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

COMMUNITY ASSISTANCE PLANNING REPORT NUMBER 203

SANITARY SEWER SERVICE AREA FOR THE CITY OF LAKE GENEVA AND ENVIRONS WALWORTH 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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December 1992

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

SOUTHEASTERN WISCONSIN REGIONAL PLANNING

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December 31, 1992

TO: The Common Council of the City of Lake Geneva; the Town Boards of the Towns of Bloomfield, Geneva, Linn and Lyons; and the Walworth County Board of Supervisors

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 Lake Geneva, on October 9, 1992, requested that the Regional Planning Commission assist the City in refining and detailing the recommended sanitary sewer service area tributary to the City of Lake Geneva 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 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 extension of sanitary sewer service.

A public hearing was held on December 21, 1992, 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 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 City of Lake Geneva. 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 concerned state and federal agencies. The plan was formally endorsed by the Wisconsin Natural Resources Board on July 25, 1979. Such endorse-

¹The 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, Recom-

mended Plan.

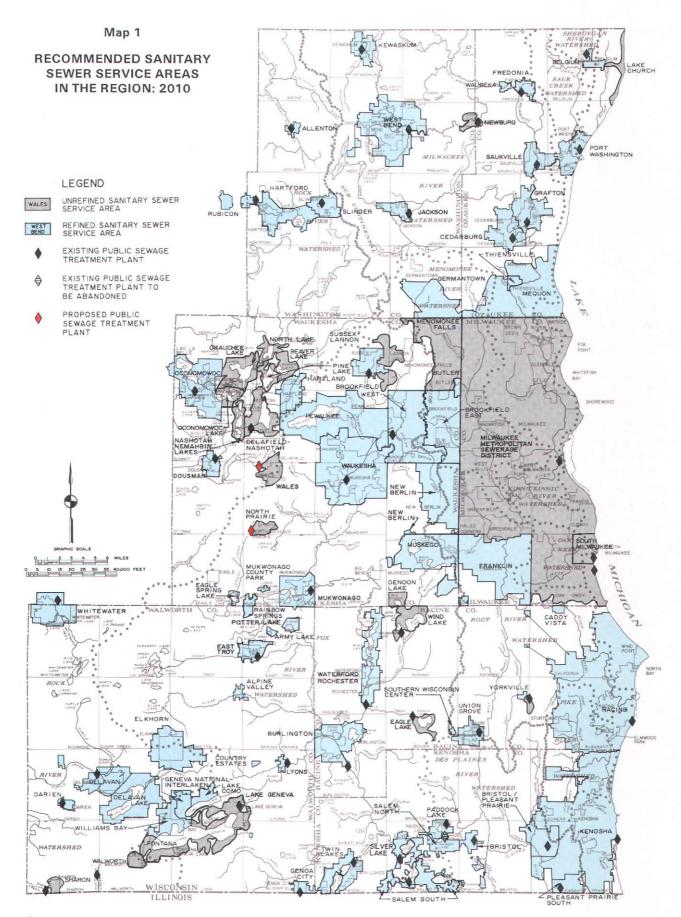
ment is particularly important because, under state law and administrative rules, certain actions by the Wisconsin Department of Natural Resources (DNR) must be found to be in accordance with the adopted and endorsed plan. These actions include, among others, DNR approval of waste discharge permits, 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 2000.² As such, the delineation of the areas was necessarily general, and may not have reflected 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

²See 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.



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 refinement and detailing process consists of the following seven steps:

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

- 4. The preparation of modifications to the initially proposed sanitary sewer service area to reflect the agreements reached at 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 CITY OF LAKE GENEVA AND ENVIRONS SANITARY SEWER SERVICE AREA REFINEMENT PROCESS

By letter dated October 9, 1992, the City of Lake Geneva requested that the Regional Planning Commission undertake the refinement and

³The 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 served as a point of departure in the delineation of the sewer service area set forth in this report.

detailing of the sanitary sewer service area tributary to the City of Lake Geneva sewage treatment plant. In making this request, the City indicated that the City had recently completed and adopted a land use plan which would provide a sound basis for the development of a refined sanitary sewer service area for the City of Lake Geneva and environs.

An interagency meeting regarding the requested refinement and detailing process was held on November 17, 1992. In attendance at this meeting were representatives of the City of Lake Geneva and the Regional Planning Commission. At the conclusion of this meeting, both parties concerned had agreed upon a preliminary revised sanitary sewer service area tributary to the Lake Geneva sewage treatment plant for presentation at a public hearing.

A copy of an initial draft of this report setting forth a preliminary proposed sanitary sewer service area was provided to the City of Lake Geneva; the Towns of Bloomfield, Geneva, Linn and Lyons; the Walworth County Park and Planning Commission; and the Wisconsin Department of Natural Resources for review and comment prior to the public hearing on the plan proposal. A public hearing was held on December 21, 1992. 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, agreedupon, sanitary sewer service area attendant to the City of Lake Geneva sewage treatment facility is described in Chapter III of this report. The delineation of this area reflects the intergovernmental decisions made in the aforereferenced meeting and pertinent comments made at the public hearing held on this matter.

Chapter II

STUDY AREA DESCRIPTION

LOCATION

The study area considered in the refinement of the City of Lake Geneva and environs 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 Lake Geneva and portions of the Towns of Bloomfield, Geneva, Linn and Lyons. As indicated in Table 1, the total study area is 30.2 square miles in extent, of which 5.8 square miles, or about 19 percent, lie within the City of Lake Geneva; 5.2 square miles, or about 17 percent, lie within the Town of Bloomfield; about 6.4 square miles, or about 21 percent, lie within the Town of Geneva; about 8.0 square miles, or about 27 percent, lie within the Town of Linn; and about 4.8 square miles, or about 16 percent, lie within the Town of Lyons.

POPULATION

As further indicated in Table 1, the estimated resident population of the entire study area in 1990 was about 8,749 persons. Of this total, 5,979 persons, or about 68 percent, resided in the City of Lake Geneva; about 290 persons, or about 3 percent, resided in the Town of Bloomfield; about 1,370 persons, or about 16 percent, resided in the Town of Geneva; about 650 persons, or about 8 percent, resided in the Town of Linn; and the remaining 460 persons, or 5 percent, resided in the Town of Lyons.

Of the 8,749 persons residing within the study area, about 6,400 persons, or about 73 percent, were served by sanitary sewers extended from the City of Lake Geneva sewage treatment facility. The 6,400 persons provided with sanitary sewer service includes virtually the entire population of the City of Lake Geneva in addition to the Coachman's Terrace Mobile Home Park located in the Town of Geneva, the Pioneer Mobile Home Park located in the Town of Bloomfield, and the Hillmore Heights subdivision located in the Town of Lyons, all three of which have entered into agreements with the City of Lake Geneva to receive service from the City's sewage treatment facility. The remaining 2,349 persons in the study area were served by onsite soil-absorption sewage disposal systems or onsite sewage holding tanks.

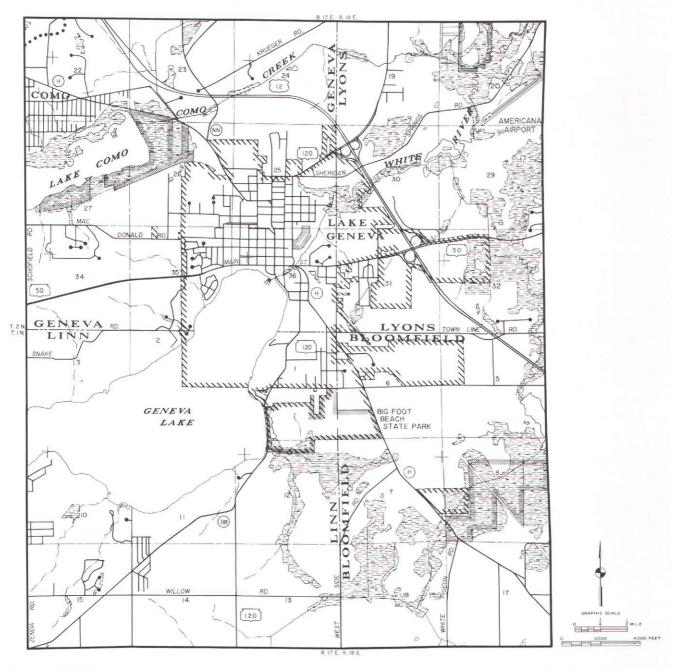
It should be noted that this report is directed toward refining the sewer service area of City of Lake Geneva and environs, comprised of the City of Lake Geneva and adjacent lands in the Towns of Bloomfield, Geneva, Linn, and Lyons. Certain other lands within the study area, specifically lands within the Town of Geneva along the north shore of Lake Como, have been the subject of previous refinement studies as set forth in SEWRPC Community Assistance Planning Report No. 56, Second Edition, Sanitary Sewer Service Areas for the Walworth County Metropolitan Sewerage District, Walworth County, Wisconsin, November 1991, and, therefore, will not be dealt with further in this report.

The forecast of probable future population levels for geographic areas such as the Lake Geneva and environs study area is a difficult task, accompanied by uncertainties and subject to periodic revision as new information becomes available. The practice that has been typically followed in forecasting population levels for physical development planning is the preparation of a single population forecast believed to be the most representative of future conditions. This traditional approach works well in periods of social and economic stability, when historic trends can be anticipated to continue relatively unchanged over the plan design period. During periods of major change in social and economic conditions, however, when there is great uncertainty as to whether historic trends will continue, alternatives to this traditional approach may be required. One such alternative approach, proposed in recent years and utilized to a limited extent at the national level for public and 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 rapidly changing socioeconomic conditions existing in the United States, the Regional Planning Commission began to incorporate the

Map 2

STUDY AREA IDENTIFIED FOR PURPOSES OF REFINING AND DETAILING
THE CITY OF LAKE GENEVA AND ENVIRONS SANITARY SEWER SERVICE AREA



Source: SEWRPC.

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

Table 1
STUDY AREA INFORMATION BY CIVIL DIVISION

| | 1990 Area | | 1990 Population | |
|---------------------|-----------------|---------|--------------------|---------|
| Civil Division | Square Miles | Percent | Estimated | Percent |
| City of Lake Geneva | 5.8 | 19.2 | 5,979 | 68.3 |
| Town of Bloomfield | 5.2 | 17.2 | 290 ^a | 3.3 |
| Town of Geneva | 6.4 | 21.2 | 1,370 ^a | 15.7 |
| Town of Linn | 8.0 | 26.5 | 650 ^a | 7.4 |
| Town of Lyons | 4.8 | 15.9 | 460 ^a | 5.3 |
| Study Area | 30.2 | 100.0 | 8,749 | 100.0 |

^aEstimated.

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

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 highgrowth 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 were 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.

Thus five alternative future land use plans incorporating consideration of the aforementioned growth scenarios and development patterns were prepared: the recommended land use plan, based on an intermediate-growth centralized land use plan, and three alternative decentralized land use plans, based on 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 11,300 persons in the Lake Geneva and environs study area. Under the alternative futures approach utilized by the Commission for its work, however, the population level within the study area could range from a low of 8,800 persons, under the low-growth decentralized land use plan, to a high of about 19,300 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 of the remaining high-value wetlands, woodlands, wildlife habitat areas, major bodies of surface water, and deline-

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

Table 2

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

| Resource Base or Related Element | Point Value |
|--|----------------|
| Natural Resource Base | |
| Natural Resource base Lake | |
| Major (50 acres or more) | 20 |
| Minor (5-49 acres) | 20 |
| Rivers or Streams (perennial) | 10 |
| Shoreland | . 10 |
| 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 |
| Country Ciginiounico | 5 |

Source: SEWRPC.

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 Lake Geneva and environs study area are shown on Map 3.

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

Also identified on Map 3 are isolated natural resource areas. Isolated natural resource areas generally consist of those natural resource base elements that have "inherent natural" value such as wetlands, woodlands, wildlife habitat areas, and surface water areas, but that are separated physically from the primary and secondary environmental corridors by intensive urban or agricultural land uses. Since isolated natural 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 protected 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 two major lakes are contained within the study area, a relatively large

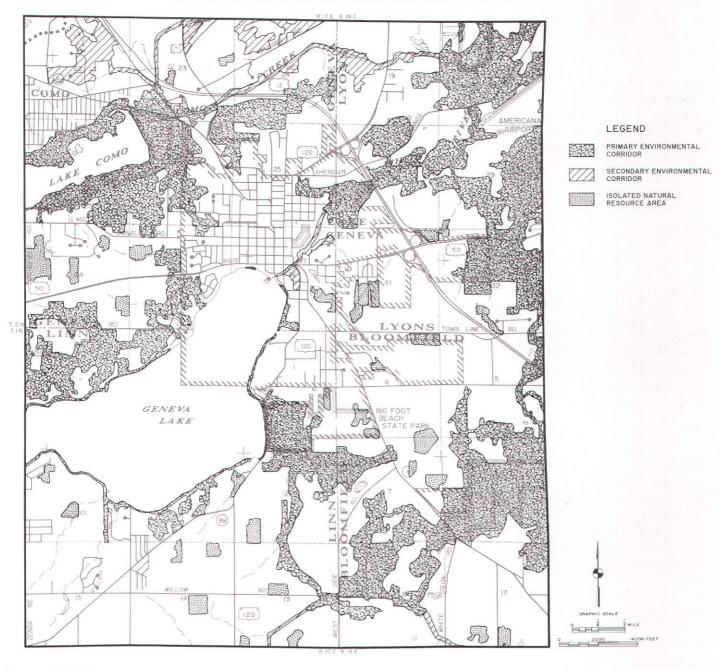
portion of the study area, 10.3 square miles, or about 34 percent, is encompassed within primary environmental corridors. Lands encompassed within the secondary environmental corridors totaled about 0.7 square mile, or about 2 percent of the study area. Lands encompassed within isolated natural resource areas totaled about 0.8 square mile, or about 3 percent of the study area. Thus, all environmentally significant lands in the Lake Geneva and environs study area comprise about 11.8 square miles, or 39 percent of the study area.

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

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

Map 3

ENVIRONMENTALLY SIGNIFICANT LANDS IN THE
CITY OF LAKE GENEVA AND ENVIRONS STUDY AREA: 1992



Chapter III

PROPOSED SANITARY SEWER SERVICE AREA

SIGNIFICANCE OF SANITARY SEWER SERVICE AREA DELINEATION

As noted earlier in this report, recent changes in the Wisconsin Department of Natural Resources (DNR) and Wisconsin Department of Industry, Labor and Human Relations (DILHR) rules governing the extension of sanitary sewers have made the delineation of local sanitary sewer service areas an important process for local units of government and private land developers. Prior to the recent rule changes, DNR and DILHR review and approval of locally proposed sanitary sewer extensions was confined primarily to engineering considerations and was intended to ensure that the sewers were properly sized and constructed. The recent rule changes significantly expanded the scope of the state review process to include water quality-oriented land use planning considerations. Before the two state agencies concerned can approve a locally proposed sanitary sewer extension, they must make a finding that the lands to be served by the proposed extension lie within an approved sanitary sewer service area. Such areas are identified in the Commission's adopted 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 CITY OF LAKE GENEVA AND ENVIRONS SANITARY SEWER SERVICE AREA

The plan year 2000 sanitary sewer service area tributary to the City of Lake Geneva sewage treatment facility, as set forth in the adopted regional water quality management plan, as amended, is shown on Map 4. This service area totals about 6.0 square miles, or about 20 percent of the total study area of 30.2 square miles, and had, in 1990, a resident population of about 6,900 persons.

REFINED CITY OF LAKE GENEVA AND ENVIRONS SANITARY SEWER SERVICE AREA

Factors taken into account in the delineation of the refined City of Lake Geneva and environs sanitary sewer service area included the currently adopted sanitary sewer service area, as amended, as shown on Map 4, year 2010 recommended and alternative futures regional land use plans as prepared by the Regional Planning Commission, the recently completed City of Lake Geneva Comprehensive Master Plan, and the suggestions made at an intergovernmental meeting attended by representatives of the City of Lake Geneva and the Regional Planning Commission, held on November 17, 1992.

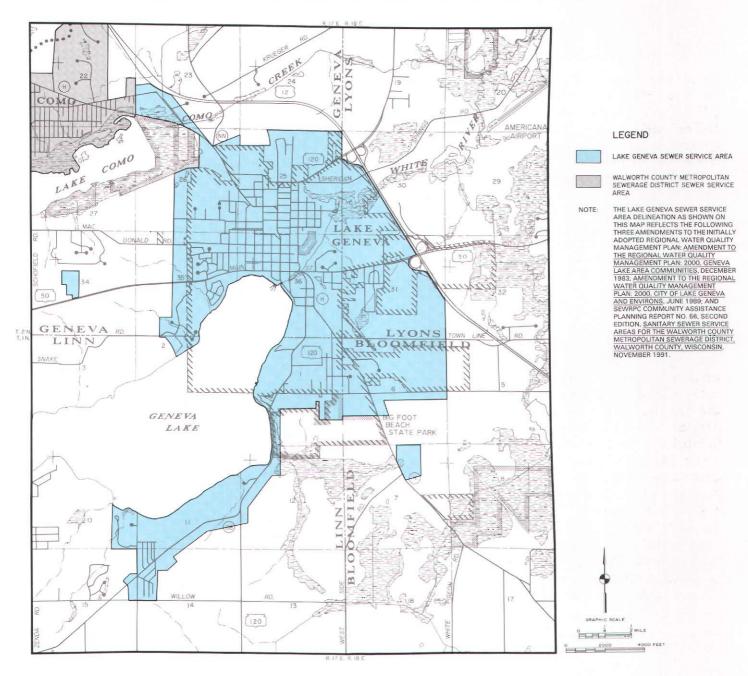
The refinement effort also considered the location, type, and extent of existing urban land use development; the location of areas where onsite soil absorption sewage disposal systems were known to be failing; the location and extent of gravity drainage areas tributary to major sewerage system pumping stations and to sewage treatment facilities; the location and capacity of existing and planned trunk sewers; the location of existing property ownership boundaries; and certain pertinent aspects of the natural resource base, including the location and extent of soils suitable for urban development, the location and extent of primary and secondary environmental corridors, and the location and extent of prime agricultural lands.

As previously noted, the Commission, as part of its regional planning program, including the delineation of sanitary sewer service areas and the subsequent refinements thereof, utilizes the "alternative futures" concept to deal with the uncertainties regarding factors affecting future growth and development within the Region. The sewer service area refinement effort for the City of Lake Geneva thus incorporates a range of population levels, with the most reasonable lower end of the population range based upon the Commission's intermediate-growth centralized land use plan and the most reasonable upper end of the population range based upon the Commission's high-growth decentralized land use plan.

Map 4

THE CITY OF LAKE GENEVA AND ENVIRONS SEWER SERVICE

AREA AS DEFINED IN SEWRPC PLANNING REPORT NO. 30, AS AMENDED



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's 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 highgrowth forecast and loading levels may be warranted where the physical life of the facilities extends beyond the 20-year planning period.

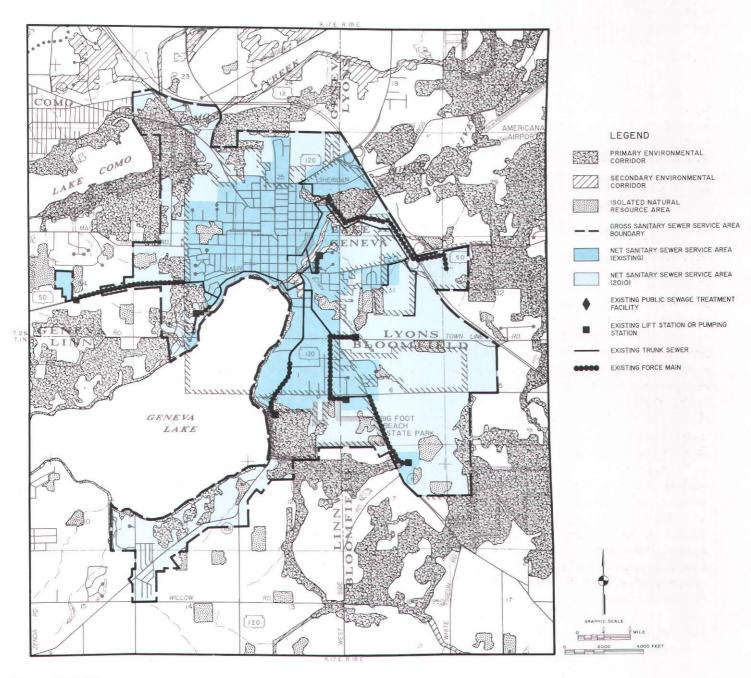
The refined year 2010 sanitary sewer service area for the City of Lake Geneva and environs anticipated to be tributary to the City's sewage treatment facility, as submitted to public hearing, is shown on Map 5, together with existing trunk sewers.

The gross City of Lake Geneva and environs sanitary sewer service area encompasses about 8.3 square miles, or about 27 percent of the total study area of 30.2 square miles. This gross sewer service area includes 1.4 square miles of primary environmental corridors, less than 0.1 square mile of secondary environmental corridors, and 0.3 square mile of isolated natural resource areas. Thus, a total of about 1.7 square miles, or about 20 percent of the sewer service area, would be encompassed in environmentally sensitive areas, consisting of primary and secondary environmental corridor and isolated natural resource area lands.

It should be noted that the environmentally significant lands indicated on Map 5 total approximately 48 acres less than the environmentally significant lands indicated on Map 3. As indicated on Map 6, there are seven areas of primary environmental corridor, encompassing about 52 acres, which are anticipated to be converted to urban uses, primarily on the basis of locally committed development proposals. None of these areas is located within lands identified as wetlands. Furthermore, because of certain of these planned conversions of primary environmental corridor to urban uses, one area encompassing about 21 acres, currently classified as primary environmental corridor and composed of upland woods, would be reclassified as an isolated natural resource area. In addition, as also shown on Map 6, there is one area adjacent to a primary environmental corridor, encompassing about four acres, which is anticipated to remain undeveloped and be restored to natural, open space uses, thereby allowing this area to be added to the primary environmental corridor.

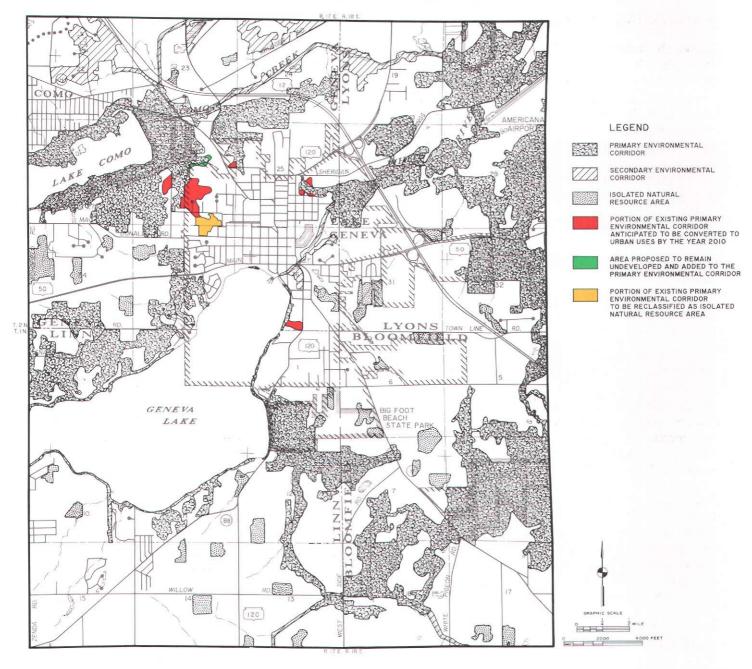
The refined year 2010 sanitary sewer service area tributary to the City of Lake Geneva sewage treatment facility would, under the Commission's high-growth decentralized land use plan, accommodate a planned year 2010 resident population of about 14,000 persons. Population levels within this service area would approximate about 9,300 persons under the Commission intermediate level centralized land use plan. The incremental population and housing unit levels envisioned in the City of Lake Geneva and environs would be accommodated at a density of about 3.3 dwelling units per net residential acre. This density lies within the recommended density range for the City of Lake

Map 5
CITY OF LAKE GENEVA AND ENVIRONS REFINED SANITARY SEWER SERVICE AREA



Map 6

ANTICIPATED CHANGE IN THE ENVIRONMENTALLY SIGNIFICANT LANDS IN THE CITY OF LAKE GENEVA AND ENVIRONS SANITARY SEWER SERVICE AREA: 1992-2010



Geneva area of the Region as identified in the Commission-adopted regional land use plan for the year 2010.¹

WATER QUALITY IMPACTS

Under the 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 sewer service could be properly located in the corridors, including park and outdoor recreation facilities, certain institutional uses, and, in some cases, extremely low-density residential development on five-acre lots. In addition, provision of public sewer service within the portion of the identified sewer service area currently developed,

¹Net incremental residential density in the refined City of Lake Geneva and environs 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 City of Lake Geneva and environs sewer service area, 2,015 units, was determined by first identifying the total number of dwelling units anticipated in that area by the year 2010, 5,966, minus the number of existing dwelling units in that area in 1990, 3,951.

Incremental gross residential land anticipated in the City of Lake Geneva and environs sewer service area, based upon the City of Lake Geneva Comprehensive Master Plan, totals about 784 acres. Incremental net residential land for this area, 604 acres, equals gross residential land, 784 acres, minus lands allocated to local streets, 23 percent or 180 acres. The total number of incremental dwelling units anticipated in the sewer service area in the design year, 2,015 units, divided by the incremental net residential land area, 604 acres, results in an incremental net residential density of 3.3 dwelling units per acre.

but outside the area served by public sewers, will reduce the pollutant loadings from the onsite sewage disposal systems to both surface water and groundwater.

Accordingly, assuming proper site development and construction practices, including appropriate construction erosion control practices,² 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 area set forth in this report is about 2.3 square miles larger than the currently approved sewer service area as set forth in the regional water quality management plan. All of the planned sewer service area lies adjacent to the current sewer service area of the City of Lake Geneva. In this regard, it should be noted that the initial regional water quality management plan included a recommendation providing for the currently unsewered urban development on the north side of Lake Como to be connected to the Lake Geneva sewerage system for treatment purposes. A 1991 amendment to the regional water quality management plan provided for the transfer of the Como Lake sewer service area for sewage treatment plant purposes from the Lake Geneva sewerage system to the WalCoMet sewerage system and included documentation of a detailed cost-effectiveness analysis supporting that transfer.3 Thus, the

²The 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.

³SEWRPC Community Assistance Planning Report No. 56 (Second Edition), <u>Sanitary Sewer</u> <u>Service Area for the Walworth County Metropoli-</u> tan Sewerage District, November 1991.

currently proposed City of Lake Geneva sewer service area includes only the City and its immediate environs. The nearest other public sanitary sewerage system is located about three miles to the east. That sewerage system is operated by the Town of Lyons Sanitary District No. 2 and is much smaller, with a sewage treatment plant capacity of 0.10 million gallons per day (mgd), than the City of Lake Geneva facility, with a sewage treatment capacity of 1.7 mgd. The next closest sanitary sewerage system is about five miles away. The type of development envisioned in the area should be provided with public sewer services. Clearly, the most cost-effective means of providing public sewer service to the entire service area is through the City of Lake Geneva sewerage system and sewage treatment plant.

SEWAGE TREATMENT PLANT CAPACITY IMPACT ANALYSIS

The Lake Geneva sewage treatment plant has a capacity of 1.7 mgd of sewage on an average annual basis. The current average annual flow rate is about 1.2 mgd. The planned increase in sewered resident population from about 6,400 persons in 1990 to a range of 9,300 to 14,000 persons by the design year 2010, is estimated to result in a flow rate of from 1.6 to 2.0 mgd on an average annual basis. Because the projected average flow under the high-growth decentralized land use plan may exceed the existing plant design capacity, it may be necessary to provide for expansion and improvement of the plant before the end of the planning period, with timing of the expansion and improvement dependent upon the actual rate of urban growth experienced within the planned sewer service area. Continued review of the City's plant operations and of the state-required compliance maintenance report for the plant should provide a sound basis for determining the timing of the initiation of a facility planning program to explore plant expansion and improvement alternatives and to recommend the best means of providing the needed expansion and improvement.

PUBLIC REACTION TO THE PROPOSED SANITARY SEWER SERVICE AREA

A public hearing was held December 21, 1992, for the purpose of receiving comments on the refined sanitary sewer service area as shown on

Map 5. This hearing was sponsored jointly by the City of Lake Geneva and the Regional Planning Commission. Summary minutes of the public hearing are presented in Appendix A.

A brief summary of the findings and recommendations of the sewer service area refinement effort was presented prior to receiving public comment. The rationale for refining and detailing the sanitary sewer service area tributary to the Lake Geneva sewage treatment plant was presented and the importance of the delineation of the service area was described, as was the importance of the delineation of environmentally sensitive lands within the service area. Comments on the report and accompanying maps were then solicited.

A review of the hearing record indicates that one concern was raised, namely, the planned conversion of a 32-acre portion of primary environmental corridor located in the northwestern portion of the City. In response to this concern, the Regional Planning Commission representative present at the public hearing noted that the envisioned conversion of primary environmental corridor lands, as set forth in the refined Lake Geneva sewer service area report, reflected the request of the City of Lake Geneva, which had a long-standing commitment with resepct to this area to planned residential development, evidenced by subdivision plat and planned unit development approvals.

Detailed delineations of the final City of Lake Geneva and environs sanitary sewer service area and environmentally significant lands within that area are shown on a series of aerial photographs reproduced as Map 7, beginning on page 20 and continuing through page 31 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:

 Formal adoption or endorsement of SEWRPC Planning Report No. 30, <u>A</u> Regional Water Quality Management Plan for Southeastern Wisconsin: 2000, and this SEWRPC Community Assistance Planning Report by the Common Council of the City of Lake Geneva, as the operator of the sewage treatment facility, by the Town Boards of the Towns of Bloomfield, Geneva, Linn, and Lyons, as having lands affected by the planned sanitary sewer service area, and by the Walworth 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 the incorporated area.

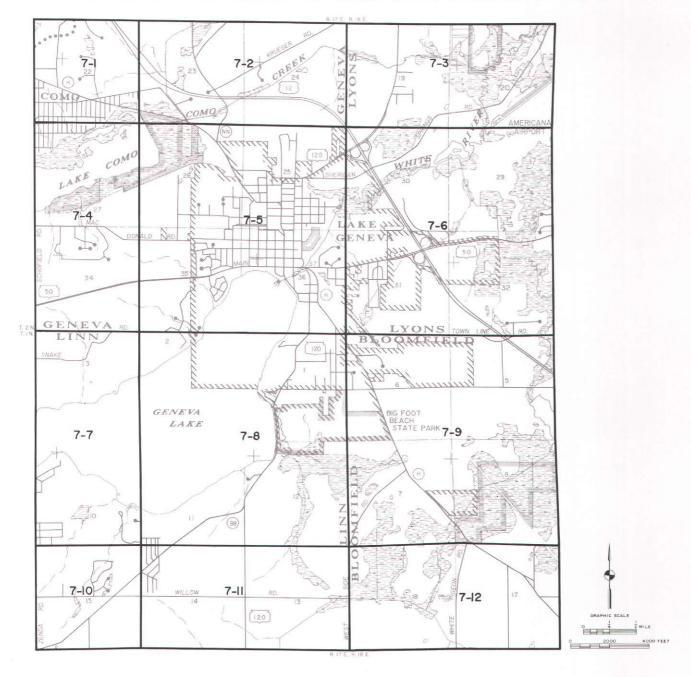
- 2. Formal adoption of this SEWRPC Community Assistance Planning Report by the Regional Planning Commission as an amendment to the regional water quality management plan set forth in SEWRPC Planning Report No. 30, with certification of this report as a plan amendment to all parties concerned, including 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 City of Lake Geneva and environs sanitary sewer service area as shown on Maps 5 and 7. In particular, steps should be taken to ensure that those lands identified as being environmentally significant in this report are properly zoned to reflect a policy of retaining such lands, insofar as possible, in essentially natural, open uses.
- 4. Review by the City of Lake Geneva and Walworth County 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 CITY OF LAKE GENEVA AND ENVIRONS SEWER SERVICE AREA

This report presents the refined sewer service area for the City of Lake Geneva. The refined sewer service area was delineated cooperatively by the units and agencies of government concerned and was subjected to review at a public hearing. It is envisioned that the delineated sewer service area will accommodate all new urban development anticipated in the City of Lake Geneva area to the year 2010. Like other long-range plans, however, this sewer service area plan should be periodically reviewed, every five years, to assure that it continues to properly reflect the urban development objectives of the communities involved, especially as such objectives may relate to the amount and spatial distribution of new urban development requiring sewer service. Should it be determined by the City of Lake Geneva, as the operator of the sewage treatment facility involved, that amendments to the sewer service area plan as presented herein are necessary, the City 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 Lake Geneva and by the Southeastern Wisconsin Regional Planning Commission prior to certification to the Wisconsin Department of Natural Resources and the U.S. Environmental Protection Agency.

Map 7

INDEX OF MAPS SHOWING THE ENVIRONMENTALLY SIGNIFICANT LANDS AND PLANNED SANITARY SEWER SERVICE AREA FOR THE CITY OF LAKE GENEVA AND ENVIRONS



Map 7-1

ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF LAKE GENEVA AND ENVIRONS

U. S. Public Land Survey Section 22 Township 2 North, Range 17 East





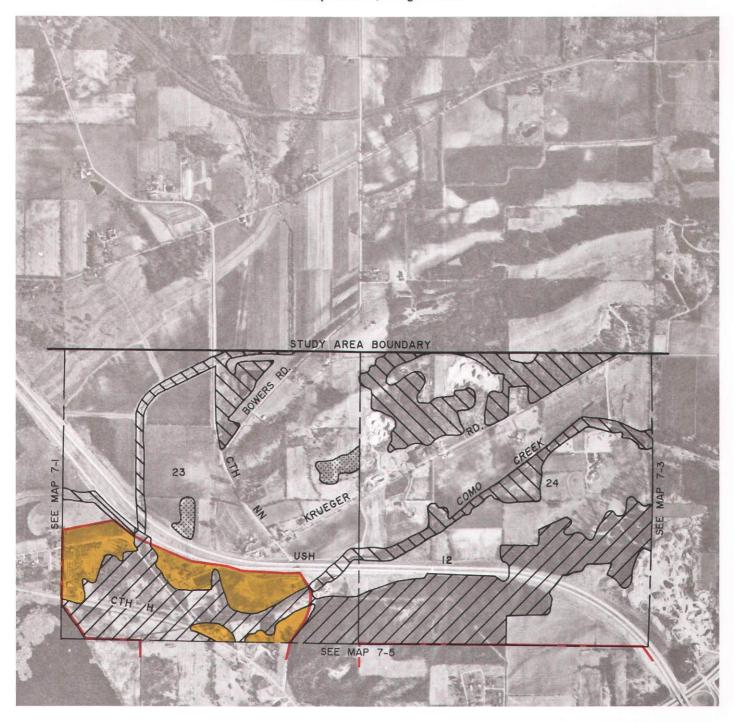


PRIMARY ENVIRONMENTAL CORRIDOR

SECONDARY ENVIRONMENTAL CORRIDOR

GROSS SANITARY SEWER SERVICE AREA BOUNDARY

U. S. Public Land Survey Sections 23 and 24 Township 2 North, Range 17 East

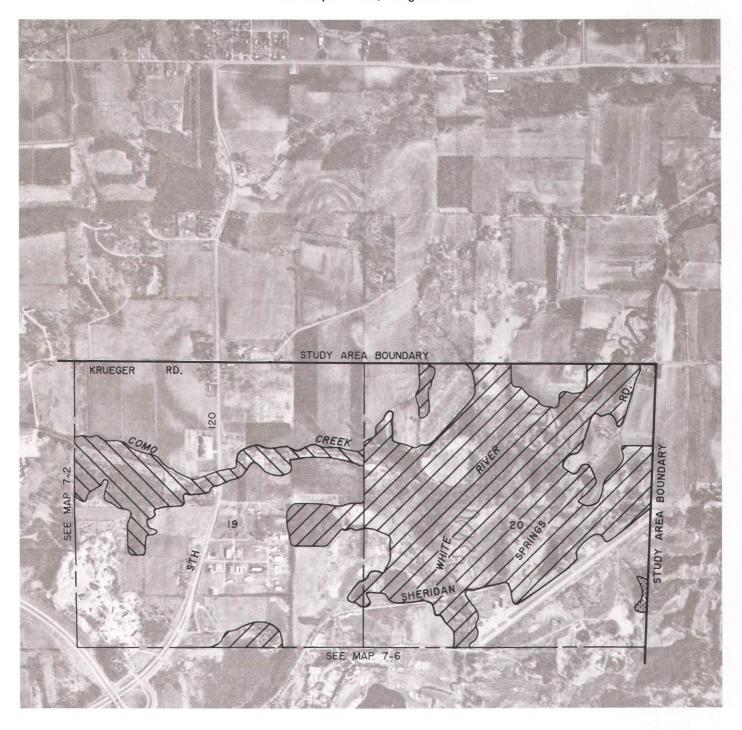






ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF LAKE GENEVA AND ENVIRONS

U. S. Public Land Survey Sections 19 and 20 Township 2 North, Range 18 East







PRIMARY ENVIRONMENTAL CORRIDOR



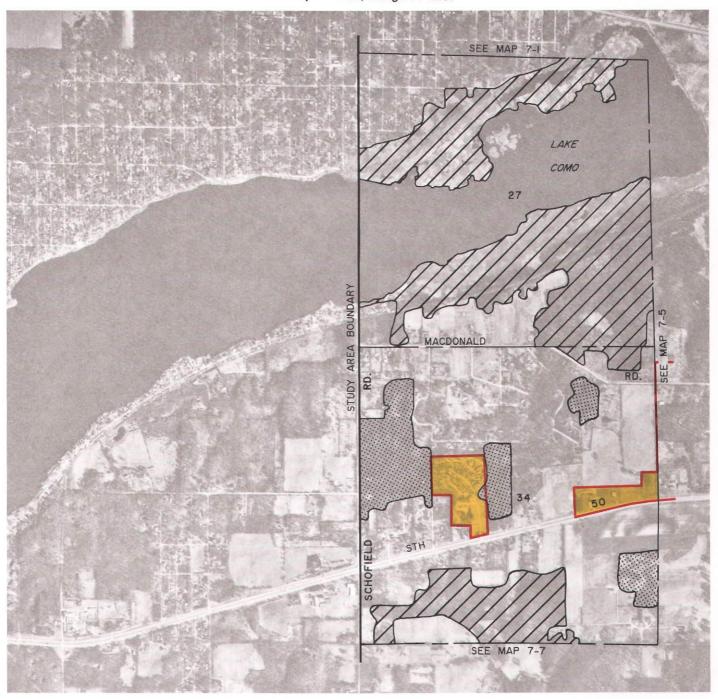
SECONDARY ENVIRONMENTAL CORRIDOR



ISOLATED NATURAL RESOURCE AREA



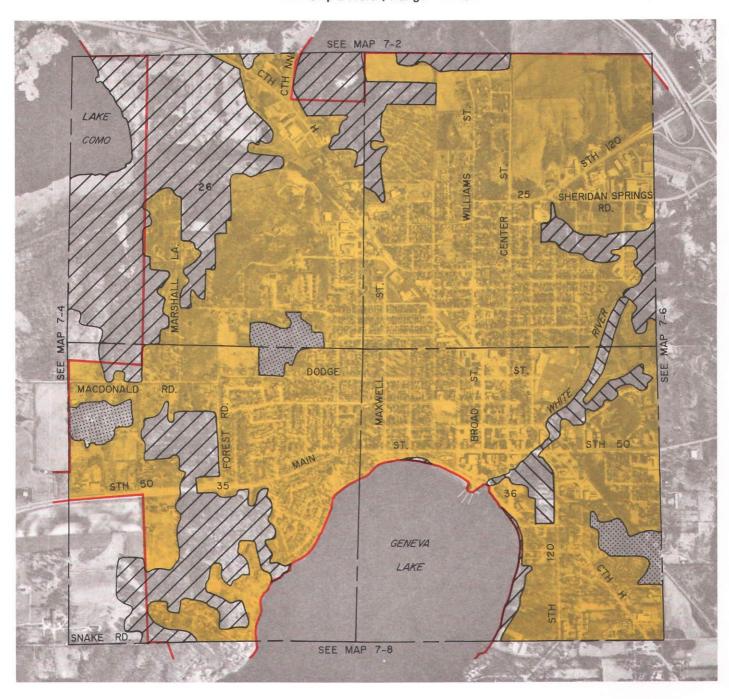
U. S. Public Land Survey Sections 27 and 34 Township 2 North, Range 17 East





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U. S. Public Land Survey Sections 25, 26, 35, and 36 Township 2 North, Range 17 East





GROSS SANITARY SEWER SERVICE AREA BOUNDARY



Source: SEWRPC.

LEGEND

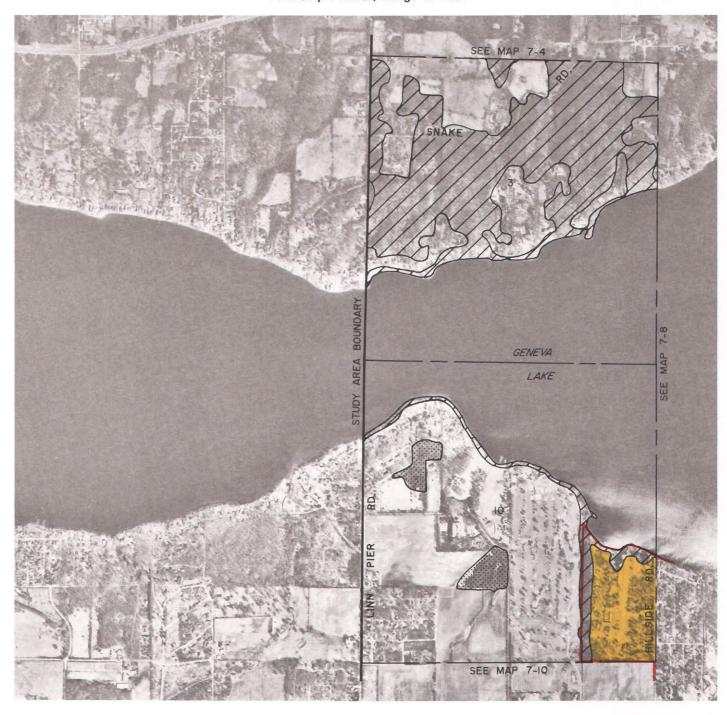
U. S. Public Land Survey Sections 29, 30, 31, and 32 Township 2 North, Range 18 East







U. S. Public Land Survey Sections 3 and 10 Township 1 North, Range 17 East





PRIMARY ENVIRONMENTAL CORRIDOR

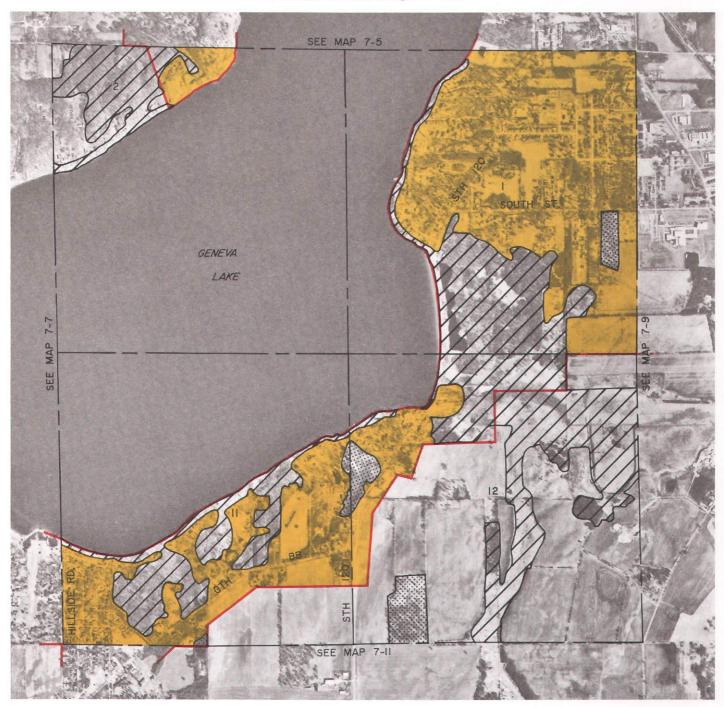
PLANNED SANITARY SEWER SERVICE AREA

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GROSS SANITARY SEWER SERVICE AREA BOUNDARY



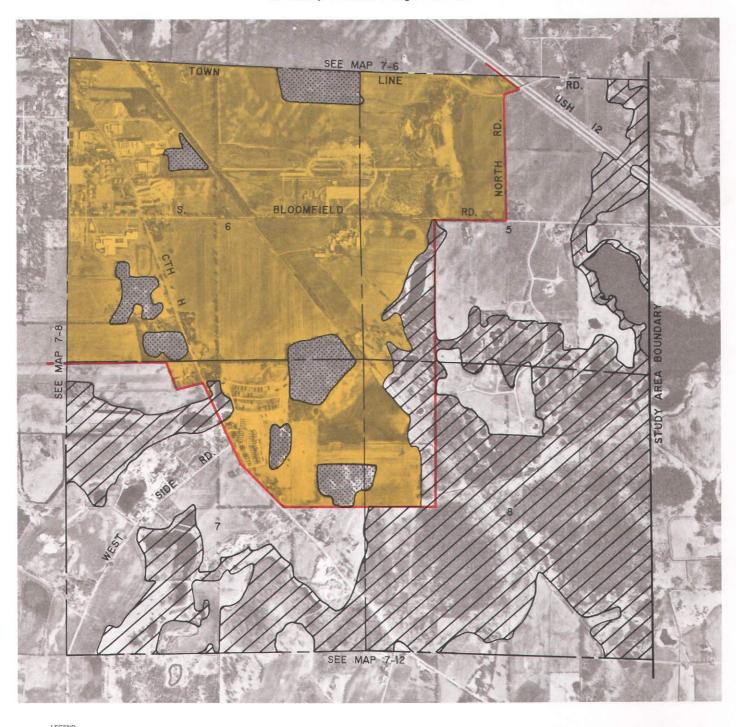
U. S. Public Land Survey Sections 1, 2, 11, and 12 Township 1 North, Range 17 East







U. S. Public Land Survey Sections 5, 6, 7, and 8 Township 1 North, Range 18 East







U. S. Public Land Survey Section 15 Township 1 North, Range 17 East



Source: SEWRPC.

PLANNED SANITARY SEWER SERVICE AREA GROSS SANITARY SEWER SERVICE AREA BOUNDARY

U. S. Public Land Survey Sections 13 and 14 Township 1 North, Range 17 East







ENVIRONMENTALLY SIGNIFICANT LANDS FOR THE CITY OF LAKE GENEVA AND ENVIRONS

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



LEGEND

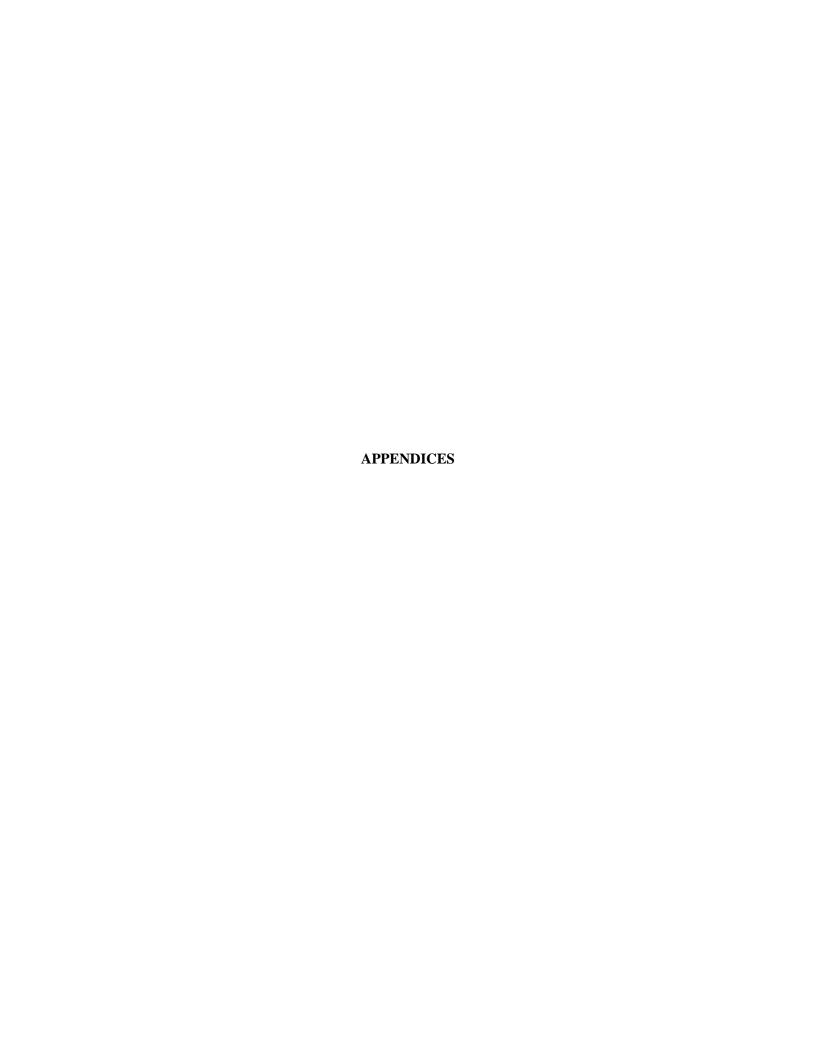
PRIMARY ENVIRONMENTAL CORRIDOR

SECONDARY ENVIRONMENTAL CORRIDOR

ISOLATED NATURAL RESOURCE AREA

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Appendix A

MINUTES OF PUBLIC HEARING

Sanitary Sewer Service Area for the City of Lake Geneva and Environs December 21, 1992

City Plan Commission Meeting Monday, December 21, 1992 - 6:30 P. M. Council Chambers City Hall

Roll Call: Present: Mayor Dale, Commissioners Frisen, Waddell, Clark, Brandley, Mushel and Etten.

Motion made by Commissioner Waddell, seconded by Commissioner Frisen to approve the minutes of the City Plan Commission Meeting of November 16, 1992 as distributed. Unanimously carried.

Comments from the public: none.

Correspondence: none.

Public Hearing for the purpose of receiving public comment on and reaction to a proposed year 2010 sewer service area plan for the City of Lake Geneva and recommended approval of sewer service area refinement plan was the first hearing before the Commission. Mr. Bruce Reuben, representative from Southeastern Regional Planning Commission appeared to review and refine the sewer service area that was currently adopted by the City of Lake Geneva thru the Department of Natural Resources for approving sewer extensions. Mr. Reuben informed that SEWRPC has been working with the City of Lake Geneva to identify the refined sewer service area consistent with the City of Lake Geneva's land use plan. Maps were furnished displaying the refined sewer service area and showing adjacent areas outside the City of Lake Geneva. This provides a guide for sewer extensions and provides for new growth and development. The maps indicated the environmental corridors revision as so shown by Mr. Reuben. Alderman Pam Williams spoke to the development thru the environmental corridor in the northwest sector of the City and wanted to go on record that she was still opposed. No one else spoke in favor or in opposition. A motion was made by Commissioner Frisen, seconded by Commissioner Brandley to close the Public Hearing. Unanimously carried. A motion was made by Commissioner Frisen, seconded by Commissioner Brandley to recommend approval to the City Council for the sewer service are refinement plan. Unanimously carried. This recommendation will go to the City Council in Resolution form on January 11, 1993.