation problems and solutions.

Existing Conditions

The Kenosha Planning District is traversed from north to south by three railroad routes. There is also an eastwest connector between two of these routes. The route along the eastern edge of the District near Sheridan Road is a passenger-freight line of the Chicago and Northwestern Railway Company (C&NW). Primary freight line facilities of the C&NW are located just west of STH-31. The passenger and freight operations of the Chicago, Milwaukee, St. Paul and Pacific Railroad (Milwaukee Road) are located just west of the C&NW freight line. The C&NW operates 26 daily trains through the Kenosha station. Of this number 14 operations consist of 7 round trip movements between Kenosha and Chicago. The remaining 12 operations consist of 6 through-trip movements between Chicago and stations north of Kenosha. The C&NW freight operations consist of 7 movements north and 7 movements south and are assigned to the two track facilities as warranted by origin and destination of the freight carried. The Milwaukee Road operates freight and passenger trains on its facilities through the west central portion of the District. Map 32 in the following chapter of this report indicates the railroad right-of-way and crossing data as well as other data.

In the Kenosha District, the C&NW has 31 total crossings, nine of which are grade separated. The Milwaukee Road has a total of 12 crossings, of which three are grade separated.

About 25 percent of the existing major street intersections with railroads are grade separated. Six of the separated crossings on the C&NW facilities are along its main route in the eastern portion of the District. The three separated crossings on the Milwaukee Road facilities are located at STH's 50, 158, and 43. The C&NW facilities in the central portion of the District are separated at STH's 50 and 158. The separation and elevation of the C&NW facilities along its eastern route is the result of an order by the Railway Commission just prior to the development of the original City Plan for Kenosha. This farsighted accomplishment has saved the residents of the area untold dollars in time, wages, and convenience and was obviously completed at a cost far less than the expenditure would have been in present times. The original City Plan recommended some changes in the first order by the Railway Commission and these, in large part, were accomplished.

The passenger and freight terminals of the C&NW are located on 13th Avenue just north of 55th Street. The Milwaukee Road has no scheduled stops in the District and maintains no terminal facilities.

The 1963 inventory by the Southeastern Wisconsin Regional Planning Commission revealed "that the only rail route within the Region providing intra-regional passengers service of such frequency as to warrant mass transit classification was the C&NW line which serves the cities of Milwaukee, Racine, and Kenosha. Passenger service on this route was operated on headways varying from 20 minutes to three hours throughout the day and when combined with paralleling inter-city bus service operating in the same corridor met the maximum headway criteria for inclusion as a part of the mass transit network.

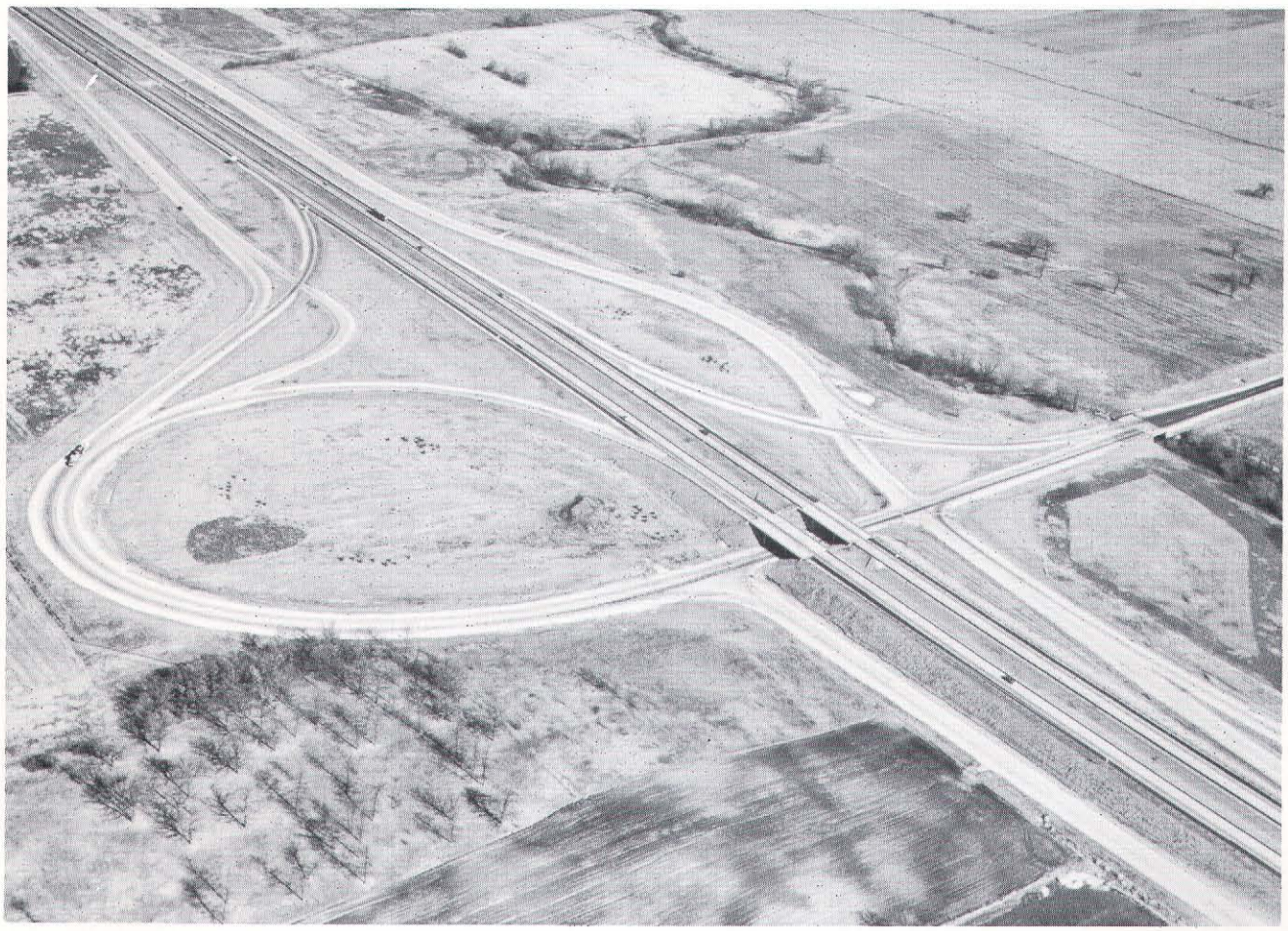
Utilization of this mode of transportation was found to be very light, with only 375 intra-regional person trips being made by rail on an average weekday within the Region."(31)

Railroad Plan

No major alterations or re-routings of existing railroad routes are planned in the Kenosha Planning District. However, it is proposed that grade separations between railroad and highway facilities be constructed in conjunction with major highway interchanges at 12th Street, STH-43 and 93rd Street along the C&NW facilities in the central portion of the District. In addition, the 60th Street intersection with this railroad facility should also be separated but this would not involve a major interchange.

Another factor to be considered which would have a bearing on future railroad plans concerns a proposed merger of the C&NW and Milwaukee Road Lines. While this merger has not been consumated as yet its possibility offers an opportunity to combine facilities of the two operations, specifically the abandonment of one of the lines traversing the central portion of the District. The direct service offered to commercial and industiral operations along both lines between Chicago and Milwaukee is of utmost importance in such a combination of facilities. Within the Kenosha Planning District however, this poses little problem and either line could be abandoned without seriously affecting operations. The choice of one line or the other would probably be affected by operations near Chicago or Milwaukee.

(31) Ibid (30), Chapter VII, Page 121.



This photograph shows how effective transportation planning can aid the movement of people and goods throughout urban areas. The view shown is of the IH 94 - STH 158 interchange looking toward the northeast.

Chapter VII

ARTERIAL STREETS AND HIGHWAYS

One of the most important elements in the physical structure of any community is its street system. The very great majority of all of the movements of people and goods within an urban community today are accomplished by means of vehicles operating over the public streets. However, streets are not the dominant element in community design. The street system is to serve people. Proper neighborhood design, satisfactory arrangement of land uses, including public schools, are components of the physical development of a community equally important with the street system.

Experience in many communities over a long period of time has demonstrated that the most efficient method of handling vehicular traffic is to improve a relatively small number of strategically located streets and highways with a wide pavement and direct alignment and to develop a network of such arteries serving all of the major traffic movements. These main traffic routes have become known as "arterial" or "major" streets and highways.

The width of a major street, insofar as both pavement and right-of-way are concerned, must be related to the volume of traffic expected to use it. The analysis of existing and probable future traffic that will be found on various parts of the street system has come to be a highly refined science. Predictions of the volume of traffic that will be on any part of a street in the future will depend upon the basic changes in the land use pattern and in the type of improvements that are made on other portions of the street systems. In most urban areas, very heavy traffic is found on a few streets primarily because these are the only ones that have received a satisfactory character of street improvement. Customarily, about ten percent of the 24-hour traffic volume is found during the peak hour. This is the critical time for traffic flow and the major street system should be designed to accommodate the peak hour movements if it is to serve the community satisfactorily.

The arterial street and highway plan is concerned primarily with providing adequate right-of-way for the major street system in the proper location. The pavement of a street may be widened or even narrowed without too much difficulty. However, if adequate rights-of-way are not provided, greater expense may be necessary to provide a satisfactory accommodation for the traffic volumes.

It is apparent in some areas of the District that it has not been possible to keep up with the vast increase in traffic volume with the necessary physical improvements in the street system. It is necessary to use imaginative traffic engineering to take the fullest possible advantage of existing facilities.

There are a number of approaches to the development of an adequate and efficient arterial street and highway plan. The approach best suited for a particular study depends upon the desired end product as well as the scope of the study and the availability of time and funds. The basic study approach used herein is typical of comprehensive transportation studies and has been coordinated with the efforts of the Southeastern Wisconsin Regional Planning Commission in their task of developing a transportation system for the seven-county region. The general procedure involves an investigation and inventory of existing conditions, an evaluation of the relationships of the travel characteristics to other existing conditions, forecasts to a future design year (1990), analysis of future needs by location, study and evaluation of alternate plans and the determination of the proposed transportation plan.

Existing Street and Highway System

Any land use-transportation study must include an evaluation of both the supply and demand elements of the transportation system. While evaluation of the demand for transportation is achieved through the various travel inventories, the evaluation of the supply of transportation is achieved through an inventory of the location and capacity of the existing transportation system. These supply and demand inventories must be complemented by an evaluation of the manner in which the existing transportation system is being utilized. Any excess capacity which may be available in the system for future volume loadings will thereby be identified and an important step toward plan synthesis achieved. These inventories, location, capacity, and utilization, are also necessary to calibrate the traffic simulation models and used in transportation system plan testing and evaluation.

Functional Classification

From a traffic planning standpoint, at least three functional classifications of streets and highways should be recognized - arterial, collector, and minor streets. These are defined as follows:

1. Arterial. "Streets and highways which are intended to serve the through movement of fast or heavy traffic and provide transportation service between two or more major subareas of the region, between such subareas and points outside of the region, or through the region."(32)

2. Collector. "Streets and highways which are intended to serve as connections between the arterial system and the minor street system.(32)

3. Minor. "Streets and highways which are intended to serve primarily as a means of access to abutting property."(32)

During the course of their study, the SEWRPC was able to utilize the results of the 1958 Wisconsin Highway Needs Determination Study as a basis for the necessary functional classification of streets and highways throughout the region. The three higher use classes of the statewide study - expressway, major primary and primary - were selected for inclusion in the existing regional arterial street and highway system and then updated to 1963, the time of the study.

The regional arterial street and highway system map was then converted to an arterial network map by assigning code numbers to all intersections, each segment between two codes being defined as a link in the system. The network thus obtained was described in numerical code,

(32) Ibid (30), Chapter VII, Page 114.

punch cards prepared containing the link identification code and all data necessary for system analysis for each link in the network. A digital computer was then used to calculate minimum time paths, thus simulating the utilization of the arterial street and highway system.

Prior to any network analysis, it was necessary to determine link lengths, travel times, and traffic characteristics which include, for each link, existing traffic volume, average operating speed, pavement width, approach gradient, type of facility, type of area, and data regarding the existence of turning lanes.

Character of the Area

Except in the Carol Beach area, which is as yet undeveloped, and a few other isolated smaller areas, the street pattern in the Kenosha Planning District is a strict grid pattern. This pattern has been extended into some of the newer subdivisions around the edge of the city also. The rural section of the district was originally laid out to have streets or roads run along section lines and this system remains intact today. While this system is more conducive to finding certain addresses, etc., it also produces a displeasing monotony. In most rapidly growing urban centers throughout the country, the grid system is being abandoned in new subdivisions in favor of what is called the curvilinear pattern. The Carol Beach area is a prime example of this type of development. One of the primary advantages of this type of pattern. other than its aesthetic value, is that it discourages through traffic because of the discontinuous alignment of the streets. This pattern is most effectively used in areas where topography plays a more important part in the urban pattern than it does in the Kenosha District, but it can be effectively used in this area also. Another example of this type of development is the Highland Park subdivision. The acceptance of the curvilinear pattern will undoubtedly grow as its effectiveness in the development of complete neighborhoods is realized.

State and Federal Highways

In the Kenosha District, there are six primary state and federal highways - three serving east-west movements and three serving north-south movements. The north-south routes are IH-94, STH-32, STH-31 and STH-192 while the three east-west routes are STH-43, 158 and 50. STH-174 also serves the southern portion of the District.

Existing Major Streets

The existing major street and highway system is shown on Map 29. This map shows 1965 traffic flow on the major street system. At the present time there are three additional north-south cross-town routes which supplement the state and federal highway system - 22nd, 30th and 39th Avenues. In the east-west pattern, two more major routes assist traffic flow - 60th Street and Roosevelt Road - the latter being one of the heaviest traveled routes in the District.

Right-of-Way and Pavement Widths

As already mentioned, most of the trips in an urban area are made on a relatively small number of routes. The right-of-way widths of the major routes in the Region are shown graphcially on Map 28. A more precise tabulation of street right-of-way and pavement widths is located in Appendix J.

Quite naturally, the widest right-of-way found in the District is along the IH-94 route. The minimum right-of-way width for this route is 300 feet. Two other major segments of the primary street system show right-of-way widths in excess of 100 feet. These are STH-158 between STH-31 and IH-94, and STH-31 between 1st Street and 52nd Street. STH-50, between IH-94 and 39th Avenue, also has a wide right-of-way.

For the most part, right-of-way widths are normal compared to other communities. Rural roads generally have 66-foot rights-of-way and some of the older streets in the urban area proper have narrow rights-of-way. This means, of course, that if improvements to these routes are necessary in order to provide a functional major street system they will be more expensive than the rural routes where development is not so complete. As mentioned previously, adequate right-of-way widths are of prime concern in the planning of future street systems.

The ultimate type of roadway design, two segments of roadway divided by a median, is found in three places on the District's major street system (See Map 29). These are located on IH-94, STH-50 between Pershing Boulevard and IH-94, STH-43 between STH-31 and a point just west of 30th Avenue. The most serious problem regarding pavement widths is the number of locations in and adjacent to the urban area where major routes have been paved to a standard less than 30 feet in width. Most of these routes will almost certainly require four-lane pavements by 1990, thus necessitating a sound program of street improvements.

Most of the travel patterns that exist today have evolved over a period of time and have been satisfied by uncoordinated right-of-way and pavement improvements. As the accelerated development of the Kenosha District continues it also presents a significant opportunity to guide the urbanization through the construction of an adequate major street system before total development instead of after.

Capacities

"One measure of street and highway capacity is the maximum number of vehicles which can pass a given point on a facility in a unit of time under the existing roadway and traffic conditions. Such capacities may be relatively high but occur under conditions of traffic congestion which result in a relatively low level of service. Another measure of street and highway capacity is the number of vehicles which can pass a given point on a facility in a unit of time under existing roadway and desirable operating conditions. The latter measure implies a better balance between full utilization of the facility and the level of service in terms of operating speed."(33)

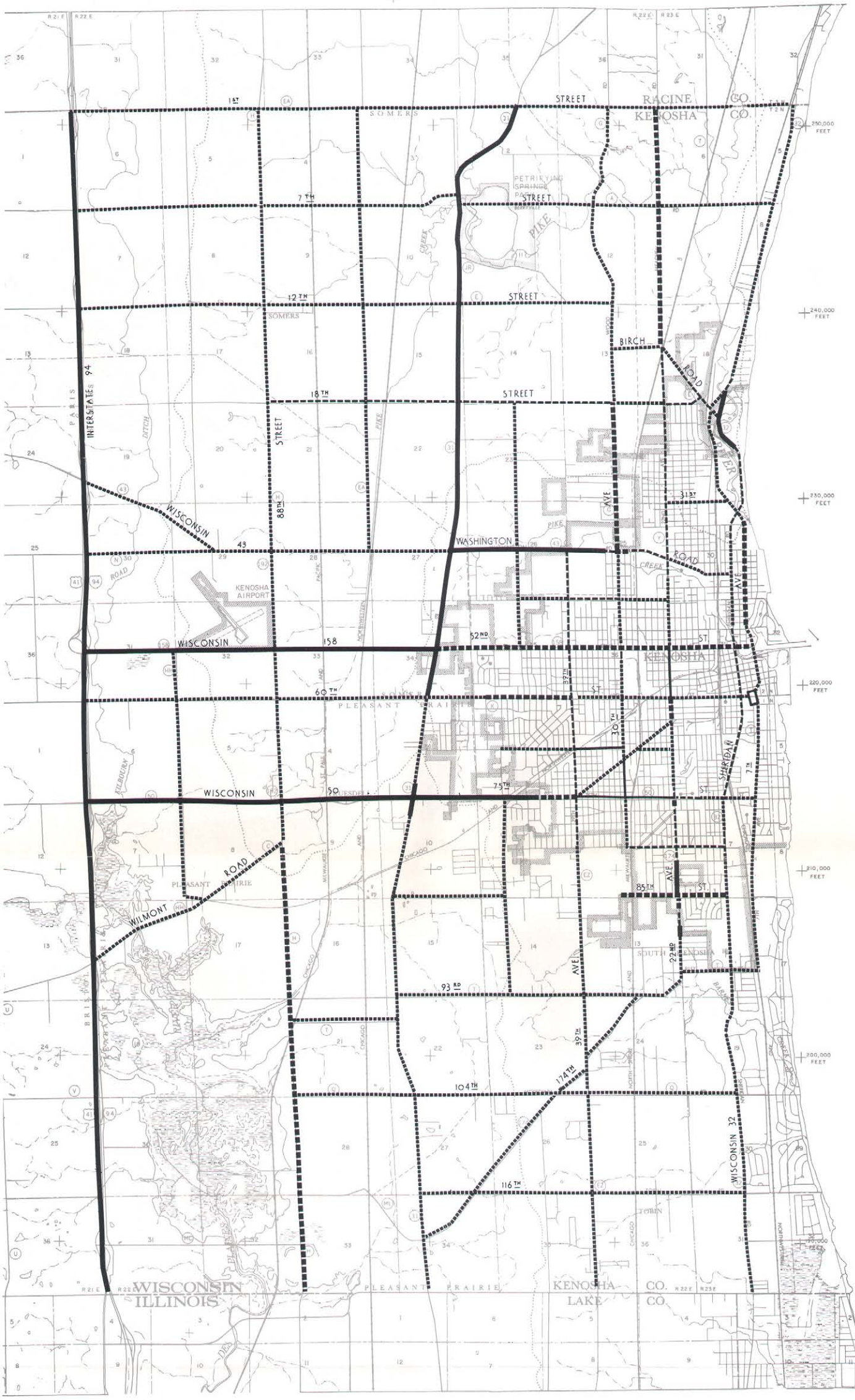
This second measure of capacity, expressed in terms of the number of vehicles per 24-hour period, was selected for use by the SEWRPC.(34)

Traffic Volumes

The November, 1965, 24-hour traffic volumes are shown on Map 30. As might be expected, the IH-94 route carries the highest volume of traffic in the District - 21,630 vehicles in the section

(33) Ibid (30), Chapter VII, Page 115.

(34) Ibid (30), Chapter VII, Page 115-117 for a complete description of capacity determination.



RIGHT-OF-WAY WIDTHS

LEGEND

- LESS THAN 60'
- 60' - 70'
- 71' - 80'
- 81' - 100'
- MORE THAN 100'

MAP 28

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

JANUARY 1967

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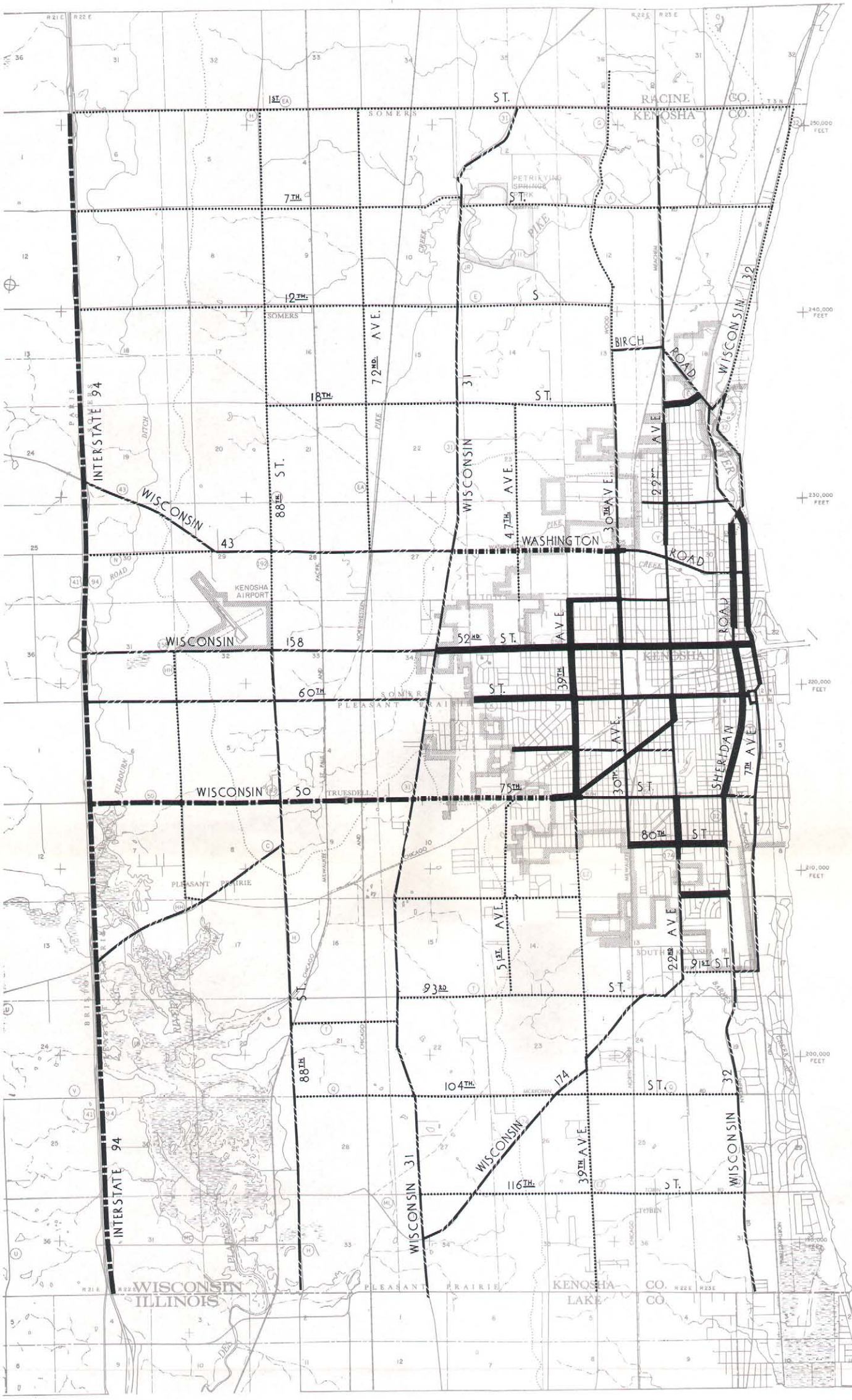

PAVEMENT WIDTHS

L E G E N D

- 20' OR LESS
- 21' - 30'
- 31' - 40'
- 41' - 50'
- 51' OR MORE
- 2 - 24' LANES
- 2 - 36' LANES

MAP 29

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

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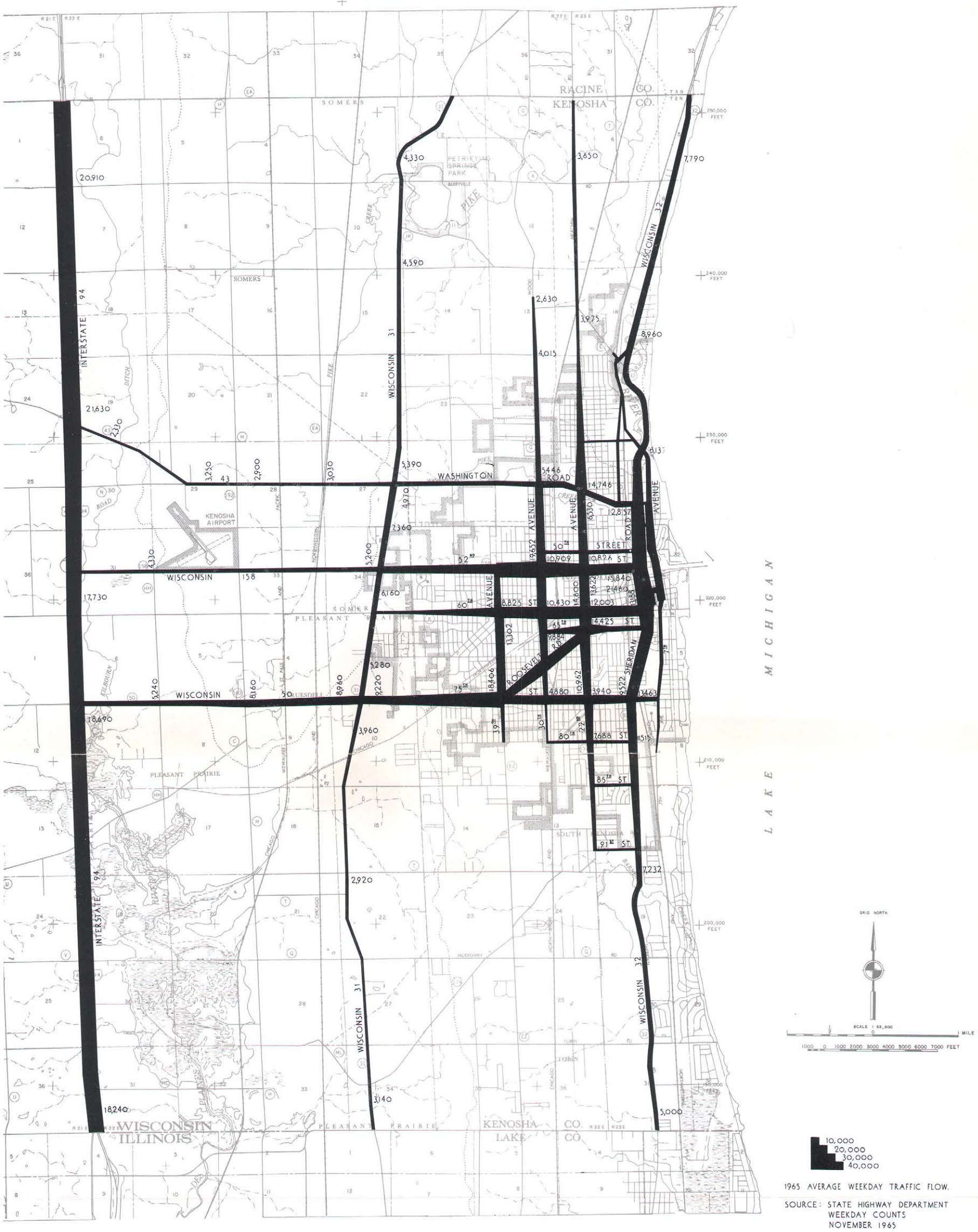

1965 AVERAGE WEEKDAY TRAFFIC FLOW.

SOURCE: STATE HIGHWAY DEPARTMENT
WEEKDAY COUNTS
NOVEMBER 1965

1965
24-HOUR TRAFFIC VOLUMES

NOVEMBER 1965

MAP 30

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY, UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

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just north of the STH-43 interchange. That part of Sheridan Road in Kenosha, just north of 60th Street, was carrying 21,460 vehicles at the time of the survey. Other significant volumes were recorded on Washington Road, 22nd Avenue, 60th Street, 75th Street, and Roosevelt Road. (See Appendix K for detailed tabulation of volumes and mileage by type of facility.)

Travel Characteristics

"One of the central concepts underlying the regional land use-transportation study is that travel is an orderly, regular and measurable occurrence, evidenced by recognizable travel patterns. A complete and accurate inventory of existing travel is necessary to discover these patterns and disclose those aspects which demonstrate a high degree of repetitiveness. Such knowledge is a prerequisite to an understanding of future travel behavior and, therefore, to intelligent planning for future travel requirements. In this respect, the inventory of travel must provide a clear representation of total travel while taking stock of and describing in detail each of its component parts.

Another of the central concepts underlying the regional land use-transportation study, previously noted in connection with the land use inventories, is that land use and transportation are closely interrelated. A complete and accurate inventory of existing travel within the Region is, therefore, also necessary in order to determine the quantitative relationships existing between land use and travel, thereby providing a solid basis for the derivation of future travel demand for existing and proposed land use patterns.

Finally, an accurate inventory of travel is necessary to provide the basis for an understanding of the interactions existing between travel behavior and land use development, an understanding of which is essential to intelligent planning for future land use requirements."(35)

In the 1963 survey it was learned that about 3.5 million person trips(36) were made on an average weekday and that more than 97 percent of these trips were made by residents of the Region. In the Kenosha area some 179,991 person trips were made, accounting for about 7.2 percent of the total trips in the Region. These trips were made in 132,107 vehicles for an average of 1.36 persons per vehicle. For the entire Region, the trips made represented an average of 6.9 trips per household per day.

Vehicle Registrations

The total number of vehicle registrations in Kenosha County increased by 13,243 (over 28 percent) vehicles between 1956 and 1965 (See Table 55). In 1956, the total number of registered vehicles in Kenosha County accounted for 7.8 percent of the total vehicles registered in the Region. In 1963, the latest year for which Region data is available, the total number of vehicles registered in Kenosha County accounted for only 7.2 percent of the vehicles registered in the Region.

In 1956, automobiles accounted for 86.9 percent of the total number of vehicles registered. By 1965, automobiles accounted for 88.3 percent of all vehicles registered in the county. During the period shown in Table 55, the total number of automobiles registered each year has constantly increased except from 1961 to 1962. Truck registrations, however, showed a very substantial loss (almost 1,000 vehicles) from 1960 to 1961. The highest truck registration total, recorded in 1960, has not been equaled since the loss occurred.

In 1956, based upon an estimated county population of 90,460 persons, there were about 39.2 vehicles per 100 persons of population. Based upon an estimated 1963 population for Kenosha County of 106,665 persons, this ratio was about 44.8 vehicles per 100 persons of population. This amounts to more than a 14 percent increase in the number of vehicles per unit of population. During this same period, the population increased about 18 percent. However, between 1960 and 1962 the actual number of vehicles registered in the county decreased by 991 vehicles while the population was increasing by about 5,100 persons. This means that the number of vehicles registered per 100 persons of population has increased at about the same or perhaps a slightly greater rate than the population for the period shown in Table 55.

Mode of Travel

In 1963, almost nine out of every ten person trips (88.2 percent) were made by automobile. Of these trips, 61.4 percent were made as a driver while the remainder were as passengers. Of the remaining modes of transportation, 8.5 percent were made on public buses, trucks and taxies, each carried about 0.1 percent and railroads carried only slightly more than 0.01 percent.

A selection of the mode of travel was not always available. For example, many households were located in areas not served by local transit and therefore, people had to rely almost entirely upon the automobile. Conversely, many families did not have an automobile available and were forced to rely on transit facilities. In addition, about 91.5 percent of all transit riders could not have made the trip as an automobile driver since they either did not possess a license to drive, did not own an automobile, or did not have an automobile available at the time the trip was made.

Table 56 offers additional data regarding the characteristics of the various modes of travel.

As might be expected, more than two-thirds of all automobile driver trips were made by males while more than two-thirds of all automobile passenger trips were made by females. In addition, almost two-thirds of all transit trips were made by females. Some 28.1 percent of the automobile driver trips were made by persons in the 30-34 age group. In the automobile passenger group, 30.8 percent of the trips were made by persons in the 5-14 age group and an additional 13.8 percent were made by persons in the 35-44 age group. About 42.7 percent of all transit passengers were in the 35-64 age group.

Automobile Occupancy

The survey also indicated that the average number of persons per auto, including the driver, varied significantly with the trip purpose as shown in Table 57. The higher average of persons per automobile for the social-recreational trips

(35) Ibid (30), Chapter VIII, Page 131.

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

Table 55

VEHICLE REGISTRATION

Kenosha County

Year	Automobiles	Trucks	Total
1956	29,983	4,524	34,507
1957	30,545	4,562	35,107
1958	32,203	4,913	37,116
1959	34,819	5,696	40,515
1960	37,332	5,802	43,134
1961	37,445	4,809	42,254
1962	37,204	4,939	42,143
1963	40,154	5,205	45,359
1964	40,241	5,380	45,621
1965	42,165	5,585	47,750

Source: Wisconsin Motor Vehicle Department

Table 56

CHARACTERISTICS OF TRAVEL MODES

Selected Characteristics	Percent of Each Modes' Total Trips			
	Auto Driver	Auto[1] Passenger	Transit Passenger	School Bus Passenger
SEX				
Male	70.2	32.3	36.5	49.1
Female	29.8	67.7	63.5	50.9
	100.0	100.0	100.0	100.0
AGE GROUP (Years)				
5-14	-	30.8	9.6	75.5
15-19	4.1	11.4	19.2	23.9[2]
20-24	8.8	7.6	9.8	-
25-29	11.5	6.7	4.7	-
30-34	12.5	5.9	4.5	-
35-44	28.1	13.8	13.6	-
45-54	20.0	11.3	14.7	-
55-64	10.6	7.4	14.4	-
65 and over	4.4	5.1	9.5	-

[1] Includes truck and taxi passengers

[2] Remaining 0.6 percent distributed throughout other age groups.

Source: Ibid (30), Chapter VIII, Page 140, Table 86.

might be explained by the higher degree of family or other group participation in this type of trip.

Table 57

AUTOMOBILE OCCUPANCY

Trip Purpose	Persons Per Auto
Social-Recreational	1.8
To Shop	1.6
To Home	1.5
Personal Business	1.3
To Work	1.2

Time Pattern

Monthly. The inventory of 1963 also revealed that vehicular travel within the Region followed a seasonal pattern, decreasing during the fall months to a low during the winter (January), and then increasing rapidly through the spring to a high in the summer (August). Maximum monthly variation from the average amounted to about 24 percent.

Daily. As generally is the case in most urban areas, trip volumes from Monday through Thursday were within five percent of the weekday average but rose sharply on Friday. Transit trips showed a fairly regular pattern throughout the week. Trip volumes varied from day to day but the various modes of transportation remained about the same. To assist in the analysis process, a travel time and delay study was conducted using the American Motors Corporation facilities as an origin. The results of this study are shown on Map 31. The time runs were made during the peak traffic hour immediately following the afternoon shift change. The pattern shown is one that is reasonably normal, except for the vivid distortion shown by persons using 22nd Avenue to travel northward. The isochronic time lines are very close together between 60th Street and 52nd Street which indicates a very slow movement of traffic. Major delays of more than two minutes were incurred at two locations - 52nd Street and 30th Avenue, and 22nd Avenue and Washington Road.

Hourly. The hourly pattern of distribution of traffic volumes revealed the relative inactivity of the early hours of the day, followed suddenly by the morning rush to school and to work (7:00 a.m. peak). Other trip purposes began in the late morning and early afternoon and gradually carried into the more sustained afternoon rush from work and school (3:00 p.m. peak).

Trip Duration. Table 58 shows the length of time for trips by trip purpose based upon the 1963 survey by SEWRPC. Automobile driver trips for all purposes averaged 13.4 minutes per trip while automobile passenger trips averaged 12.6 minutes per trip.

Table 58

TRIP DURATION

Trip Purpose	Duration in Minutes
To Work	16.5
Social-Recreational	13.8
To Home	13.4
Personal Business	12.2
To Shop	10.5
To School	9.9

Trip Distance. Table 59 shows the distance traveled for each trip purpose based upon the 1963 survey.

Table 59

TRIP DISTANCE

Trip Purpose	Distance in Miles
To Work	5.1
Social-Recreational	4.6
Personal Business	3.5
To School	3.0
To Shop	2.9

Trip Generation

"For planning purposes it is important that the trip generation relationships developed meet three criteria: (1) the relationships must involve socio-economic and land use characteristics which can be adequately determined from a land use plan for small geographic areas such as traffic analysis zones; (2) the relationships must be reasonably stable over time so that they may be applied with validity to future as well as to existing land uses; and (3) the variables involved in the relationships must exhibit a high degree of correlation."(37)

The following series of relationships are used to further analyze the trip generation characteristics of the Southeastern Wisconsin Region and the urbanizing areas of the Region.

Table 60

FAMILY SIZE*

Number of Persons	Percent of Households	Trips Per: Household	Trips Per: Person
1	12	1.83	1.83
2	28	4.75	2.38
3	18	7.22	2.41
4	17	9.05	2.26
5 or more	25	10.08	2.01

*Regional Basis

Source: Ibid (30), Chapter IX, Page 156, Table 92

As might be expected, Table 60 shows that the number of trips per household increases as the number of persons per household increases; however, the number of trips per person decreases as family size increases when two or more persons are involved. This can be attributed in part to the larger proportion of children in larger families who make fewer trips.

Table 61

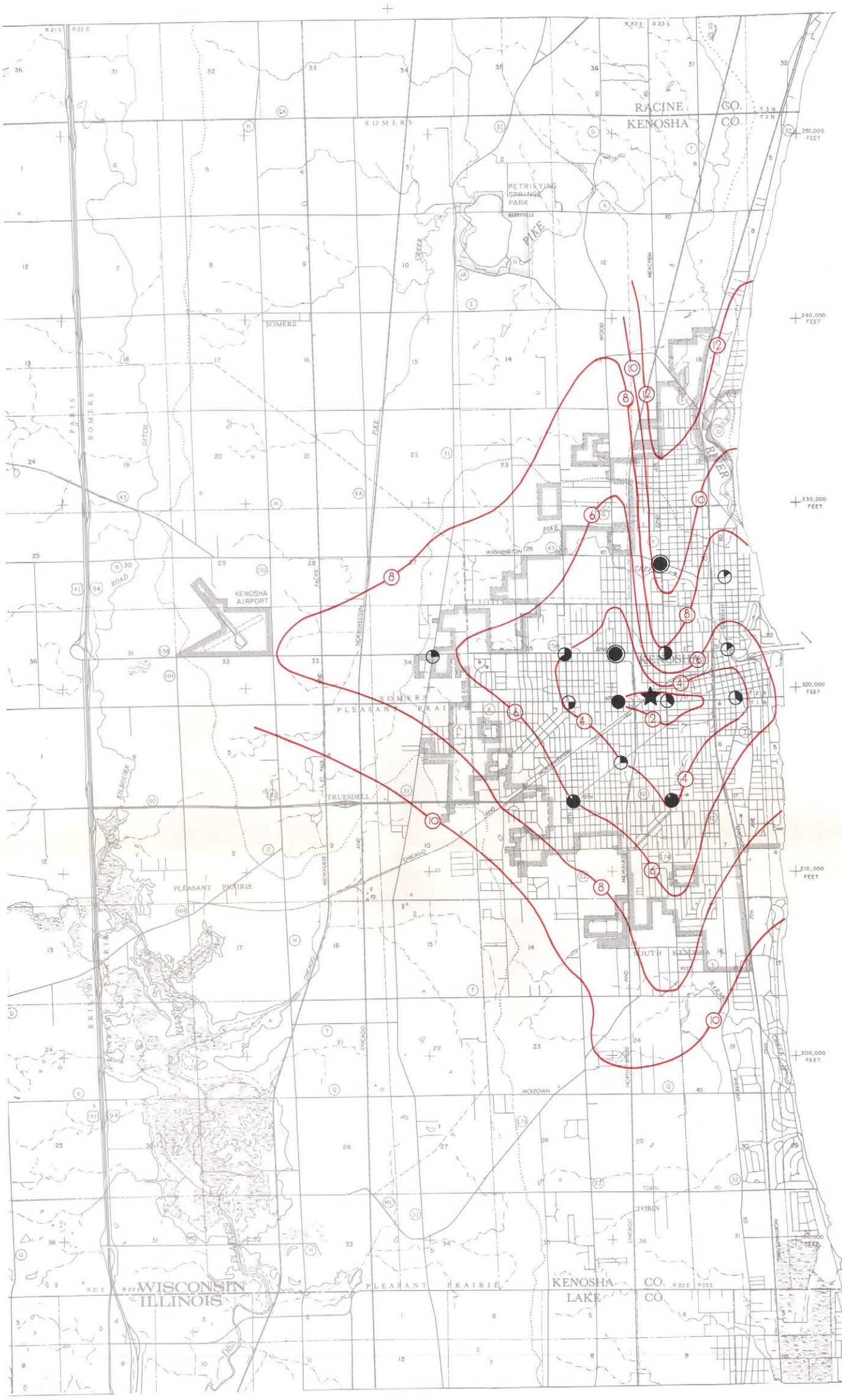
AUTO OWNERSHIP*

Autos Available	Percent of Households	Trips per Household
0	18	1.99
1	58	6.98
2	21	10.34
3 or more	3	13.00

*Regional Basis

Source: Ibid (30), Chapter IX, Page 156, Table 93

(37) Ibid (30), Chapter IX, Page 155.



TRAVEL TIME AND DELAY STUDY

LEGEND

DELAY IN MINUTES

1/2 1 1½ 2 OVER 2

SHORTEST TIME ISOCHRONIC LINE

(8) PEAK HOUR TRAVEL TIME IN MINUTES

★ SURVEY ORIGIN

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION	THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH A TECHNICAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY, UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954, AS AMENDED.	KENOSHA PLANNING DISTRICT CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS	HARLAND BARTHOLOMEW AND ASSOCIATES CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS SAINT LOUIS, JANUARY 1967 MISSOURI

MAP 31

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Table 61 shows that 82 percent of the households in the Region have at least one automobile available. These households make about 95 percent of the total person trips within the Region on an average weekday. Where more than one automobile per household is available, the number of trips made per household increases but at a decreasing rate.

Table 62

HOUSEHOLD INCOME*

Income Group	Percent of Households	Trips per Household
Less than $4,000	24	2.88
$ 4,000 - $ 7,999	49	7.50
$ 8,000 - $11,999	20	10.47
$12,000 - $15,999	4	11.65
$16,000 and over	3	12.32

*Urbanizing Areas of Region

Source: Ibid (30), Chapter IX, Page 157, Table 94

Households having an annual income of less than $4,000 generated slightly less than three trips per household while the next highest income range generated 7.50 trips per household, an increase of about 160 percent (See Table 62).

In higher income groups trip generation rates increases but at a decreasing rate. Also, 73 percent of the households in the urbanizing areas of the Region have incomes of less than $8,000 and account for about 61 percent of the total person trips in the Region on an average weekday.

Table 63

TYPE OF STRUCTURE*

Type of Structure	Percent of Households	Trips per Household
Single-Family	55	8.73
Two-Family	27	5.86
3 and 4 Family	7	5.24
Multi-Family	9	3.85
Trailer	-	5.40
Other	2	1.17

*Urbanizing Areas of Region

Source: Ibid (30), Chapter IX, Page 158, Table 95

The data in Table 63 shows that the trip generation rate per household decreases with an increase in the number of housing units within a structure. Families living in single-family and two-family structures account for 82 percent of the total households living in the urbanizing areas of the Region and account for about 90 percent of the total internal person trips made on an average weekday in the Region.

Table 64

LAND USE AT TRIP DESTINATION*

Use	Trips per Net Acre		
	Person	Auto	Truck
Developed Residential	21.7	14.3	1.3
Commercial	164.6	111.3	15.3
Industrial	34.2	26.2	4.6
Governmental and Institutional	40.0	21.8	1.6

*For Kenosha Urbanizing Area of Region

Source: Ibid (30), Chapter IX, Page 160, Table 97

Quite obviously, the commercial land use has the highest trip generation capacity for all three categories, (See Table 64). Industrial uses generate the next highest number of trips per acre for autos and trucks only while governmental and institutional uses rank second for person generating capabilities.

Parking Space at Commercial Destination

As an additional aid to the analysis process, a special study was conducted to determine the adequacy of parking space at the five major shopping areas in the Kenosha Planning District. The data assembled and some resulting ratios is shown in Table 65. Since these commercial areas varied quite widely in size and function, the purpose of the study was to reduce raw data on parking space and building area to a ratio between these two items.

The study shows that the three commercial areas that were designed as shopping centers from their inception all have essentially the same ratio of parking spaces to building area. This ratio is one off-street parking space for every 110, 116, or 122 square feet of building area. On the other hand, the CBD and Uptown shopping areas have ratios of 1:700 and 1:1,034 respectively. These two areas were obviously not intended to be "shopping centers" as the term is now used, but competition from these outlying centers has forced them to provide more off-street parking. This is a slow and expensive process for these two centers as the development around them is almost complete, whereas the three shopping centers were able to acquire sufficient open land for their development.

Another factor affecting the study is the intensity of land use development. In the three shopping centers the buildings are more spread out, giving an open, airy atmosphere whereas in the CBD and Uptown areas the buildings are on small lots and vertical development plays a much more important part. Also, the inclusion of on-street parking facilities would drastically reduce the ratios of the CBD and Uptown centers as shown in the lower portion of Table 65.

Capacity Increasing Measures

Quite obviously, if the District grows as estimated and the corresponding traffic generated by this growth is placed upon the existing street system, the system will have certain deficiencies in its ability to accommodate this traffic. An obvious approach to alleviating these deficiencies is to construct new streets; however, there are other considerations providing an economical approach to both immediate and long-range needs. For an example, a freeway lane can accommodate two to three times as much traffic as a regular street lane. Thus, by providing an expressway-freeway system, lane requirements are reduced in comparison with providing a normal arterial street system.

In addition to the possibility of constructing new streets, one must consider the measures available for increasing the capacity of existing streets. Table 66 provides a summarization of these means with pertinent advantages and disadvantages of each. There are essentially two groupings for such improvements. One consists of increased capacity through the use of traffic control measures and should be used to the maximum practicable extent, while the second category involves construction through intersection treatments and street widening programs. Generally,

Table 65

PARKING AREA - BUILDING AREA RATIOS

Retail Location	Off-Street Parking Area(1)	Off-Street Parking Spaces(2)	Commercial Building Area(3)	Ratio of Parking Spaces to Building Area (3)
CBD	560,400	1,601	1,121,400	1:700
Community Discount - Montgomery Ward Complex	642,900	1,836	214,100	1:116
Pershing Plaza	527,400	1,506	184,900	1:122
Town & Country	145,200	414	45,800	1:110
Uptown	70,700	202	209,000	1:1,034

(1) Expressed in Square Feet.

(2) Calculated at Ratio of 350 Square Feet Per Space - Includes Driveways, etc.

(3) Building Area Expressed in Square Feet of Floor Area.

Retail Location	Off-Street Spaces	On-Street Spaces	Commercial Building Area	New Ratio
CBD	1,601	1,891	1,121,400	1:321
Uptown	202	105	209,000	1:638

Source: Land Use Data Assembled in Early 1964.

Table 66

CAPACITY INCREASING MEASURES

	Advantages	Disadvantages
I. Traffic Control Measures		
A. Progressive fixed time signalization	1. Low cost 2. Easily installed 3. Long-range flexibility	1. Provides minimal increase in capacity normally 2. Interconnection desirable 3. No flexible for two-way streets
B. Flashing signals, off-peak	1. Low cost 2. Aids cross street	1. Does not aid major street peak hour needs
C. Interconnection with multi-dial controller	1. Relatively low cost 2. Some flexibility on two-way streets	1. Provides minimal increase in capacity 2. Often difficult to obtain good progression for two-way streets
D. Volume density controllers	1. Provides best adaptation to flow changes 2. Most capacity for "as is" conditions	1. Most costly of signalization means 2. Cannot provide gross increases in capacity
E. Parking restrictions	1. Low cost 2. Provides high capacity increases	1. Requires strict enforcement 2. May not add appreciably to intersection capacity
F. Turn restrictions	1. Low cost 2. Easily installed 3. Can effectively increase capacity	1. Requires enforcement 2. Shifts the problem - does not solve it 3. Often only minimal relief provided
G. Reverse lanes	1. Low cost possible 2. Provides high capacity increases	1. Requires high degree of public information 2. Can be expensive 3. Six lanes desirable
H. One-way couples	1. Low cost 2. Maximum utilization of pavement width possible 3. Easy to obtain progression 4. Provides increased intersection capacities	1. Some circuity 2. Requires a pair of nearby similar streets 3. Streets should be connected at each end of couple
I. Reverse streets	1. Low cost possible 2. Provides very high capacity increases when most needed 3. Permits normal two-way operation during off-peak hours 4. Easy to obtain progression during peak hours 5. Provides increased intersection capacity 6. Maximum utilization of pavement width possible	1. Requires high degree of public information and acceptance 2. Requires special treatment at each terminus; may be expensive 3. Some circuity introduced during peak hours
II. Construction	**Advantages**	**Disadvantages**
A. Intersection treatments	1. Less costly construction than over-all widening 2. Better utilization of pavement widths between blocks 3. Reduces right-of-way requirements between major intersections	1. May not permit desirable operating speeds between intersections. 2. On wider streets calls for very large intersection areas 3. Can have limited effectiveness
B. Widening	1. Can provide large capacity increases 2. Can permit desirable operating speeds between intersections	1. Most costly means 2. Aesthetics

use of traffic control measures involves a relatively inexpensive capacity increasing approach while new construction is often necessary where large increases in capacity are required.

Factors Affecting Major Street Locations

Within an urban area there are a number of combinations of street segments that can be considered in the development of a transportation plan. In addition to the consideration of traffic service, it is also necessary to evaluate the transportation plan with a number of physical factors influencing the desirable location of major streets.

Map 32 summarizes the results of a study of the many factors affecting major street and highway location. These factors include a consideration of existing and proposed locations for the following:

1. Schools
2. Shopping Centers
3. Public and Semi-Public Land
4. Major Employment Centers
5. Railroad and Highway Grade Separations
6. Expressway Routes
7. Potential Commercial and Industrial Growth Areas

The general location of the proposed industrial freeway is shown just west of STH-31. The development of this route will influence traffic movements and land growth trends to a significant degree and its location is of major importance in the development of a major street system for the Kenosha Planning District.

Future land use plays a predominant role in the determination of future traffic. The precise type of land use determines to a significant degree the level of traffic generation, and special street planning considerations are required for certain land uses. For example, major parks and other public and semi-public areas require special consideration in order to permit the public to have access to the areas. Major public and semi-public areas have been delineated on Map 32 in order to permit their consideration in the development of a major street plan.

Objectives and Principles

The transportation plan should establish certain objectives and principles which, if followed, will serve as a guide to future development of a safe, efficient and desirable transportation system. The Southeastern Wisconsin Regional Planning Commission has developed seven transportation planning objectives and supporting principles. In addition, a comprehensive list of standards has been developed to assist in the transportation planning procedure leading to the development of an overall transportation plan. The seven objectives and their supporting principles are listed in the following portion of this section. (38)

Objective #1

An integrated transportation system which will effectively serve the existing regional land use pattern and promote the implementation of the regional land use plan, meeting the anticipated travel demand generated by the existing and proposed land uses.

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

Objective #2

A balanced transportation system providing the appropriate types of transportation service needed by the various sub-areas of the Region at an adequate level of service.

Principle. A balanced regional transportation system consisting of highway and transit transportation and terminal facilities is necessary to provide an adequate level of transportation service to all segments of the population, to properly support essential economic and social activities, and to achieve economy and efficiency in the provision of transportation service. The transit component provides transportation service to that segment of the population which cannot for various reasons own and operate an auto. Furthermore, transit supplies added transportation system capacity to alleviate the peak home-to-work movement loadings on highway facilities, and assists in reducing the land use demand for parking facilities in central business districts.

Objective #3

The alleviation of traffic congestion and the reduction of travel time between component parts of the Region.

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

Objective #4

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

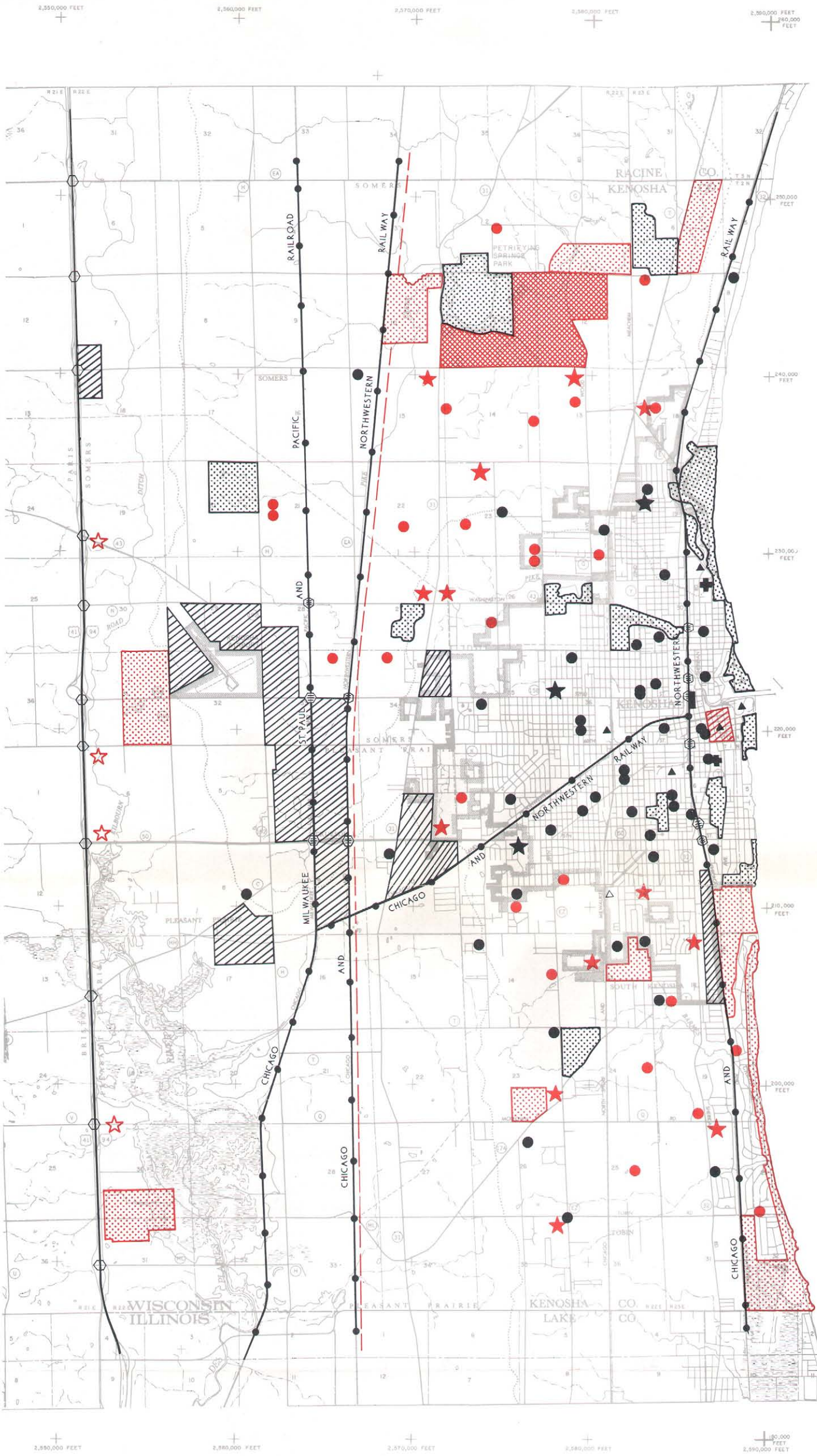
Principle. Accidents take a heavy toll in life, property damage, and human suffering; contribute substantially to overall transportation costs; and increase public costs for police and welfare services; therefore, every attempt should be made to reduce both the incidence and severity of accidents.

Objective #5

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

Principle. The total resources of the Region are limited and any undue investment in transportation facilities and services must occur at the expense of other private investment; therefore, in the interest of an efficient and equitable allocation of fiscal resources, total transportation costs should be minimized.

(38) Report No. 7, "Land Use - Transportation Study", Forecasts and Alternative Plans 1990, Volume Two, June, 1966, by SEWRPC, Chapter II, Table 2.



FACTORS AFFECTING MAJOR STREET LOCATIONS

L E G E N D

- EXISTING SCHOOLS
- PROPOSED SCHOOLS
- EXISTING SHOPPING CENTER
- PROPOSED SHOPPING CENTER
- PROPOSED HIGHWAY COMMERCIAL AREA
- MAJOR CENTERS OF EMPLOYMENT
- HOSPITAL
- GRADE SEPARATION (HIGHWAY)
- GRADE SEPARATION (RAILROAD)
- MAJOR PUBLIC AND SEMI-PUBLIC AREA
- PROPOSED PUBLIC AND SEMI-PUBLIC AREA
- POTENTIAL INDUSTRIAL GROWTH AREA
- EXISTING EXPRESSWAY SYSTEM (I-94)
- PROPOSED EXPRESSWAY ROUTE
- CENTRAL BUSINESS DISTRICT
- UNIVERSITY OF WISCONSIN-PARKSIDE
- EXISTING RAILROAD
- RAILROAD DEPOT

MAP 32

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

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Objective #6

The minimization of disruption of desirable existing enighborhood and community development and of the deterioration or destruction of the natural resource base.

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

Objective #7

A high aesthetic quality in the transportation system and proper visual relation of the major transportation facilities to the land and cityscape.

Principle. Beauty in the physical environment is conducive to the physical and mental health and well-being of people, and as major features of the land and cityscape, transportation facilities have an important impact on the aesthetic quality of the total environment.

Future Travel Demand

There are three basic questions that arise in the planning and design of a new transportation facility or of an improvement to an existing transportation facility.

1. How will the existing traffic patterns be distributed on any proposed facilities?

2. How will future traffic patterns be distributed on any proposed facilities?

3. How will the proposed facilities affect traffic on the remainder of the transportation system?

These three basic transportation planning questions must be answered if a sound system is to be provided.

New transportation planning techniques require the formulation and application of mathematical models which permit both the existing and potential traffic demand within an urban region to be simulated and assigned to any given transportation system. A brief description of the sequence of simulation follows.

Trip Generation

Trip generation is the term generally applied to that phase of the traffic simulation process whereby the relationships existing between land use and the travel which it produces are determined and quantified. For this analysis the travel data is usually expressed in terms of "trip ends". One set of relationships is determined for the "production" end of the trip and another relationship is determined for the "attraction" end of the trip. Because trips made for different reasons produce different patterns in time and space, it is also necessary to distribute trips by purpose category.

Modal Split

The second major step in the determination of future traffic demand process involves the division of future person trips between two major modes of travel-public mass transit and private automobile. This division is usually expressed as the percentage of all person trip ends that will use mass transit, with this percentage being determined for each traffic analysis zone within the planning area by a modal split model relating transit utilization to selected characteristics of the land use development and transportation systems.

Trip Distribution

The third major step in the traffic simulation process is the conversion of trip productions and attractions to trip interchanges, that is, the linking of all origins and destinations derived in the trip generation analysis to form trips. The resulting zonal trip interchange constitute the basis for the assignment of future traffic loads to alternative transportation networks.

"The most widely used trip distribution model is the so-called 'gravity model'. The basic concept underlying the gravity model is that trip interchange between two subareas of the Region is a direct function of the number of trip ends (activity) in each subarea and some inverse function of their spatial separation. This function of spatial separation adjusts the relative attraction of each zone for the ability, desire, or necessity of the trip-maker to overcome the travel distance involved."(39)

Traffic Assignment

The final major step in the forecasting of future traffic demand consists of the assignment of the zonal trip interchanges derived in the distribution phase to specific routes of the alternative transportation system. To simulate the existing traffic loads the actual interzonal traffic movements determined from the origin and destination survey are used as input to the assignment process; to simulate future traffic loads, the forecast of interzonal traffic movements prepared in the distribution analysis are used as input. The output is an estimate of the existing or future traffic volumes to be carried by each segment of the transportation system.

Plan Development Process

The following is a brief description of the process used to develop the arterial street and highway plan for the Kenosha Planning District.

Using the previously developed preliminary controlled existing trend land use plan as a model, the SEWRPC prepared an expected 1990 traffic flow map for the District. This flow map was prepared only for what was termed the "existing plus committed" street system and provided anticipated traffic flow in terms of vehicles per 24-hour period for each link in the street system. The existing portion of the above phrase is self-explanatory. The term committed was applied to those facilities which would be constructed before the design year 1990 regardless of the results of the regional planning program. These facilities consisted primarily of highway improvement projects under various stages of development from official commitment of funds for engineering design and construction, through acquisition of right-of-way, to actual construction underway. The cancellation of such projects would not only be extremely costly and uneconomical but, in many cases, administratively and politically impossible.

(39) Ibid (38), Chapter IV, Page 63.

An analysis was then made of the entire existing plus committed street system in the District to determine what effect could be expected from the anticipated 1990 traffic flow. This analysis process can be termed a capacity-deficiency analysis. In this process, deficiencies in the existing system appear which are generally caused by two factors. These are (1) overloading, that is, the existing plus committed facilities would be expected to be carrying more traffic than they could accommodate and (2) lack of any facility which requires a new route or substantial improvements to existing routes.

The next step in the plan development process was that of plan preparation. In this step, a preliminary arterial street and highway plan was developed by assigning certain cross-sections having calculated design capacity capabilities to each of the links in the district's system. (See Map 33 and Table 67. These are described in more detail in a later section of this chapter.) There are certain modifications necessary to produce a well-coordinated system capable of meeting all the anticipated demands. For example, streets and highways are designed to generally serve two functions: (1) traffic desires or traffic flow and (2) to provide land service. The latter element means that many facilities are designed to provide service to adjacent land uses and not solely for expected traffic flow.

The preliminary arterial street and highway plan was then submitted to the SEWRPC for testing by electronic computer. The purpose of this process was to insure that the plan eventually proposed would satisfy the demands expected to be placed upon it by the 1990 traffic flow. At this stage in the development of the overall comprehensive plan a preliminary land use plan for the District had been developed. This plan was developed in more detail than the one prepared by the SEWRPC for the region, thus providing a more accurate up-to-date model on which to forecast future travel. Adjustments were made to computer program to allow for new facilities provided by the preliminary system plan and later data provided by the State of Illinois and a similar study underway in Lake County. The result of the new test was a revised anticipated 1990 traffic flow map for the Kenosha District.

The review of the new flow map following the test revealed that only minor adjustments were necessary to produce a plan for the district that would satisfy the expected needs. The greatest need to be satisfied at this stage was a corridor along the present route of STH-174 in the southern portion of the District. Whereas the initial estimated flow map showed no particular need for improvement, the revised traffic flow map indicated that about 17,000 vehicles would desire to use that route between STH-31 and 104th Street. Further north the flows diminished to about 9,000 vehicles in a 24-hour period, still a significant change. In addition, a demand was evident in the area between Sheridan Road at about 97th Street and 93rd Street and 22nd - 24th Avenue where no direct route now exists. This need was also satisfied by alterations to the preliminary plan.

The revised anticipated 1990 traffic flow data is shown on Map 33. The flows anticipated along the proposed industrial freeway dominate the map and immediately indicate the importance of this facility. In the southern portion of the District the expected traffic flow would be about 12,000 vehicles during a 24-hour period (average weekday) while in the extreme northern portion of the District, the flow is estimated at 48,000 vehicles. On STH-31, located just east of the proposed freeway, anticipated flows vary between 5,000 (north) and 13,000 (south) clearly indicating that the new freeway would not be expected to render the route useless. Traffic on IH-94 would be expected to increase from 21,000 to 47,000 vehicles in a 24-hour period in its northern section.

Other major north-south traffic demands are expected in the 47th Avenue corridor (4,000 - 16,000 vehicles), 39th Avenue (3,000 - 18,000 vehicles), 30th Avenue (5,000 - 14,000 vehicles), and 22nd Avenue where traffic flows are expected to vary between 7,000 and 19,000 vehicles along the route.

In the east-west movements several major increases are evident. STH-174 and the movement involving Sheridan Road to 93rd Street have already been mentioned. Significant increases in traffic flow are expected along 80th Street between 22nd and 39th avenues; STH-50 (75th Street) between 39th Avenue and the industrial freeway where traffic is expected to more than double; STH-43 (Washington Road) between Sheridan Road and the industrial freeway. In addition to these routes, more than 8,000 vehicles per day would be expected along 12th Street, the southern boundary of the University of Wisconsin - Parkside campus.

Arterial Street and Highway Plan

The proposed arterial street and highway plan (See Map 34) is the recommended system resulting from the data collection, analysis, and testing procedures previously described in this chapter. The system shown has been tested and compared with anticipated future demands and successfully fulfills those demands. The proposed plan is necessarily a long-range plan designed to accommodate 1990 estimated traffic levels and to permit logical extensions and expansions for traffic growth beyond 1990. The proposed locations and right-of-way improvements should be considered general as they will require detailed preliminary studies in order to establish the final locations and widths for design.

A necessary supplement to this proposed plan is Map 35 which shows recommended typical cross-sections. Table 67 contains standard capacities for the cross-sections shown on Map 35. The recommended cross-sections have been coordinated and developed by the Wisconsin State Highway Department and the Southeastern Wisconsin Regional Planning Commission. The various cross-sections shown are keyed to the plan (Map 34) by a system of numbers for urban areas and letters in the rural areas. The designations of the various cross-sections have also been keyed to the expected traffic flows. For example, the 1990 traffic flow on the northern section of the industrial freeway is estimated at 48,000 vehicles in a 24-hour period. Reference to Table 66 reveals that volumes in this range would require a six-lane freeway cross-section. Therefore, cross-section "A" has been assigned to that portion of the freeway (rural section). Similarly, the expected flow on STH-174 between STH-31 and 104th Street is 17,000 vehicles. In the lower portion of Table 67, this range of flow in an outlying area is satisfied by a four-lane arterial with a 56-foot pavement. From Map 35, cross-section "C" has been assigned to that portion of STH-174. This system has been used throughout.

ESTIMATED 1990 AVERAGE WEEKDAY TRAFFIC FLOW ON PROPOSED ARTERIAL STREET AND HIGHWAY SYSTEM.

SOURCE: SEWRPC, NOVEMBER, 1966

1990
24-HOUR ESTIMATED TRAFFIC VOLUMES

MAP 33

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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KENOSHA PLANNING DISTRICT

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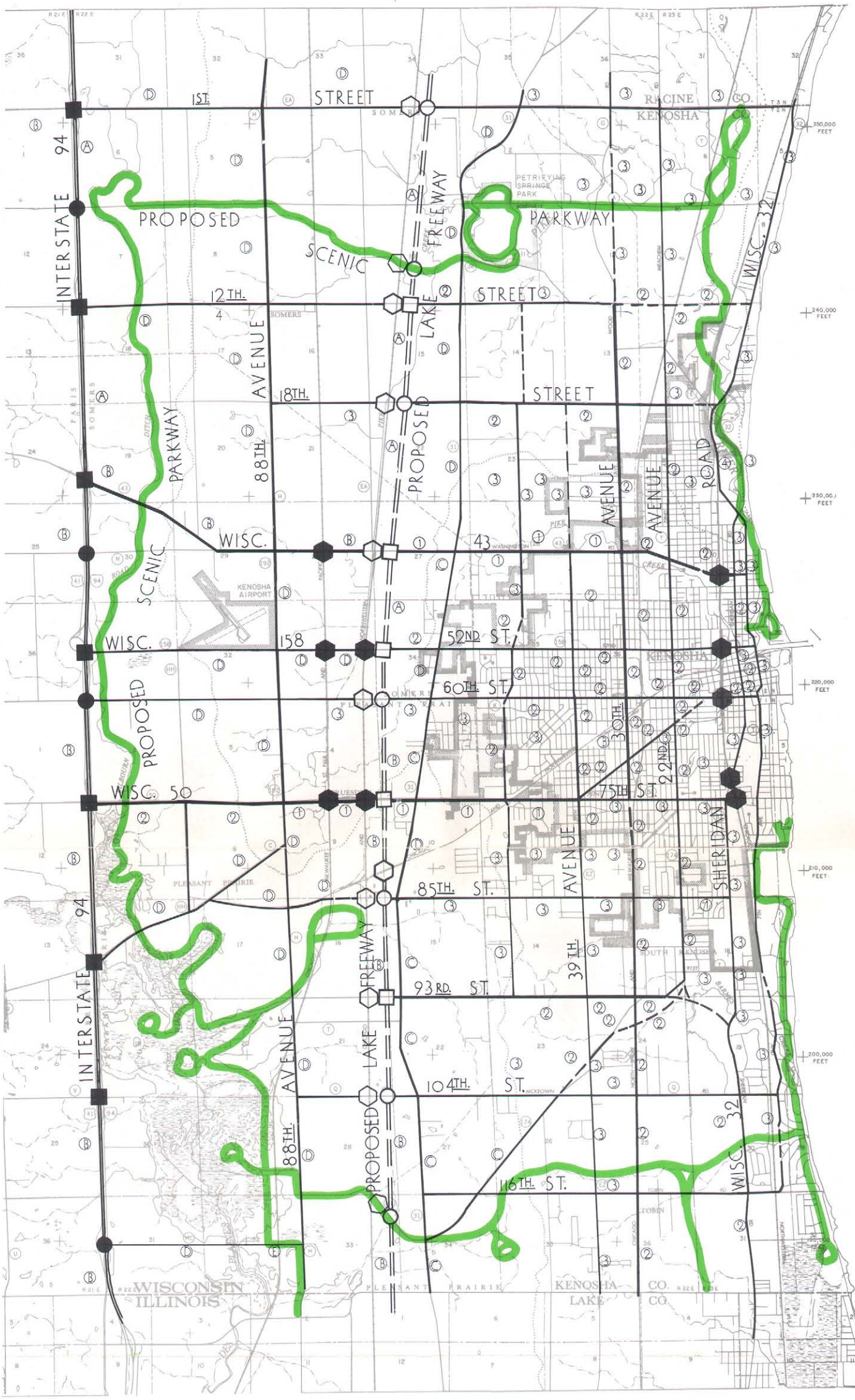

ARTERIAL STREET AND HIGHWAY PLAN

TYPE OF STREET	EXISTING OR WIDENED RIGHT-OF-WAY	PROPOSED NEW RIGHT-OF-WAY
FREEWAY OR EXPRESSWAY	═══	═══
STANDARD ARTERIAL	———	———
COLLECTOR	———	- - - -
PROPOSED SCENIC PARKWAY		▬▬▬

FACILITY	EXISTING	PROPOSED
INTERCHANGE	■	□
HIGHWAY GRADE SEPARATION	●	○
RAILROAD GRADE SEPARATION	⬢	⬡

② RECOMMEND TYPICAL CROSS-SECTION

MAP 34

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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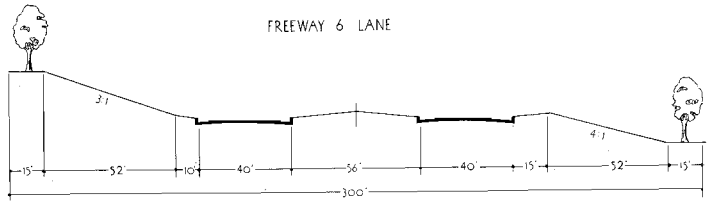
URBAN SECTIONS



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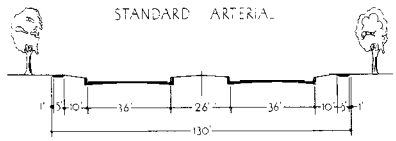

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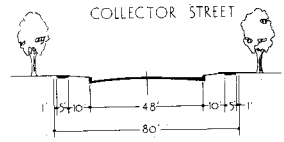

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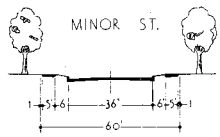
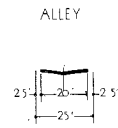
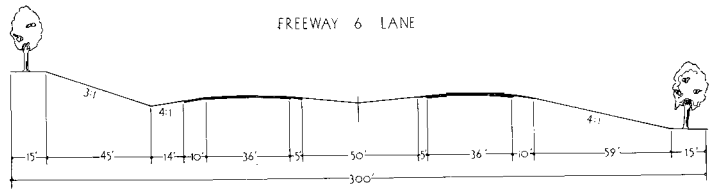




RURAL SECTIONS



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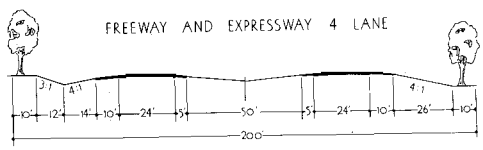

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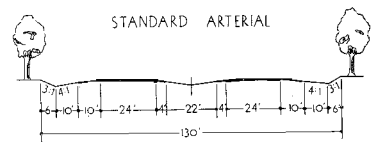

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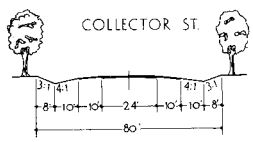

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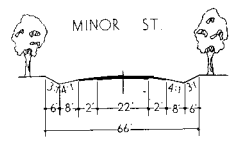

RECOMMENDED TYPICAL CROSS SECTIONS

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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Table 67

24-HOUR DESIGN CAPACITY[1]

Type Facility	Width in 12' Lanes	Type of Area			
		Downtown	Intermediate	Outlying	Rural
Freeway	4	41,800	41,800	41,800	41,800
	6	64,600	64,600	64,000	64,000
	8	87,400	87,400	87,400	87,400
Expressway	4	25,080	26,400	27,280	28,600
	6	38,760	40,800	42,160	44,200
	8	52,440	55,200	57,040	59,800
Arterial	4	9,680	11,880	13,200	14,500
	6	14,960	18,360	20,400	22,440
	8	20,240	24,840	27,600	30,360

(1) No Reduction for Adverse Grades
No Increase for Turning Lanes

Type Facility	Pavement Width[2]	Type of Area	
		Intermediate	Outlying
2-Lane Arterial	20	4,580	5,600
	24	5,720	7,000
	28	6,860	8,400
	32	8,010	9,800
4-Lane Arterial	40	10,300	12,600
	44	11,440	14,000
	48	12,580	15,400
	52	13,730	16,800
	56	14,870	18,200
	60	16,020	19,600
	64	17,160	21,000
6-Lane Arterial	64	17,160	21,000
	68	18,300	22,400
	72	19,450	23,800
	76	20,590	25,200
	80	21,740	26,600

(2) Minus Two Feet Each Side

Source: SEWRPC

North-South Routes

Perhaps the most far-reaching proposal contained in the plan involves the so-called "industrial freeway" to be located just west of STH-31. This facility has long been the discussion of traffic engineers, planners and citizens. The rapid growth of the Southeastern Wisconsin Region has progressed to the point where detailed mapping and route location for this route were required and are now in progress. The route is intended to provide a connector between the Chicago and Milwaukee urban areas and is to be developed as a limited access route. According to the plan this route would have four traffic lanes in the section south of STH-50 and six traffic lanes to the north of that highway. The plan indicates only five traffic interchanges in the Kenosha District along this route, located at 93rd Street, 75th Street, 60th Street, 52nd Street, Washington Road and 12th Street. These interchanges will provide access to STH-50, 158 and 43 also. The importance of this route is further exemplified by the nine other grade separations proposed in the Plan. The 12th Street interchange would serve the University of Wisconsin-Parkside, the next three interchanges to the south would serve the central urban area and the 93rd Street interchange would serve a by-pass or cross-town route connecting with IH-32.

Another major facility involves the extension of 30th Avenue to the south along the old North Shore right-of-way to connect with a proposed facility in Illinois. The new section should terminate at 80th Street where a connection would be made with 30th Avenue. A new section of 30th Avenue is proposed between 1st and 12th streets to eliminate the poor alignment of the existing road. Although the plan shows a direct extension, the exact location of this route will have to be determined in cooperation with the University and may, in fact have to be located somewhat to the east of the location shown.

The analysis of future traffic desires indicated the need for a major connector between STH-32 and the industrial freeway. This is provided to the south of and connecting with 93rd Street. This connector also provides an opportunity for removing through traffic from Sheridan Road and routing it to 22nd Avenue which would be improved to major arterial standards. Further, a need was indicated for the improved alignment of STH-174 between 91st Street and 104th Street because of an expected increase in traffic. This also allowed the use of 22nd Avenue as a cross-town route which would by-pass the central business district and still be close enough to provide access to the area.

Roosevelt Road, at the present time, runs diagonally between the intersections of 22nd Avenue at 63rd Street and 39th Avenue at 75th Street. The arterial street and highway plan proposes that Roosevelt Road be extended in a north-easterly direction to 60th Street just east of 17th Avenue. This will greatly aid traffic movement into and out of the central business district.

East-West Routes

One of the primary recommendations of the arterial street and highway plan affecting east-west traffic movement involves the extension of 12th Street between 30th Avenue and STH-32. This extension would provide continuous, direct routing through the northern section of the district through interchanges at both IH-94 and the industrial freeway. This extension is particularly important because it serves the location of the University of Wisconsin-Parkside and cross-town traffic facilities will be necessary to accommodate the anticipated enrollment and its activities.

Washington Road is another of the important east-west routes which the plan proposes for improvement. The anticipated traffic volumes indicate the need for four traffic lanes between 30th Avenue and Sheridan Road. At present, this section is restricted to only two moving lanes and at one point, 16th Avenue, very poor alignment. The removal of this sharp curve is a necessity if traffic is to move freely and safely through this area. To the west of 30th Avenue, six traffic lanes would be required to accommodate the anticipated traffic, at least as far as the industrial freeway. West of the freeway, however, only four traffic lanes would be required.

A major by-pass type facility through the southern portion of the urban area would be 93rd Street. As mentioned previously, this route would serve as a connector between STH-32 and the industrial freeway.

Scenic Parkway

Although the arterial street and highway plan shows a scenic parkway encircling the District, this proposed route is not intended to serve as a major street or heavy traffic carrier. The intention is that truck traffic would be prohibited and that automobile traffic would be regulated by speeds in the range of 10-20 miles per hour. This route, as proposed, would provide a 50-mile long section of parkway which would satisfy in large part a growing demand for pleasure driving throughout the county. The parkway would connect all three primary environmental corridors and several of the secondary environmental corridors providing access to many wildlife habitats and forest areas.

Achieving the Plan

The achievement of the major street plan is necessarily long range and should be accomplished as the opportunities and resources permit. The plan establishes general concepts; the exact location, grade and alignment can only be determined by subsequent actual street and highway engineering. Obviously, the implementation of the various recommendations of the plan will require the coordinated efforts of the city, town, county and state officials. The Wisconsin State Highway Commission, through its construction and maintenance of state and federal routes, will be an important agent in the achievement of major elements of the plan. The scheduling of local public improvements in accordance with a specific capital improvement program will also be an important means of gradually carrying out the plan.

Under Wisconsin statutes, the city is empowered to establish an "official map" showing the location and widths of streets and highways to be established. The City of Kenosha presently has such a map and has jurisdiction over an encompassed area by a three-mile radius from the city limits. The thoroughfares designated on the major street plan should be placed on this official map by amending the present map so that these recommendations will then have official status and the rights-of-way, existing and proposed, will be protected. The statute provides

that once these streets are established on the map, no permit shall be issued for any building in the bed of such designated street or highway. By this means, the integrity of the plan can be insured and the new rights-of-way can gradually be acquired. Further, undeveloped areas can be acquired in connection with land subdivision without cost to the city or towns and without inconvenience or excessive cost to the subdivider.

Some of the street improvements recommended will be expensive to construct but are sorely needed and should eventually be accomplished. Adherence to the plan and the systematic construction of these projects in accordance with their urgency will produce the most effective use of available funds and the entire plan will eventually become a reality.

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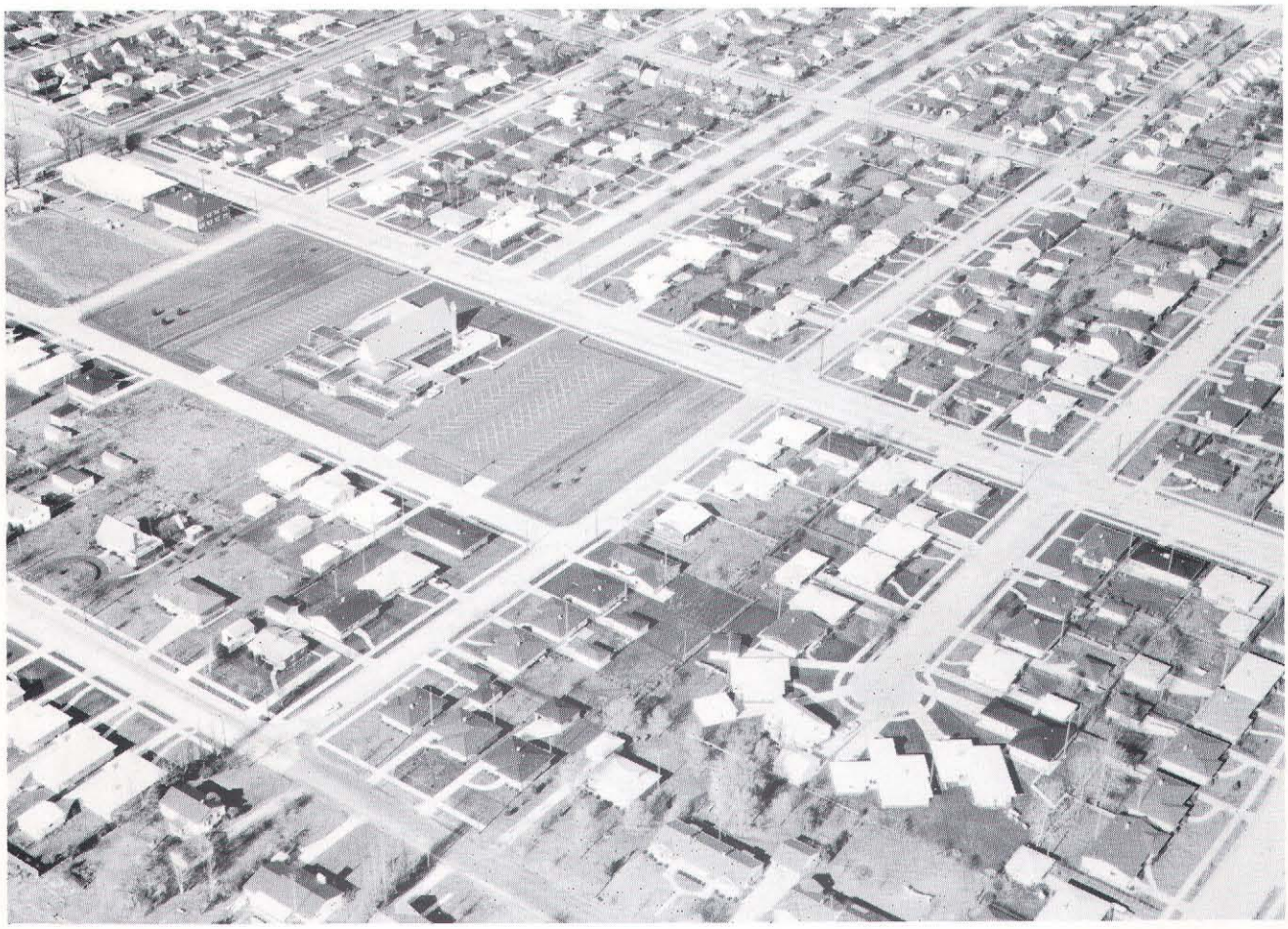

The rapid population growth currently being experienced in the area is expected to continue to 1990 when some 181,000 persons are expected to reside in the District. Residential developments such as the one shown in the photograph above must be properly planned and integrated into the existing developments if the future urban area is to be a better place to live.

Chapter VIII

SCHOOLS

As urban areas grow there is an increasing demand for more "community facilities" - schools, parks, utilities, and public buildings. To meet these requirements, governments can follow one of two general courses: (1) to meet community needs on the basis of crises or expediency; or (2) to estimate future needs and carefully schedule the provision of such services and facilities in accordance with a sound financing program. Only those communities that follow an overall plan that anticipates future needs before those needs arise can provide a sound and attractive urban environment for all their citizens with a satisfactory standard of services provided at a reasonable cost.

Well located schools on sites sufficiently large to provide ample space for recreation contribute in a major way to the creation of a good urban environment. Parks are essential to a city, not solely as "beauty spots", but as areas for active and passive recreation activities by all age groups. There is a close relationship between parks and schools since they both provide open space and recreational areas. The combination of a neighborhood park and the elementary school (which can also serve as the community building) is the logical center of a residential neighborhood. Close coordination in the planning of schools and parks is essential to the sound development of residential neighborhoods. A combined site will eliminate duplication of facilities, and by allowing more efficient use and maintenance of space can result in substantial economies to the area. It is extremely important that these sites be acquired in advance of actual need in order that they may be obtained at a reasonable cost.

The future of the Kenosha Planning District as well as that of our country, depends to a great extent upon its schools. The responsibility of providing well-educated citizens equipped to cope with the problems and complexities of modern society lies with the school. Good planning and sound economies can provide school teachers and administrators with a physical plant and surroundings designed to enable them to do the best job possible. Physical facilities designed for today's teaching concepts go hand-in-hand with well educated and dedicated teachers. Both are needed to do the task that modern society requires.

General Planning Standards

Generally accepted standards that should be utilized whenever possible in the planning of the school system are shown on Figure 7 and described as follows:

Elementary Schools (Grades K-6)

An elementary school should not only be designed for the education of children, but also as the community center of the neighborhood which it serves. As the scope of public education has been continually broadened in recent years, its benefits are now extended not only to school-age children but to adults as well. The modern public school should be provided with physical facilities designed to make the school an attractive focal point in the community life of the neighborhood by providing opportunities for all forms of recreational activities. In recent years elementary schools have been designed to serve as community centers adjoining neighborhood parks.

The enrollment of an elementary school may vary within a range of 200 to 800 pupils; however, the National Council on School House Construction and the Elementary School Principals of the National Education Association (N.E.A.) believe that the interest of the child can best be served when the maximum class size is 25 students and the size of the individual school is limited to 500 pupils. Other authorities feel that 25 pupils per class is best, but that 30 pupils is the maximum size that should be permitted. If the school becomes too large, the demands upon general use facilities, such as the auditorium, gymnasium and cafeteria, become so great as to reduce their value to the child. If the school becomes too small, the cost per pupil increases markedly. Local standards for elementary schools have been two kindergartens and 18 classrooms for first through sixth grades with the building on a 10 to 12 acre site, serving an area within a radius of approximately one-half mile.

A popular design for an elementary school consists of a "section" of seven classrooms, one each for kindergarten and the first six grades, referred to as "K-6". With an average enrollment of 25 to 30 students per grade, this section provides for 175 to 210 pupils. Four of these sections would provide for an enrollment of between 700 and 840 pupils, generally the size of school best suited to local needs in the opinion of officials of the Kenosha School District.

The elementary school site should contain a minimum of five acres plus one additional acre for each 100 pupils of predicted ultimate maximum enrollment. This would mean a site of 12 to 13 acres for a "four-section" school. This standard is used by the majority of the states, including Wisconsin.

As mentioned previously, the elementary school and associated park area should be established as the focal point of the neighborhood. This is generally referred to as the neighborhood unit concept of development. This term is used to describe the arrangement of the residential area within such a unit in order to provide the maximum degree of safety and beauty and the minimum degree of hazard and blight. The purpose of the arrangement is to bring about the highest permanent residential values and amenities. This concept also provides a system of advance planning when administered with zoning regulations, in that once the density of an area is established, future population can be determined and, from this, the size of the school facilities can be established accordingly.

Junior High Schools (Grades 7-9)

In recent years, there has been a trend toward the broad, high-quality educational program which can be offered at larger schools. Modern architecture and careful planning of curriculum can do much to overcome the disadvantages of "bigness". Some authorities consider 800 pupils a minimum and 1,500 pupils as optimum capacity for either separate or combined junior and senior high schools. The N.E.A. recommends 700 to 1,500 for junior high schools. In the Kenosha School District, local officials believe that a range of 1,000 to 1,200 pupils for junior high schools is satisfactory. This standard is also compatible to that of the Wisconsin State Department of Public Instruction.

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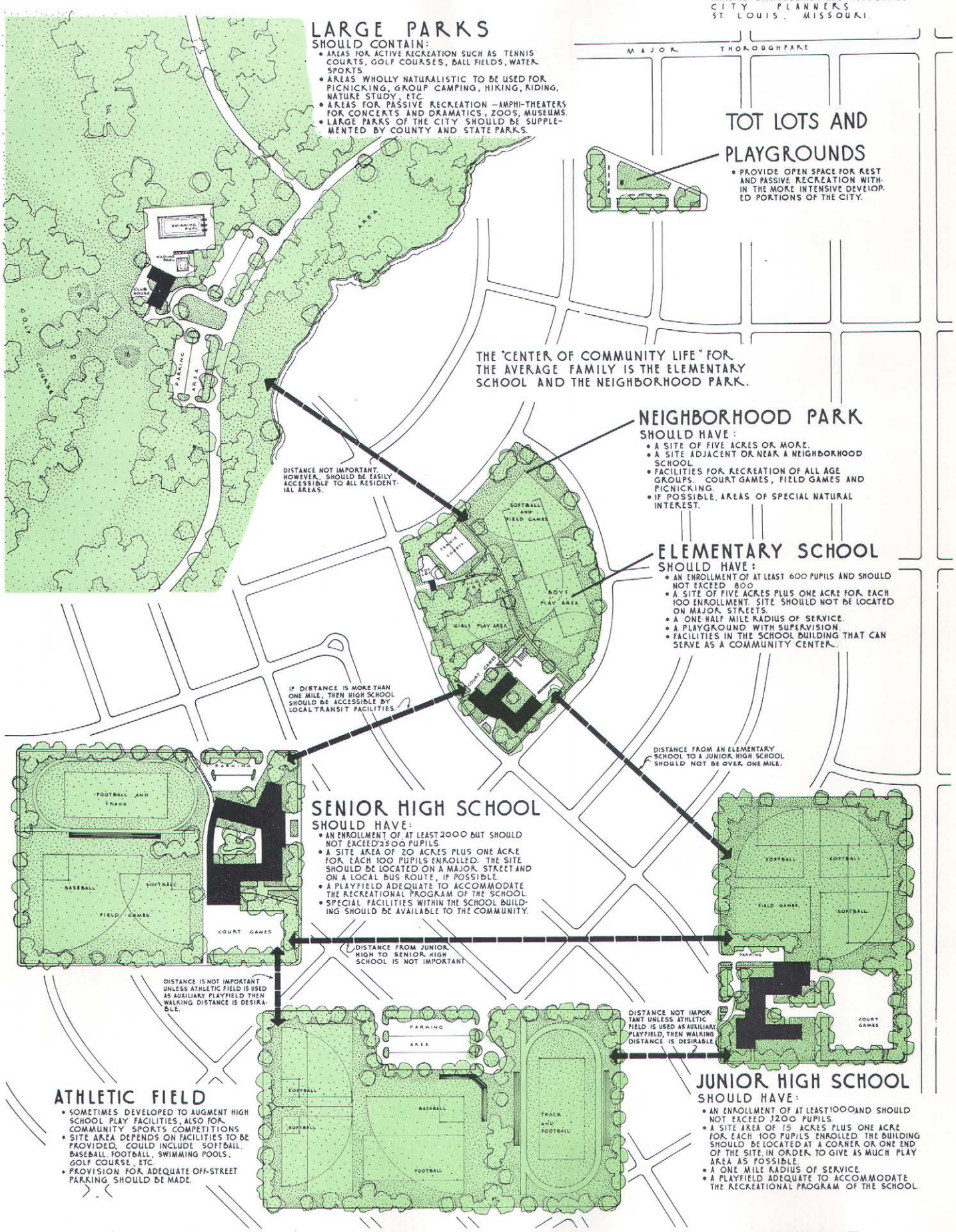
GENERAL STANDARDS FOR SCHOOLS & PARKS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS
ST. LOUIS, MISSOURI



LARGE PARKS

SHOULD CONTAIN:

- AREAS FOR ACTIVE RECREATION SUCH AS TENNIS COURTS, GOLF COURSES, BALL FIELDS, WATER SPORTS.
- AREAS WHOLLY NATURALISTIC TO BE USED FOR PICNICKING, GROUP CAMPING, HIKING, RIDING, NATURE STUDY, ETC.
- AREAS FOR PASSIVE RECREATION – AMPHI-THEATERS FOR CONCERTS AND DRAMATICS, ZOOS, MUSEUMS.
- LARGE PARKS OF THE CITY SHOULD BE SUPPLEMENTED BY COUNTY AND STATE PARKS.

TOT LOTS AND PLAYGROUNDS

- PROVIDE OPEN SPACE FOR REST AND PASSIVE RECREATION WITHIN THE MORE INTENSIVE DEVELOPED PORTIONS OF THE CITY.

THE "CENTER OF COMMUNITY LIFE" FOR THE AVERAGE FAMILY IS THE ELEMENTARY SCHOOL AND THE NEIGHBORHOOD PARK.

DISTANCE NOT IMPORTANT, HOWEVER, SHOULD BE EASILY ACCESSIBLE TO ALL RESIDENTIAL AREAS.

NEIGHBORHOOD PARK

SHOULD HAVE:

- A SITE OF FIVE ACRES OR MORE.
- A SITE ADJACENT OR NEAR A NEIGHBORHOOD SCHOOL.
- FACILITIES FOR RECREATION OF ALL AGE GROUPS. COURT GAMES, FIELD GAMES AND PICNICKING.
- IF POSSIBLE, AREAS OF SPECIAL NATURAL INTEREST.

ELEMENTARY SCHOOL

SHOULD HAVE:

- AN ENROLLMENT OF AT LEAST 600 PUPILS AND SHOULD NOT EXCEED 800.
- A SITE OF FIVE ACRES PLUS ONE ACRE FOR EACH 100 ENROLLMENT. SITE SHOULD NOT BE LOCATED ON MAJOR STREETS.
- A ONE-HALF MILE RADIUS OF SERVICE.
- A PLAYGROUND WITH SUPERVISION.
- FACILITIES IN THE SCHOOL BUILDING THAT CAN SERVE AS A COMMUNITY CENTER.

IF DISTANCE IS MORE THAN ONE MILE, THEN HIGH SCHOOL SHOULD BE ACCESSIBLE BY LOCAL TRANSIT FACILITIES.

DISTANCE FROM AN ELEMENTARY SCHOOL TO A JUNIOR HIGH SCHOOL SHOULD NOT BE OVER ONE MILE.

SENIOR HIGH SCHOOL

SHOULD HAVE:

- AN ENROLLMENT OF AT LEAST 2000 BUT SHOULD NOT EXCEED 2500 PUPILS.
- A SITE AREA OF 20 ACRES PLUS ONE ACRE FOR EACH 100 PUPILS ENROLLED. THE SITE SHOULD BE LOCATED ON A MAJOR STREET AND ON A LOCAL BUS ROUTE, IF POSSIBLE.
- A PLAYFIELD ADEQUATE TO ACCOMMODATE THE RECREATIONAL PROGRAM OF THE SCHOOL.
- SPECIAL FACILITIES WITHIN THE SCHOOL BUILDING SHOULD BE AVAILABLE TO THE COMMUNITY.

DISTANCE FROM JUNIOR HIGH TO SENIOR HIGH SCHOOL IS NOT IMPORTANT.

DISTANCE IS NOT IMPORTANT UNLESS ATHLETIC FIELD IS USED AS AUXILIARY PLAYFIELD THEN WALKING DISTANCE IS DESIRABLE.

DISTANCE NOT IMPORTANT UNLESS ATHLETIC FIELD IS USED AS AUXILIARY PLAYFIELD, THEN WALKING DISTANCE IS DESIRABLE.

ATHLETIC FIELD

- SOMETIMES DEVELOPED TO AUGMENT HIGH SCHOOL PLAY FACILITIES, ALSO FOR COMMUNITY SPORTS COMPETITIONS
- SITE AREA DEPENDS ON FACILITIES TO BE PROVIDED, COULD INCLUDE SOFTBALL, BASEBALL, FOOTBALL, SWIMMING POOLS, GOLF COURSE, ETC.
- PROVISION FOR ADEQUATE OFF-STREET PARKING SHOULD BE MADE.

JUNIOR HIGH SCHOOL

SHOULD HAVE:

- AN ENROLLMENT OF AT LEAST 1000 AND SHOULD NOT EXCEED 1200 PUPILS.
- A SITE AREA OF 15 ACRES PLUS ONE ACRE FOR EACH 100 PUPILS ENROLLED. THE BUILDING SHOULD BE LOCATED AT A CORNER OR ONE END OF THE SITE, IN ORDER TO GIVE AS MUCH PLAY AREA AS POSSIBLE.
- A ONE MILE RADIUS OF SERVICE.
- A PLAYFIELD ADEQUATE TO ACCOMMODATE THE RECREATIONAL PROGRAM OF THE SCHOOL.

FIGURE 7

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The junior high school should serve an area with a radius of approximately one mile or, in other words, it should service four residential neighborhoods. Because the children attending these schools are older and desire to engage in more active games, a site of at least 15 acres plus an additional acre for each 100 students should be provided.(40) As in the case of the elementary schools, it is desirable that the junior high school site be used throughout the entire year for recreational purposes.

Senior High Schools (Grades 10-12)

The N.E.A. recommends 1,000-2,000 pupils for senior high enrollments, while local school officials believe enrollments of 2,000-2,500 pupils are satisfactory. Accessibility of the high school site is an important location factor, particularly if a wide area is to be served. The large, modern high school is a major traffic generator with a daily influx of buses and numerous student and faculty automobiles, and with periodic large-scale attendance at sporting events and other community activities.

Senior high school pupils also are older and can travel much greater distances; thus, the radius of service for such schools is not a dominant factor and the importance of securing sites accessible to major transportation routes should receive full consideration. A site of at least 25 acres plus one acre for each 100 pupils should be provided.(41) The National Council of School House Construction recommends a minimum site of 30 acres plus an additional acre for each 100 pupils of predicted maximum enrollment. The necessity for a large site results from needs for more playfield area, spacious one-story building arrangements and more parking space.

Both elementary and high schools will perform many important services beyond the teaching of pupils. Their grounds and buildings will supply a large part of the community's needs for meeting places and recreation.

Previous Studies

Within the past 15 years, two studies have been made of the city school system. This section of the report presents a very general review of these studies.

Education Survey Report(42)

Recommendations of this 1951 report can be summarized as follows:

a. A new school is needed to relieve the McKinley Elementary School;

b. No new junior high schools are needed at the present time;

c. Several classrooms should be added to many of the schools;

d. The present need is generally for certain kinds of space rather than enlargement;

e. Most school sites are too small;

f. The Bradford High School site should be enlarged to include land west of the present site to the C&NW railroad tracks;

g. There is a great need for a long-range plan of development.

Also included was a very detailed list of recommendations for improvements at various schools.

A Survey of School Building Needs(43)

Recommendations of this 1959 report can be summarized as follows:

a. Abandon the high school annex and construct a new addition;

b. Construct two new high schools, serving the north and south sections of the community;

c. Construct a new junior high school in the southwest section of the community;

d. Construct a new elementary school in the Highland Park area;

e. By 1961, construct a new elementary school on the far north side;

f. By 1963, construct a new elementary school on the south side near Forest Park.

The primary purpose of the first of these two reports was to determine present needs rather than to prepare a long-range development program. The report indicated the great need for a long-range plan. In the 1959 report, several recommendations were made; some have been realized; others have not; and still others have been programmed for construction by school officials. The present study is the first made for Joint School District Number One and provides a current guide for decisions regarding the location of schools.

Existing School System

Public Schools

The public schools in the Kenosha Planning District are administered by Joint School District Number One which was formed on July 1, 1965 to include the city schools and those county schools located in the Towns of Pleasant Prairie and Somers. The School District's boundaries are the same as those of the Planning District, an ideal situation as one agency is responsible for schools in the entire area.

The public schools are operated on a 6-3-3 basis, that is, with kindergarten and the first six grades in elementary school and with three grades in each of the junior and senior high schools.

The present public school system consists of 28 elementary schools, four junior high and two senior high schools. In addition, two elementary schools have special facilities - Vernon and Jefferson. (See Map 36 and Table 68.)

(40) Standard of State Department of Public Instruction. The standard currently in use by the Kenosha School District represents 10 acres plus one acre for each 100 students enrolled.

(41) Standard of State Department of Public Instruction. The standard currently in use by the Kenosha School District represents 15 acres plus one acre for each 100 students enrolled.

(42) See Educational Survey Report, by Dr. Eugene S. Lawler, Dean, School of Education, Florida State University, Tallahassee, Florida, March, 1951.

(43) See A Survey of School Building Needs, by the Field Service and Survey Division, School of Education, Northwestern University, May, 1959.

Table 68

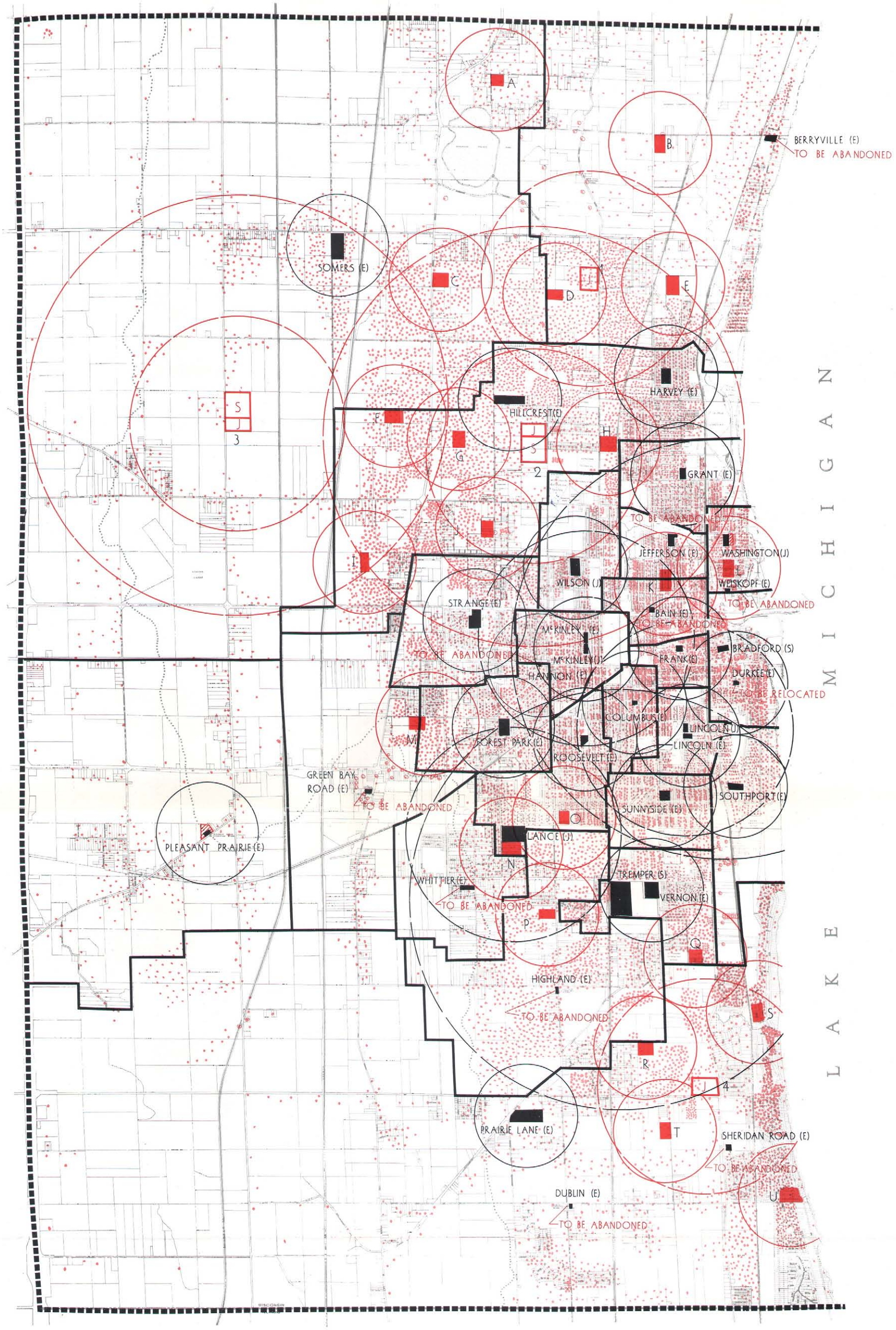
EXISTING PUBLIC SCHOOL FACILITIES

Kenosha Planning District

Grades	Name	Location	Area of Site	Year Constructed	Number of Classrooms	Educational Capacity	Enrollment September, 1966	Educational Load Per Classroom	Major Additions	Structural Condition	Availability-Suitability for Non-Educational Functions	AGKLMS (1)
K-6	Bain	2210 - 52nd St.	1.70	1907	17	425	455	26.8	1914, 8 rooms 1954, Gym-Auditorium	Good	O.K.	AGL
K-6	Berryville	7th St. & Sheridan Rd.	2.57	1924	12	300	325	27.1	1928, 4 rooms 1953, 4 rooms	Good	O.K.	K
K-6	Columbus	6410 - 25th Ave.	1.31	1910	14	350	414	29.6	1954, Gym-Auditorium 2 rooms	Good	O.K.	AGLM
K-6	Dublin	116th St. & 39th Ave.	0.86	1928	4	50	104	26.0	-	Good	Fair	
K-6	Durkee	839 - 62nd St.	1.52	1905	12	300	316	26.3	1962, Gym Addition	Good	O.K.	GKL
K-6	Forest Park	6810 - 45th Ave.	10.50	1956	24	600	695	29.0	1961, 8 rooms	Excellent	O.K.	GKLMS
K-6	Frank	1816 - 57th St.	2.18	1896	13	325	350	26.9	1897, 2 rooms 1911, 8 rooms 1964, Gym-Aud.-Kitchen	Good	O.K.	AGKL
K-6	Grant	1716 - 35th St.	4.30	1924	17	425	456	26.8	1954, 8 rooms	Good	O.K.	AGKLS
K-6	Green Bay Road	Hwy. 31 & 78th St.	2.95	1904	10	200	225	22.5	-, 5 rooms-Kitchen 1965, 4 rooms	Orig.-Poor Add.-Good	O.K.	K
K-6	Hannan	4001 - 60th St.	2.08	1909	5	100	128	25.6	-	Fair	O.K.	K
K-6	Harvey	2012 - 19th Ave.	9.43	1961	21	525	666	31.7	-	Excellent	O.K.	GKMS
K-6	Highland	3909 - 93rd St.	0.96	1927	4	75	147	36.9	-	Good	O.K.	
K-6	Hillcrest	2417 - 47th Ave.	13.76	1954	10	250	241	24.1	1956, 3 rooms 1959, 3 rooms 1960, Multi-Purpose Room	Good	O.K.	AGKM
K-6	Jefferson	1832 - 43rd St.	3.28	1924	13	275	457	35.2	1954, 4 rooms	Good	O.K.	AGKLM
Special	Jefferson	1808 - 41st Pl.	2.07	1929	7	-	43	-	1963, Major Re-modeling	Good	O.K.	KM
K-6	Lincoln	6811 - 18th Ave.	2.84	1917	18	450	542	30.1	1957, Major Re-modeling	Good	O.K.	GLS
K-6	McKinley	5520 - 32nd Ave.	2.77	1950	20	450	530	26.5	-	Good	O.K.	AGKLS
K-6	Pleasant Prairie	Wilmot Rd.	2.53	1930	9	225	362	40.2	1959, 2 rooms 1965, 3 rooms and multi-purpose room	Good	O.K.	AGK
K-6	Prairie Lane	Springbrook Rd.	14.20	1957	19	425	518	27.2	1960, 11 rooms Kitchen-Library	Good	O.K.	AGKS
K-6	Roosevelt	3322 Roosevelt Rd.	4.26	1929	23	575	653	28.4	-	Good	O.K.	AGKL
K-6	Sheridan Rd.	111th St. & Sheridan Rd.	2.13	1932	4	50	106	26.5	-	Good	O.K.	K
K-6	Somers	12th St. & 72nd Ave.	19.20	1962	18	450	557	31.0	1965, 6 rooms	Excellent	O.K.	AGKL
K-6	Southport	723 - 76th St.	6.25	1954	18	450	484	26.9	1961, 8 rooms	Excellent	O.K.	AGKMS
K-6	Strange	5414 - 49th Ave.	12.13	1963	20	500	625	31.2	-	Excellent	O.K.	AGKLMS
K-6	Sunnyside	7714 - 20th Ave.	6.40	1956	20	500	563	28.1	1961, 4 rooms	Excellent	O.K.	AGKLMS
K-6	Vernon	8518 - 22nd Ave.	11.75	1961	22	550	796	36.2	-	Excellent	O.K.	AGKMS
Special	Vernon Ortho.	8518 - 22nd Ave.	-	-	9	-	50	-	-	Excellent	O.K.	AGKLMS
K-6	Weiskopf	812 - 50th St.	0.78	1901	8	200	60	7.5	1963, Major Re-modeling	Excellent	O.K.	M
K-6	Whittier	8542 - 51st St.	1.37	1930	11	275	305	27.7	1952, 2 rooms 1959, 4 rooms 1965, 5 rooms and library	Good	O.K.	KLM
K-6	Wilson	4520 - 33rd Ave.	10.05	1954	18	450	532	29.5	1961, 8 rooms			KMS
7-9	Lance	4515 - 80th St.	23.97	1962	45	1,000	1,107	24.6	-	Excellent	O.K.	AGKLMS
7-9	Lincoln	6729 - 18th Ave.	2.60	1929	40	950	912	22.8	-	Excellent	O.K.	AGKLS
7-9	McKinley	5710 - 32nd Ave.	2.78	1921	32	700	695	21.7	1952, 2 shops, 2 labs, library and 5 rooms	Excellent	O.K.	AGLS
7-9	Washington	811 Washington Rd.	4.10	1920	41	840	896	22.4	1965, 15 rooms, multi-purpose and library	Excellent	O.K.	AGKL
10-12	Bradford	913 - 57th St.	3.60	Annex-1890 Main- 1926	76	1,710	1,668	21.9	1905, annex re-modeling	M-Excellent A-Fair	O.K.	AGLS
10-12	Tremper	8560 - 26th Ave.	40.00	1964	83	1,870	2,183	26.4		Excellent	O.K.	AGKLMS

(1) A - Auditorium
G - Gymnasium
K - Kitchen/Cafeteria
L - Library
M - Multi-Purpose Room
S - Special Education Rooms

Source: Kenosha School Board Staff



EXISTING & PROPOSED PUBLIC SCHOOL SYSTEM

- SCHOOL DISTRICT BOUNDARY
- ELEMENTARY SCHOOL ENROLLMENT BOUNDARY (EXISTING)
- EXISTING SCHOOL SITE
- EXPANSION OF EXISTING SITE

NOTES: SERVICE AREAS FOR SCHOOLS TO BE ABANDONED ARE NOT SHOWN. LETTERS AND NUMBERS ADJACENT TO PROPOSED SCHOOLS REFER TO TEXT DESCRIPTION

• ONE DOT EQUALS 10 PERSONS - 1990

EXISTING		PROPOSED
(E)	ELEMENTARY SCHOOL	
(J)	JUNIOR HIGH SCHOOL	J
(S)	SENIOR HIGH SCHOOL	S
	½ MILE RADIUS SERVICE AREA ELEMENTARY SCHOOL	
	1 MILE RADIUS SERVICE AREA JUNIOR HIGH SCHOOL	
	2 MILE RADIUS SERVICE AREA SENIOR HIGH SCHOOL	

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

SCALE 1:62,500

MAP 36

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Only five of the 28 elementary schools had enrollments of less than 200 students in September of 1965, and all but one of these were schools in the Towns of Pleasant Prairie and Somers prior to the formation of the Joint School District and all are planned to be replaced. The theoretical overlapping of elementary school service areas in the urbanized portion of the District is mitigated by the location of school attendance boundaries.

The great majority of the schools are located on sites far below generally accepted standards. This creates a serious problem in the provision of such things as adequate play areas, faculty parking, etc. At the same time, it is extremely difficult, if not impossible, to expand these sites as they are located in areas where surrounding development is quite intensive. One possible method of expanding such sites is to use urban renewal where justified by presence of substandard structures.

Seven schools were constructed prior to 1916 making them at least 50 years old, generally considered to be the normal useful life of a building. These seven schools had a total enrollment of 2,089 students in September of 1965. This means that about 11.3 percent of the total public school enrollment was housed in what is generally termed obsolete buildings by reason of age even though the condition of these buildings is generally good. Nine new schools have been constructed during the past 10 years, an average of about one new school per year. In addition to their age, many of the existing schools are seriously deficient in site area. Twenty-three schools are located on sites of less than five acres.

Local school officials believe that 25 students per classroom is the optimum classroom load standard; only eight schools meet this standard. However, 26 of the 34 schools meet the standard of 30 students per classroom.

Table 69 shows the number of school buildings having special facilities. In some cases, of course, they represent combinations such as auditorium-gymnasium, etc.

Table 69

SUMMARY OF PUBLIC SCHOOL FACILITIES

Facilities	Number of Schools
Auditorium	22
Gymnasium	26
Kitchen/Cafeteria	28
Library	21
Multi-purpose Room	17
Special Education Rooms	17

Most of the more recently constructed schools have multi-purpose rooms and rooms for special education such as audio-visual rooms, speech rooms, etc.

Two of the junior high schools are operating within their design capacity, while the other two are slightly over their capacity. Although Tremper High School was constructed in 1964 and has a design capacity of 1,870 students, the September, 1966 enrollment was 2,183 students, indicating the need for additional high school facilities. Local school officials have anticipated this need and have already purchased a 60-acre site in the north-central section of the District for a senior and junior high school.

Private Schools

In addition to the public school system, there are a number of private school facilities in the Kenosha Planning District. (See Map 37 and Table 70.) The private school facilities incorporate parochial and protestant church schools and number 15 elementary schools and one senior high school. Of the 15 elementary schools, four are K-8, one is K-9, one is K-3, and nine are 1-8 grade facilities. St. Joseph's High School accommodates grades 9-12.

As is the case with public schools, the sites for more of these schools are extremely small - 12 of the elementary schools have sites less than five acres in size. Eight of the schools have been constructed since 1956 with only two of the schools more than 50 years old.

The classroom load factor is somewhat higher in the private schools than in the public schools. Most of the schools use 40 students as an acceptable maximum load per classroom and only one school exceeded this standard. Enrollments in the private schools ranged from a low of 35 students to a high of 1,223 students.

Other Schools

Kemper Hall, constructed in 1850, with major additions in 1870 and 1910, is a private girls' school located on a 10-acre site overlooking Lake Michigan (See Map 37). The school teaches the seventh through the twelfth grades. Since 1910, numerous remodelings have kept its physical plant in excellent condition. The September, 1965, enrollment of 125 students from various sections of the country is also the rated capacity of the facilities. No expansion or alteration plans are contemplated at this time.

Carthage College is a four-year Lutheran College located on an 85-acre site overlooking Alford Park and Lake Michigan. This campus was constructed in 1961 after the college had been relocated from Carthage, Illinois, where it was built in 1847. All of the facilities are of modern architecture making the college one of the most attractive in the entire Midwest. At the beginning of the 1965-66 school year, the enrollment totaled 1,176 students. When the present building program is completed in a few years, the school will have a capacity of about 1,500 students. The facilities of the college are available to community and business groups and to summer seminars, schedules permitting.

The facilities of the Kenosha Area Technical Institute are presently located on 52nd Street just east of Eighth Avenue. However, the Institute will move to new, modern 50-acre campus type facilities this year. This entirely new campus will have an initial capacity of about 1,500 students and an ultimate capacity of 2,000 students. Enrollment in September of 1965 was 1,100 students. Community and business groups will not only be welcomed but encouraged to use the facilities of this school, one of the most modern technical schools in the country.

The University of Wisconsin Extension Center offered two-year undergraduate work to 701 commuter students in the fall of 1965. Completion of another wing during the present year will increase the capacity of this facility to 1,200 students. The original building was built in 1961 on the 34-acre site located at 39th Avenue and Washington Road.

Table 70

EXISTING PRIVATE SCHOOL FACILITIES

Kenosha Planning District

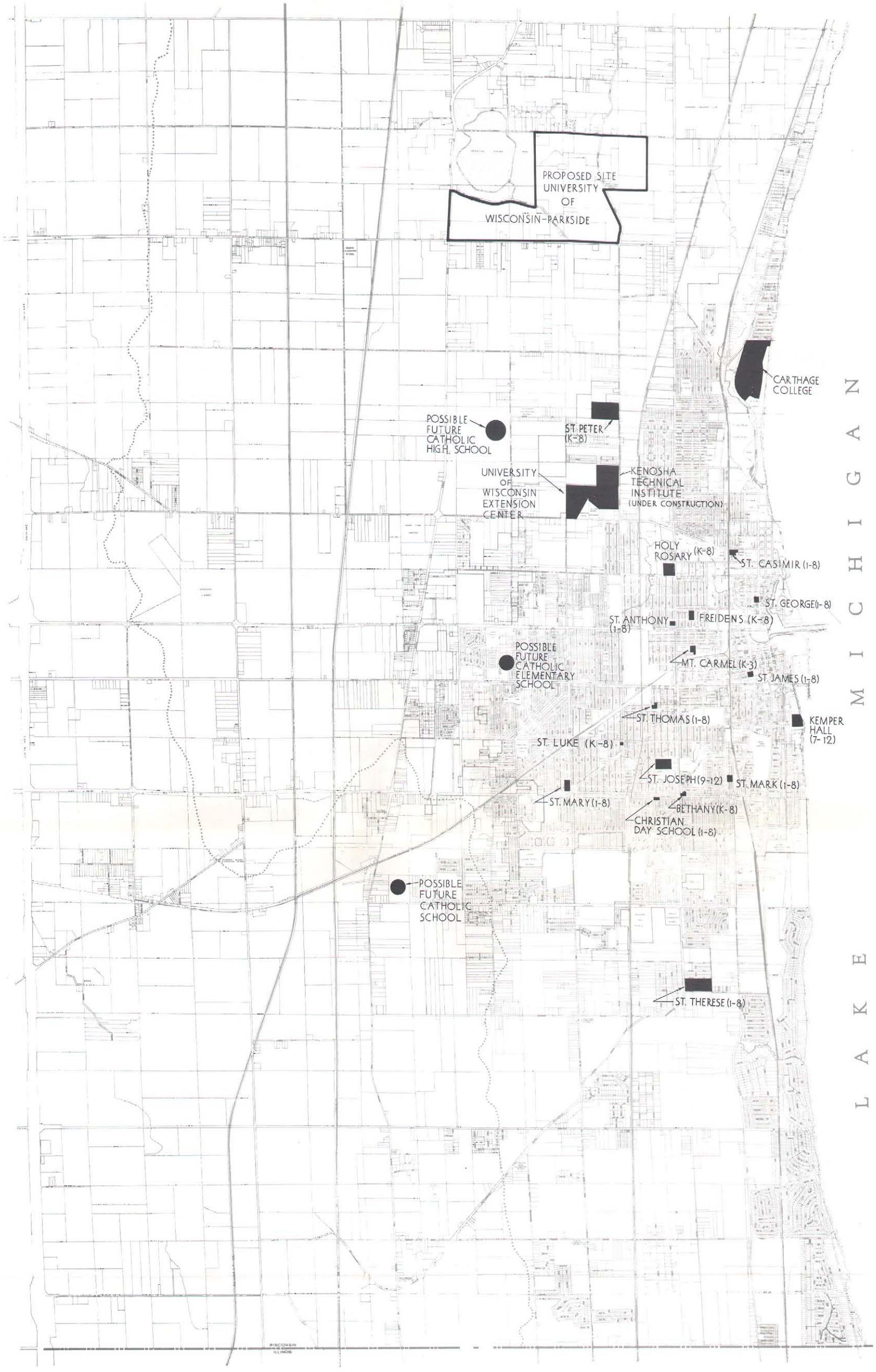
Grades	Name	Location	Area of Site	Year Constructed	Number of Classrooms	Educational Capacity	Enrollment September, 1966	Educational Load Per Classroom	Major Additions	Structural Condition	Availability-Suitability for Non-Educational Functions	AGKLMS[1]
K-8	Bethany	2110 - 75th St.	1.08	1960	5	130	117	23.4	-	Good	Yes	
K-9	Friedens	5038 - 19th Ave.	2.60	1908	13	330	323	24.8	8 classrooms in 1958	Good	Yes	KMS
K-8	Holy Rosary	4400 - 22nd Ave.	7.89	1951	18	720	557	31.0	1963 - Gym and 9 classrooms	Excellent	Yes	AGKLS
1-8	Kenosha Christian	75th St. & 25th Ave.	(2)	1966	3	100	35	11.7	-	Excellent	Yes	L
K-3	Mt. Carmel	5400 - 19th Ave.	2.16	1964	9	380	125	13.9	-	Excellent	No	KL
1-8	St. Anthony	5115 - 23rd Ave.	1.29	1953	8	320	255	31.9	-	Good	Yes	AKLMS
1-8	St. Casimir	935 Washington Rd.	1.66	1909	8	320	263	32.9	6 classrooms in 1926 2 classrooms in 1963	Fair	No	AGKM
1-8	St. George	4824 - 7th Ave.	1.40	1965	12	480	431	35.9	Gym remodeled 1950 - Fair	Excellent	Yes	AGKLMS
1-8	St. James	5421 - 10th Ave.	1.60	1928	9	360	315	35.0	-	Good	Yes	GKLS
9-12	St. Joseph	2401 - 69th St.	10.17	1957	50	1,500	1,223	24.5	-	Excellent	Yes	AGKLS
K-8	St. Luke	6712 - 30th Ave.	0.78	1958	4	140	80	20.0	-	Good	Yes	MS
1-8	St. Mark	7115 - 14th Ave.	1.66	1930 1954	23	920	854	37.1	Remodeled and 8 classrooms added in 1949	Good	Yes	AGKLMS
1-8	St. Mary	7400 - 39th Ave.	3.41	1930	24	1,030	954	39.7	8 classrooms in 1958	Good	Yes	KMS
K-8	St. Peter	30th Ave. & 24th St.	10.15	1965	8	320	260	32.5	-	Excellent	Yes	KLMS
1-8	St. Therese	2020 - 91st St.	16.78	1959	8	280	205	25.6	-	Excellent	Yes	GL
1-8	St. Thomas	6218 - 25th Ave.	1.72	1924	8	320	329	41.2	-	Fair	Yes	AGKS

(1) A - Auditorium
G - Gymnasium
K - Kitchen/Cafeteria
L - Library
M - Multi-Purpose Room
S - Special Educational Room

(2) School is adjacent to church.

(3) September, 1966

Source: Private school officials



EXISTING PRIVATE SCHOOLS & PUBLIC COLLEGES

NOTE: DATA REGARDING FUTURE CATHOLIC SCHOOL SITES OBTAINED FROM LOCAL CATHOLIC SCHOOL OFFICIALS.

MAP 37

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT
CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

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The University of Wisconsin will soon begin construction of additional facilities in the Kenosha Planning District. A new four-year campus, known as Parkside, will be located immediately east of Petrifying Springs Park and is to have an ultimate capacity of about 20,000 students. Current plans indicate that both this facility and those of the Extension Center will be used until enrollments warrant the transfer of all facilities to the Parkside Campus.

School Population

Public school population is influenced by a number of factors such as the size and age composition of the area population, birth rates and the proportion of children in private schools. The birth rate per 1,000 persons of population in the Kenosha Planning District in 1960 was 25.8, slightly lower than that of the Southeastern Wisconsin Region level of 26.2.

Trends in School Enrollment

The total public school enrollment increased 21.1 percent in both the first and second five-year segments of the 10-year period 1956-1966 (See Table 71). Private school enrollments increased 33.4 percent in the first half of the period and only 0.3 percent in the second half of the period. The total school enrollment in grades K-12 increased from 16,690 students in 1956-57 to 24,885 students in 1965-66, a gain of 49.1 percent. Public enrollment, as a percent of the total enrollment, was reduced from 72.1 percent to 70.1 percent in the first half of this period. This is coincident with the construction of five private schools in the same period and a 33.4 percent increase in private school enrollments. During the second half of the 10-year period, the public enrollment percentage of total school enrollment increased to 74.6 percent, 3.5 percent higher than the level at the beginning of the period.

Total K-6 enrollments increased from 11,121 students in 1956-57 to 15,154 students in 1965-66, a gain of about 13.6 percent. (See Table 72.) Enrollments in the 7-9 grades increased by 1,615 students in the 10-year span, a gain of almost 52 percent. In the 10-12 grades, enrollments were increased by 2,373 students in the period shown, a gain of more than 100 percent. The number of students requiring special education facilities increased from 172 in 1956-57 to 346 in 1965-66. The K-6 grades show continuous yearly gains in enrollment throughout the period indicated while reductions from previous years were experienced twice in the 7-9 grades (1957-58 and 1962-63). The senior high grades also showed continuous gains except for the last year shown when a loss of 84 students was experienced.

Estimated Future School Population

In 1960, total school enrollments (20,800 students) accounted for 94.8 percent of the total population (21,936) in the 5-18 age group of the District. For future planning estimates, it is assumed that 95 percent of those persons in the 5-18 age group will be enrolled in school. The percentage should remain at this level because of increasing state and federal school aid programs, increasing income levels, and the increasing importance of having an adequate education.

Population projections made in an earlier phase of the comprehensive plan indicated an estimated 1990 District population of 175,000 persons. Since the publication of that estimate, certain factors have occurred which caused this estimate to be increased to 181,000 persons.

Table 73

SCHOOL-AGE POPULATION AND ENROLLMENT PROJECTIONS

Age Group	Population	Percent of Total Population
5-12	34,210	18.90
13-15	10,460	5.78
16-18	10,320	5.70

Age Group	95% Enrollment	Public Enrollment(1)	Private Enrollment(2)
5-12	32,500	26,000	6,500
13-15	9,940	7,950	1,990
16-18	9,800	7,850	1,950
	52,240	41,800	10,440

(1) Assumed to be 80 percent of all enrollments based upon trend indicated in Table 71.

(2) Assumed to be 20 percent of all enrollments based upon trend indicated in Table 71.

Table 73 shows the latest population estimates for 1990 and new estimates of total public and private school enrollments for 1990 based upon the above projections.

Table 74 indicates the estimated change in school enrollment between 1965-66 and 1990-91.

Table 74

ESTIMATED CHANGE IN SCHOOL ENROLLMENT 1965-66 TO 1990-91

Grades	Total		Public	
	1965-66	1990-91	1965-66	1990-91
K- 6	15,154	32,500	10,792	26,000
7- 9	4,755	9,940	3,826	7,950
10-12	4,630	9,800	3,600	7,840
Total	24,539	52,240	18,218	41,790

Note: Does not include special education enrollment.

The above projections reflect assumptions that there will be:

(1) A gradual shift toward a more youthful age profile.

(2) Rapid growth in the 0-14 and 20-29 age groups.

(3) A declining percentage of persons 65 and over although numerically the group will increase.

(4) A concentration of most of the school-age population (5 - 18) will increase in the elementary age group.

The projections indicate a 141 percent increase in public elementary enrollments, a 108 percent increase in public junior high enrollments, and a 118 percent increase in public senior high enrollments.

Table 71

TREND IN TOTAL SCHOOL ENROLLMENTS

Kenosha Planning District

	1956-57	1957-58	1958-59	1959-60	1960-61	% Increase 1956-57 to 1960-61	
City Schools[1]	10,092	10,337	10,933	11,379	11,778		
County Schools[2]	1,932	2,082	2,143	2,627	2,799		
Total Public	12,024	12,419	13,076	14,006	14,577	21.1	
Private Schools	4,666	4,764	5,206	5,919	6,223	33.4	
Total Enrollment	16,690	17,183	18,282	19,925	20,800	24.6	
Public Percent of Total	72.1	72.4	71.6	70.3	70.1	-2.8	
	1961-62	1962-63	1963-64	1964-65	1965-66	% Increase 1961-62 to 1965-66	% Increase 1956-57 to 1965-66
City Schools[1]	12,576	13,329	13,926	14,647	15,590		
County Schools[2]	2,744	2,904	3,095	3,050	2,974		
Total Public	15,320	16,233	17,021	17,697	18,564	21.1	54.2
Private Schools	6,301	6,376	6,579	6,574	6,321	00.3	35.3
Total Enrollment	21,621	22,609	23,600	24,271	24,885	15.1	49.1
Public Percent of Total	70.9	71.8	72.2	73.0	74.6	5.1	3.5

Notes: (1) City schools by definition prior to formation of joint school district in 1965.
(2) County schools in Towns of Pleasant Prairie and Somers prior to formation of joint school district.

Source: Kenosha School Board Staff

Table 72

TREND IN SCHOOL ENROLLMENTS BY GRADE[1]

Kenosha Planning District

Year	K	1	2	3	4	5	6	Total K-6 City Public & Private	K-6 County[2] Public	Total K-6
1956-57	1,429	1,404	1,461	1,411	1,341	1,070	1,073	9,189	1,932	11,121
1957-58	1,423	1,457	1,388	1,425	1,391	1,320	1,081	9,485	2,082	11,567
1958-59	1,494	1,574	1,441	1,384	1,420	1,387	1,308	10,008	2,143	12,151
1959-60	1,514	1,564	1,565	1,465	1,365	1,422	1,305	10,200	2,627	12,827
1960-61	1,536	1,612	1,521	1,555	1,457	1,346	1,407	10,434	2,799	13,233
1961-62	1,672	1,665	1,599	1,521	1,567	1,486	1,333	10,843	2,744	13,587
1962-63	1,765	1,769	1,628	1,575	1,499	1,546	1,458	11,250	2,904	14,154
1963-64	1,703	1,800	1,729	1,604	1,576	1,496	1,536	11,444	3,095	14,539
1964-65	1,811	1,754	1,759	1,711	1,576	1,563	1,509	11,683	3,050	14,733
1965-66	2,048	1,910	1,720	1,718	1,678	1,556	1,550	12,180	2,974	15,154

Year	7	8	9	Total 7-9	10	11	12	Total 10-12	Special[3] Education	Total
1956-57	1,040	993	1,107	3,140	874	774	609	2,257	172	16,690
1957-58	1,046	1,020	1,038	3,104	938	772	636	2,346	166	17,183
1958-59	1,087	1,050	1,147	3,284	1,032	906	732	2,670	177	18,282
1959-60	1,476	1,161	1,196	3,833	1,082	1,138	842	3,062	203	19,925
1960-61	1,317	1,465	1,362	4,144	1,145	1,118	943	3,206	217	20,800
1961-62	1,428	1,315	1,708	4,451	1,245	1,201	912	3,358	225	21,621
1962-63	1,334	1,417	1,556	4,307	1,894	1,135	885	3,914	244	22,609
1963-64	1,465	1,342	1,662	4,469	1,874	1,441	1,006	4,321	271	23,600
1964-65	1,539	1,446	1,596	4,581	1,790	1,468	1,386	4,644	313	24,271
1965-66	1,514	1,519	1,722	4,755	1,706	1,622	1,302	4,630	346	24,885

Notes: (1) Totals by grade available only for city schools (See Note 1, Table 3) and private schools.

(2) See Note 2, Table 3.

(3) Includes ungraded pupils.

Source: Kenosha School Board Staff

School Plan

The proposed future public school system would consist of 39 elementary schools, eight junior high schools and four senior high schools. Of these totals, there would be 26 entirely new elementary schools (five new schools would replace existing structures on the same site), four new junior high schools and two new senior high schools (See Map 36). No attempt has been made on the plan to outline the individual school attendance districts as these are subject to adjustment from time to time, and are necessarily flexible. In selecting sites for the proposed new units, consideration was given to the expected future distribution of population, to the availability of adequate sites, to the location of major trafficways, and to the land use plan. The enrollment estimates accompanying the description of each school in the following text are peak estimates, that is, estimates of the greatest number of students that should be anticipated rather than a sustaining school population estimate.

In addition to the pupils expected to attend public schools, an estimated 10,450 students will be attending private schools by 1990. These students cannot be accommodated by the facilities existing at present. Thus, as is the case with public schools, new facilities will have to be provided. Past trends indicate that the private student sector of the future enrollment in the District will approximate 20 percent. While expansion of private facilities has generally kept pace with requirements, and officials of private schools currently desire to continue this trend, any substantial change in this respect in the future, due to depressed economic conditions and the withdrawal of children from the private schools or inability of these schools to expand, would materially increase the public school enrollments in the future. For this and other reasons, the trend of future school enrollments should be watched closely for any changes. Since most of the private school facilities are church affiliated and their locations are primarily dictated by church parish requirements, no new private school locations have been indicated on the school plan. However, several sites already owned and projected for use by private schools are shown on Map 37.

Existing Elementary Schools

Somers. Expand capacity from 450 to 610 students to serve that portion of Analysis Zone (A.Z.) 7 lying west of the proposed industrial freeway and all of A.Z. 6, 23, and 24.

Hillcrest. Expand capacity from 250 to 680 students to serve the northwest, northeast, and southwest quarters of the Willowbrook neighborhood.

Harvey. Expand capacity from 525 to 850 students to serve the Harvey East and Harvey West neighborhoods.

Grant. Replace existing structure with new facility having a capacity of 790 students to serve Lakeview Park and Grant neighborhoods, and A.Z. 15.

Wilson. Expand capacity from 450 to 580 students to serve the east half of A.Z. 32, all of 33, the west half of Washington Park North neighborhood, and the eastern portion of A.Z. 31.

Strange. Expand capacity from 500 to 670 students to serve A.Z. 42, 43 and the south half of A.Z. 30.

McKinley. No change, although enrollment is expected to be approximately 350 students, somewhat below its capacity of 450 students. Surplus could be used to help relieve student load at Wilson.

Frank. Replace existing structure with new facility having a capacity of 520 students to serve Frank neighborhood and the northern part of the Milltown neighborhood.

Durkee. Replace existing structure with new facility having a capacity of 530 students to serve the Kemper Hall and central business district neighborhoods.

Lincoln. Replace existing structure with new facility having a capacity of 640 students to serve the Lincoln Park neighborhood and the southern portion of the Milltown neighborhood.

Columbus. Replace existing structure with new facility having a capacity of 710 students to serve the St. Joseph's neighborhood.

Roosevelt. Expand, but eventually replace entire existing structure to provide new facility having a capacity of 710 students to serve the Roosevelt Park and Fairview neighborhoods.

Forest Park. Expand capacity from 600 to 790 students to serve A.Z. 50 and 51.

Pleasant Prairie. Expand, but eventually replace entire existing structure with new facility having a capacity of 810 students to serve Pleasant Prairie neighborhood and A.Z. 25, 26, 44, 45, 46, 47, and 71.

Sunnyside. Expand capacity from 500 to 710 students to serve Sunnyside and Lincoln Road neighborhoods.

Southport. Expand capacity from 450 to 510 students to serve Southport neighborhood.

Vernon. No change.

Prairie Lane. Expand capacity from 425 to 750 students to serve Prairie Lane, Pleasant Homes and McKeon Road neighborhoods, and A.Z. 83 and 84.

Proposed New Elementary Schools

The following brief descriptions relate the size and general service areas of proposed new elementary schools on entirely new sites.

New School A would require a capacity of about 520 students (10.2 acres).

New School B is proposed to serve all of the Country Club neighborhood and the northern two-thirds of the North Lake Shore neighborhood and would require a capacity of about 580 students (10.8 acres).

New School C is proposed to serve that portion of the Strawberry Hills neighborhood lying west of 47th Avenue and an area lying east of the proposed industrial freeway. This new school would probably be the nucleus of a new neighborhood and would require a capacity of about 660 students (11.6 acres).

New School D would serve that portion of the Strawberry Hills neighborhood lying east of 47th Avenue and would require a capacity of about 660 students (11.6 acres).

New School E would serve the Birch Road neighborhoods and would require a capacity of about 800 students (13.0 acres).

New School F would require a capacity of about 730 students (12.3 acres).

New School G would serve the Highview neighborhood and would require a capacity of about 720 students (12.2 acres).

New School H would have a capacity of about 830 students (13.3 acres).

New School I is proposed to serve the Sunset Ridge neighborhood and would require a capacity of about 480 students (9.8 acres).

New School J would serve the northern one-third of the Kenosha Land neighborhood and parts of two other neighborhoods, and would require a capacity of about 690 students (11.9 acres).

New School K would be part of a renewal project and would replace Jefferson and Bain and serve Washington Park East and South and the southwest corner of Washington Park North. The school should have a capacity of about 830 students (13.3 acres).

New School L would be a part of a renewal project serving the Union Park neighborhood and would have a capacity of about 670 students (11.7 acres).

New School M would require a capacity of about 610 students to adequately serve the Green Bay Road neighborhood (11.1 acres).

New School N would serve the western half of the Elmwood Park neighborhood and all of the Whittier neighborhood, and would have a capacity of about 820 students (13.2 acres).

New School O would serve the eastern part of the Elmwood Park neighborhood and the Newman Park neighborhood, and would require a capacity of about 610 students (11.1 acres).

New School P is proposed to serve the Forest Haven neighborhood and would require a capacity of about 870 students (13.7 acres).

New School Q is proposed to serve part of the Rolling Meadows and Highland Park neighborhoods and would require a capacity of about 470 students.

New School R would serve the majority of the Rolling Meadows neighborhood and would require a capacity of about 680 students (11.8 acres).

New School S would serve the Carol Beach North neighborhood and would require a capacity of about 660 students (11.6 acres).

New School T would serve the Tobin Road and Green Tree neighborhoods and would require a capacity of about 370 students (8.7 acres).

New School U would serve the Carol Beach South neighborhood and would require a capacity of about 950 students (14.5 acres).

As an additional phase of the school plan, Berryville, Weiskopf, Green Bay Road, Whittier, Highland, Sheridan Road and Dublin Schools would be abandoned.

Existing Junior High Schools

Washington. The existing capacity of this facility (840) should be adequate for the estimated student load placed upon the building from the Lakeview Park, Grant, Union Park, Washington Park North and East, CBD and Frank neighborhoods. Enrollment is estimated at 810 students.

McKinley. Expand capacity from 700 to 790 students to serve the McKinley, Fairview, Roosevelt Park, and Washington Park South neighborhoods.

Lincoln. Expand capacity from 950 to 990 students to serve the Kemper Hall, Milltown, Columbus, St. Joseph's Lincoln Park, Southport, Sunnyside and Lincoln Road neighborhoods.

Lance. Expand capacity from 1,000 to 1,280 students to serve Elmwood Park, Forest Haven, Whittier and McKeon Road neighborhoods and other nearby areas.

Proposed New Junior High Schools

The following brief descriptions relate the size and general service areas of proposed new junior high schools.

New School 1 is proposed to serve the North Lake Shore, Country Club, University Park, Birch Road and Strawberry Hills neighborhoods, and would require a capacity of about 820 students (23.2 acres).

New School 2 would serve the Harvey, Highview, Willowbrook and Kenosha Land neighborhoods and would require a capacity of about 1,200 students (27.0 acres).

New School 3 is proposed to serve the area bounded by Wisconsin 31 on the east, 60th Street on the south, I-94 on the west, and the county line on the north and would require a capacity of about 820 students (23.2 acres).

New School 4 would serve the Carol Beach North and South, Highland Park, Rolling Meadows, Tobin Road, Green Tree, Prairie Lane and Pleasant Homes neighborhoods and would require a capacity of about 1,240 students (27.4 acres).

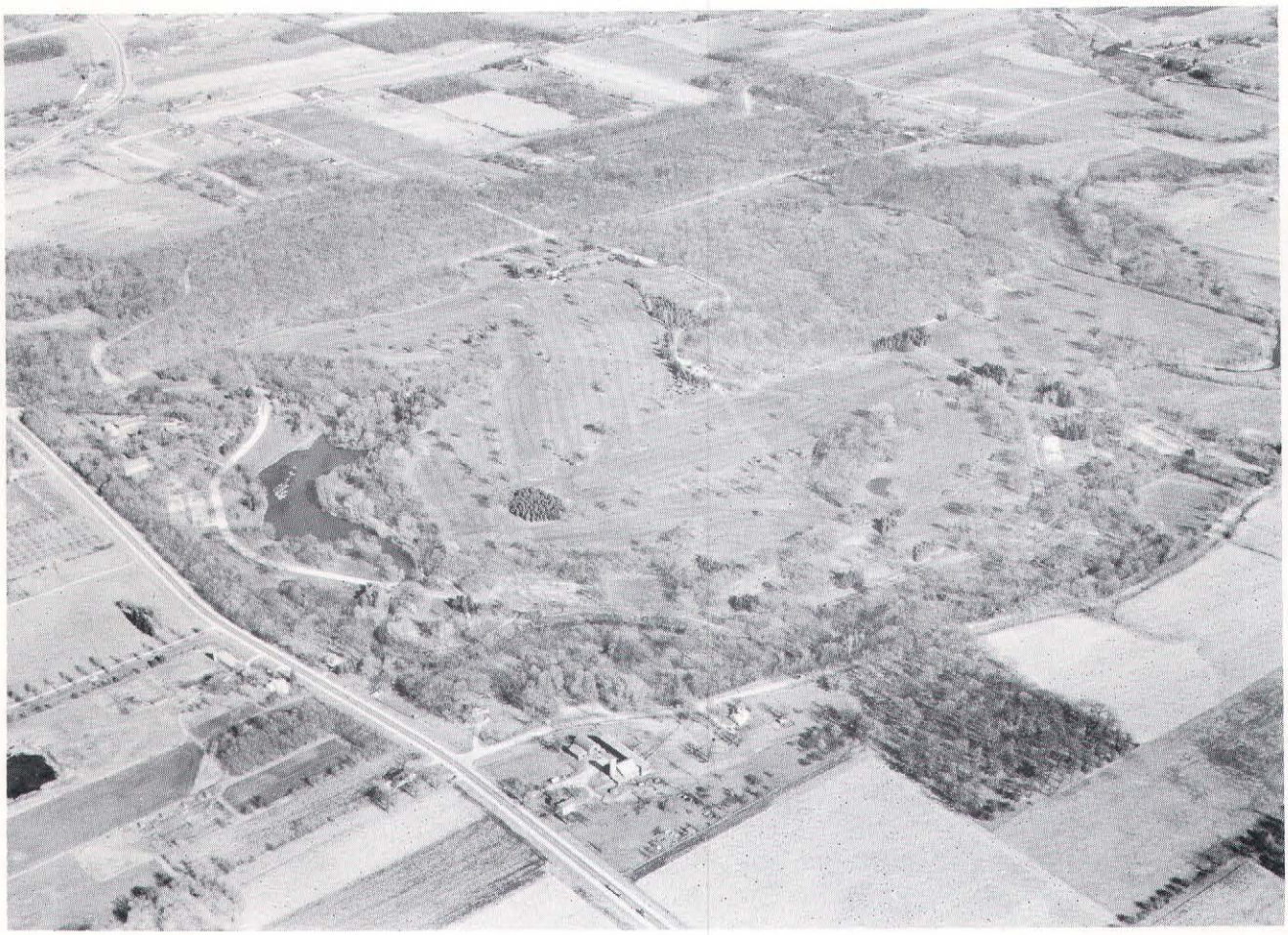
Senior High Schools

By 1990, the enrollment at Bradford High School would be about 1,730 students which is only slightly above its rated capacity at the present time. Therefore, no new expansion will be required except that the site should be expanded westward to the C&NW tracks to provide more space for the necessary outdoor education facilities required of a modern high school. The annex building should be replaced at that time.

Tremper High School should be expanded to a capacity of about 2,200 students by 1990 to accommodate increased enrollments from population growth in the southeastern section of the District.

A new high school will be needed in the near future to serve the northeast section of the District. It should be planned for an ultimate enrollment of about 2,550 students (50.5 acres).

An additional high school facility will be needed by 1990 to serve the western half of the District. The site shown on Map 36 for this facility is in the northwestern section of the District. This location will allow for better distribution of school facilities in the event another high school is needed for the southwest section of the District beyond 1990. The capacity of this facility should be about 1,730 students (42.3 acres).



The residents of the District are indeed fortunate in having close access to Petrifying Springs Park shown in the photograph above. This 345-acre park has most of the facilities normally located in a regional park and the development of the new University of Wisconsin-Parkside Campus can only serve to improve the entire area.

Chapter IX

PARKS AND RECREATION

"In an urbanizing region, open space should serve three primary purposes. First, it should lend form to regional development by shaping urban growth and providing a desirable setting for the more intensive types of urban land uses. Second, it should serve to protect outdoor recreational opportunities to the resident population. Third, it should be utilized to conserve and enhance the natural resource base and to protect certain important community values. When properly related to woodlands, wetlands, and prime wildlife habitat areas, open space can be used to conserve soils, fish and game, and certain species to trees and plants, and to improve surface and ground water quality and quantity. Open space may also be used to protect sites having scenic, historic, or scientific value. Planning for the provision of the necessary open space in an urbanizing region, therefore, requires definitive knowledge of the woodlands, wetlands, and wildlife habitat areas; of the scenic, historic, and scientific sites; and of the existing and potential park and outdoor recreation sites."(44)

Elements of a Park System

The following is a brief discussion of the four main types of parks that comprise the modern system, together with recreational areas of special significance. (See Figure 7.)

Tot Lots and Playgrounds

Small parks containing three acres or less can be valuable assets in a heavily populated section of the city. Such areas may provide both space for active recreation and serve an ornamental function and should be well landscaped and maintained for this purpose. The number of small ornamental parks should be relatively low since their value is in their location and appearance rather than in their use, and their maintenance cost generally is high. Such parks are often developed and maintained privately.

Neighborhood Parks

The neighborhood park is a relatively small area for passive and active recreation for all ages. As these parks serve roughly the same area as the elementary school, it is desirable that they adjoin the school ground and that the improvement of both areas be coordinated. This neighborhood "park-school" should comprise 20 to 30 acres and provide facilities for all season indoor and outdoor education and recreation activities. By using both the school building and the park area year-round, better play facilities can be provided for the school children, and at the same time, recreational opportunities that are of interest to the entire neighborhood can be offered.

Playfields

Where possible, playfields should adjoin the junior and senior high school grounds, but in some instances, they can be located in a portion of a neighborhood or large park. Adequate parking and spectator seating should be provided to accommodate people who may travel considerable distances to reach these areas and for those who want to watch others participate. Such athletic fields, fully developed with all types of facilities, should occupy 30 to 40 acres.

Regional Parks

Large parks serve the entire urban area. These are normally 250 acres or more in size, selected because of their topography and physical advantages. Locations on lakes and rivers are especially desirable, as are areas containing rugged topography and heavily wooded sections. These parks need not be located within the urban area, but should be conveniently accessible to most of the urban population. While some of the large parks might be improved with public golf courses and other facilities for active recreation, the major part of the area should be maintained in its natural state to afford opportunities for picnicking, walking, riding, boating, and various types of passive recreation. A perfect example of a large park providing almost all of the various facilities and activities mentioned is Petrifying Springs Park in the north-central section of the District. This is one of the finest parks in the entire Southeastern Wisconsin Region.

Other Park Possibilities

There are several important types of recreational areas in addition to those described above. Among these are parkways where vehicular traffic is usually restricted to passenger vehicles and which afford access to some features of exceptional scenic merit. The Outdoor Recreation Resources Review Commission (the Laurence Rockefeller Committee), in its report to the President, dated July 31, 1962, reported that pleasure driving was the most popular of all outdoor recreational activities. Other activities that rated high in the report were picnicking, overnight camping, and hiking. These activities should be accommodated in parkways, large outlying forest reservations, and other such facilities that are normally provided by state or county park, forest preserve, or conservation agencies rather than by cities or towns.

Parks may also be established to protect important drainage courses from building encroachment and to preserve wooded or rugged areas as belts of permanent open space. These park strips provide a haven for wildlife, require only minimum maintenance and offer a pleasant contrast in the urban scene. Many such areas have been proposed in the land use plan. In addition, park areas should be coordinated with environmental corridors wherever possible.

Other open spaces not normally associated with recreation can form part of an overall plan for open space - cemeteries, airports, public buildings, churches and universities, for example.

Area Standards

A generally accepted minimum park standard calls for ten acres of park land for each 1,000 persons. Approximately one-half of this total should consist of local or neighborhood parks with the remainder in large parks. Other "rules of thumb" call for the setting aside of 10 percent of the urban area for parks or open space. To this requirement, there is frequently added an additional one acre of forest preserves or

reservations for each 100 persons, these areas to be selected for their scenic values and to have a less intensive development than the usual urban park.

A park plan for the Kenosha Planning District should have a wider objective than merely the provision of recreational facilities. Development of abundant natural assets in scenic and recreational land is of extreme importance. The nearness of a large and rapidly growing metropolitan area, the close proximity of Lake Michigan, and the new campus of the University of Wisconsin-Parkside all call for more than usual emphasis to be placed on a long-range park plan.

Existing Park System

The District's location on the shores of Lake Michigan is a great natural asset. Many years ago, the City of Kenosha embarked upon a vigorous program to acquire the lake shore for park purposes. The result is clearly evident today with Alford, Pennoyer, Kennedy, Simmons Island, Lakefront, Eichelman, and Southport Parks occupying 68 percent of the shoreline within the city's boundaries (See Map 38). These seven lakeshore parks have a total area of 253 acres, 31 percent of the total public park area in the District. None of the shoreline north and south of the city limits to the extremities of the District is in park land and there are practically no opportunities to the north to acquire additional areas. Fortunately, considerable opportunities exist to the south.

Of the 35 existing parks (See Table 75), Petrifying Springs, a county park, is by far the largest with 345 acres within its boundaries. This park has all of the facilities normally located in a regional park. The next largest park is Alford (81.39 acres) which stretches along the northern portion of the city and encompasses Carthage College. The third largest recreation area is the Municipal Golf Course which has an area of 70.90 acres. In addition to these parks, there are seven other parks which have areas ranging in size from 24.40 acres to 43.72 acres. The remaining parks are all less than 11 acres in size. The City of Kenosha owns 31 of the parks; the Town of Pleasant Prairie is in the process of developing two additional parks; and Kenosha County operates one park. The Town of Somers does not own any park land at present. Some 14 parks have some type of shelter building, 12 have comfort stations, and eight have concession buildings. There is only one swimming pool, located in Washington Park. In all, most of the parks are very well developed and excellently maintained. In addition to the park areas shown on Map 38 and tabulated in Table 75, the Town of Pleasant Prairie has 15 dedicated but as yet undeveloped parks totaling 47-83 acres in area. Most of these are extremely small and have limited use.

Park Plan

A good park system should provide ample areas for sports and games and a wide variety of active recreation, as well as protect and preserve areas of scenic appeal for passive enjoyment. The proposed park plan (See Map 38 and Table 76), is designed to meet these objectives. The total facilities of the park and open space plan would encompass 12,586 acres of land or about 23 percent of the land area of the District. Of this total, 8,573 acres representing 15.6 percent of the land area would be in environmental corridors, 1,019 acres (1.9 percent) would be in private or semi-private acreage, 540 acres (1.0 percent) would be in public preserves not subject to active recreation pursuits, while the remainder, 2,454 acres, representing 4.5 percent of the total land area of the District would be in public parks. This compares favorably with the estimated need for park land.

Area #1

This proposed park, located in the northeastern section of the District, has good access by a county trunk highway and encompasses about 195 acres of open lands, swamps and water areas with development potential for picnicking, camping, nature study, fishing and play areas. The Pike River enters the site in the extreme southwest corner.

Area #2

This proposed 170-acre park is located immediately west of the Kenosha Country Club and north of the proposed sites of the University of Wisconsin-Parkside campus. Good access is provided by a county trunk highway. The site is suitable for development of play areas, picnicking, nature study, fishing and hiking. The Pike River traverses this site from west to east.

Area #3

At the present time, some private owners are preserving much of this 375-acre area in its natural state and allowing picnicking, nature study, fishing and hiking by special groups such as schools, etc. This group has control over a relatively small portion of the total area and the entire area should be preserved. Pike Creek flows through the site and joins the Pike River in the extreme northeastern corner of this proposed park. Here also, good access is provided by both state and county trunk highways. The area has many trees of all sizes and varieties and a portion of the site is known as Hawthorne Hollow. Topography is varied and the site presents unusual possibilities because of the proximity of the proposed campus. Any public or private park and recreation plans for this area should carefully consider and provide for the location of the proposed freeway.

Area #4

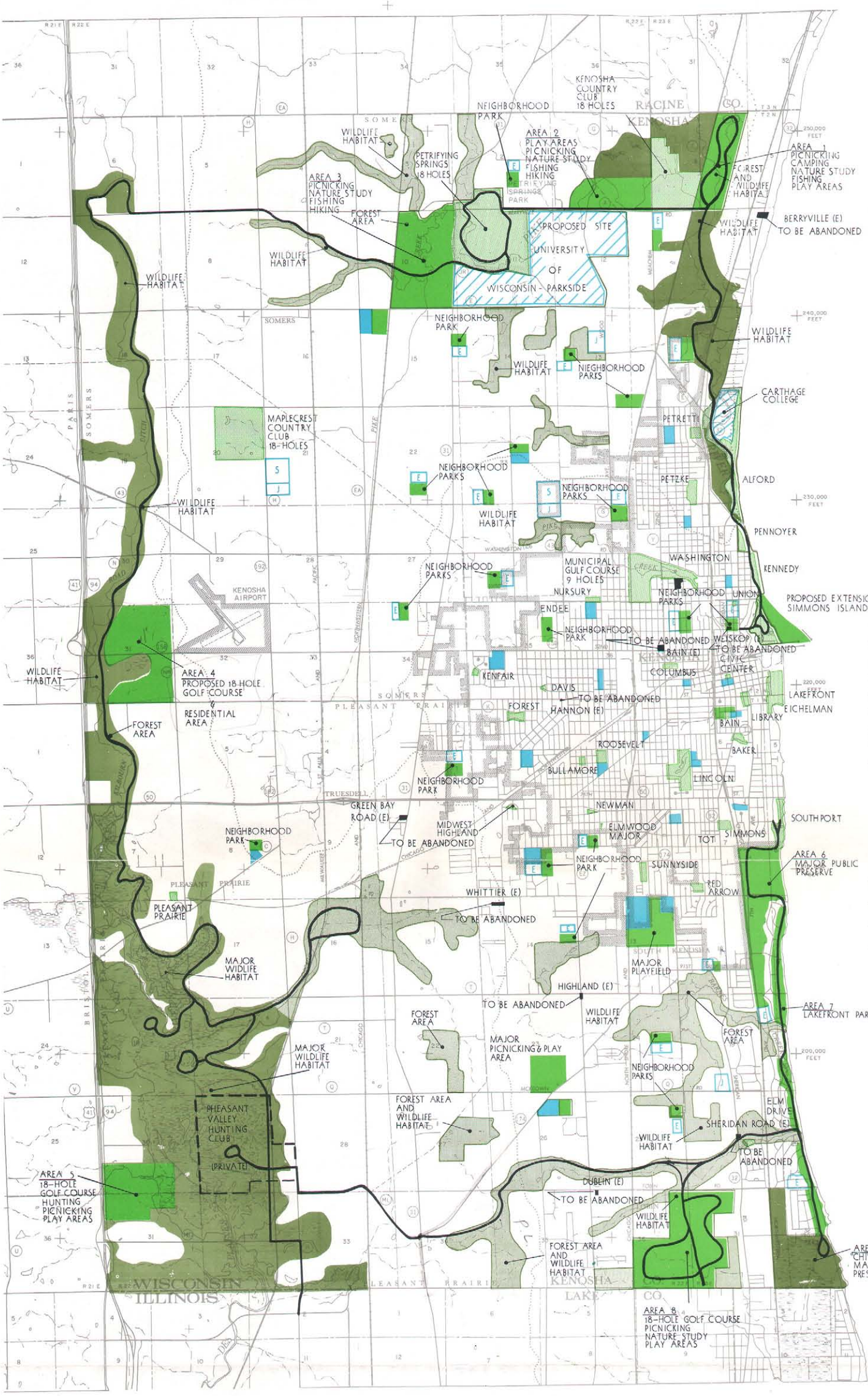
This 340-acre site is proposed for a combination 18-hole golf course and residential area. The site is gently rolling and has very little tree cover and presently is used for farming. This area would also adjoin the primary "environmental corridor" along the western edge of the Planning District.

Area #5

This 263-acre area is best suited for an 18-hole golf course, picnicking and play areas. This is an open area of gently rolling crop land presently being leased for hunting. Access to the area is extremely good and the site has several areas of tree cover.

Area #6

This area encompasses about 260 acres of land containing swamps, marshes, ridges and sand dunes. It should be preserved as areas along the lakes containing these sand dunes are rapidly disappearing due to urbanization. The erosion caused by the wave action in this area and the



EXISTING AND PROPOSED PARK SYSTEM

- EXISTING PARK AND RECREATION AREA
- PROPOSED PARK AND RECREATION AREA
- PROPOSED PRIMARY ENVIRONMENTAL CORRIDOR
- PROPOSED SECONDARY ENVIRONMENTAL CORRIDOR
- EXISTING PUBLIC SCHOOL
- PROPOSED PUBLIC SCHOOL
  - E - ELEMENTARY
  - J - JUNIOR HIGH
  - S - SENIOR HIGH
- PROPOSED SCENIC PARKWAY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

MAP 38

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Table 75

EXISTING PARK FACILITIES

Kenosha Planning District

Agency	Name of Park	Acreage	Facilities in Park
K	Alford	81.39	CS - CO - P - PE - BE
K	Bain	1.60	PE
K	Baker	4.93	S - CS - B - PE - V - BA
K	Bullamore	1.79	
PP	Elm Drive	2.63	S - B - I
K	Civic Center	1.21	
K	Columbus	6.60	S - CS - B - PE - I - V - BA
K	Davis	0.75	PE
K	Eichelman	4.08	P - PE - BE
K	Elmwood Manor	0.43	PE - I
K	Endee	1.65	PE
K	Forest	6.10	B - P - PE - I - F
K	Kenfair	1.71	B - PE
K	Kennedy	24.40	B - PE - V - BA
K	Lakefront	37.90	S - CS - CO - F
K	Lincoln	43.72	S - CS - B - T - P - PE - I - BA - F
PP	Midwest-Highland	0.12	B - PE
K	Municipal Golf Course	70.90	S - CS - CO
K	Navy Memorial	0.26	
K	Newman	1.67	B - PE
K	Nursery	4.44	
K	Pennoyer	35.17	S - CS - B - T - P - PE - I - BE
K	Petretti	8.00	B - PE
CTY	Petrifying Springs	345.00	S - CS - CO - B - P - PE
K	Petzke	10.08	S - CS - B - PE - I - V
PP	Pleasant Prairie Village	5.36	B - I
K	Red Arrow	6.55	B - P - PE - I
K	Roosevelt	5.98	S - CS - B - T - PE - I - V - BA - F
K	Simmons Athletic Field	7.68	S - CO - B
K	Simmons Island	40.78	S - CO - B - T - P - PE - BE - BA
K	Southport	28.90	S - CS - CO - B - P - PE - BE
K	Sunnyside	5.08	B - P - PE - I - F
K	Tot	0.33	PE
K	Washington	28.70	S - CS - CO - B - T - P - PE - I - V - F
K	Union	1.22	
	Total	826.61	

K - City of Kenosha
PP - Town of Pleasant Prairie
CTY - Kenosha County

Symbols

S - Shelter
CS - Comfort Station
CO - Concession Building
B - Ball Diamond
T - Tennis Courts
BA - Basketball
P - Picnic Areas
PE - Playground Equipment
I - Ice Skating Area
BE - Beach
V - Volleyball
F - Football

Note: There are horseshoe courts in Lincoln and Petrifying Springs.
The municipal golf course is a nine-hole course and there is an 18-hole course at Petrifying Springs.
There is a swimming pool at Washington Park.

Source: County, City and Town Inventories

Table 76

SUMMARY OF PROPOSED PARK AND RECREATION SYSTEM

Facility	Area in Acres
Large Parks	
Petrifying Springs	345
Area 1	195
Area 2	170
Area 3 (Private)	375
Area 4 (Private)	340
Area 5	263
Area 6 (Public Preserve)	265
Area 7	185
Area 8	485
Area 9 (Public Preserve)	275
Kenosha Country Club	141
Maplecrest Country Club	163
	3,202
Neighborhood Parks	
All existing parks to remain (See Table 74)	481
25 new parks	330
	811
Environmental Corridor Area	
Primary*	5,815
Secondary*	2,758
	8,573
Total	12,586

*The boundaries of these areas also include parks and other public and semi-public areas. Total primary corridor area is 8,612 acres and total secondary corridor area is 3,270 acres.

recession of the lake have exposed some prehistoric tree remains adding to the significance of the area.

Area #7

This 185-acre area was proposed for a lakefront park during the development of the land use plan. The overall plan for this section of the District would involve high-rise apartments overlooking the park land and Lake Michigan.

Area #8

The park plan proposes a 485-acre park in the southeastern section of the District. One of the major uses of this park would be an 18-hole golf course to supplement the other public or semi-public golf courses in the District. In addition to the golf course, the site, which has several large areas of trees and bushes, could be developed in a manner similar to Petrifying Springs Park and have hiking and horseback trails, nature study areas, picnicking and large play areas. A major park shelter and an area for camping trailers could also be provided. This area should probably be developed as a county park because of its size.

Area #9

The area known as "Chiwaukee Prairie" encompasses about 275 acres of land. The plan proposes that this area be reserved as a public preserve. Over the course of many years, there have been several attempts to preserve this valuable area. Some have been partially successful while others have failed. Recently, the cause for preserving this area has received the support of a national group, Nature Conservancy. This group, through its local chapter, has recently purchased 63 acres in the heart of the prairie. Approximately 87 additional acres are needed to complete acquisition of the most valuable area remaining.(45) Current plans are to deed the entire area to the University of Wisconsin as a scientific study area. In addition to local funds being raised for future purchases, the local chapter has applied for Federal funds to assist in the acquisition. The value of this prairie lies not only in the variety of plants, but also in the soils, insects and animals. In addition, the area's archaeological and geological aspects would provide a wealth of information. This area is a must for public ownership and preservation.

Neighborhood Parks

In addition to the above proposals for large parks, 25 new neighborhood parks should be provided. Most of these vary in size from eight to 25 acres and are located adjacent to, and would be developed in conjunction with, elementary schools.

Environmental Corridors

The methods that can be used to preserve the "environmental corridor" areas include exclusive agricultural, park, and conservancy zoning districts; long-term lease agreements; the requirement of needed park and open space reservation in land division ordinances, and the concomitant dedication of park and open space land by subdividers; the delineation of parks, playgrounds and parkways on official maps; and the acquisition of park and other open space sites by a governmental agency through purchase. The last of these methods is perhaps the most reliable in a rapidly urbanizing area but also places the heaviest burden on already limited financial resources. There are also available various Federal and State aids to assist local governments in this type of acquisition. The following is a brief review of some of the various methods available.(46)

Acquisition Methods

Open Space Land Program. Title VII of the Housing Act of 1961 provided Federal grants to local units of government in amounts up to 30 percent of the acquisition cost of parks and open space lands. The Housing and Urban Development Act of 1965 increased this amount to 50 percent, permitted the acquisition and clearance of developed land when undeveloped land is not available, made certain development costs of land acquired under the program eligible for 50 percent grants, and provided 100 percent relocation grants for displaced families and businesses.

Urban Beautification Program. The Housing and Urban Development Act of 1965 provides Federal grants to local units of government in amounts up to 50 percent of the cost of improvement and beautification of publicly owned or controlled lands, such as streets, parks, sidewalks, squares, and plazas. These grants are limited to an amount not to exceed 50 percent of the expenditures made by the applicant for beautification activities. Such grants apply to those expenditures which exceed the applicant's average expenditures for comparable activities during the two preceding fiscal years.

Land and Water Conservation Fund (LAWCON). Public Law 88-578 (78 Stat. 897) provides Federal grants to local units of government in amounts up to 50 percent of the cost of acquiring and improving outdoor recreation areas. The State of Wisconsin's share of this Federal fund is $1,273,434 for the 1967 fiscal year. Kenosha County's share of this is $10,066. It is estimated that Wisconsin's share will be increased to $2,500,000 for each of the next 25 years and the county's share will be increased proportionately.

Cropland Adjustment Program (GREENSPAN). Title VI of the Food and Agricultural Act of 1965 provides Federal grants to local units of government in amounts up to 50 percent of the cost of acquiring and converting cropland to park and recreation purposes so as to cause such land to remain permanently in a non-crop land use. These acquisition grants are computed on the basis of the crops previously grown and the past productivity of the acreage to be converted to non-crop use.

State Recreation Aid Program (ORAP). Sections 66.36, 20.705 (44), and 109.05 (3) of the Wisconsin Statutes provide state grants to local units of government in amounts up to 50 percent of the cost of acquiring recreation land and rights in land for development of urban area park systems. Costs not eligible under this program are legal, appraisal, survey, development, and maintenance.

Development Rights. Another process offering a potential for acquisition or use of land for open spaces is the purchase of development rights through the use of easements. In this instance, the agency acquiring the land buys the land owner's right to build, subdivide or sell his land for purposes of subdivision. Since these become restrictions on the land owner's range of alternative uses, the easement is said to be negative. A continuation of present uses or expansion into a narrow range of similar land use alternatives is usually contemplated. The easement may be perpetual for those tracts designed to serve as permanent open space such as the environmental corridors.

Forest and Wildlife Habitats

In addition to the active park and recreation areas shown on Map 38, the plan proposes that seven forest areas and 19 wildlife habitats be preserved. All of these 26 interest points are located within the boundaries of either a primary or secondary environmental corridor. In an area such as the Kenosha Planning District where tree masses are not overly abundant, it is extremely important that these areas be protected from urbanization. Wildlife, when provided with a suitable habitat, will provide the population with opportunities for certain scientific, educational, and recreational pursuits; provide a food source; aid significantly in controlling harmful insects and other noxious pests; and provide an economic resource for the fur and fishing industries. These areas must be preserved if a proper balance of urban life is to be attained.

Scenic Parkway

The scenic parkway proposed in the plan on Map 38 is approximately 50 miles in length and would provide a low-speed pleasure drive roadway almost completely around the District. The opportunities attendant to this route are many and include pleasure driving, picnicking, nature study at selected locations along the route in the various wildlife habitats and forest areas, fishing, boating, hiking trails, the development of three or four overnight camping sites with various facilities such as water and electricity, golf, and several different types of active park areas adjacent to the parkway. A national scenic highway program might provide financing for such a scenic highway.

The city's sewage treatment plant shown in the photograph above is currently undergoing expansion which will increase its primary treatment capacity to 30 M.G.D. and its secondary treatment capacity to 18 M.G.D. This public service facility is only one of many required by a growing urban area.

Chapter X

PUBLIC AND PRIVATE SERVICES

A major objective of the comprehensive plan is to guide and direct the growth of the Kenosha Planning District so that it will be compact, but not congested, spacious but not too scattered. The proper balance between a spacious and compact development will insure the most economical provision of public utilities. Public services - the distribution of water, the collection and disposal of sewage, storm water drainage and garbage and private services - the provision of electric, gas and telephone services - are essential for the proper functioning of an urban area.

Water is the most essential utility provided by an urban area with its direct impact on the health, commerce and general well being of the citizens. In addition to its primary life-sustaining function, water is essential for sanitation, commerce and industry, and fire protection. The availability of an adequate and dependable water supply often has a great bearing on the growth and prosperity of a community.

There is an obvious inter-relationship between water and sanitary sewer facility planning. The future planning of water distribution and sanitary sewers must necessarily be related to, and in turn coordinated with, the land use plan and the future distribution of population. Basic policies should be established regarding the extension of water and sewer services within the urban area. The withholding of these services can be used to encourage compact and contiguous land use arrangements. The development of private wells and septic tanks in areas unserved by public systems has caused problems in many areas of the Region. Septic tanks on lots of insufficient size have in turn endangered underground water supply.

The problem of surface and ground water pollution of natural resources is now beginning to receive the widespread concern that it has so long deserved. Nationwide attention and action is now being focused on what has been fittingly described as a "national disgrace". The urbanization trend and increase in population necessitates the proper removal and disposal of domestic and industrial waste to avoid any possibility of contamination of water supplies and the resultant hazards to the community health. The current improvements being made at the Kenosha Water Protection Plant are a good example of community progress in this respect.

The primary function of an urban storm sewer system is to reduce or eliminate accidents and property damage due to local floods. Storm sewers also assist in the maintenance of efficient, safe vehicular and pedestrian traffic movement, and eliminate the health and safety hazards accompanying pooled water.

Advance planning enables the urban area to provide for the increased storm water runoff which is an inevitable result of urban development. As more roofs, streets, parking lots and other relatively impervious surfaces replace the original undeveloped countryside, the percentage of runoff from a given rainfall may increase as much as five-fold or more. The purpose of the study contained in this chapter of the comprehensive plan is to identify the major storm drainage facilities that will be needed for the expected 1990 development.

The so-called private services - the provision of electric power, gas, and telephone service - are also necessary and important elements in the growth of any urban area. Although the responsibility of providing these services lies with other than municipal agencies, and is generally provided on an "as needed" basis, the planning of these facilities can bring obvious benefits. For example, the relation of new extensions and service areas to the land use plan can serve to avoid duplication and poorly located facilities. The savings gained from this type of planning and foresight are generally passed on to and realized by the customer in the form of lower costs for services, or reinvested into increased technology ultimately leading to better services.

Water System

Existing Conditions

At the present time the Kenosha area has three adequate sources of potable water: (1) Lake Michigan which is the source of water for the city system, (2) deep wells used by persons who do not have service provided by the city system, and (3) shallow wells in the glacial till and connected limestone aquifers. The major problem for the future in the District is one of providing water to the estimated 1990 population (181,000 persons) at the most economical cost.

The water facilities in the City of Kenosha are under the supervision and control of the Kenosha Water Utility, a municipally owned yet separate entity. The Water Utility designs, constructs, operates, maintains and finances, from water revenues, the water and sewage treatment facilities for the city and some adjacent areas.

The source of supply for the city system is Lake Michigan through a 42-inch intake which projects 4,700 feet into the lake. The plant also has a 24-inch emergency intake system. This intake pipe has a capacity of 40 million gallons per day (MGD) and raw water pumping capacity is rated at 47.5 MGD. The high lift pumping capacity is 65 MGD and all plant and pumping facilities are in good condition. All water is treated by flocculation, sedimentation, pre and post chlorination and for taste and odor control.

In 1917, the original water treatment plant was built with a capacity of 8 MGD. A 6 MGD addition was completed in 1929, another 6 MGD addition built in 1953, and the last addition was completed in 1964 and supplied an additional 20 MGD capacity. The rated capacity of the water treatment plant is presently 40 MGD.

The various finished water storage facilities are listed in Table 77.

Table 77

WATER STORAGE FACILITIES

Treatment Plant Clearwell	2.00 Million Gallons
Treatment Plant Reservoir	2.50 Million Gallons
60th Street Standpipe	2.75 Million Gallons
80th Street Standpipe	4.00 Million Gallons
Total	11.25 Million Gallons

Source: Kenosha Water Utility

The water distribution system is entirely cast iron pipe and consists of additions to and replacements of the original 13 miles of mains installed in 1895. All service is metered. The distribution system now totals more than 215 miles of mains. The primary distribution mains (16 inch and 24 inch) are shown on Map 39, in addition to the 1966 area of service. The majority of the service area north of 52nd Street is served from a 16-inch transmission main on 22nd Avenue between 45th and 18th Streets. The southern portion of the area is served by a 24-inch main located on Seventh Avenue between 56th and 80th Streets and a 16-inch main on 80th Street.

Table 78

WATER CONSUMPTION IN GALLONS

Year	Maximum Daily	Minimum Daily	Average Daily
1961	22,250,000	6,290,000	10,971,420
1962	22,758,000	6,990,000	11,765,195
1963	25,817,000	7,337,000	12,685,466
1964	23,831,000	7,430,000	12,509,641
1965	27,851,000	7,551,000	12,682,123

Source: Kenosha Water Utility

Table 78 indicates that maximum daily water consumption has increased by 25 percent in the five-year period shown, while minimum daily consumption has increased about 20 percent and the average daily consumption has increased 15.6 percent. However, these consumptions are affected by rainfall and do not necessarily reflect a sizeable increase in use.

Table 79

1965 WATER CONSUMPTION BY TYPE CUSTOMER

Type	Average Daily Use (MG)
Residential	4.70
Commercial	1.75
Industrial	5.76
Public Use	0.44
Private Fire Protection	0.05
	Number of Meters (1965)
Residential	17,997
Commercial	1,464
Industrial	127
Public and Others	107
Total	19,695

The data shown in Table 79 indicates that industrial consumption of water was the highest of all types of customers and accounted for about 45.4 percent of the total consumption. Residential users ranked second with approximately 37.0 percent, and commercial customers used about 13.8 percent of the total water used.

Table 79 also shows that of the 19,695 total meters in service at the end of 1965, 17,997 or 91.4 percent were residential meters. Only 7.4 percent of all the meters, representing the industrial customers, accounted for 45.4 percent of total water consumption.

The Zirbel Water Utility, a private firm, provides water service to approximately 300 persons in the Village of Pleasant Prairie through an 1,800 foot deep well which was originally drilled in the early 1900's for the old Hercules Powder Plant. The quality of water is such that it does not require treatment. The most recent addition to this utility was the construction in 1964 of a 30,000 gallon elevated storage tank.

At the present time, the well is operated about nine hours out of each 24 hours and produces 24,300 gallons of water for the customers, served through a pump which operates at the rate of 45 gallons per minute. This data indicates that the customers of the utility use an average of about 81 gallons of water per person per day, well below that of the City of Kenosha users' average of 166 gallons per person per day. However the city consumption rates include commercial and industrial customers which use large quantities of water, thereby distorting the data. The total capacity of the pumping facilities, if operated on a 24-hour basis, is approximately 64,800 gallons. At the present consumption rate, a population of 800 persons could be served.

Three additional water utilities are located in the District. One, serving the area along North Sheridan Road in the Town of Somers has no well or pumping facilities. Service is supplied by the City of Kenosha. The other two are described briefly in the following text.

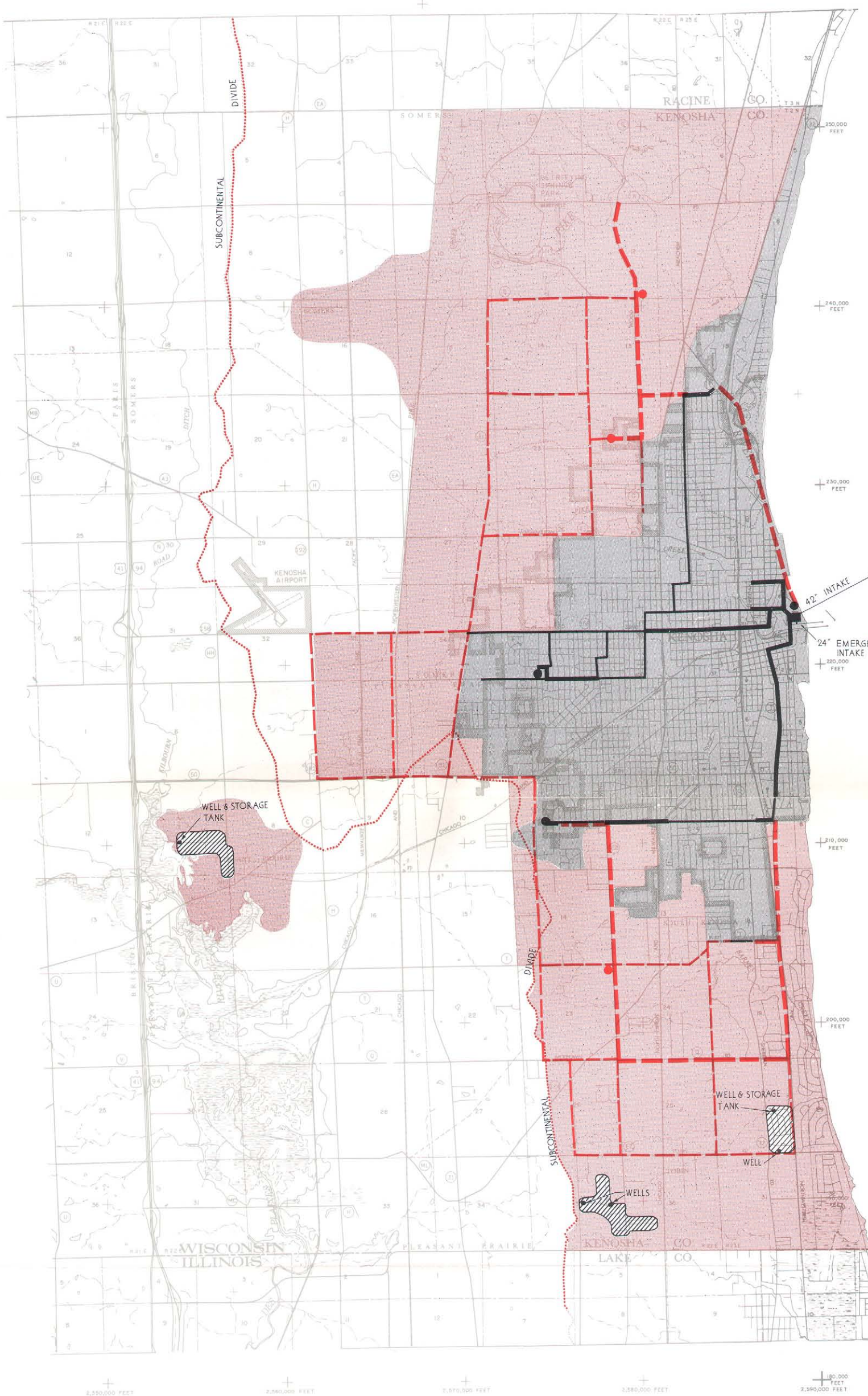
There are two wells serving the Pleasant Homes and Green Tree subdivisions. These wells, at the present time, provide service to about 420 persons. One well was drilled to a depth of 185 feet in 1958 and has a rated production capacity of about 158,400 gallons per day. The second well was drilled in 1959 to a depth of 311 feet but its capacity is unknown. Both wells are equipped with 12-inch casings. Although consumption data is unavailable, even at the city customer rates of 166 gallons per person per day, the first well could theoretically serve about 955 persons. Like the previously described water service, this water does not require treatment.

The Carol Beach Water Company provides service to about 300 people in the Carol Beach #1 Addition through two wells drilled about 18 to 20 years ago. The company also owns a storage tank which has a capacity of 30,000 gallons. One of the wells has a 10-inch casing to a depth of 940 feet, while the other has a six-inch casing to a depth of 260 feet. The larger well has a rated capacity of approximately 60 gallons per minute, which is capable of providing a total capacity of about 86,400 gallons per day based upon 24-hour operations. The smaller well has a pumping capacity of about 25 gallons per minute or a total capacity per 24 hours of operation of approximately 36,000 gallons. These two wells are capable of providing a total of 122,400 gallons of water per day. At the present time, it is estimated that the 300 customers use about 25,000 gallons per day or slightly more than 80 gallons per person per day. Even at the current city customer consumption rate of 166 gallons per person per day, these wells should theoretically be capable of serving a population of about 740 persons.

Future Service

The proposed 1990 area of service is also shown on Map 39. This is essentially the area that is expected to be urbanized by 1990.

In December, 1961, a report was submitted to the Water Utility outlining expansion plans



EXISTING & PROPOSED WATER DISTRIBUTION SYSTEM

- WATER TREATMENT PLANT
- EXISTING RESERVOIR
- PROPOSED RESERVOIR
- EXITING 16" MAIN
- PROPOSED 16" MAIN
- EXISTING 24" MAIN
- PROPOSED 24" MAIN
- SUBCONTINENTAL DIVIDE
- 1966 AREA OF SERVICE KENOSHA WATER UTILITY
- 1966 AREA OF SERVICE PRIVATE WATER UTILITIES
- 1990 AREA OF SERVICE

MAP 39

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI
FEBRUARY 1967

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for the physical system.(47) Chapter II of this report by the Utility's consultants develops the need for long-range planning.

> "We believe that it will be greatly to the advantage of Kenosha over the long term to take into account the possibility of the city water works being developed to serve a very much larger area than the present city. In areas where the urban population is continuous along the lake shore, as it may eventually be from the Kenosha County south line to Racine, development of public water supply from the lake is more economical if provided by relatively large plants located at least about 10 miles apart rather than by numerous smaller plants only a few miles apart. In this respect the Kenosha water works is very well situated, in that it is about 10 miles away from the Racine water works and five and one-half miles away from the Kenosha County south line with no intervening water works on either side of the city. Kenosha County extends 12 miles along the lake shore, that is, six and one-half south and five and one-half miles north from the Kenosha water works. It is our view that all of the area along the lake shore in Kenosha County and as far west as lake water may eventually be needed, could be most economically served by the centrally located Kenosha water works, especially if the latter is properly planned now for future development."(48)

This report continues and indicates the problems attendant to the development of small water plants scattered along the lake front in the area north of Chicago. This report also develops and recommends a broad water works development policy.

> "With respect to Kenosha, it would seem desirable to adopt a policy of willingness to serve filtered lake water to any area of Kenosha County within practicable reach and to discourage the construction of other water works plants along the lake shore to serve areas outside the Kenosha city limits. To accomplish this purpose, if considered desirable, the capacity of the Kenosha plant should be kept well ahead of immediate needs and the city should undertake to extend suitable feeder mains to serve outlying areas when and as needed."(49)

The following estimates contained in Table 80 were also included in the report.

Table 80

1961 POPULATION ESTIMATES

Alvord, Burdick and Howson

Year	Estimated Population	Average Daily Consumption MGD	Maximum Daily Consumption MGD
1961	67,381	11.0	22.25
1970	82,000	13.9	20.80
1980	96,000	17.3	25.90

Note: Population estimate made for City of Kenosha only.

(47) See report, Supplementary Report on Necessary Plant Improvements, by Alvord, Burdick and Howson, Chicago, Illinois, December, 1961.

(48) Ibid (47), Chapter II, Pages 10, 11.

(49) Ibid (47), Chapter II, Page 13.

The maximum daily rate was calculated at the generally accepted ratio of one and one-half times the average rate. In addition to the provision of normal water service, the water works system also provides another very important service - that of fire protection. The National Board of Fire Underwriters' requirements for water supply in connection with a maximum conflagration should also be met. The so-called maximum demand plus "fire demand" based on population would be increased to 32.8 MGD and 38.9 MGD in 1970 and 1980 respectively. Fire demand must be available for a 10-hour period.

The final recommendation of this report was that an addition should be made to the plant which would increase its capacity by 10 MGD. This actually represented a reduction of some 10 MGD compared with a report issued about two months earlier by the same consultant. The reasoning for the reduction in the recommended addition over the earlier report was that an anticipated substantial increase in use by American Motors Corporation failed to materialize. Apparently, however, the Water Utility recognized the eventual need for the capacity and the 20 MGD capacity addition to the plan was completed in 1964.

The policies affecting the number of water treatment plants in the Kenosha Planning District and the future service area should be adopted with one general limitation. This limitation is in regard to the area of service of the existing water treatment plant. As mentioned earlier, a subcontinental divide transverses the District generally in a northwesterly-southeasterly direction and is of great significance. A policy was developed that the planning of any large scale urbanization west of the subcontinental divide which involved interbasin water diversions should be avoided. Therefore, the western limit of the service area of the existing water treatment plant should coincide with the subcontinental divide. The northern and southern limits would be the county line and the state line respectively.

Future Capacity Requirements

The population estimates made in the report cited indicate 82,000 persons and 96,000 persons for the years 1970 and 1980 respectively (city only). However, the population estimates use 1990 as a reference year and indicate a population of 181,000 persons in the District. If the service area of the Water Utility is limited to that portion of the District east of the subcontinental divide, the population requiring service would be reduced to approximately 177,000 persons.

Assuming the per capita use of water would continue to increase in accordance with rates used in the projections of the report mentioned, which are comparable with national averages (rate is 10 gallons per capita per day for 10-year period), the average daily consumption by a population of 177,000 persons would be 33.8 MGD in 1990. (The 1965 average daily consumption rate was 166 gallons per capita. The 1990 average daily consumption rate would be an estimated 191 gallons per capita. Actual calculation is 33,750,000 gallons per day). The estimated maximum daily consumption is obtained by multiplying the expected average daily consumption by 1.5 which produces a maximum daily consumption rate of 50.7 MGD. Adding to this rate the recommended fire pumpage rate of the National Board of Fire

Underwriters (17.1 MGD for 176,700 persons of population), the total estimated 1990 water consumption demand would be 67.8 MGD. Since the present rated capacity of the water plant is 40 MGD, the plant capacity would have to be expanded by about 70 percent. There is adequate ground area at the existing site to accomplish such an expansion. Such an expansion program, of course, would require additional intake capacity. Current plans of the Water Utility are to install a 48-inch raw water intake into Lake Michigan by 1975.

At the present time, most residents in the Towns of Pleasant Prairie and Somers obtain water service through the use of shallow wells. This method will probably prove sufficient for quite some time, or until extensions are made from the existing systems.

Distribution System

Extensions of the existing distribution system would be made in accordance with the land use plan and are shown on Map 39. The plan shows three new standpipe locations: (1) 93rd Street and 39th Avenue, (2) 12th Street and 30th Avenue, and (3) 21st Street west of 30th Avenue. The site for the latter facility has already been purchased. A major loop involving extensions of 24-inch transmission mains would be formed on the south side of the District by utilizing Seventh Avenue from 80th Street to 91st Street and an extension south to 104th Street, west of 104th Street to 39th Avenue, and then north on 39th Avenue to an existing 24-inch main on 80th Street. This system would be complemented by a more diverse system of 16-inch transmission mains as shown.

Map 39 also shows two major extensions of 24-inch mains in the northern part of the District. The first would be the construction of a main from the water treatment plant to a point just west of Carthage College and eventually connecting to the proposed standpipe west of 30th Avenue at 21st Street. The second 24-inch transmission main would be extended north along 30th Avenue from 21st Street to Seventh Street. Here also this major system would be supported by a system of 16-inch transmission mains. The main along 30th Avenue would, of course, be the primary feeder to the new University of Wisconsin-Parkside campus.

Major service facilities would also be extended west of the present service limits to serve the proposed industrial subdivision at the airport.

Sanitary Sewers

Existing Conditions

Approximately 76,500 persons are served by the existing sanitary sewer service area (See Map 40). This area includes the City of Kenosha, Somers Sanitary District #1, and Sewer Utility Districts #1 and #2, and A, B and C. The population residing outside of the city but within these special sewer districts is served by the facilities of the individual districts which are in turn connected to the city system. As explained earlier, the city system is owned and operated by the Kenosha Water Utility. All existing facilities shown are 24-inch lines or larger in diameter and are generally regarded as the primary system.

The primary function of the main sewers shown is to collect the sewage and storm water from trunk lines, which in turn collect sewage and storm water from the lateral service lines on the various streets throughout the service area. After collection by these various mains, the sewage reaches the sewage treatment plant (water supply protection works) after which the liquid effluent is discharged into Lake Michigan.

The primary purpose of water supply protection is to remove three broad groups of pollutants or constituents in varying degrees before the processed effluent is discharged into the receiving stream or lake to the degree necessary to abate pollution in all its forms. These three groups of pollutants are described in Appendix L.

The City of Kenosha has enjoyed the various advantages and benefits of an integrated sewage system for over 60 years and a limited sewage treatment plant for the past 26 years. The service rendered to residents, and to commercial and industrial firms in the service area has become much less satisfactory in recent years due to greater amounts of waste waters from the increasing population equivalent tributary to the sewage system, to the increased urban areas of sewer service and to increased surface water runoff from pavements, roofs, and other impervious areas. During the year 1965, the partial treatment plant pumped and treated 7,306,437,000 gallons of sewage - a daily average of 19,998,000 gallons. Since the plant was originally designed to accommodate 10 MGD, this means that the plant is operating at about twice its intended capacity. Whereas the water use averaged 166 gallons per capita per day, the flow to the water supply protection works indicates an average of 262 gallons per capita per day.

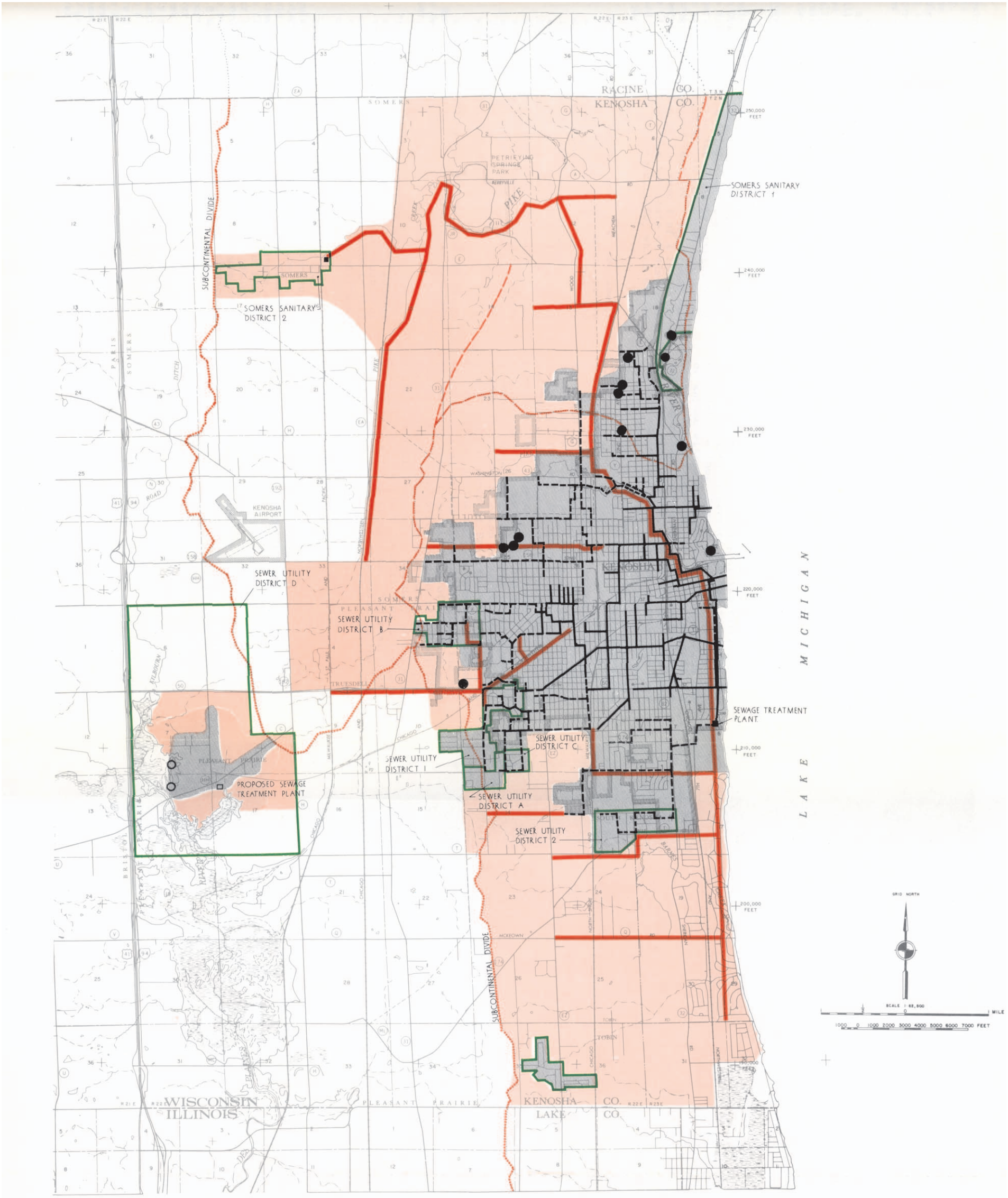
The primary sewer to the water supply protection works is a 72-inch intercepting sewer with a hydraulic capacity of approximately 48 to 52 MGD. The sewage flowing to the plant is partially controlled by a manually operated hydraulic sluice gate so that the rate of sewage flow to the initial plant facility (comminutor units) is limited to the available plant capacity (25 MGD, more or less), and the excess (due to backwater gradient in the 72-inch sewer) flow is diverted through the upstream overflow outfalls of the sewer system into Lake Michigan. The comminutor units, pumping facilities and grit chamber have capacities rated at 11 MGD, 50 MGD and 20 MGD respectively. The treated liquid effluent is discharged into Lake Michigan at a point some 1,200 feet from the shoreline.

Table 81

TREATMENT DATA

Year	Average MGD	% Removal Suspended Solids	% Removal 5-Day B.O.D.*	Inches of Precipitation
1961	14.550	52	33	29.59
1962	14.460	55	33	21.90
1963	14.160	56	32	24.48
1964	15.600	50	28	28.78
1965	19.998	54	33	43.76

* B.O.D. - Biochemical Oxygen Demand
Source: Kenosha Water Utility



EXISTING AND PROPOSED SANITARY SEWER FACILITIES

- EXISTING PRIMARY COMBINED SEWER
- EXISTING PRIMARY SANITARY SEWER
- PROPOSED PRIMARY SANITARY SEWER
- EXISTING SEWAGE LIFT STATION
- PROPOSED SEWAGE LIFT STATION
- 1966 OR INITIAL AREA OF SERVICE
- 1990 AREA OF SERVICE
- SUBCONTINENTAL DIVIDE
- MAJOR DRAINAGE BASIN BOUNDARY
- SEWER UTILITY OR SANITARY DISTRICT BOUNDARY

MAP 40

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI JANUARY 1967

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For the past five years the flow to the treatment plant has averaged 15.753 MGD or almost 60 percent over design capacity (See Table 81). In large part, the record average daily flow to the plant recorded in 1965 was attributable to the 43.76 inches of rain recorded. During the year 1965, the highest monthly flow was recorded in September while the lowest monthly flow was recorded in January.

During the past several years the practice of separating sanitary sewer and storm sewer facilities in new residential developments has been followed. These separated facilities eventually combine in the existing combined system. Herein lies the major problem of the water supply protection works.

Future Service-Treatment Plant

In January of 1965, a report titled "Water Supply Protection Works", prepared by Warren and Van Praag of Decatur, Illinois, was presented to the Kenosha Water Utility. The purpose of this report was to examine the existing operations of the treatment plant and to recommend and design a program for improved service. This study was generally initiated as the result of a letter to the City of Kenosha from the State of Wisconsin Board of Health in September, 1960, which stated in part:

> "The Board of Health feels that the sewage treatment program for Great Lakes cities will be aimed at utilization of complete sewage treatment plants.... In view of this imminent need for additional treatment units and because of the location of the City of Kenosha within close proximity of a sister state, it would seem most desirable to plan at this time for the installation of treatment units which would augment existing facilities, so as to provide a higher degree of purification."

A conference between officials of the Board of Health and the Utility's consultants resolved the degree of treatment to the following in November, 1964.

> "In the interest of protecting our water resources, and in keeping with the general trend, the facilities should be capable of producing an effluent comparable to that expected from a conventional activated sludge treatment plant."

The report cited earlier estimated the 1985 population of the area served by the water supply protection works to be 92,000 persons. As a basis for projections, the average 1965 flow was estimated at 15.2 MGD. (Records indicate that the flow actually amounted to 19.998 MGD for the year 1965.) In view of the excessive rainfall recorded in 1965 (43.76 inches as compared with the average of 30.12 inches), the estimate of 15.2 MGD appears to be quite reasonable. The report also assumes that as a program of sanitary sewer and storm sewer separation is accelerated, these flows will be substantially reduced as only sanitary flows and infiltration will be reaching the water supply protection works. Figure 3 of the report shows a projection of the rate of flow through the plant and indicates that the flow would increase to 18.0 MGD by 1985. The average daily flow per capita is expected to decrease from its present level to approximately 200 gallons. (This estimate was based on a 1964 level of about 211 gallons per capita per day.)

The recommendations of the Warren and Van Praag report were accepted and a major water supply protection works expansion is now under construction with completion expected in the spring of 1967. This expansion will increase the capacity of the primary treatment facilities to 30 MGD, and provide secondary treatment facilities for a capacity of 18 MGD. The expected population to be served by these complete treatment facilities is 92,000 persons or a population equivalent to 104,000 persons. However, the population estimates (92,000) assumed were for areas having combined sanitary and storm sewer facilities. If the storm sewer flows are removed from the treatment plant, the capacity of the sewage treatment plant is thus increased, in a matter of speaking, to a level sufficient to accommodate flows expected by the estimated 176,700 residents of the service area in 1990, with an excess capacity of about 3.5 MGD.

The primary problem with regard to service may be decided by a policy of the Water Utility as to its area of service for the treatment facilities - either City of Kenosha residents only or anyone within a reasonable distance from the plant. This situation is almost identical to that regarding future water service to the District resident in 1990. The policy may have been already determined as residents outside the city in both towns are receiving service at the present time. While this amounts to only a small number of customers at present, it may represent an all-inclusive policy.

The problem has another aspect to be explored - that of the possibility of other sections of the District desiring treatment facilities of their own. In fact, the Town of Pleasant Prairie has had an engineering report prepared showing a possible sewer system and treatment facilities for the eastern portion of the town. The town presently has a sewage treatment plant and sewer system under construction to serve the area near the Village of Pleasant Prairie, This problem is not so severe as the service area of this small plant lies west of the subcontinental divide and the service area of the majority of the 1990 population is expected to reside east of the divide. The subcontinental divide is expected to be a limiting factor in the western boundary of any singular or multiple sewer districts, much the same as the case with water service. Two small package treatment plants presently exist in the area east of the subcontinental divide. One is located in the Village of Somers (Somers Sanitary District #2) and the other in the extreme southern part of the District (Pleasant Park Utility District). The major concern generally is the formation of a large utility district with treatment facilities, that is whether additional treatment facilities are necessary or even desirable.

During a recent study on "Relief, Extension and Conversion of Sewer Facilities" by Consoer, Townsend and Associates for the City of Kenosha, the consultants contacted the State of Wisconsin Board of Health relative to the State's position on a possible second treatment plant for the city. The Board of Health must review and approve all treatment plant facilities prior to construction. A new treatment plant located in the northern part of the city might prove more economical and provide better service to that section of the city, especially in view of the expected impact of the University of Wisconsin-Parkside campus and attendant growth. The text of a letter from the Board of Health dated June 17, 1966, and signed by the State Sanitary Engineer, reads as follows:

"In reference to your letter of May 20, 1966 concerning a proposal to develop a second sewage treatment plant in the northern part of Kenosha, please be informed that we feel that all sewage should be conveyed to a single site for treatment. This would be particularly desirable in view of the distinct possibility that tertiary type treatment will be required for removal of nutrients at a relatively early date. We feel that such processes could be more adequately provided at a single site. For the time being treatment works should consist of complete treatment, with disinfectant of the effluent prior to its disposal into the lake, preferably through a lengthy submerged lake outfall."

The State's position relative to additional treatment facilities is quite clear, at least in respect to the City of Kenosha. Since the state policy rejected the idea of a second treatment plant that would serve an area somewhat far removed from the plant itself, it seems logical to assume that the policy would also apply to areas immediately south of the plant site of the Town of Pleasant Prairie where considerable urbanization is expected to occur.

The plan for the expansion of sanitary sewer and treatment facilities is shown on Map 40. Only two major sewage treatment plants are indicated for the future. The plant currently under construction in the Village of Pleasant Prairie is designed to provide primary treatment service for a population of approximately 1,320 persons based on an expected flow of 125,000 gallons per day. The anticipated 1990 population within the boundaries of Sewer Utility District D is about 2,500 persons. If all of these persons are to be served by the plant some expansion of the facilities under construction will be necessary. However, this can be achieved quite easily as the plant is to be built with future expansion in mind.

The second plant shown on the plan is the existing water supply protection works in the City of Kenosha. In view of the State's policy on multiple sewage treatment plants, the boundaries of the service area of this plant should be: the subcontinental divide on the west, the county line on the north, Lake Michigan on the east, and the State line on the south, in which service area approximately 177,000 persons are expected to reside by 1990.

There are generally two methods that can be used to achieve the above recommended policy. The first is a continuance of the current policy where small areas such as the Sewer Utility Districts or Sanitary Districts can construct, at their own expense, sanitary sewer lines to service residents and then connect the main line to the Kenosha Water Utility system. The second method involves the formation of a metropolitan sewerage commission as authorized by Wisconsin Statutes.

There are several factors evident that lead to the conclusion that the metropolitan sewerage commission is the best alternative. First, the proliferation of small utility or sanitary districts has already begun to adversely affect surface waters in the Region. Secondly, it has already been indicated that health officials will soon require tertiary treatment of sewage. In addition, the economy of a large system far outweighs that of the smaller utilities and districts.

The metropolitan special-purpose district, although limited in its legislatively delegated powers, has a great potential for the implementation of District plans in two important respects. First, it constitutes a precedent for regional action which may be helpful in inducing district-wide organization for community services other than sewage collection and treatment. Secondly, close cooperation between planning agencies and metropolitan sewage commissions can help guide the placement of regional development in both time and space through the location and construction of sewage and drainage facilities. The metropolitan approach would appear to be the best means of achieving the basic objective - the provision of adequate sanitary sewer service for the District.

The small sewage treatment "package plants" located in Somers Sanitary District #2 and in the Pleasant Park Utility District would remain in operation until such time as the central system were extended to their facilities and they could connect to the overall system.

Future Service - Collection System

The plan for future sanitary sewer facilities shown on Map 40 incorporates the recommendations made in a previously cited report by Consoer, Townsend and Associates insofar as they affect the District as a whole. Beyond the scope of their report locations of recommended primary sanitary sewers are shown to adequately serve the 1990 urbanized area of the District. The report cited is a detailed analysis of existing problems, and contains recommendations for achieving eventual separation of the now combined sanitary and storm sewer facilities. A brief description of the major proposed improvements of the sanitary sewer system follows.

To enable only one treatment plant to be used in Kenosha, a major interceptor will be necessary to collect sewage from the area bounded generally by STH-43, STH-31, the county line and the C&NW tracks near Sheridan Road. This interceptor would generally be constructed parallel to a large existing sewer which would not be capable of accommodating the increased flow anticipated. This interceptor would begin in Washington Park and generally run toward the central business district and then south to the treatment plant. Additional primary sewers would be required to connect with the northwestern terminus of this interceptor. One would be located along a new 33rd Street between 47th Avenue and the old North Shore right-of-way where it would connect to a major sewer to Washington Park. The second primary sewer would run north along the old North Shore right-of-way to Birch Road, west along Birch Road to 30th Avenue, and then north almost to 7th Street. The rather peculiar land configuration and resulting drainage pattern has a significant bearing on sewer routing. Most of the routes proposed in the system could be installed as gravity-flow mains, with a few lift stations probably necessary. The topography of the land in the district immediately to the west of STH-31 between about 60th Street and 31st Street is such that drainage flows west to the Pike Creek adjacent to the Milwaukee Road tracks and then north to the Pike River which flows eastward and eventually south to its outlet in Lake Michigan. If a gravity flow system is to be utilized in this area, the primary sanitary sewer will have to follow the channel of the Pike River and Pike Creek as shown. If a gravity flow system is not used, extensive pumping and lift

facilities will be required to deliver the collected sewage over the drainage basin boundary which traverses the area described. The gravity flow system will involve a more lengthy system but would probably result in less cost, a decision which would have to be resolved in a more detailed engineering analysis of the problem..

To adequately serve the west-central section of the District (near the intersection of STH's 158 and 31), a primary sewer should be extended west along 50th Street between the old North Shore route and STH-31.

Major primary sewers will also be required in the area near the intersection of STH's 50 and 31. A primary sewer would be constructed along the C&NW diagonal tracks from 75th Street to about 32nd Avenue where it would connect with an existing sewer. Primary laterals would also serve areas to the north and south of 75th Street and Cooper Road. Another major element would provide service to the industrial area proposed to the west of that intersection as shown.

In order to adequately serve the southern one-third of the District, a major interceptor is proposed from the treatment plant south to 116th Street. This primary interceptor would then collect sanitary sewage flow from other primary sewers extended to the west along 85th Street, 91st-93rd Street, and 104th Street.

Precise pipe sizes of all of the previously described systems, except that covered by the city's recent study, would have to be determined as the result of further detailed engineering studies not within the scope of this report.

Storm Drainage

Existing Conditions

As explained earlier, the major portion of the City of Kenosha is provided storm drainage through a combined sanitary and storm sewer system. The Consoer, Townsend and Associates Report, and other cited reports, indicate several problems associated with this situation, chief of which is the overloading of the water supply protection works. There is generally no need to provide treatment facilities for storm water although it may become necessary in the future. An engineering study was made to determine how to best achieve separation of these sewers which will also alleviate problems of sewer backup now experienced in many parts of the city. Map 41 shows the system of combined sewers and also the somewhat limited system of separated storm sewers. As in the case of the sanitary sewer improvements in the City of Kenosha, the storm water improvements recommended by Consoer, Townsend and Associates have been incorporated into the overall system for the District.

Future Service

Four new major storm sewer outfalls to Lake Michigan are included in the plan shown on Map 41. In addition a primary sewer is proposed for connection to an existing outfall system. The first primary storm sewer would be located on 14th Avenue between 27th Street and 40th Street where it would turn east and outfall into Lake Michigan. The second and most significant would be located along 60th Street between 39th Avenue and the lake. Another primary sewer would run generally along 73rd Street from Roosevelt Road to a new outfall at the lake and finally, a new primary storm sewer would be located on 85th Street between Sheridan Road and the lake. All of these improvements would be in enclosed pipes ranging from 36 to 96 inches in diameter. A primary open ditch would be constructed along the old North Shore right-of-way from 24th Street to a point just north of Birch Road where it would connect with an intermittent stream flowing into the Pipe River to the east.

In many areas of the country, storm water retention basins are used to hold storm water in a specific area reserved for this purpose until such time as covered storm sewers can accommodate the flow. These basins have the effect of reducing needed sizes of storm trunk sewers and to reduce flooding in the lower reaches of drainage courses. The cost of these retention basins is also substantially lower than the conventional storm sewer pipes. In addition, since these areas are dry the majority of time, many communities have been successful in developing these basins for passive park purposes affording multiple use and a corresponding reduction of associated costs.

Four such storm water retention basins have been proposed for the area and are shown on Map 41 immediately adjacent to the urbanizing portions of the District. The largest of the four would comprise about 35 acres and would be located to the northwest of Washington Road and 39th Avenue and would drain the area to the west and slightly north generally as far west as STH-31. This basin would drain into the Pike Creek which flows through Washington Park. Another basin encompassing some 10 acres in area would be located northwest of 47th Avenue and STH-158 and would drain areas to the south and west. This basin would eventually be connected to the city storm sewer system. A third basin is located to the southwest of 75th Street and 56th Avenue and would comprise about 15 acres of land and drain areas to the north. Another primary sewer would connect this basin with an existing sewer at 78th Street and 43rd Avenue. The fourth basin is proposed southwest of 30th Avenue and 80th Street and would comprise about 30 acres of land draining areas to the west, southwest, and south.

In the remaining portions of the District, natural drainage courses are proposed to accommodate storm water flows. The major courses in the area are the Des Plaines River and its tributary course, the Kilbourn Road Ditch, the Pike River, the two Pike Creeks (one flowing into the Pike River, the other into Lake Michigan), Barnes Creek and another stream south of Barnes Creek which flows into Lake Michigan. In July of 1967, the 1965 Water Quality Act will take effect and will require that standards be set on stream conditions on the Des Plaines. The problem of alternating flooding and low water flow on the Des Plaines will have to be considered further. A unique opportunity exists in the District to utilize these natural drainage courses to accommodate storm water runoff. All of these major drainage courses and the most of the many streams throughout the District have been placed in either the primary or secondary environmental corridors on the proposed land use plan. Many of these courses drain considerable areas and storm sewer pipe sizes would necessarily be quite large. As urbanization of the District continues, however, storm water runoff will increase drastically and some of the natural drainage channels will require such improvements as straightening, widening, and in some areas, paving of bottoms to successfully accommodate the

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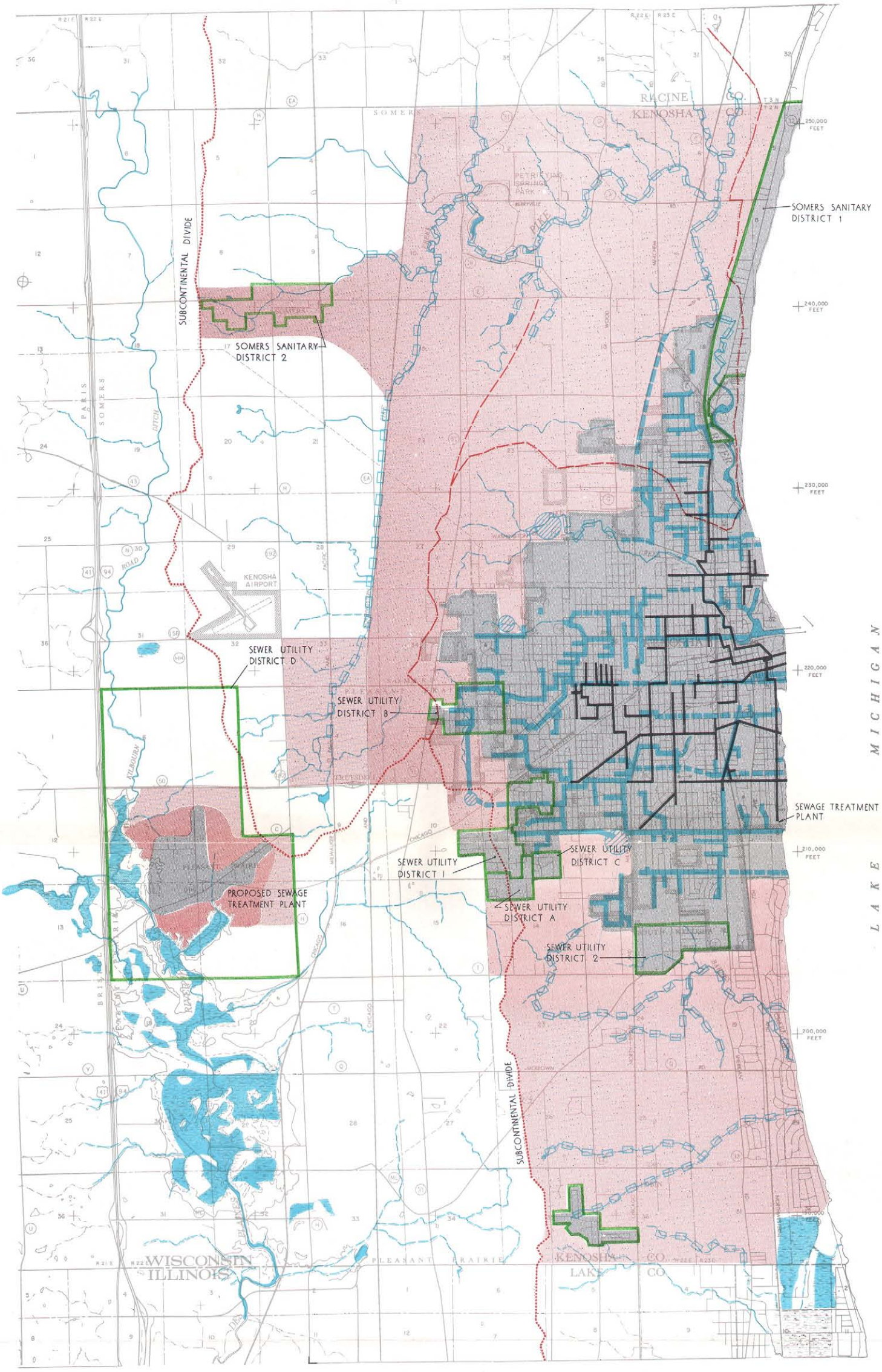
EXISTING AND PROPOSED STORM DRAINAGE FACILITIES



POND

PERENNIAL STREAM OR DRAINAGE CHANNEL

INTERMITTENT STREAM

MARSH

EXISTING PRIMARY STORM SEWER

PROPOSED PRIMARY STORM SEWER

EXISTING PRIMARY COMBINED SEWER

PROPOSED PRIMARY DRAINAGE WAY

PROPOSED STORM WATER RETENTION BASIN

SUBCONTINENTAL DIVIDE

MAJOR DRAINAGE BASIN BOUNDARY

SEWER UTILITY OR SANITARY DISTRICT BOUNDARY

1966 OR INITIAL AREA OF SERVICE

1990 AREA OF SERVICE

MAP 41

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE URBAN RENEWAL ADMINISTRATION OF THE HOUSING AND HOME FINANCE AGENCY UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954, AS AMENDED.

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

JANUARY 1967

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flows. The cost savings coupled with the aesthetic improvement and the preservation of many wildlife habitats and other natural resources make this possibility extremely advantageous. The proposed primary natural drainage channels are delineated on Map 41.

Solid Waste Disposal

Like many other expanding urban areas, the Kenosha Planning District is confronted with the serious question of how to dispose satisfactorily of the domestic, industrial, commercial and contractor's refuse which is one of the products of urban society. Refuse consists of unwanted material such as garbage, rubbish, ashes, dead animals, leaves, tree and yard trimmings, and waste from street cleaning and construction. American "affluent" living is bringing more and more discards of paper, glass, plastics, and tin cans as a part of household, commercial, and industrial practice.

At the present time, there are four major methods of refuse disposal used in the District.

1. Open Dumping

An open dump is an area where refuse is dumped and allowed to remain exposed to the atmosphere. Rodents and flies, therefore, have easy access to the refuse. This method is not a desirable method of refuse disposal for other than inert material. Open dumps vary in degree of offensiveness. Those which are "worked" (bulldozers are used periodically to level and compact the refuse) are more tolerable than those which do not make use of any equipment. Some open dump sites become swampy or filled with water and present a deplorable picture of pungent refuse floating on water that has become sour and stagnant. The probability of ground water contamination is especially high at sites where refuse is continually saturated. Those parts of the dump that are above water are generally infested with vermin and are often aflame, giving rise to air pollution and serious odor problems.

2. Sanitary Landfill

Sanitary landfill is generally a nuisance-free method of refuse disposal characterized by competent and continuing engineering planning and control. Sanitary landfills do not produce ground and surface water pollution, nor is there burning of any kind at a sanitary landfill site. Refuse is compacted and covered each day with six inches or more of earth covered material. The earth cover also is compacted to provide a tight seal that will usually accomplish the following:

1. Prevent flies from laying eggs on the refuse or rodents from invading the fill,
2. Seal in odors,
3. Prevent rain water from entering the fill,
4. Minimize the blowing and scattering of refuse,
5. Prevent the emergence of adult flies that have been bred in the refuse, and
6. Provide a surface on which trucks can operate.

The operations and maintenance of sanitary landfills require equipment that is capable of satisfactorily performing the various operations of excavation, compaction, and cover needed by the quantities of refuse that are dumped at the site. When desired grades are attained, the fill is topped with a cover of at least two feet of earth (four to eight is preferred) to seal in odors.

3. Central Incineration

Space requirements for refuse disposal can be reduced substantially by incineration. Unlike common fuels, refuse is physically heterogenious and therefore requires special incinerators for burning. High-temperature burning (at 1,400° F.) is required to prevent smoke and odors which are the result of incomplete combustion. In addition, control devices are necessary to reduce the amount of dust and fly ash discharged from the stack. Even a properly designed incinerator will give off smoke and odors if it is overloaded or improperly operated. Truck traffic to incinerators is a problem also.

In addition to the type of incineration described above, some incineration is accomplished in a relatively small coneshaped, prefabricated structure. The absence of refractories to hold heat in this type of installation makes it virtually impossible to constantly maintain temperatures high enough to result in complete combustion of noxious gases and particulate matter. Incinerators of this type are little more than enclosed bonfires and are generally major contributors to air pollution. They are not suitable for disposing of large amount of urban refuse.

4. On-the-Site Disposal

Disposal of certain types of refuse at the place of origin or "on-the-site" aids in reducing the cost of refuse collection by minimizing the volume that must be hauled to central disposal sites. Home incinerators and garbage grinders are the most widely used methods.

Home Incinerators. These are gas-fired or electrically-heated combustion chambers that burn refuse under controlled conditions within buildings. Most municipal authorities do not encourage the installation of home incinerators because they are often improperly operated and burning generally does not take place at temperatures that are high enough (1,400° F.) to result in complete combustion. In addition, it is extremely difficult to regulate the maintenance and operation of large numbers of home incinerators.

Garbage Grinders. The garbage portion of refuse can be processed by grinding and flushing it through sewers to the sewage treatment plant for disposal. Most domestic grinders are permanently installed in the drains of kitchen sinks.

Existing Conditions

At the present time, there are two methods of refuse collection used in the District. Residents of the City of Kenosha are provided with collection services by the city through the use of its fleet of 26 trucks. Residents in the Towns of Pleasant Prairie and Somers contract for refuse collection services through private operators. In addition, private collection service is contracted by many businesses and industries

to supplement city service which is operated on a twice weekly basis.

During 1965, the city collected 16,119 tons of garbage which was burned in the city's incinerator. The city also collected 642 tons of garbage which was disposed of at the city's sanitary landfill site located just east of Birch Road. In addition, the city collected 14,431 tons of rubbish which was dumped at the landfill site. Private collectors dumped an additional 5,200 tons of rubbish at the landfill site. Thus, the city alone accounted for 36,392 tons of refuse. Although no exact data is available for the towns, it is estimated that Pleasant Prairie residents had about 245 tons of refuse collected, while Somers' residents contracted for collection of about 174 tons of refuse. For the entire district, the estimated 1965 population of 100,100 persons required the disposal of about 36,811 tons of refuse. Based upon an estimated 1965 population of 100,100 persons, 2.40 pounds of refuse per capita per day was produced in the District.

The Town of Pleasant Prairie owns one landfill site while the Town of Somers owns two landfill sites. All landfill sites are shown on Map 43. Unfortunately, there are problems associated with each of the sites. The northern site of the Town of Somers is extremely small although fairly well located with respect to future urban development patterns. The town's western site, although much larger in area, is located in a flood plain and hauling distance to the site is extreme. The Town of Pleasant Prairie owns a site in the extreme southern part of the District south of Springbrook Road and east of the C&NW freight line tracks. This location is quite far removed from the urbanizing area of the town and is located in the corridor of the proposed industrial freeway. The Birch Road site owned by the city is expected to be completed and closed in the near future. If properly covered, it can become a distinct benefit as it is located immediately east of the proposed Birch Road Elementary School soon to be constructed. The area of the site is proposed for use as a neighborhood park and is also located in an environmental corridor. The site just recently acquired by the city, located north of 12th Street, most unfortunately encroaches on an area designated as a wildlife habitat. In addition, it is in close proximity to the University of Wisconsin-Parkside campus but is well located with regard to future urban development patterns. All of these problems clearly indicate the overall difficulty in disposing of refuse. Officials estimate that the site should be sufficient for 15 years at the current rate of disposal.

Two incinerators are located in the District. One, just north of St. Peter's School on 30th Avenue, is the cone-shaped type locally referred to as the "Tin Tepee". The other is owned and operated by the City of Kenosha and is located on 50th Street just west of Sheridan Road. The capacity of the city's incinerator is rated at 400 tons per day (2,280 cubic yards per day) or 98,000 tons per year on the basis of 245 days of operation per year. A study has recently been completed to determine the feasibility and costs involved of converting the city's plant to an all-inclusive plant, that is, capable of accommodating what is termed combustible refuse and non-combustible refuse. Both theoretical computations and actual operations observed during the preparation of this report indicate that the capacity of the four units at the plant does not exceed 160 tons per 24 hour period based upon the heat content of the material presently being fired.(50)

Future Requirements

The residents of the District are now supplying refuse for disposal at the rate of about 2.76 pounds per capita per day. If existing trends continue to 1990, it is estimated that this rate will increase to about 4.0 pounds per capita per day. This means that a need will exist to dispose of 264,260,000 pounds (132,130 tons) of refuse in 1990, based on an estimated 181,000 persons residing in the District. Quite obviously, this is a problem of major proportions.

> "In order to help solve the city's disposal problem it is necessary that the total volume of mixed refuse (garbage and rubbish) be reduced. The most efficient method available today to obtain this reduction in volume is by means of incineration. To accomplish this it is recommended that the city take steps to provide a combined collection system of garbage and rubbish and then incinerate the mixed refuse. The changing from separate collections to a single collection of mixed refuse will undoubtedly reduce the costs of collection."(51)

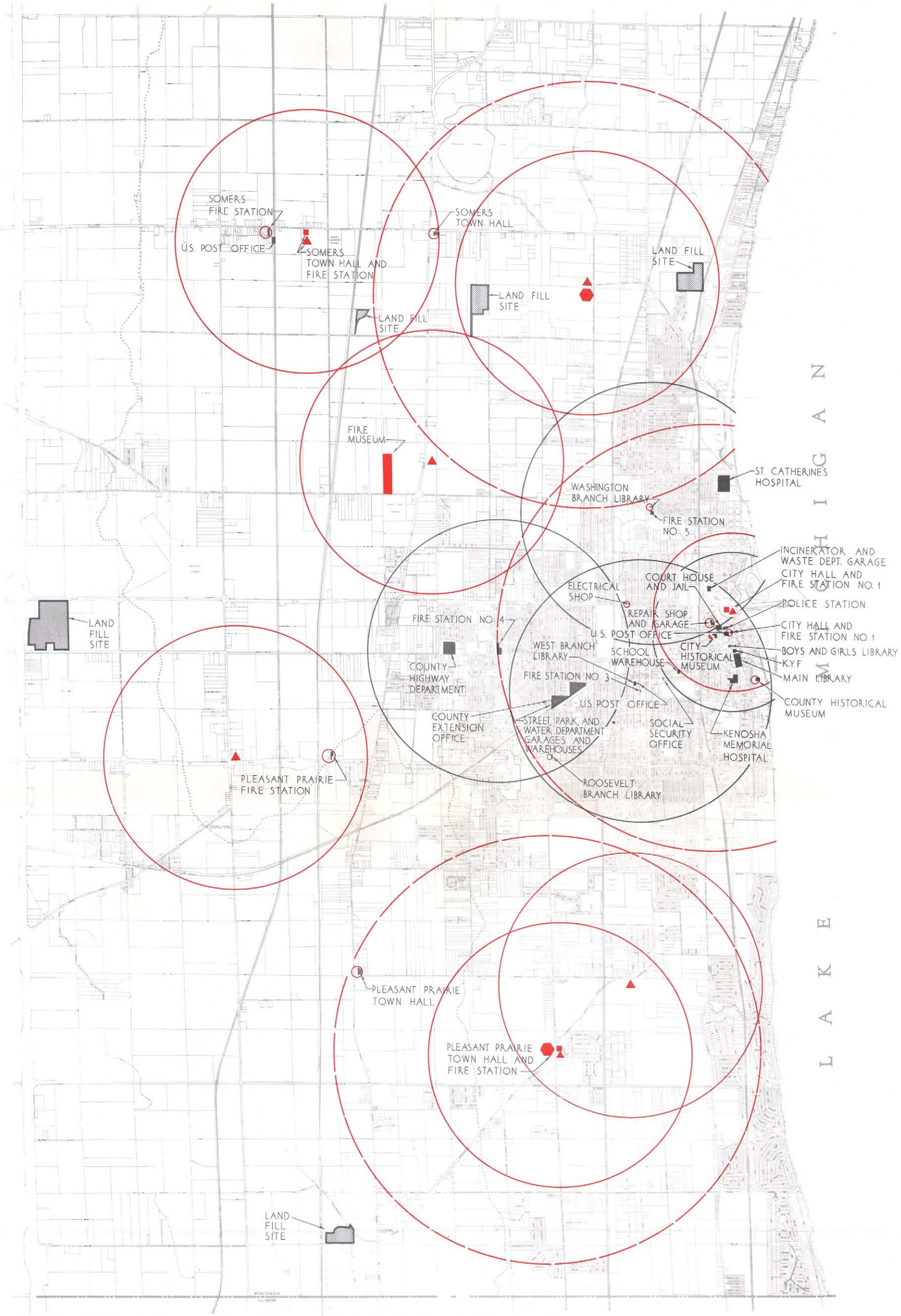
The report cited goes on to recommend a system of modification to the city's existing incineration plant. The estimated total cost of these changes is $615,700. The changes would provide two incinerator units of approximately 150 percent of present plant capacity and permit burning a mixture of garbage and rubbish. The report also estimates that by 1986, a need will exist to incinerate 275 tons of refuse per day from the estimated 99,000 city population based on a 5-day week of incineration. This, however, is the city need only and no estimates were made for the area outside the city. Since the 1990 estimated population of the District is 181,000 persons, the refuse to be disposed of amounts to an estimated 506 tons per day. This is compared with the estimated capacity of about 240 tons which can be effectuated by the modification.

From the preceding discussion it is apparent that the modification of the incinerator and its corresponding increased capacity will only serve usefully for about 10-12 years if it is used on a District-wide basis. Obviously, it would serve for a longer period if only the city refuse were accommodated. However, like many other urban affairs this too is a problem transcending political boundaries. Some satisfactory arrangement for participating use of the incinerator by the Towns of Pleasant Prairie and Somers should be made. At the end of the useful life of the incinerator a new plant should be built in the western industrial district. The site for such a plant should be acquired at an early date.

In any event, a sanitary landfill site or sites will still be required. Properly operated incinerators produce a stable ash and residue amounting to 5 to 35 percent of the volume of the incoming material depending on the nature of the refuse. Assuming a 30 percent residue from the estimated quantity of refuse to be incinerated,

(50) See Engineering Report on Modernization of the City Incinerator Plant, by Consoer, Townsend and Associates, Chicago, Illinois, November, 1966, Pages 6, 7.

(51) Ibid (50), Page 1.



EXISTING AND PROPOSED PUBLIC BUILDINGS

- EXISTING PUBLIC BUILDING SITE
- SERVICE AREA OF EXISTING FIRE STATION ¾ MILE RADIUS MAIN STATION; 1¼ MILE RADIUS ALL OTHER CITY STATIONS
- SERVICE AREA OF EXISTING LIBRARIES, 2 MILE RADIUS
- PROPOSED PUBLIC BUILDING
- PROPOSED FIRE STATION
- SERVICE AREA OF PROPOSED FIRE STATION ¾ MILE RADIUS MAIN STATION; 1¼ MILE RADIUS ALL OTHER STATIONS
- PROPOSED LIBRARY
- SERVICE AREA OF PROPOSED LIBRARY, 2 MILE RADIUS
- EXISTING BUILDING TO BE ABANDONED

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

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ST. LOUIS, MISSOURI FEB 67 CHICAGO, ILLINOIS

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MAP 43

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approximately 39,700 tons of ash would be produced and require disposal. One possible site for disposal would be in Lake Michigan to provide a landfill for the proposed extension of Simmons Island Park. Several such projects have been constructed by the city already.

Electric Service

Electric power is provided to the Kenosha Planning District by the Wisconsin Electric Power Company. Map 42 shows the routes of the major transmission lines through the District. These are a 345 k.v. line which is located in the extreme southwestern corner of the area, and a 138 k.v. line which provides most of the power. This line also serves other areas on the system to the west and north and connects with facilities to the south in Illinois. The main electric power substation in the District is located on 28th Avenue north of 45th Street. Additional substations are located on 22nd Avenue at Birch Road, Sheridan Road near Berryville Road, south of 52nd Street near the Harbor, 65th Street at 51st Avenue, 75th Street near the old North Shore Railroad crossing, in the Village of Pleasant Prairie, at the old North Shore Railroad crossing and 93rd Street, and along Seventh Avenue south of 80th Street. There are no plans at present to significantly expand the system, but substations and facilities will be added as the demand for service increases.

Gas Service

The primary source of natural gas to the District is the facilities of the Michigan-Wisconsin Pipeline Company and the local Wisconsin Natural Gas Company. The major supply to the Racine-Kenosha areas is provided through a 10-inch and 12-inch pipeline into the District from the west, south of CTH-E, to the gas regulating station on 22nd Avenue south of Birch Road. A 16-inch line travels north to Racine and a 12-inch line serves the Kenosha areas. No future expansion plans have been announced but service will be extended as required.

Telephone Service

The Kenosha Planning District is principally served by the Wisconsin Telephone Company's Kenosha exchange. The main exchange building is located in downtown Kenosha and is presently operating at near capacity. A branch exchange located at 93rd Street and 39th Avenue is also operating close to capacity. Of a total of 25,144 customers, 19,536 or 78 percent are single-party lines. Only 184 lines serve more than two customers.

With the significant population increase expected and the location of the University of Wisconsin-Parkside campus in the Kenosha District, the need for expanded facilities is apparent. The size and location of an additional exchange or enlarged exchange has not as yet been determined. The possibility also exists that a metropolitan exchange would be formed combining the facilities of Racine and Kenosha. At any rate, telephone service will undoubtedly continue to be expanded as required.

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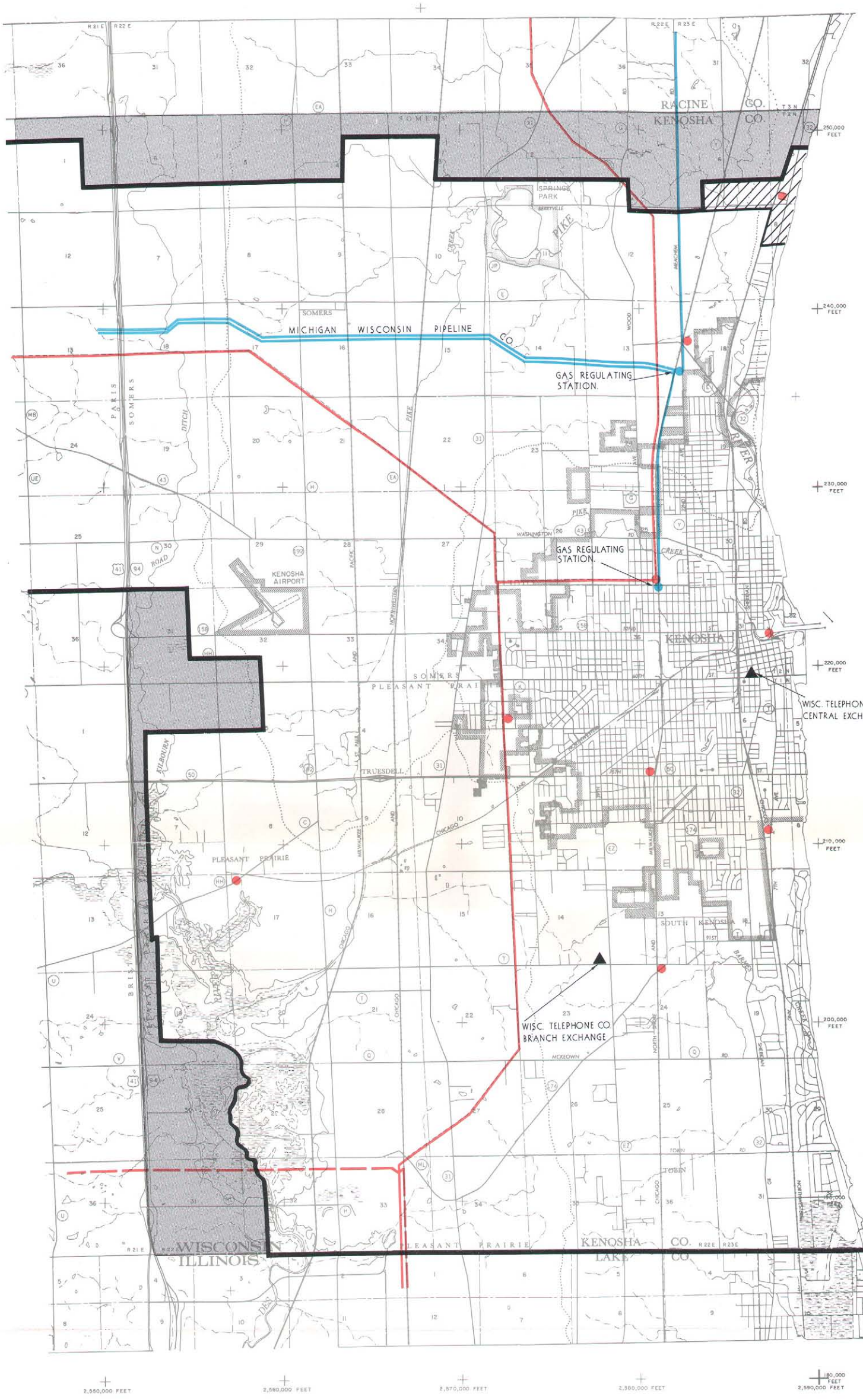

TELEPHONE GAS & ELECTRIC FACILITIES

- BOUNDARY WISC. TELEPHONE CO. SERVICE AREA - KENOSHA EXCHANGE.
- TELEPHONE SERVICE BY BOTH KENOSHA AND RACINE EXCHANGES, WISC. TELE. CO.
- AREA WITHIN KENOSHA PLANNING DISTRICT NOT SERVED BY KENOSHA EXCHANGE, WISC. TELEPHONE CO.
- 138 K.V. ELECTRIC TRANSMISSION LINE
- 345 K.V. ELECTRIC TRANSMISSION LINE
- ELECTRIC SUBSTATION
- MAJOR GAS TRANSMISSION LINE
- GAS REGULATING STATION

MAP 42

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JANUARY 1967 MISSOURI

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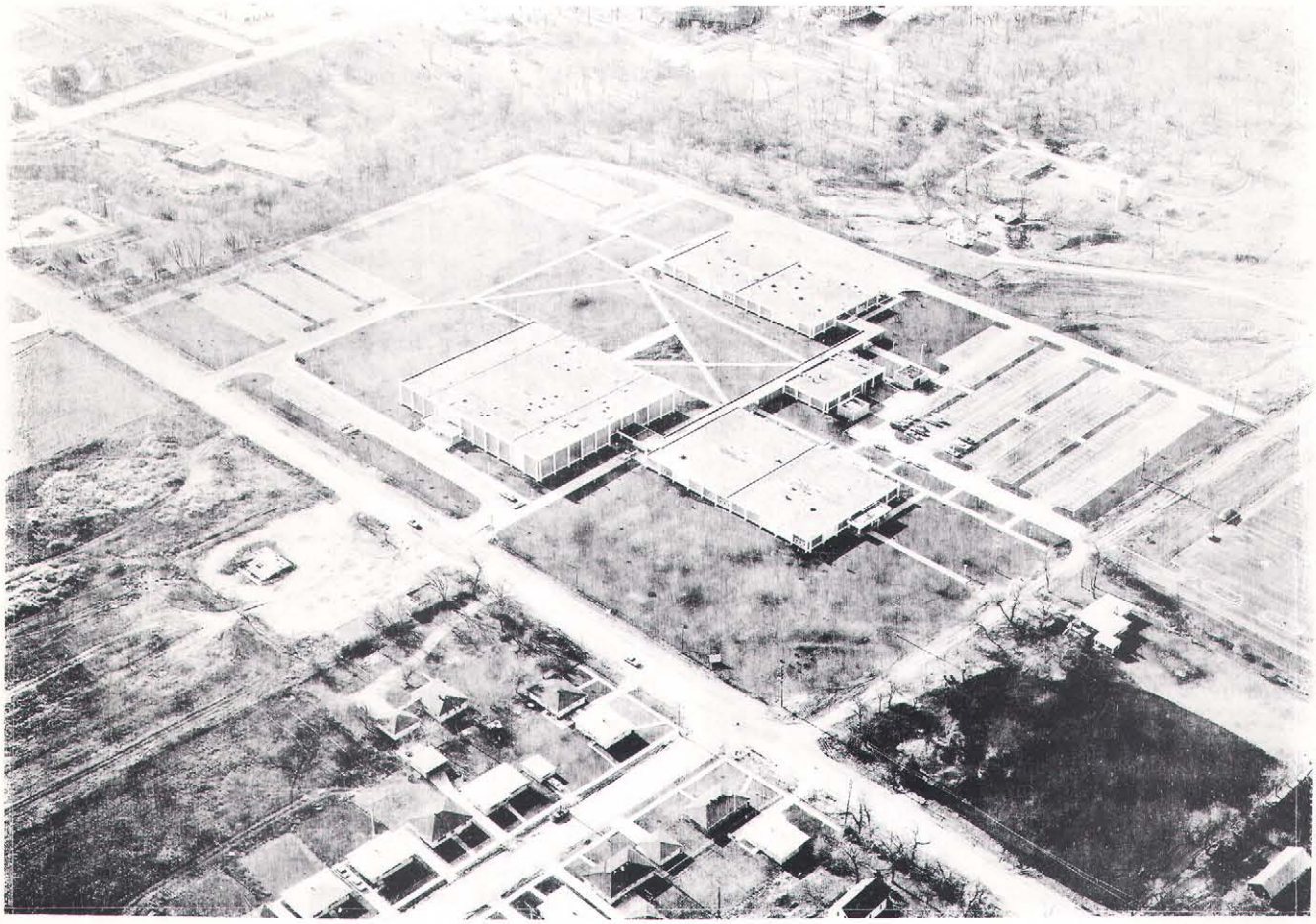

The new Kenosha Area Technical Institute is one of many different types of public buildings needed in a growing area. Other public buildings required include city and town halls, fire and police buildings, libraries, churches, and museums.

Chapter XI

PUBLIC BUILDINGS

The conduct of public affairs requires numerous public buildings and, in any growing urban area such as the Kenosha Planning District, various levels of governmental activities are continuously being expanded to keep pace with the growing needs for new and augmented public services. The widening scope of governmental activities, in turn, increases the requirements for public building space. The City of Kenosha, the Towns of Pleasant Prairie and Somers, Kenosha County, the State of Wisconsin, and the Federal government all have various agencies serving the district and its population. Modifications of existing building space and additional space will be needed in the future to house these various activities.

Public buildings represent a considerable investment of public funds. Once constructed, they should provide good service for at least 50 years, sometimes longer. Because of this, provision for flexibility and for enlargement of public buildings should be a major consideration in their location. Consideration of the distribution of population, land use, transportation facilities, and similar matters pertaining to the composition of the city should enter into the location of any public building. Sound judgment should also take into consideration the extent and manner in which these features might be expected to change in the future. Investments in public buildings are too great for hasty and ill-considered judgment as to their location. The usefulness of a public building is measured partly by the character of its design and the quality of its construction, and partly by the appropriateness of its location. A badly designed or poorly constructed building can be a serious handicap to the conduct of business. A public building improperly located is even more wasteful and inefficient. The selection of a site for a public building, consequently, is an important planning function. Public buildings frequently do not benefit commercial property values. A wide scattering of public buildings is often detrimental to the public interest and may have a very limited advantage to the immediate area in which the buildings are placed.

Planning Criteria

Although no absolute criteria can be established to determine the need for and proper location of public buildings, there are certain basic factors that should be considered in planning such structures. The planning of public buildings within a community takes place on several levels. Requirements of the various municipal, town, county, state and Federal agencies must be coordinated to insure that their buildings are well located and properly related to the other elements of the comprehensive plan.

Centralized Public Buildings

The centralized grouping of such public buildings as the City Hall, County Courthouse, Post Office, or Federal Building is commonly referred to as a "civic center". Such a development was a primary recommendation of the Kenosha City Plan completed in 1925. The center now contains Bradford High School, the Kenosha Public Museum, Kenosha County Courthouse, the City Police Station, a small park, and the United States Post Office which also houses various other agencies. This grouping of buildings obviously promotes public convenience, improves efficiency and economy, and enhances the appearance of the community.

This grouping of buildings obviously promotes public convenience, improves efficiency and economy, and enhances the appearance of the community.

Local Public Buildings

The selection of sites for public buildings serving a local neighborhood involves consideration of factors that are dependent upon the particular use of the structure.

Branch Libraries. As an urban area's population exceeds 50,000 persons, branch libraries are usually required to adequately serve the public. Such is the case in the Kenosha area as there are three branch libraries in addition to the main library facilities near downtown Kenosha. A branch library should serve the area within a two-mile radius.

An alternative method which has proved successful in many instances is to locate branch libraries in or close to schools as these are centrally located in the neighborhood and children usually comprise the greatest percentage of the registration in branch libraries. Shopping centers have also been used as sites with great success.

Fire Stations. The location of fire stations is determined primarily by the character of the district to be protected and by the need for speed and dependability in answering alarms. Large commercial and industrial developments should be within three-quarters of a mile and residential areas should be within one and one-quarter miles of a fire station. Narrow streets and traffic congestion should, if possible, be avoided in locating these facilities. Fire stations should be sited on or closely adjacent to major streets. The size of the station and the equipment necessary is determined by the character of the neighborhood serviced.

General Considerations

There are a number of basic considerations in the development of all types of public buildings, whether of the centralized or local type. These are summarized as follows:

Every public building should be conveniently located both for the citizens who use it and for the employees working within the building.

The site for each public building should be large enough to provide for present and future space needs for the building and attendant parking facilities, and for sufficient open landscaped area to provide a proper setting.

A location within or adjacent to a central business district, or in the case of outlying buildings, within or adjacent to a shopping center, will insure the greatest convenience to the public; however, public buildings should not be located in the heart of commercial areas, as such buildings interrupt the continuity and obstruct the development of the business area. In addition, a site in the heart of a shopping or business district may be too expensive.

Public parking located near, but not within, the commercial area will relieve the area of some of the parking demand.

The appearance of a public building is dictated by its architectural design and by the treatment of the site. The architectural design should be related to the conditions surrounding the building. Appearance of the building is substantially enhanced if a properly landscaped site is developed. This aspect usually received little attention in the development of public buildings, but is of major importance in the overall design.

Existing Public Buildings

There are a number of Federal, state, county, and local public buildings of various types in the Kenosha Planning District (See Map 43). These structures have, for the most part, been built individually over a period of many years. The following is a brief description of the most important public buildings in the District.

U. S. Post Office

The main post office, dedicated in 1935, is a gray stone building on Sheridan Road between 56th and 57th streets. A sizable addition to the main building was completed in 1965, giving the building a total floor area of 44,100 square feet on the first floor and basement. The building is part of a group of buildings referred to as the civic center and is very convenient to downtown activities.

The West Side Branch Post Office leases 1,000 square feet of floor space in a building completed prior to 1925. In spite of its age, the structure, located at 63rd Street and 24th Avenue, is still in good condition.

The Somers Post Office is a small wooden structure on Railroad Avenue in the Village of Somers and provides about 500 square feet of floor space.

The Pleasant Prairie Post Office is a small wooden structure attached to a residence located on Bain Station Road just east of 104th Avenue.

Health, Education, and Welfare

The Social Security Administration leases about 2,200 square feet of floor space in a recently completed building at the corner of 63rd Street and 20th Avenue.

Kenosha County Courthouse

The west half of the gray stone courthouse has recently undergone extensive remodeling. Originally, the building was constructed in 1923 as part of the civic center, a part it still occupies. The Circuit Court is also located in this building which contains all of the usual county offices. Still in excellent condition, the building has three floors and a basement and contains 108,000 square feet of floor space.

The County Jail is located on the same site as the courthouse on Sheridan Road at 56th Street. This three-story masonry building (plus basement) contains 19,600 square feet of floor space.

Kenosha County Highway Department

The County Highway Department offices and garage are located on 60th Street west of 55th Avenue. Although the building was built in the late 1930's, it is still in good condition. The offices and garage occupy a total of 19,230 square feet of floor space. At the present time, there is sufficient open land north of the building if expansion becomes necessary. This facility may be moved to the west, outside the District in the future.

Kenosha County Extension Service and Soil Conservation Office

At the present time, these offices lease 2,000 square feet of floor space located in a recently completed office building in the 6500 block of 39th Avenue. This space should be adequate for several years, but as services expand and increased staff requirements are necessary, additional space will be necessary.

Kenosha County Historical Society

The County Historical Museum has just recently been relocated into an old brick residence at 6300 Third Avenue, and houses the historical data of the county. Because of the vast amount of material owned, the 9,700 square feet of floor space contained in the structure will not be sufficient to adequately display the material. The lot contains about 39,100 square feet of area and could be used for expansion of the building. Extreme care should be taken, however, to insure that any future building expansion would not detract from the surrounding residences.

Willowbrook

The Willowbrook Sanitorium is a tuberculosis hospital owned and operated by Kenosha County. Originally built by the W.P.A. in 1937 and dedicated in 1938, this brick building is of fire-resistant construction, contains 42 beds, and is a complete hospital. The staff consists of 17 employees plus some part-time assistants. Although there are no immediate plans for expansion, additional facilities will have to be provided if the county is to continue to provide this type of facility for the expected population in 1990.

Brookside

This institution is a home for the aged also owned and operated by Kenosha County and consists of three separate buildings. The original brick veneer building was dedicated in 1916 and contains 51 beds. In 1943, the nurses' home was built of fireproof construction and now contains 20 beds. The latest addition to the group of buildings was completed in 1957 and was built of fireproof construction and contains 175 beds. The home employs 193 persons. No expansion plans are evident but, as in the case with Willowbrook, some additional facilities will have to be provided if the County is to continue this service.

The above two buildings are located on a site containing about 624,000 square feet of land area.

School Administration Offices

The main offices of the School Board are located in a building that was once the College of Commerce, on Sheridan Road immediately north of the City Police Station. This building is in poor condition and provides only 7,300 square feet of floor space on an extremely small site.

This situation will be relieved greatly next year when the offices will be moved to the third floor of the Kenosha Technical Institute building when the new school is occupied.

The school warehouse provides 10,000 square feet of storage space on a site having an area of 18,750 square feet. Although this two-story brick building was built around 1900, it remains in good condition.

Somers Town Hall

The existing Town Hall in the Town of Somers is located at the corner of STH-31 and CTH-E. A one-story frame structure in poor condition, this building provides about 920 square feet of floor space on a site containing about 4,950 square feet of area. Primarily used for meetings, (the activities of the town are directed from the town clerk's residence) this building should be abandoned. A new Town Hall and office building containing the fire fighting equipment will be constructed in the near future on a site just west of the Somers Elementary School on CTH-E. This new facility should prove to be adequate for many years, and the site is adequate to accommodate any necessary expansion.

Somers Fire Station

At the present time, the Somers fire fighting equipment is housed in a small building in the Village. As noted above, new facilities will soon be built to the east of the Village.

Pleasant Prairie Town Hall

The existing Town Hall in the Town of Pleasant Prairie is located at the intersection of STH-31 and CTH-T. The building is a one-story frame structure in poor condition and used mainly for meetings. The activities of the town are conducted in leased space (1,250 square feet) in a shopping center at 91st Street and 22nd Avenue. A new building which will house offices, a meeting room, and a fire station is currently under construction on 39th Avenue north of 100th Street. Upon completion of the new facilities, the old Town Hall should be abandoned.

Pleasant Prairie Fire Station

The existing fire station for the town is located on STH-50 east of the C&NW freight line. The one-story concrete building was built in 1932 on 32,860 square feet of land and contains 5,400 square feet of floor space. Garage facilities for the town are also contained in the building which is in good condition. Upon completion of the new fire station, this structure could continue in use as a garage if not acquired for right-of-way for the proposed industrial freeway.

Kenosha City Hall

The present city hall is a two-story (plus basement) masonry structure built in 1910 as a replacement for and adjacent to the old Town Hall and Fire Station. The old building now houses the Central Fire Station. Although the structure contains 17,700 square feet of floor space for office and storage space, it is totally inadequate for modern-day needs, considering both space and condition. Next year, when the Kenosha Technical Institute moves to its new quarters, the activities of the City Hall will be moved to the first two floors of the Institute's present structure on 52nd Street just east of Eighth Avenue.

City Fire Station.

With the completion of the new city hall in 1910, the old building continued in use as the present Fire Station #1. This building is a two-story brick structure having about 8,850 square feet of usable floor space. The precise age of this building is not known, but it is probably near 100 years old and in poor condition. The facilities of Fire Station #1 will also be moved to new quarters with the city hall later this year.

Fire Station #3 is located on Roosevelt Road and was built in 1921. The two-story (plus basement) building contains about 13,500 square feet of floor space and is in fair condition. The site contains only 5,500 square feet of area and would be difficult to expand because of surrounding development.

Fire Station #4 was completed in 1963 and contains the department's training station in addition to the usual facilities. The site, located on 60th Street between 46th and 47th Avenues, has an area of 305,640 square feet. The two-story (plus basement) brick building provides 25,400 square feet of floor space and, of course, is in excellent condition.

Fire Station #5 is located at the corner of 22nd Avenue and Washington Road. Constructed in 1954, this two-story brick building (plus basement) is in excellent condition, and provides 14,400 square feet of floor space.

City Libraries

The G. M. Simmons Library (main library) was built of gray stone in 1900 and contains a total floor area of 10,900 square feet on its one floor, basement and mezzanine. Of this total space, however, only 6,825 square feet of floor area is usable for library purposes. The building is located on a beautiful five-acre park-like site just south of the central business district in Kenosha.

The Boys' and Girls' Library was originally constructed as a church in 1907 and converted to its present use in 1929 to relieve crowded conditions at the main library. The building has a total floor area of 5,800 square feet, of which 4,500 square feet of space is being used for library purposes.

The West Side Branch Library was built in 1925 on 63rd Street just west of 24th Avenue. This one-story brick building (plus basement) provides 5,680 square feet of total floor area, 3,100 of which is used for library purposes. Most of the space not used by the branch library is used for offices and storage for the book-trailers.

The Roosevelt Road Branch Library leases about 3,420 square feet of floor space on the first floor and basement of a store in a shopping center at 38th Avenue. The library uses about 3,000 square feet of floor space.

The Washington Road Branch Library occupies about 2,600 square feet of leased space in a small shopping center at 22nd Avenue.

Table 82 is a tabulation of the number of volumes and circulation at each of the various

Table 82

LIBRARY DATA - 1965

Facility	Volumes	Circulation[1]
Main Library	62,600	129,978
Boys and Girls Department	20,960	77,428
Total Central	83,560	207,406
West Branch	20,622	64,324
Washington Road Branch	17,770	83,754
Roosevelt Road Branch	16,728	85,844
Booktrailers (two)	30,312	211,696
Extension - S[2]	13,891	40,773
Rotating Collection	2,110	-
Total System	184,993	693,797

(1) Includes books, magazines, pamphlets.

(2) Used for elementary classroom collections, serviced by Boys and Girls Department.

Source: Library Director

library facilities. The table shows that the central facilities contain 45.2 percent of the total number of volumes.

City Police Station

The city's police station and jail was completed in 1965, and is located on 56th Street at Sheridan Road in the civic center. This modern three-story brick structure contains 18,000 square feet of floor space for offices, jail, and pistol range.

City Museum

The Kenosha Public Museum is located on the west side of the civic center on a site containing 37,255 square feet of land area. This building is the old post office which was moved to this site in the early 1930's. This masonry building provides 10,300 square feet of floor space for office and art and natural history displays on one floor, basement and mezzanine, and is in fair condition.

City Garages

The City Street Department occupies three garages and storage facilities on a parcel of land containing 155,345 square feet of area. The buildings were built in 1957, 1960, and 1965 and have a total floor area of 39,100 square feet. These facilities are located at 69th Street and 35th Avenue. Should additional building space be required in the future, this site should prove to be adequate.

The Water Utility garage and warehouse and the Park Department garage occupy a 446,881 square foot site adjacent to the Street Department facilities. The garage for the water utility was built in 1946 and provides 9,800 square feet of floor space, while the Park Department garage was built in 1963 and contains 13,400 square feet of floor space. Here again, this site should prove to be adequate for housing any additional buildings that might be required.

The city's repair shop and garage is located on 55th Street at 10th Avenue and provides 43,100 square feet of floor space in a two-story brick building (plus basement). The site provides only 41,420 square feet of land area.

The city's electrical shop was originally built in 1915 as a fire station at its present site on 52nd Street near 25th Avenue. This three-story brick structure (plus basement) is in fair condition and contains about 4,500 square feet of floor space on a 3,750 square foot site.

The city's Waste Department garage is located adjacent to the incinerator plant on 50th Street west of Sheridan Road. The one-story cement block building was built in 1959 and provides about 9,600 square feet of floor area.

Kenosha Youth Foundation

The KYF occupies a 34,650 square foot site located just south of the central business district in Kenosha. The five-story masonry structure (plus basement) contains 115,000 square feet of floor space and was built in 1929. This facility was founded as a Y.M.C.A. but is now a youth and community center open to everyone and provides living quarters, social and recreation facilities and offices and remains in excellent condition.

Hospitals

The Kenosha Memorial Hospital was originally started in 1903. This original building has since been removed and replaced by major additions in 1910, 1923, 1928, 1959 and most recently, in 1965. The hospital now provides all the modern facilities normally found in an institution of this size and has a capacity of 268 beds. The hospital employs 620 people at its location on Sheridan Road at 63rd Street. Another major addition comprised of 210 beds, emergency and therapy facilities, and other improvements will be started in the very near future at a cost of approximately $3,000,000. This new addition will be housed in an eight-story wing to the north of the existing building.

St. Catherine's Hospital, located on Sheridan Road south of 35th Street, was originally built in 1928 with major additions having been made in 1942 and 1962. This modern three-story hospital has a capacity of 268 beds and employs 600 people.

Public Building Plan

The foregoing sections have reviewed the adequacies and inadequacies of the major public buildings in the district. The estimated future population of 181,000 persons in the area will require an expansion of public building space needs. New public buildings will be needed to replace existing out-moded buildings and to provide additional space for future augmented public services.

The proposed plan for public buildings is shown on Map 43. The public building plans have been related to the land use plan and the transportation and major street plans. The major proposals of the plan are discussed in the following sections.

Civic Center

Although the U. S. Post Office has recently completed an expansion program of sizable proportions, it is doubtful that this expansion will be sufficient to provide enough space for the needs of the expected 1990 population. The site is now totally developed and the prospects for building a new building entirely are remote. The plan proposes therefore that additional space, when needed, can be gained by removing the offices in the basement of the existing building to allow for expansion. In addition, basement facilities could be expanded below the area used for loading and unloading in the northeast corner of the site. This should provide adequate space for the estimated needs.

If the Post Office Department continues its policy of providing branch offices in various sections of the district, these centers should be located in convenient shopping centers. For example, the west branch could be moved eventually to the center at 91st Street and 22nd Avenue and a new branch could be established in the proposed center at the southeast corner of the University of Wisconsin-Parkside campus.

Kenosha County Courthouse. The provision of additional space in the courthouse will be difficult at best. This is caused primarily by the fact that the jail to the north of the main building occupies the only available space for expansion. The public building plan proposes that the jail building be removed and the facilities replaced in a new addition to the courthouse

when the demand for space exceeds the physical limitations of the structure.

Library - Museums. At the present time, neither the main library, the county nor city museums have sufficient space for their activities. In March, 1966, the Kenosha Library Board adopted a building program for a proposed new library. This statement developed the need for a new library having a floor area of 70,000 to 75,000 square feet of area serving a population of about 135,000 persons. The population estimate for the District for 1990 is 181,000 persons. Such population would require a central building housing a minimum of 100,000 volumes and would replace both existing downtown facilities. In addition, a feasibility study relative to using the existing main building was made for the library board. The study indicated that this was not practical.

There are at least four possible sites for a new library as discussed in the following text.

1. The entire block bounded by 55th Street, Seventh Avenue, 56th Street and Eighth Avenue. This is an ideal location which would be very convenient for shoppers, however, it would remove a considerable number of available parking spaces from an area of critical need.

2. The north half of the block bounded by 56th Street, Seventh Avenue, 57th Street and Eighth Avenue is also a good location and would have the advantage of utilizing space vacated by the removal of the present city hall and central fire station. A disadvantage exists in that existing businesses would have to be relocated.

3. The space occupied by the existing Boys and Girls Library could be utilized after removal of the existing structure. Here again, some encroachment of parking space would be required.

4. Replacement of the existing central library building in Library Park. While some local interests do not favor removal of the existing building, the land is already available and acquisition of a new site would be expensive in the central area of the city.

The final determination of one of these sites is beyond the scope of this study and should be made by local interest.

The existing West Branch Library should be relocated to the major shopping center southwest of its present location.

The city and county museums should be combined into one structure. As in the case of the central library, there are several alternatives possible regarding a site.

1. The present site of the central library if it is not selected as a site for a new library.
2. An attractive site along the lake in one of the parks could be selected without disrupting park activities to any great extent.
3. The present city museum could be demolished and the site expanded to the west to add strength to the civic center area.

Fire Stations

As mentioned earlier, the facilities of Fire Station #1 will soon be moved to the new quarters with the Kenosha City Hall. The public building plan proposes six new fire stations not including the new facility mentioned above. Three are already contemplated - one in the new Town Hall for Somers (on CTH-E west of the C&NW tracks), another in the new Town Hall for Pleasant Prairie (on 39th Avenue north of 100th Street), and the third under construction on Springbrook Road on the site of the old Victory School. The other three would be located at 30th Avenue and Birch Road, STH-31 at about 25th Street, and STH-50 and 88th Avenue. Early consideration should be given to the station at Birch Road and 30th Avenue.

Branch Libraries

Two new branch libraries are proposed in the public building plan. The branch to the south, in the proposed commercial center opposite the new Pleasant Prairie Town Hall, would eventually replace the Roosevelt Road Branch which is poorly located to adequately serve the population. The branch to the north would be located on the same site as the Birch Road Fire Station on 30th Avenue. In 1965, the State of Wisconsin, Department of Resource Development, issued a report titled "Public Library Facilities" as one of several reports in the Wisconsin Development Series. This report indicates the need for what is called a Type I Library to serve the Kenosha area. The Public Libraries' General Development Plan as shown on Page 65 of the report indicates the need for 19 Type I libraries throughout the state. The various functions of such a facility are listed on Pages 63, 64, and 66 of the report. With the construction of the new University of Wisconsin-Parkside campus, certainly a library of university stature would more than meet the need anticipated, particularly when supplemented by a new main library in the City of Kenosha.

Correctional Facilities

The above-mentioned Wisconsin Development Series also contained a report titled "Correctional Facilities" in which the correctional institution needs of the state are outlined. The Adult Male Correctional Institutions 1964-1988 Plan shown on Page 53 of the report indicates the need for a Medium Security Facility for the Kenosha-Racine area. While no precise location was recommended for this facility, it would seem that a facility of this type would best be located in a rural setting somewhere west of IH-94 so as to place it outside of the area expected to be urbanized by these two cities between 1980 and 2000.

City Hall-School Administration

As previously mentioned, these two agencies are proposed to move to the building to be vacated by the Kenosha Technical Institute. This building will have a total floor area of approximately 67,500 square feet, 11,000 of which will be allocated to the school administration offices. It is extremely doubtful that the physical limitations of this structure will be able to satisfy the estimated need of both of these agencies through 1990. However, it is possible that the building could be expanded to the south when such additional space is required if it is deemed advisable to keep both agencies in the same structure.

City Garages

Earlier in this section of the report, it was indicated that certain garage facilities of

the city are located on extremely large sites at 64th Street and 35th Avenue. The public building plan proposes that the city's repair shop and garage and electrical shop be relocated to this site. This would not only provide a centralized location but possibly avoid duplication of materials and services.

Fire Museum

A museum called the "Hall of Flame" to house a collection of fine antique and carefully restored fire engines along with other fire fighting equipment is to be constructed in the near future on a 20-acre site on STH-43 west of STH-31. Ground breaking ceremonies for the first building were held recently. This facility has excellent tourist attraction possibilities as well as providing a central location for a collection of this type.

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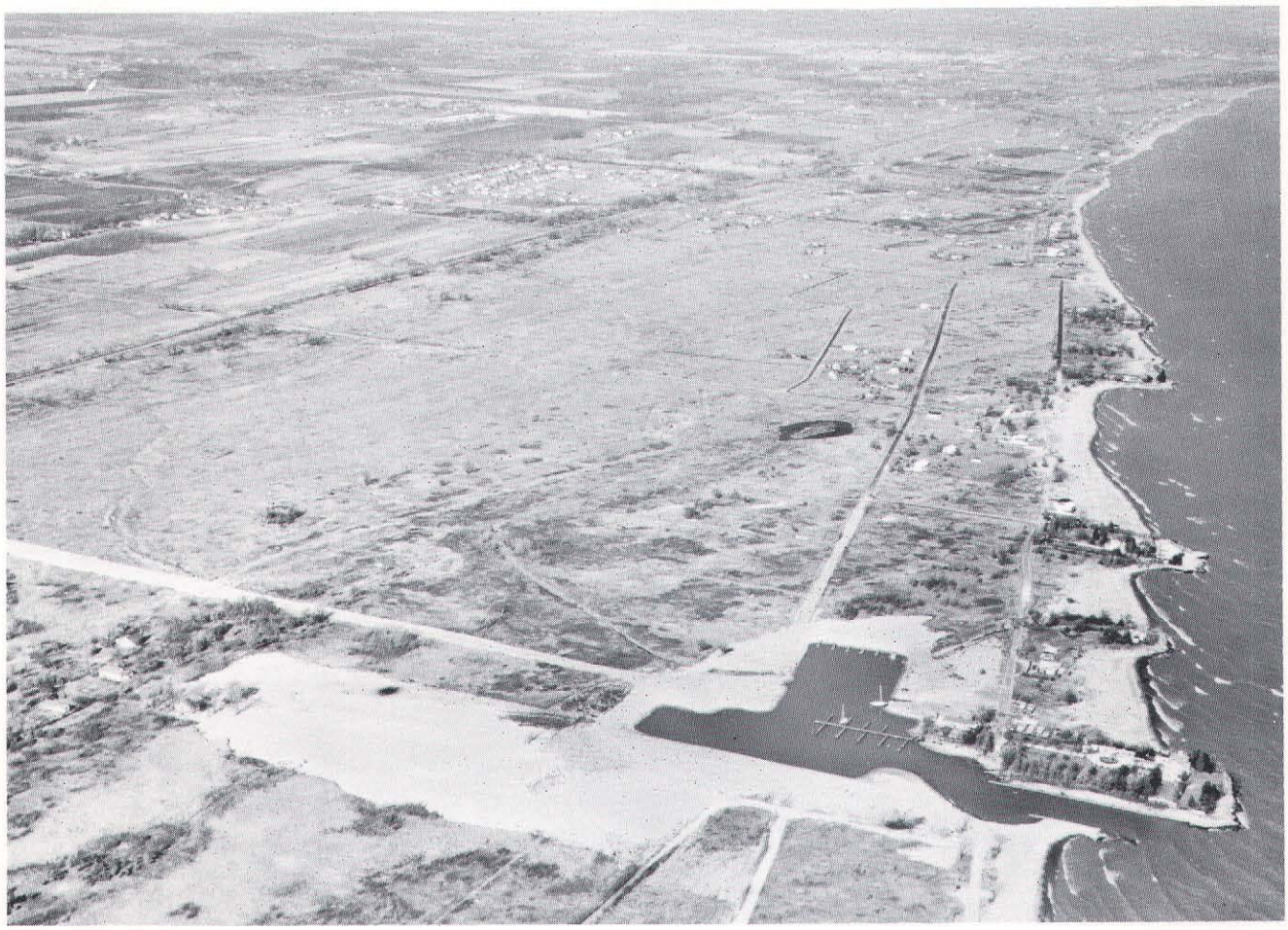

Looking toward the northwest, this photograph shows Chiwaukee Prairie and the southern lakefront area of the District. This land is one of the last remaining wet prairies in the Midwest and affords a great opportunity for scientific study and use as a plant and wildlife habitat, one of the limited number of natural resources in the Kenosha Planning District.

Chapter XII

PLAN IMPLEMENTATION

The proposed land use, transportation and community facility plans described in the preceding chapters of this report provide a design for the attainment of those specific District development objectives and standards enumerated in this report. These proposed plans comprise the key elements of a comprehensive plan for the physical development of the District. In a practical sense, however, comprehensive planning program is not complete until the steps required to implement these proposed plans are set forth.

Therefore, this chapter is presented as a guide for the implementation of these proposed plans. It outlines the actions which must be taken by the local levels and agencies of government concerned if the proposed plans are to be realized. Those local units and agencies of government which have plan adoption and plan implementation powers applicable to the proposed plans are identified, plan adoption actions are specified, and specific implementation actions are recommended with respect to land use, transportation and community facilities.

The District development objectives and standards have been fully integrated with regional development objectives and standards and the District plan serves to carry the adopted regional plans into greater detail. Such integration of local and areawide planning efforts is not only sound planning practice, but is, and may be increasingly expected to be, required by the Federal Government as a necessary prerequisite to the approval of federal aids for community development projects of various kinds. This chapter has, therefore, been prepared with particular attention to the provision of plan implementation recommendations that can be fully coordinated with those of the regional land use and transportation plan elements prepared and adopted by the Commission on December 1, 1966. The recommendations contained herein are also related to each of the local units of government which comprise the District, namely the City and County of Kenosha, and the Towns of Pleasant Prairie and Somers.

In addition to these local units of government, there are several state and federal agencies that have either a direct or indirect effect upon development and consequently upon plan implementation within the District. These state and federal agencies are identified in Chapter VII of SEWRPC Planning Report No. 7, Volume Three, Recommended Regional Land Use and Transportation Plans - 1990, and specific recommendations concerning the plan implementation functions of these agencies are made in that report. The development decisions of these agencies, if properly made, can serve to significantly implement important elements of the District plan. If improperly made, these decisions can serve to block attainment of the plan. Examples of required development decisions by state agencies include construction of the Lake Freeway by the State Highway Commission of Wisconsin and acquisition of portions of the environmental corridors by the Wisconsin Conservation Commission.

Organization

Those local agencies whose action will have a significant effect upon the successful implementation of the proposed District plan and whose full cooperation in plan implementation is essentail are listed and discussed below. A more detailed discussion of the duties and functions of these local agencies may be found in SEWRPC Technical Report No. 6, Planning Law in Southeastern Wisconsin, 1966, and in SEWRPC Planning Guide No. 4, Organization of Planning Agencies, 1964.

Local Planning Agencies

Proper implementation of the proposed District plan includes reports, recommendations, and certification of plan adoption to the governing bodies, formulation and administration of the necessary zoning, official map and subdivision regulations, preparation of a capital improvement program and the updating of the proposed plans and implementation devices. This process is best achieved through city and town plan commissions created pursuant to Sections 60.18(12), 61.35 and 62.23(1) of the Wisconsin Statutes. The following steps should be taken as soon as possible:

1. The City of Kenosha and the Towns of Pleasant Prairie and Somers create plan commissions in accordance with Section 62.23 of the Wisconsin Statutes. A suggested ordinance creating such commissions is provided in Volume Two of this report.

2. The City of Kenosha in cooperation with the Towns of Pleasant Prairie and Somers consider the creation of a joint extraterritorial zoning committee pursuant to Section 62.23 (7a) of the Wisconsin Statutes, for the purpose of joint land use planning and zoning in areas of mutual interest.

The activities of the recommended plan commissions and zoning committee should be supplemented by the activities of a county park and planning commission created pursuant to Section 27.02 of the Wisconsin Statutes. Such a county commission would have the function and duty of preparing a county park system plan and a county highway system plan. In addition, this county commission may be used to prepare and administer county shoreland, flood plain, airport, and comprehensive zoning ordinances and to administer county subdivision plat review.

Local Redevelopment Authority

Redevelopment authorities created in accordance with Section 66.431 of the Wisconsin Statutes are empowered to prepare plans for and undertake redevelopment and urban renewal projects which include the power to acquire, clear, rehabilitate, conserve and install public improvements in and dispose of such project areas. The City of Kenosha should create a Redevelopment Authority in accordance with this section of the Wisconsin Statutes.

Local Public Works Agencies

There are many local agencies which have the responsibility, authority, or the financing capabilities to implement one or more of the elements contained in the proposed District plans. Those agencies having acquisition and development responsibilities include the following:

Proposed Plan Element	Local Agency Responsible
Airport Plan	City Airport Commission
Harbor Plan	City Harbor Commission
Arterial Street and Highway Plan	City Department of Public Works County Park Commission County Highway Committee
Public School System Plan	District School Board
Park System Plan	City Department of Parks County Park Commission District School Board
Water Distribution System Plan	Kenosha Water Utility Town Water District Commissions
Sanitary Sewer System Plan	City Department of Public Works Town Sanitary District Commissions
Storm Water Drainage System Plan	City Department of Public Works Town Drainage District Boards
Public Building Plan	Simmons Library Board City Fire Department Town Fire Departments Kenosha Public Museum Board City Public Works Department

Private Companies and Institutions

Many private companies and institutions developing and redeveloping areas lying within the District will have a direct effect upon the implementation of the District plan. Specific proposals affecting two private companies are the proposed bus routes (See Map 26) and the proposed railroad grade separations (See Map 34). A private transit company such as the Lake Shore Transit-Kenosha, Inc. is the most appropriate company to service the proposed bus routes and the Chicago and Northwestern Railway Company is the most appropriate company to construct the railroad grade separations proposed in the plan in cooperation with local improvement programs.

County Highway Committee

The Kenosha County Highway Committee, established pursuant to Section 83.45 of the Wisconsin Statutes, is responsible for the administration and expenditure of all county funds for highway construction and maintenance and is empowered to establish and change the county trunk highway system, to cooperate with the State Highway Commission in the selection of a system of federal aid secondary roads, and to acquire land for county highway purposes by purchase of condemnation.

County Soil and Water Conservation District

The Kenosha County Soil and Water Conservation District established pursuant to Section 92.05 of the Wisconsin Statutes has the authority to develop comprehensive plans for the conservation of soil and water resources, prevention of soil erosion, and prevention of floods, and the authority to adopt land use regulations in unincorporated areas that would implement these plans. The importance of proper soil and water conservation and management practices to the successful attainment of the District development objectives cannot be overemphasized. The lack of such practices will have a serious adverse effect upon the agricultural and environmental corridor land use plan elements.

Cooperative Contract Commissions

Section 66.30 of the Wisconsin Statutes, enacted in 1939, provides that municipalities may contract to provide jointly any services or exercise jointly any powers that such municipalities may be authorized to provide or exercise separately. Recently, state legislation was enacted clarifying these powers and granting such commissions bonding powers for purposes of acquisition, development, and equipping of land, buildings, and facilities for regional projects.

Significant economies can often be affected through the provision of certain municipal services or facilities on a cooperative intergovernmental basis. Moreover, the areawide nature of certain developmental and environmental problems within a rapidly urbanizing area such as the District requires that their solution be approached on an areawide basis; and such an approach may sometimes be efficiently and economically provided through the use of a cooperative contract commission. Such cooperative contract commissions may also be delegated specific district plan implementation powers by the city and towns and, as such, could become important agencies for implementing certain functional elements of the proposed plans for the physical development of the District. A model agreement creating a cooperative contract commission is provided in Appendix A, SEWRPC Technical Report No. 6, Planning Law in Southeastern Wisconsin.

Intergovernmental Cooperation and Coordination

It is extremely important to emphasize the close cooperation and coordination that will be required between the various public and private groups at both the municipal and county levels if the District plan is to be realized. The kind of cooperation and coordination needed to effectively and efficiently implement the proposed plans may take any one of, or a combination of, the following forms, as best meets the needs and desires of the District population.

Informal Cooperation. The necessary intergovernmental cooperation and coordination between the city, town and county planning agencies can be achieved on an informal basis through use of a permanent active citizens advisory committee composed of three to ten citizen members of recognized experience and qualifications. Membership on the committee would be drawn from each affected unit of government. The committee members could be appointed by the Mayor and Town Chairmen subject to confirmation by the respective governing bodies.

Such a citizens committee was created for and provided valuable assistance in the preparation of the District plan. The public acceptance and understanding of the plan and the resultant

implementation could be greatly enhanced through the continued use of such a citizens committee.

District Planning Committee. The necessary intergovernmental cooperation and coordination can be achieved on a more formal basis through the creation of a district planning committee, by a joint resolution of the governing bodies of the city and towns composed of four or five official or citizen members from each participating municipality. This type of committee would evaluate and make advisory recommendations to these participating municipalities concerning problems, studies, proposed plans and implementation devices that are common to all participants or affect more than one participant.

Cooperative Contract Plan Commission. The necessary intergovernmental cooperation and coordination can be achieved through a cooperative plan commission created by contract pursuant to Section 66.30 of the Wisconsin Statutes. Such a commission could be assigned all or certain planning powers and duties possessed by the city and towns and could replace the city and town plan commissions. It should be remembered that any such plan commission would be entirely advisory and any of its findings and recommendations would have to be finally evaluated and acted upon by the city and town governing bodies.

In the application of any of the foregoing methods of achieving closer cooperation and coordination, the Regional Planning Commission is available to provide assistance and coordination in any continued planning and plan implementation programs.

Plan Adoption

Endorsement, adoption, or formal acknowledgment of the proposed District plan by the local governing bodies and the existing local agencies involved in plan implementation is highly desirable and in some cases necessary, to assure a common understanding between the several government levels and to enable their staffs to program the necessary implementation work. Also, in some cases formal adoption is required by the Wisconsin Statutes before certain public plan implementation actions can proceed (as in the case of city and town plan commissions created pursuant to Section 62.23 of the Wisconsin Statutes). The following steps should be initiated as soon as possible:

1. The City and Town Plan Commissions should adopt the District comprehensive plan by resolution pursuant to Section 62.23(3)(b) of the Wisconsin Statutes, and certify such adoption to their respective Common Council or Town Board. (A suggested resolution for this purpose is provided in Volume Two of this report.) The Common Council and Town Boards should then endorse the comprehensive plan and formally acknowledge their plan commission's adoption of such plan.

2. The County Park Commission, County Highway Committee, County Soil and Water Conservation District Supervisors and the County Zoning Agency should endorse the District comprehensive plan as it relates to those proposed land use and transportation plans applicable to county park acquisition and development, county trunk highway construction, district soil and water conservation, and county land use regulations.

3. The various city and town departments, boards, utilities, and commissions, and any cooperative contract commission subsequently created, directly affected by the District comprehensive plan should endorse such plan as it relates to their implementation powers, integrate such plan into their particular acquisition, utility extension, construction or other development program and adopt the appropriate capital improvement program (See Volume Two) as a guide for public works improvements for the next five years.

4. The redevelopment authority, when created, should formally acknowledge the District comprehensive plan, particularly its recommendations concerning community action areas (See Map 20), and adopt the capital improvements program contained in Volume Two.

5. All private companies and institutions directly affected by the comprehensive plan such as the Lakeshore Transit-Kenosha, Inc., and the Chicago and Northwestern Railway Company should endorse such plan as it relates to their operation and development programs, particularly the proposed bus routes (See Map 26) and the proposed railroad grade separations (See Map 34).

Adjustment of the Plan

No plan can be permanent in all of its aspects or precise in all of its elements. The very definition and characteristics of "planning" suggests that a comprehensive plan, to be viable and of use to local units and agencies of government, be continually adjusted through formal amendments, extensions, additions, and refinements to reflect changing conditions. The Wisconsin Legislature clearly foresaw this when it gave to local plan commissions the power to "amend, extend, or add to the master plan or carry any part or subject matter into greater detail" under Section 62.23(2) of the Wisconsin Statutes.

Amendments, extensions and additions to the District Comprehensive Plan will be forthcoming not only from the local planning program but also from the work of the Southeastern Wisconsin Regional Planning Commission under its continuing regional planning programs, and from various state and county agencies as they adjust, refine, and implement plans.

Land Use Plan Implementation

The implementation of the District land use plan is most important to the ultimate realization of the District development objectives. Of all the land use plan implementation devices available to the local units of government, probably the most important and most versatile is the control of land use development through the adoption of an appropriate zoning ordinance.

Zoning Ordinances

Fortunately, the City of Kenosha has already had the use of this particular implementation device for many years. The last major revisions and

moderization of the city's zoning ordinance was accomplished in 1953 and certain deficiencies in need of correction can be accomplished by adoption of the suggested zoning ordinance (See Volume Two). The Towns have elected to join with Kenosha County to have land use development regulated under a joint town-county zoning ordinance.

The most efficient and practical approach to future land use regulation in the Towns lies in town approval of a completely revised county zoning ordinance. The County Zoning Administrator in cooperation with the Corporation Council and with the assistance of the Southeastern Wisconsin Regional Planning Commission has already prepared such a revised ordinance which is now under study by the County Zoning Agency. The following actions regarding zoning ordinances should be implemented as soon as possible:

1. The City Plan Commission should formulate and recommend to the Common Council a new city zoning ordinance in accordance with Section 62.23(7) of the Wisconsin Statutes so as to provide district regulations, soil and floodland restrictions, and exclusive use districts as set forth in the suggested zoning ordinance and zoning district map presented in Volume Two of this report.

2. The Town Boards of Pleasant Prairie and Somers should request the Kenosha County Zoning Agency to formulate and recommend to the County Board of Supervisors comprehensive amendments to the county zoning ordinance in accordance with Section 59.97(3) of the Wisconsin Statutes so as to provide district regulations, soil and floodland restrictions, and exclusive use districts as set forth in the suggested zoning ordinance together with changes in their zoning district maps to reflect the suggested zoning district map set forth in Volume Two of this report.

3. The Common Council and the County Board should adopt such ordinance, pursuant to Sections 62.23(7) and 59.97(3) respectively of the Wisconsin Statutes and the Town Boards should file certified resolutions approving such amendments and changes pursuant to Section 59.97(3)(g) of the Wisconsin Statutes.

The zoning of lands in the unincorporated areas may be supplemented by the exercise of the extraterritorial zoning power of the city jointly with the towns pursuant to Section 62.23(7a) of the Wisconsin Statutes.

Zoning District Delineation

The delineation of the zoning districts to immediately reflect the District land use plan would result initially in overzoning which may, in turn, result in mixed and uneconomical future land use patterns. Therefore, the use of exclusive agricultural districts or large estate-type residential districts will be necessary so as to regulate community growth in both time and space in an orderly and economical manner. The following suggestions are made to the City and Town Plan Commissions and the County Zoning Agency to assist them in the task of zoning district delineation.

Residential Areas. Not all of the areas shown on the District land use plan as devoted to residential use should initially be placed in residential use district. Only existing and platted, but not yet fully developed, residential areas, as well as those areas that have immediate residential development potential and can be economically served by municipal utilities and facilities, such as sanitary sewer, public water supply, and schools, should be placed in exclusive residential districts and related to the development densities indicated on the land use plan. The balance of the residential land use elements should be placed in exclusive Agricultural Districts or large estate-type Residential Districts. The use of these districts is discussed in SEWRPC Planning Guide No. 3, Zoning Guide, April, 1964. Such districts should be rezoned into the appropriate residential district or supporting land use districts, such as neighborhood business or park districts, only when the community can economically and efficiently accommodate the proposed development.

Agricultural Areas. Areas devoted to agricultural use on the land use plan should be placed in the exclusive Agricultural District which would permit only agricultural uses. In such areas dwellings should be permitted only as accessory uses to the basic agricultural use. Commercial forests, prime wildlife habitat areas, wetlands, and floodways and flood plains within the agricultural areas should be placed in the Conservancy Districts. Aesthetic forests, existing park sites, potential park sites, and other sites having high aesthetic or recreational value may be placed in park districts which would permit both public and private recreational facilities. Existing mineral extraction operations and those areas which have immediate extractive potential may be placed in quarrying districts which are then carefully regulated as to operation and restoration by conditional use permits. Existing and platted residential colonies may be placed in low-density residential districts, depending upon the limitations of the soils for utilization of on-site sewage disposal systems.

Planned Industrial Areas. The planned industrial areas shown on the land use plan should be placed in the Planned Industrial District with all uses carefully regulated by conditional use permits so as to ensure preservation and give the local units of government adequate control over future development.

Environmental Corridors. The environmental corridors shown on the land use plan should be placed in one of several zoning districts as dictated by consideration of existing development, the character of the specific resource values to be protected by the corridor, and the attainment of the open-space preservation and resource conservation objectives of the corridor. Commercial forests, prime wildlife habitat areas, wetlands, and floodways and flood plains lying in the corridors should be placed in Conservancy Districts. Aesthetic forests, existing park sites, scenic and historic sites, and potential park sites lying in the corridors should be placed in park districts which would permit both public and private recreational uses.

Tax Relief

One of the valid criticisms concerning the use of exclusive Agricultural and Conservancy Districts is that the owner is required to pay taxes that reflect potential development values.

A discussion of this problem and the tax relief available to the landowner under present constitutional and statutory law in Wisconsin may be found in Chapter VII of SEWRPC Planning Report No. 7, Volume Three, Recommended Regional Land Use and Transportation Plans - 1990.

The City of Kenosha and the Towns of Pleasant Prairie and Somers should instruct their assessors that such tax relief exists for individual property owners upon such owner's voluntary sale or relinquishment of potential development rights.

A discussion of how Kenosha County may supplement the exclusive agricultural and conservancy zoning district regulations with soil and water conservation regulations formulated by the Kenosha County Soil and Water Conservation District Supervisor may also be found in Chapter VII of SEWRPC Planning Report No. 7, Volume Three.

Airport Zoning

Counties, cities, villages and towns owning state and federally approved airport sites have been granted the power to protect the aerial approaches to such sites by special airport zoning ordinances. Such an ordinance would also be applicable to lands lying up to three miles outside the limits of the adopting unit of government. It is recommended that the City of Kenosha adopt suitable airport zoning ordinances pursuant to Section 114.136 of the Wisconsin Statutes, so as to protect the glide paths required by state and federal agencies and to regulate the use and size of both lands and structures within the area affected by existing and proposed airport facilities.

Public Development Policies

Almost as important as the use of the zoning power by the local units of government to implement the land use plan is the adoption and adherence to certain public development policies concerning annexation, incorporation, consolidation, and the extension of municipal utilities, such as water supply and sanitary sewer systems. Proper consideration of the District land use plan in deliberations concerning municipal annexations, consolidations, and incorporations will assist in achieving more economical urban service areas, since the urban land use delineations on the recommended regional and district land use plans were based upon historic growth trends, rational utility service areas, drainage patterns, and soil capabilities. The following recommendations concern the more important public policies that will have a significant effect upon the implementation of the District land use plan.

1. The City of Kenosha should carefully consider the urban land use pattern indicated on the District land use plan when reviewing proposed annexations. To the maximum extent possible, only such lands as are shown on the plan as urban and such other contiguous lands as may be necessary to meet local open-space, utility, and community facility needs should be annexed.

2. The City of Kenosha and the Towns of Pleasant Prairie and Somers should carefully consider the urban land use pattern indicated on the District land use plan when reviewing consolidations and incorporations and give due consideration to the rational urban service area implications of any consolidations or incorporations as these might affect the District land use pattern.

Transportation Plan

For plan implementation purposes, the District transportation plan may be subdivided into the airport plan, the harbor plan, the proposed bus routes, and the arterial street and highway plan. The following implementing actions should be initiated immediately:

1. The City Airport Commission should proceed to refine and revise the airport plan (See Map 24) as necessary, acquire additional lands, extend and widen the NW-SE runway and construct the facilities needed to accommodate the growth, and the corporate jet-type aircraft anticipated to the year 1990.

2. The City Harbor Commission should proceed to refine and adjust the harbor plan (See Map 25) as necessary, complete the land fill project, and construct those facilities needed to accommodate the growth and vessels anticipated to the year 1990.

3. The Lakeshore Transit-Kenosha, Inc., should refine and adjust the proposed bus routes (See Map 26) as necessary so as to provide those mass transit facilities and services needed to accommodate the urban growth areas proposed to be developed to the year 1990.

The arterial street and highway plan, as presented in this report, is related only to a functional classification of facilities and not to jurisdictional responsibility; that is, the plan contains specific recommendations as to the type and character of the physical facilities that are required to serve the forecast traffic needs but does not specify the governmental unit or agency that should have the responsibility for acquiring, constructing, or maintaining each of the recommended facilities (See Map 34).

One of the first and most important steps in implementing the arterial street and highway plan will be to convert the functional highway plan to a jurisdictional plan, that is, to determine jurisdictional responsibility for all elements of the plan and to subsequently adjust the federal aid, state trunk and county trunk highway systems to the jurisdictional plan.

A thorough discussion of the recommended procedure for such conversion to jurisdictional plans, subsequent adjustment of the highway aid systems corridor refinement, right-of-way reservation, acquisition and construction, and capacity protection is provided in Chapter VII of SEWRPC Planning Report No. 7, Volume Three. Specific recommendations to the U.S. Bureau of Public Roads, State Highway Commission of Wisconsin, and Kenosha County Highway Committee were made in that report concerning highway facilities of areawide importance including the freeways and certain major arterial streets and highways in the District. Therefore, only recommendations directly concerning the city and towns and other elements of the District transportation plan will be made here.

The County Park Commission should assume jurisdictional responsibility for the proposed

scenic parkway shown on the District arterial street and highway plan where deemed appropriate by such Commission in the unincorporated areas and the City of Kenosha should assume responsibility for that portion of the parkway within the city.

Corridor Refinement

The Lake Freeway and scenic parkway facilities shown on the District arterial street and highway plan represent general locations, either on and along existing rights-of-way or on new locations, within traffic corridors varying from one-quarter up to one mile in width. Once the jurisdictional responsibility for a facility has been assumed by the appropriate state, county, or local units of government within the context of the continuing transportation planning process, it will become necessary to refine these traffic corridor locations as a prerequisite to any reservation of the necessary right-of-way for the facilities.

Jurisdiction for the proposed Lake Freeway has been assumed by the State Highway Commission of Wisconsin, and the necessary preliminary corridor refinement and precise mapping work has been initiated for the 12 miles of Lake Freeway lying in Kenosha County as shown on the District arterial street and highway plan and is scheduled for completion in 1968.

The Kenosha County Highway Committee and the Kenosha County Park Commission in close cooperation with the City of Kenosha and the Towns of Pleasant Prairie and Somers should begin refining the proposed parkway corridor and as budget and staff limitations permit, conduct the necessary engineering studies necessary to determine the centerline location of such scenic parkway.

Right-of-Way Reservation

The most effective and efficient means of prior reservation of right-of-way is the use of the official mapping powers granted by the State Legislature to the State Highway Commission, counties, cities, and towns in Wisconsin. These powers are thoroughly discussed and illustrated in SEWRPC Planning Guide No. 2, Official Mapping Guide, 1964.

1. When the functional highway plan is converted to a jurisdictional highway plan in Kenosha County, the Kenosha County Board should adopt an "Official map" for all proposed arterial streets and highways within the District and the governing bodies of the City of Kenosha and the Towns of Pleasant Prairie and Somers should approve such county "official maps" pursuant to Section 80.64 of the Wisconsin Statutes.

2. The City of Kenosha and the Towns of Pleasant Prairie and Somers should then prepare and adopt "official maps" and ordinances, which would include the state and county mapped routes as well as the remaining arterial streets and highways, including any extraterritorial plat approval jurisdictional areas, in accordance with Section 62.23(6) of the Wisconsin Statutes, utilizing the suggested Official Map Ordinance contained in Volume Two of this report. Such official mapping may be supplemented in certain intensely developed areas by the establishment of building setback lines, under Section 62.23(11) of the Wisconsin Statutes, to protect portions of the District arterial street and highway rights-of-way.

Acquisition and Construction

The governmental powers available to acquire the rights-of-way and other lands required to develop the District Arterial Street and Highway Plan range from purchase through dedication and lease, to eminent domain. The use of any one particular method to acquire the necessary rights-of-way is determined by available funds; state and local regulations; the attitude of donors, landowners, and land developers, and the lead time available to construct the necessary facility.

Kenosha County, the City of Kenosha and the Towns of Pleasant Prairie and Somers should proceed as necessary to plan, acquire and construct those facilities shown on the Arterial Street and Highway Plan (See Map 34) so as to meet the capital improvements schedule set forth in Volume Two of this report.

Capacity Protection

Regulation of the use of, and access to, lands that abut and adjoin freeways and controlled access arterial streets and highways is necessary to provide for the safe and efficient functioning of these facilities and for the sound development of land in relationship thereto.

Adoption of the suggested zoning and land division ordinances (See Volume Two of this report) previously recommended in this chapter by the County Board and the City of Kenosha containing traffic, parking and access restrictions, exclusive highway districts, sign controls, conditional use regulations, and street and highway design standards will provide the towns and city with adequate capacity protection for the District's freeways and certain arterial streets and highways.

At-grade intersections between railways and arterial streets and highways prohibit the movement of vehicular traffic and unduly restrict the free flow of trains at certain times as well as created unexpected safety hazards. Therefore, the Chicago and Northwestern Railway Company in cooperation with the City of Kenosha should proceed to prepare preliminary plans, acquire lands, and construct those structures necessary to provide for the proposed grade separations shown on Map 34.

Community Facilities Plan

For plan implementation purposes the District Community Facility Plan may be subdivided into a public school system plan, a park system plan, utility plans, and a public building plan.

Public School System Plan

Fortunately, the Kenosha Planning District's boundaries are coterminous with the boundaries of Joint School District No. 1 and all public school facilities proposed for the District can be carried out by one agency.

The District School Board should acquire those sites and develop those school facilities needed to serve the District's people as shown on

the proposed Public School Plan (See Map 36) and as scheduled in the capital improvements program set forth in Volume Two of this report.

Park System Plan

In order to effectively preserve the environmental corridors and the proposed park and recreation sites shown on the District Land Use Plan, the ultimate acquisition and development of these park and recreational sites and of certain portions of the corridors as parks will be necessary over the plan implementation period. Since it is not economically feasible to acquire all of these parks immediately, it becomes necessary to utilize certain police powers that are available to the local units of government in addition to acquisition by fee or less-than-fee purchases.

In addition to preservation of existing public and private parks by exclusive park district zoning and the protection of parks to be acquired within a reasonable period of time by the use of exclusive conservancy and agricultural zoning districts, the official mapping powers possessed by municipalities in Wisconsin may be utilized. Such powers, as well as the required maps and survey control system, are described in SEWRPC Planning Guide No. 2, Official Mapping Guide, 1964.

The single most important prerequisite of such official mapping is the availability of accurate base maps at an adequate scale, properly related to both the U. S. Public Land Survey and state plane coordinate systems. Such maps will soon become available from the Regional Planning Commission and the State Highway Commission for selected areas along the Lake Freeway corridor in the District. Additional mapping of the quality recommended in SEWRPC Planning Guide No. 2 should be accomplished by the local units of government in those areas shown on the District Land Use Plan for future urban development.

The City of Kenosha and the Towns of Pleasant Prairie and Somers should prepare and adopt official maps pursuant to Section 62.23(6), showing those proposed park and recreation sites indicated on the District Land Use Plan and selected park and drainageway areas in the environmental corridors, and adopt an ordinance similar to the suggested Official Map Ordinance set forth in Volume Two of this report.

Acquisition of the proposed park and recreation sites and certain open-space lands lying in the environmental corridors shown on the District Land Use Plan may be accomplished in various ways, ranging from actual gifts by owners, through dedication by land developers at the time of platting, to outright purchase of the entire fee or of lesser interests by the state or by local units of government. There is justification for requiring land developers to dedicate reasonable portions of those sites or parklands lying within their subdivision or development or to pay a fee in lieu of dedication toward the purchase of neighboring parkland. This justification is based upon the concept that the local governing body, by permitting such developer to create building sites or dwelling units, places a demand upon the entire community which is thereafter responsible for the services that must be provided to such development and its residents, including parklands, and that the owner or developer or future resident should, in justice, bear all or a portion of such cost directly attributed to his land. The following recommendations are made in this regard:

1. The City and Town Plan Commissions should recommend to their respective governing body in accordance with Section 236.45(4) of the Wisconsin Statutes, the adoption of new subdivision regulations that are similar to the suggested land division ordinance contained in Volume Two of this report so as to assure dedication of all or portions of these park and recreational sites and corridor parklands or payment of fees in lieu of such dedication. Such an ordinance requiring dedication or a fee of $200 per lot in lieu of dedication has been recently upheld by the Wisconsin Supreme Court.

2. The respective governing bodies should adopt such recommended land division ordinances thereto pursuant to Section 236.45 of the Wisconsin Statutes.

If these sites or corridor parklands shown on the recommended regional land use plan cannot reasonably be acquired by gift or dedication, acquisition of the entire fee interest is the most desirable method of acquiring such lands.

The City of Kenosha, Kenosha County and the Towns of Pleasant Prairie and Somers continue or initiate active park acquisition and development programs, pursuant to Section 27.065 of the Wisconsin Statutes, so as to result in the preservation of the environmental corridors, and the proposed park and recreational sites, and to meet the District park standards.

Purchase by the local units of government of less than the fee interest in the environmental corridors may be considerably less expensive and may result in more rapid preservation, acquisition, and use of said lands. Such acquisition of less-than-fee interests may be in the form of scenic easements for vista protection, conveyances of development rights to assure continuance of private parks or open-spaces, and grants of various public access and development rights for construction and use of park facilities. These devices should be used when acquisition of the entire fee interest is too costly or otherwise not practical.

Utility Plans

1. The Kenosha Water Utility and the Town Water District Commission should design and construct those water facilities needed to serve the District population as shown on the proposed Water Distribution System (Map 39) and as scheduled in the capital improvements program set forth in Volume Two of this report.

2. The City Public Works Department, the Town Drainage and Sanitary Districts and any metropolitan sewerage district subsequently created, in cooperation with each other, should design and construct those sewerage and drainage facilities needed to serve the District population as shown on the proposed Sanitary Sewer and Storm Drainage Plan (Maps 40 and 41) and as scheduled in the capital improvements program set forth in Volume Two of this report.

3. All District municipal utilities should adopt and adhere to utility extension policies that would result in only those areas shown as urban on the District

Land Use Plan being serviced by public water supply and sanitary sewer systems.

4. All District municipal utilities should design and install public water supply and sanitary sewer systems so as to preclude the provision of such services to urban development proposed to be located on agricultural land or in environmental corridors or on those soils designated in the regional soil survey as having severe and very severe limitations for such urban development.

Public Building Plan

The Simmons Library Board and the Kenosha Public Museum Board should acquire the sites and construct those library and museum facilities necessary to serve the District's people as shown on the proposed Public Building Plan (Map 81) and as scheduled in the capital improvements program set forth in Volume Two of this report.

The City and the town fire departments should acquire those sites and construct those fire protection facilities needed to serve the District's people as shown on the proposed Public Building Plan and as scheduled in the capital improvements program set forth in Volume Two of this report.

Financial Assistance

Most of the various types of financial assistance available to local units of government ranging from current revenue sources through borrowing to numerous state and federal loan and grant programs were thoroughly discussed in Chapter VII of SEWRPC Planning Report No. 7, Volume Three, Recommended Regional Land Use and Transportation Plan - 1990.

These state and federal programs included local code enforcement, parkland acquisition and development, water and sewer systems, sewage treatment works and transportation grants.

Urban Renewal Grants

Several federal grant programs are available to the local units of government for the slum prevention, blight elimination, land clearance, rehabilitation, housing code enforcement and testing of new renewal techniques. A brief discussion of these is contained in Appendix G of this report.

Administration

The City or Town Plan Commission created as recommended in the Local Planning Agencies Section of this chapter is the most appropriate local agency for administering and updating the District Comprehensive Plan. It should be noted that Section 62.23 of the Wisconsin Statutes which applies to cities, villages, and towns that have adopted village powers is a wise and adequate local planning enabling act.

This enabling act recognizes planning as an essential function of local government and delegates this function to continuing advisory bodies, known as plan commissions, qualified for their tasks and little influenced by political change. The methods and procedures provided by this act are well established in Wisconsin and have generally proven to be successful when properly applied. State legislation presently requires that the primary local planning agency shall be the Plan Commission.

Under the state planning enabling legislation in Wisconsin, the Plan Commission performs a unique role of representing the public interest, not only of today's public, but of tomorrow's as well. This is an interest shared by many elected legislative and executive officials but to which few can give first priority since the actions of elected public officials must often embody the immediate public interest. The local units of government need, and most elected public officials will welcome, the separate embodiment of the future public interest in a Plan Commission. The elected legislative body need not fear any loss of power or authority to this Plan Commission since the local governing body not only controls the budget of the Commission but also the final decision as whether to act upon Commission recommendations. Moreover, where elected public governing officials will find themselves working closely with the planning staff since that staff normally provides the contact through which the Commission formally reports to the executive and legislative bodies.

The membership, organization and functions of plan commissions are thoroughly discussed in Chapter V of SEWRPC Planning Guide No. 4, Organization of Local Planning Agencies, 1964.

Referrals

One of the most important functions of the Plan Commission is its review powers over specific aspects of community development. The Wisconsin Statutes require that certain matters must be referred to the Plan Commission for recommendation before final action may be taken by the Common Council or Town Board. The most important of these matters are:

1. All plats of land within the corporate limits and the extraterritorial plat approval jurisdiction of the municipality.

2. The location, acceptance, extension, alteration, vacation, abandonment, change of use, sale, acquisition, or lease of any public way, park, playground, airport, parking area, public grounds, or memorial.

3. The location, extension, abandonment, or authorization of any public utility whether privately or publicly owned.

4. The location, character and extent, acquisition, sale or lease of lands for public or semi-public housing and slum clearance.

5. Changes to the zoning ordinance regulations or district map.

6. Temporary zoning classification of annexed territory.

7. Changes or additions to the official map.

8. The location and design of public buildings.

Failure of the governing bodies to comply with these referral requirements of the Statutes

will affect the legality of their actions. The Wisconsin Supreme Court recently held invalid the attempt of the Common Council of the City of Menasha to transfer city property because the Council had failed to properly refer the matter to the City Plan Commission before taking final action.(52)

Therefore, whenever any new improvements of a type covered in the District Comprehensive Plan, such as school and park sites, arterial streets, or public buildings are initiated by various local municipal agencies, the plans for such improvement shall be submitted to the local Plan Commission for study and report before actual construction is started. The Plan Commission checks the improvement against the comprehensive plan and if the project is generally in accord therewith, the Commission should approve the improvement and so report to the sponsoring agency. If, however, the Commission finds that the proposed improvement is contrary to the plan, it should recommend that the project not be undertaken, unless it is suitably changed. This referral function is very important to plan implementation as the Comprehensive Plan should be consistently recognized in the design and location of public improvements.

The various city and town officials considering the above mentioned matters should seek the review and comment of their local planning staffs and the city and town governing bodies obtain the review and recommendation of their local Plan Commission before taking any action on these various aspects of community development.

Importance of a Local Planning Staff

In order for the local Plan Commissions to adequately perform their duties, they must be properly supported by a competent, professional staff whose duty it is to furnish professional and technical assistance. In the Kenosha Planning District only the City Planning Department fills this function and at the present time it is woefully understaffed. Without adequate technical assistance, the Local Planning Commissions will be severely handicapped in administering the comprehensive plan. Listed below are the more important functions of a planning staff.

1. A major function of the Plan Commission is to prepare and keep up-to-date the comprehensive plan and to assist the other elements of the city government in encouraging the realization of the proposals and objectives of the plan. The time of the Plan Commission should not be so preponderantly devoted to the consideration of relatively minor individual zoning and land division problems. In this respect, it should be the responsibility of the Planning Department to provide adequate staff work to enable the current matters to be disposed of expeditiously and to see that a major part of the time of the Plan Commission is devoted to keeping the comprehensive plan up-to-date and to promoting major programs for the realization of the community development objectives.

2. The Planning Department should process and report on all petitions for rezoning. This involves field inspection of existing land uses and structures, the preparation of not only the area in question, but for some distance around, and the preparation of a recommendation for approval of disapproval and the reasons for such recommendation.

3. The Planning Department should also process, review and report on all land divisions. The review process should include a comparison of the local Land Division Ordinance with the proposed division, thus insuring that sound subdivision planning principles have been used in the design of the plat and compliance made with all other applicable local ordinances. Preliminary subdivision layout plans will need to be made from time to time to make sure that an individual plat fits into a reasonable neighborhood pattern. Close coordination with other municipal agencies such as the Public Works Department and the Water Utility is extremely important in this review of land divisions.

4. The Planning Department should also conduct inventories and analyses on land use, financial capabilities, population, economic activity and development trends, so as to keep up-to-date the various studies undertaken, plans and capital improvement programs prepared under the District planning program.

5. Because of the vast amount of state and federal assistance programs available to local units of government, there is need for one local official to be familiar with all these programs and able to provide information on these programs to other local officials. Logically, this can be a function of the Director of Planning.

6. The Planning Department should also be responsible for the preparation of general plans for specific projects recommended in the comprehensive plan, such as comprehensive plans for proposed neighborhood parks, combined school park sites and arterial street improvements. The Director of Planning should work with other department heads in evaluating the need for public improvements and participate in the preparation of an annual capital budget based on the capital improvement program.

7. An additional duty and responsibility of the Director of Planning should be to furnish technical assistance to the Board of Zoning Appeals, in the administration of the zoning regulations and he should also cooperate with the Engineering Department in the preparation and maintenance of an "Official Map" based on the Arterial Street and Highway Plan.

As evident from the above suggested work program, a Plan Commission composed partially of lay people cannot possibly implement the comprehensive plan without an adequate professional and technical staff. The Towns of Pleasant Prairie and Somers presently have no planning staff and without such staffs it will be extremely difficult to implement the comprehensive plan.

(52) Scanlon vs. City of Menasha, 16 Wisconsin 2d 437, 114 N. W. 2d 791 (1962).

Size of the Planning Staff

Experience has shown that the employment of a full-time resident planning staff, responsible to a plan commission, is the best method of obtaining professional planning services. The size, cost, and administrative organization of such resident staffs vary from one community to another. A staff may consist of one trained planner, as in the case of small communities, or may number several planners, researchers, draftsmen and secretaries in larger cities.

The majority of local planning offices are small one- or two-man operations usually consisting of a planning director, an assistant, and a clerk-stenographer. If the community desires its own planning staff, it must be prepared to commit itself to paying the cost of the planning staff employed not for one or two years, but on a permanent basis, so that the planning program will be on a continuing basis. Office space, equipment, supplies, and other expense items must also be provided. These expenses, however, are minor in comparison with the economies that may be realized from sound community planning.

The mean size of planning staffs used by cities between 50,000 and 99,999 population throughout the United States in 1966 was 6.2 of which 3.2 were professional planners.(53) The City of Kenosha should provide a planning staff to include at least a full-time Director, Assistant Director, a draftsman and a secretary.

This staff or a larger one could effectively provide technical and professional assistance to the towns also.

Cost of the Planning Staff

The average annual per capita expenditures for cities with planning staffs in the United States for 1965 were $.710, and for cities between 50,000 and 99,999 populations with planning staffs it ranged from $.257 to $2.76 per capita with a median of $.592 per capita.

It should be remembered that there are some components of the District's comprehensive plan that can be prepared by other municipal agencies with the Plan Commissions performing the role of "master planner" or coordinator so that the individual plan components are integrated into the overall community plan. For example, the city utility, park, and school plans can be prepared by the city engineering department and the city park and district school board staffs with supervision and coordination being furnished by the planning department staff. This utilization of a community's other professional and technical staffs reduces the number of resident staff planners and consequently reduces the community's planning budget.

Based on the above median of $.592 per capita, a city the size of Kenosha, should provide an annual budget of at least $42,000 for municipal planning purposes. However, communities like the towns having less than 20,000 population would find it perhaps difficult to pay the salary and office expenses of a full-time resident professional planner. The towns could hire a planning consultant on a continuing basis or hire a planner who would divide his time between planning work and other work for the town, such as engineering or park development and management.

(53) American Society of Planning Officials, P.A.S. Report No. 208, March 1966.

Sometimes two or more neighboring communities can join together in providing the planning staff who would then divide their time among the communities. The Wisconsin Legislature has specifically provided that cities, villages, towns, counties, and regional planning commissions may contract with each other for the joint exercise of any power or duty required or authorized by statute as discussed previously in this chapter.

It is recommended that the City of Kenosha provide a budget of at least $42,000 per annum so as to provide for the retention of an adequate, competent, professional planning staff and that the towns consider utilizing this staff under some mutually agreed upon financial program.

One possible method of financing such a joint program would be for one-half of the planning budget to be paid based upon equalized assessed value and the other half to be divided equally among the participating units of government.

The interrelationship between the agencies involved and the necessity for joint action to solve common problems should provide a solid foundation for the organization proposed. The dividends paid in the form of an improved District would undoubtedly be many times the relatively small investment that would be necessary.

Educational Program

Those communities in which the planning function has been most effective are those where public support for the plans has been developed and maintained. The Plan Commissions and planning staff or consultants must do more than just work with community leaders and certain elected public officials. It must also reach out to the general public at large, promote understanding, and solicit wide participation. Public participation in the planning process is difficult to obtain and requires a continuing effort. Strong and active citizen planning groups are of tremendous value and are often able to materially aid the Plan Commission in carrying out the community plan. Their assistance may take the following forms: exhibits, discussions before civic professional and neighborhood conservation groups, newspaper articles, radio broadcasts, education television, and study courses in the local schools.

Many voluntary local citizen groups are only successful when the initiating drive comes from within their group; however, the local Plan Commissions can do much to encourage the growth of these organizations. These Plan Commissions can furnish them information about the District Comprehensive Plan, consult with them regularly about this plan, and encourage expression of opinions. Those alert citizen groups with a sense of participation in the community will significantly raise the general level of public awareness about the community's problems. Such groups can assist the local Plan Commissions by their testimony and support of sound planning at both public and private gatherings. These groups may become, in effect, lay experts on community planning, aiding in policy formulation, maintaining citizen support, ensuring more critical examination of proposals, and generally creating a more favorable planning atmosphere in the community.

Publication and distribution of the comprehensive plan is the first important means of familiarizing the general public with the activities of the District's planning program. The

mere printing of the plan in its entirety, however, will not be an adequate means of securing public understanding. Many people will not read such a long report and many will not remember the large amount of data and recommendations contained therein.

At least 10,000 copies of a colorful, graphic summary brochure of about ten pages describing the District's planning program, its studies, plan proposals and implementation recommendations should be prepared for distribution to at least one out of every three households in the District.

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APPENDICES

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Appendix A

KENOSHA PLANNING DISTRICT

701 ADVISORY COMMITTEE

Representing the City of Kenosha:	Miss Peggy Roeder, Secretary Mr. John S. Tondryk Mr. Russell Huber
Representing the Town of Pleasant Prairie:	Mr. Paul Jaeger, Chairman Mr. Jasper Gentile Mr. Charles Hawkins
Representing the Town of Somers:	Mr. Howard Blackmon Mr. Richard Lindl Mr. William Rider

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Appendix B

LAND USE SURVEY METHODS AND PROCEDURES

The land use data used in this report originated with subsequent modifications, as a result of a comprehensive land use survey of the entire Region. This survey was conducted in 1963 by the Southeastern Wisconsin Regional Planning Commission as a part of their overall Land Use-Transportation Study of the region. The following quotation is taken from Planning Report No. 7, Land Use-Transportation Study, INVENTORY FINDINGS 1963, Volume One by SEWRPC, May, 1965, Chapter V, Page 80.

> "Existing land use information was not available on a uniform, area-wide basis for the Region in a form suitable for both land use and transportation planning. Consequently, an extensive existing land use survey was required. A land use classification system was developed for use in the inventory and approved by the technical coordinating advisory committee. This classification system utilizes nine major land use categories, which are divisible into a total of 57 minor categories, and is suitable for both land use and transportation planning; adaptable to storm water drainage, public utility, and community facility planning; and compatible with existing land use classification systems already in use within the Region. With the exception of the most intensively developed urban areas, where field surveys were utilized, the existing land uses were delineated by photo interpretation on SEWRPC aerial photographs at a one inch equals 400 feet scale, measured, checked, coded, edited, and transferred to punch cards for machine processing. The U. S. Public Land Survey quarter section was chosen as the basic geographic data collection unit, and the land uses were identified in terms of the actual activities taking place on the land without regard to ownership characteristics.
>
> In order to produce a high quality inventory for an area as large and diverse as the Region, careful attention was given to quality control. Quality control checks included determination of the amount of error in the scale of the aerial photographic prints upon which the land uses were delineated and measured; verification of the photographic interpretation and delineation on a sample basis by field inspection; and control balancing of measured totals by quarter section, section, civil division, and county as well as by the Region as a whole."

The area of the Kenosha Planning District (54,904.08 Acres) represents about 3.2 percent of the total land area of the Region and therefore can be planned in greater detail. The need for this greater detail led to further, more refined assembly of land use data for the District. The following is a brief description of the procedures used in this study.

Using the latest records of all land ownerships from the Kenosha County Tax Record Office, copies of all platted subdivisions from the Kenosha County Register of Deeds Office, existing local quarter section plat maps and the most recent Farm plat books, acetate overlays to the one inch equals 400 feet scale enlarged photographs and the cadastral maps were made containing the following data:

1. All U.S. Public Land Survey Section and quarter section lines.

2. All street, alley, and other rights-of-way lines.

3. All real property ownership boundaries in single ownership in the unplatted areas.

4. All block and lot lines in the platted areas.

5. All lands dedicated to public use on recorded plats.

Also placed on these overlays was an identification number, based upon the coordinates of a 10,000 square grid overlaying each quarter section, assigned to each platted lot and each parcel in single ownership. The land use data, assembled by the SEWRPC in their study was transferred to work maps at a one inch equals 200 feet and a one inch equals 400 feet scale, and supplemented by field checking to assist in maintaining accuracy. The larger scale maps were used to record data in the intensively developed areas of the District, primarily within the City of Kenosha, while the smaller scale maps were used to record the data in the rural sections of the District. Further updating of the land use data was accomplished using records maintained by the Planning Department of the City of Kenosha. The land use areas delineated were then measured, using actual property dimensions, checked and recorded by quarter sections where more than one land use was found to occupy a parcel or platted lot, areas were computed for each separate use. The SEWRPC provided quarter section totals against which the parcel-by-parcel data was checked as a means of maintaining adequate control balancing of measured totals. To allow a finer degree of analysis, both present and future, 91 separate analysis zones were formed. See Appendix F for analysis Zone Boundaries. This data was then transferred to punch cards for machine processing by the SEWRPC, which resulted in the land use data (10 major and 56 minor categories) being tabulated for the District by civil division, quarter section and analysis zone. All other procedures were accomplished by the Planning Department of the City of Kenosha.

For additional reports concerning this survey explanation see the following references:

1. A detailed description of the methodology and classification scheme utilized is contained in SEWRPC Procedural Manual Number 5, Land Use Inventory.

2. See "Aerial Photographs and Their Use in the Regional Land Use Inventory," SEWRPC Technical Record, Volume 1 - No. 2.

3. Table 39, "Distribution of Land Use in the Region by County - 1963," Planning Report Number 7, Land Use - Transportation Study, INVENTORY FINDINGS 1963, Volume 1 by SEWRPC, May, 1965, Chapter V, Page 84.

Appendix C

DEFINITION OF USES FOR TABLES 38 AND 39

Single-Family Residential	- includes Mobile Homes
Two-Family Residential	- self-explanatory
Multiple-Family Residential	- self-explanatory
Commercial	- self-explanatory
Light Industrial	- includes Wholesale and Storage category and all types of Non-Durable Manufacturing except Chemical and Allied Products group. Also contains Truck terminals and Communications and Utility facilities group
Heavy Industrial	- includes Heavy Industry and Extractive category and the Chemical and Allied Products group and Rail, Bus and Ship Terminal group
Railroads	- includes all areas associated with railroad activities, i.e., yards, terminals, right-of-way, etc.
Public & Semi-Public	- includes institutions and Government Services and Airports
Parks and Recreation	- self-explanatory
Streets and Alleys	- includes all types of streets and all off-street parking facilities
Agriculture and Related Uses	- self-explanatory
Open Lands and Water Area	- includes all undeveloped residential areas

Note: This classification system was used in Tables 38 and 39 because of presentation form of comparison cities ' data. The only problem occurring from adapting the SEWRPC system to this system was in the combination of streets and alleys data with that of off-street parking facilities. In the data presented for the comparison cities, off-street parking areas are computed together with the attendent use of the land.

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Appendix D

LIST OF COMPARISON CITIES

1. Alton, Illinois
2. Appleton, Wisconsin
3. Battle Creek, Michigan
4. Benton Harbor, Michigan
5. Decatur, Illinois
6. Kankakee, Illinois
7. Lima, Ohio
8. Muncie, Indiana
9. Sioux Falls, South Dakota

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Appendix E

COMMERCIAL USES ALONG I-94

1. "KR"
   - NW - Vacant
   - SW - Vacant
   - NE - Residential
   - SE - Residential

2. "A"
   - NW - Vacant
   - SW - Vacant
   - NE - Vacant
   - SE - Vacant

3. "E"
   - NW - Combination candy shops and gas station
   - SW - Vacant commercial building
   - NE - Trucking company headquarters
   - SE - Vacant

4. "43"
   - NW - Gas Station and restaurant and small motel
   - SW - Major motel and restaurant, gas station, and commercial food store
   - NE - Residential
   - SE - Vacant

5. "N"
   - NW - Residential
   - SW - Equipment sales and storage yard
   - NE - Vacant
   - SE - Vacant

6. "158"
   - NW - Vacant
   - SW - Vacant
   - NE - Vacant
   - SE - Vacant

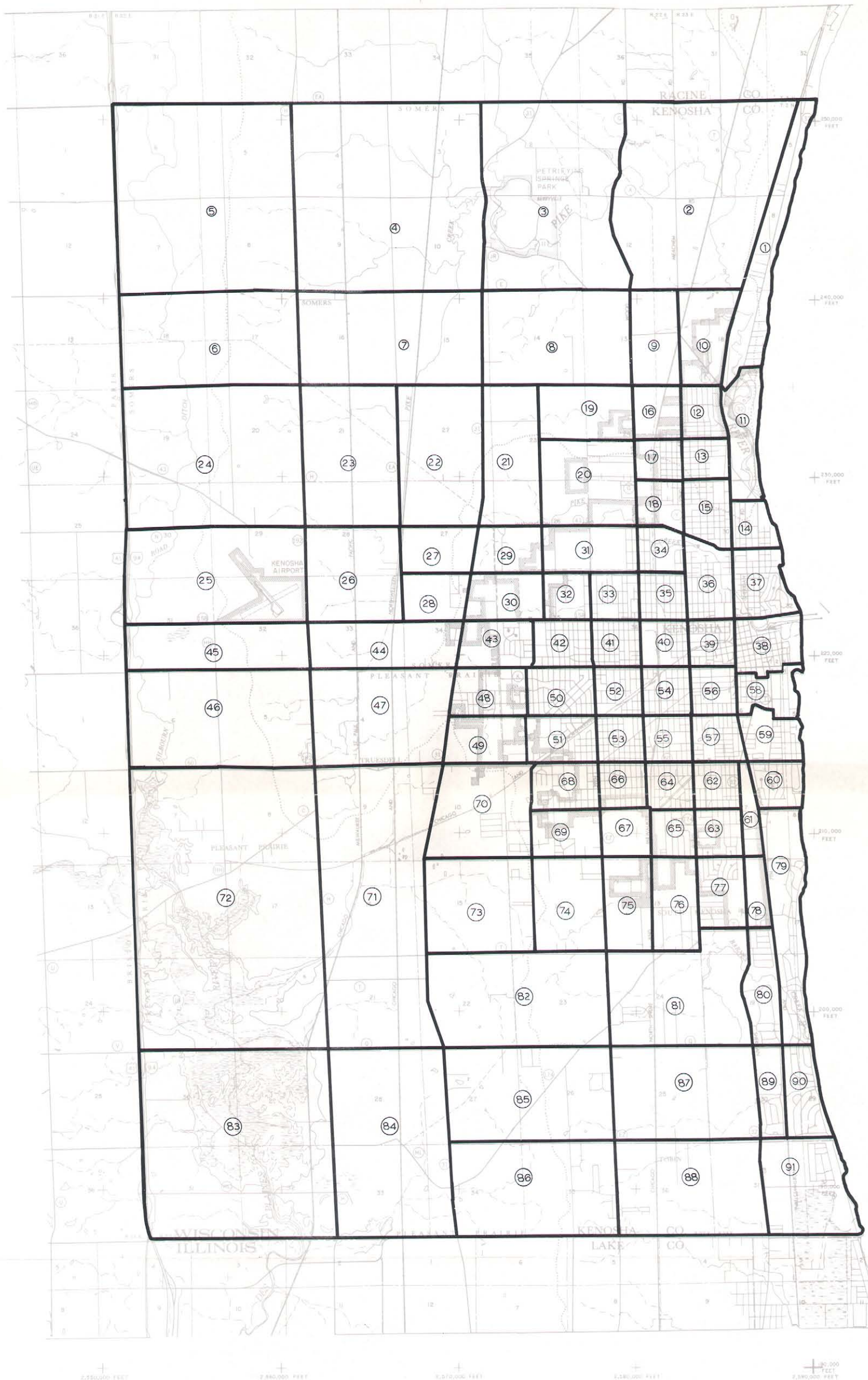
7. "K"
   - NW - Vacant
   - SW - Vacant
   - NE - Boat manufacturing company
   - SE - Scattered commercial buildings, both vacant and occupied

8. "50"
   - NW - Gas station and restaurant
   - SW - Major motel, restaurant, and gas station
   - NE - Residential
   - SE - Gas station

9. "C"
   - NW - Residential (vacant near corner)
   - SW - Residential (vacant near corner)
   - NE - Residential
   - SE - Tavern and restaurant and gas station under construction

10. "V"
NW - Vacant
SW - Farm buildings
NE - Residence and farm buildings
SE - Tourist information center

11. "ML"
NW - Vacant
SW - Vacant
NE - Small motel
SE - State Police Weigh Station



ANALYSIS ZONE BOUNDARIES

Appendix F

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

KENOSHA PLANNING DISTRICT

CITY OF KENOSHA & TOWNS OF PLEASANT PRAIRIE & SOMERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS FEBRUARY 1967 MISSOURI

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Appendix G

MEASURES FOR THE IMPROVEMENT OF HOUSING CONDITIONS

The housing problems are not unique as they are found in varying degrees in almost every city. Urban housing conditions have become a matter of national concern and as a result Federal Funds are available to the city in solving the problem. The following discussion will be concerned with a brief description of the various tools available for the concerted effort to solve the housing problem.

Federal Housing Legislation

The magnitude of the problems of slums and blighted areas through out the country brought about passage of the Federal Housing Act of 1949. This Act and its several amendments is a major method of assistance to municipalities in solving housing problems. The general purpose of this Act is to provide Federal aid to urban communities for the improvement of living conditions in accordance with sound principles of housing and city planning. Federal assistance is provided for clearance and redevelopment and for rehabilitation and conservation of urban areas. The basic philosophy of the Act is that communities must not only correct their existing slum and blighted areas but must protect and preserve all of their residential areas to prevent continued creation of poor housing conditions. The Act is administered by the Department of Housing and Urban Development (HUD), which has established various regulations and procedures to be followed in carrying out the purpose of the Act. In general, the Housing Act provides seren major types of aid to a city as follows:

1. Assistance is provided in the development of overall programs for housing improvement, in the procedures necessary for obtaining Federal aid, in providing information on programs in other communities and in the provision of technical and professional assistance in surveys and planning.

2. Advances of funds are made for surveys and plans for urban renewal projects including preliminary analyses of the feasibility of such projects.

3. Urban Renewal Project participation in the form of capital grants, definitive loans and temporary loans are available for clearance projects in which all property in a project area is acquired by a "local public agency," most of the buildings are demolished; new site improvements in the form of streets and utilities are installed and the land is offered for sale to private developers. In rehabilitation projects, only substandard properties are acquired and demolished. Site improvements are installed and the cleared sites are offered for sale. Remaining structures must be improved or rehabilitated. The difference between acquisition and resale in these projects is the loss or "write-off" in which the HUD pays three-fourths and the "local public agency" pays one-fourth. The loans are available to the "local public agency" as working capital.

4. Community Renewal Programs under which the HUD grants up to two-thirds of the cost for the preparation of community-wide plans for urban renewal. The entire community is studied to determine blighted areas, identify potential urban renewal project areas, determine financial costs and relocation requirements for each potential project, and schedule future urban renewal activities.

5. Research projects are undertaken investigating improvement of methods and techniques in the elimination of poor housing conditions. The Federal Government provides two-thirds of the cost of these projects.

6. Special provisions are made for mortgage insurance for construction of new buildings or rehabilitation of existing buildings in approved urban renewal areas. Mortgage insurance under Section 220 is authorized up to 95 percent of value for rehabilitation of existing units and for new multiple family or rehabilitated rental housing. This aid is only available in approved renewal project areas.

7. A similar provision for mortgage insurance under Section 221 is available to provide low-cost housing for families displaced as a result of government action in housing or other public improvements. Mortgage insurance is available for new or rehabilitated housing with a down payment as low as five percent and with a maximum mortgage of $9,000.

8. The Act provides for public housing for families of low income. Under the provisions of this program, standard dwelling units are made available for families of low income by means of a Federal subsidy which makes up the difference between the economic rent that would have to be charged to finance the project and the rental that the families can afford.

Workable Program

Before any of the above aids are available, the City must have a "workable program" approved by the HUD. This program is essentially a report on a long-range program to prevent the spread of blight and slum conditions in the City. Many of the "required" elements of a workable program have already been adopted in Kenosha. The following is a brief discussion of the seven essential elements of a "workable program".

1. Codes and Ordinances. The City must either have in effect or agree to enact, satisfactory building, plumbing, electrical, housing and fire prevention codes.

2. Community Plan. This is a comprehensive city plan for which the plan currently under preparation is more than adequate. The plan must include satisfactory zoning and subdivision regulations.

3. Neighborhood Analyses. In the existing neighborhoods, it would be necessary to make an analyses of existing housing conditions, identification of the causes of neighborhood deterioration and general plans for neighborhood improvement.

4. Administrative Organization. The city should have a sufficient staff to be able to adequately and vigorously enforce the building, housing, health and zoning ordinances.

5. Financing. In addition to increased personnel requirements, any comprehensive community housing program will require local financial participation. Before embarking upon such a program, the community should recognize its responsibilities in this regard.

6. Housing Displaced Families. This is a major problem in connection with an urban renewal program.

7. Citizen Participation. Evidence must be submitted indicating real support of the citizens for the program for improvement of housing conditions.

Following approval and certification of the "workable program," Federal assistance is then available for various activities or undertakings in urban renewal that may involve some or all of the following;

1. Acquisition of slum or blighted areas and other real property, and demolition or removal of buildings and improvements thereon in accordance with an urban renewal plan.

2. Installation, construction or reconstruction . (in the urban renewal area) of streets, utilities, parks, playgrounds and other improvements necessary for carrying out in such areas, the urban renewal objectives of the act in accordance with the urban renewal plans.

3. The disposition of any property acquited in such urban renewal area (including sale, initial leasing or retention by the local public agency itself) at its fair value for uses in accordance with the urban renewal plans.

4. Carrying out plans for a program of voluntary repair and rehabilitation of buildings or other improvements in accordance with the urban renewal plan.

The Federal Government will pay three-fourths of the net cost of the project, with the community paying the remainder. The local community may, however, meet its share of the cost by providing cash grants from local bonds or revenue, providing donations of land, undertaking part of the demolition of removal work, or by installing, constructing or reconstructing streets, utilities, parks, playgrounds or other improvements specififed in the urban renewal plans for serving the project area, or by providing public building or other public facilities needed to carry out the urban renewal plan.

As mentioned previously, the condition of housing in Kenosha is considerably above the average. Here, the need is not so great for broad clearance and redevelopment projects, although a few very small areas could come under this consideration. The basic problem is one in which a large number of the existing dwellings have served more than one-half their useful life. It is expected that a large number of these dwellings will approach the end of their useful life during the period of the planning program. Where deteriorating housing exists at

present, the units are scattered. Occasionally small groups of these houses are located in close proximity to one another. The primary method of combating this problem is code enforcement. The boundaries of certain suggested code enforcement projects are shown on the planning area maps. The following is an excerpt from a publication of the HHFA and is dated September 16, 1964. In part, it reads as follows:

"CODE ENFORCEMENT PROGRAMS IN URBAN RENEWAL AREAS"

> Section 1-10(c) of Title 1 has been amended to authorize a new type of urban renewal project consisting entirely or substantially of a program of intensive Code Enforcement. This type of project is limited to areas that are basically sound, but which, principally because of noncompliance with the housing code and related codes of the community, have begun to show signs of deterioration or blight. The Agency is expected to exercise its discretion to costs and to limit grant-in-aid credit for expenditures for public facilities for code enforcement projects, so that the propostionate amount available for grant-in-aid credit for these projects is similar to the amount of grant-in-aid available for projects involving clearance or conservation. This amendment also permits the cost of code enforcement activities, such as the preparation of violation notices, the making of compliance inspections for code violations, and other acts which are a part of regular municipal code enforcement programs, to be included as part of eligible cost of projects involving clearance or conservation . . .
>
> The carrying out of a code enforcement project or the inclusion of code enforcement costs in a clearance or rehabilitation project may not be authorized, however, unless the community agrees to increase its total expenditures for code enforcement activities, during the period the project is under a contract for Loan and Grant, by an amount equal to its share of the project costs attributable to the code enforcement activities in the project area. This is to assure that a community wishing to receive Federal Aid for code enforcement activities will at least continue its present level of expenditures for Code Enforcement in the rest of the Community.

This program is ideally suited to the needs of the City of Kenosha. If the City is to take positive steps toward continuing to provide stable neighborhoods for its population, a program of this type is an absolute necessity.

Appendix H

REVIEW MEETINGS ON PRELIMINARY LAND USE PLAN

1966

March 23	Director of Planning, City of Kenosha
March 28	Staff of SEWRPC Executive Director Chief Land Use Planner Chief Community Assistance Planner
March 30	Citizens' Advisory Committee Town Board and Plan Commission - Pleasant Prairie Town Board and Plan Commission - Somers
April 4	Town Plan Commission - Somers
April 7	Kenosha City Plan Commission
April 13	Citizens' Advisory Committee
April 15	Staff fo SEWRPC and representative of State Highway Department
April 20	Town Board and Plan Commission - Pleasant Prairie
April 26	Town Board and Plan Commission - Somers
April 27	Representatives of Wisconsin Department of Resource Development
April 29	Staff of Lake County, Illinois, Plan Commission
May 5	Staff of SEWRPC
May 5	Kenosha City Plan Commission
May 11	Citizens' Advisory Committee
May 19	Staff of SEWRPC Chief Natural Resources Planner Chief Community Assistance Planner

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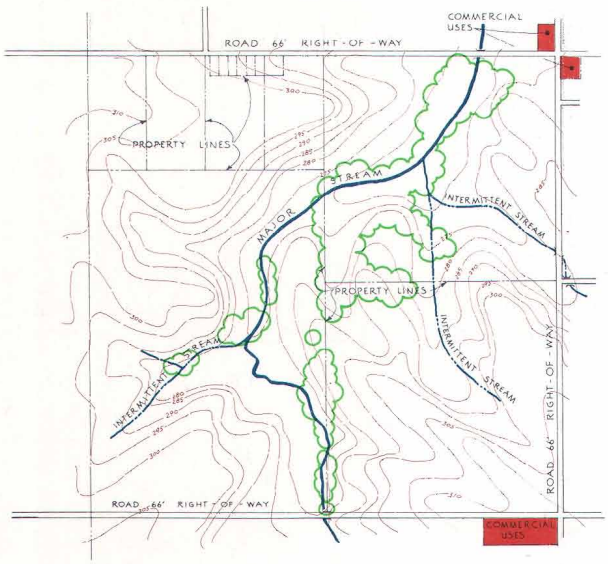
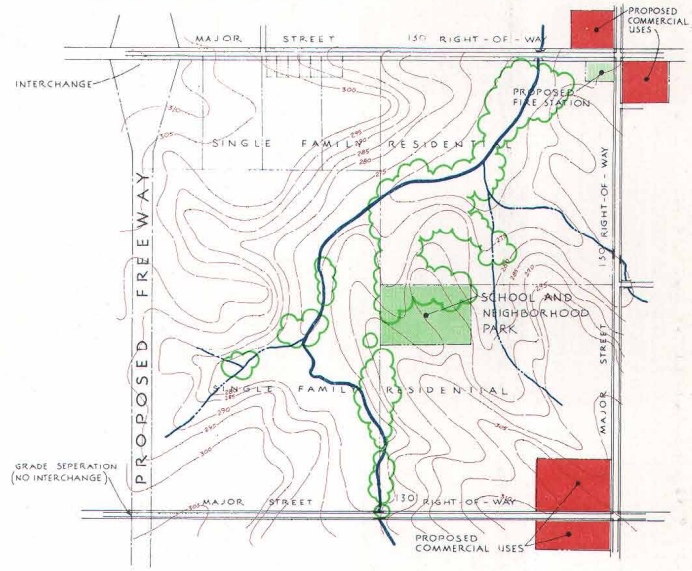
Appendix I

SUBDIVISION DESIGN PRINCIPLES

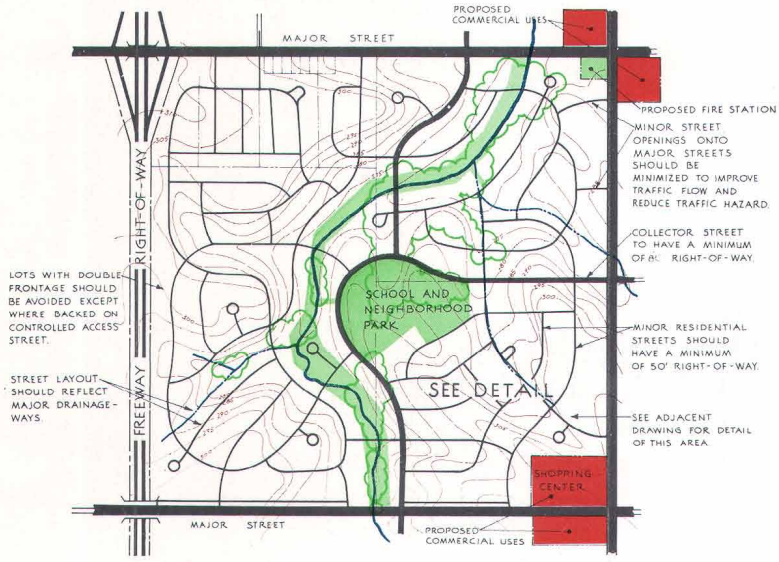
1 EXISTING CONDITIONS



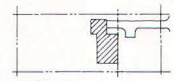
2 PROPOSALS OF THE COMPREHENSIVE PLAN



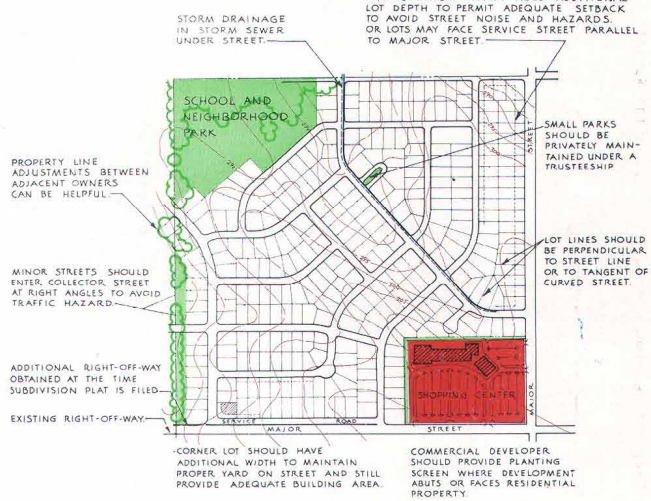
3 NEIGHBORHOOD UNIT PLAN



NOTE:
THIS DESIGN ILLUSTRATES PLANNING PRINCIPLES APPLYING TO TYPICAL NEW RESIDENTIAL NEIGHBORHOODS. IT DOES NOT ILLUSTRATE PLANNED INTER-MIXTURES OF RESIDENTIAL LAND USES. IT HAS NOT BEEN ADJUSTED TO SIGNIFICANT LOCAL CONDITIONS OF RAINFALL, MICROCLIMATOLOGY OR WIND DIRECTION WHILE IT SHOWS SOME PEDESTRIAN CIRCULATION ROUTES IT DOES NOT CALL FOR A COMPLETE SYSTEM OF SEPARATED PEDESTRIAN ROUTES BECAUSE THESE REQUIRE A SINGLE OWNER OF THE ENTIRE DEVELOPMENT. THIS PLAN IS BASED UPON CREATION OF A SATISFACTORY NEIGHBORHOOD THROUGH COOPERATIVE ACTION BY SEVERAL OWNERS.



RECOMMENDED DEVELOPMENT FOR LOT FACING MAJOR STREET NEED ADDITIONAL LOT DEPTH TO PERMIT ADEQUATE SETBACK TO AVOID STREET NOISE AND HAZARDS. OR LOTS MAY FACE SERVICE STREET PARALLEL TO MAJOR STREET.



HARLAND BARTHOLOMEW AND ASSOCIATES
PLANNERS, ENGINEERS, LANDSCAPE ARCHITECTS

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Appendix J

TABULATION OF RIGHT-OF-WAY AND PAVEMENT WIDTHS

Kenosha Planning District

Street	From[1]	To[1]	Right-of-Way Width in Feet	Pavement Width in Feet
North-South Streets				
Interstate 94	Wisconsin State Line	1st Street	Varies-Minimum 300	2-24
104th Avenue	Bain Station Road	52nd Street	66	20
88th Avenue	Wisconsin State Line	60th Street	Varies - 85-140	24
"	60th Street	1st Street	66	20
72nd Avenue	Wisconsin 43	1st Street	66	20
Wisconsin 31	Wisconsin State Line	Wisconsin 158	66	20
"	Wisconsin 158	1st Street	Varies - 100-110	24
51st Avenue	93rd Street	75th Street	66	16
47th Avenue	Washington Road	18th Street	66	18
39th Avenue	Wisconsin State Line	80th Street	66	20
"	80th Street	75th Street	80	22
"	75th Street	60th Street	80	54
"	60th Street	45th Street	80	56
"	45th Street	Washington Road	80	20
30th Avenue	80th Street	78th Street	66	36
"	78th Street	75th Street	60	36
"	75th Street	Roosevelt Road	50	36
"	Roosevelt Road	67th Street	66	36
"	67th Street	53rd Street	60	36
"	53rd Street	52nd Street	76	36
"	52nd Street	Washington Road	66	48
"	Washington Road	34th Street	90	20
"	34th Street	31st Street	85	20
"	31st Street	30th Street	90	20
"	30th Street	18th Street	83	20
"	18th Street	1st Street	66	20
22nd Avenue	91st Street	88th Street	66	22
"	88th Street	87th Street	133	22
"	87th Street	86th Street	73	22
"	86th Street	85th Street	100	22
"	85th Street	84th Street	140	22
"	84th Street	81st Street	130	22
"	81st Street	80th Street	Varies - 73-80	41
"	80th Street	76th Street	Varies - 73-80	54
"	76th Street	75th Street	100	54
"	75th Street	74th Street	73	33
"	74th Street	Roosevelt Road	66	33
"	Roosevelt Road	60th Street	100	74
"	60th Street	52nd Street	50	38
"	52nd Street	45th Street	70	32
"	45th Street	44th Street	Varies - 63-75	32
"	44th Street	38th Street	Varies - 63-75	36
"	38th Street	35th Street	Varies - 73-75	36
"	35th Street	25th Street	Varies - 73-75	48
"	25th Street	19th Street	80	48
"	19th Street	Birch Road	80	20
"	Birch Road	1st Street	Varies - 80-125	24
			(Under Construction)	
Wisconsin 32	Wisconsin State Line	91st Street	66	24
"	91st Street	80th Street	66	30
"	80th Street	79th Place	73	50
"	79th Place	75th Street	66	50
"	75th Street	60th Street	66	52
"	60th Street	50th Street	66	54
"	50th Street	7th Avenue	66	52
"	7th Avenue	21st Street	80	30
"	21st Street	17th Street	100	30
"	17th Street	1st Street	66	30
7th Avenue	80th Street	67th Street	66	36
"	67th Street	61st Street	66	34
"	61st Street	59th Place	50	34
"	59th Place	59th Street	66	34
"	59th Street	50th Street	66	42
"	50th Street	38th Street	99	74
"	38th Street	35th Street	87	74
"	35th Street	Birch Road	66	20

Street	From[1]	To[1]	Right-of-Way Width in Feet	Pavement Width in Feet
East-West Streets				
1st Street	Interstate 94	Wisconsin 32	66	20
7th Street	Interstate 94	Wisconsin 32	66	20
12th Street	Interstate 94	22nd Avenue	66	20
18th Street	88th Avenue	30th Avenue	66	20
Pershing Blvd.	22nd Avenue	Birch Road	80	56
31st Street	26th Avenue	Sheridan Road	66	36
Wisconsin 43	Interstate 94	Wisconsin 31	66	24
Washington Road	Wisconsin 31	32nd Avenue	102	2-36
"	32nd Avenue	30th Avenue	66	44
"	30th Avenue	28th Avenue	Varies - 83-100	44
"	28th Avenue	22nd Avenue	Varies - 66-83	40
"	22nd Avenue	16th Avenue	66	36
"	16th Avenue	7th Avenue	66	39
45th Street	39th Avenue	30th Avenue	73	46
"	30th Avenue	22nd Avenue	60	36
50th Street	30th Avenue	22nd Avenue	70	36
"	22nd Avenue	17th Avenue	60	36
"	17th Avenue	Pike River	66	36
"	Pike River	7th Avenue	66	40
Wisconsin 158	Interstate 94	Wisconsin 31	Varies - 120-180	24
"	Wisconsin 31	Pike River	100	52
"	Pike River	7th Avenue	83	52
60th Street	Interstate 94	Wisconsin 31	66	20
"	54th Avenue	40th Avenue	100	56
"	40th Avenue	39th Avenue	100	76
"	39th Avenue	38th Avenue	83	48
"	38th Avenue	8th Avenue	66	48
Roosevelt Road	39th Avenue	22nd Avenue	66	48
Wisconsin 50	Interstate 94	Wisconsin 31	Varies - 200-220	2-24
75th Street	Wisconsin 31	43rd Avenue	96	2-36
"	43rd Avenue	39th Avenue	96	64
"	39th Avenue	38th Avenue	55	48
"	38th Avenue	22nd Avenue	58	36
"	22nd Avenue	19th Avenue	80	36
"	19th Avenue	17th Avenue	73	36
"	17th Avenue	C. & NW. R.R.	66	36
"	C. & NW. R.R.	7th Avenue	66	30
Wilmot Road	Interstate 94	88th Avenue	66	22
80th Street	48th Avenue	39th Avenue	80	56
"	30th Avenue	Wisconsin 32	80	56
85th Street	Wisconsin 31	39th Avenue	66	18
"	32nd Avenue	Wisconsin 32	100	56
91st Street	22nd Avenue	Wisconsin 32	66	20
93rd Street	Wisconsin 31	22nd Avenue	66	20
104th Street	88th Avenue	Wisconsin 32	66	20
116th Street	Wisconsin 31	Wisconsin 32	66	20
Wisconsin 174	Wisconsin 31	93rd Street	66	22

NOTE: [1]Nearest Intersection

Source: State, County, Towns, and City Records

Appendix K

SELECTED TRAFFIC VOLUMES

Location	1965 Annual 24-Hour Average Traffic
Interstate 94	
North of 7th Street	20,910
North of Wisconsin 43	21,630
North of 60th Street	17,730
North of Wilmot Road	18,690
North of State Line	18,240
Wisconsin 31	
North of 7th Street	4,170
North of 12th Street	4,590
North of Wisconsin 43	5,390
North of Wisconsin 158	7,360
North of Wisconsin 50	5,280
North of 93rd Street	3,340
North of State Line	3,140
39th Avenue	
South of 52nd Street	6,689
North of 60th Street	8,825
South of 60th Street	11,372
North of 75th Street	9,891
30th Avenue	
North of 18th Street	4,015
North of 31st Street	5,200
North of Washington Road	5,446
North of 52nd Street	10,909
North of 60th Street	10,430
North of 63rd Street	10,951
North of 75th Street	4,880
North of 80th Street	2,041
22nd Avenue	
North of 18th Street	3,013
North of 31st Street	9,117
North of Washington Road	14,746
North of 52nd Street	10,826

22nd Avenue (continued)	
North of 60th Street	12,003
North of 63rd Street	14,425
North of 75th Street	8,940
North of 85th Street	5,014
Wisconsin 32 (Sheridan Road)	
North of 7th Street	7,790
North of 12th Street	8,110
North of Birch Road	10,299
Along Alford Park Drive	6,977
South of 35th Street	9,634
North of Washington Road	10,705
North of 50th Street	15,026
North of 52nd Street	16,012
North of 60th Street	21,462
North of 75th Street	13,463
North of 80th Street	11,515
North of 85th Street	9,058
North of 91st Street	6,610
South of 91st Street	5,930
South of 104th Street	5,600
North of State Line	5,000
Wisconsin 43 (Washington Road)	
East of Interstate 94	2,330
West of 88th Avenue	3,250
West of Wisconsin 31	3,630
East of Wisconsin 31	4,970
East of 30th Avenue	7,564
East of 22nd Avenue	6,530
West of Sheridan Road	6,698
Wisconsin 158 (52nd Street)	
East of Interstate 94	4,330
West of 88th Avenue	4,210
West of Wisconsin 31	5,200
East of Wisconsin 31	8,545
West of 47th Avenue	9,966
East of 39th Avenue	17,635
East of 30th Avenue	18,713
East of 22nd Avenue	13,622
West of Sheridan Road	11,654

60th Street	
West of 56th Avenue	3,757
East of 47th Avenue	7,304
East of 39th Avenue	13,302
East of 30th Avenue	14,410
East of 22nd Avenue	14,084
West of Sheridan Road	13,188
Roosevelt Road	
East of 39th Avenue	9,956
West of 30th Avenue	14,398
West of 22nd Avenue	10,645
Wisconsin 50 (75th Street)	
East of Interstate 94	5,240
West of 88th Avenue	5,910
West of Wisconsin 31	8,960
East of Wisconsin 31	9,220
West of 43rd Avenue	16,949
West of 39th Avenue	18,406
West of 30th Avenue	11,565
East of 22nd Avenue	10,738
West of Sheridan Road	9,522

Source: November, 1965 Traffic Counts by the State Highway Commission of Wisconsin in cooperation with Bureau of Public Roads, U. S. Department of Commerce.

MILEAGE BY TYPE FACILITY (1)

TYPE FACILITY	EXISTING	PROPOSED ADDITIONAL	PROPOSED TOTAL
Freeways and Expressways (2)	12.3	12.1	24.4
Standard Arterials	107.4	40.1	147.5
All Others	307.9	45.2 (3)	353.1
Total	427.6	97.4	525.0

(1) City Data as of 10/29/65 - Data for Towns as of 1/1/63

(2) Primary Travel Lanes Only (Actual Route Mileage)

(3) Estimate

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Appendix L

DEFINITION OF POLLUTANTS

Following are the definitions of the three board groups of pollutants removed at the water supply protection works:

1. Total Suspended Solids (inorganic or fixed, and volatile, or putrescible) is the matter held in suspension (colloidal), settleable, and floating, all of which create visible objectionable conditions on the lake shores and lake beaches, and allow the formation of putrescible and unsightly sludge banks. These pollutants are partially removed in so-called primary treatment, similar to that in operation at Kenosha since 1940.

2. The dissolved and colloidal organic matter is oxidized through viological processes to further prevent pollution and the formation of objectionable odors, unsightly conditions, etc., and further to supply sufficient dissolved oxygen in the effluent to support fish and aquatic life. This pollutant is generally measured by the biochemical oxygen demand (BOD) of the waste waters, and generally requires secondary treatment or second stage treatment for its removal.

3. The mass of harmful bacterial life present in the waste waters following primary and secondary treatment must be greatly reduced or destroyed, so as to protect the raw water supply, bathing beaches, and recreational environments of the adjacent areas.

The above definitions are quoted from:

Report on WATER SUPPLY PROTECTION WORKS BY
Warren and Van Praag, Inc., Decatur, Illinois
January, 1965, Pages 1 and 2.

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