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

### SOUTHEASTERN WISCONSIN REGIONAL PLANNING

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SUBJECT: Certification of Amendment to the Adopted Regional Water Quality Management Plan (Delafield-Nashotah and Environs Sanitary Sewer Service Area)

TO: The Legislative Bodies of Concerned Local Units of Government within the Southeastern Wisconsin Region, namely: the County of Waukesha, the City of Delafield, the Village of Nashotah, the Towns of Delafield and Summit, and the Delafield-Hartland Water Pollution Control Commission

This is to certify that at a special meeting of the Southeastern Wisconsin Regional Planning Commission, held at the Commission offices, Waukesha, Wisconsin, on the 18th day of January 1993, the Commission did by unanimous vote by all Commissioners present, being 15 ayes and 0 nays, and by appropriate Resolution, a copy of which is made a part hereof and incorporated by reference to the same force and effect as if it had been specifically set forth herein in detail, adopt an amendment to the regional water quality management plan, which plan was originally adopted by the Commission on the 12th day of July 1979 as part of the master plan for the physical development of the Region. The said amendment to the regional water quality management plan pertains to the proposed sanitary sewer service area for the City of Delafield and the Village of Nashotah and environs and consists of the inventory findings, maps, charts, figures, and supporting data, plans, and plan implementation recommendations contained in SEWRPC Community Assistance Planning Report No. 127, Sanitary Sewer Service Area for the City of Delafield and the Village of Nashotah and Environs, Waukesha County, Wisconsin, published in December 1992, attached hereto and made a part hereof. Such action taken by the Commission is recorded on, and is a part of, said plan, and the plan as amended is hereby transmitted to the constituent local units of government for consideration, adoption, and implementation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal and cause the Seal of the Southeastern Wisconsin Regional Planning Commission to be hereto affixed. Dated at the City of Waukesha, Wisconsin, this 19th day of January 1993.

David B. Falstad, Chairman Southeastern Wisconsin

Regional Planning Commission

ATTEST:

Kurt W. Bauer, Deputy Secretary

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#### **RESOLUTION NO. 93-10**

RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AMENDING THE ADOPTED REGIONAL WATER QUALITY MANAGEMENT PLAN, THAT PLAN BEING A PART OF THE MASTER PLAN FOR THE PHYSICAL DEVELOPMENT OF THE REGION COMPRISED OF THE COUNTIES OF KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH WASHINGTON, AND WAUKESHA IN THE STATE OF WISCONSIN (DELAFIELD-NASHOTAH AND ENVIRONS SANITARY SEWER SERVICE AREA)

WHEREAS, pursuant to Section 66.945(10) of the Wisconsin Statutes, the Southeastern Wisconsin Regional Planning Commission, at a meeting held on the 12th day of July 1979, duly adopted a regional water quality management plan as documented in the three-volume SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000; and

WHEREAS, the adopted regional water quality management plan includes recommended delineations of urban sanitary sewer service areas and primary environmental corridors, together with a recommendation that new sewered urban development in the Region occur within such delineated sewer service areas but not within such primary environmental corridors; and

WHEREAS, the adopted regional water quality management plan specifically recommended that the concerned local units of government work cooperatively with the Commission toward the refinement and detailing of the delineated sanitary sewer service areas and primary environmental corridors so as to properly reflect local, as well as regional, needs and objectives; and

WHEREAS, the City of Delafield on May 6, 1985, and the Village of Nashotah on June 28, 1985, requested that the Commission assist the City and Village in refining and detailing the recommended sanitary sewer service area tributary to the Delafield-Hartland Water Pollution Control Commission sewage treatment plant; and

WHEREAS, the Commission, working with the City of Delafield, the Village of Nashotah, and other concerned agencies of government, had completed a refined sanitary sewer service area plan for the area to be served, such plan being set forth in SEWRPC Community Assistance Planning Report No. 127, Sanitary Sewer Service Area for the City of Delafield and the Village of Nashotah and Environs, Waukesha County, Wisconsin, dated December 1992; and

WHEREAS, the refined sanitary sewer service area, as documented in SEWRPC Community Assistance Planning Report No. 127, addressed the pertinent comments made at a public hearing held on October 21, 1985; and

WHEREAS, the Common Council of the City of Delafield on November 16, 1992, and the Village Board of the Village of Nashotah on November 4, 1985, approved the refined and detailed sanitary sewer service area plan for the City of Delafield and the Village of Nashotah and environs; and

WHEREAS, Section 66.945(9) of the Wisconsin Statutes authorizes and empowers the Regional Planning Commission, as the work of making the whole master plan progresses, to amend, extend, or add to the master plan or carry any part or subject thereof into greater detail;

NOW, THEREFORE, BE IT HEREBY RESOLVED:

FIRST: That the regional water quality management plan for the Southeastern Wisconsin Region, being a part of the master plan for the physical development of the Region and comprised of SEWRPC Planning Report No. 30, Volumes One, Two, and Three, which was adopted by the Commission as a part of the master plan on the 12th day of July 1979, be and the same hereby is amended to include

the refined sanitary sewer service area plan for the City of Delafield and the Village of Nashotah and environs, as set forth in SEWRPC Community Assistance Planning Report No. 127.

SECOND: That the said SEWRPC Community Assistance Planning Report No. 127, together with the maps, charts, programs, and descriptive and explanatory matter therein contained, is hereby made a matter of public record; and the originals and true copies thereof shall be kept, at all times, at the offices of the Southeastern Wisconsin Regional Planning Commission at present located in the Old Courthouse Building in the City of Waukesha, County of Waukesha, and State of Wisconsin, or at any subsequent office that the said Commission may occupy, for examination and study by anyone who may desire to examine the same.

THIRD: That a true, correct, and exact copy of this resolution, together with a complete and exact copy of SEWRPC Community Assistance Planning Report No. 127, shall be forthwith distributed to each of the local legislative bodies of the local governmental units within the Region entitled thereto and to such other bodies, agencies, or individuals as the law may require or as the Commission, its Executive Committee, or its Executive Director, at their discretion, shall determine and direct.

The foregoing resolution, upon motion duly made and seconded, was regularly adopted at the meeting of the Southeastern Wisconsin Regional Planning Commission held on the 18th day of January 1993, the vote being: Ayes 15; Nays 0.

David B. Falstad, Chairman

ATTEST:

Kurt W. Bauer, Deputy Secretary

#### COMMUNITY ASSISTANCE PLANNING REPORT NUMBER 127

## SANITARY SEWER SERVICE AREA FOR THE CITY OF DELAFIELD AND THE VILLAGE OF NASHOTAH AND ENVIRONS WAUKESHA COUNTY, WISCONSIN

#### Prepared by the

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

The preparation of this report was financed in part through a planning grant from the Wisconsin Department of Natural Resources.

November 1992

Inside Region \$2.50 Outside Region \$5.00 (This page intentionally left blank)

### SOUTHEASTERN WISCONSIN REGIONAL PLANNING

COMMISSION

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November 30, 1992

TO: The Common Council of the City of Delafield, the Village Board of the Village of Nashotah, the Town Boards of the Towns of Delafield and Summit, the Waukesha County Park and Planning Commission, and the Delafield-Hartland Water Pollution Control Commission

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 City of Delafield on May 6, 1985, and the Village of Nashotah, on June 28, 1985, requested that the Regional Planning Commission assist the City and Village in refining and detailing the recommended sanitary sewer service area tributary to the Delafield-Hartland Water Pollution Control Commission sewage treatment plant. 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 October 21, 1985, 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 any pertinent comments and suggestions made at the hearing, and at the subsequent interagency staff meetings.

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 local public officials in the making of sewer service-related development decisions in the Delafield-Nashotah area. Accordingly, careful consideration and adoption of this report by all parties concerned is respectfully urged. The Regional Planning Commission stands ready to assist the various units and agencies of government concerned in implementing the recommendations contained in this report.

Respectfully submitted,

Kurt W. Bauer Executive Director (This page intentionally left blank)

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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."

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 appropriate state and federal agencies. The plan was formally endorsed by the Wisconsin Natural Resources Board on July 25, 1979. Such endorse-

ment 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.

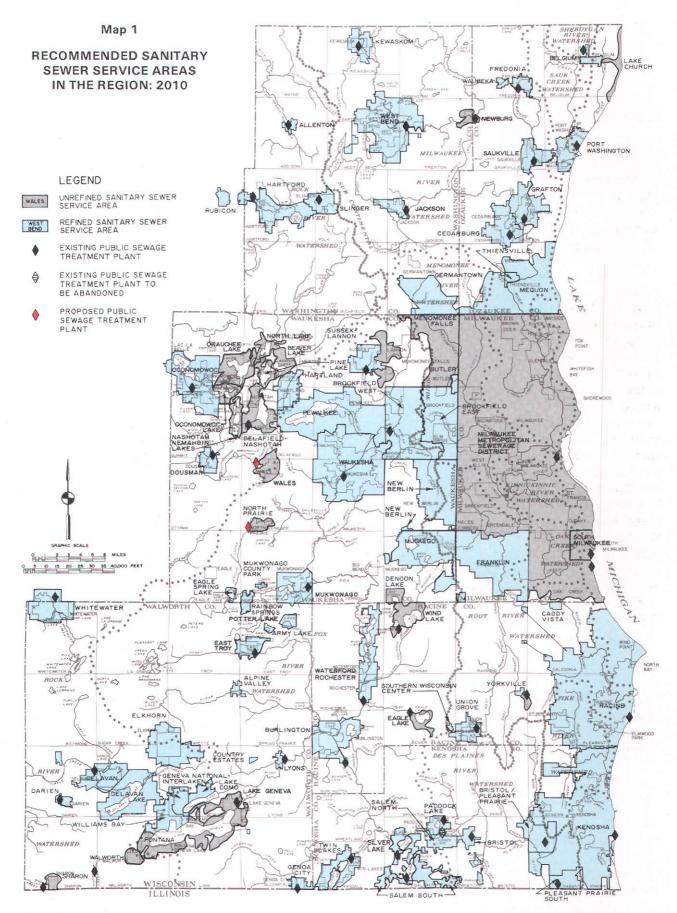
#### NEED FOR REFINEMENT AND DETAILING OF LOCAL SANITARY SEWER SERVICE AREAS

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.<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

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

<sup>&</sup>lt;sup>2</sup>See SEWRPC Planning Report No. 25, <u>A</u>
Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000,
Volume One, <u>Inventory Findings</u>, and Volume
Two, Alternative and Recommended Plans.



Source: SEWRPC.

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 properly to 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 85 sanitary sewer service areas delineated in the plan in cooperation with the local units of government concerned. The refining and detailing process consists of the following seven steps:

- 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.<sup>3</sup>
- 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

<sup>3</sup>The sewer service areas in the 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.

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 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 DELAFIELD-NASHOTAH AND ENVIRONS SANITARY SEWER SERVICE AREA REFINEMENT PROCESS

The process of refining and detailing the sanitary sewer service areas in southeastern Wisconsin was initiated subsequent to the Commission's adoption of the regional water quality manage-

ment plan in July 1979. By letter dated May 6, 1985, the City of Delafield requested that the Regional Planning Commission undertake the refinement and detailing of the proposed year 2000 sanitary sewer service area in the City of Delafield and Village of Nashotah areas tributary to the Delafield-Hartland Water Pollution Control Commission sewage treatment facility. A series of interagency meetings regarding this refinement and detailing process were then held. which subsequently culminated in a public hearing held on this matter on October 21, 1985. The Delafield-Nashotah sanitary sewer service area plan was documented in SEWRPC Community Assistance Planning Report No. 127, Sanitary Sewer Service Area for the City of Delafield and the Village of Nashotah and Environs, Waukesha County, Wisconsin. That report, at the suggestion of the Regional Planning Commission, included only those lands within the City of Delafield, the Village of Nashotah, and portions of the Towns of Delafield and Summit tributary to the Delafield-Hartland Water Pollution Control Commission treatment facility which had not been the subject of similar previous studies. That report was adopted by the Common Council of the City of Delafield on October 21, 1985; and by the Village Board of the Village of Nashotah on November 4, 1985. 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.

In a letter dated June 11, 1986, the City of Delafield requested that adoption of this report by the Regional Planning Commission and the Wisconsin Department of Natural Resources be held in abeyance until such time as other related planning efforts were completed and coordinated with the plan. These efforts included enactment of the state-mandated shoreland-wetland zoning in the City and completion and adoption of a new land use plan for the City. Consequently, final actions regarding adoption of this plan and attendant report were held in abeyance.

Throughout the ensuing years, the City of Delafield has worked towards completing these interrelated planning efforts. The City received the final Wisconsin Wetlands Inventory map from the Wisconsin Department of Natural Resources on July 27, 1988, and adopted a shoreland-wetland zoning ordinance on April 19, 1991. On March 4, 1991, the City adopted a new land use plan.

By letter dated May 22, 1991, the City requested that the Regional Planning Commission complete the refinement of the Delafield-Nashotah sanitary sewer service area, taking into consideration the shoreland-wetland zoning and the newly adopted land use plan.

An interagency staff meeting between representatives of the City of Delafield and the Regional Planning Commission was held on July 31, 1991, regarding the proposed refinement of the Delafield-Nashotah sanitary sewer service area. At the conclusion of that meeting, the parties concerned had agreed upon a revised sanitary sewer service area.

The final, agreed-upon, revised sanitary sewer service area, as adopted by the Common Council of the City of Delafield on November 16, 1992, is described in Chapter III of this report. The delineation of this area reflects the intergovernmental decisions made in the abovereferenced meetings and hearing held to consider this matter.

#### **Chapter II**

#### STUDY AREA DESCRIPTION

#### LOCATION

The study area considered in the refinement of the Delafield-Nashotah sanitary sewer service area is shown on Map 2. The area consists of all the lands encompassed within the corporate limits of the City of Delafield and the Village of Nashotah as well as portions of the Villages of Chenequa, Hartland, and Oconomowoc Lake, and of the Towns of Delafield, Merton, Oconomowoc, and Summit. As indicated in Table 1, the total study area is 42.2 square miles in extent.

#### **POPULATION**

As further indicated in Table 1, the estimated resident population of the entire study area in 1990 was 16,284 persons. By civil division, this population ranged from 5,347 persons, or about 33 percent of the total population within the study area, residing within the City of Delafield, to 180 persons, or 1 percent of the total, residing within the Village of Chenequa. In 1990, of the 16,284 persons residing within the study area about 3,300 persons, or about 20 percent, within the City of Delafield and the Village of Nashotah, were served by sanitary sewers extended from the Delafield-Hartland Water Pollution Control Commission sewage treatment facility. An additional 1,700 persons, or about 10 percent of the resident population of the study area, within the Village of Hartland were also served by the Delafield-Hartland Water Pollution Control Commission sewage treatment facility. In addition, about 400 persons, or about 2 percent, within the Town of Delafield were served by sanitary sewer extended from the City of Brookfield sewage treatment facility in 1990. The remaining 10,884 persons in the study area were served by onsite soil absorption sewage disposal systems or onsite sewage holding tanks.

It should be noted that this report is directed toward the refinement of the Delafield-Nashotah and the Nashotah-Nemahbin Lakes sewer service areas, which are comprised of the City of Delafield, the Village of Nashotah, and adjacent lands in the Towns of Delafield and Summit. Certain other lands within the study area, specifically lands within the Village of Hartland

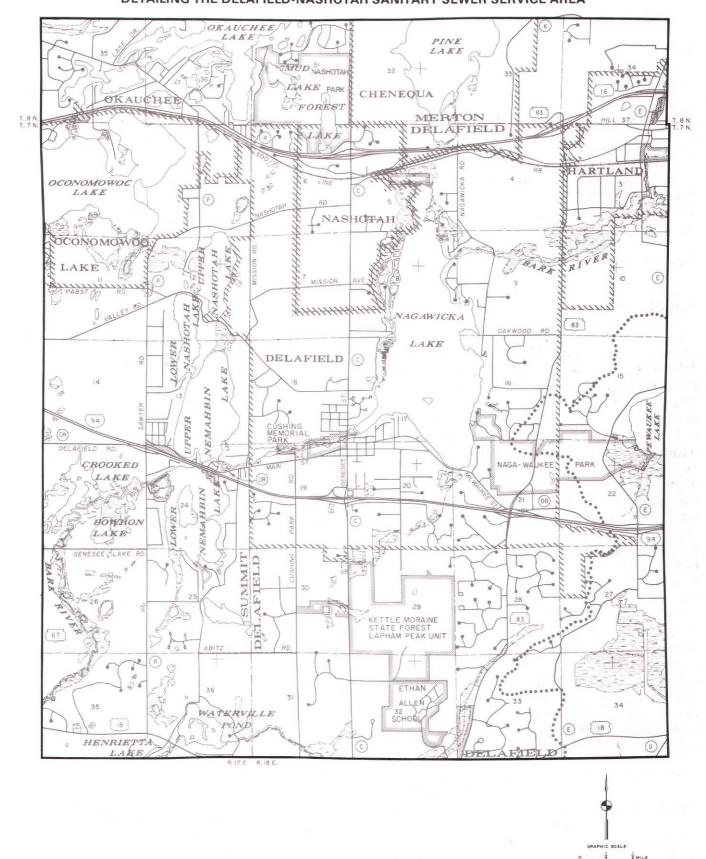
and within portions of the Town of Delafield, as set forth in SEWRPC Community Assistance Planning Report No. 93, Sanitary Sewer Service Area for the Village of Hartland, Waukesha County, Wisconsin, April 1985, and in SEWRPC Community Assistance Planning Report No. 113, Sanitary Sewer Service Area for the Town of Pewaukee Sanitary District No. 3, Lake Pewaukee Sanitary District, and Village of Pewaukee, Waukesha County, Wisconsin, June 1985, respectively, have been the subject of previous refinement studies and, therefore, will not be dealt with further in this report. In addition, certain other lands, including those portions of the Beaver Lake, Oconomowoc Lake, Okauchee Lake, and Pine Lake sewer service areas within the study area, will be the subject of future refinement studies and reports.

The forecast of probable future population levels for geographic areas such as the Delafield-Nashotah 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 quasipublic 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

Map 2

STUDY AREA IDENTIFIED FOR PURPOSES OF REFINING AND DETAILING THE DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA



Source: SEWRPC.

Table 1
STUDY AREA INFORMATION BY CIVIL DIVISION

Civil Division	Square Miles	Percent	1990 Population	
			Number	Percent
City of Delafield	10.8	25.6	5,347	32.8
Village of Chenequa	2.0	4.7	180 <sup>a</sup>	1.1
Village of Hartland	1.7	4.0	2,150 <sup>a</sup>	13.2
Village of Nashotah	1.6	3.8	567	3.5
Village of Oconomowoc Lake	2.5	5.9	380 <sup>a</sup>	2.3
Town of Delafield	10.3	24.4	3,080 <sup>a</sup>	18.9
Town of Merton	1.9	4.5	520 <sup>a</sup>	3.2
Town of Oconomowoc	1.8	4.3	2,130 <sup>a</sup>	13.1
Town of Summit	9.6	22.8	1,930 <sup>a</sup>	11.9
Study Area	42.2	100.0	16,284	100.0

a Estimated.

Source: U. S. Bureau of the Census, Wisconsin Department of Administration, and SEWRPC.

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

The Commission's year 2010 land use plan also considered alternative development patterns for accommodating the incremental population and employment levels envisioned under the aforedescribed 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.

Five alternative future land use plans incorporating consideration of the aforementioned growth scenarios and development patterns were thus prepared: the recommended land use plan, based upon an intermediate-growth centralized land use plan; a high-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, would accommodate a year 2010 population level of 18,400 persons in the Delafield-Nashotah 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 15,200

persons under the low-growth decentralized land use plan, to a high of about 30,000 persons 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 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 Delafield-Nashotah 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, 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 resourcerelated 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 Delafield-Nashotah 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 resource areas. Isolated natural resource areas generally consist of those natural resource base

Table 2

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

Resource Base or	Point
Base-Related Element	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 Site	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.

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 resource 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 pro-

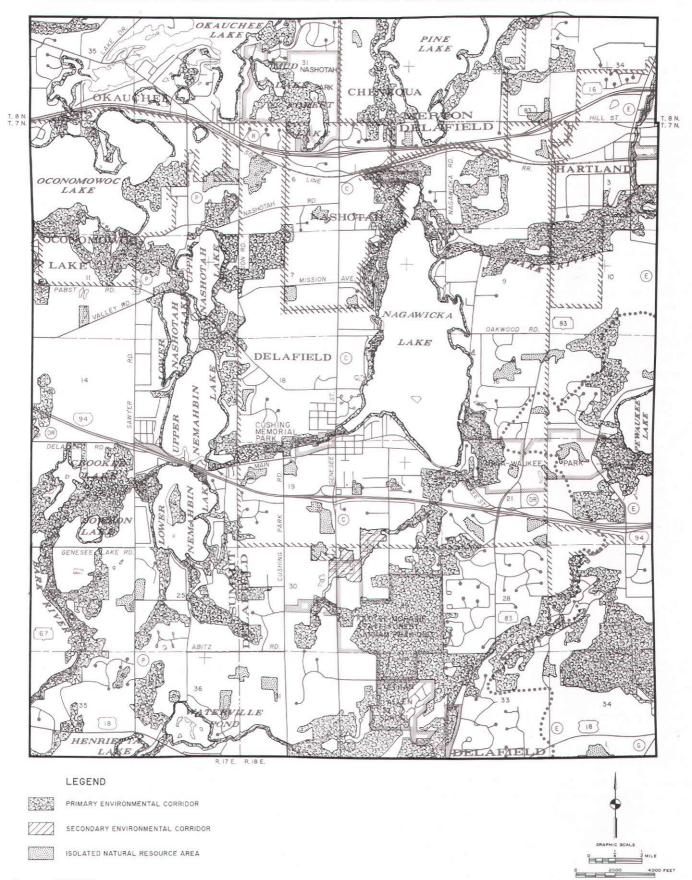
tected and preserved in a natural state to the extent practicable. An isolated natural resource area must be at least five acres in size.

Because portions of 11 major lakes are contained within the study area, a relatively large portion of the study area, 14.4 square miles, or 35 percent, is encompassed within primary environmental corridors. Lands encompassed within the secondary environmental corridors totaled about 0.2 square mile, or less than 0.5 percent of the study area. Lands encompassed within isolated natural resource areas totaled about 0.8 square mile, or about 2 percent of the study area. Thus, all environmentally significant lands in the Delafield-Nashotah study area comprise about 15.4 square miles, or 36 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 serve 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 Delafield-Nashotah 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.

Map 3
ENVIRONMENTALLY SIGNIFICANT LANDS IN THE DELAFIELD-NASHOTAH STUDY AREA: 1990



Source: SEWRPC.

#### 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, 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.

## CURRENTLY APPROVED DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA

The plan year 2000 Delafield-Nashotah sanitary sewer service area tributary to the Delafield-Hartland Water Pollution Control Commission sewage treatment facility, as set forth in the adopted regional water quality management plan, is shown on Map 4. This service area, which includes both the Delafield-Nashotah and the Nashotah-Nemahbin Lakes areas, totals about 9.6 square miles, or about 23 percent of

the total study area of 42.2 square miles. The 1990 resident population of this area totaled 6,100 persons.

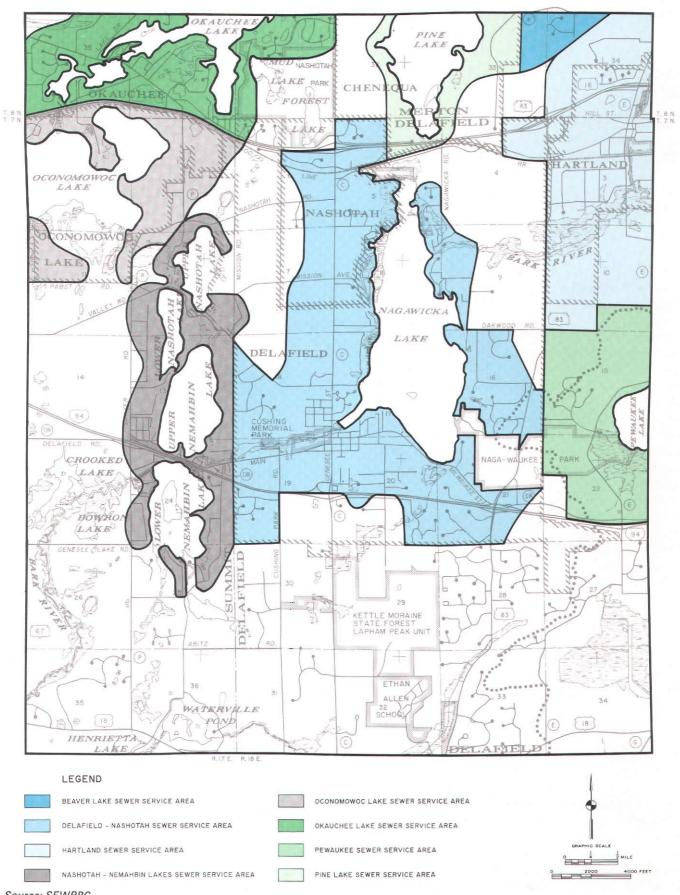
## PRELIMINARILY REFINED DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA

Factors which were considered in the delineation of the preliminarily refined Delafield-Nashotah sanitary sewer service area included the currently adopted sanitary sewer service area as shown on Map 4 and the suggestions put forth at two intergovernmental meetings held on July 9, 1985, and August 2, 1985.

The refinement effort also considered the location of areas where onsite soil absorption sewage disposal systems were known to be failing; 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.

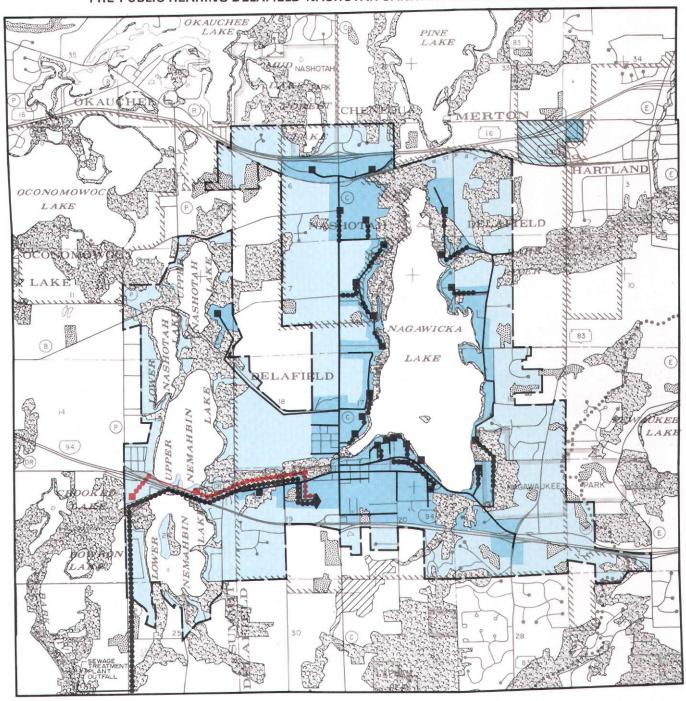
Map 5 shows the preliminarily refined Delafield-Nashotah sanitary sewer service area as taken to public hearing on October 21, 1985. This gross preliminarily refined sanitary sewer service area totals about 12.2 square miles, or about 34 percent of the total study area of 36.2 square miles. This gross refined area includes 4.8 square miles of primary environmental corridor and 0.2 square mile of isolated natural resource areas. There are no secondary environmental corridor lands within the gross sanitary sewer service area. Thus, a total of 5.0 square miles, or about 41 percent of the Delafield-Nashotah preliminarily refined sewer service area, would be encompassed in environmentally sensitive areas. The preliminarily refined sanitary sewer service area was based upon the Commission's adopted design year 2000 land use plan and would accommodate a total plan year 2000 resident population of about 11,100 persons, at a density of about 2.1 dwelling units per net residential acre.

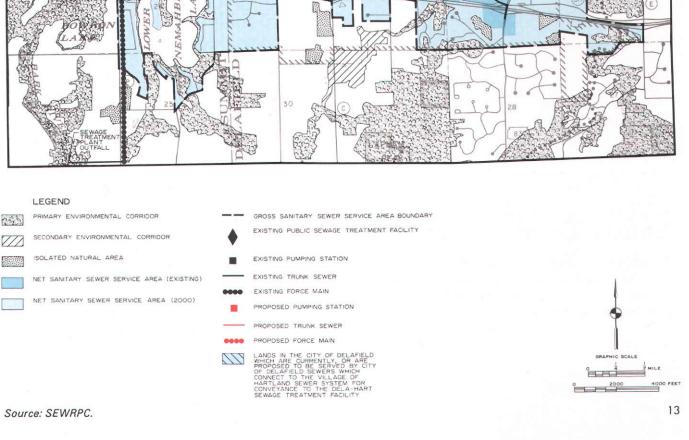
Map 4
SEWER SERVICE AREAS IN THE DELAFIELD-NASHOTAH STUDY AREA



Source: SEWRPC.

Map 5
PRE-PUBLIC HEARING DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA





## PUBLIC REACTION TO THE PROPOSED SANITARY SEWER SERVICE AREA

As noted above, a public hearing was held on October 21, 1985, for the purpose of receiving comments on the refined sanitary sewer service area as shown on Map 5. This hearing was sponsored by the City of Delafield, the Village of Nashotah, and the Regional Planning Commission. A copy of the minutes of the public hearing is contained in Appendix A.

A brief summary of the sewer service area refinement report for the Delafield-Nashotah area was presented prior to receiving public comment. The rationale for refining and detailing the Delafield-Nashotah portion of the sanitary sewer service area tributary to the Delafield-Hartland Water Pollution Control Commission sewage treatment plant and the importance of the final delineation of the service area were discussed. In addition, the significance of environmentally significant lands within the Delafield-Nashotah study area. namely, primary environmental corridors, secondary environmental corridors, and isolated natural resource areas, 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 by public officials or the city and village residents and landowners attending the hearing. However, as previously noted, subsequent to the public hearing, and adoption of this report by the City of Delafield Common Council and the Village of Nashotah Village Board, the City of Delafield requested that the Regional Planning Commission and the Wisconsin Department of Natural Resources hold in abeyance adoption of this report until such time as certain other planning and plan implementation efforts could be completed and fully coordinated.

#### REFINED DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA

In addition to being coordinated with the new City of Delafield land use plan and the new shoreland-wetland zoning, the refined Delafield-Nashotah sanitary sewer service area also reflects certain more current information not available at the time of the initial preparation of this report, including updated delineations of the environmental corridor and isolated natural resource areas, committed development decisions on the part of the City of Delafield made during the 1985 to 1992 time period, and year 2010 population and housing unit levels envisioned under the recently completed design year 2010 regional land use plan prepared by the Regional Planning Commission.

The aforementioned inventory and plan data, as well as suggestions put forth at an intergovernmental meeting attended by representatives of the City of Delafield and the Regional Planning Commission, held on July 31, 1991, were considered in the delineation of the refined Delafield-Nashotah sanitary sewer service area.

As previously noted, the Commission, as part of its regional planning program, including the delineation of sanitary sewer service areas and 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 Delafield-Nashotah area thus incorporates a range of population levels with the most reasonable lower end of the population range being based upon the Commission's intermediategrowth 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 of sewage treatment facilities, such as pumps, compressors, and chemical feed equipment, are typically 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 amenable 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 delineating 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 refined year 2010 Delafield-Nashotah sanitary sewer service area as agreed upon at the July 31, 1991, intergovernmental meeting, and as adopted by the Common Council of the City of Delafield on November 16, 1992, is shown on Map 6, together with existing trunk sewers.<sup>1</sup>

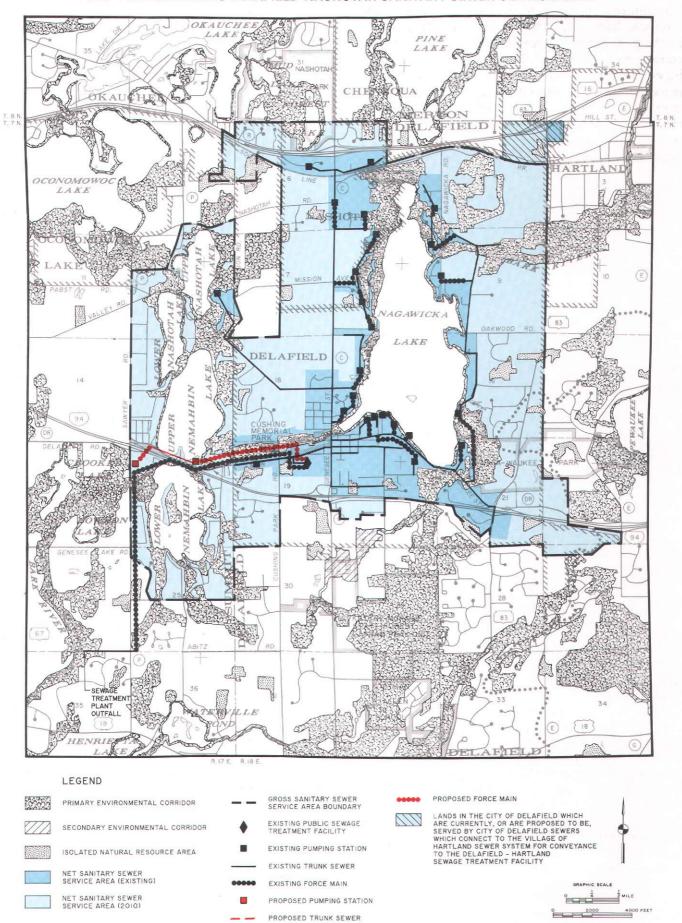
The gross Delafield-Nashotah sanitary sewer service area totals about 13.8 square miles, including 2.7 square miles of surface water located within Nagawicka Lake, Upper and Lower Nashotah Lakes, and Upper and Lower Nemahbin Lakes, or about 33 percent of the total study area of 42.2 square miles. This refined gross sewer service area includes 4.9 square miles of primary environmental corridors and 0.2 square mile of isolated natural resource areas. There are no secondary environmental corridors within the refined Delafield-Nashotah sewer service area. Therefore, a total of 5.1 square miles, or about 37 percent of the refined sewer service area, would be encompassed in environmentally sensitive areas, consisting of some primary environmental corridors and some isolated natural resource area lands.

It should be noted that the environmentally significant lands indicated on Map 6 total approximately one acre more than the environmentally significant lands indicated on Map 3. As indicated on Map 7, this one-acre net gain is due to a development proposal which envisions that one acre of primary environmental corridor would be developed in order to accommodate the proposed Lake Country School building, while an adjacent two acres of land, also located adjacent to the environmental corridor, would remain undeveloped and be restored to natural, open space uses, thereby allowing this area to be added to the primary environmental corridor. The area concerned does not encompass any identified wetlands.

The refined year 2010 Delafield-Nashotah sanitary sewer service area would, under the Commission's high-growth decentralized land use plan, accommodate a plan year 2010 population of about 12,600 persons. Population levels within this area, however, would approximate about 7,900 persons under the intermediate-growth centralized land use plan. The incremental population and housing unit levels envisioned in the Delafield-Nashotah sewer service area would be accommodated at a density of about 1.4 dwelling units per net residential acre. This density lies within the recommended density

<sup>&</sup>lt;sup>1</sup>It should be noted that the owners of the Westbrook Church property, located within U. S. Public Land Survey Section 16, Township 7 North, Range 18 East, City of Delafield, east of, and adjacent to STH 83, and the owners of the Applied Power property, along with the Town of Delafield Town Hall, located within U. S. Public Land Survey Section 22, Township 7 North, Range 18 East, Town of Delafield, north of, and adjacent to, CTH DR, have requested, and the Lake Pewaukee Sanitary District has agreed to provide, temporary sewer service to these lands, such lands being located within the planned sewer service area tributary to the Delafield-Hartland sewage treatment facility, until such time as the City or Town of Delafield is in a position to extend sewers to these sites.

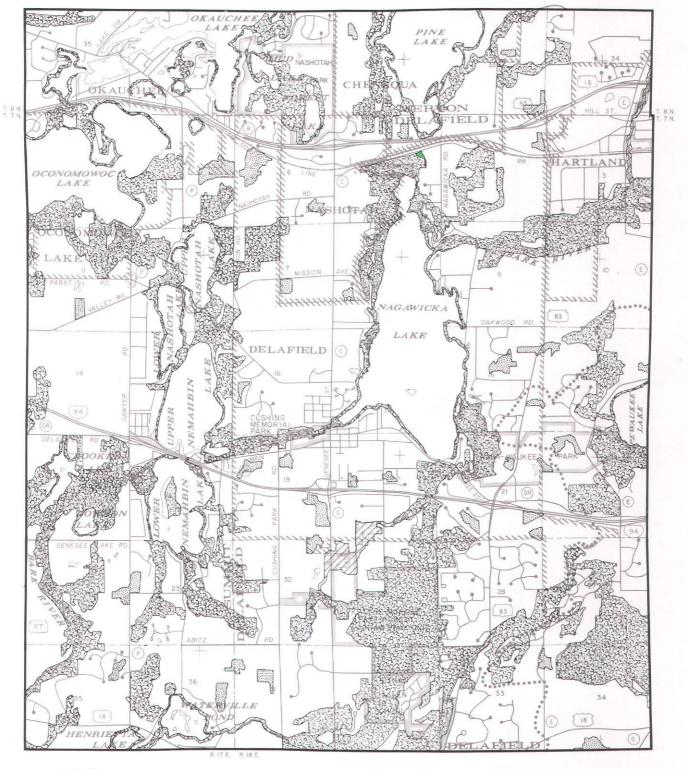
Map 6
POST-PUBLIC HEARING DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA



Source: SEWRPC.

Map 7

## ANTICIPATED CHANGE IN THE ENVIRONMENTALLY SIGNIFICANT LANDS IN THE DELAFIELD-NASHOTAH SEWER SERVICE AREA: 1990-2010



#### LEGEND

PRIMARY ENVIRONMENTAL CORRIDOR

SECONDARY ENVIRONMENTAL CORRIDOR

ISOLATED NATURAL RESOURCE AREA

PORTION OF EXISTING (1990) PRIMARY ENVIRONMENTAL CORRIDOR ANTICIPATED TO BE CONVERTED TO URBAN USES BY THE YEAR 2010

AREA PROPOSED TO REMAIN UNDEVELOPED AND ADDED TO THE PRIMARY ENVIRONMENTAL CORRIDOR



range for the Delafield-Nashotah area of the region as identified in the Commission-adopted regional land use plan for the year 2010.<sup>2</sup>

Detailed delineations of the final Delafield-Nashotah sanitary sewer service area and environmentally significant lands within this area are shown on a series of aerial photographs reproduced as Map 8, beginning on page 22 and continuing through page 33 of this report.

#### 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 would receive sanitary sewer service. It is also envisioned that all lands identified as primary environmental corridor would not be developed for intensive urban use. It is recognized, however, that certain land uses requiring sanitary

<sup>2</sup>Net incremental residential density in the refined Delafield-Nashotah sewer service area, as set forth under the Commission's high-growth decentralized land use plan, is determined by dividing the total number of incremental dwelling units in the sewer service area in the design year by the net incremental residential land area anticipated within that area.

The total number of incremental dwelling units anticipated in the Delafield-Nashotah sewer service area, 1,842 units, was determined by first identifying the total number of dwelling units anticipated in that area by the year 2010, 4,398, minus the number of existing dwelling units in that area in 1990, 2,556.

Incremental gross residential land anticipated in the Delafield-Nashotah sewer service area, based upon the City of Delafield Comprehensive Plan, totals about 1,676 acres. Incremental net residential land for this area, 1,290 acres, equals gross residential land, 1,676 acres, minus lands allocated to local streets, 23 percent, or 386 acres. The total number of incremental dwelling units anticipated in the sewer service area in the design year, 1,842 units, divided by the incremental net residential land area, 1,290 acres, results in an incremental net residential density of 1.5 dwelling units per acre.

sewer service could be properly located in the corridors, including park and outdoor recreation facilities, certain institutional uses, and, in some cases, very low density residential development on five-acre lots. In addition, provision of public sewer service within the identified sewer service area will reduce the pollutant loadings from onsite septic systems to both surface and groundwater. Therefore, the abandonment of existing septic systems, and, more importantly, the abandonment of failing septic systems, can be expected to have positive water quality impacts. This is especially important in the Nashotah and Nemahbin Lakes areas. Accordingly, assuming proper site development and construction practices, including appropriate soil erosion control practices,3 and compatible development within primary and secondary environmental corridors, isolated natural resource areas or lands adjacent to such areas, there should be no significant adverse water quality impacts attributable to the development of the planned sanitary sewer service area.

#### COST-EFFECTIVENESS ANALYSIS OF SEWAGE CONVEYANCE AND TREATMENT ALTERNATIVES

The planned sewer service areas set forth in this report lie adjacent to the current sewer service areas of the City of Delafield and Village of Nashotah, both of which are served through the Delafield-Hartland Water Pollution Control Commission sewerage facilities. The type of development envisioned in the area should be provided with public sewer services.

Two other public sanitary sewer systems are located in the vicinity. The Pewaukee Lake Sanitary District system extends to the eastern portion of the study area and is connected to the Pewaukee-Brookfield sewerage system. The limits of that service area have long been agreed upon and properly approximate the divide

<sup>&</sup>lt;sup>3</sup>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 as documented in "Model Ordinance," <u>The Municipality</u>, Vol. 82, No. 1, January 1987.

between the Fox and Bark River watersheds. The sizing of existing sewers in the Pewaukee Lake Sanitary District does not provide for further expansion beyond the watershed divide. Likewise, the existing and planned service area tributary to the City of Oconomowoc sewage treatment plant is located immediately to the north and northeast of the planned Delafield-Nashotah sanitary sewer service area. The boundary between the service area tributary to the Oconomowoc sewerage system and the Delafield-Nashotah service area has been longstanding, dating back to the Regional Planning Commission's 1970 Regional Sanitary Sewerage System Plan. The boundary has been reaffirmed, with minor refinements, in several subsequent cost effectiveness studies.

In addition, as discussed in the following section, the Delafield-Hartland Water Pollution Control Commission sewage treatment plant was designed to serve a population level of 20,800 persons, somewhat above the planned design year 2010 level of 18,100 persons for the entire Delafield-Nashotah-Hartland service area set forth herein under the intermediate-growth centralized land use plan. The design population level is, however, less than the 26,700 persons envisioned under the high-growth decentralized land use plan for the entire Delafield-Nashotah-Hartland service area. Thus, it appears that the Delafield-Hartland Water Pollution Control Commission sewage treatment plant has adequate capacity for the planned sewer service area for at least 10 years. Clearly, the most costeffective means of providing public sewer service to the entire service area is through the Delafield-Nashotah sewerage system.

## SEWAGE TREATMENT PLANT CAPACITY IMPACT ANALYSIS

The Delafield-Hartland Water Pollution Control Commission sewage treatment plant has a capacity of 2.20 million gallons per day (mgd) of sewage on an average annual basis. As already noted, the plant was designed to serve a population of 20,800 persons. The current average annual flow rate is about 1.39 mgd. A year 2010 planned population level of roughly 18,100 to about 26,700 persons is expected within the entire sewer service area under the intermediate-growth centralized land use plan and the high-growth decentralized land use plan, respectively. These planned population levels include the

currently unsewered Nashotah-Nemahbin Lakes areas and include about 10,200 and 14,100 persons in the Hartland sewer service area under the intermediate- and high-growth future scenarios, respectively. Based upon these population levels, year 2010 sewage flows of from 2.4 to 3.4 mgd on an average daily basis are expected. Thus, the Delafield-Hartland Water Pollution Control Commission will probably need to initiate facility planning for a plant expansion between the years 2000 and 2010, provided that the Nashotah-Nemahbin Lakes areas are connected by that time.

#### IMPLEMENTING RECOMMENDATIONS

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

- 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 Common Council of the City of Delafield, by the Village Board of the Village of Nashotah, by the Town Boards of the Towns of Delafield and Summit, as having lands affected by the planned sanitary sewer service area; by the Delafield-Hartland Water Pollution Control Commission, as the agency officially responsible for providing wastewater treatment services to the Delafield-Nashotah sanitary sewer service area; and by the Waukesha County Park and Planning Commission, 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 outside of the incorporated 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 Delafield-Nashotah sanitary sewer service area as shown on Maps 6 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 City of Delafield and the Village of Nashotah 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.

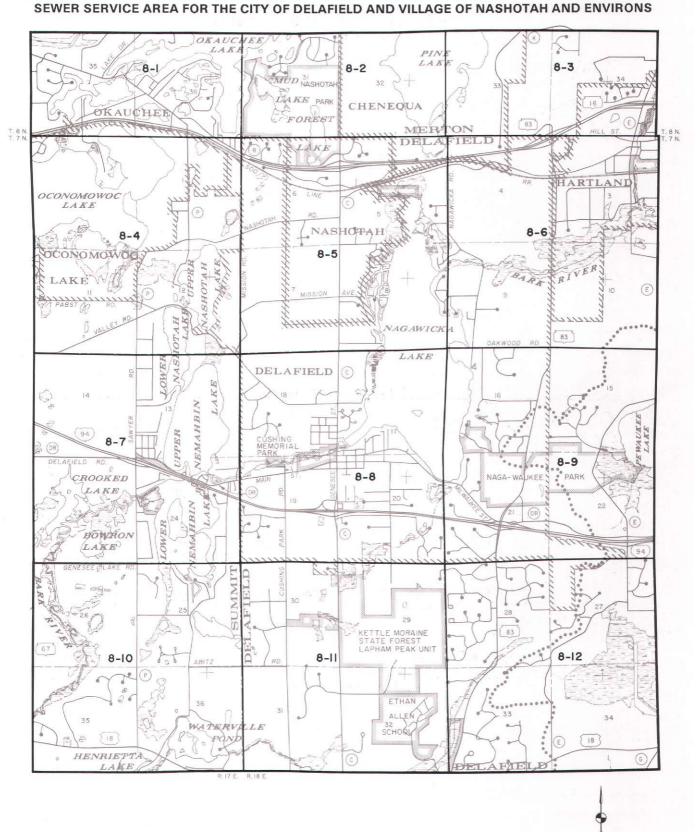
#### SUBSEQUENT REFINEMENTS TO THE DELAFIELD-NASHOTAH SEWER SERVICE AREA

This report presents a refined sewer service area for the Delafield-Nashotah area. The refined sewer service area were 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 Delafield-

Nashotah area to the year 2010. Like other longrange plans, however, this sewer service area plan should be reviewed periodically, 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 City of Delafield or the Village of Nashotah that amendments to the sewer service area plan as presented herein are necessary, the City of Delafield or the Village of Nashotah 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 Common Council of the City of Delafield, the Village Board of the Village of Nashotah, 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.

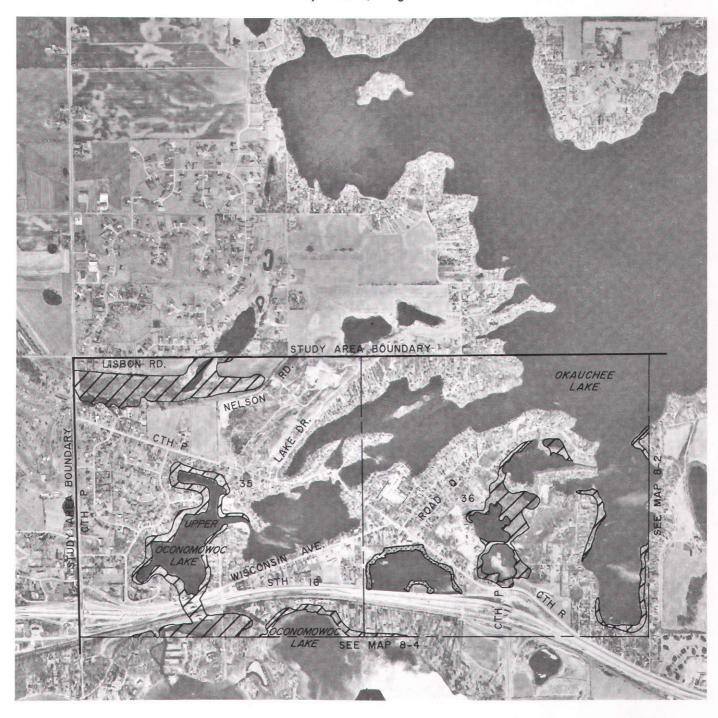
Map 8

INDEX OF MAPS SHOWING THE ENVIRONMENTALLY SIGNIFICANT LANDS AND PLANNED SANITARY



## ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF DELAFIELD AND VILLAGE OF NASHOTAH AND ENVIRONS

U. S. Public Land Survey Sections 35 and 36 Township 8 North, Range 17 East



LEGEND

PRIMARY ENVIRONMENTAL CORRIDOR

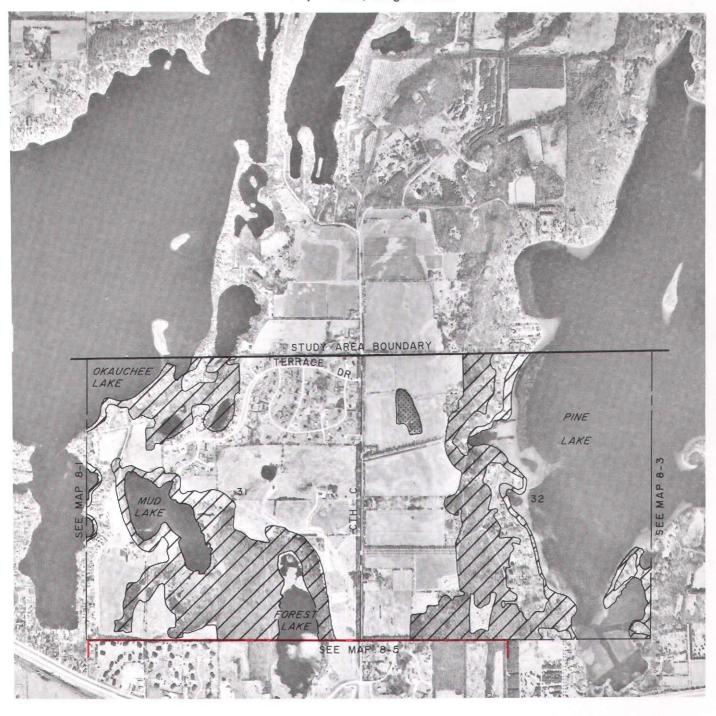
ISOLATED NATURAL RESOURCE AREA

GRAPPIC SCALE
0 400 800 IF00 FEET

Source: SEWRPC.

## ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF DELAFIELD AND VILLAGE OF NASHOTAH AND ENVIRONS

U. S. Public Land Survey Sections 31 and 32 Township 8 North, Range 18 East







## ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF DELAFIELD AND VILLAGE OF NASHOTAH AND ENVIRONS

U. S. Public Land Survey Sections 33 and 34 Township 8 North, Range 18 East



LEGEND

PRIMARY ENVIRONMENTAL CORRIDOR

\_\_\_

SECONDARY ENVIRONMENTAL CORRIDOR

....

ISOLATED NATURAL RESOURCE AREA



U. S. Public Land Survey Sections 1, 2, 11, and 12 Township 7 North, Range 17 East





PRI

PRIMARY ENVIRONMENTAL CORRIDOR

ISOLATED NATURAL RESOURCE AREA

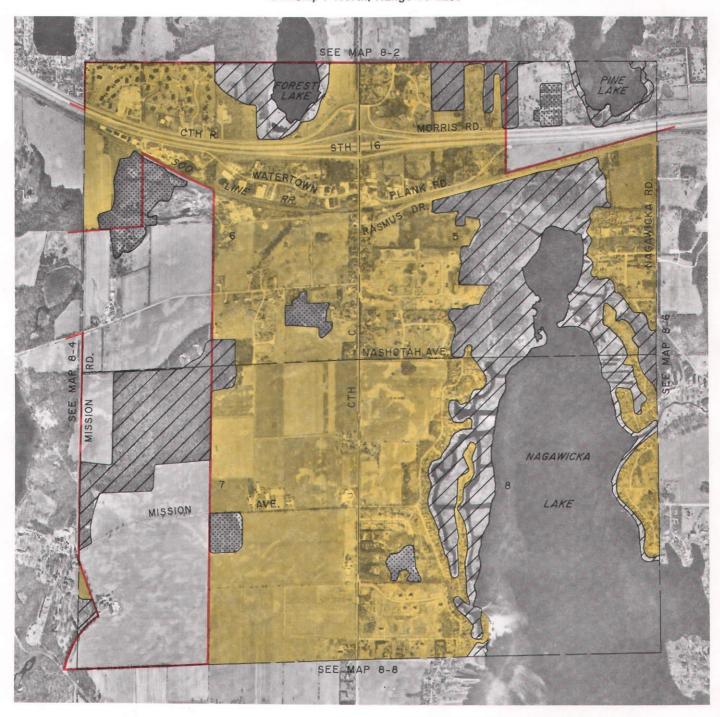
PLANNED SANITARY SEWER SERVICE AREA

GROSS SANITARY SEWER SERVICE AREA BOUNDARY

Source: SEWRPC.



U. S. Public Land Survey Sections 5, 6, 7, and 8 Township 7 North, Range 18 East

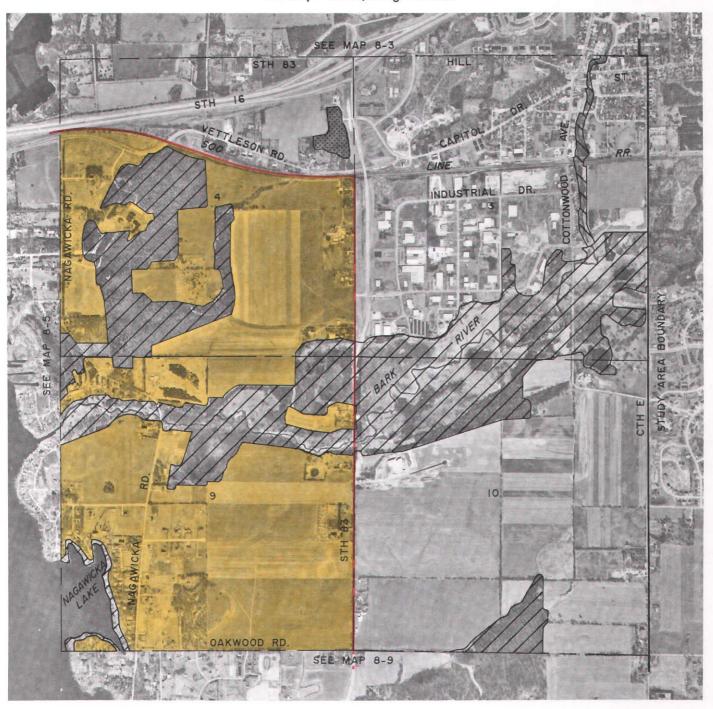




BRACHIC SCALE

6 400 600 1200 FEET

U. S. Public Land Survey Sections 3, 4, 9, and 10 Township 7 North, Range 18 East



PRIMARY ENVIRONMENTAL CORRIDOR

SECONDARY ENVIRONMENTAL CORRIDOR

ISOLATED NATURAL RESDURCE AREA

PLANNED SANITARY SEWER SERVICE AREA

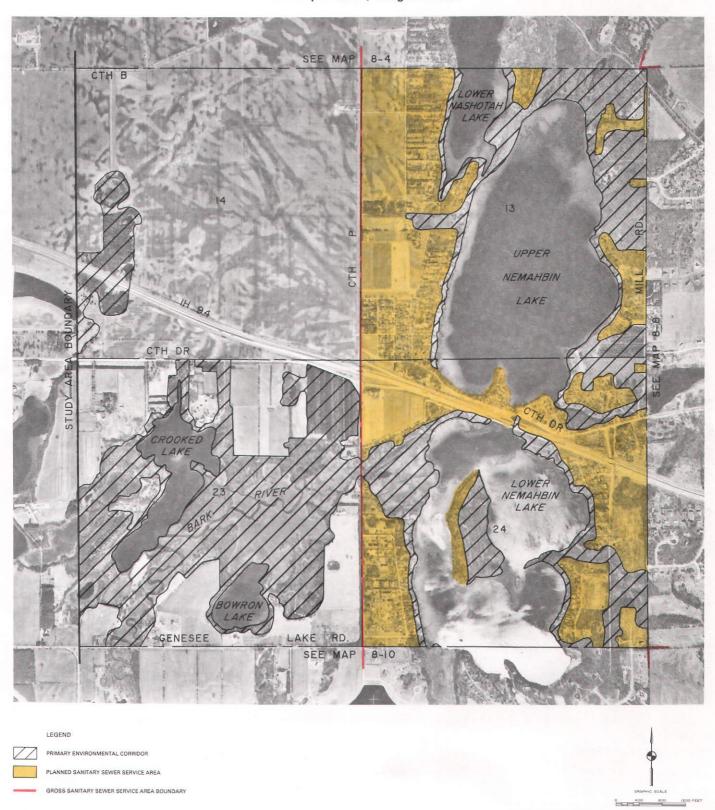
GROSS SANITARY SEWER SERVICE AREA BOUNDARY

0 400 800 800 FEET

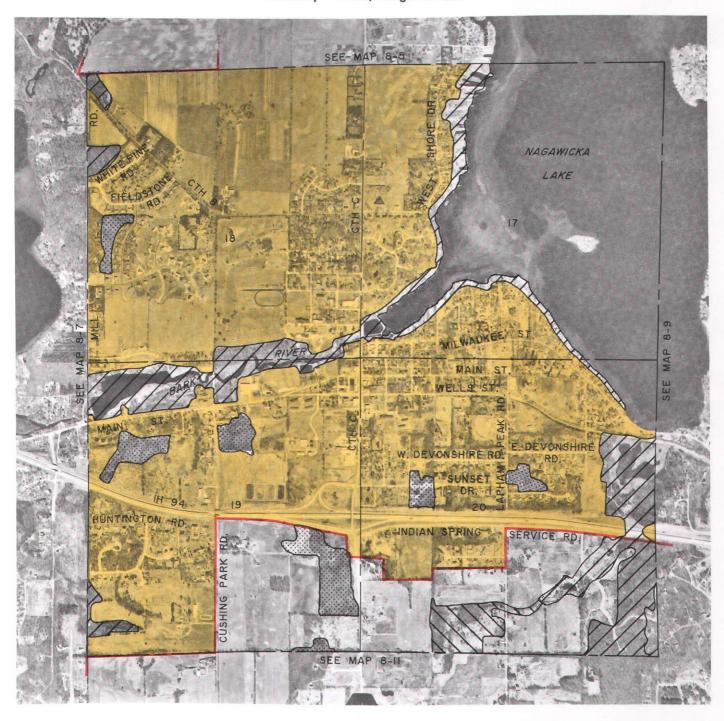
Source: SEWRPC.

LEGEND

U. S. Public Land Survey Sections 13, 14, 23, and 24 Township 7 North, Range 17 East



U. S. Public Land Survey Sections 17, 18, 19, and 20 Township 7 North, Range 18 East



PRIMARY ENVIRONMENTAL CORRIDOR

SECONDARY ENVIRONMENTAL CORRIDOR

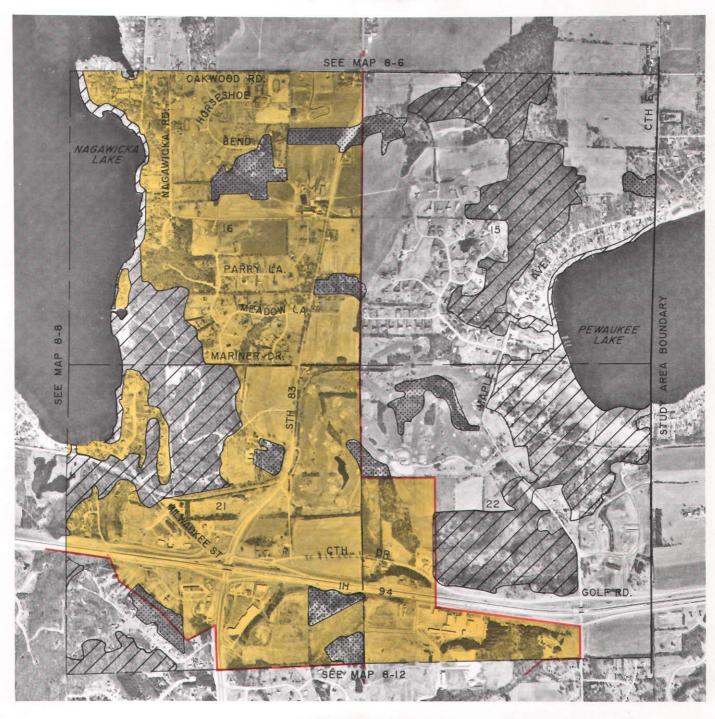
ISOLATED NATURAL RESOURCE AREA

PLANNED SANITARY SEWER SERVICE AREA

GROSS SANITARY SEWER SERVICE AREA BOUNDARY



U. S. Public Land Survey Sections 15, 16, 21, and 22 Township 7 North, Range 18 East







U. S. Public Land Survey Sections 25, 26, 35, and 36 Township 7 North, Range 17 East







## ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF DELAFIELD AND VILLAGE OF NASHOTAH AND ENVIRONS

U. S. Public Land Survey Sections 29, 30, 31, and 32 Township 7 North, Range 18 East





SHAPPIC SCALE 0 400 800 STOOFEET

U. S. Public Land Survey Sections 27, 28, 33, and 34 Township 7 North, Range 18 East







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#### Appendix A

#### MINUTES OF PUBLIC HEARING

#### Sanitary Sewer Service Area for the City of Delafield and the Village of Nashotah and Environs October 21, 1985

#### Present:

Mayor R. Savrnoch

Ald. C. Kot

Ald. D. Mraz

Ald. R. Transon

Ald. J. Kelly

Ald. R. Beaver

#### Present for public hearing:

Bruce Rubin, SEWRPC
Dennis Lefevre, SEWRPC
Gary Relihan, Village of Nashotah
Dorothy J. White, Village of Nashotah

#### PUBLIC HEARING: DELAFIELD-NASHOTAH SANITARY SEWER SERVICE AREA

Mayor Savrnoch declared hearing open. Clerk read notice of hearing as published in the Lake Country Reporter October 10, 1985. Hearing is for the purpose of receiving public comment on, and reaction to, a proposed year 2000 sewer service area plan for the City of Delafield and Village of Nashotah and environs, including the Nashotah and Nemahbin Lakes areas of the Town of Summit. This hearing is sponsored by the City of Delafield, the Village of Nashotah, and SEWRPC.

Mayor Savrnoch introduced SEWRPC officials and representatives from the Village of Nashotah. Mr. Bruce Rubin, of the SEWRPC, briefly reviewed the proposed plan. It has been amended from the original draft form to include lands in the northeastern part of the City which will be served by the Village of Hartland sanitary sewer service area because of their proximity to Hartland.

Dorothy White, 2220 Key Point Lane, Hartland, asked what is new on this plan, that was not previously included in Plan No. 30, other than inclusion of the area north of Highway 16. Mr. Rubin said Plan No. 30 was fairly generalized in nature. This more precisely squares off property lines, includes lands to the north of Highway 16 and additional lands north and east of Nagawicka Lake which were not in the original plan. He recommended reviewing the plan periodically every five years or so.

Mrs. White commented she hoped this does not mean the City will immediately sewer all that land in those areas.

Ald. Mraz asked if it would be prudent to include Nashotah House farmland in the area to be sewered now. Mr. Rubin advised that the DNR discourages including large amounts of vacant land. It is his understanding at this point in time that Nashotah House does not envision their farmland being sewered. The DNR looks at the anticipated urban service area with the question, "Is it reasonable?" You can add or change boundaries later if you wish.

Mrs. White asked if there was any possibility of the Okauchee area being included in this area. Mr. Rubin said that would be part of another refinement. It would take an engineering analysis to see if it would be cost effective to include it in this area.

Mrs. White commented she was glad to see the portion north of Highway 16 in the northwest corner of City included in the Del-Hart plant rather than Oconomowoc.

Mayor Savrnoch asked if this plan had any limitations--Can we contract sanitary sewer services to others, or must we annex them to serve them? Mr. Rubin said SEWRPC stays away from that; they just identify areas as urban service areas and leave it up to the municipalities from there.

Mrs. White feels it would be difficult for the communities to require annexation. She feels we have a moral obligation to service it without annexation because of the federal funds received to build the system.

There being no further comments, the hearing was declared closed.