

SANITARY SEWER SERVICE AREA FOR THE VILLAGE OF UNION GROVE AND ENVIRONS

RACINE COUNTY WISCONSIN

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Special acknowledgement is due SEWRPC Planner Joel E. Dietl for his contribution to this report.

**COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 180**

**SANITARY SEWER SERVICE AREA FOR THE
VILLAGE OF UNION GROVE AND ENVIRONS
RACINE COUNTY, WISCONSIN**

Prepared by the

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August 31, 1990

TO: The Village Board of the Village of Union Grove, the Town Boards of the Towns of Dover and Yorkville, the Wisconsin Department of Health and Social Services, and the Racine County Planning and Development Department

The adopted regional water quality management plan for southeastern Wisconsin identifies in a preliminary manner recommended sanitary sewer service areas tributary to each of the existing and proposed sewage treatment plants within the Region. The plan recommends that these service areas be refined and detailed through the cooperative efforts of the local units and agencies of government concerned so that the service areas properly reflect local, as well as areawide, development objectives.

This refinement and detailing is particularly important in light of provisions in the Wisconsin Administrative Code which require that the Wisconsin Department of Natural Resources with respect to public sanitary sewers, and the Wisconsin Department of Industry, Labor and Human Relations with respect to private sanitary sewers, make a finding that all proposed sanitary sewer extensions be in conformance with the adopted regional water quality management plan and the sanitary sewer service areas identified in that plan. These Departments, in carrying out their responsibilities in this respect, require that the Southeastern Wisconsin Regional Planning Commission, as the designated areawide water quality management planning agency for the Southeastern Wisconsin Region, review and comment on each proposed sewer extension as to its relationship to the approved plan and sewer service area. If such review can be based on a refined service area cooperatively identified by the local units of government concerned, then no conflicts concerning sanitary sewer extensions should arise, and the entire sewerage system and related land use development process can proceed in a smooth and efficient manner.

Acting in response to the recommendations made in the adopted regional water quality management plan, the Village of Union Grove, on December 22, 1989, requested that the Regional Planning Commission assist the Village in refining and detailing the recommended sanitary sewer service area tributary to the Village's wastewater treatment facility. This report documents the results of that refinement process.

The report contains a map showing not only the recommended refined sanitary sewer service area, but also the location and extent of the environmental corridors within that service area. These environmental corridors contain the best and most important elements of the natural resource base within the sewer service area. Their preservation in essentially natural, open uses is important to the maintenance of the overall quality of the environment in the area, while avoiding the creation of serious and costly developmental problems. Accordingly, urban development should not be encouraged to occur within these corridors, a factor which should be taken into consideration in the future extension of sanitary sewer service.

A public hearing was held on June 4, 1990, to discuss the preliminary findings and recommendations of the sewer service area refinement process and to receive the comments and suggestions of the local elected officials concerned and of interested citizens. The recommendations contained in this report reflect the pertinent comments and suggestions made at the hearing.

The sanitary sewer service area herein presented is intended to constitute a refinement of the areawide water quality management plan adopted by the Regional Planning Commission in July 1979. Accordingly, upon adoption of this report by the local units and agencies of government concerned and subsequent adoption by the Regional Planning Commission, the report will be certified to the Wisconsin Department of Natural Resources, the Governor, and the U. S. Environmental Protection Agency as an amendment to the adopted, areawide water quality management plan.

The sanitary sewer service area presented in this report provides a sound guide which can assist the responsible public officials in the making of sewer service-related development decisions in the Village of Union Grove. Accordingly, careful consideration and adoption of this report by all parties concerned is respectfully urged. The Regional Planning Commission stands ready to assist the Village in implementing the recommendations contained in this report.

Respectfully submitted,



Kurt W. Bauer
Executive Director

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TABLE OF CONTENTS

	Page		Page
Chapter I—INTRODUCTION	1	Significance of Sewer	
Background	1	Service Area Delineation	11
Need for Refinement and		Preliminary Sanitary	
Detailing of Local Sanitary		Sewer Service Area	11
Sewer Service Areas	1	Refined Sanitary Sewer	
The Village of Union Grove and		Service Area	13
Environs Sanitary Sewer Service		Water Quality Impacts	15
Area Refinement Process	3	Cost-Effectiveness Analysis	
Chapter II—STUDY AREA		of Sewage Conveyance and	
DESCRIPTION	5	Treatment Alternatives	15
Location	5	Sewage Treatment Plant	
Population	5	Capacity Impact Analysis	16
Environmentally		Public Reaction to the Proposed	
Significant Lands	7	Sanitary Sewer Service Area	16
Chapter III—PROPOSED		Implementing Recommendations	16
SANITARY SEWER		Subsequent Refinements to the	
SERVICE AREA	11	Village of Union Grove and	
		Environs Sewer Service Area	17

LIST OF TABLES

Table		Page
	Chapter II	
1	Study Area Information by Civil Division	6
2	Values Assigned to Natural Resource Base and Resource Base-Related Elements in the Process of Delineating Primary and Secondary Environmental Corridors	8
	Chapter III	
3	Sanitary Sewer Service Area Information for the Village of Union Grove and the Southeastern Wisconsin Center	13

LIST OF MAPS

Map		Page
	Chapter I	
1	Recommended Sanitary Sewer Service Areas in the Region: 2000	2
	Chapter II	
2	Study Area Identified for Purposes of Refining and Detailing the Village of Union Grove and Environs Sanitary Sewer Service Area	6
3	Environmentally Significant Lands in the Union Grove and Environs Study Area	9

Chapter III

4	Sanitary Sewer Service Areas for the Village of Union Grove and the Southern Wisconsin Center Under the SEWRPC High-Growth Decentralized Land Use Plan	12
5	Union Grove and Environs Sanitary Sewer Service Area	14
6	Anticipated Change in the Environmentally Significant Lands in the Union Grove and Environs Sewer Service Area: 1990-2000	14
7	Index of Maps Showing Environmentally Significant Lands and Planned Sanitary Sewer Service Area for the Village of Union Grove and Environs	17
Map 7-1	Environmentally Significant Lands for the Village of Union Grove and Environs U. S. Public Land Survey Section 24 Township 3 North, Range 20 East	18
Map 7-2	Environmentally Significant Lands and Planned Sanitary Sewer Service Area for the Village of Union Grove and Environs U. S. Public Land Survey Sections 19 and 20 Township 3 North, Range 21 East	19
Map 7-3	Environmentally Significant Lands for the Village of Union Grove and Environs U. S. Public Land Survey Section 21 Township 3 North, Range 21 East	20
Map 7-4	Environmentally Significant Lands and Planned Sanitary Sewer Service Area for the Village of Union Grove and Environs U. S. Public Land Survey Sections 25 and 36 Township 3 North, Range 20 East	21
Map 7-5	Environmentally Significant Lands and Planned Sanitary Sewer Service Area for the Village of Union Grove and Environs U. S. Public Land Survey Sections 29, 30, 31, and 32 Township 3 North, Range 21 East	22
Map 7-6	Environmentally Significant Lands and Planned Sanitary Sewer Service Area for the Village of Union Grove and Environs U. S. Public Land Survey Sections 28 and 33 Township 3 North, Range 21 East	23

Chapter I

INTRODUCTION

BACKGROUND

On July 12, 1979, the Southeastern Wisconsin Regional Planning Commission formally adopted an areawide water quality management plan for southeastern Wisconsin. The plan is aimed at achieving clean and wholesome surface waters within the seven-county Region, surface waters that are "fishable and swimmable."¹

The plan has five basic elements: 1) a land use element consisting of recommendations for the location of new urban development in the Region and for the preservation of primary environmental corridors and prime agricultural lands; 2) a point source pollution abatement element, including recommendations concerning the location and extent of sanitary sewer service areas, the location, type, and capacity of, and the level of treatment to be provided at, sewage treatment facilities, the location and configuration of intercommunity trunk sewers, and the abatement of pollution from sewer system overflows and from industrial wastewater discharges; 3) a nonpoint source pollution abatement element, consisting of recommendations for the control of pollutant runoff from rural and urban lands; 4) a sludge management element, consisting of recommendations for the handling and disposal of sludges from sewage treatment facilities; and 5) recommendations for the establishment of continuing water quality monitoring efforts in the Region.

The plan was formally certified over the period July 23 to September 20, 1979, to all of the local units of government in the Region and to the concerned state and federal agencies. The plan was formally endorsed by the Wisconsin Natural Resources Board on July 25, 1979. Such endorsement is particularly important because under state law and administrative rules certain

actions by the Wisconsin Department of Natural Resources (DNR) must be found to be in accordance with the adopted and endorsed plan. These actions include, among others, DNR approval of waste discharge permits, DNR approval of state and federal grants for the construction of wastewater treatment and conveyance facilities, and DNR approval of locally proposed sanitary sewer extensions.

NEED FOR REFINEMENT AND DETAILING OF LOCAL SANITARY SEWER SERVICE AREAS

The adopted regional water quality management plan includes recommended sanitary sewer service areas attendant to each recommended sewage treatment facility (see Map 1). There were in the plan, as initially adopted, a total of 85 such identified sanitary sewer service areas. The initially recommended sanitary sewer service areas were based upon the urban land use configuration identified in the Commission-adopted regional land use plan for the year 2000.² As such, the delineation of the areas was necessarily general, and may not reflect detailed local planning considerations.

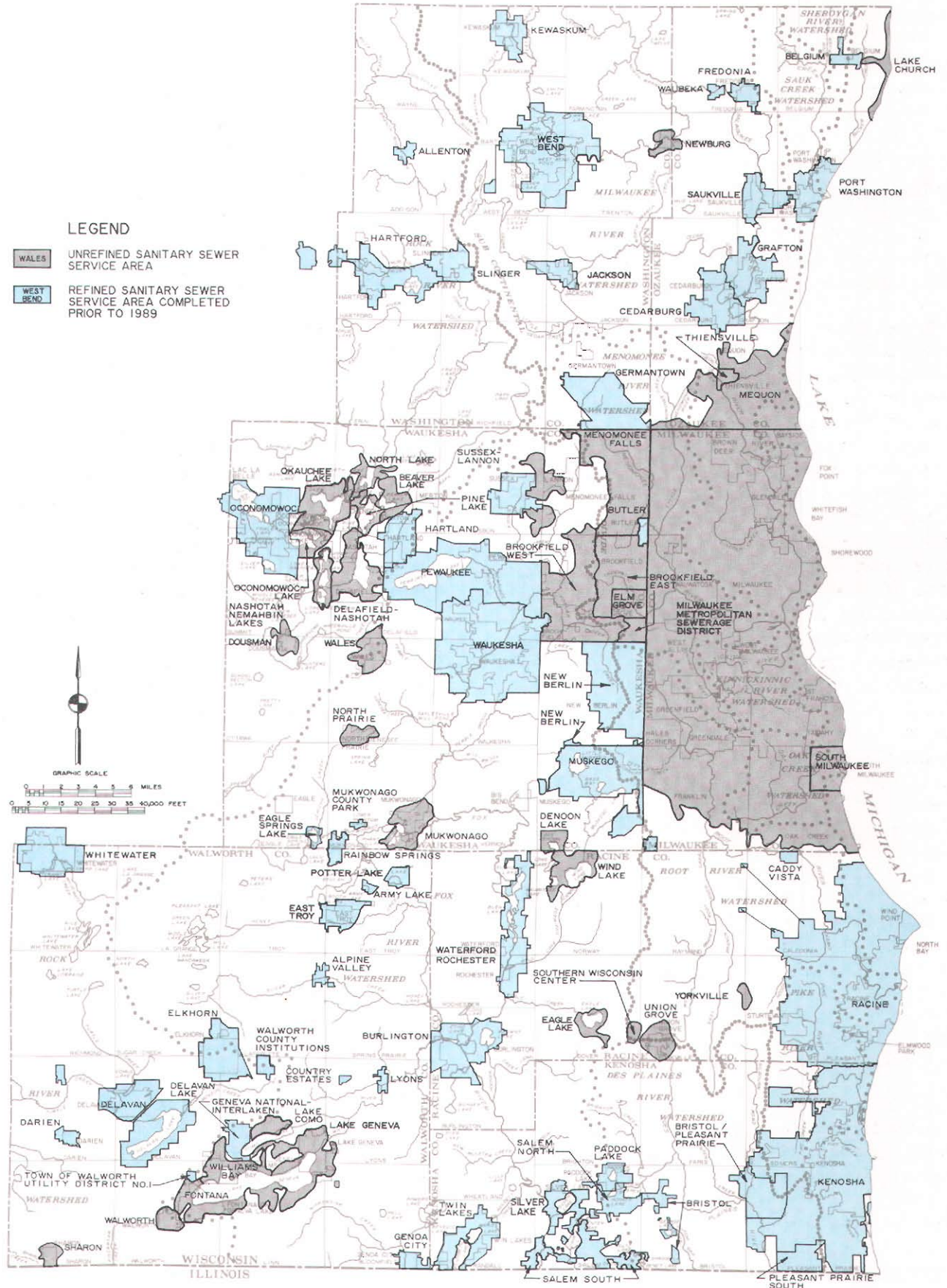
Section NR 110.08(4) and Section ILHR 82.20(4) of the Wisconsin Administrative Code require that the Wisconsin Department of Natural Resources with respect to public sanitary sewers, and the Wisconsin Department of Industry, Labor and Human Relations with respect to private sanitary sewers, make a finding that all proposed sanitary sewer extensions be in conformance with adopted areawide water quality management plans and the sanitary sewer service areas identified in such plans. These Departments, in carrying out their responsibilities in this respect, require that the Southeastern

¹*The adopted areawide water quality management plan is documented in SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings; Volume Two, Alternative Plans; and Volume Three, Recommended Plan.*

²*See SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume One, Inventory Findings; and Volume Two, Alternative and Recommended Plans.*

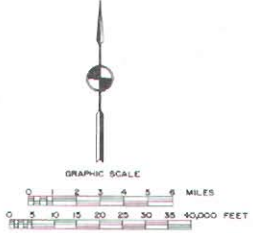
Map 1

RECOMMENDED SANITARY SEWER SERVICE AREAS IN THE REGION: 2000



LEGEND

- WALES** UNREFINED SANITARY SEWER SERVICE AREA
- WEST BEND** REFINED SANITARY SEWER SERVICE AREA COMPLETED PRIOR TO 1989



Source: SEWRPC.

Wisconsin Regional Planning Commission, as the designated areawide water quality management planning agency for the Southeastern Wisconsin Region, review and comment on each proposed sewer extension as to its relationship to the approved plan and sewer service areas. In order to properly reflect local, as well as area-wide, planning concerns in the execution of this review responsibility, the Regional Planning Commission, in adopting the areawide water quality management plan, recommended that steps be taken to refine and detail each of the 85 sanitary sewer service areas delineated in the plan in cooperation with the local units of government concerned. The refinement and detailing process was envisioned to consist of the following seven steps:

1. The preparation of a base map at an appropriate scale for each sanitary sewer service area identified in the areawide water quality management plan.
2. The delineation on that base map of the design year 2010 sanitary sewer service area consistent with the objectives set forth in the adopted regional land use plan.³
3. The conduct of intergovernmental meetings involving the local or areawide unit or units of government operating the sewage treatment facility or facilities concerned, and the other local units of government that are to be provided sanitary sewer service by the sewage treatment facility or facilities concerned. At these meetings, the initial sanitary sewer service area delineation is to be presented and discussed and the positions of each of the units of government concerned solicited.
4. The preparation of modifications to the initially proposed sanitary sewer service area to reflect the agreements reached at

³The sewer service areas in the adopted areawide water quality management plan were based upon the urban land use configurations as set forth in the Commission's year 2000 land use plan. The Commission has since completed a series of alternative year 2010 land use plans, which plans served as a point of departure in the delineation of the sewer service area set forth in this report.

the intergovernmental meetings, meeting to the fullest extent practicable the objectives expressed both in the adopted areawide water quality management and regional land use plans and in any adopted local land use and sanitary sewerage system plans.

5. The holding of a public hearing jointly by the Commission and the local or areawide unit or units or government operating the treatment facility or facilities concerned to obtain public reaction to site-specific sewer service area issues that might be raised by the proposed sewer service area delineation.
6. The preparation of a final sanitary sewer service area map and accompanying report.
7. Adoption of the final sewer service area map by the Commission and certification of the map to the Wisconsin Department of Natural Resources and the U. S. Environmental Protection Agency as an amendment to the adopted, areawide, water quality management plan. Desirably, such adoption by the Commission would follow endorsement of the map by the local or areawide unit or units of government operating the sewage treatment facility or facilities concerned, and by the governing bodies of the local units of government that are to be served by the sewage treatment facility or facilities. While such a consensus by the local governments concerned will always be sought by the Commission, it is recognized that in some cases unanimous support of the refined and detailed sanitary sewer service areas may not be achieved. In those cases, the Commission will have to weigh the positions of the parties concerned and make a final determination concerning the issues involved.

THE VILLAGE OF UNION GROVE AND ENVIRONS SANITARY SEWER SERVICE AREA REFINEMENT PROCESS

By letter dated December 22, 1989, Crispell-Snyder, Inc., consultants to the Village of Union Grove, requested that the Regional Planning Commission provide certain information for use in the preparation of a sewerage facilities plan for the Village. In response to this request, and in light of the fact that a new land use plan had

recently been completed for the Village by the Racine County Planning and Development Department—and was adopted by the Union Grove Village Board on February 29, 1988—the Regional Planning Commission determined that the refinement of the Village of Union Grove and environs sanitary sewer service area would be particularly appropriate at this time. Also considered in this refinement effort is the Southern Wisconsin Center—formerly known as the Center for the Developmentally Disabled—since the regional water quality management plan recommended that the sewage treatment plant serving this facility be abandoned and service to this facility be provided through the Village of Union Grove.

A copy of the draft of this report setting forth the preliminary sanitary sewer service area was provided to the Village of Union Grove, the Towns of Dover and Yorkville, Racine County, the Wisconsin Department of Health and Social Services, and Crispell-Snyder, Inc., for review and comment prior to the public hearing on the plan proposal. A public hearing was held on June 4, 1990. The public reaction to the proposed sanitary sewer service area is summarized later in this report, and a copy of the transcript of the public hearing is on file at the Village of Union Grove and the offices of the Commission. The final, agreed-upon, refined sanitary sewer service area for the Village of Union Grove and environs is described in Chapter III of this report.

Chapter II

STUDY AREA DESCRIPTION

LOCATION

The study area considered in the refinement of the Village of Union Grove and environs sanitary sewer service area is shown on Map 2. The area consists of all the land encompassed within the corporate limits of the Village of Union Grove, as well as certain adjacent portions of the Towns of Dover and Yorkville. As indicated in Table 1, the total study area is 10.5 square miles in extent, of which about 1.0 square mile, or 9 percent, lies within the Village of Union Grove; 3.0 square miles, or 29 percent, lie within the Town of Dover; and 6.5 square miles, or 62 percent, lie within the Town of Yorkville. These areas are based on 1989 civil division boundaries.

POPULATION

As further indicated in Table 1, the estimated resident population of the entire study area in 1985 was 5,300 persons. Of this total, about 3,600 persons, or about 68 percent, resided in the Village of Union Grove; about 1,200 persons, or about 23 percent, resided in the Town of Dover; and the remaining 500 persons, or about 9 percent, resided in the Town of Yorkville. Virtually the entire population of the Village of Union Grove was served by sanitary sewer extended from the Village of Union Grove sewage treatment facility, and about 630 persons in the Town of Dover were served by sanitary sewer extended from the Southern Wisconsin Center sewage treatment facility. The remaining 1,070 persons in the Towns of Dover and Yorkville were served by onsite soil absorption sewage disposal systems or onsite sewage holding tanks.

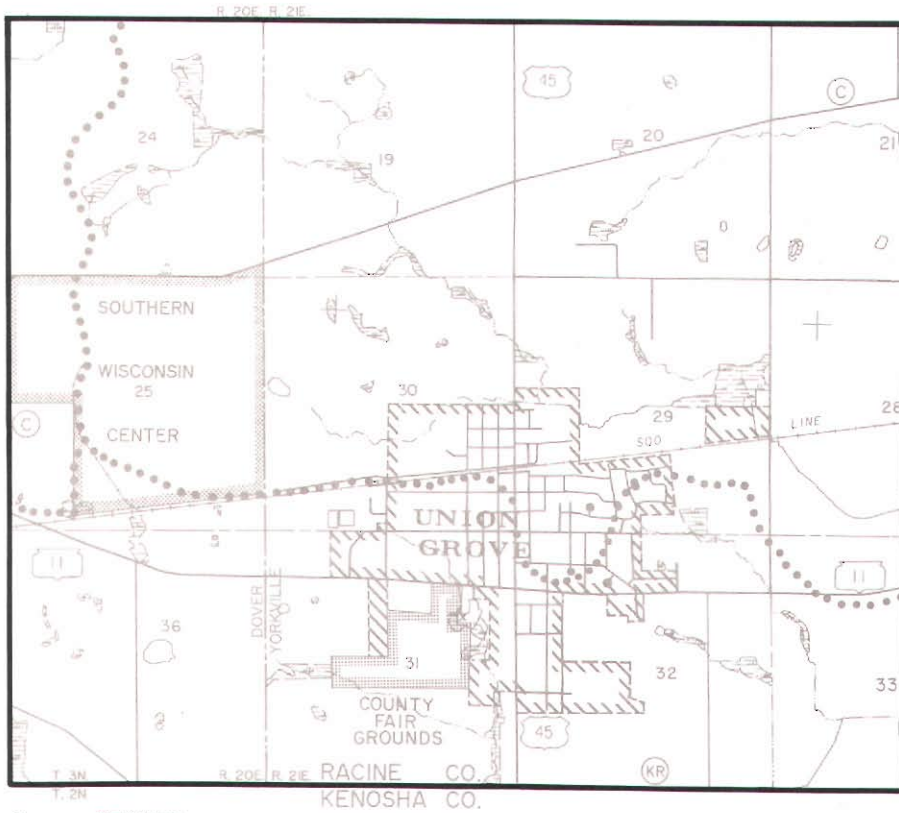
As also indicated in Table 1, it is estimated that 6,210 persons—including 720 persons in the Southern Wisconsin Center—will reside in the identified study area under the Commission's design year 2010 recommended regional land use plan. It should be noted that the forecast of probable future population levels for small geographic areas such as the Village of Union Grove and environs study area is a difficult task, accompanied by uncertainties and subject to

periodic revision as new information becomes available. The practice that has been typically followed in forecasting population levels for physical development planning is the preparation of a single population forecast believed to be the most representative of future conditions. This traditional approach works well in periods of social and economic stability, when historic trends can be anticipated to continue relatively unchanged over the plan design period. During periods of major change in social and economic conditions, however, when there is great uncertainty as to whether historic trends will continue, alternatives to this traditional approach may be required. One such alternative approach proposed in recent years, and utilized to a limited extent at the national level for public and quasi-public planning purposes, is termed "alternative futures." Under this approach, the development, test, and evaluation of alternative plans is based not upon a single, most probable forecast of socioeconomic conditions, but upon a number of alternative futures chosen to represent a range of conditions which may be expected to occur over the plan design period.

Recognizing the increasing uncertainty inherent in estimating future population levels under the rapidly changing socioeconomic conditions existing in the United States, the Regional Planning Commission began to incorporate the alternative futures approach into its planning program in the late 1970s, the first known attempt to apply this approach to areawide and local planning in the United States. In the exploration of alternative futures for the Southeastern Wisconsin Region, an attempt was made first to identify all those external factors which may be expected to directly or indirectly affect development conditions in the Region, together with the likely range of prospects for these factors. Thus, the preparation of the Commission's new year 2010 regional land use plan incorporated a consideration of three alternative scenarios for regional growth and change, involving different assumptions regarding three major external factors—the cost and availability of energy, population lifestyles, and economic conditions. Two of these scenarios—the high-growth and low-growth scenarios—are intended to represent the upper and lower extremes of possible future regional

Map 2

STUDY AREA IDENTIFIED FOR PURPOSES OF REFINING AND DETAILING THE VILLAGE OF UNION GROVE AND ENVIRONS SANITARY SEWER SERVICE AREA



Source: SEWRPC.

Table 1

STUDY AREA INFORMATION BY CIVIL DIVISION

Civil Division	Areal Extent		1985 Population		2010 Population			
	Square Miles	Percent	Estimated	Percent	Recommended Plan	Low-Growth Decentralized Plan	Intermediate Decentralized Plan	High-Growth Decentralized Plan
Town of Dover	3.0	28.6	1,200 ^a	22.7	--	--	--	--
Town of Yorkville	6.5	61.9	500	9.4	--	--	--	--
Village of Union Grove	1.0	9.5	3,600	67.9	--	--	--	--
Study Area	10.5	100.0	5,300	100.0	6,210 ^b	5,460 ^b	6,620 ^b	8,920 ^b

^aThis population level includes an estimated group-quartered population of 630 persons residing at the Southern Wisconsin Center located within Section 25, Township 3 North, Range 20 East, Town of Dover, Racine County.

^bIncludes an estimated group-quartered population level of 720 persons residing at the Southern Wisconsin Center under each of the four land use plans.

Source: Wisconsin Department of Administration and SEWRPC.

growth and change, while the third is intended to represent an intermediate future between the two extremes. A set of population and employment projections were then developed for each of the three scenarios.

The year 2010 land use plan also considered alternative development patterns for accommodating the incremental population and employment levels envisioned under the aforescribed growth scenarios. Two development patterns were considered in the preparation of the alternative land use plans—a centralized development pattern which, like the first and second generation adopted regional land use plans, accommodated increases in population and economic activity by promoting a more compact regional settlement pattern, moderating to the extent practicable the current trend toward diffusion of population, employment, and attendant urban development; and a decentralized development pattern which accommodated the continued diffusion of population and employment levels but in a manner consistent with the protection of the natural resource base of the Region.

Four alternative future land use plans incorporating consideration of the aforementioned growth scenarios and development patterns were thus prepared—an intermediate-growth, centralized land use plan; and three alternative decentralized land use plans based upon the low-, intermediate-, and high-growth scenarios, respectively.

The intermediate-growth, centralized land use plan—the Commission's recommended land use plan—as previously noted, would accommodate a year 2010 population level of 6,210 persons in the Village of Union Grove and environs study area. Under the alternative futures approach utilized by the Commission for its work, however, the population level within the study area could range from a low of 5,500 under the low-growth, decentralized land use plan, to a high of about 8,900 under the high-growth, decentralized land use plan.

ENVIRONMENTALLY SIGNIFICANT LANDS

Environmental corridors are defined as linear areas in the landscape containing concentrations of natural resource and resource-related amenities. These corridors generally lie along the major stream valleys, around major lakes,

and in the Kettle Moraine area of southeastern Wisconsin. Almost all of the remaining high-value wetlands, woodlands, wildlife habitat areas, major bodies of surface water, and delineated floodlands and shorelands are contained within these corridors. In addition, significant groundwater recharge and discharge areas, many of the most important recreational and scenic areas, and the best remaining potential park sites are located within the environmental corridors. Such corridors are, in effect, a composite of the most important individual elements of the natural resource base in southeastern Wisconsin, and have immeasurable environmental, ecological, and recreational value.

The land use element of the adopted regional water quality management plan recommends that lands identified as primary environmental corridors not be developed for intensive urban use. Accordingly, the plan further recommends that sanitary sewers not be extended into such corridors for the purpose of accommodating urban development in the corridors. It was, however, recognized in the plan that it would be necessary in some cases to construct sanitary sewers across and through primary environmental corridors, and that certain land uses requiring sanitary sewer service could be properly located in the corridors, including park and outdoor recreation facilities and certain institutional uses. In some cases, very low-density residential development on five-acre lots, compatible with the preservation of the corridors in essentially natural, open uses, may also be permitted to occupy corridor lands, and it may be desirable to extend sewers into the corridors to serve such uses. Basically, however, the adopted regional land use plan seeks to ensure that the primary environmental corridor lands are not destroyed through conversion to intensive urban uses.

One of the first steps in refining the Village of Union Grove and environs sanitary sewer service area was to map in detail the environmentally significant lands in the study area. Accordingly, Commission inventories were reviewed and updated as necessary with respect to the following elements of the natural resource base: lakes, streams, and associated shorelands and floodlands; wetlands; woodlands; wildlife habitat areas; areas of rugged terrain and high-relief topography; wet, poorly drained, and organic soils; and remnant prairies. In addition,

Table 2

VALUES ASSIGNED TO NATURAL RESOURCE BASE AND RESOURCE BASE-RELATED ELEMENTS IN THE PROCESS OF DELINEATING PRIMARY AND SECONDARY ENVIRONMENTAL CORRIDORS

Resource Base or Related Element	Point Value
Natural Resource Base	
Lake	
Major (50 acres or more)	20
Minor (5-49 acres)	20
Rivers or Streams (perennial)	10
Shoreland	
Lake or Perennial River or Stream	10
Intermittent Stream	5
Floodland (100-year recurrence interval)	3
Wetland	10
Wet, Poorly Drained, or Organic Soil	5
Woodland	10
Wildlife Habitat	
High Value	10
Medium Value	7
Low Value	5
Steep Slope	
20 Percent or More	7
13-19 Percent	5
Prairie	10
Natural Resource Base-Related	
Existing Park or Open Space Site	
Rural Open Space Site	5
Other Park and Open Space Sites	2
Potential Park Site	
High Value	3
Medium Value	2
Low Value	1
Historic Site	
Structure	1
Other Cultural	1
Archaeological	2
Scenic Viewpoint	5
Scientific Area	
State Scientific Area	15
State Significance	15
County Significance	10
Local Significance	5

Source: SEWRPC.

inventories were reviewed and updated as necessary with respect to such natural resource-related features as existing parks, potential park sites, sites of historic and archaeological value, areas possessing scenic vistas or viewpoints, and areas of scientific value.

Each of these natural resource and resource-related elements was mapped on one inch equals 400 feet scale, ratioed and rectified aerial

photographs. A point system for value rating the various elements of the resource base was established (see Table 2). The primary environmental corridors were delineated using this rating system. To qualify for inclusion in a primary environmental corridor, an area must exhibit a point value of 10 or more. In addition, a primary environmental corridor must be at least 400 acres in size, be at least two miles long, and have a minimum width of 200 feet. This environmental corridor refinement process is more fully described in SEWRPC Technical Record, Vol. 4, No. 2, in an article entitled, "Refining the Delineation of Environmental Corridors in Southeastern Wisconsin." The primary environmental corridors as delineated in the Village of Union Grove and environs study area are shown on Map 3.

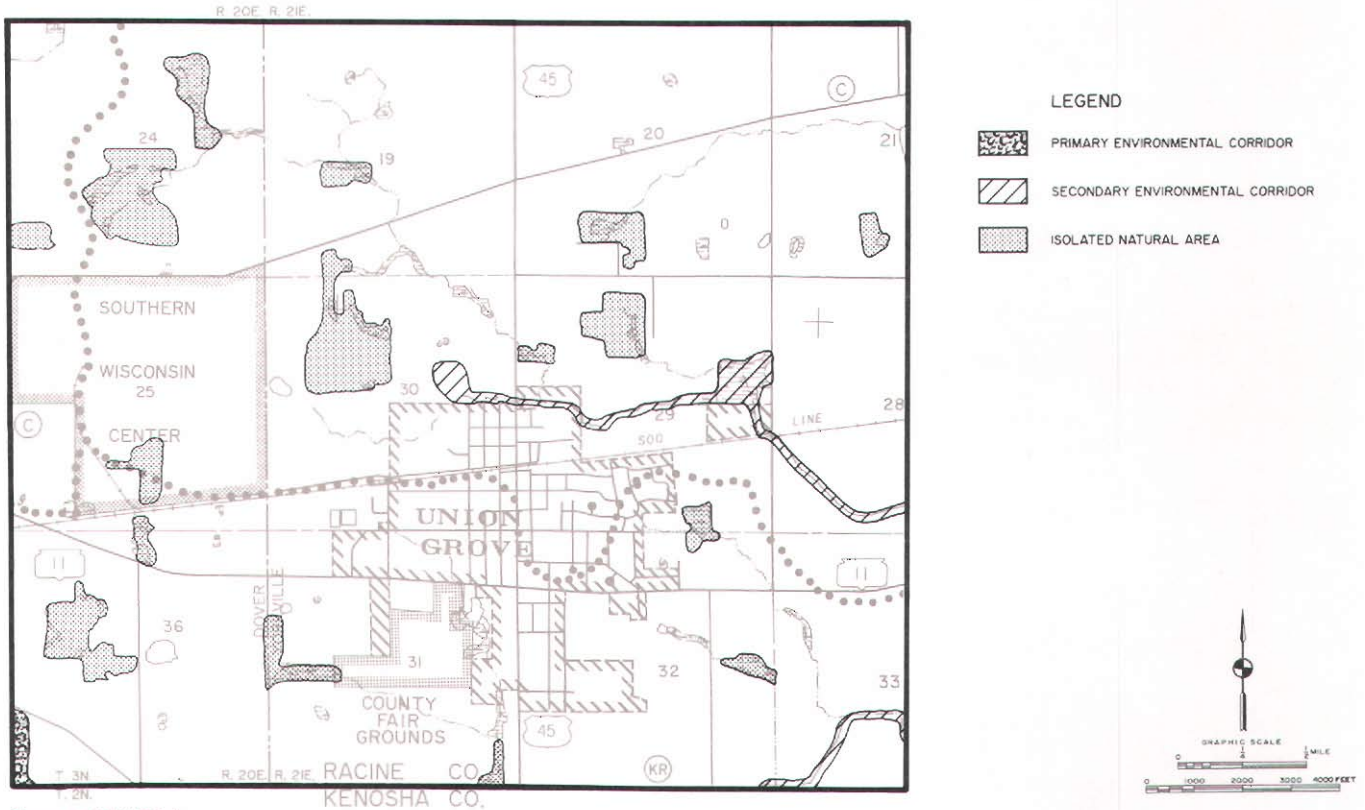
In addition, Map 3 identifies secondary environmental corridors. The secondary environmental corridors, while not as significant as the primary environmental corridors in terms of overall resource values, should be considered for preservation as the process of urban development proceeds, because such corridors often provide economical drainageways, as well as needed "green" space, through developing residential neighborhoods. To qualify for inclusion in a secondary environmental corridor, an area must exhibit a point value of 10 or more, and have a minimum area of 100 acres and a minimum length of one mile.

Also identified on Map 3 are isolated natural areas. Isolated natural areas generally consist of those natural resource base elements that have "inherent natural" value such as wetlands, woodlands, wildlife habitat areas, and surface water areas, but that are separated physically from the primary and secondary environmental corridors by intensive urban or agricultural land uses. Since isolated natural areas may provide the only available wildlife habitat in an area, provide good locations for local parks and nature study areas, and lend aesthetic character and natural diversity to an area, they should also be protected and preserved in a natural state to the extent practicable. An isolated natural area must be at least five acres in size.

Lands encompassed within the primary environmental corridors of the Union Grove and environs study area in 1990 totaled less than 0.1 square mile, or less than 1 percent of the total study area. Lands encompassed within the

Map 3

ENVIRONMENTALLY SIGNIFICANT LANDS IN THE UNION GROVE AND ENVIRONS STUDY AREA



Source: SEWRPC.

secondary environmental corridors also totaled about 0.1 square mile, or about 1 percent of the study area. Lands encompassed within isolated natural areas totaled about 0.5 square mile, or about 5 percent of the study area. Thus, all environmentally significant lands in the Union Grove and environs study area comprise about 0.6 square mile, or 6 percent of the study area.

While the adopted regional water quality management plan places great emphasis upon the protection of the lands identified as primary environmental corridors in essentially natural, open space uses, it recognizes that there may be situations in which the objective of preserving the corridor lands directly conflicts with other legitimate regional and local development objectives. For example, the regional plan recognizes that if a community were to determine the need for a strategic arterial street extension through the primary environmental corridor lands in order to service an important local development project, the street extension may be considered

to be of greater community benefit than the preservation of a small segment of the primary environmental corridor. When such conflicts in legitimate community development objectives occur, it is important that they be resolved sensitively, and that any damage to the natural environment in the corridors be minimized.

It should also be noted that while almost all the delineated floodlands in the Union Grove and environs study area are contained within the environmental corridors, there are small areas of the floodlands utilized for agricultural or other open space uses located outside such corridors. The Regional Planning Commission recognizes that such floodlands are generally unsuitable for intensive urban development owing to poor soil conditions and periodic flood inundation. The Commission thus recommends that as development of lands located within urban areas and adjacent to these floodland areas occurs, such floodland areas be preserved in essentially natural, open space uses.

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Chapter III

PROPOSED SANITARY SEWER SERVICE AREA

SIGNIFICANCE OF SANITARY SEWER SERVICE AREA DELINEATION

As noted earlier in this report, recent changes in the Wisconsin Department of Natural Resources (DNR) and Wisconsin Department of Industry, Labor and Human Relations (DILHR) rules governing the extension of sanitary sewers have made the delineation of local sanitary sewer service areas an important process for local units of government and private land developers. Prior to the recent rule changes, DNR and DILHR review and approval of locally proposed sanitary sewer extensions was confined primarily to engineering considerations, and was intended to ensure that the sewers were properly sized and constructed. The recent rule changes significantly expanded the scope of the state review process to include water quality-oriented land use planning considerations. Before the two state agencies concerned can approve a locally proposed sanitary sewer extension, they must make a finding that the lands to be served by the proposed extension lie within an approved sanitary sewer service area. Such areas are identified in the Commission's adopted, area-wide, water quality management plan and any subsequent amendments thereto. If a locally proposed sanitary sewer extension is designed to serve areas not recommended for sewer service in an areawide water quality management plan, the state agencies concerned must deny approval of the extension. Consequently, it is important that an intergovernmental consensus be reached in the delineation of proposed sanitary sewer service areas.

PRELIMINARY SANITARY SEWER SERVICE AREA

A number of important factors were taken into account in the delineation of Union Grove and environs sanitary sewer service area. These factors also comprised an important consideration in the development of the recommended regional land use plan, and included, among others, the location, type, and extent of existing locally planned urban land use development; the location of areas where onsite soil absorption sewage disposal systems were known to be

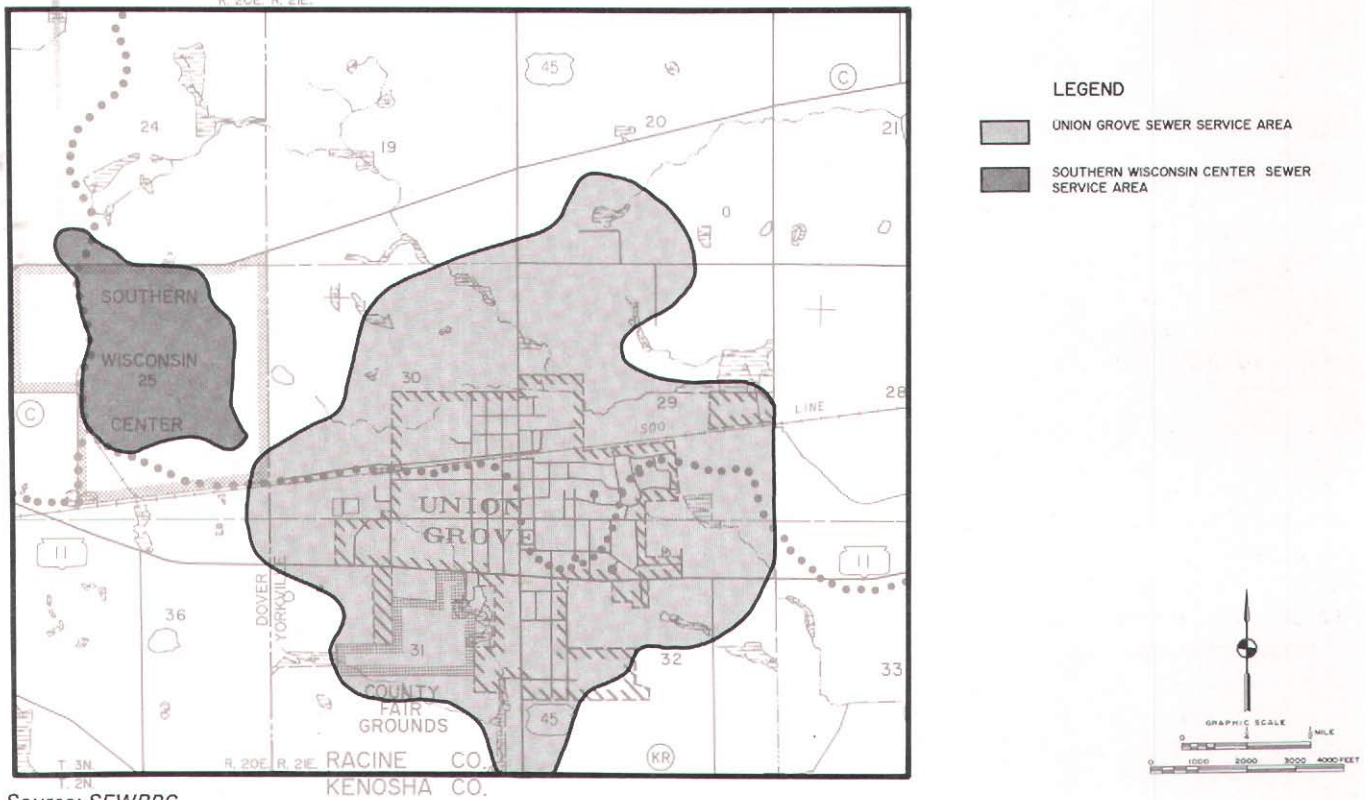
failing; the location and extent of gravity drainage areas tributary to major sewerage system pumping stations, and to sewage treatment facilities; the location and capacity of existing and planned trunk sewers; the location of existing property ownership boundaries; and certain pertinent aspects of the natural resource base, including the location and extent of soils suitable for urban development, the location and extent of primary and secondary environmental corridors, and the location and extent of prime agricultural lands.

As previously noted, the Commission, as part of its regional planning program—including the delineation of sanitary sewer service areas, and the subsequent refinements thereof—utilizes the “alternative futures” concept to deal with the uncertainties regarding factors affecting future growth and development within the Region. The sewer service area refinement effort for the Village of Union Grove and environs thus incorporates a range of population levels with the most reasonable lower end of the population range being based upon the Commission's intermediate-growth centralized land use plan, and most reasonable upper end of the population range being based upon the Commission's high-growth decentralized land use plan. Indeed, local sanitary sewer service area and sewerage facility planning work should consider a range of population levels in the evaluation of alternative facility plans in order to identify alternatives which perform well under a reasonable range of possible future conditions. Construction of certain facilities and mechanical and electrical components—such as pumps, compressors, and chemical feed equipment—of sewage treatment facilities, typically are based upon relatively short-term population and loading forecasts. These facilities are often replaced or rebuilt at intervals of 10 to 15 years and are amendable to expansion in a staged manner. Accordingly, capital investment in such facilities are often limited to those relatively certain to be needed over a 15- to 20-year design period. The use of the intermediate population forecast, thus, may be most appropriate for use in the design of such facilities.

Consideration of a high-growth population forecast, however, may be appropriate in deline-

Map 4

SANITARY SEWER SERVICE AREAS FOR THE VILLAGE OF UNION GROVE AND THE SOUTHERN WISCONSIN CENTER UNDER THE SEWRPC HIGH-GROWTH DECENTRALIZED LAND USE PLAN



Source: SEWRPC.

ating a service area and in the design of certain components of the sewerage system that have a longer life, including gravity flow conveyance facilities and certain treatment plant components such as hydraulic conduits and tanks. With respect to the size of the service area, the high-growth population forecast may be the most logical to use since the Commission forecasting methodology analyses indicate that such a level is indeed potentially achievable within the Southeastern Wisconsin Region. A sanitary sewer service area size based upon that level may also be desirable in order to provide flexibility to communities in determining the spatial distribution of anticipated new urban development and to facilitate the operation of the urban land market. With respect to the design of certain components of the sewerage system, the use of the high-growth population forecast may also be desirable where the physical life of the facilities is substantially greater than 20 years. Thus, facility construction based upon the high-growth forecast and loading levels may be warranted where the physical life of the facilities extends beyond the 20-year planning period.

The preliminary sanitary sewer service areas for the Village of Union Grove and the Southern Wisconsin Center sewage treatment facilities are shown on Map 4. The sewer service areas delineated on Map 4 are based upon the urban land use configuration identified in the Commission's year 2010 high-growth decentralized land use plan, and as such, serve as an update to the year 2000 sewer service area delineations identified in the regional water quality management plan. As indicated in Table 3, these areas together total about 3.4 square miles, or about 32 percent of the total study area of 10.5 square miles. As also indicated in Table 3, it is envisioned that these areas will accommodate a resident population of about 8,120 persons. Population levels within these areas, however, would approximate about 5,490 persons under the intermediate-growth, centralized land use plan, and could be as low as 4,820 persons under the low-growth, decentralized land use plan.

It should also be noted that a memorandum completed by the Commission staff entitled "Response to Request by the Village of Union

Table 3

SANITARY SEWER SERVICE AREA INFORMATION FOR THE VILLAGE OF UNION GROVE AND THE SOUTHERN WISCONSIN CENTER

Sanitary Sewer Service Area	Areal Extent (square miles)	1985 Population		2010 Population	
		Estimated	Percent	Estimated	Percent
Village of Union Grove	3.0 ^a	3,800	85.8	7,400 ^a	91.0
Southern Wisconsin Center	0.4	630	14.2	720 ^b	9.0
Total	3.4	4,430	100.0	8,120	100.0

^aBased upon the Commission's 2010 high-growth, decentralized land use plan.

^bAssumes a group-quartered population level of 720 persons residing at the Southern Wisconsin Center as set forth in Facility Plan for the Village of Union Grove, Racine County, Wisconsin, prepared by Crispell-Snyder, Inc.

Source: SEWRPC.

Grove and the Wisconsin Department of Health and Social Services to Reevaluate the Recommendation in the Regional Water Quality Management Plan to Abandon the Southern Wisconsin Center Sewage Treatment Facility," dated February 2, 1988, and revised April 4, 1988, reaffirmed the recommendations of SEWRPC Planning Report No. 30—namely, the abandonment of the private sewage treatment facility serving the Southern Wisconsin Center and connection of the Center to the sewerage system owned and operated by the Village of Union Grove. Furthermore, the recently completed facility plan for the Village of Union Grove entitled, Facility Plan for the Village of Union Grove, Racine County, Wisconsin, prepared by Crispell-Snyder, Inc. is also consistent with this recommendation. The population levels envisioned within the Union Grove area under the facility plan—6,370 persons—lies within the alternative population levels considered by this Commission in the preparation of the sewer service area refinement.

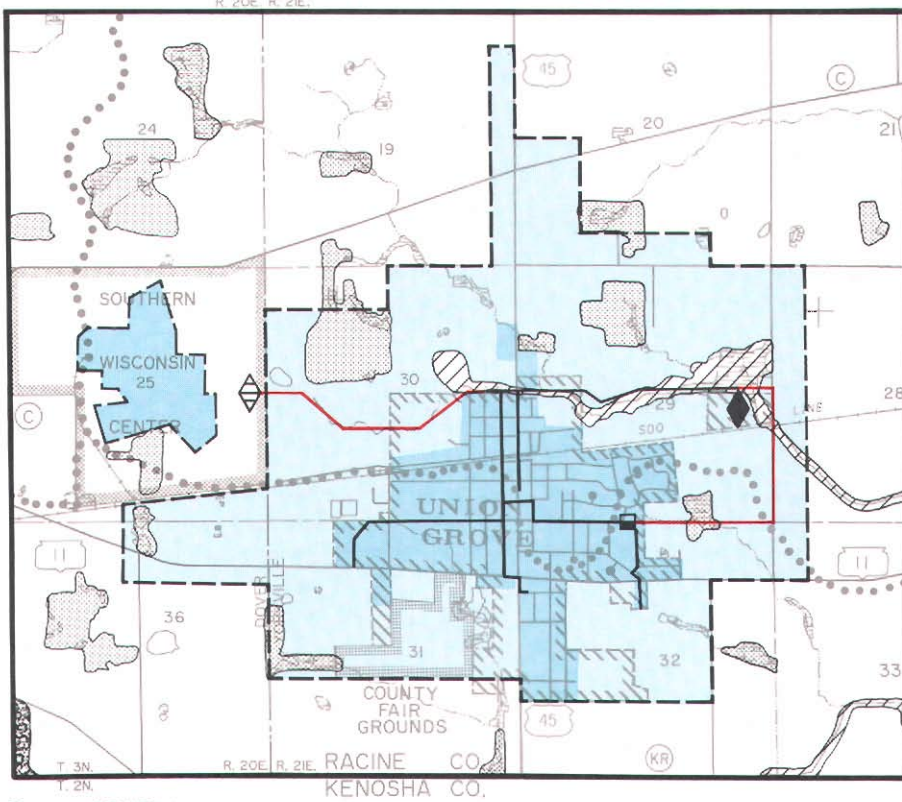
REFINED SANITARY SEWER SERVICE AREA

The refined year 2010 sanitary sewer service area for the Village of Union Grove and environs anticipated to be tributary to the Village's sewage treatment facility, as submitted to public hearing, is shown on Map 5, together with existing trunk sewers.

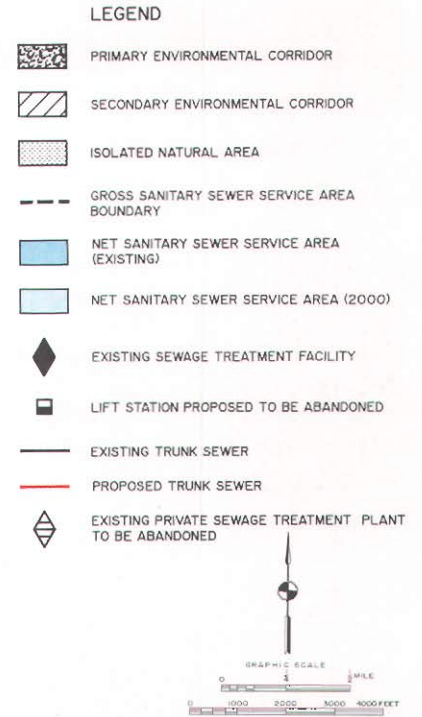
The combined gross Village of Union Grove sanitary sewer service area totals about 3.9 square miles, or about 37 percent of the total study area of 10.5 square miles. This gross sewer service area includes 0.1 square mile of secondary environmental corridors, and 0.2 square mile of isolated natural areas. There are no primary environmental corridors located within the refined sewer service area. A total of 0.3 square mile, or about 3 percent of the combined sewer service area, however, would be encompassed in environmentally sensitive areas, consisting of some secondary environmental corridor and isolated natural area lands. It should be noted that the environmentally significant lands indicated on Map 5 total approximately 12 acres more than the environmentally significant lands indicated on Map 3. As indicated on Map 6, these 12 acres are located in four areas within the 100-year recurrence interval floodplain, adjacent to the West Branch of the Root River, and are proposed to remain undeveloped and be converted to secondary environmental corridor over the plan design period. The refined year 2010 Village of Union Grove and environs sanitary sewer service area tributary to the Village's sewage treatment facility would, under the Commission high-growth, decentralized land use plan, accommodate a plan year 2010 population of about 8,120 persons, including a group-quartered population of about 720 persons at the Southern Wisconsin Center and about 7,400 persons in the Union Grove area. The incremental population and housing unit levels envi-

Map 5

UNION GROVE AND ENVIRONS SANITARY SEWER SERVICE AREA

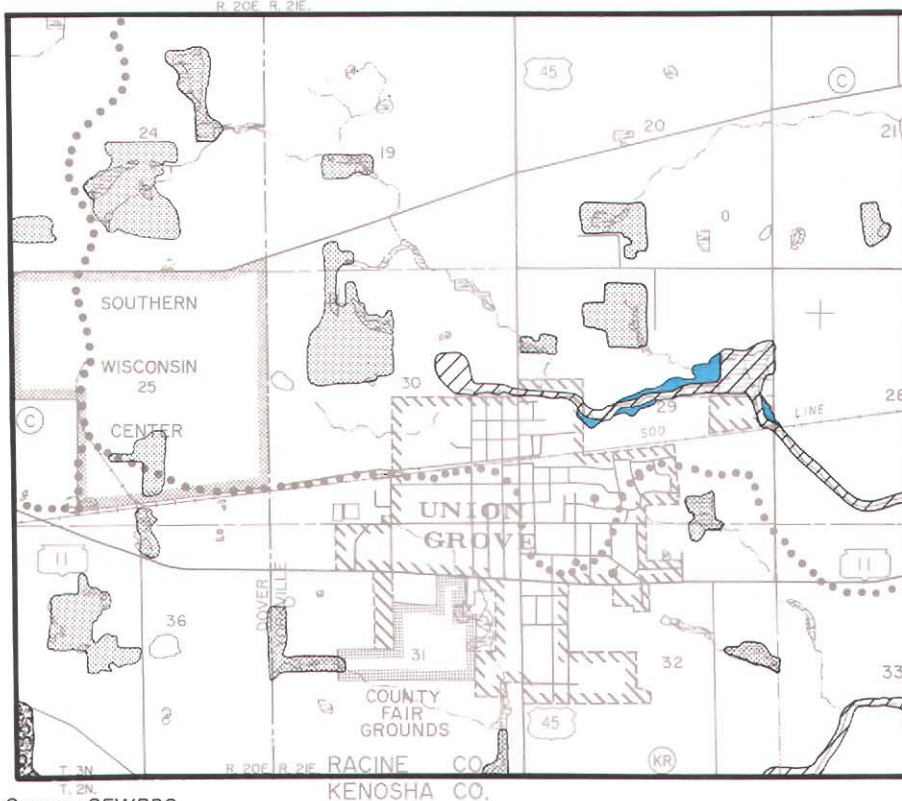


Source: SEWRPC.

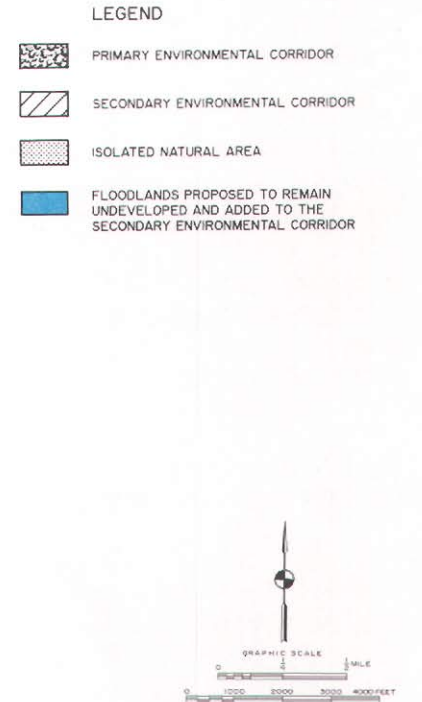


Map 6

ANTICIPATED CHANGE IN THE ENVIRONMENTALLY SIGNIFICANT LANDS IN THE UNION GROVE AND ENVIRONS SEWER SERVICE AREA: 1990-2000



Source: SEWRPC.



oned in the Union Grove area would be accommodated at a density of about 2.3 dwelling units per net residential acre.¹ This density lies within the recommended density range for the Village of Union Grove as identified in the Commission-adopted regional land use plan for the year 2010.

WATER QUALITY IMPACTS

Under this recommended sanitary sewer service area plan, it is envisioned that all urban lands located within the planned urban service area

¹*Net residential density for the incremental dwelling units is determined by dividing the total number of incremental dwelling units anticipated in the Village of Union Grove sewer service area between 1985 and the design year by the incremental net residential land area anticipated in that area. The total number of incremental dwelling units anticipated in this sewer service area—1,394—was determined by dividing the anticipated year 2010 household population in the sewer sewer area—7,400 persons—by the anticipated average household size—2.8 persons—subtracting the total number of dwelling units in the sewer service area in 1985—1,290 units—and then adding 3 percent for a vacancy factor.*

Incremental net residential land anticipated in the sewer service area was determined by first identifying all net developable land within the service area. Net developable land—1,291 acres—equals gross developable land—1,384 acres—that is, all undeveloped land within the proposed sewer service area except environmental corridors, isolated natural areas, floodplains, and areas covered by soils poorly suited for urban development minus any lands committed to noncommunity—county or regional level—land uses which, within the Village of Union Grove sewer service area, encompass 93 acres. Incremental net residential land—597 acres—equals net developable land—1,291 acres—minus lands allocated to other urban uses—40 percent, or 516 acres—then minus lands allocated to local streets—23 percent, or 178 acres.

The total number of incremental dwelling units anticipated in the sewer service area in the design year—1,394—divided by the incremental net residential land area—597 acres—results in an incremental net residential density of 2.3 dwelling units per acre.

would receive sanitary sewer service. Since there are no primary environmental corridor lands in the refined Village of Union Grove and environs sanitary sewer service area, there should be no significant adverse water quality impacts attributable to the development of the planned sanitary sewer service area—providing that appropriate soil erosion control practices are followed in the event of development of secondary environmental corridor lands or isolated natural areas located within the sewer service area.²

COST-EFFECTIVENESS ANALYSIS OF SEWAGE CONVEYANCE AND TREATMENT ALTERNATIVES

A cost-effectiveness analysis of alternative means of providing for the treatment of sewage from the planned Village of Union Grove and Southern Wisconsin Center service areas was conducted by the Regional Planning Commission and is documented in a Commission staff memorandum entitled "Response to Request by the Village of Union Grove and the Wisconsin Department of Health and Social Services to Reevaluate the Recommendation in the Regional Water Quality Management Plan to Abandon the Southern Wisconsin Center Sewage Treatment Facility," dated February 2, 1988, and revised April 4, 1988. The conclusions reached in this staff memorandum reaffirm the recommendation contained in the adopted regional water quality management plan—namely, that the most cost-effective means of providing treatment of the wastes generated by the Southern Wisconsin Center would be through abandonment of the sewage treatment facility serving the Southern Wisconsin Center and connection of the Center to the sewerage system owned and operated by the Village of Union Grove. Additional information concerning this conclusion can be found in the aforementioned staff memorandum and in a sewerage facilities plan for the Village currently under preparation by the firm of Crispell-Snyder, Inc.

²*The Wisconsin Department of Natural Resources, in conjunction with the League of Wisconsin Municipalities, published a model ordinance which local units of government are encouraged to adopt to control construction site erosion. The ordinance is documented in "Model Ordinance," The Municipality, Volume 82, No. 1, January 1987.*

SEWAGE TREATMENT PLANT CAPACITY IMPACT ANALYSIS

A sewage treatment plant capacity analysis for the Village of Union Grove and the Southern Wisconsin Center sewerage systems was also included in the above-mentioned staff memorandum. The memorandum again reaffirmed the recommendation of the adopted regional water quality management plan. In this case, it was concluded that following needed plant upgrading and expansion, the Village of Union Grove sewage treatment facility would have sufficient capacity to treat the Southern Wisconsin Center flows and sufficient reserve capacity for anticipated growth and development in the service area. Additional information concerning this conclusion can also be found in the staff memorandum and in the sewerage facility plan for the Village being prepared by Crispell-Snyder, Inc.

PUBLIC REACTION TO THE PROPOSED SANITARY SEWER SERVICE AREA

A public hearing was held on June 4, 1990, for the purpose of receiving comments on the refined sanitary sewer service areas as shown on Map 5. This hearing was sponsored by the Village of Union Grove and the Regional Planning Commission. A copy of the transcript of the public hearing is on file at the Village of Union Grove and the offices of the Commission.

A brief summary of the sewer service area refinement report for the Village of Union Grove was presented prior to receiving public comment. The rationale for refining and detailing the sanitary sewer service area tributary to the sewage treatment plant operated by the Village of Union Grove was discussed, as was the importance of the final delineation of the service area. In addition, the significance of environmentally sensitive lands within the Union Grove study area was discussed. Comments on the report and accompanying maps were then solicited.

A review of the hearing record indicates that no substantive concerns were raised at the hearing. Accordingly, no changes were made to the Village of Union Grove sewer service area plan as presented at the public hearing and as reflected on Map 5.

Detailed delineations of the final Village of Union Grove and environs sanitary sewer service area and environmentally significant lands within that area are shown on a series of aerial photographs reproduced as Map 7, begin-

ning on page 18 and continuing through page 23 of this report.

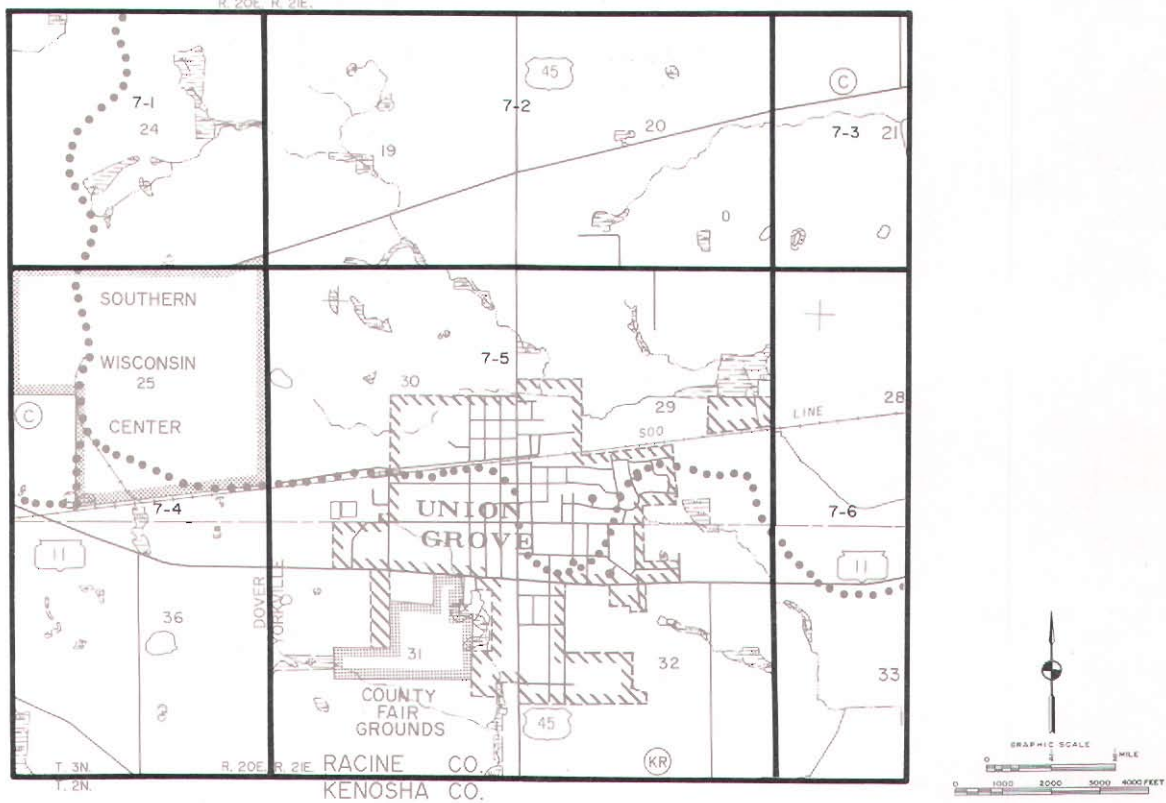
IMPLEMENTING RECOMMENDATIONS

It is recommended that the following steps be taken to implement the sanitary sewer service area proposals contained in this report:

1. Formal adoption or endorsement of SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000, and this SEWRPC Community Assistance Planning Report by the Wisconsin Department of Health and Social Services as the operator of the sewage treatment facility currently serving the Southern Wisconsin Center planned to be abandoned; by the Village Board of the Village of Union Grove as the operator of the sewage treatment facility; by the Town Boards of the Towns of Dover and Yorkville as having lands affected by the planned sanitary sewer service area; and by the Racine County Planning and Development Department as the county planning agency having joint responsibility with the Towns in planning and zoning and otherwise regulating the development of lands in the study area.
2. Formal adoption of this SEWRPC Community Assistance Planning Report by the Regional Planning Commission as an amendment to the regional water quality management plan set forth in SEWRPC Planning Report No. 30, with certification of this report as a plan amendment to all parties concerned, including the Wisconsin Natural Resources Board and the U. S. Environmental Protection Agency.
3. Review by all of the local units of government concerned of their zoning, land subdivision control, and related ordinances to ensure that the policies expressed in such ordinances reflect the urban development recommendations inherent in the final delineated Village of Union Grove and environs sanitary sewer service area as shown on Maps 5 and 7. In particular, steps should be taken to ensure that those lands identified as being environmentally significant in this report are properly zoned to reflect a policy of retaining such lands, insofar as possible, in essentially natural, open uses.

Map 7

INDEX OF MAPS SHOWING ENVIRONMENTALLY SIGNIFICANT LANDS AND PLANNED SANITARY SEWER SERVICE AREA FOR THE VILLAGE OF UNION GROVE AND ENVIRONS



Source: SEWRPC.

4. Review by the Village of Union Grove of utility extension policies to ensure that such policies are consistent with the urban land development recommendations inherent in the delineation of the planned sanitary sewer service area.

SUBSEQUENT REFINEMENTS TO THE VILLAGE OF UNION GROVE AND ENVIRONS SEWER SERVICE AREA

This report presents a refined sewer service area for the Village of Union Grove and environs. The refined sewer service area was delineated cooperatively by the units and agencies of government concerned, and was subjected to review at a public hearing. It is envisioned that the delineated sewer service area will accommodate all new urban development anticipated in the Union Grove area to the year 2010. Like other long-range plans, however, this sewer service area plan should be periodically reviewed—every five years—to assure that it continues to properly reflect the urban development objectives of the communities involved, especially as such objectives may relate to the amount and spatial distribution of new urban

development requiring sewer service. Should it be determined by the Village of Union Grove, as the operators of the sewage treatment facility involved, that amendments to the sewer service area plan as presented herein are necessary, the Village should ask the Southeastern Wisconsin Regional Planning Commission for assistance in undertaking the technical work required to properly amend the plan. Any such plan revision should be carried out in a manner similar to that utilized in the refinement effort described in this report. While plan amendment may be expedited because study area base maps have been prepared and certain inventories completed as part of the sewer service area planning documented herein, such amendment should be subject to the same analyses and interagency review, and should include a public hearing to obtain the comments and suggestions of those citizens and landowners most affected by the proposed changes to the sewer service area boundary. Upon agreement on a revised sewer service area, the new plan map should be endorsed by the Village Board of the Village of Union Grove and by the Southeastern Wisconsin Regional Planning Commission prior to certification to the Wisconsin Department of Natural Resources and the U. S. Environmental Protection Agency.

Map 7-1

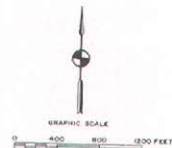
ENVIRONMENTALLY SIGNIFICANT LANDS FOR
THE VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Section 24
Township 3 North, Range 20 East



LEGEND

 ISOLATED NATURAL AREA



Source: SEWRPC.

Map 7-2

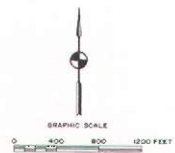
ENVIRONMENTALLY SIGNIFICANT LANDS AND
PLANNED SANITARY SEWER SERVICE AREA FOR THE
VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Sections 19 and 20
Township 3 North, Range 21 East



LEGEND

-  ISOLATED NATURAL AREA
-  PLANNED SANITARY SEWER SERVICE AREA
-  GROSS SANITARY SEWER SERVICE AREA BOUNDARY



Source: SEWRPC.

Map 7-3

ENVIRONMENTALLY SIGNIFICANT LANDS FOR
THE VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Section 21
Township 3 North, Range 21 East



LEGEND

 ISOLATED NATURAL AREA

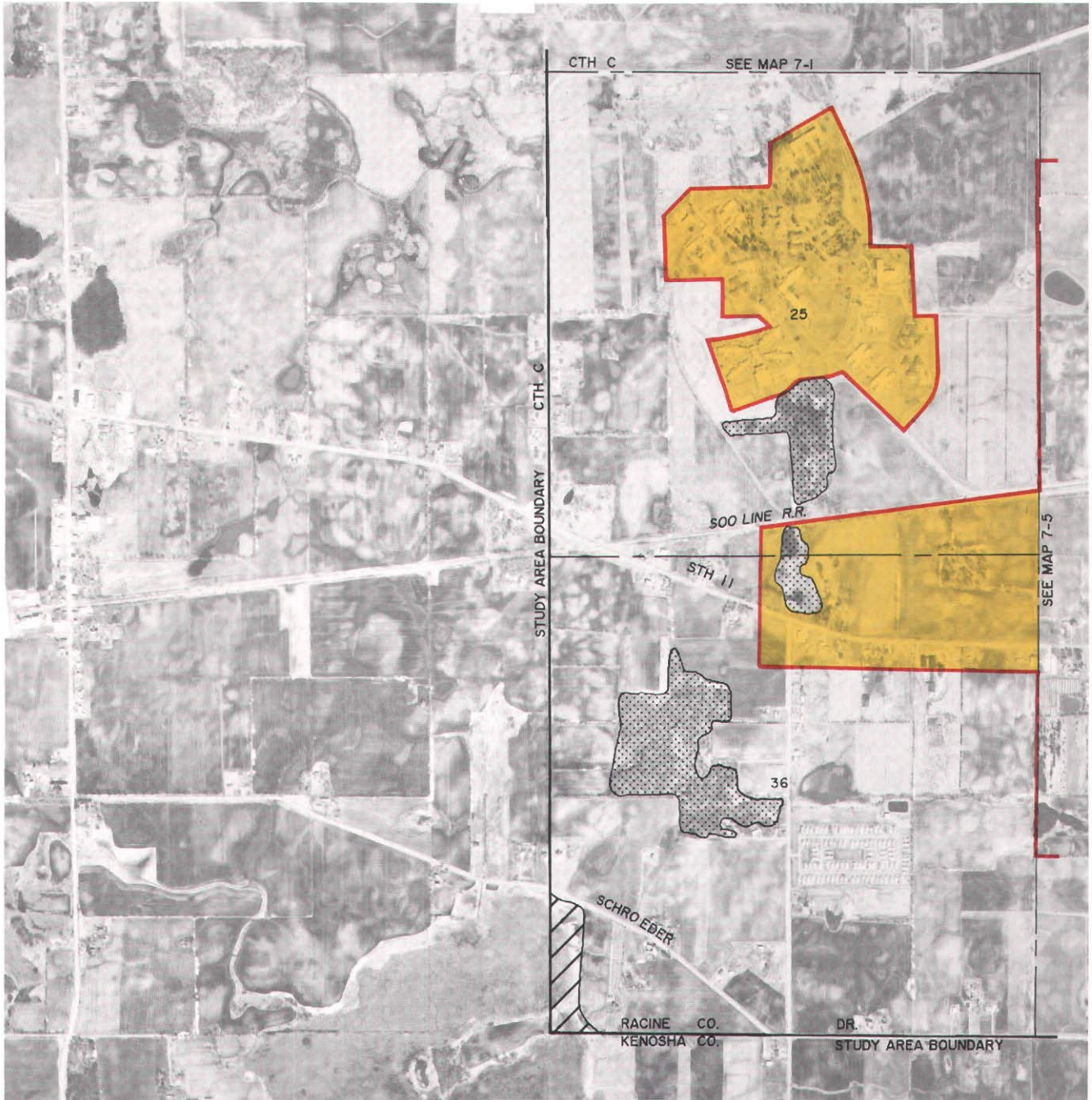


Source: SEWRPC.



Map 7-4

ENVIRONMENTALLY SIGNIFICANT LANDS AND
PLANNED SANITARY SEWER SERVICE AREA FOR THE
VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Sections 25 and 36
Township 3 North, Range 20 East



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA
-  PLANNED SANITARY SEWER SERVICE AREA
-  GROSS SANITARY SEWER SERVICE AREA BOUNDARY

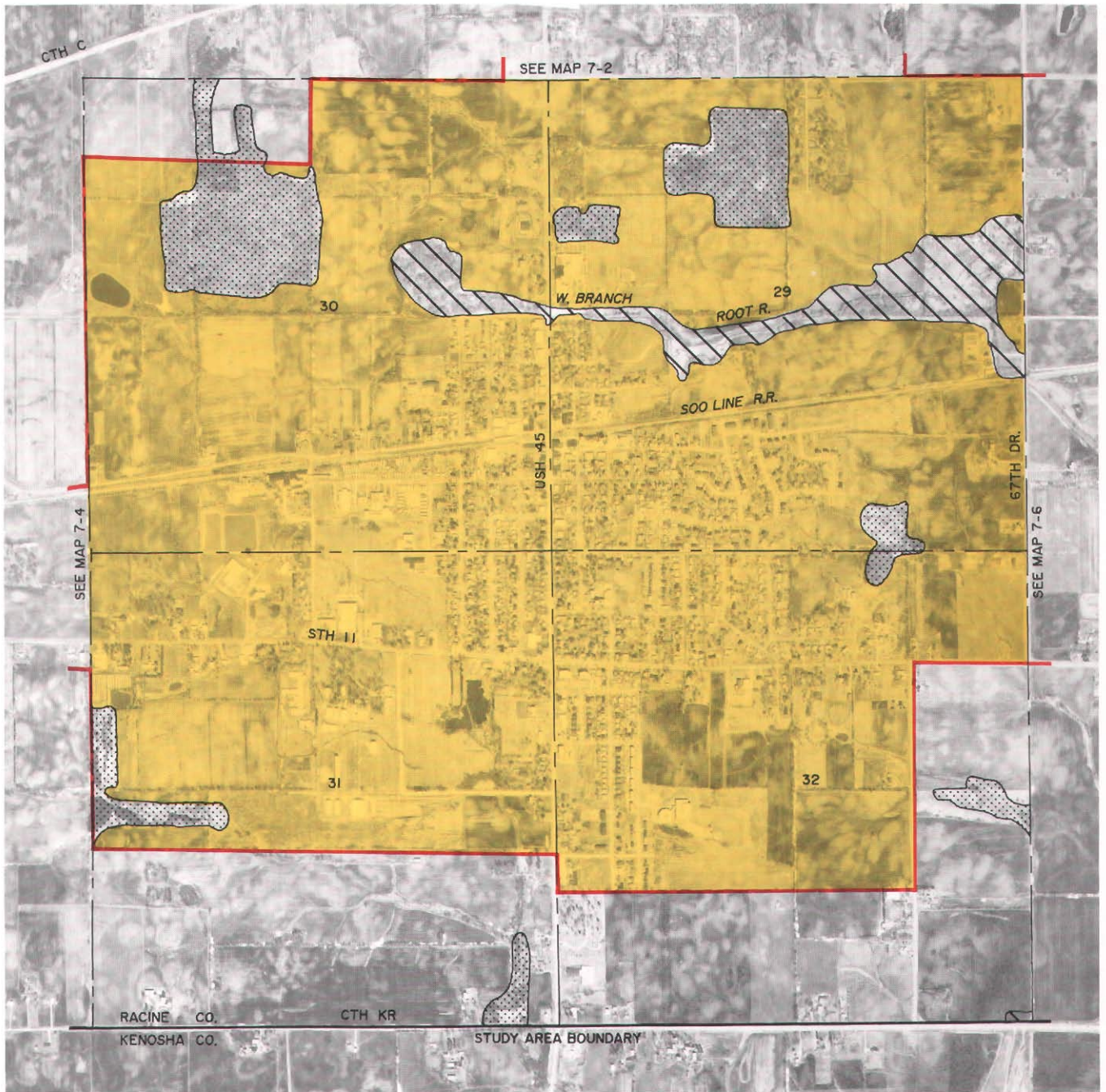
Source: SEWRPC.



Map 7-5

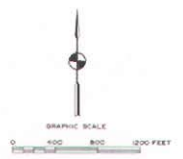
ENVIRONMENTALLY SIGNIFICANT LANDS AND
PLANNED SANITARY SEWER SERVICE AREA FOR THE
VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Sections 29, 30, 31, and 32
Township 3 North, Range 21 East



LEGEND

-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA
-  PLANNED SANITARY SEWER SERVICE AREA
-  GROSS SANITARY SEWER SERVICE AREA BOUNDARY



Source: SEWRPC.

Map 7-6

ENVIRONMENTALLY SIGNIFICANT LANDS AND
PLANNED SANITARY SEWER SERVICE AREA FOR THE
VILLAGE OF UNION GROVE AND ENVIRONS

U. S. Public Land Survey Sections 28 and 33
Township 3 North, Range 21 East



LEGEND

-  SECONDARY ENVIRONMENTAL CORRIDOR
-  PLANNED SANITARY SEWER SERVICE AREA
-  GROSS SANITARY SEWER SERVICE AREA BOUNDARY



Source: SEWRPC.