

# SANITARY SEWER SERVICE AREA

## VILLAGE OF TWIN LAKES KENOSHA COUNTY WISCONSIN

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Special acknowledgement is due SEWRPC planner Dennis K. Lefevre for his contribution to this report.

COMMUNITY ASSISTANCE PLANNING REPORT  
NUMBER 149

SANITARY SEWER SERVICE AREA FOR  
THE VILLAGE OF TWIN LAKES,  
KENOSHA COUNTY, WISCONSIN

Prepared by the

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

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May 1987

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Outside Region \$5.00

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# SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

916 N. EAST AVENUE

• P.O. BOX 1607

• WAUKESHA, WISCONSIN 53187-1607

• TELEPHONE (414) 547-6721

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May 1, 1987

TO: The Village Board of the Village of Twin Lakes, the Town Board of the Town of Randall, and the Kenosha County Land Use Committee.

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 Twin Lakes on March 18, 1986, 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 March 16, 1987, 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, this 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 Twin Lakes. 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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## 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."<sup>1</sup>

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

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<sup>1</sup>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.

facility (see Map 1). There were a total of 85 such identified sanitary sewer service areas in the plan as initially adopted, as shown on Map 1. 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.<sup>2</sup> 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 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 areawide, 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 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:

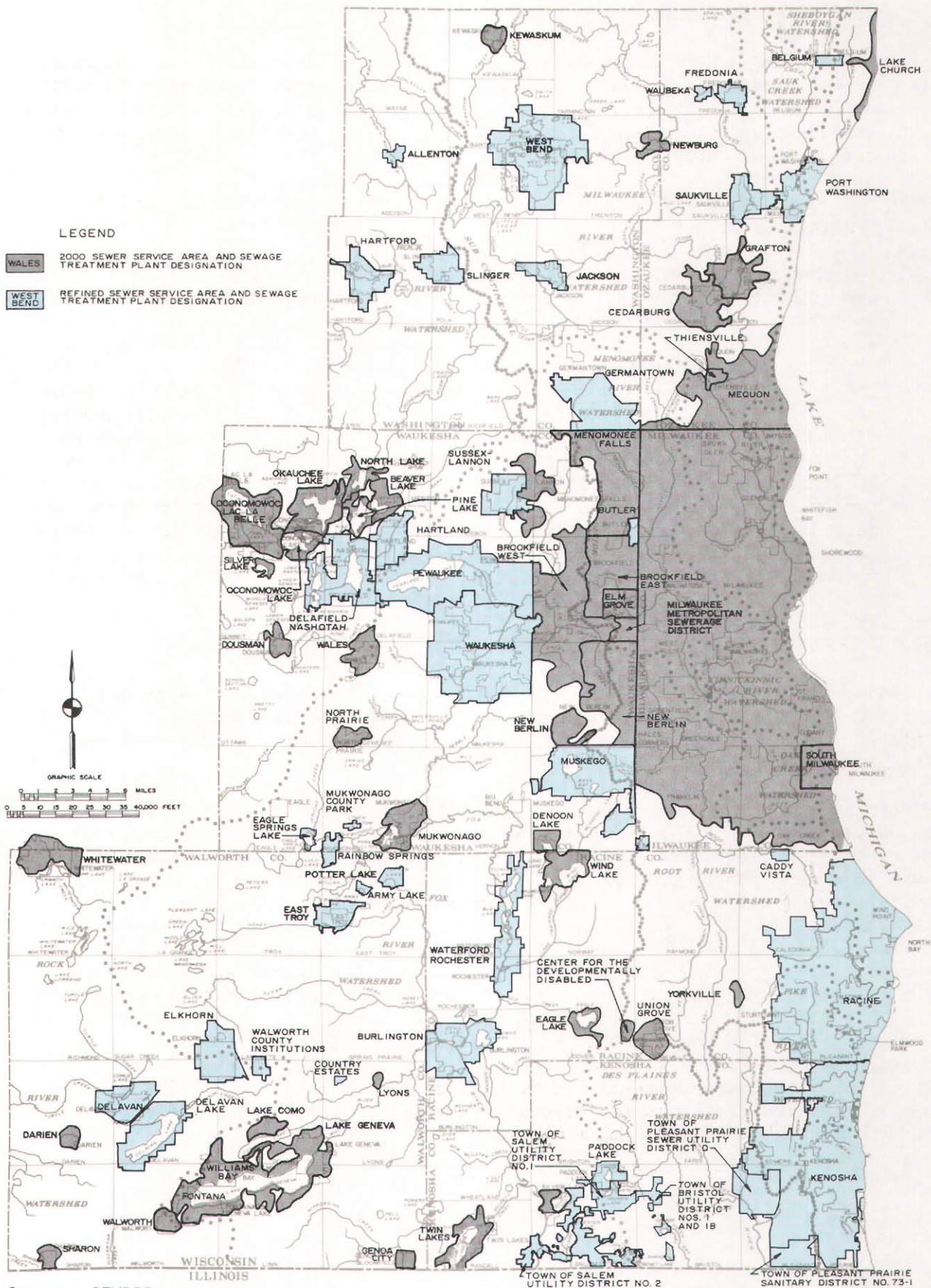
1. The preparation of a base map at an appropriate scale for each sanitary sewer service area identified in the adopted, areawide water quality management plan.
2. The delineation on that base map of the design year 2000 sanitary sewer service area as proposed in the regional water quality management plan and consistent with the objectives set forth in the adopted regional land use plan.
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 which 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 the intergovernmental meetings, meeting to the fullest extent practicable the objectives expressed both in the adopted, areawide water quality management

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<sup>2</sup>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



Source: SEWRPC.

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 of 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 TWIN LAKES SANITARY SEWER SERVICE AREA REFINEMENT PROCESS

By letter dated March 18, 1986, the Village of Twin Lakes requested that the Regional Planning Commission undertake the refinement and detailing of the proposed year 2000 sanitary sewer service area tributary to the Village of Twin Lakes sewage treatment facility.

Intergovernmental meetings regarding the refinement were held on July 21, 1986 and January 5, 1987. In attendance at those meetings were representatives of the Village of Twin Lakes and the Regional Planning Commission. Subsequent to those meetings, both parties concerned agreed upon a preliminary, refined sanitary sewer service area for presentation at a public hearing. A copy of the draft of this report setting forth the preliminary sanitary sewer service area was provided to the Village of Twin Lakes, the Town of Randall, and the Kenosha County Planning and Zoning Administration for review and comment prior to a public hearing on the plan proposal. The public hearing was held on March 16, 1987. The public reaction to the proposed sanitary sewer service area, as documented in the minutes contained in Appendix A, is summarized later in this report. The final, agreed-upon, refined sanitary sewer service area for the Village of Twin Lakes is described in Chapter III of this report. The delineation of that area reflects the intergovernmental decisions made at the meeting and hearing held to consider this matter.

## Chapter II

### STUDY AREA DESCRIPTION

The study area considered in the refinement of the Village of Twin Lakes sanitary sewer service area is shown on Map 2. The area consists of all of the lands encompassed within the corporate limits of the Village of Twin Lakes, as well as certain adjacent portions of the Towns of Randall and Wheatland, located within Kenosha County, together with certain adjacent portions of the Town of Bloomfield, located within Walworth County. The study area encompasses 22.6 square miles, of which 6.1 square miles, or about 27 percent, lie within the Village of Twin Lakes; 11.9 square miles, or about 53 percent, lie within the Town of Randall; 2.3 square miles, or about 10 percent, lie within the Town of Wheatland; and 2.3 square miles, or about 10 percent, lie within the Town of Bloomfield. These areas and percentages are based on 1985 civil division boundaries.

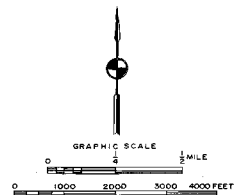
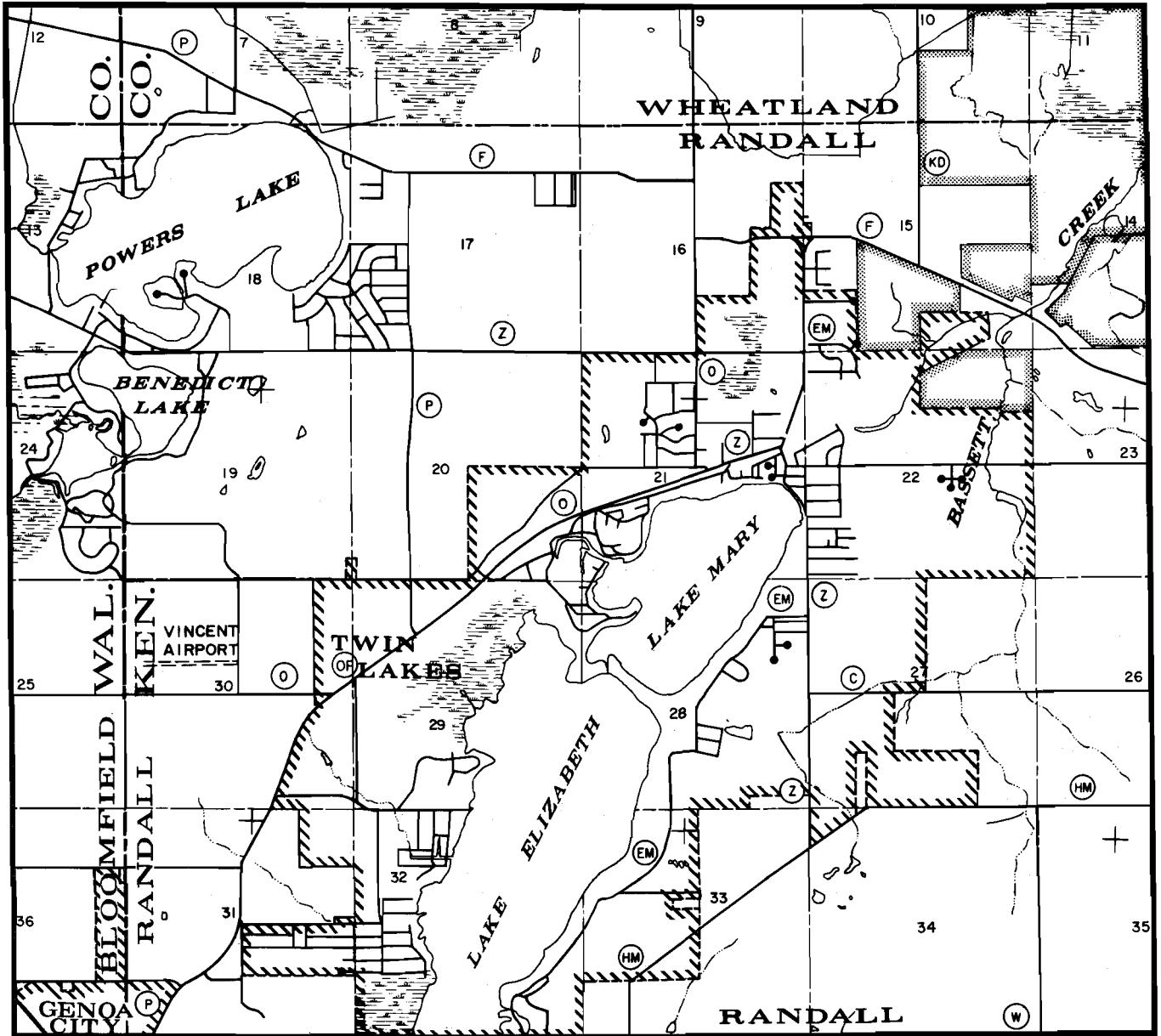
The 1980 resident population of the entire study area as determined by the U. S. Census was 5,794 persons. Of this total, 3,474 persons, or about 60 percent, resided in the Village of Twin Lakes, with virtually the entire resident population being provided with centralized sanitary sewer service extended from the Village of Twin Lakes sewage treatment facility. Also, of the total 5,794 persons residing in the study area in 1980, 1,736 persons, or about 30 percent, resided in the Town of Randall; 199 persons, or about 3 percent, resided in the Town of Wheatland; and 385 persons, or about 7 percent, resided in the Town of Bloomfield, with the entire resident population of these towns being served by onsite soil absorption sewage disposal systems or by sewage holding tanks.

It is estimated that 8,000 persons will reside in the identified study area by the year 2000. The areawide water quality management plan envisions that, of this total, about 6,200 persons, or about 78 percent, will reside in the Village of Twin Lakes sewer service area and be provided with centralized sanitary sewer service extended from the Village of Twin Lakes sewage treatment facility. The remaining 1,800 persons, or 22 percent, would continue to rely on onsite sewage disposal systems for sewage disposal.

It should be noted that the forecast of probable population levels for small geographic areas such as the Village of Twin Lakes 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

Map 2

STUDY AREA IDENTIFIED FOR PURPOSES OF REFINING AND DETAILING  
THE VILLAGE OF TWIN LAKES SANITARY SEWER SERVICE AREA



Source: SEWRPC.



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 in the United States, the Regional Planning Commission began to incorporate the alternative futures approach into its planning program in the late 1970's, 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 future development conditions in the Region, together with the likely range of prospects for these factors. Two 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--were thus defined. These scenarios represent opposite extremes of the prospects identified for the external factors and, consequently, indicate relatively large potential differences in population growth and in economic activity. One scenario developed postulates moderate population and economic growth; the other scenario postulates stable or declining population and employment levels in the Region. Two alternative regional land use plans, a centralized plan and a decentralized plan, were then developed for each of the two alternative future scenarios, thus providing, in effect, four alternative futures as a framework for physical development planning and related demographic and economic studies.

The anticipated year 2000 population level of about 8,000 persons in the Village of Twin Lakes study area is based upon the moderate growth, centralized land use scenario--the scenario utilized by the Commission in the development of the areawide water quality management plan. However, the population level within the study area could range from a low of about 7,200 under the stable or declining growth, decentralized land use scenario, to a high of about 10,600 under the moderate growth, decentralized land use scenario.

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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 process of delineating local sanitary sewer service areas an important one 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 areawide 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.

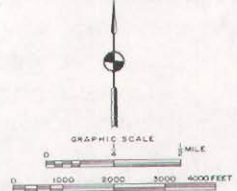
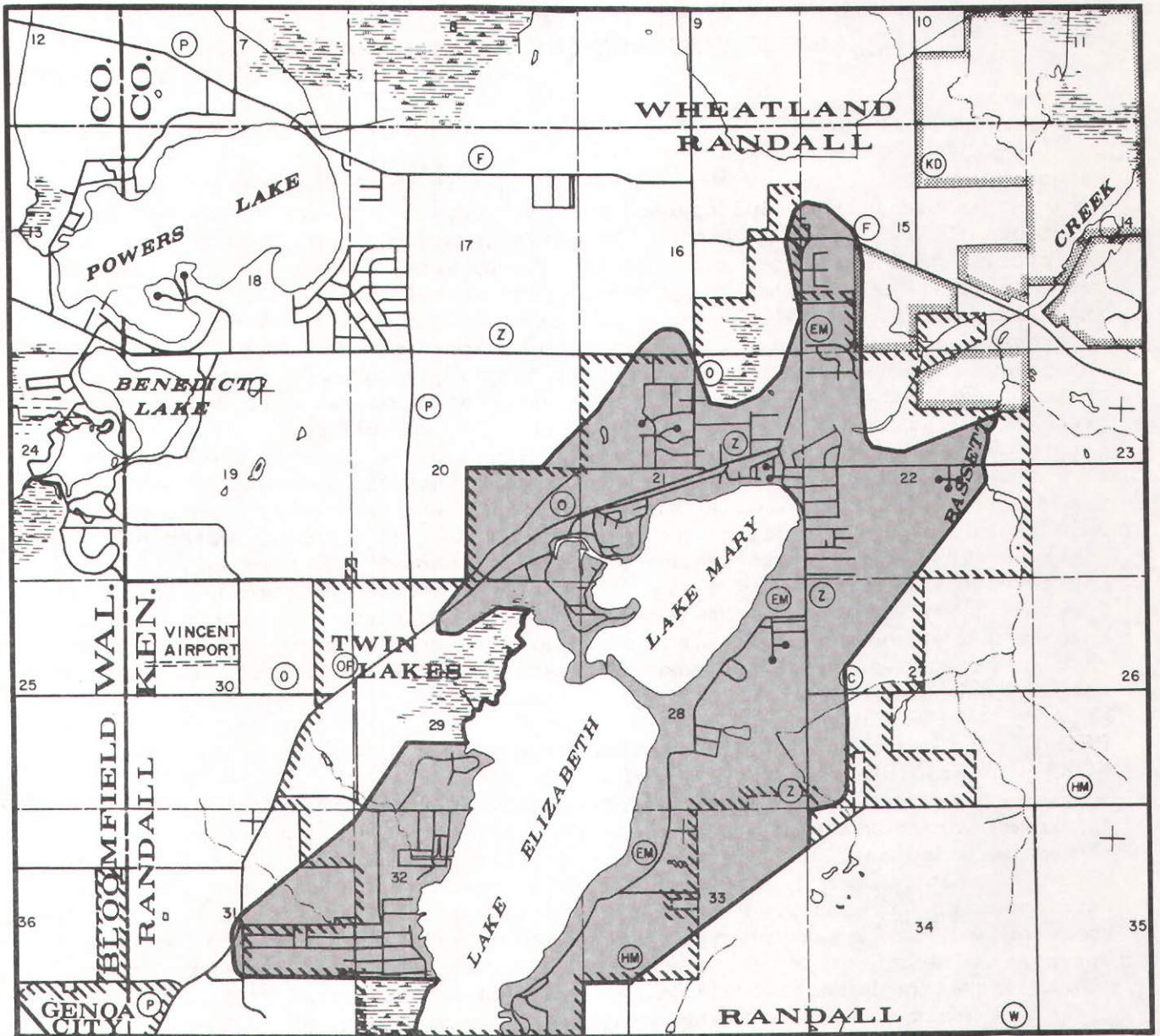
#### PROPOSED SANITARY SEWER SERVICE AREA AS SET FORTH IN SEWRPC PLANNING REPORT NO. 30

A number of important factors were taken into account in the delineation of the recommended sanitary sewer service area as set forth in SEWRPC Planning Report No. 30. These factors also comprised important considerations in the development of the adopted regional land use plan. These factors included, among others, the location, type, and extent of existing 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, or to sewage treatment plants; the location and capacity of existing and planned trunk sewers; 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.

The plan year 2000 sanitary sewer service area tributary to the Village of Twin Lakes sewage treatment facility as proposed in the adopted areawide water quality management plan is shown on Map 3. The service area totals about 4.9 square miles, or about 22 percent of the total study area of 22.6 square miles. In 1980, the resident population of this area totaled 3,616 persons. A resident population of 6,200 persons may be expected to reside in this sanitary

Map 3

THE VILLAGE OF TWIN LAKES SANITARY SEWER SERVICE AREA  
AS DEFINED IN SEWRPC PLANNING REPORT NO. 30



Source: SEWRPC.

sewer service area by the plan design year 2000, as estimated in SEWRPC Planning Report No. 30. This population includes a seasonal resident population of about 1,400 persons. This population level is based upon the moderate growth, centralized land use alternative. The population level within the proposed sewer service area could, however, range from a low of 5,500 persons under the stable or declining growth, decentralized land use alternative, to a high of 8,600 persons under the moderate growth, decentralized land use alternative, including the seasonal resident population of about 1,400 persons.

## DETERMINATION OF ENVIRONMENTALLY SIGNIFICANT LANDS IN THE VILLAGE OF TWIN LAKES STUDY AREA

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 environmental 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. 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 steps involved in refining the Village of Twin Lakes sanitary sewer service area was mapping in detail the environmentally significant lands in the Village of Twin Lakes 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, 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 1). 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 Twin Lakes study area are shown on Map 4.

In addition, Map 4 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, with such a corridor having a minimum area of 100 acres and a minimum length of one mile.

Also identified on Map 4 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 and 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 possible. An isolated natural area must be at least five acres in size.

Lands in the study area encompassed within the primary environmental corridors total about 5.7 square miles, or about 26 percent of the total study area. Lands encompassed within the secondary environmental corridors total about 1.2 square miles, or about 5 percent of the study area. Lands encompassed within isolated natural areas total about 0.5 square mile, or about 2 percent of the study area. Thus, environmentally significant lands in the Village of Twin Lakes study area comprise about 7.4 square miles, or 33 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 benefit to the community than preservation of a small segment of the primary environmental

Table 1

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
<b>Natural Resource Base</b>	
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
<b>Natural Resource Base-Related</b>	
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.

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.

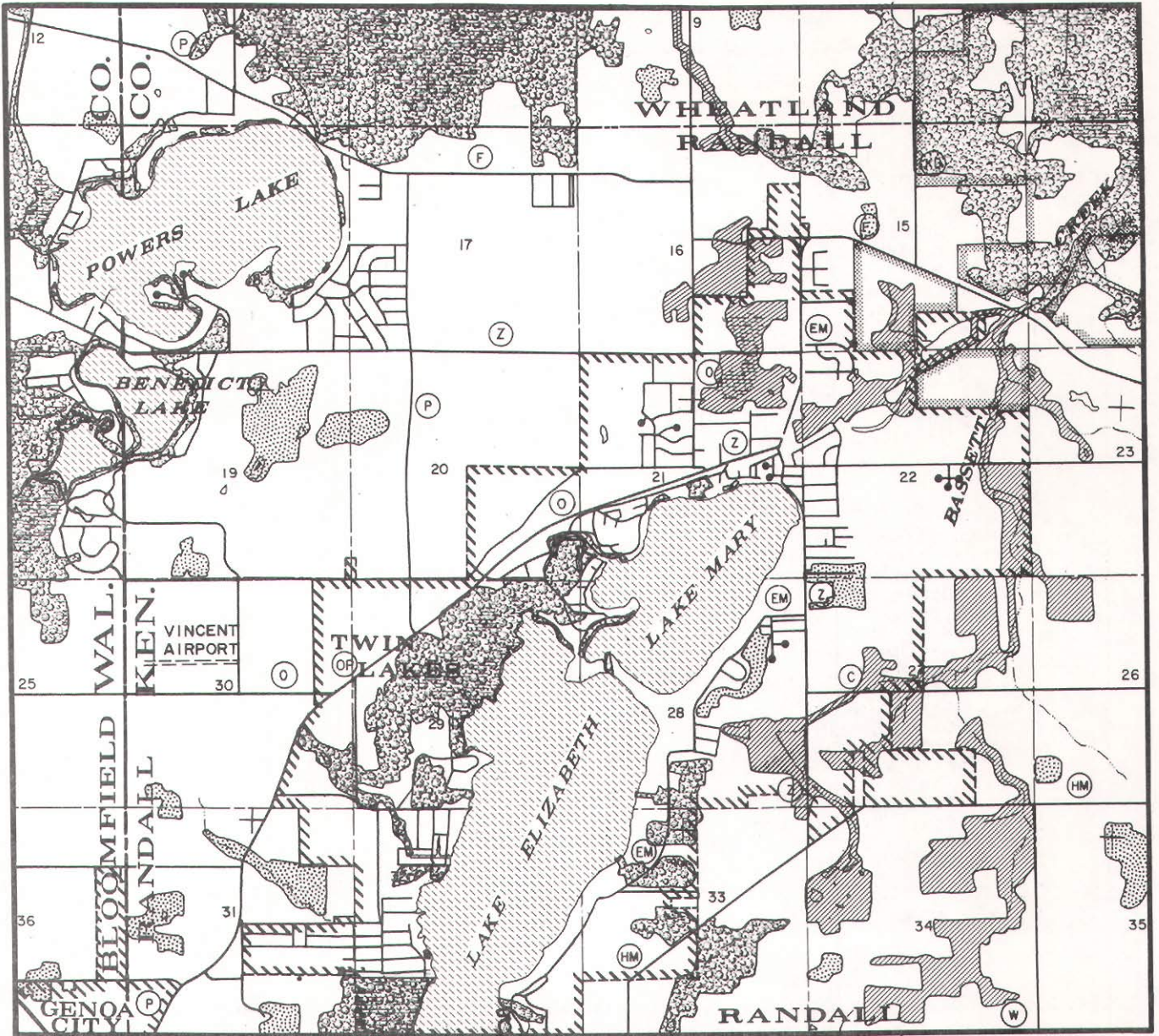
REFINED SANITARY SEWER SERVICE AREA

The refined year 2000 sanitary sewer service area tributary to the Village of Twin Lakes sewage treatment facility, as agreed upon by the local officials present at the intergovernmental meetings referenced earlier in this report, and as submitted to public hearing, is shown on Map 5, together with the existing trunk sewers.




The gross sanitary sewer service area for the Village of Twin Lakes totals about 7.4 square miles, or about 33 percent of the total study area of 22.6

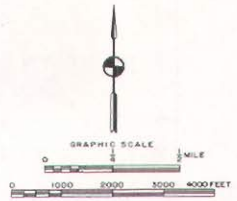
Map 4

ENVIRONMENTALLY SIGNIFICANT LANDS IN THE VILLAGE OF TWIN LAKES STUDY AREA



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA

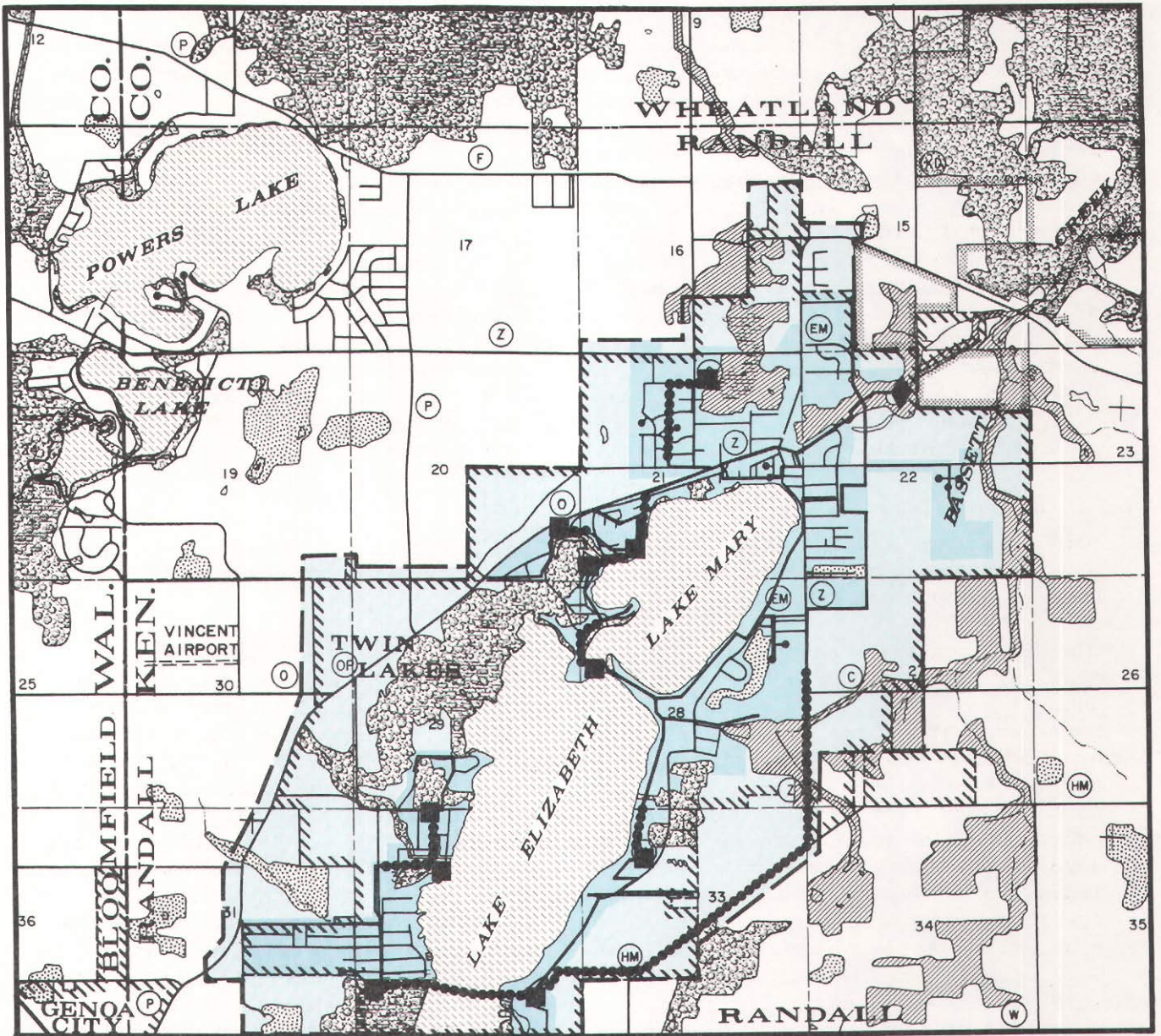


Source: SEWRPC.



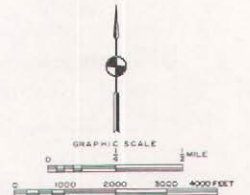
Map 5

PRE-PUBLIC HEARING VILLAGE OF TWIN LAKES SANITARY SEWER SERVICE AREA



LEGEND

- |  |  |  |  |
|--|--|--|--|
|  | PRIMARY ENVIRONMENTAL CORRIDOR             |  | GROSS SANITARY SEWER SERVICE AREA BOUNDARY |
|  | SECONDARY ENVIRONMENTAL CORRIDOR           |  | EXISTING PUBLIC SEWAGE TREATMENT FACILITY  |
|  | ISOLATED NATURAL AREA                      |  | EXISTING LIFT STATION                      |
|  | NET SANITARY SEWER SERVICE AREA (EXISTING) |  | EXISTING TRUNK SEWER                       |
|  | NET SANITARY SEWER SERVICE AREA (2000)     |  | EXISTING FORCE MAIN                        |



Source: SEWRPC.

square miles. This area includes 2.3<sup>1</sup> square miles of primary environmental corridor, 0.4 square mile of secondary environmental corridor, and 0.1 square mile of isolated natural area. Thus, about 2.8 square miles, or about 38 percent of the Village of Twin Lakes refined sewer service area, would be encompassed within environmentally sensitive areas. It should be noted that nine parcels encompassing about 76 acres have been deleted from the environmentally significant lands indicated on Map 5. Of the nine parcels, eight parcels encompassing about 74 acres consist primarily of upland woods. As indicated on Map 6, of the eight parcels, three parcels encompassing about 40 acres are located within primary environmental corridors, three parcels encompassing about 18 acres are located within secondary environmental corridors, and two parcels encompassing about 16 acres are located within isolated natural areas. As further indicated on Map 6, the remaining two-acre parcel deleted from the environmentally significant lands consists primarily of wetlands and is located within secondary environmental corridor. These nine parcels have been deleted from the "inventoried" environmentally significant lands shown on Map 4 to accommodate anticipated urban development. The refined year 2000 sanitary sewer service area would accommodate a population of about 6,200 persons--including an estimated seasonal population of 1,400--resulting in a density of about 2.0 dwelling units per net residential acre.<sup>2</sup>

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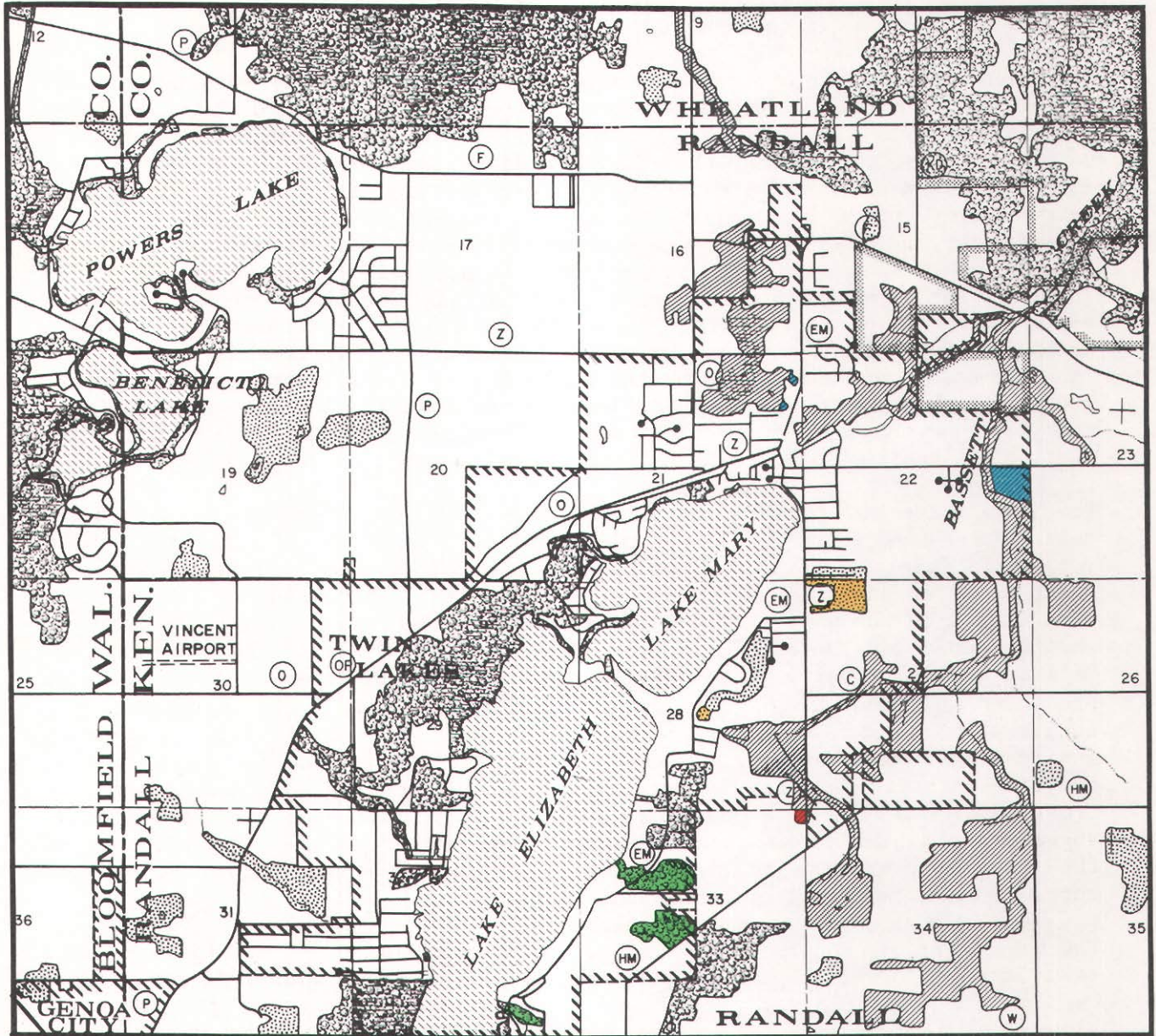
<sup>1</sup>Of this 2.3 square miles of primary environmental corridor, 1.6 square miles, or about 70 percent, is identified as surface water encompassed within Lakes Elizabeth and Mary.

<sup>2</sup>Net residential density is determined by dividing the total number of dwelling units in the sewer service area in the design year by the net residential land area anticipated in the sewer service area. The total number of dwelling units anticipated in this sewer service area--2,660--was determined by dividing the anticipated household population--6,200--by the anticipated average household size of 2.4 persons per dwelling. In addition, a dwelling unit vacancy rate of 3 percent was assumed. The net residential land anticipated in this sewer service area was determined by first identifying all developable land within the service area. Developable land was assumed to include 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 with sewer service. Developable land in the remaining portion of the sewer service area totaled 1,765 acres. In order to provide flexibility in determining the spatial distribution of new urban development and in order to facilitate operation of the urban land market, it was assumed that only 80 percent of the developable land--1,412 acres--would actually be developed for urban purposes by the design year of the plan. It was further assumed that 60 percent of the land to be developed, or 847 acres, would be allocated to "gross" residential uses, the remaining 40 percent being allocated to other urban uses. Of the 847 acres allocated to "gross" residential uses, it was further assumed that streets would occupy 23 percent of the area, leaving the remaining 77 percent, or 652 acres, for new "net" residential development.








This area added to the 700 acres of existing net residential land in the service area provided a total net residential area of 1,352 acres. The number of dwelling units anticipated in the sewer service area in the design year--2,660--divided by the anticipated net residential land area--1,352--results in an overall net residential density of 2.0 dwelling units per acre.

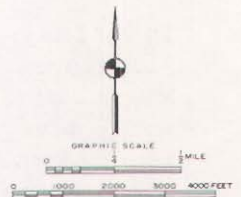
Map 6

ANTICIPATED CHANGE IN THE ENVIRONMENTALLY SIGNIFICANT LANDS  
 WITHIN THE TWIN LAKES SANITARY SEWER SERVICE AREA: 1985-2000



LEGEND

- |   |  |   |  |
|---|--|---|--|
|  | PRIMARY ENVIRONMENTAL CORRIDOR   |  | PORTION OF EXISTING (1985) SECONDARY ENVIRONMENTAL CORRIDOR TO BE DELETED DUE TO PLANNED URBAN DEVELOPMENT |
|  | SECONDARY ENVIRONMENTAL CORRIDOR   |  | PORTION OF EXISTING (1985) ISOLATED NATURAL AREA TO BE DELETED DUE TO PLANNED URBAN DEVELOPMENT            |
|  | ISOLATED NATURAL AREA  |  | WETLAND WITHIN SECONDARY ENVIRONMENTAL CORRIDOR TO BE DELETED DUE TO PLANNED URBAN DEVELOPMENT             |
|  | PORTION OF EXISTING (1985) PRIMARY ENVIRONMENTAL CORRIDOR TO BE DELETED DUE TO PLANNED URBAN DEVELOPMENT |   |  |



Source: SEWRPC.

## PUBLIC REACTION TO THE PROPOSED SANITARY SEWER SERVICE AREA

A public hearing was held on March 16, 1987, for the purpose of receiving comments on the refined sanitary sewer service area as shown on Map 5. The hearing was sponsored jointly by the Village of Twin Lakes and the Regional Planning Commission. Minutes of the public hearing are presented in Appendix A.

A review of the hearing record indicates that three areas of concern were raised at the hearing. The first area of concern was a letter dated November 19, 1986, from the Town of Randall to the Regional Planning Commission requesting that the Powers Lake, Lake Benedict, and Bassett areas be included in the Village of Twin Lakes proposed sewer service area. In considering this matter, the Village decided not to include such areas because of the limited capacity of the Village's sewage treatment facility and the distance of such areas from the Village's trunk sewer lines. It was agreed, however, that should the need for sewer service arise, a detailed engineering study--sponsored by representatives of the areas in question--should be undertaken to determine the most cost-effective method of providing sewer service to such areas. If it is determined upon completion of the study that the most cost-effective way to provide such service is via sewer extensions from the Village of Twin Lakes sanitary sewerage system, the Village of Twin Lakes would consider an amendment to its sanitary sewer service area to include such lands.

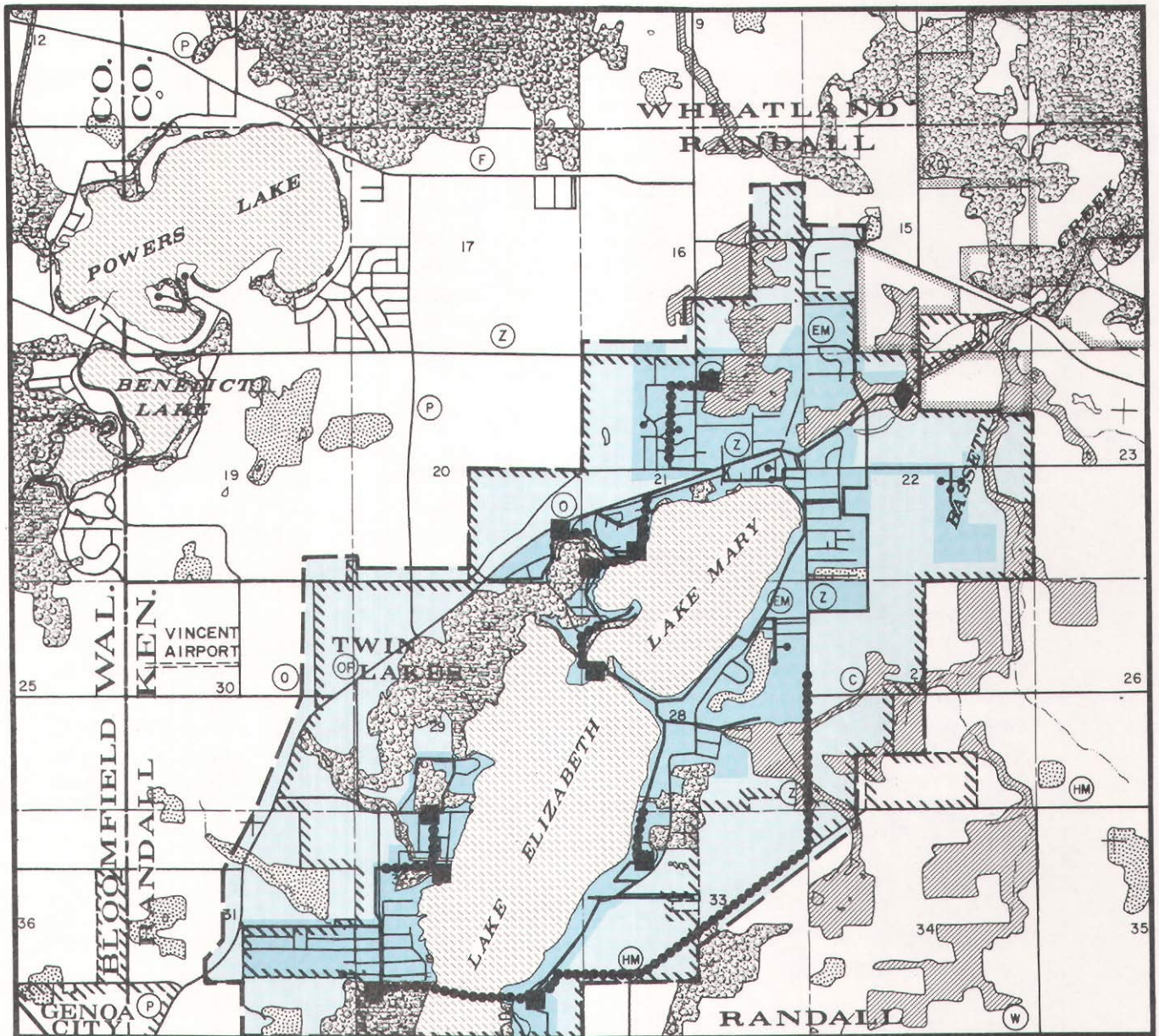
The second area of concern was raised by a property owner who questioned the delineation of primary environmental corridor on lands he intended to develop for residential purposes. SEWRPC staff noted that the filling of wetlands which comprise the primary environmental corridor on his land may have a negative impact on the water quality of Lake Mary. The property owner was informed that he could ask the SEWRPC staff biologist to field verify the extent of the wetland on his property if he disagreed with the delineation of the wetland as presented in this report. Upon review of this parcel on a low-flight one inch equals 400 feet scale aerial photograph, it was determined that the primary environmental corridor traversed the rear portion of the proposed lots in question. Assuming village zoning and subdivision regulation could be met, the front portion of the lots could be developed for residential use. SEWRPC staff suggested that the primary environmental corridor along the rear portions of the lots be protected by a deed restriction which would require that such corridor lands remain in open, natural uses.

The third area of concern was the possible expansion of the proposed Twin Lakes sewer service area to include a 44-acre parcel of land located directly adjacent to the preliminary refined sewer service area northeast of the intersection of CTH HM and CTH Z in the Town of Randall. Based upon the proposed annexation of this parcel by the Village, it was agreed to revise the preliminary sewer service area indicated on Map 5 to include this parcel of land.

The final, revised year 2000 sanitary sewer service area tributary to the Village of Twin Lakes sewage treatment facility is shown on Map 7. The final sewer service area totals about 7.5 square miles, or about 33 percent of the total study area. The area would accommodate a plan year 2000 resident population of about 6,200 persons--including an estimated seasonal population of 1,400--resulting in a density of about 2.0 dwelling units per net residential acre.

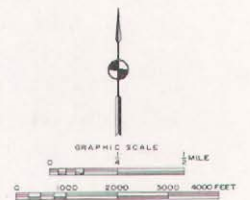
Map 7

POST-PUBLIC HEARING VILLAGE OF TWIN LAKES  
SANITARY SEWER SERVICE AREA



LEGEND

- |  |  |  |  |
|--|--|--|--|
|  | PRIMARY ENVIRONMENTAL CORRIDOR             |  | GROSS SANITARY SEWER SERVICE AREA BOUNDARY |
|  | SECONDARY ENVIRONMENTAL CORRIDOR           |  | EXISTING PUBLIC SEWAGE TREATMENT FACILITY  |
|  | ISOLATED NATURAL AREA                      |  | EXISTING LIFT STATION                      |
|  | NET SANITARY SEWER SERVICE AREA (EXISTING) |  | EXISTING TRUNK SEWER                       |
|  | NET SANITARY SEWER SERVICE AREA (2000)     |  | EXISTING FORCE MAIN                        |



Source: SEWRPC.

Detailed delineations of the final Village of Twin Lakes sanitary sewer service area and environmentally significant lands within that area are shown on a series of aerial photographs reproduced as Map 8 beginning on page 23 and continuing through page 34 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 Village Board of the Village of Twin Lakes as the operator of the sewage treatment facility; by the Town Board of the Town of Randall as having lands affected by the planned sewer service area; and by the Kenosha County Land Use Committee as the county planning agency having joint responsibility with the Town 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 Twin Lakes sanitary sewer service area as shown on Maps 7 and 8. 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.
4. Review by the Village of Twin Lakes 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 TWIN LAKES SANITARY SEWER SERVICE AREA

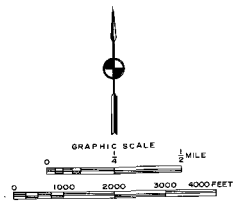
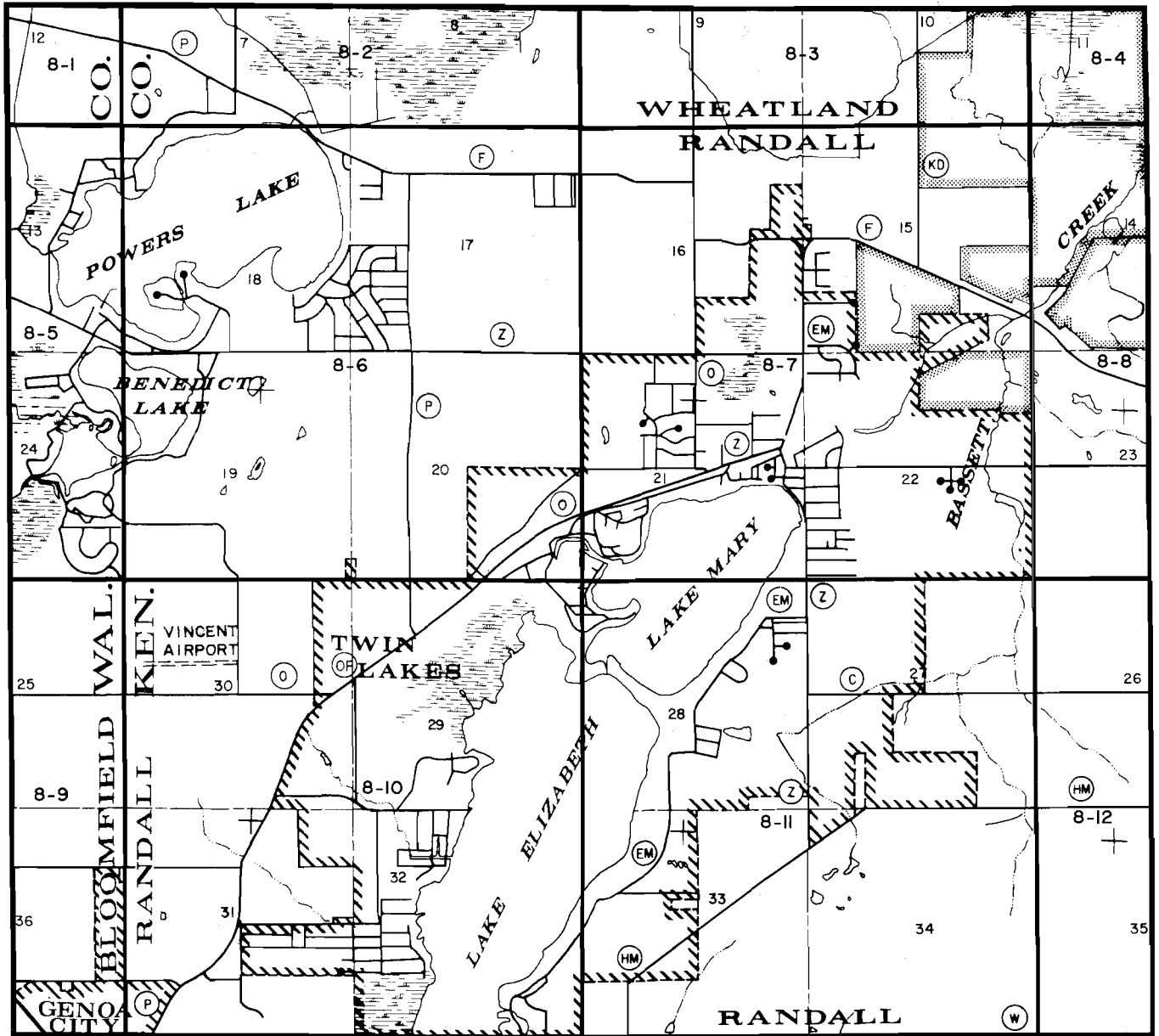
This report presents a refined sewer service area for the Village of Twin Lakes. The refined sewer service area was delineated cooperatively by the units and agencies of government concerned, and was subjected to review at an intergovernmental meeting and at a public hearing. It is envisioned that the delineated sewer service area will accommodate all new urban development anticipated in the Village of Twin Lakes to the year 2000. 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 community involved, especially as such objectives may relate to the amount and spatial distribution of new urban develop-

ment requiring sewer service. Should it be determined by the Village of Twin Lakes, as the operator 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 intergovernmental 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 Twin Lakes 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 8

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



Source: SEWRPC.



Map 8-1

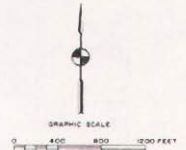
ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Section 12  
Township 1 North, Range 18 East



LEGEND

-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA



Source: SEWRPC.

Map 8-2

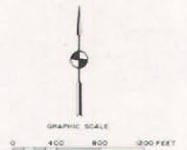
ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 7 and 8  
Township 1 North, Range 19 East



LEGEND

 PRIMARY ENVIRONMENTAL CORRIDOR



Source: SEWRPC.

Map 8-3

ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 9 and 10  
Township 1 North, Range 19 East



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA

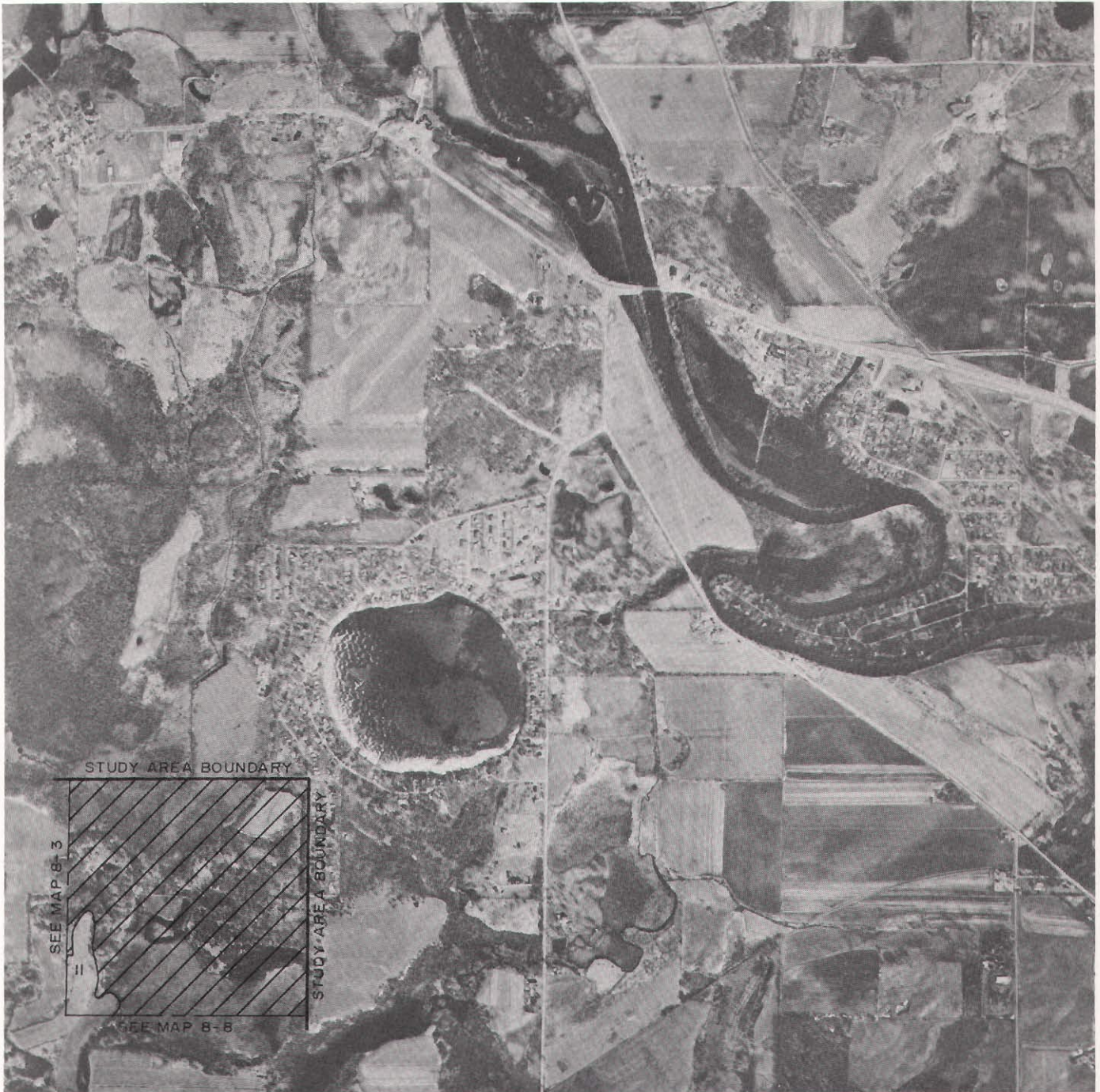


Source: SEWRPC.

Map 8-4

ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

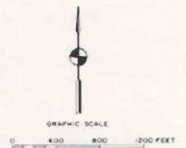
U. S. Public Land Survey Section 11  
Township 1 North, Range 19 East



STUDY AREA BOUNDARY  
SEE MAP 8-3  
SEE MAP 8-5  
STUDY AREA BOUNDARY

LEGEND

 PRIMARY ENVIRONMENTAL CORRIDOR



Source: SEWRPC.

Map 8-5

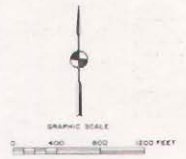
ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 13 and 24  
Township 1 North, Range 18 East



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA



Source: SEWRPC.





Map 8-6

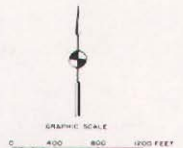
ENVIRONMENTALLY SIGNIFICANT LANDS AND  
 PLANNED SANITARY SEWER SERVICE AREA FOR  
 THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 17, 18, 19, and 20  
 Township 1 North, Range 19 East



LEGEND

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

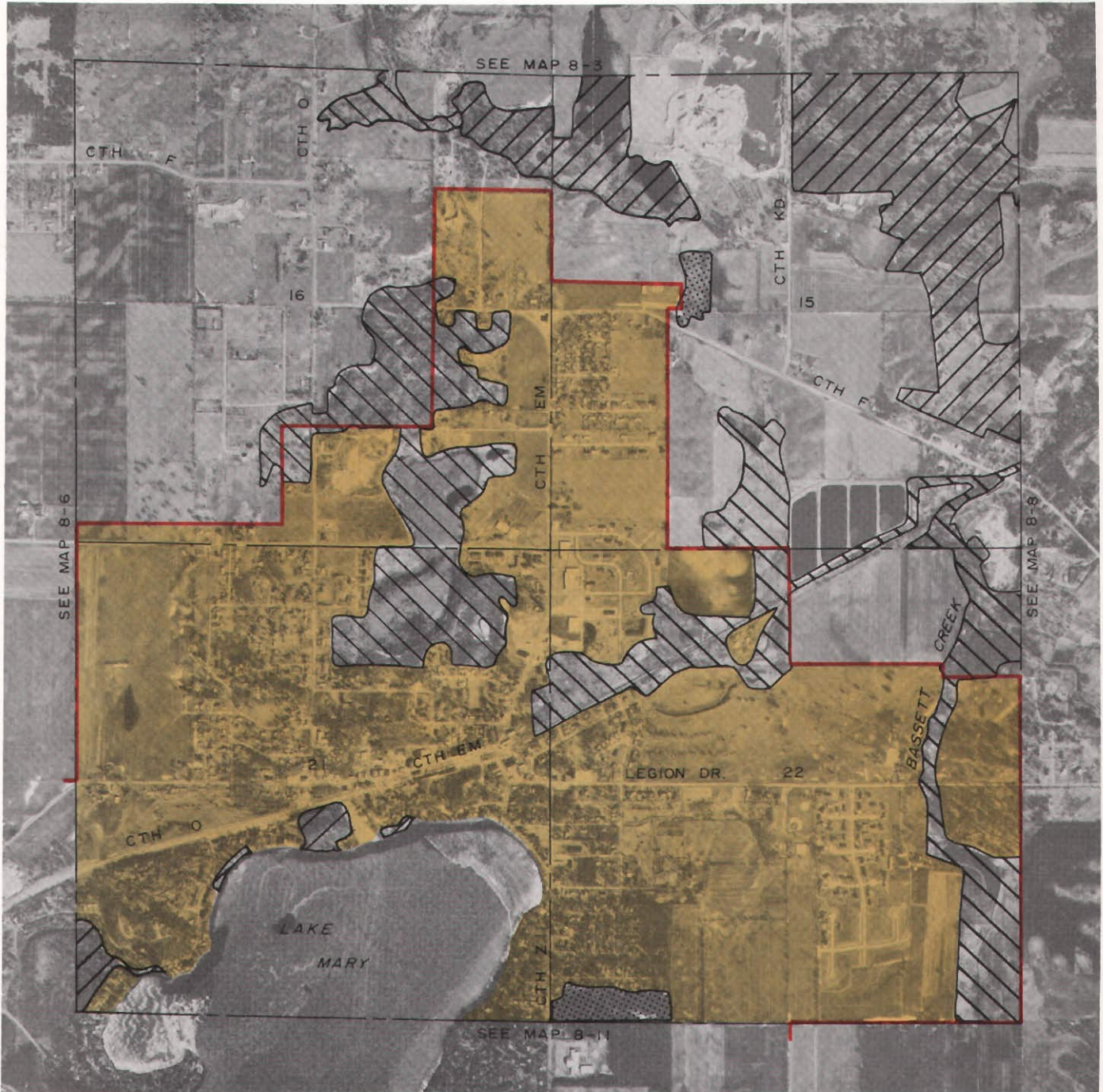


Source: SEWRPC.






Map 8-7

ENVIRONMENTALLY SIGNIFICANT LANDS AND  
 PLANNED SANITARY SEWER SERVICE AREA FOR  
 THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 15, 16, 21, and 22  
 Township 1 North, Range 19 East



LEGEND

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

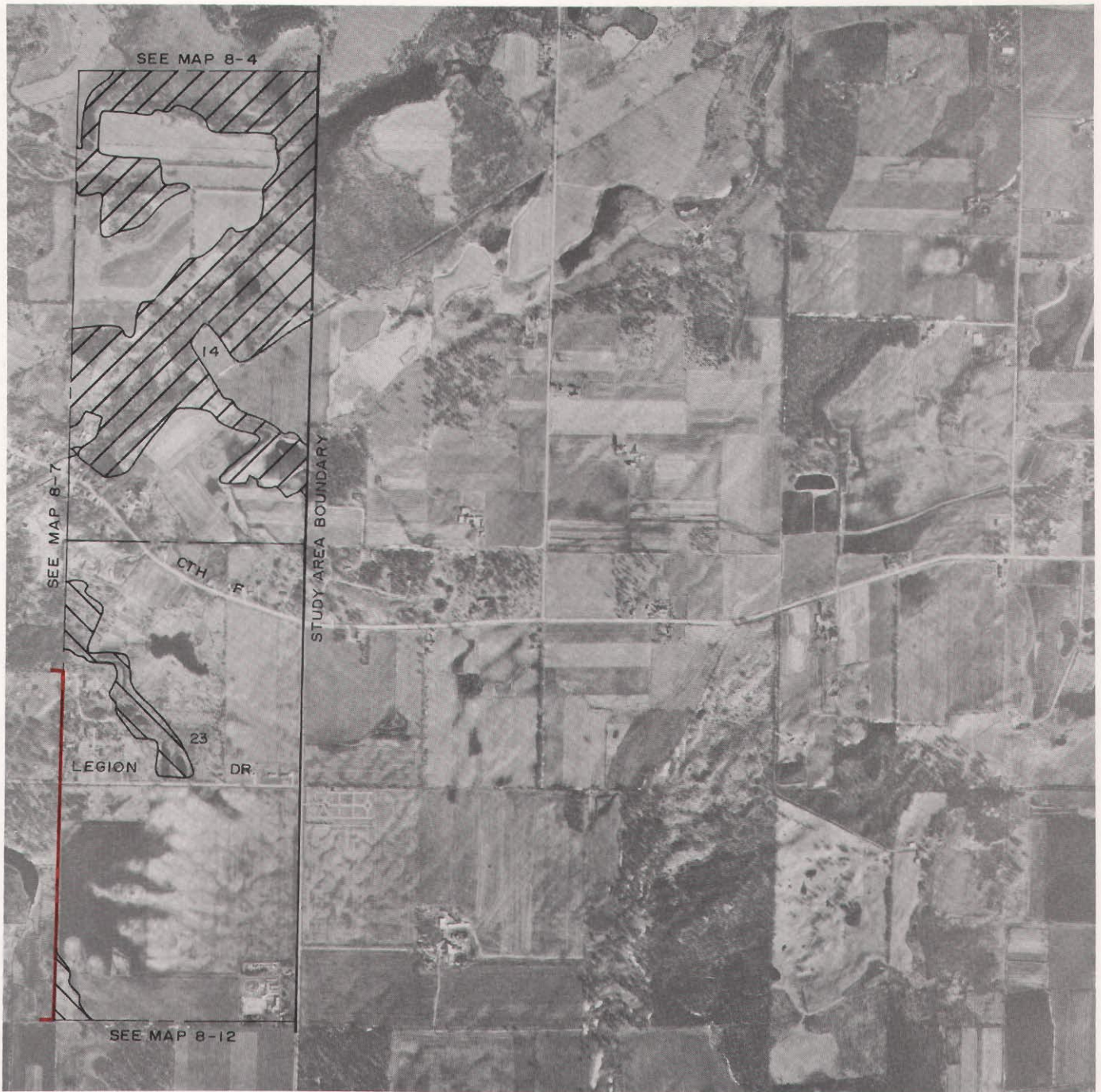
Source: SEWRPC.



Map 8-8

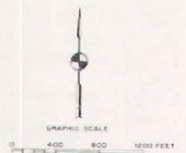
ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 14 and 23  
Township 1 North, Range 19 East



LEGEND

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



Source: SEWRPC.



Map 8-9

ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 25 and 36  
Township 1 North, Range 18 East



LEGEND

-  PRIMARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA

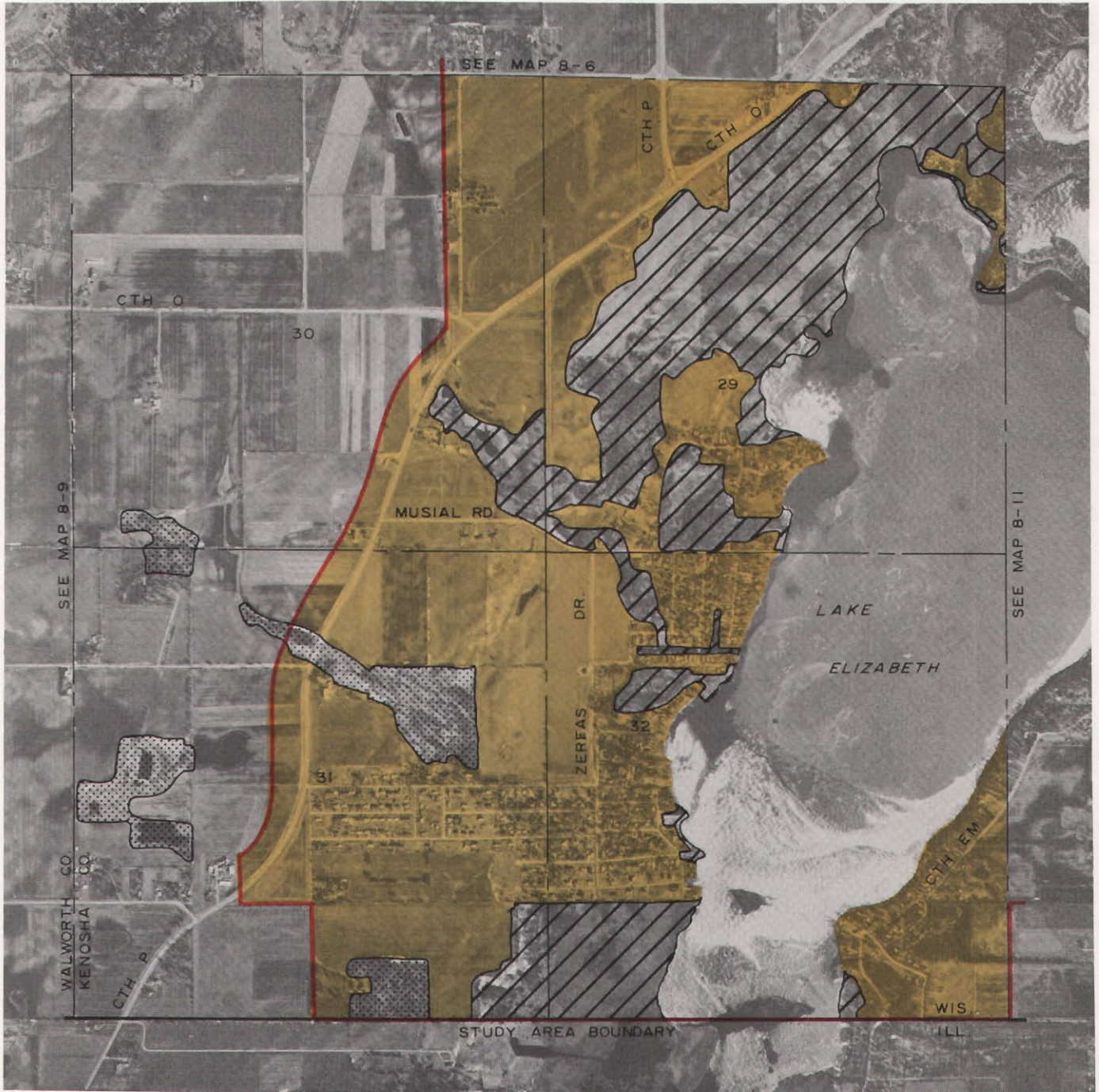


Source: SEWRPC.





Map 8-10

ENVIRONMENTALLY SIGNIFICANT LANDS AND  
 PLANNED SANITARY SEWER SERVICE AREA FOR  
 THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 29, 30, 31, and 32  
 Township 1 North, Range 19 East



LEGEND

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

Source: SEWRPC.








Map 8-11

ENVIRONMENTALLY SIGNIFICANT LANDS AND  
 PLANNED SANITARY SEWER SERVICE AREA FOR  
 THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 27, 28, 33, and 34  
 Township 1 North, Range 19 East



LEGEND

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

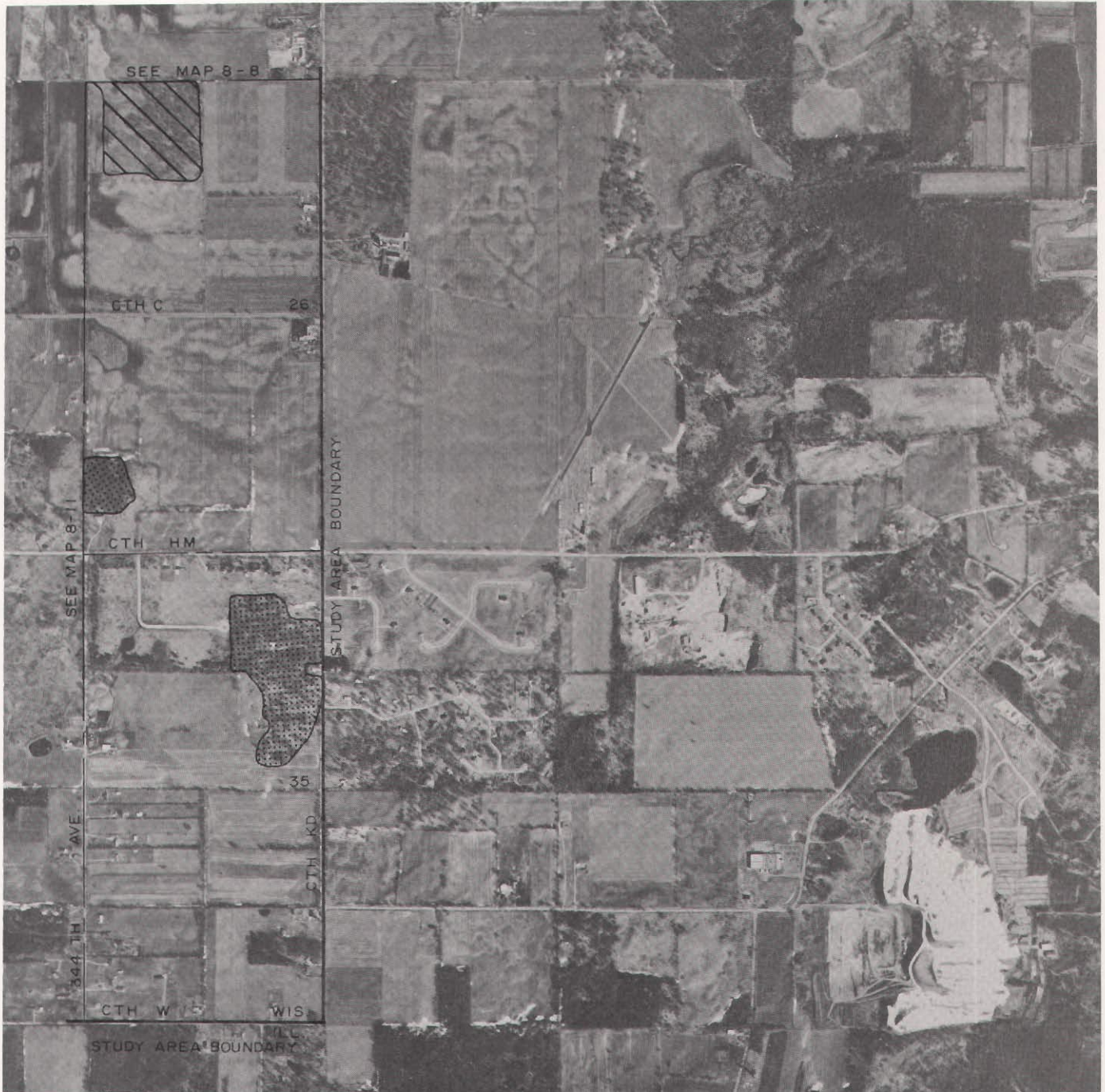
Source: SEWRPC.



Map 8-12

ENVIRONMENTALLY SIGNIFICANT LANDS FOR  
THE VILLAGE OF TWIN LAKES AND ENVIRONS

U. S. Public Land Survey Sections 26 and 35  
Township 1 North, Range 19 East



LEGEND

-  SECONDARY ENVIRONMENTAL CORRIDOR
-  ISOLATED NATURAL AREA



Source: SEWRPC.

## **APPENDICES**

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## Appendix A

### PUBLIC HEARING MINUTES

#### TWIN LAKES SEWER SERVICE AREA

March 16, 1987

Twin Lakes Village Hall

Meeting called to order by President James H. Mayer. Members present: Elverman, Green, Jahns, Kekos, Todd. Roy Rohde absent. Plan Commission members also present: Bruce Rubin and Dennis Lefevre of SEWRPC.

Bruce Rubin described the initial sewer service area as adopted under the areawide water quality management plan, as well as the new refined service area that had been agreed upon at our last meeting. He also explained what had taken place at the previous meetings. The initial sewer service area covered about  $6\frac{1}{2}$  square miles of land and water. The new area covers about  $7\frac{1}{2}$  square miles. Rubin indicated that the new service area will be adequate to accommodate the population increase envisioned for the Village to the year 2000. Rubin explained that the sewer service area can be amended in future years if need be. Rubin pointed out the inventory of environmental areas on the map and noted that nine areas, approximately 76 acres in size, are excluded from the 2000 planned sewer service area. Rubin presented a letter from the Town of Randall dated November 19, 1986, that requested that the following areas be added to the Twin Lakes sewer service area: Powers Lake, Lake Benedict, and all of Bassett. Elverman asked what the advantage would be of including these areas. Rubin responded that if the Village at some time in the future would decide to provide service to such areas and such areas would be included on the revised plan maps, the Village would not have to amend the plan later to add such areas. Discussion followed as to who would have to pay if sewer service were extended to Randall. The Clerk felt that it was part of the Village code now that if an area would be serviced in Randall, they would have to pay towards the existing sewer plant etc. Rubin explained that it was the Village's decision to provide sewer service by agreement or by annexation.

John Gridley stated that he thought five-acre parcels were to have been excluded from the corridor. He has approximately three acres on his parcel that are in a primary environmental corridor. He thought a SEWRPC biologist was to have come out and checked the area. Rubin explained that all environmentally significant lands five acres or greater in area are shown on the map. He added that residential development of lots five acres or greater in size would generally be allowed in the corridor. Rubin noted that the Commission staff biologist, Mr. Reed, was to have been contacted by Mr. Gridley to have his property inspected in Mr. Gridley's presence. Mr. Reed will be glad to meet with Gridley to inspect the area if requested by Mr. Gridley. Gridley stated that the corridor followed the tree line. Rubin stated that there is a creek running through this area, and that if it is filled, runoff could affect the water quality of the lake. He also explained that trees can be included in areas designated as wetlands. Rubin stated that he had large-scale photographs showing the sewer service area and environmentally significant lands within

the area, and that these maps would be left with the Village. Rubin explained that as far as the Commission was concerned, development of the secondary corridor areas should be decided by the Village. A map of the Gridley area was viewed and explained. Mr. Rubin noted that the primary environmental corridor on the Gridley property traversed the rear portion of a few of the proposed lots in his preliminary development proposal. He noted if village zoning and subdivision regulation could be met, the front portion of the lots in question could be developed and the primary environmental corridor along the rear portion of the lots could be protected by a deed restriction which would require that such corridor lands remain in open, natural uses. Green inquired about future annexations that are not in the current revised sewer service area. Rubin stated that such areas should be considered at the time the area was to be developed. The Village then may have to delete some other area that is already in the sewer service plan. Rubin explained that if a new annexed area were to be developed, it is likely that other areas in the village sewer service area would not be developed by the plan design year.

Several of the Board members and Plan Commission members wondered what right the DNR has to tell us what to do. Rubin stated it was water quality regulation. The State has the power to zone, but they have delegated this power to the municipalities. The State has given money to the municipalities to put in sewer, water, etc.

Board members inquired how long it would take to amend the sewer service area once it has been approved. Ahler inquired about the ramifications if some of the area is taken off. Rubin stated that the time to amend sewer service areas varies from community to community, but noted that some amendments have been completed in as little time as several weeks. Rubin explained primary and secondary environmental corridors. The DNR will not allow sewer to serve urban development in primary environmental corridors which will have a negative water quality impact. It is up to the Village in the secondary corridors. Preserving the environmental corridor will make the Village a better place to live.

Clerk inquired as to the procedures the Village must now follow. Rubin explained that if the Village is in agreement with the revised sewer service area and would feel comfortable using it as a guide for development in the Village, they should pass a resolution adopting the report and the maps and transmit a copy of the adoption resolution to the Commission. The Commission would then adopt the revised sewer service area report as an amendment to the water quality management plan and forward it to the Wisconsin DNR for its review and approval.

Gene Ploskonka inquired about his property. There are currently two buildings on it, and he wants to tear them down and build some new units, and hook to the system. His property has an adjacent existing sewer allowing him to hook into the system. Rubin noted that this plan would not affect existing sewer service to existing or rebuilt structures in the community.

McBride suggested that the Van Braemer property be included in the sewer service area, and other board members agreed that it should be included. Rubin agreed to make adjustment in the sewer service area map to include the Van Braemer property.



SEWRPC will prepare and publish the report with maps identifying final revised sewer service area.

Motion to adjourn by Green, Elverman, carried.

Respectfully submitted,

Jean Erickson  
Village Clerk