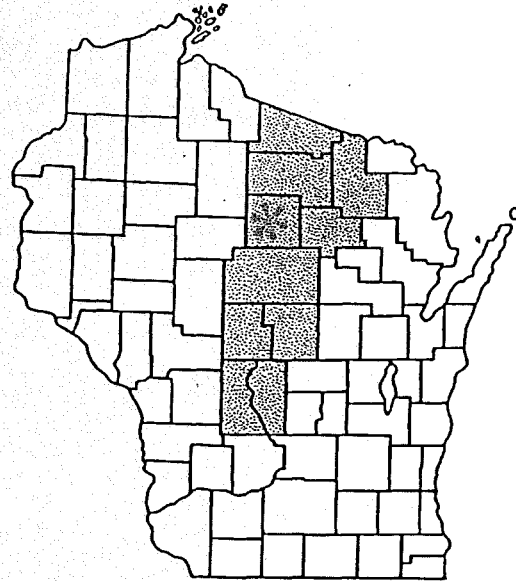


SEWER SERVICE AREA PLAN...City of Merrill Urban Area, Lincoln County WI

North Central Wisconsin Regional Planning Commission...April, 1996



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TITLE - SEWER SERVICE AREA PLAN...MERRILL URBAN AREA, LINCOLN COUNTY, WI

SUBJECT - A planning report that identifies sewer service needs through the year 2015, based upon:

- forecasts of population and land development density standards;
- the delineation of environmentally sensitive areas where development should be limited in order to protect water quality;
- potential water quality problems as a result of present on-site septic absorption systems; and which,
- sets forth an institutional structure and procedures for plan implementation.

DATE - April, 1996

CLIENT - The WI Department of Natural Resources (WisDNR) for the City of Merrill and the Towns of Merrill, Pine River, and Scott.

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REPORT COST - \$25.00

LIBRARY OF CONGRESS NUMBER -

PLANNING AGENCY - This study/report was conducted by staff of the North Central WI Regional Planning Commission (NCWRPC) in cooperation with the WisDNR. Partial funding was provided by the WisDNR through a local water quality planning grant, and by the NCWRPC.

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PURPOSE

In 1972, the U.S. Congress enacted the Federal Water Pollution Control Act Amendment (P.L. 92-500) which is commonly referred to as the "Clean Water Act". Section 208 of the act requires "area wide water quality management planning" including planning for sewerage collection and treatment. Section 201 of the act establishes a "facility planning grant program". Facility plans must be consistent with the broader framework of the area wide plans prepared under section 208.

In response to this legislation, Wisconsin statute s.147 grants the Wisconsin Department of Natural Resources (WisDNR) all authority necessary to establish, administer and maintain a state pollutant discharge elimination system to effectuate the policy set forth in P.L. 92-500. Wisconsin Administrative Code NR.121 establishes regulations that specify policies, procedures, and requirements for Wisconsin's area wide water quality planning process. This process results in the preparation throughout the state of area wide plans for managing the quality of waters of the state...ground and surface, public and private, including the consideration of the relationship of water quality to land and water resources and uses. Regulations further require that "Sewer Service Area" (SSA) plans be prepared for communities with a population over 10,000. These plans are prepared by the WisDNR or by designated agencies under contract with the WisDNR.

Sewer service area plans serve as a basis for WisDNR approval of state and federal grants for the planning and construction of wastewater treatment and sewerage facilities. They also serve as a basis for WisDNR approval of locally proposed sanitary sewer extensions and Department of Industry, Labor and Human Relations (DILHR) approval of private sewer laterals. In addition, because the service area plans identify environmentally sensitive areas, they serve as a guide for environmental permit decisions by federal and state agencies.

The sewer service area plan is intended to be an important planning and development guide for local communities. The plan serves the following purposes:

1. It projects future needs for sewer service and establishes the geographic extent of the sewer service area for a twenty-year planning period.
2. It provides technical data for designing cost-effective and environmentally sound sewage treatment configurations for the planning area.
3. It defines the procedures for reviewing and revisiting the SSA boundary and plan amendments.

4. It identifies major areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints which are to be excluded from the sewer service area. Areas to be considered for exclusion from the sewer service area because of the potential for adverse impacts on the quality of the waters from both point and non-point sources of pollution include, but may not be limited to: wetlands, shorelands, floodways and floodplains, steep slopes, highly erodible soils and other limiting soil types, groundwater recharge areas, and other such physical constraints.
5. It serves as a guideline for government interaction and will be useful in the development of community plans.
6. It provides a basis for community officials to direct community growth and protect environmental, social, and economic concerns.
7. The SSA plan will become a component of the Upper Wisconsin River Water Quality Management Plan...as required by P.L. 92-500 and Wisconsin statute s.147.

As stated above, NR-121, supplemented by WisDNR "planning guidelines" (SEE APPENDIX "A") set forth the requirements for SSA planning. Essentially, a SSA plan must include the following elements:

- population projections, in five year increments, for the next twenty years including locally approved population density(s);
- existing and projected land-use patterns;
- a quantification of projected numbers of households, and non-household equivalents needing sewer, along with the amount of land that will be required to meet the projected population need; and
- the delineation of the SSA boundary wherein sewer is expected to be provided...excluding areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints, including, but not limited to natural resources such as wetlands, floodways and floodplains, severe slopes, highly erodible and other limiting soil types, and groundwater recharge areas.

In summary, the purpose of sewer service area plans is to guide sewered development and prevent water pollution associated with such development. A sewer service area plan delineates lands that are most suitable for development and that can be serviced

by a public wastewater collection and treatment system. To protect water resources (ground & surface), the plan designates "environmentally sensitive areas", where new sewer development is prohibited. If these protected areas were to be developed, bacteria, sediment and other pollutants could find an easy route to lakes, streams, and groundwater.

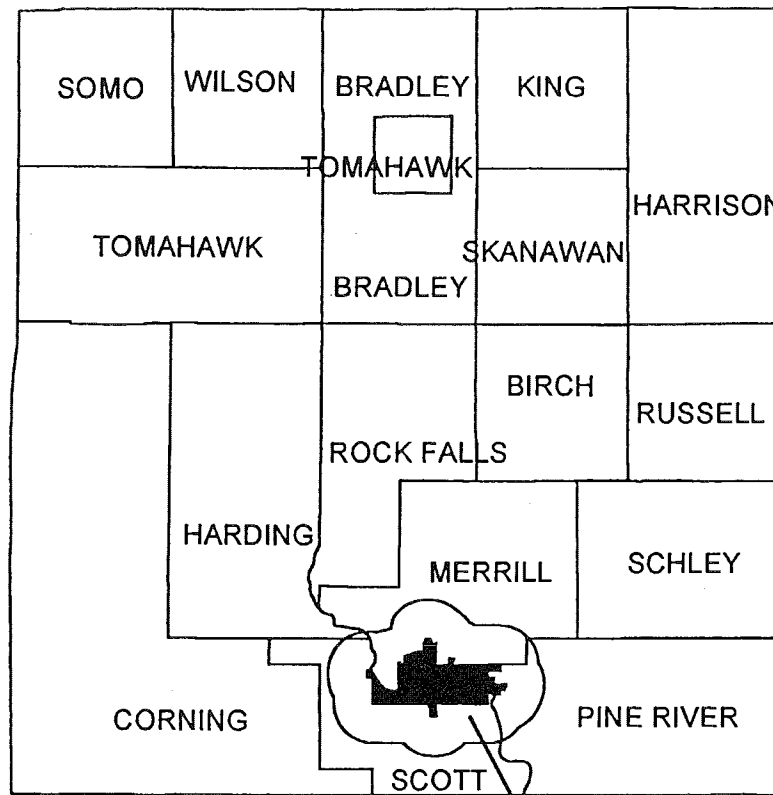
STUDY APPROACH

On July 12, 1994, the Common Council of the City of Merrill passed Resolution #1316 (SEE APPENDIX "B") authorizing the preparation of a sewer service area plan in accord with federal and state laws and regulations. It further authorized the North Central WI Regional Planning Commission (NCWRPC), as the designated WisDNR agency to prepare that plan. Subsequently, the NCWRPC entered into an agreement with the WisDNR wherein the WisDNR agreed to provide partial funding for the study.

NR-121 requires that a local policy advisory committee be established, thus, the NCWRPC created the Merrill Area Sewer Service Planning Advisory Committee to assist the NCWRPC and the WisDNR in preparation of the plan, and to be an advisor in matters concerning implementation. Bylaws (SEE APPENDIX "C") were prepared and were adopted by the Committee.

Under WI Statute s.66.32, cities and villages may exercise "extraterritorial" planning jurisdiction. The City of Merrill may exercise this authority within a 1.5 mile radius around the city's corporate border. This 1.5 mile area was chosen as the planning area within which a SSA would be delineated. This area was chosen also because of land-use trends and patterns which helped focus study efforts into a defined geographic area which facilitated data collection and analysis.

LINCOLN COUNTY



CITY OF MERRILL
STUDY AREA

Natural Conditions/Factors

- BACKGROUND

Land-use plans and policies for land-use location, roadways, sewer/water extension, etc., should consider and be compatible with, certain natural resource features that support or hinder land-use activities. These natural resources features or elements, are defined and identified by geologic, vegetative, and hydrologic characteristics, and for purposes of this study/report, include:

- floodways and floodplains,
- highly erodible soils,
- shorelands,
- steep slopes (12%+),
- wetlands, and
- other physical conditions which could adversely affect water quality as a result of development, e.g. groundwater and woodland cover.

Consideration of these natural resource elements should shape, structure, and provide the pattern for land development and related activities such as the extension of sewer service.

Natural resources protection is necessary for people as well as for the environment. By allowing natural processes, such as the hydrologic system, to function without impediment, property, water supply, and environment are protected. The protection of natural resources also preserves important ecological communities. Certain natural resources have more than merely aesthetic and leisure-time activity values. They are essential to long-term human survival and the preservation of life, health, and general welfare. As such, protecting and/or managing these natural resources clearly is in the public interest. Analysis of the conditions within the study area reveals conditions that are unsuitable for the installation of waste treatment systems where development should not occur. Those areas are identified where public sewer should and should not occur during the 20-year planning period. An analysis of the significant natural resources found within/about the study area follows.

- SOILS

Due to the inherent qualities of certain soils, specific types of development may be unsuitable to certain areas. Depth to bedrock, poor filtration capabilities, slow water percolation, wetness, ponding, susceptibility to erosion (slope) and subsidence are all factors which have a limiting affect on development/construction activities. Soils of these characteristics are generally found in wetland areas, on slopes greater than

twelve (12) percent, in very shallow soils overlying bedrock and in depressional mineral soil areas.

The unstable character of many saturated soils can present costly problems for highway and building construction. Road surfaces and structural foundations may suffer from cracking, settling, and possible collapse in these areas. In some soils, the proximity of the watertable to the surface can reduce the proper function of on-site septic absorption systems. On-site systems on these soils can cause contamination of ground and surface waters. Due to their fragile nature, destruction of vegetative cover on soils with low water absorption capabilities can trigger irreparable damage from wind and gully erosion. On certain soils, the possibility for soils slippage under foundations, slump along highway cuts, and water erosion of non-vegetated slopes, are increased.

The U.S. Natural Resource Conservation Service (NRCS), previously known as the Soil Conservation Service (SCS), is in the process of completing a detailed soils survey that encompasses the City of Merrill and surrounding Towns. Significant area within the planning area contains soils that are classified as having severe limitations for on-site septic absorption systems (SEE MAP 1-1). Note that there are many structures located on these "severe" soils.

Modern codes and ordinances that regulate land development and building location include soil characteristics considerations. Several ways of guiding development where soils are poor include not allowing residential/commercial/industrial development unless sewer is available; requiring alternative systems to on-site absorption of septic; requiring larger lot sizes; and placing particularly severe areas into a "Conservancy" zoning district.

- TOPOGRAPHY

The land surface of the study area ranges from relatively flat in the northern sections to undulating/hilly east and south. Elevations vary from 1,250 feet along the Wisconsin River's edge through the city, to a high of 1,450 feet south of the city limits. Because of the need for river crossings, the poor soils prevalent in the study area, and the undulating terrain, sewer line and water main extensions become complicated and expensive. Extension of water service is less of a problem than extending sewer. The city's water distribution system can service an area below 1,330 feet elevation, which is virtually the entire study area (SEE MAP 1-2). However, the undulating terrain east and south poses limitations for gravity sewer extension. An alternative is to install "light" stations.

Slope is an important determinant of land uses practicable on a given parcel of land. Lands with steep slopes are generally poorly suited for urban development and for

most agricultural purposes and, therefore, should be maintained as natural cover for wildlife habitat and erosion control. Lands with less severe slopes may be suitable for certain agricultural uses, such as pasture, and for certain urban uses, such as carefully designed low-density residential areas. Lands which are gently sloping or nearly level are best suited to agricultural production and to high-density residential, industrial, or commercial uses. It should also be noted that slope is directly related to water runoff and erosion hazards and, therefore, the type and extent of both urban and rural land uses should be carefully adjusted to the slope of the land. In general, slopes of 12 percent or greater should be considered unsuitable for urban development and most types of agricultural land uses and, thus, should be maintained in essentially natural, open uses.

- SURFACE WATER AND DRAINAGE PATTERNS

Alexander Lake is a flowage (667 acres) on the west side of the study area just north of Council Grounds State Park created by a dam on the Wisconsin River. Pesabic Lake is the only other major lake (156 acres) within the study area and is located in Section 36 Township 32N. Range 6E. just north of the City of Merrill in the Town of Merrill. This lake is characterized by relatively high density residential development on small lots with individual private septic systems. Failing septic systems and potential water contamination have been a concern of county and local officials for some time. Gibson Lake (7 acres) is a small lake in Section 6 Township 31N. Range 7E. with residential lots on its north and west sides. Further development on this lake may be precluded by wetlands. Henrich Lake (9 acres) in Section 18 Township 31N. Range 7E., and Gospel Lake (7 acres) in Section 29 Township 32N. Range 7E. are minor lakes and have not attracted development to date. There are also a number of small (unnamed) ponds throughout the study area.

The Wisconsin River traverses the study area from northwest to southeast. Meadow Creek from the north and Barnes Creek from the east join with the Prairie River as it meanders in from the northeast to its confluence with the Wisconsin in the central portion of the City. Devil Creek flows through the study area and into the Wisconsin from the southwest. The Copper River enters the Wisconsin from the west while Joe Snow Creek crosses the northwest corner of the study area where it also flows into the Wisconsin. The Pine River just clips the southeastern corner before entering the Wisconsin just south of the study area.

As indicated by the above descriptions of the surface water bodies and courses that occur within the study area, the entire area, eventually, drains into the Wisconsin River. The study area contains parts of the following watersheds. Also see APPENDIX "D".

- Mid Wisconsin River,
- Prairie River,
- Pine River,
- Devil Creek/Lower Wisconsin River,
- Copper River, and
- New Wood River.

Within the overall context of protection of open space and environmental corridors there are several specific programs directed at protection of streams and shorelands from adverse impacts which would affect or detract from the environmental functions of these resources. These programs are directed at regulating activities in floodplains, shoreland and wetlands. Programs include the federal Section 404 permit program (administered by the U.S. Army Corps of Engineers) regulating the discharge of dredged or fill materials into all waters of the United States, generally including all lakes, streams and adjacent wetlands which are part of a surface tributary system to and including navigable waters. State Chapter 30 and 31 permits (administered by the Department of Natural Resources) regulate a variety of activities in, or directly affecting, navigable waters of the state. WisDNR also administers NR 103, Wetland Water Quality Standards, which provides criteria for permitting activities affecting wetlands.

State law requires counties to adopt and enforce restrictive zoning of shorelands along navigable streams or lakes in unincorporated areas. Shorelands are defined as areas lying within 1,000 feet of lakes, ponds or flowages, and within 300 feet of rivers or streams, or to the landward side of the floodplain, whichever distance is greater. Minimum standards and criteria for regulation of land use in the shoreland areas are included in Chapter NR 115 of the Wisconsin Administrative Code. State shoreland protection requirements also require counties (in unincorporated areas) and villages and cities to adopt shoreland-wetland zoning ordinances which provide substantial additional protection measures for wetlands (5 or more acres) located within shoreland areas. NR 115 and NR 117 are the administrative rules providing standards and criteria for these zoning programs. State law also requires counties, cities, and villages to adopt floodplain zoning ordinances under criteria and standards established in NR 116 of the Administrative Code.

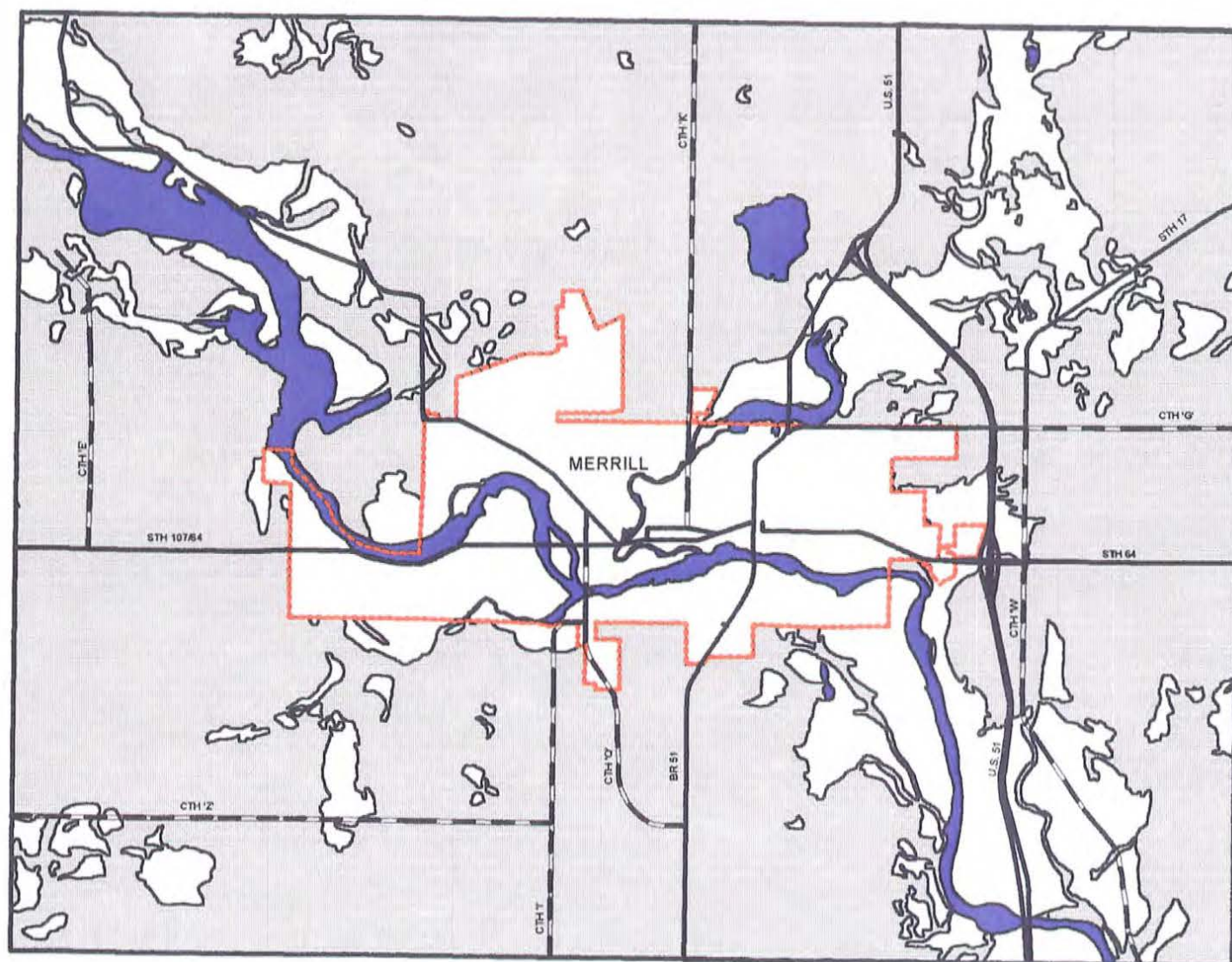
- FLOOD PLAINS

The primary value of flood plains within the study area is their role in natural flood control. The extent that a flood hazard area will be inundated will depend upon the amount of precipitation, the distance and speed that water travels, and the topography of the area. If uninterrupted by development, the areas shown on a map as floodplains should be able to handle the relatively severe (regional) floods, even those that have a probability of occurring once every one hundred years. A "floodway" is the channel area of a natural stream or river, which is reasonably required to carry and discharge the floodwater or flood flow of the flood event. The floodplain includes the channel and the relatively flat area adjoining the channel which is flooded during a storm event and has been or may be converted by

MAP 1-1

SOILS

UNSUITABLE FOR ON-SITE SEPTIC TANK ABSORPTION FIELDS



LEGEND

-  U.S./State Highways
-  County Highways
-  Corporate Limit Boundary
-  Unsuitable Soils
-  Water Bodies

This map compiled from multiple sources including: U.S.G.S. 7.5 min. quad. maps, and the Lincoln County Soil Survey.

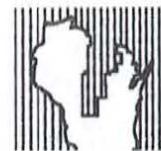


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NATURAL FEATURES



- This map compiled from multiple sources including: U.S.G.S. 7.5 min. quad. maps, DNR Wetland maps, and FIRM floodplain maps.



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floodwater. While the water flow in the channel is relatively constant, the floodplain may store water for extended periods of time. There is a value in preserving and protecting these natural flood control areas from encroachment. First, by preventing development in the flood plain, the cost of building dikes, levies, or other man-made flood control devices will be saved. Second, for each structure that is constructed in a floodplain, that floodplain expands, potentially subjecting other structures, originally built outside the delineated flood hazard area, to the risk of flooding. Each new structure (or modification to existing structures) placed in the flood plain puts more life and property in danger.

The Federal Emergency Management Agency (FEMA) has completed a Flood Insurance Study and a Flood Insurance Rate Map (FIRM) that encompasses the City of Merrill and the unincorporated areas of the study area (Lincoln County). This FIRM delineates the "A" Zones including the floodway and flood fringe which are those areas inundated by the 100-year flood (SEE MAP 1-2). The primary flood plain areas are associated with the Wisconsin and Prairie Rivers, Devil Creek, and the Copper River. Significant areas along these streams are in public recreational uses (including Council Grounds State Park, numerous city parks, and a golf course) and thus protected from development. However, streams like the Wisconsin and Prairie Rivers are very attractive to residential development which is filling in the available shoreland areas with small tracts and subdivisions.

A number of major floods have occurred on the Wisconsin River, as well as the Prairie and other streams within the study area. Low-lying lands adjacent to the river are subject to periodic flooding. A historical perspective of flooding within the study area is given by U.S. Geological Survey (USGS) gage data taken at the USGS gaging station on the Wisconsin River in Merrill (SEE TABLE 1).

Considerable development has occurred in flood plain areas over the years. However, state legislated mandates have been promulgated in response to this problem, and as a result, Lincoln County has adopted flood plain and shoreland-wetland zoning ordinances. Although development within flood hazard areas is not necessarily prohibited, only open-space uses are allowed in floodways, and all new structures in these areas must be constructed to standards that make them "flood proof". These provisions have sharply curtailed development in flood hazard areas, but development may still occur if the provisions of the ordinances are met.

Based on the foregoing discussion, future development or modification of flood hazard areas (flood plain) in the 20-year sewer service area should only be allowed if development in accordance with local floodplain zoning ordinances and local units of government are encouraged to protect flood hazard areas that are within their jurisdiction, but fall outside of the 20-year service area of this plan.

TABLE 1

HISTORIC FLOODS @ WISCONSIN RIVER USGS GAGE - MERRILL, WISCONSIN

Date	Peak Discharge (1)	Recurrence Interval
1941	49,400	N/A (2)
1912	45,000	N/A
1942	27,000	30-year
1967	23,800	15-year
1916	23,400	N/A
1905	23,000	N/A
1973	22,000	10-year
1929	21,900	N/A
1903	21,800	N/A
1980	21,200	10-year
1993 (3)	19,100	6-year

Source: Federal Emergency Management Agency, FIS, 1986.

1- cubic feet per second

2- Construction of a number of dams in the early 1940's substantially altered the hydrologic characteristics of the river.

3- Source: Dept. Natural Resources, 1993.

- WETLANDS

Wetlands occur in areas where water stands near, at, or above the soil surface during a significant portion of most years. Vegetation is generally aquatic in nature and may vary from water lilies and rushes in marsh areas to alder and tamarack in lowland forest. Swamps, bogs, marshes, potholes, wet meadows, and sloughs are all wetlands. The soils in these areas are usually saturated during the growing season within a few inches of the surface, and need some type of artificial drainage to be made arable. Wetland characteristics in the study area primarily include emergent wet meadow, broad-leaved deciduous scrub/shrub, and broad-leaved deciduous forested.

Wetlands perform many indispensable roles in the proper function of the hydrologic cycle, and local ecological systems. In a natural condition, they control flood water by moderating peak flows, and some may act as groundwater recharge sites. All wetlands have valuable water purification capabilities and make significant contributions to surface and groundwater quality. They act as settling areas for inflowing streams as well as functioning in the reduction of water nutrients through uptake of these compounds into plant tissues. They also have a buffering affect on

water acidity or alkalinity, and are helpful in the elimination of harmful bacteria which may be found in surface or groundwaters. Because wetlands serve as breeding and nesting grounds for waterfowl and many other animals which depend on aquatic habitats, they are an important wildlife resource, as well as serving as recreational, educational, and aesthetic resources. In many instances, wetlands serve as the habitat for rare or endangered species. Through their combined roles of flood moderation, water purification, and aquatic habitat, wetlands are important to the maintenance of downstream habitat as well.

When drainage of wetlands occurs, or drainage patterns are altered, the water table is locally lowered and soils are exposed to oxidation at depths usually saturated. Nutrients held in the wetland soils can be leached away. Wildlife population and habitat in drained areas and downstream locations may be negatively affected, lowering the recreational and educational value. Eradication of wetlands can also occur in urban locations through the use of fill material. This can destroy the hydrological function of the site and open the area to improper development.

The Wisconsin Department of Natural Resources (WisDNR) has delineated the location of wetlands on "Wisconsin Wetland Inventory " maps, and has promulgated minimum standards for managing wetlands (SEE MAP 1-2). Wetlands in the "shoreland" areas, are regulated (allowable/prohibitive uses) by the Lincoln County Zoning Ordinance, which is applicable in the study area outside of the City of Merrill.

Wetlands are scattered throughout the study area. The most significant wetland delineated is located north of the City and occupies much of Sections 35 & 36 T. 32 N. R. 6 E.

One goal of this sewer service area plan is to preserve the quality of the urban area's surface and groundwater. A step in accomplishing this goal is by restricting sewerage urban-type development from occurring in or near environmentally sensitive areas such as wetlands.

- WOODLAND COVER

Significant tracts of woodland or forest cover exist within the study area. These are primarily associated with streams, intermittent drainage ways, and wetlands. Woodland cover plays a key role in the function and value of sensitive environmental areas like steep slopes, wetlands, and flood plains, as discussed above. Regulation of the removal of woodland (tree and shrubbery) material (especially in shoreland areas) is desirable to protect scenic beauty, control erosion, and reduce effluent and nutrient flows into surface water bodies/courses.

- GROUNDWATER

Together with the lakes, streams, and wetlands, comprising surface water resources, groundwater contained in subsurface aquifers completes the terrestrial portion of the hydrologic cycle. During periods of increased precipitation or thaw, this vast resource is replenished with water moving by gravity through permeable soils. In the North Central Wisconsin Region, major areas of recharge occur in outwash sand and gravel deposits and glacial till composed of unstratified sand, gravel, and clay. Less expansive recharge areas also are found where decomposed and fractured granite lies at or near the surface.

Municipalities overlying the aquifer pump the available groundwater for use in public, domestic, industrial, and recreational supplies. Rural wells irrigate fields, water cattle, and supply homes. Under natural conditions, the aquifers generally receive clean water from rainfall percolating through the overlying soils. However, contamination of groundwater reserves can result from such sources as percolation of water through improperly placed or maintained landfill sites, private waste disposal systems located near the watertable, leaks from sewer pipes, and seepage from mining operations into the aquifer. Runoff from livestock yards and urban areas and the improper application of agricultural fertilizers can also add organic and chemical contaminants in locations where the watertable is at or near the surface. Protection of these groundwater reserves is necessary to ensure adequate amounts of suitable water to domestic, agricultural, and industrial users.

As demands from urban and rural uses increase, depletion of this vital water resource can occur unless careful management is observed. Excessive pumping in locations where public and agricultural water demand is high can depress the local watertable to a point where there is no longer an adequate supply of well-water for users in that area. This depletion of reserves can also impair the flow of those surface streams which depend largely on groundwater discharge as their source.

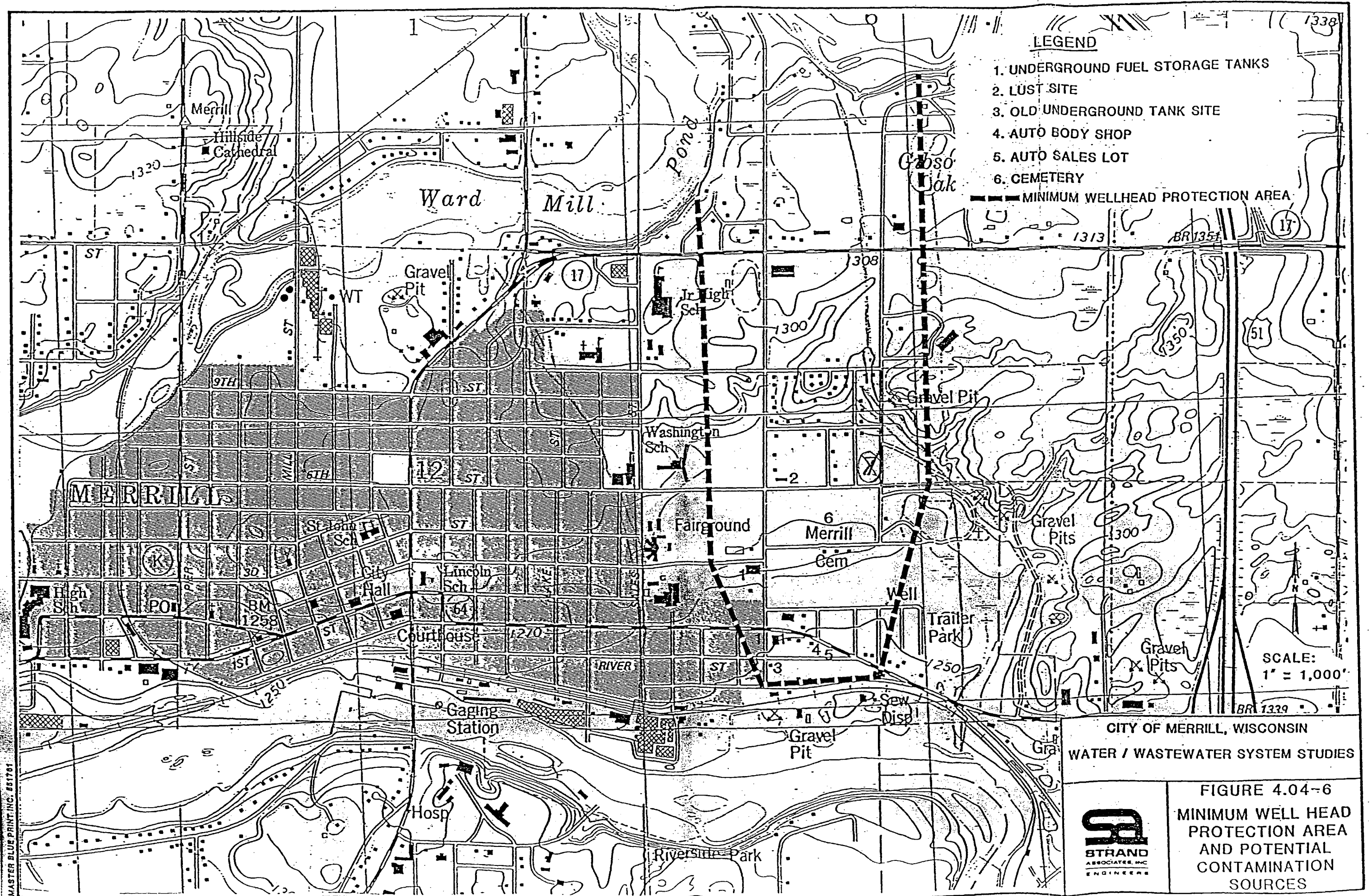
Wellhead Protection Areas (WHPA) are being used to protect groundwater associated with a specific well. The wellhead protection program being implemented by the state involves five components. These are:

1. delineation of a zone of contribution for a five year time of travel;
2. an inventory of all potential contamination sources within that zone;
3. an education program;
4. a management plan; and
5. a contingency plan.

Land use activities with a history of creating groundwater problems can then be

limited and or closely monitored within the zone of contribution. Implementation of a sound management plan and education have proven effective in protecting municipal water supply wells. A wellhead protection study/plan, funded by the WisDNR and the Regional Planning Commission, is scheduled to be undertaken in the Spring of 1996 for the City of Merrill.

Section 4 of the *Water/Wastewater System Study* for the *City of Merrill, Wisconsin (February 1994)* by Strand Associates, Inc. depicts the groundwater situation within the study area and an approximation of the geographic extent of the well-head protection area for the City wells (SEE MAP 1-3). This area is based on a U.S. Environmental Protection Agency (EPA) computer model and can be used as the basis for establishing zoning and land division ordinance regulations that can minimize groundwater contamination.



Man-made Conditions/Factors -**- BACKGROUND**

The natural resources found in any given area guide and shape land development and land-use activity. Likewise, man-made land-use patterns including, the roadway system, the extent of public services and facilities, governmental jurisdictional boundaries, and local government codes and ordinances, also guide and shape new development.

- SOCIOECONOMIC PROFILE**Population**

Over the past two decades, the populations of the City of Merrill and the surrounding Towns of Merrill, Pine River, and Scott have been increasing. The County's population has also increased. Table 3 below, identifies historical data on population totals by community. Except for the City of Merrill, the area's rate of population increase has noticeably lessened between 1980 and 1990, when compared to the previous decade.

TABLE 3: Population Patterns: 1970 - 1990

Community	YEAR				
	1970	1980	Rate of Change 1970 - 1980	1990	Rate of Change 1980 - 1990
C. Merrill	9,502	9,578	1%	9,860	3%
T. Merrill	1,742	2,591	49%	2,716	5%
T. Pine River	1,271	1,463	15%	1,552	6%
T. Scott	1,046	1,149	10%	1,210	5%
Subtotal	13,561	14,781	9%	15,338	4%
Lincoln County	23,499	26,555	13%	26,993	2%

Source: Wisconsin Department of Administration, 1993

Nearly 57% of the total Lincoln County population, live in the Merrill area (City of Merrill and the surrounding Towns of Merrill, Pine River, and Scott). Of the 15,338 persons living in the Merrill area, two-thirds of the population are residents of the City of Merrill. Specifically within the mile and an half area surrounding the city limits of Merrill, approximately 40% or 2,191 (1990 census block track data) of

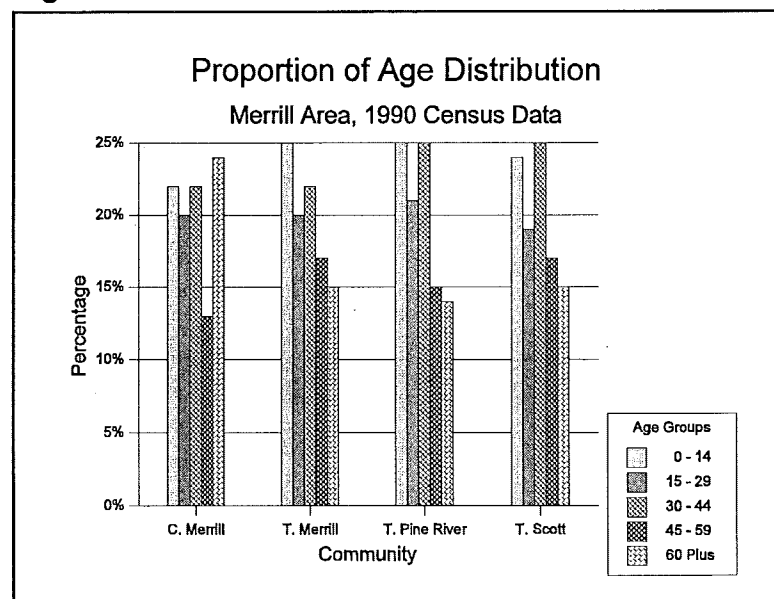
the surrounding towns' cumulative population reside in the extraterritorial jurisdictional boundary area of the City. **Therefore, approximately 12,051 persons live in the sewer service project area.**

Obtaining a better understanding of the composition of the population assists in projecting the types of future demands on community services. Therefore, the following population characteristics, such as gender, age distribution, household size and income levels, are presented in order to identify the general characteristics of the residents.

Lincoln County is fifty-fifty in respect to the proportion of males to females (Wisconsin Department of Administration, 1993). However, in the City of Merrill there are slightly more females than males; in the surrounding towns, it's just the opposite, there are slightly more males in the communities than females. Generally, single women and women with children tend to live in the larger communities which traditionally have more services and other amenities available.

A higher proportion of retirement age persons also reside in the City of Merrill. Twenty-four percent of the City's population is 60 years of age and older. Whereas, 15% or less of the populations in the towns are persons 60 years of age or older. Older adults also tend to live in larger communities because of easier access to affordable housing, medical services, shopping, community centers, etc.

Figure 1



In regard to the surrounding towns, they have a slightly higher proportion of younger persons (under 60 years of age) residing in their communities, refer to Figure 1. However, over the last decade, all the communities populations are growing older. This trend is shown by comparing the 1980 and 1990 median

ages (in years) by community (see Table 4).

TABLE 4: 1980 and 1990 Median Age by Community

1980 Median Age		1990 Median Age	
<u>Age</u>	<u>Community</u>	<u>Age</u>	<u>Community</u>
33.5	City of Merrill	34.5	City of Merrill
28.1	Town of Merrill	32.8	Town of Merrill
27.6	Town of Pine River	31.8	Town of Pine River
30.0	Town of Scott	32.5	Town of Scott
31.7	Lincoln County	34.9	Lincoln County

As stated previously, the City of Merrill has a higher percentage of residents aged 60 and older. The impacts of this information will become more apparent when reviewing the household sizes by community. For a current profile of the number of persons by age group by community, refer to Table 5 below.

TABLE 5: 1990 Population by Age Group

COMMUNITY	AGE GROUP					
	<15 yrs	15 - 29 yrs	30 - 44 yrs	45 - 59 yrs	60 plus yrs	Total
C. Merrill	2,127	1,988	2,128	1,237	2,380	9,860
T. Merrill	676	556	610	469	405	2,716
T. Pine River	384	333	384	233	218	1,552
T. Scott	296	231	304	201	178	1,210
Subtotal	3,483	3,108	3,426	2,140	3,181	15,338
Lincoln County	5,919	5,349	5,873	4,050	5,802	26,993

Source: 1990 Census Data

Population Projections

The future brings continued population growth for the City of Merrill and the surrounding towns. As depicted in Table 6, on the following page, the rate of increase in the population is gradual. Between 1995 and 2015, the City of Merrill is projected to increase by 3% or 295 persons; and the surrounding Towns of Merrill, Pine River, and Scott are projected to increase by a total of 329 persons collectively.

TABLE 6: Population Projections: 1995 - 2015

COMMUNITY	YEAR					Rate of Change 1995 - 2015
	1995	2000	2005	2010	2015	
C. Merrill	10,533	10,750	10,833	10,861	10,828	3%
T. Merrill	2,814	2,895	2,934	2,958	2,968	5%
T. Pine River	1,594	1,609	1,606	1,601	1,585	-1%
T. Scott	1,167	1,212	1,259	1,305	1,351	16%
Subtotal	16,108	16,566	16,632	16,725	16,732	4%
Lincoln County	28,243	28,770	28,983	29,084	29,024	3%

Source: Wisconsin Department of Administration, 1993

Within the 1.5 mile extraterritorial jurisdictional boundary limit of the City, the surrounding towns' population in 20 years (2015) is projected to be 2,361. The projection indicates an increase of 130 persons between 1995 and 2015. In the entire sewer service project area (City of Merrill and the area encompassed within the 1.5 mile radius from its corporate limit), the population is projected to be 13,189 by 2015; an increase of 425 persons from 1995 figures.

Population projections assist in projecting the amount of acreage needed to accommodate the future residential housing demands. Table 7, presents projected residential acreage by different minimum lot sizes (10,000 sq ft, 15,000 sq ft, and 20,000 sq ft).

TABLE 7: Projected Residential Acreage

Community	20 year Population Increase	Projected Housing Units Needed	Projected Acreage (10,000 sq ft lots)	Projected Acreage (15,000 sq ft lots)	Projected Acreage (20,000 sq ft lots)
C. Merrill	295	115	26	40	53
Towns	130	41	9	14	19
Combined	425	156	35	54	72

Housing

As the population in the Merrill area increased in the last decade, so did the number of households; however, the ratio of persons per household decreased. In the surrounding towns, the size of the household tends to be larger than the City's average household size. This pattern is consistent with the information on the population's age distribution. Proportionately more elderly persons reside in

the City, who generally live alone or with one other person. In the towns, a larger proportion of persons are younger and living in a family setting: parents with children at home. Table 8, presents 1980 and 1990 Census data in regard to households in the Merrill area.

TABLE 8: 1980 and 1990 Households by Community

<i>Community</i>	1980		1990	
	<i>No. of Households</i>	<i>Persons/ Households</i>	<i>No. of Households</i>	<i>Persons/ Households</i>
C. Merrill	3,659	2.56	3,919	2.46
T. Merrill	855	3.03	954	2.85
T. Pine River	439	3.33	519	2.99
T. Scott	354	3.25	399	3.03
Lincoln Co.	9,375	2.76	10,159	2.60

Source: 1980 & 1990 Census Data

Within the Merrill area, the number of housing units has greatly increased over the last two decades. Since 1970, the number of housing units in the City of Merrill increased by 23%. In the surrounding Towns of Merrill, Pine River, and Scott, the number of housing units increased by 71%, 60% and 42% respectively. However, in the last decade the rate of increase in the number of housing units has slowed to some extent. This trend is consistent with the slowed rate of growth in the population as presented previously. Table 9, presents the rate of change in the number of housing units by community in the Merrill area for the last two decades.

TABLE 9: Number of Housing Units by Community by Year

Housing Units					
Community	1970	1980	<i>Rate of Change: '70-'80</i>	1990	<i>Rate of Change: '80-'90</i>
C. Merrill	3,292	3,840	17%	4,045	5%
T. Merrill	605	953	58%	1,037	9%
T. Pine River	354	475	34%	566	19%
T. Scott	297	378	27%	423	12%
Lincoln Co.	9,809	12,780	30%	13,256	4%

Source: 1980 & 1990 Census Data

Within the towns surrounding the City, the vacancy rate of housing units was very minimal. The vacancy rates for the Towns of Merrill, Pine River, and Scott were 8%, 8% and 6% respectively. The City's vacancy rate was 3% (1990 Census data). Whereas, Lincoln County's vacancy rate was 23%.

In regard to more recent trends, between 1990 and 1994, the number of building permits issued by the Lincoln County Zoning Office for new homes have been increasing for the Towns of Merrill, Pine River, and Scott. The building permits for new construction (new homes) issued by the City of Merrill Building Inspector

have also been increasing during the same time frame. Even though, in recent years the City issued more new permits than any other entity, the combined number of permits for homes in the surrounding towns is greater than the number of new homes being built in the City.

TABLE 10: Building Permits issued for new homes by year

Community	1990	1991	1992	1993	1994
C. Merrill	11	14	21	22	18
T. Merrill	16	12	18	19	20
T. Pine River	6	7	12	16	16
T. Scott	5	4	5	9	13

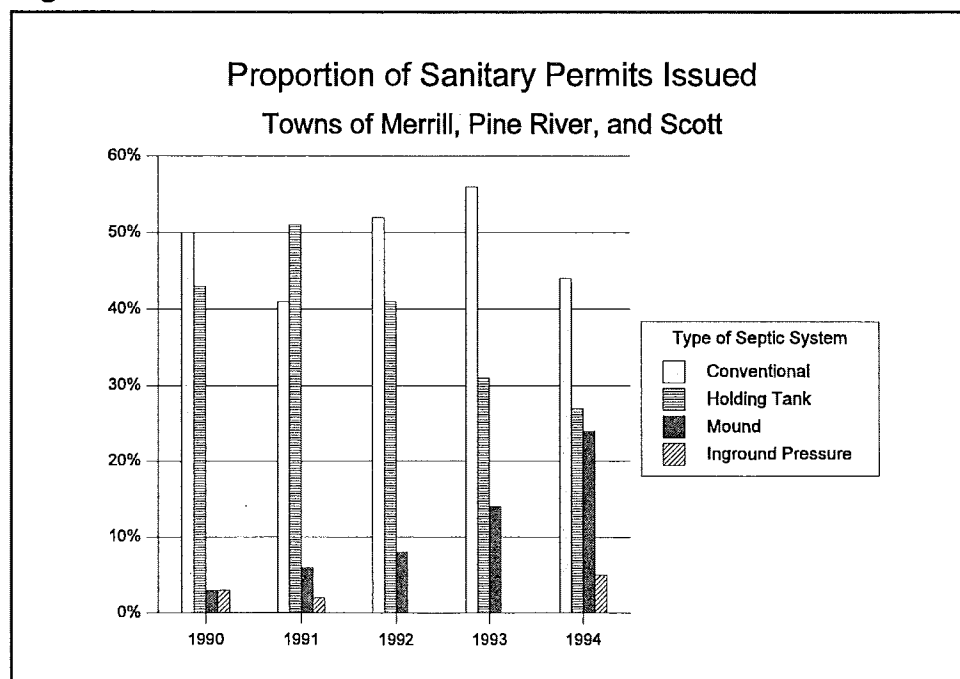
Source: Lincoln County Zoning Office and City of Merrill Building Inspector

In regard to the permits issued for private sewage systems, the most common systems installed in surrounding towns were for conventional systems and holding tanks. Of all private sewage system permits, between 1990 and 1994:

- * 49% were for conventional systems;
- * 37% were for holding tanks;
- * 12% were for mound systems; and
- * 2% were for inground pressure systems.

However, over that five year period, the proportion of holding tanks has been decreasing and the percentage of mound systems has been slowly increasing. Refer to the bar chart (Figure 1-2).

Figure 2



Throughout the five year period, conventional systems have generally been the most common system installed. The proportion of holding tanks has been gradually decreasing and the number of permits issued ranged between 21 - 27. The number of permits issued for mound systems has increased over the years as well. In 1990 there were only 2 permits issued for mound systems: one in the Town of Merrill and one in the Town of Pine River. By 1994, there were 19 permits issued for mound systems, refer to Table 11.

TABLE 11: Private Sewage System Permits issued by type and by year

<u>Private Sewage System</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Conventional	30	20	34	49	34
Holding Tank	26	25	27	27	21
Mound	2	3	5	12	19
Inground Pressure	2	1	0	0	4

Source: Lincoln County Zoning Office

Economy

The City of Merrill is a primary economic center for Lincoln County. In addition to being the county seat, many of the medium to large employers in the county are also located in the Merrill area. The manufacturers and other businesses listed below all employ 100 or more persons.

The leading manufacturing employers include:

- * C& H Packaging Company, Inc.
- * Fox Point Sportwear, Inc.
- * Hurd Millwork Company, Inc.
- * Lincoln Wood Products, Inc.
- * Merrill Manufacturing Corp.
- * Northern Wire Corp.
- * Semling Menke Company, Inc.
- * WCA Industries, Inc.
- * Weinbrenner Shoe Co., Inc.
- * Wire Products Manfg. Corp.

The leading non-manufacturing employers include:

- * Church Mutual Insurance Company
- * County of Lincoln
- * Department of Health & Social Services
- * Good Samaritan Health Center
- * Merrill Public School

With the number of employers located in the Merrill area, it is not surprising that of the 12,152 working residents (16 years and older) who live in Lincoln County, 45% work in the City of Merrill. Of the rest of the working county residents, 16% work in Tomahawk; 19% work in the other communities in Lincoln County; 14% work in the Wausau area; and the balance of 6% work elsewhere (outside Lincoln County and the Wausau area).

Of the total number of Lincoln County residents who work (those 16 years of age or older), 5,477 work in the City of Merrill. Of those:

- * 59% or 3,227 live in the City of Merrill;
- * 27% or 1,466 live in the surrounding Towns of Merrill, Pine River, or Scott; and
- * 14% or 784 live outside of the City of Merrill and the surrounding Towns of Merrill, Pine River, and Scott.

Even though there are a number of employment opportunities in the Merrill area, the civilian unemployment rate for the City and surrounding Towns are slightly higher on the whole than the State's 5.2% unemployment rate (1990 Census). The civilian unemployment rates were as follows: Lincoln County, 6.6%; City of Merrill, 7.3%; Town of Merrill, 4.2%, Town Pine River, 5.3%, and Town of Scott, 5.8%. In regard to income levels and poverty status of persons residing in the study area, again, it appears that persons living in the surrounding towns are some what better off than those living in the City of Merrill or even county-wide. The table below identifies the 1990 Census data in regard to income levels (per capita and median household) and the percent of persons living below the poverty level¹.

TABLE 12: Income & Poverty Status by Community

Community	Per Capital Inc.	Household Median Income	Percent of Persons Below Poverty
C. Merrill	\$11,758	\$24,074	13.9%
T. Merrill	11,322	27,847	7.4
T. Pine River	11,333	28,696	5.9
T. Scott	12,151	29,191	6.5
Lincoln County	11,282	25,175	10.4

Source: 1990 Census Data

- LAND-USE PATTERNS

Development within the City is divided north and south by the Wisconsin River and east and west by the Prairie River. Residential development is divided into four main neighborhood areas: East Side, West Side, Sixth Ward, and South Side. Most of the residential development exists in the East and West Side neighbor-hoods which comprise that area of the City north of the Wisconsin River on either side of the Prairie River. The Sixth Ward neighborhood is that area lying south of Alexander Lake. The South Side is a much smaller area than the other three and contains far fewer dwelling units. It is somewhat constricted by

¹According to the Census, the average poverty threshold for a family of four persons was \$12,674 in 1989.

Riverside Park and the golf course.

Major commercial development in the City is located within the central business district and along Business 51. Another significant commercial area is on the east side of the City at the '51/64' interchange where the Walmart development is located. The Sixth Ward and West Side areas each have their own neighborhood commercial areas.

Industrial development is located in two major areas, including the riverfront industrial area and the airport industrial park.

Annexation activity has been relatively slight over the last 25 years. Growth of the City via annexation has been mainly to the east along S.T.H. 64. Significant land area to the north of the City was acquired for the airport.

Historic land-use activity within the study area outside the City is characterized by farming interspersed with heavily wooded areas, primarily wetlands and shoreland areas. Significant non-farm development has scattered throughout the study area. This non-farm development is predominantly residential land-use and is stripped along the town road systems.

Some clustering of development has occurred as well. Several subdivisions have developed primarily in the northern portion of the study area. Much of the privately held land on lake or river frontage has been subdivided. There are numerous subdivisions (20 or more) comprising a significant number of parcels that have been platted but not yet developed. Two mobile home parks are located on the Prairie River on either side of U.S. 51 north of the City.

This residential development on private septic systems, especially those areas in close proximity to surface waters, has been a concern to local officials regarding groundwater contamination potential. Several sites have been identified as areas of failing systems. These include the Pesabic Lake area, an area off Riverside Drive off S.T.H. 17 near the Wisconsin River, a small group of mobile homes located off Business 51 just inside the city limit line, and the Sunridge Acres subdivision at Center Road and C.T.H. W.

There is also some commercial development scattered through the area. These are primarily, tavern, restaurant, and wood products businesses among others. A cluster of commercial properties is located on the east side of the City adjacent to the Walmart near the U.S. 51 interchange including a bank, grocery, and hotel. ITC Trucking operates a major truck distribution facility located off of C.T.H. W just south of the '51/64' interchange.

An assortment of other uses can be found including churches, cemeteries, schools, and town halls.

- LAND AND DIVISION AND ZONING REGULATION

Under Wisconsin Statute s.236, towns, villages, cities, and counties MAY adopt land division/land parcelling ordinances, which both the city of Merrill and Lincoln County have done. The purpose of these ordinances is to regulate the subdivision of land to further the orderly layout and use of land, to prevent the overcrowding of land, to lessen congestion in the streets and highways, to facilitate adequate provision for water, sewerage, and other public requirements, and to provide for proper ingress and egress.

A "subdivision" by statutory definition, is a division of a lot, parcel or tract of land by the owner, or the owner's agent, for the purpose of sale or of building development, where:

- the act of division creates 5 or more parcels or building sites of 1.5 acres each or less in area, OR
- five or more parcels or building sites of 1.5 acres or less in area are created by successive divisions within a period of 5 years.

This definition provides a land division "loophole" because new lots being created that are over 1.5 acres in size, do not have to comply with state statute or local subdivision regulations, unless local ordinances include more restrictive provisions that require lots/parcels of larger size to be reviewed and approved. Statutes also allow cities and villages to exercise land division/parcelling or subdivision plat approval authority within, in the case of Merrill, a 1.5 mile radius of its corporate boundary. In urbanizing areas, it is important to guide and manage new lot parcelling, what ever the size, so that eventual land-use patterns are systematic.

Both the city and county have adopted land division ordinances that set forth procedures for land parcelling. The county's ordinance is applicable in the three towns surrounding the city. The Lincoln County "Subdivision Zoning Ordinance", is a land division ordinance, not a zoning ordinance!

The ordinance has a number of shortcomings that do not allow for proper review of land parcelling. The county defines a subdivision differently than the State Statute. The county's ordinance only applies to the creation of a subdivision or 3 parcels of 5 acres each or less at the same time, OR 3 parcels of 5 acres each or

less within a 5 year period. While the county's larger parcel size (5 acres rather than 1.5 acres) is an improvement over the state's requirement, it does not require the review of single parcels, whether being created by "metes and bounds" description, or by the use of a "certified survey map" (CSM's). The concern arises from the fact that very little "subdivision" activity has or is taking place within the study area. Most parcelling is of the one or two parcel nature...one lot here, one lot there. Thus, there is no ability to effect an overall scheme to development patterns which makes it more difficult to service some areas.

Many (more modern) codes require the review of single parcels and many require single parcels being created that are 35 or less acres each be reviewed. The larger the parcel being reviewed, the more opportunity there is to identify a pattern for future road systems and utility routing. Additionally, the county's present ordinance does not set forth what are called parcelling "design standards"...lot shapes, drainage, driveway location, future road extensions, etc. Another shortcoming of the present county ordinance is that it allows parcelling and development of private drives/roads which many times are not of sufficient width or are not built to public road standards, should adjacent property owners ever request the town (or city) to take them over.

Also under Wisconsin Statute, towns, villages, cities, and counties MAY adopt "zoning" ordinances. Zoning is a method and practice for implementing or carrying out a "land-use plan" that depicts a proposed pattern of land-use/development. The goal of zoning is to ensure a reasonable development pattern by keeping similar and related uses together and separating dissimilar, unrelated, and incompatible uses, particularly in relationship to transportation facilities, utilities, and public services and facilities. Zoning can be described as a way to "keep the pig out of the parlor"...an old expression!

A zoning ordinance consists of a map and a written text. The zoning map arranges the community (county) into districts or zones...conservancy, residential, business, agriculture, etc. Within each of these districts, the text of the zoning ordinance specifies the permitted land-uses, the bulk of buildings, the required yard/lot dimensions, and other standards and criteria for obtaining permission to develop.

As indicated above, a county MAY adopt zoning for the entire unincorporated area (that area outside of city or village boundaries) subject to town approval, however, counties are mandated to promulgate and adopt a zoning ordinance that regulates land-use and development in what are called shoreland, wetland, and floodplain areas for the entire county outside of villages and cities. The

shoreland/ wetland/floodplain area is that area that lies within 1,000 feet of a lake, within 300 feet of a navigable stream, or to the landward side of a floodplain, whichever distance is greater.

The county has adopted both a general zoning ordinance (SEE MAP 1-4) and a shoreland/wetland/floodplain ordinance, both of which are applicable within the three towns surrounding the City of Merrill. Merrill has also adopted zoning, and the City also has statutory authority to exercise "extraterritorial" zoning within a 1.5 mile radius of the city's boundaries. It has never exercised this authority!

Under the county's (read towns) zoning districting, the city is virtually surrounded by either a RECREATION DISTRICT, or by a RESIDENTIAL DISTRICT. For a half mile south of the city limits, with the exception of an area east of the Wisconsin River out to STH "51", the area is zoned RECREATION. Most of the area on the north side of the city is zoned RESIDENTIAL, with the exception of the area west of the airport, which is also zoned RECREATION. There is a strip of COMMERCIAL along the north side of CTH "G" on the northeast side of the city. Within the one and one-half mile jurisdictional area of the city, the vast amount of land is zoned AGRICULTURE.

The following list concerns, for the purpose of this sewer service area study, with the Lincoln County Zoning Ordinance, of which the three towns are a part:

- * The RESIDENTIAL district is relatively restrictive in what are allowed as permitted uses, with the exception that it allows mobile home parks as a CU (conditional-use). The allowed density may be high without public sewer.
- * The RECREATION district is a misnomer. Its "statement-of-intent" is to "protect and encourage the wise development of the recreation industry" but with very few exceptions, its permitted and conditional-use have nothing to do with "recreation". It affords very little property protection because it allows conflicting land-uses next door to each other.
- * Wetlands are not mapped within or without the "shoreland" protection zones.
- * A few small parcels around the airport are zoned AIRPORT COMMERCIAL, but the district does not allow commercial uses!
- * In the AGRICULTURE district, there appears to be some inconsistency between lot size requirements for a single-family residence as a permitted or conditional-use. It is permitted with a 20 acre minimum size parcel, but the conditional-use allows a single family residence on one (1) acre.

Under conditional-uses, it also allows (section 17.33(3)(o)), non-agricultural business.

- * Lot size minimum's in most districts are 30,000 sq. ft. On the north and north-east side of the city, this lot size could be a potential problem because over-all density is becoming quite high for an area served by on-site sewerage disposal systems. The area is characterized by soils that have severe limitations for on-site septic absorption systems. The area has a potential for requiring public sewer or water.

Also, pursuant to Wisconsin Statute a city, as well as towns, may establish street and highway widths in excess of the widths in use, and likewise, may adopt plans showing the location and width proposed for any future street or highway within its extraterritorial jurisdiction. Such streets or highways or plans must be shown on a map (commonly referred to as an "Official Map"). The effect of this type of city action assures that necessary land is reserved for a street or highway since building permits (except under limited conditions) are prohibited from being granted for construction in what is shown on the "official map" as a proposed street or highway right-of-way. The issue here is that the City of Merrill could "officially map" future roadways that would be located within its one and one-half mile jurisdictional area.

- PUBLIC SERVICES/FACILITIES

Transportation Network

The study area is traversed by a number of major federal, state, and county highways. These include U.S. 51, Business 51, S.T.H. 17, S.T.H. 64, S.T.H. 107, and County Trunk Highways (C.T.H.) E, F, G, I, K, Q, W, and Z.

U.S. 51 is a four-lane freeway bypassing the City, however it currently drops down to two-lane highway just north of the City. New four-lane expansion of this highway is currently under construction and will relocate U.S. 51 west of its current right-of-way, north out of the study area.

The Wisconsin Central Limited has a rail line through the study area on a north-south path paralleling C.T.H. W and S.T.H. 64 into the City, looping east around Pesabic Lake, and out along the new U.S. 51 relocation corridor.

There is one airport located in the study area. Merrill Municipal Airport is a public facility owned by the City of Merrill. It is a 360 acre site north of the City (Section 2, T.31N., R.6E.) with two (2) runways at an elevation of 1317 feet. The primary

runway is 4,000 feet and the crosswind runway is 3,000; both have asphalt surfacing. The airport has been classified by the DOT as a General Utility I facility which means that it can serve single and twin engine planes under 12,500 pounds with approach speeds under 121 knots and wingspans under 49 feet. These aircraft are typically used for business and charter flying.

Parks

Merrill is known as the "City of Parks". The City has ten (10) park sites totalling 85.72 acres, not including the Merrill Area Recreation Complex (MARC). Of these parks, seven (7) totalling 73.72 acres are located on the Wisconsin or Prairie River shorelines. A public golf course is also located on the Wisconsin River. Council Grounds State Park also on the Wisconsin River adjoins the City of Merrill on its western border. Council Grounds is a forested area of approximately 405 acres that protects over one (1) mile of Wisconsin River shoreline between Alexander Lake and the City of Merrill. The Town of Pine River has a town park (Pine River Park) located on the Pine River in the southeastern tip of the study area. All of these park lands help to preserve/protect environmentally sensitive areas and area water quality.

The MARC is a 100 acre sports complex on the northwest edge of the City off S.T.H. 107. The facility is currently under construction and is planned to include a multipurpose building with ice rink and parking for 1,000 cars. The Lincoln County Fairgrounds is a much more modest facility located on the west side of the city.

Utilities

A Wisconsin Public Service power transmission line (115 kv) traverses the study area via the Pine Substation in a north-south direction paralleling U.S. Highway 51. A second transmission line, also 115 kv, enters from the east along S.T.H. 64 and hooks into the Pine Substation located at the '51/64' interchange. Two 46 kv lines leave this substation to distribute power to the city.

A gas pipeline carries natural gas into the city through the southeast corner of the study area.

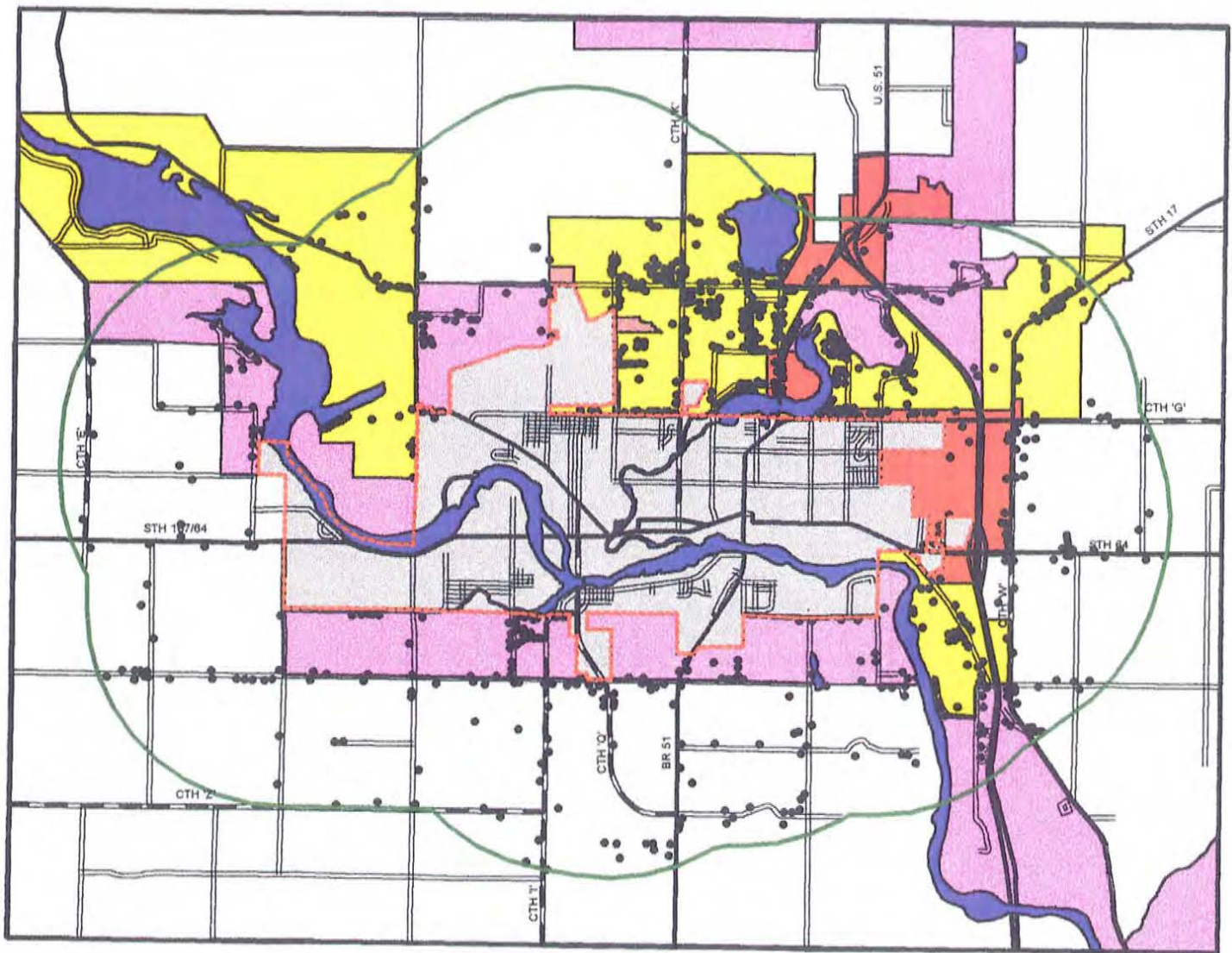
Schools

The Merrill Area Public Schools (MAPS) system provides public education to 11 of Lincoln County's 16 townships including those in the study area and the City of Merrill, itself. Within the study area there are four elementary schools, a junior

MAP 1-4

EXISTING ZONING

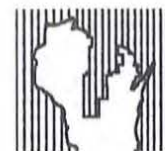
SHOWN WITH EXISTING STRUCTURES



LEGEND

	Water Bodies		U.S./State Highways
	Agriculture		County Highways
	Residential		Local Roads
	Commercial		Corporate Limit Boundary
	Airport Comm.		Extra-Territorial Zone
	Recreation		Existing Structure
	City of Merrill		

This map compiled from multiple sources including: U.S.G.S. 7.5 min. quad. maps, Lincoln County Zoning maps, and NCWRPC field surveys (7/95).



NORTH
CENTRAL
WISCONSIN
REGIONAL
PLANNING
COMMISSION

high school, and a senior high school located inside the city limits. There is also an elementary school located in the Town of Pine River off S.T.H. 64, east of the '51/64' interchange. Another elementary school is located in the Town of Scott off S.T.H. 64/107, west of the Wisconsin River.

Currently under consideration are plans to build a new elementary school which would replace two (2) older, overcrowded buildings. Five (5) sites are under study. Any of the sites will have an impact on sewer service demand, but one site in particular (Smith site) would require a new lift station to provide sufficient water pressure due to site elevation above the city's normal pressure zone.

Historical Sites

There are a number of structures in the City of Merrill that are listed on the National Register of Historical Places. There are three individual structures, the Lincoln County Courthouse, Merrill City Hall, and the T. B. Scott Free Library which are on the national registry. In addition to those buildings, is a cluster of residential housing that were recently added to the national registry as well and listed as the Center Avenue Historical District.

Solid Waste

There are no active landfills within the study area, however, three abandoned landfill sites exist. The abandoned City of Merrill landfill is located north of the City just east of U.S. 51 in the Town of Merrill (Sec. 30 & 31, T32N, R7E). This site operated as a sanitary landfill accepting all types of waste except hazardous. The abandoned Ward Paper Company landfill lies in the Town of Merrill northwest of the City on C.T.H. K (Sec. 7, T31N, R7E). This site accepted wastewater sludges, ash, and stock rejects. The abandoned Merrill Gravel and Construction site is located just east of the City in the Town of Merrill (Sec. 7 T31N, R7E). This site was used only for building demolition materials.

The WI Department of Natural Resources has exercised control within a 1,200 feet radius of abandoned landfills. Special state permits to drill and use water from wells within this area may be required. This concern is raised here because persons residing within that radius of an abandoned landfill may need alternative water supply systems.

Water

The City of Merrill currently has five (5) municipal water supply wells. Three of these wells, numbers 1, 4, and 5, are located in close proximity on the City's east

side. The other two, numbers 2 and 3, are located on the City's west side near the Wisconsin River. These wells pump directly into the distribution system. The wells on the east side supply a majority of the City's water due to higher capacity than the west side wells because they are deeper and are located in a larger bedrock valley.

Two 200,000 gallon elevated tanks supply the system. One is located between the Wisconsin and Prairie Rivers, and the other is located in the Northwestern corner of the City. According to Strand engineers, the minimum recommended system pressure is 40 psi, which limits normal pressure zone service to elevations below 1330 feet msl (SEE MAP 1-2). The distribution system consists of 65 miles of iron and steel mains ranging from one (1) to sixteen (16) inches in diameter. Specific recommendations are made by Strand Associates, Inc., for improving the water supply system and meeting projected future water demand.

Areas outside the city limits obtain their water from individual private wells.

Wastewater Treatment Plant

The City's wastewater treatment plant is located on the east side of the City just north of the Wisconsin River. Wastewater is conveyed to the plant via a network of small collecting sewers, large interceptor sewers, lift stations, and force mains. The treated effluent is discharged into the Wisconsin River. Specific recommendations are made by the 1994 Strand Associates, Inc., report for improving the wastewater collection network and treatment plant. However, these recommendations are dependent upon growth and annexation projections. Growth patterns and wastewater flows must be monitored to specifically determine when and where improvements are necessary.

The City has an ordinance regulating (policies and procedures) the acceptance of septage/holding tank wastes at the treatment plant.

Discharge permit information and design characteristics of the plant are as follows:

WPDES Permit Number:	WI-0020250-5
Expiration Date:	March 31, 1998
Design Flow:	3.06 mgd
Average Flow:	1.49 mgd (1991)
Treatment Type:	Secondary treatment via cumminution, grit removal, primary settling, activated sludge, final clarification, and chlorination.
Sludge Treatment:	Anaerobic digestion followed by a belt press.
Sludge Disposal:	Land spreading.
Receiving Water:	Wisconsin River
Classification:	CON; WWSF
Q7,10:	880 cfs
Dilution Ratio:	265.3

Current and anticipated future wastewater flow and loadings are projected by Strand Associates in the Water Wastewater System Study and are shown here in Table 13. As shown in the table, the sustained wet weather flow rate is projected at 3.51 mgd, which exceeds the current design capacity of 3.06. However, this estimated lack of capacity is dependant on the actual growth/annexation that occurs.

TABLE 13
PROJECTED WASTEWATER FLOWS AND LOADING, CITY OF MERRILL, WISCONSIN

1994					
Municipality	Average Daily Flow (mgd)	Sustained Wet Weather Flow (mgd)	Peak Flow (mgd)	BOD Load (lb/day)	TSS Load (lb/day)
City of Merrill	1.63	1.98	4.98	2,100	1,750
2015					
City of Merrill	2.29	2.80	7.01	2,950	2,460
Town of Merrill	0.43	0.53	1.31	550	460
Town of Scott	0.07	0.09	0.23	90	80
Town of Pine River	<u>0.07</u>	<u>0.09</u>	<u>0.23</u>	<u>90</u>	<u>90</u>
TOTAL	2.86	3.51	8.78	3,600	3,080

Source: Strand Associates, Inc., 1994

The condition of the various parts of the wastewater collection system depends greatly on when they were installed. The city still has some sewers that were originally installed in 1887. Strand has identified those interceptor sewers with capacity deficiencies (SEE TABLE 14).

TABLE 14
CAPACITY DEFICIENCY IN CITY INTERCEPTOR SEWERS, MERRILL, WI

Sewer ID	1994 Conditions		2015 Conditions	
	Capacity Deficit (mgd)	Required Pipe Size (inches)	Capacity Deficit (mgd)	Required Pipe Size (inches)
Sturdevant St.	1.53	18	4.63	24
Logan St.	1.73	18	3.45	24
Stang St.	1.42	15	3.39	21
Memorial St.	-----	----	0.40	8
Industrial Area	-----	----	1.48	12

Source: Strand Associates, Inc., 1994

Of the city's nine existing lift stations the Strand report suggests that, three (Sixth Ward, Riverside Avenue, and Wisconsin Street) will require increased pumping capacity for future conditions. The other six are sufficient to handle their present and future flow requirements. New regional lift stations will likely be required to serve areas within the Towns of Merrill or Scott depending on those areas to be annexed.

The primary limiting factor on the capacity of the city wastewater treatment plant is the RAS (return activated sludge) pumps. The treatment plant has three (3) RAS pumps each with a capacity of 560 gpm. The WisDNR requires RAS pumping capacity to be 75% of forward flow with the largest pump out of service, therefore the RAS pumping capacity is 1.61 mgd. Based on these figures, the Strand report shows the RAS capacity to 81% of existing plant flow. However, projected future flows could reduce this figure down to 53%.

- **Conclusion**

This section has described the natural resources and environmental constraints to development within the Merrill Sewer Service Study Area and has discussed the benefit (value) of these natural conditions to the area as opposed to altering these conditions for more intensive development. Some environmentally sensitive areas are protected from encroachment by state and local regulation, such as flood hazard areas and wetlands falling within the shoreland jurisdiction of Lincoln County's zoning ordinance. Other sensitive areas remain available for development.

Additionally, this section has described the man-made condition and factors that exist in the study area. Reviewing these man-made influences helps to identify where growth should be directed to best take advantage of already existing public investment, as well as to identify those areas where development has been preempted by the effects of man's past actions.

Public sewer within the service boundary should be prohibited in all floodplain and in areas with a slope greater than 12%. Areas of high groundwater, bedrock near the surface, and areas of steep slopes should be carefully examined before development plans are approved, and such plans should be rejected if found incompatible with the public interest. The factors of concern that require review by potential developers and local governments include the increased development and maintenance

costs associated with housing, streets, and public sewer and water systems in environmentally sensitive areas. Such costs rise when structures are required to be flood proofed, with flood damage repair, flood insurance, site preparation, and maintenance to damaged structures, roads, and the infrastructure that is installed in unsuitable soil conditions. Development in wellhead protection areas must also be scrutinized to prevent uses which might adversely impact the groundwater supply. Finally, more efficient use of public funds can be realized if development first proceeds where necessary public services have already been made available.

OVERVIEW -

This study/report is intended to address three basic questions:

- 1.) What is the future demand for sewer?
- 2.) What areas are suitable for sewer development?
- 3.) What areas are unsuitable for sewer development because of physical or environmental constraints?

The preceding PART-1 of this report includes projections that can answer questions 1 and 2, and NR-121 requires that "environmentally sensitive" areas be excluded from areas to which sewer will/would be provided. Those areas also identified in PART-1. The City of Merrill has considered these questions since 1983, when it adopted the MERRILL COMPREHENSIVE PLAN (prepared by Barton-Aschman Associates, Inc.). Section 9 of that Plan discusses sewer goals/objectives/policies and it makes specific sewer recommendations. It also includes a sewer system "area" plan for the year 2000.

The surrounding Towns of Merrill, Pine River, and Scott have no similar planning document that helps them guide land development and use. What they do rely upon, however, is the Lincoln County Zoning Ordinance which (in the writer's opinion) is not based upon planning principles and practices, particularly for "urbanizing" areas. The ordinance allows development at densities and in areas that can have a detrimental effect on groundwater quality.

While the 1983 Plan makes recommendations that the city review land development and use in the areas outside the city, and also that it "establish design, construction, maintenance, inspection, and monitoring procedures and requirements for existing and new on-site sewage systems...", the city has no authority to do that. It could request that the land division ordinance be revised.

Given this "backdrop", the following sections of this PART-2 provide the framework for delineating the Sewer Service Area (SSA).

CONCERNS/ISSUES/RECOMMENDATIONS -

The identification of those environmentally sensitive areas is relatively straight forward. The delineation of these areas is depicted on MAP 3-1. The environmental protection areas shown on the sewer service area map are a representation of the conditions at the time of map preparation, using the best available data. the presence and location of wetlands, navigable water, floodplains and similar site features should be verified by

field survey and applicable permits should be obtained prior to any land disturbing activity. Contact the city, county or WisDNR zoning administration office for assistance in delineating these environmentally sensitive area boundaries on your property. The only natural resource that is not entirely exempt are those soils that have severe limitations for on-site septic absorption systems and for structures with basements. There exists some potential problem areas that have been developed on these soils where public water and/or sewer may be needed at some time in the future to ensure groundwater protection. The concern here, as development density increases in these areas, is how to solve the problem. Public sewer/water may be one solution, but proposed revisions to the Department of Industry, Labor & Human Relations (DILHR) Wisconsin Administrative Code Section 83 (ILHR 83) may make it easier to develop those areas using alternative private wastewater systems. These proposed regulations may also indirectly allow for more "urban sprawl". Concerns/issues about the delineation of a SSA include:

- * the relatively small population increases projected between now and the year 2015;
- * the large amounts of undeveloped land within the city border;
- * the existing density of development on poor soils (with private sewage systems) on the north, northeast sides beyond the city limits; present land-parcelling and zoning practices of the towns (read county);
- * the extent and condition of the city's present sewer collection system, in terms of a gravity-flow system vis-a-vis lift stations and associated costs;
- * the uncertainty of where a new elementary school may be located; and
- * the willingness to control types of development in the "wellhead" protection zones.

The resolution of these concerns/issues is addressed in the following section and are addressed as "goals and objectives".

GOALS/OBJECTIVES/POLICIES -

The following goals/objectives/policies are excerpted from the 1983 MERRILL COMPREHENSIVE PLAN, and are re-introduced here as still pertinent and relevant. Goals are intended to provide general guidelines. The corresponding objectives are intended to be somewhat more precise and definitive and are intended to help implement the more general goals.

Many of the goals and objectives require coordination between the City of Merrill, the affected townships, Lincoln County, and the State of Wisconsin. **The awareness of the cost of providing sewer service to new areas and the awareness of the environmental impacts of improperly functioning sewage treatment systems will**

demand cooperative future efforts in sewer system planning. It is the intent of this section to establish proper sewer system goals and objectives from which to make plan recommendations and to provide proper guidance to sewer improvements as they relate to the city's overall comprehensive plan.

Goal 1: The city should assure efficient utilization of existing sewer systems.

- Objective 1.1: Maximize the development potential of existing sewer areas.
- Objective 1.2: Repair existing sewage system problem areas thereby maximizing capacity of existing system.
- Objective 1.3: Phase sewer extensions in a manner that is efficient in both land and sewer utilization and which maximizes the cost benefit to the city.

Goal 2: Create an urban/rural service area planning boundary.

- Objective 2.1: Establish sewer service boundaries for the year 2015.
- Objective 2.2: Establish a phasing plan for extension of sewer within the planned urban service area. Establish short-term sewer extension plans year by year for the next five years, and in five year increments thereafter until 2015.
- Objective 2.3: Establish an annual plan update procedure by which the city can review and update the yearly system projections.
- Objective 2.4: Establish a capital improvements program for sewer improvements for the next five years.
- Objective 2.5: Assure that growth outside of the urban service area is controlled so that premature extension of sewer is not required.
- Objective 2.6: Establish design, construction, maintenance, inspection, and monitoring procedures and requirements for existing and new on-site sewage systems so as to assure the proper long-term functioning of these systems.

Goal 3: Eliminate sewer related environmental problems.

- Objective 3.1: Work with the townships, county, and state officials to correct

existing on-site sewage system problem areas and to protect against future problems through the establishment of standards and procedures for construction and maintenance of on-site systems.

- Objective 3.2: Investigate and evaluate the continuing possibilities for application of sewage sludge to agricultural fields.
- Objective 3.3: License and control septic tank pumpers so that the pumpage is properly treated rather than being dumped over land without treatment.
- Objective 3.4: Strive for water quality protection through the delineation of areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints.

Goal 4: Assure coordination between future sewer improvements and land-use development.

- Objective 4.1: Ensure proper locations for existing and future utility easements in areas of future development.
- Objective 4.2: Assure adequate utility capacity for future developments..."

Goal 5: Improve the consistency among policies within the regulating tools (zoning and land division ordinances) between the different levels of government - county and city.

- Objective 5.1: The City Planning commission should initiate a meeting(s) with the County Zoning Committee for purposes of developing complementary codes and ordinances.

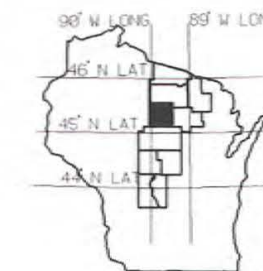
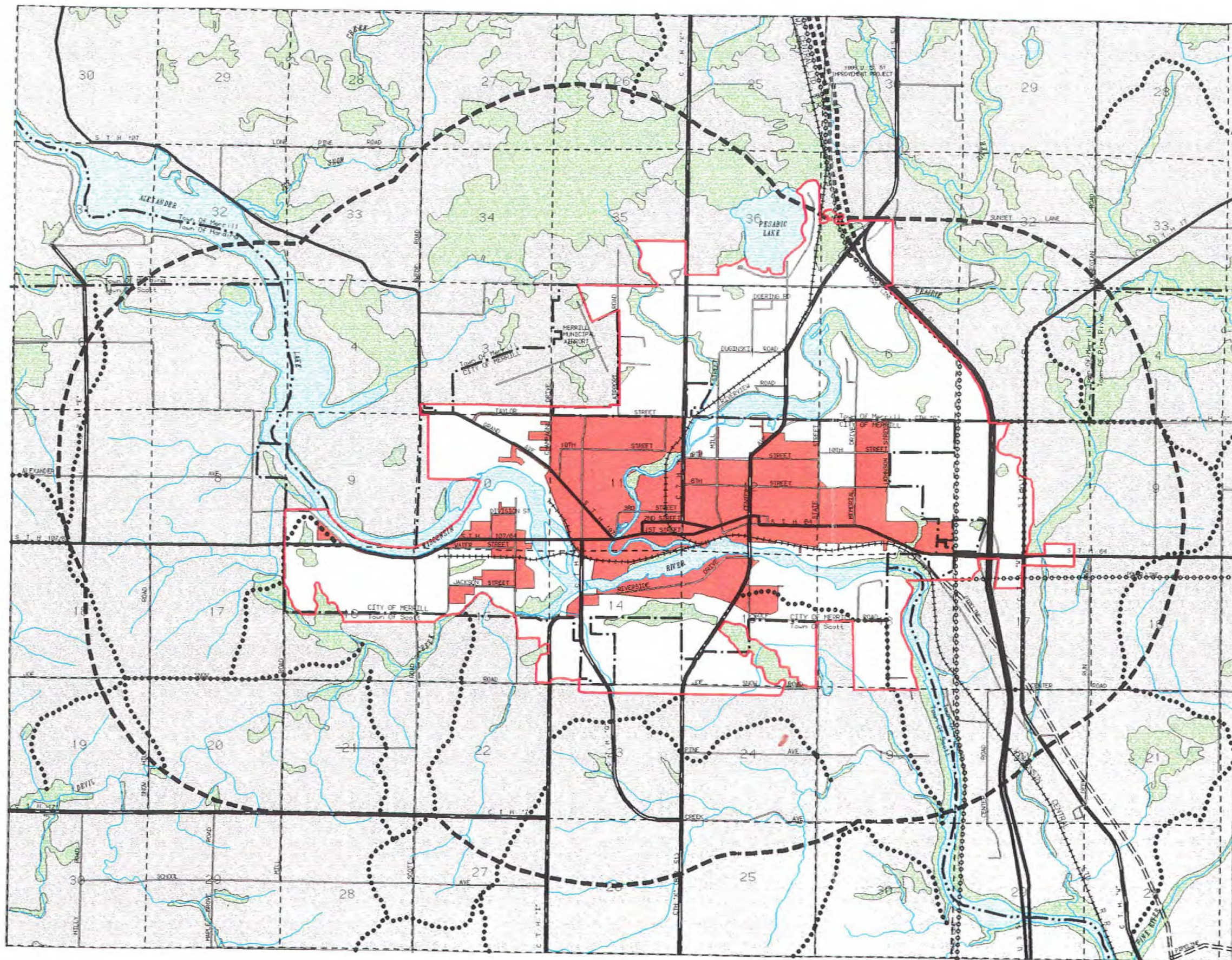
NOTE: NCWRPC staff is available to coordinate and provide technical assistance regarding Goal 5.

Following an analysis of the planning conditions and considerations presented in the preceding PART's of this study/report, and discussions with the members of the Merrill Area Sewer Service Planning Advisory Committee and staff of the WisDNR, the Merrill Sewer Service Area Plan depicted on MAP 3-1, is based upon numerous technical, political and economic factors. The Plan reflects what is expected to be the area where sewer can be expected to be available by the year 2015. **Inclusion of lands within the sewer service area does not imply that they will be developed and sewered by 2015, only that there is potential for development utilizing sewer service.**

However, amendments to this plan can provide changes to the service area boundaries to account for changing growth rates and development patterns.

There is more acreage contained within the planned sewer service area than is expected to be developed. There are a number of reasons for this. It is difficult to precisely determine what land, let alone who's land, will be available for development. Planning practice suggests that two and one half to three times the amount of land projected to be needed should be available so that people have a choice of several locations of where they might live or have a business, rather than being restricted to only one location. Present zoning practice also does not sufficiently restrict where people build or not build, so a larger area was included. And it was agreed that it is better to provide for the potential for sewered development and let the development controlling mechanisms of local planning, zoning and site plan review, the sewer service area plan and its connection/extension policies, and the costs of sewer extension and hookup determine where that development will actually occur. Lastly, it was also agreed that limiting the size of the potential sewered area could lead to numerous plan amendment requests which could stymie the development process.

CITY OF MERRILL LINCOLN COUNTY, WISCONSIN SEWER SERVICE AREA



-
-  PRESENT SEWER/WATER SERVICE (GENERALIZED)
 AREA OUTSIDE SSA
 WETLAND / FLOODPLAINS
 WATER
 SEWER SERVICE AREA BOUNDARY
 U.S. HIGHWAYS
 STATE HIGHWAYS
 COUNTY HIGHWAYS
 LOCAL ROADS
 RAILROADS
 CORPORATE BOUNDARY
 TOWN BOUNDARY
 SECTION LINES
 EXTRA - TERRITORIAL ZONE
 RIDGELINES
 POWER LINE
 PIPELINE

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.



PREPARED: APRIL 1996

The success of any planning program can best be measured by the extent to which the plan is implemented. The plan should also provide an amendment procedure addressing changing land-use conditions. To that extent, WI Administrative Code NR-121 requires that there be a "Designated Management Agency" (DMA) which has the responsibility for implementing specific plan recommendations and to ensure compliance with the SSA plan. The responsibilities of the DMA can be done through direct activities of the designated agency, or through delegation to another agency(s) or unit(s) of government.

The DMA has three major responsibilities:

- 1.) To advise the WisDNR whether or not a sewer "extension" is in conformity with the SSA plan...a sewer extension means installation of a sewer or interceptor sewer or extension thereof, to provide additional capacity for new development within the existing or proposed tributary area of the extension. The proposed development must lie within the SSA, but not within an environmentally sensitive area. The DMA sends a "conformance" letter to the WisDNR Bureau of Wastewater along with the proposed construction drawing(s) for its approval.
- 2.) To advise the DILHR whether or not a sewer "hookup"/certain plumbing plans are in conformity with the SSA plan...a hookup means when a structure or use is connected (hooked up) to sewer collection system or facility. Most new commercial buildings and residential units containing more than two living units require that a "conformance" letter from the DMA be sent to DILHR for its approval. Here again, the DMA must stipulate that the activity is within the SSA but not within an environmentally sensitive area.
- 3.) to review requests for amendments to the sewer service area boundary and to provide periodic updates to the SSA plan.

The Merrill Area Sewer Service Planning Advisory Committee (MASSPAC) agreed that because the City of Merrill is the only owner and provider of sewer service in the area, that it should be designated the DMA to provide the necessary work entailed in numbers 1 and 2 cited above. It further agreed that the city's office of Building Inspection & Zoning Administration be the agent for the actual review process. The MASSPAC also agreed that the North Central WI Regional Planning Commission (NCWRPC) should continue as the "Designated Planning Agency" (DPA) and be responsible for number 3 above. Under other statutory requirements, wastewater facilities plans and plan amendments must also be submitted to the NCWRPC for review for consistency with local sewer service area plans as well as for related regional policies, plans, and programs.

The MASSPAC will continue as the DPA and the DMA advisory body, and as such, it should:

1. Adopt the Merrill Sewer Service Area Plan;
2. Convene at the request of the DMA, DPA, City of Merrill or adjoining township, the county, or the WisDNR, to review and make recommendations to the respective parties regarding emerging concerns/ problems, or proposed development, that may have an impact upon sewer service or the sewer service area plan.

Special emphasis is placed upon #2 above. Local units of government may exercise other authority conferred upon them by state statute to preserve and protect water quality. Local units may use this authority to plan and manage land-use and development through subdivision, zoning, and other development ordinances. Criteria can be written into existing ordinances, or new ordinances can be adopted, which promote orderly development and that address water quality concerns. Specific actions by local units of government which are recommended for water quality protection include the adoption of construction site erosion and storm-water management ordinances, the preservation of greenways along existing drainage corridors, well-head protection, and the review of all land parcelling that creates a parcel of 20 acres or less in area.

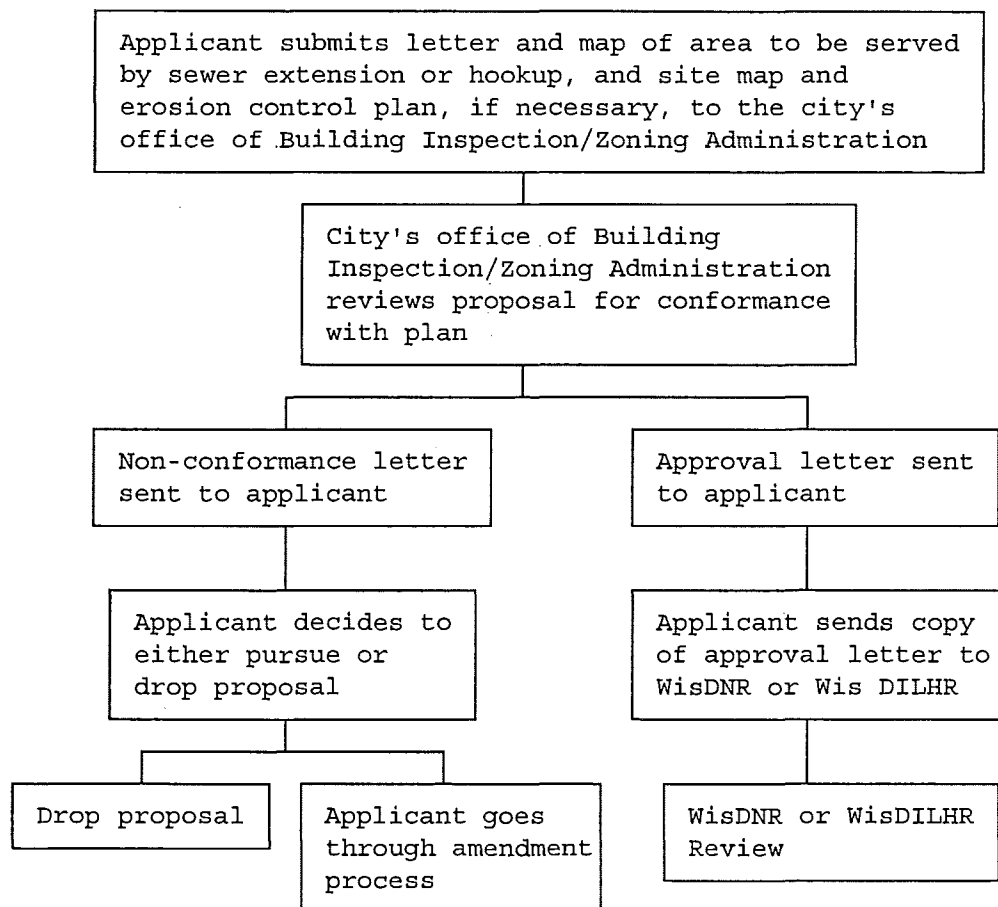
SEWER EXTENSION AND SEWER HOOKUP REVIEW PROCEDURES -

Before requesting formal sewer extension or sewer hookup approval, the applicant should review NR-110 and ILHR 82.20 for detailed WisDNR or DILHR requirements. The local review process of the city's office of Building Inspection/Zoning Administration, is illustrated in Figure 1, page 4-3, and is outlined below.

- 1.) Applicants for sewer extensions or sewer hookups must submit a letter and a plan map showing the proposed sewer extension or hookup and the development to be served (with acreages) to the city's office of Building Inspection/Zoning Administration. This should be done early in the planning process, prior to detailed plans, to avoid delays of the project. Early submittal of the plans will ensure the local review process is completed prior to final submittal of the plans to the WisDNR or DILHR.
- 2.) The city's office of Building Inspection/Zoning Administration will review all submissions for conformance with the SSA plan, specifically ensuring the proposed extension or hookup, and the building it serves, is within the sewer service area, and does not infringe on an environmentally sensitive area. If there is any doubt as to the proposed extension or hookup infringing on an environmentally sensitive area, the city's office of Building Inspection/Zoning

Administration, may request more site-specific information (including proposed building footprint), and it may consult with local, state, or other personnel or agencies. It may also request a copy of the erosion control plan required by either the city of Merrill, Lincoln County, DILHR, or the WisDNR, which describes the erosion control measures to be implemented at the site.

FIGURE 1 - Review Procedures for Sewer Extension or Hookup Requests



- 3.) If the requested sewer extension is in conformance with the plan, a letter will be sent to the applicant within 15 days of receipt of the plan map. This approval letter and other required materials should then be submitted to the WisDNR or DILHR by the applicant. If the proposed extension or hookup is not in conformance with the plan, or if there are questions about consistency, a letter of notification will be sent to the applicant within 15 days. The applicant should then decide if it wants to further pursue the matter. If not, no further action is necessary.
- 4.) If the applicant decides to pursue the sewer extension or hookup, the plan must be amended for the proposed extension or hookup to be in

conformance. The amendment procedures can be found in the Plan Amendment Process section. An applicant can also alter the proposal to pursue conformance and re-apply.

- 5.) If the plan is amended, the applicant must re-submit the application to the city's office of Building Inspection/Zoning Administration.

SSA PLAN AMENDMENT PROCEDURES -

Unanticipated events or development may necessitate changes to the SSA boundary. A formal boundary amendment process allows the local governments and developers to alter the service area by using additional technical data, new community needs and trends, and possible facility changes. Boundary changes may be based upon the following:

- A. Sewer service area boundaries may be modified (acreage swap) provided there is no increase in the total acreage of the specific sewer service area.
- B. Sewer service area boundaries may be expanded provided there is a documented need for a sanitary sewer collection system for areas of existing urban development.
- C. Sewer service area boundaries may be expanded provided there is a documented need for sanitary sewers to serve a proposed unique facility or development, e.g.: park or recreation area restrooms, landfill site restrooms.
- D. Sewer service area boundaries may be modified by the redesignation of previously identified environmentally sensitive areas consistent with all the following standards:
 1. The environmentally sensitive area is immediately adjacent to an existing sewer service area.
 2. Appropriate local, state and federal environmental permits are granted for the proposed development.
 3. Major redesignations shall pose no significant adverse water quality impacts. Major redesignations include:
 - a. removal of any mapped wetland area for sewered development unless resulting from an activity exempted by state administrative rules governing wetland protection [NR 117.05t2] or state approved

rezoning of wetlands.

- b. any change which would reduce a delineated floodway of any navigable stream or river, or which would remove any area below the ordinary high water mark of a navigable stream, pond or lake.
- c. any change to the continuity of any corridor segment including floodways, wetlands, shoreland buffer strips or steep slopes adjacent to water bodies. The water quality benefit that was associated with the portion of the corridor removed must be provided for in the development.

4. The redesignated acreage will be added to the service area total acreage.

- E. Sewer service area boundaries may be modified or expanded to correct an error in the maps, data, projections or allocations of the adopted sewer service area plan.
- F. Sewer service area boundaries may be modified in order to add holding-tank service areas to the plan, re: NR-113 & 205.

Any proposed amendment shall be reviewed according to the following criteria:

- A. The cost-effectiveness of the proposed amendment compared to other alternatives. The NCWRPC may require this determination from the applicant.
- B. The environmental impacts of the proposed amendment shall be assessed in accordance with the criteria established in the Wisconsin Department of Natural Resources environmental assessment checklist.
- C. Consistency with the NCWRPC's adopted FRAMEWORK FOR REGIONAL DEVELOPMENT, and as it may be amended or updated from time-to-time.
- D. Amendment areas shall have a common boundary with the current sewer service area and shall not create a void within the service area.
- E. The NCWRPC will provide a water quality impact assessment and facilitate an evaluation of the ability of the existing sewerage facilities to transport and treat the projected flows. It may also prescribe conditions necessary to protect the water quality of the area.

Proposed sewer service amendments shall be reviewed according to the following procedure:

- A. Requests for sewer service area amendments should be made by the governmental entity that will be expected to serve the area. Units of government seeking an amendment to the sewer service area boundary should transmit a letter requesting the amendment to the NCWRPC along with the following documentation:
 - 1. A map of the proposed expansion area and, if required, any area to be deleted (swapped) which affects the boundary modification;
 - 2. Estimates of existing and anticipated population, wastewater generation and means of collection from the area;
 - 3. A description of the type of development expected to occur;
 - 4. Ability of the treatment facility to treat the anticipated wastewater;
 - 5. Methods of stormwater management for added service area and surrounding areas which may be impacted; and
 - 6. Documentation that all property owners in areas proposed to be added or deleted (swapped) were notified of this request by the unit of government seeking the amendment.
- B. Based on this information the NCWRPC staff will review the proposed amendment to determine whether it meets the standards set forth in the Sewer Service Area Amendment Process. If no significant adverse water quality impacts area involved, the NCWRPC staff shall recommend approval of the Plan amendment and submit it to the MASSPAC and to the Wisconsin Department of Natural Resources for State plan approval.

CONCLUSION -

This Merrill Area Sewer Service Plan is intended to be a guide for the City of Merrill, the Towns of Merrill, Pine River, and Scott, and Lincoln County in water quality management. The Plan map is based upon the preceding data and maps, especially the population projections, growth areas, and environmentally sensitive areas. This information has been integrated and translated into the sewer service area for the year 2015. Inclusion of lands within this area does not imply that they will be developed and sewered by 2015!

The sewer service plan is designed to accommodate changes which may occur in the years between updates. Development trends, population density changes, community needs, and failed septic systems are all possible reasons the sewer service plan may need to be altered during the interim years. All changes in the plan require an amendment which must be approved by the Merrill Area Sewer Service Policy Advisory Committee.

APPENDIX A - DNR PLANNING GUIDELINES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

DRAFT
POLICIES AND PROCEDURES
SEWER SERVICE AREA PLANS AND AMENDMENTS
January 1994

Since 1979, sewer service area (SSA) plans have been developed for more than 155 Wisconsin communities in designated and non-designated areas of the state. The plans, which are prepared by local or regional planning agencies under contract with the Department, are designed to protect water quality. This planning process is described in NR 121, Wis. Adm. Code.

These guidelines describe the areas which were to be excluded from sanitary sewer service areas as environmental corridors.

1. Initiating Sewer Service Area Revisions

SSA revisions can be initiated only by a designated planning agency (DPA), a designated management agency (DMA) or by an entity seeking DMA status (e.g., a previously unsewered sanitary district). The Department will review a denial by a DPA only if an appeal of the denial comes from a DMA. The Department does not accept revisions or appeals submitted by developers, individuals or other organizations.

2. Sewer Service Area Boundary

SSA boundaries should follow specific physical or cultural features, such as roads, rivers, property boundaries, drainage divide, the outer limits of environmental corridors and related floodland and wetland areas, or a line at a specific distance from a physical or cultural feature. When a planning agency submits a SSA plan or amendments to the DNR, they must submit maps with adequate detail to precisely identify these boundaries.

3. Land Use and Service Limitations:

The DNR can approve water quality plans or amendments in which the Designated Planning Agency in cooperation with local governments set land use limitations or other additional requirements above and beyond the minimum requirement of Ch. NR 121, Wis. Adm. Code. Examples of such limitations include: residential, commercial, industrial, institutional, housing type (single versus multiple units) and restricted provisions of other urban services such as water supply, school, and transportation. However in reviewing sewer extensions for conformance with water quality management plans, WDNR is not authorized to consider land use limitations or requirements which are not related to water resource management.

4. Updates To SSA Plans:

Ch. NR 121, Wis. Adm. Code, calls for an update of the WQMP including the SSA plan every five years. If three significant amendments to a SSA have been

submitted for a DMA to the Department during five year period, any additional amendment must include an overall analysis of population projection and density assumption of that SSA and its cumulative impact on the receiving STP.

5. Conditional Approval:

The DNR can add conditions as part of a SSA amendment approval if necessary to protect ground or surface water. If any person is aggrieved by the Department's decision, that person has the right to appeal the decision. Wisconsin Statutes and Administrative Code establish time periods within which requests to review Department decisions must be filed.

6. Conformance Review:

One duty of the Designated Planning Agency (under contract with the Department) is to review sewer extension requests to determine conformance with water quality management plans. If the Designated Planning Agency decides that a proposed extension is not in conformance with the plan, the DMA for that area may appeal that decision to the DNR. The legislature has authorized the Department to consider conformance with areawide plans as part of its review of facility plans and "plans and specifications" under s. 144.04, Wis. Stats. The Department, in adopting Chapter NR 110, Wis. Adm. Code, specifically requires that all facility plans and all "plans and specifications" for reviewable projects, including sewer extensions, shall be in conformance with areawide plans in order to be approved. As with any other requirement (e.g., sewer sizing, number of manholes, etc.) it is up to the applicant to provide evidence of compliance and up to the Department to review for compliance. The sole responsibility for reviewing a request for a sewer extension for conformance with areawide plans rests with the Department. In carrying out the responsibility to assure conformance of a sewer extension project with areawide water quality management plan requirements, the Department has two options: 1) review by the Department staff, or 2) contract with a designated or local planning agency.

7. Revision of Approved SSA Plan:

The Department can withdraw earlier sewer extension or SSA plan approvals if new information indicates that sewered development will have a significantly negative impact on water quality.

8. Holding Tank Service Area:

The following summarizes the relationship between sewer service area and holding tank service area:

1. The planning area and sewer service area boundaries are those identified under NR 121, Wis. Adm. Code. The holding tank service area must be defined and identified at the time of negotiation between the holding tank owner and the publicly owned wastewater treatment works (POTW).

2. If a holding tank or a septic tank is located within the 20 year sewer service area boundary, the disposal of the septage from that system must be at that POTW (required by NR 113 and NR 205, Wis. Adm. Code). This is true regardless of whether a county boundary is

involved. The areawide water quality management plan need only identify this requirement.

3. Holding tanks for new development outside of the 20 year sewer service area, which will receive more than 3,000 gallons per day of wastewater, require that the owner of the holding tank system and the POTW reach an agreement (and seek a water quality management plan amendment by the DPA with approval by the DNR). The amendment is needed to put the area tributary to the holding tank within the holding service area of the POTW. The new holding tank cannot be approved until the amendment has been completed or until the Department has received adequate assurance that it will be completed. This amendment does not require a swap of acreage. The DPA will evaluate the amendment request and may recommend that the holding tank owner consider other POTW's because of cost effectiveness or environmental concerns.

4. Holding tanks to replace failing onsite system(s), which receive more than 3,000 gallons of wastewater per day, should also be included in a designated POTW service area. However, if the owner of the holding tank can satisfactorily demonstrate that he is unable to become part of such a service area, the holding tank may be approved provided that owner has a multi-year contract with a POTW to provide treatment for all wastewater tributary to the holding tank. Furthermore, the owner must provide satisfactory assurance that all such wastewater will only be disposed of at a POTW.

For more information call Terry Lohr at (608) 267-2375.

GUIDANCE FOR APPROVING SEWER SERVICE AREA PLANS AND PLAN AMENDMENTS

The following guidance has been developed by the Wisconsin Department of Natural Resources (DNR) for the evaluation of sewer service area (SSA) plans and plan amendments. These guidelines represent the minimum criteria that will be used by the Department in reviewing and approving of SSA plans and amendments. Field investigations will be conducted by Department staff in those cases where it is deemed necessary. The results of the field investigations will weigh heavily in the final decision on a request for approval.

The local community or designated management agency may utilize more stringent criteria than those established in this guidance. All plans and plan amendments will be reviewed on an individual basis and the merits of each will be considered along with the consistency of the submittal with these guidelines or other approved amendment procedures. Unique local conditions or circumstances will be considered in the approval of plans or plan amendments. This guidance will be revised as necessary to reflect changes in state laws, administrative rules and DNR policies.

Environmentally Sensitive Areas - NR 121.05(g)(2)(c), Wis. Adm. Code, describes environmentally sensitive areas to be excluded from SSA. These excluded areas are commonly referred to as "environmental corridors". In this guidance the term "environmental corridor" will be used as a generic term for environmentally sensitive areas that should be considered for exclusion from SSA. Environmental corridors may include wetlands, shorelands, floodways and floodplains, steep slopes and highly erodible soils, groundwater recharge areas and other physical constraints.

WETLANDS:

Definition - An area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and has soils indicative of wet conditions (NR 103, Wis. Adm. Code).

Policy - All wetlands should be excluded from sanitary sewer service areas. Wetlands which have been identified in the State Wetlands Mapping Program and protected through local zoning should be designated as environmental corridors and prohibited from sanitary sewer service.

Sewer Service Area Plans and Plan Amendments. Wetlands which have not been altered should be given high priority for preservation. Plans and plan amendments which would impact a wetland will be evaluated according to the following steps:

1. Will the project affect a wetland?
2. Is the proposed activity wetland dependent?
3. Does a practicable alternative exist?
4. Will the project has significant adverse impacts on wetland functional values?

SHORELANDS:

Definition - Shorelands are lands within the following distances from the ordinary high-water mark of navigable waters: 1,000 feet from a lake, pond or flowage or 300 feet from a river or stream to the landward side of the floodplain, whichever distance is greatest.

Policy - Shorelands represent environmental features which should be given high priority for protection from development, particularly those shorelands which coincide with wetlands as identified in the State Wetlands Mapping Program.

Sewer Service Area Plans and Plan Amendments - The Department will not approve any plan or plan amendment that is not consistent with an approved county or state shoreland zoning ordinance. Additionally, evaluation of plan amendments will consider the following:

- a. Potential adverse water quality impacts. In assessing plan amendments the Department will consider adverse impacts upon any of the following:
 1. maintenance of dry season stream flow, or the discharge, recharge or flow of groundwater from a wetland
 2. filtering or storage of sediments, nutrients or heavy metals that would otherwise drain into navigable waters
 3. shoreline protection against erosion to reduce the flow of effluent, sediment and nutrients from the shoreland area.
- b. Potential adverse impacts on habitats. Amendments where the proposed activity would adversely disrupt wildlife habitat or fish spawning, breeding, nursery or feeding grounds should include protective measures.
- c. Storm and flood water storage capacity. Amendments which would result in a reduction of storm and flood water storage capacity should be avoided or minimized.
- d. Presence of, or proximity to, scientific study areas, sanctuaries and refuges, or scarce wetland areas. SSA plans and amendments should assess and take into consideration potential adverse impacts to these areas.

STEEP SLOPES AND HIGHLY ERODIBLE SOILS:

Definition - This category is defined as any slope equal to or greater than 12 percent and any soil type occurring on a slope equal to or greater than 12 percent.

Policy - In general, slopes equal to or greater than 12 percent regardless of soil type and which are proximal to a stream should be excluded from development. Slopes in combination with other environmental features should be considered for designation as environmental corridors.

Sewer Service Areas Plans and Plan Amendments - Sewer Service area plans should exclude slopes equal to or greater than 12 percent, which are proximal to a stream, from sanitary sewer service. Where a local construction erosion control ordinance exists, the plans should be consistent with the slope restrictions of the ordinance. Amendments to the service area plan should consider the following.

- a. Proximity of the slope to a stream. Amendments for sewer development on steep slopes which would result in direct runoff into a stream should be prohibited. Development on any slopes should include mitigating measures for protection of water quality.
- b. Amendments to allow sewer development on slopes should be the most cost-effective alternative and should be consistent with the existing development pattern and locally approved construction erosion control ordinances.

OTHER LIMITING PHYSICAL FEATURES:

Definition - Physical features of an area which may have significant local or statewide importance. These areas may include woodlands or plant stands of rare or endangered species; rare or endangered animal habitats; historical or archaeologic sites; or groundwater recharge/discharge areas.

Policy - Areas which include one or more of the above features may be considered for environmental corridor designation when they represent an integral part of the direct stream drainage area.

Sewer Service Area Plans and Plan Amendments - In the preparation of service area plans, appropriate state or local offices (e.g., State Historical Society, DNR Bureau of Endangered Species) should be contacted to determine if any of these features are present in the planning area. Areas containing these features may be excluded from sanitary sewer service. Plan amendment requests to provide sanitary sewer service to an area with any of these features should be the least disruptive alternative and should include preventive measures to provide maximum protection of adjacent water resources.

II. GUIDANCE FOR SUBMISSION OF PROPOSALS FOR SEWER SERVICE AREA AMENDMENTS

Proposals for the amendment of sewer service areas should include the exact acreage, as well as a description of lands to be added or deleted. The description should allow these areas to be easily located on a map in relation to the boundaries of the original sewer service areas, and to roadways, environmental corridors, and other significant features. At a minimum, amendments should be described in terms of township, range, section, and quarter section, and shown on an appropriately detailed map with the scale indicated.

The locational description should be accompanied by a description of the resource base of the land being added to or deleted from the service area. This description should include the acreage of each resource feature (e.g. wetlands, woodlands, habitat) to be added or deleted. Any anticipated water quality impacts from the proposed amendments should be identified to the extent possible.

The acreage incorporated by an approved sewer service area is determined by the population of the area, the projected future population which will be serviced by the sewer system, and by locally approved density assumptions for the service area. Accordingly, incremental acreage cannot be added to the sewer service area unless the following circumstances exist: 1) area is needed to accommodate unanticipated population growth, and 2) a change in local densities has been approved by the local municipality.

If population projections and locally approved densities remain unchanged, acreage can only be added to the service area if a corresponding number of acres is subtracted, keeping the population density stable. The exception to this swap requirement is a case where a density range has been established for the service area and the addition of land to the service area does not violate either the upper or lower limit of the range.

Documentation of public participation and approval of the density assumptions in local decisions to amend an approved sewer service area must be submitted with sewer service area amendment requests. A locally approved land use plan may be submitted as a basis for a change in the service area and density assumptions, however, public participation must be documented in any case. SSA amendment proposals must include an analysis of how each of the amendment criteria are met.

The planning commission or agency must maintain a current map of sewer service areas in its jurisdiction, showing approved amendments (additions or deletions) to the service areas.

For more information call Terry Lohr at (608) 267-2375.

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APPENDIX B - MERRILL RESOLUTION 1316

RESOLUTION NO. 1316

A RESOLUTION AUTHORIZING THE PREPARATION OF A SEWER SERVICE AREA PLAN FOR THE CITY OF MERRILL BY THE NORTH CENTRAL WISCONSIN REGIONAL PLANNING COMMISSION.

WHEREAS, the North Central Wisconsin Regional Planning Commission has proposed preparing a Sewer Service Area Plan for the City of Merrill using a Wisconsin Department of Natural Resources grant; and,

WHEREAS, the City Plan Commission has reviewed the proposal and finds that preparation of the plan is in the best interest of the City of Merrill; and,

WHEREAS, the proposed plan will be presented to the City Plan Commission and the Common Council prior to final approval and adoption;

NOW THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF MERRILL, WISCONSIN this 12th day of July, 1994 that the City of Merrill authorize the preparation of a sewer service area plan by the North Central Wisconsin Regional Planning Commission using grant funds from the Wisconsin Department of Natural Resources for presentation to the City Plan Commission and the Common Council for review.

Introduced by: City Plan Commission

Moved by: Grefe

Passed: July 12, 1994

CITY OF MERRILL, WISCONSIN

Patricia A. Woller
Patricia A. Woller
Mayor

Judith A. Stockowitz
Judith A. Stockowitz
Clerk/Treasurer

APPENDIX C - ADVISORY COMMITTEE BYLAWS

BYLAWS
OF
MERRILL URBAN AREA SEWER SERVICE PLANNING ADVISORY COMMITTEE

PREAMBLE -

These bylaws, in accordance with U.S.Public Law 92-500; Wisconsin Statutes s.144.025 and s.147.25; Wisconsin Administrative Code NR 121; and with a 1994 grant contract between the WI Department of Natural Resources (DNR) and the North Central WI Regional Planning Commission (NCWRPC), further define and regulate the duties and operations of the heretofore created Merrill Urban Area Sewer Service Planning Advisory Committee (Committee), and have been adopted by the Committee for that purpose. Pursuant to the above citations, and in the spirit of Wisconsin's Intergovernmental Cooperation statute s.66.30, the general functions of the Committee are to:

- 1.) assist in carrying out Section 208 of PL 92-500, passed by Congress in 1972, which requires the state of Wisconsin to prepare area-wide water quality management plans to achieve the overall goal of making Wisconsin's waters fishable and swimmable;
- 2) assist in carrying out Chapters 144.025 and 147.25 of WI Statutes, which authorizes the DNR to organize a comprehensive state program for the enhancement and protection of all waters of the state. Under this authority, Chapter NR 121 of the WI Administrative Code was established and which specifies the policies, procedures, and requirements for Wisconsin's area-wide water quality management planning process;
- 3.) according to NR 121.05(g)(4), assist in preparing a regional waste treatment system and sewer service area plan for urban (read Merrill) areas over 10,000 in population, which plan's purpose is to:
 - protect and enhance water quality;
 - encourage the most cost-effective method of providing wastewater treatment; and

- to protect environmentally sensitive areas.
- 4.) and in further accord with NR 121.05(g)(4), which also specifies that this plan should be prepared by a local planning agency under the supervision of a local policy advisory committee consisting of representatives of various local units of government within the planning area, to provide guidance to the NCWRPC planning staff in the preparation of policies, plans, and programs related to the City of Merrill's sewer service area plan; and subsequently,
- 5.) to review and make recommendations for institutional mechanisms and procedures for monitoring all sanitary sewer connections, extensions, and waste treatment plant expansions within the Merrill "urban" area;
- 6.) assist in establishing procedures for policy, plan, and program amendments and updates consistent with WI Administrative Code NR 121.08; and lastly,
- 7.) provide direction regarding a public participation and information program with the Merrill "urban" area...including providing timely reports to the local government each member has been appointed to represent.

* * * * *

ARTICLE A - MEMBERSHIP

Section 1 - General

The membership of the Committee may be composed of elected and appointed persons from the general purpose units of government that are, or could in the future be, within the extra-territorial jurisdictional area of the city of Merrill as defined in WI statutes s.62.05, s.62.23(7a), s.66.32, and s.236. There shall also be a member, and others may be, appointed at-large from within, or to represent, the extra territorial jurisdictional area.

General purpose units of government shall have one or more members on a one person/one vote basis, as determined by annual estimates of population promulgated by the Demographics Services Center within the WI Department of Administration, or as may be provided by the U.S.Bureau of the Census.

All members of the Committee shall be appointed by the NCWRPC upon the advice and consent of the City of Merrill.

Section 2 - Principal Representative(s)

The governing body (city council/town board) of each general purpose unit of government to be represented on the Committee, shall appoint its chief elected official, or his or her designee, as a principal representative to the Committee. Any appointed designee for the chief elected official shall also be an elected official of that unit of government. If a city or town is entitled to more than one principal representative, a majority of each local government's principal representatives shall be elected officials.

Section 3 - Alternate Representative

The Governing body of each unit of government may also appoint one or more alternate representatives that shall be entitled to full voting privileges on all matters coming before the Committee in the absence of the principal member. Alternate representatives shall not serve in a permanent capacity on the Committee. The alternate representative(s) shall announce to the Committee, at the commencement of the meeting, his or her name and representative capacity.

Section 4 - At-Large Representative

There shall at all times be at least one At-Large Merrill Area School District Administrative officer representative on the Committee who is not an elected or appointed person from one of the general purpose units of government represented on the Committee. Additional at-large representatives may also be appointed. At-large representatives shall be persons who are able to represent area-wide perspectives or interests.

Section 5 - Ex-Officio Representative

The City of Merrill Zoning Administrator, the Lincoln County Zoning Administrator, the Lincoln County Community Development Agent, and the Executive Director of the NCWRPC, or their designee, shall serve as Ex-Officio non-voting members of the Committee. The Committee may, from time-to time, designate other persons to serve as non-voting members of the Committee.

Section 6 - Term of Appointment

Persons appointed to the Committee as principal representative(s), or their designee, shall serve for a period of two (2) years, or for the term of their locally elected or designated position, whichever is shorter. Alternate and at-large representatives shall also serve two (2) year terms. All members may be re-appointed. Persons appointed to fill unexpired terms of members shall serve the same term as the person they are replacing.

Section 7 - Voting

Each principal and at-large member shall be entitled to one (1) vote, and each alternate member shall be entitled to one (1) vote in the absence of the principal member that person is representing. Members or their alternates must be in attendance at a Committee meeting to vote on matters before the Committee: Ex-Officio members shall have no voting privilege.

All eligible members shall vote on matters unless excused by the majority of the other members present. If an eligible voting member in attendance at a Committee meeting has a conflict-of-interest in a matter before the Committee, that person shall declare that conflict-of-interest and abstain from voting on that matter.

The Committee as currently composed, shall be entitled to the following one person/one vote allocation:

- City of Merrill - Six (6) Principal representatives - each with one (1) vote;
- Town of Merrill - Two (2) Principal representatives - each with one (1) vote;
- Town of Pine River - One (1) Principal representative - One (1) vote;
- Town of Scott - One (1) Principal representative - One (1) vote.
- Merrill Area School District Administrative Officer - One (1) At-Large Representative - with one (1) vote.

Section 8 - Member Participation

Members or their duly appointed alternate representatives, who are not excused from scheduled Committee meetings by the Committee Chair, and who fail to attend more than fifty (50) percent of the meetings during any six (6) consecutive months of the year, or who miss more than three (3) consecutive meetings of the Committee, shall lose their community representation and their vote. The general purpose unit of government that person represents shall be requested to appoint another representative. In the case of an at-large member, that position shall be filled by another appointee.

ARTICLE B - OFFICERS

Section 1 - General

The officers of the Committee shall be a Chairperson, a Vice Chairperson, and a Secretary. The Chairperson and the Vice Chairperson shall be elected by the Committee, and the Secretary shall be a staff member of the NCWRPC.

Section 2 - Election

The first Chairperson and Vice Chairperson shall be elected at the first regular meeting of the Committee following adoption of these bylaws, and the second election of the two (2) officers shall be held during the month of May first following the initial election, and thereafter, every two (2) years during the month of May. The elected officers may serve two (2) or more consecutive terms.

Section 3 - Chairperson

The Chairperson shall preside at all meetings of the Committee and may present matters to the Committee, and shall perform such other duties as prescribed by law or these bylaws.

Section 4 - Vice Chairperson

The Vice Chairperson shall preside at meetings of the Committee at the request of the Chairperson, or in the event that the Chairperson is unable to preside because of absence, or in the event the Chairperson is incapacitated.

Section 5 - Secretary

The Secretary of the Committee shall prepare and distribute meeting notices and agendas, and shall record and keep minutes of each Committee meeting. Additionally, the Secretary shall keep and preserve all resolutions, transactions, findings, and determinations of the Committee.

In the absence of the Secretary, the Chairperson may name an acting Secretary who shall perform the duties of the Secretary at that meeting, or subsequent meetings until the position shall have been filled as heretofore prescribed.

Section 6 - Removal

Either of the two (2) elected officers may be removed for cause or if incapacitated or unable to participate in Committee meetings or be able to attend to the affairs of the Committee. Removal shall require a majority vote of Committee members present

Section 7 - Vacancies

Should either elected officer position become vacant for any cause, the Committee may select, by majority vote of those members present, a successor from among the Committee members, who may serve until the next meeting of the Committee, at which time the Committee shall elect a replacement(s) to fill the unexpired term(s).

ARTICLE C - SUB-COMMITTEES

Section 1 - General

The Committee or the NCWRPC may request the Chairperson to create and appoint standing or ad hoc advisory sub-committees for the purpose of accomplishing specified tasks, or purposes of eliciting technical counsel/advice.

ARTICLE D - MEETINGS

Section 1 - General

All meetings of the Committee shall be considered public meetings and conducted pursuant to WI Statute s.19. Subject to any contrary requirements of state law or these bylaws, meeting protocol shall be guided by Robert's Rules of Order.

Section 2 - Annual Meeting

Each year the Committee shall meet during the month of May at an announced meeting place to conduct such business as required by state law and these bylaws, and such other business as may be properly before it.

Section 3 - Other Meetings

Meetings may also be called at any time by the NCWRPC staff or by the Committee Chairperson. Meetings shall also be called by the Chairperson

upon written request of three (3) or more Committee members.

Section 4 - Meeting Notice

The Secretary or a designee shall mail to each Committee member notice of all meetings not less than five (5) days prior to said meetings and such notice shall state the day, the time, and the place of such meeting, and a summary of its purpose.

Section 5 - Quorum

The majority of the members of the Committee shall constitute a quorum at any meeting.

ARTICLE E - MEETINGS

Section 1 - These bylaws may be amended at any legal meeting of the Committee, however, amendments shall not be inconsistent with, or contrary to the one person/one vote provision of these present bylaws or with the intent of federal or state laws and regulations requiring the presence of this Committee.

Section 2 - PRIOR NOTICE AND VOTE

The Committee Secretary or a designee, shall mail to each Committee member a copy of the proposed amendment(s) to the bylaws. This shall be done not less than ten (10) days prior to the date of the meeting.

Amendment of these bylaws shall require a two-thirds vote of the Committee members present, voting at a legal meeting, but in no event unless a majority of all members are present.

ARTICLE F - COMPLIANCE

In the event that these bylaws, or any provisions contained herein, should in any manner be contrary to the provisions of Wisconsin law, the provisions of the Wisconsin law shall prevail. If a court of jurisdiction should find any section, clause, provision or portion of these bylaws to be adjudged unconstitutional or invalid, the remainder of these bylaws shall not be affected thereby.

ARTICLE G - ADOPTION

These bylaws adopted by the Merrill Urban Area Sewer Service Planning
Advisory Committee on March 30, 1995.

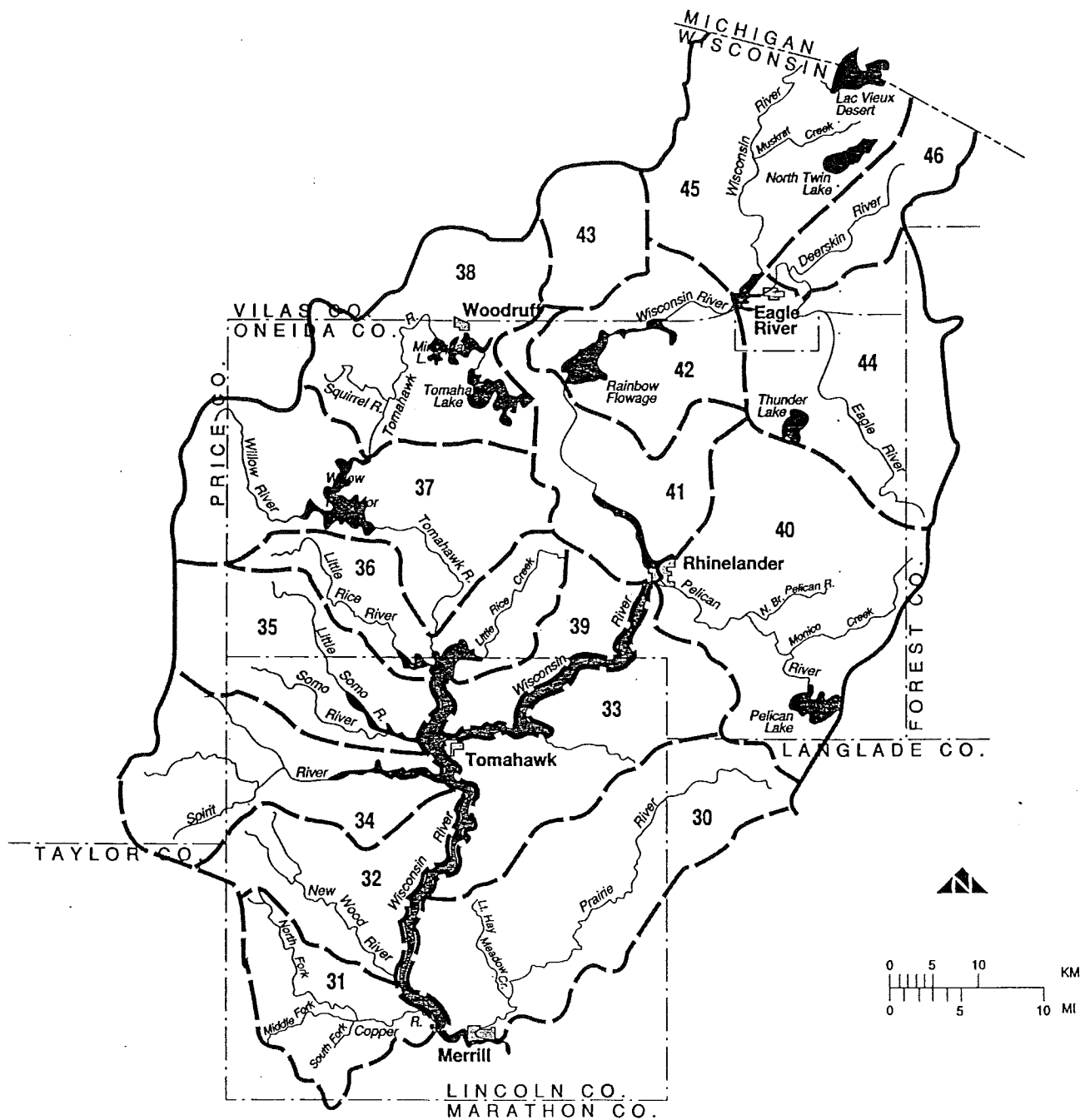
ATTEST:

S/Greg Kautza
Greg Kautza
Acting Chairperson

S/Arno Haering
Arno Haering
Executive Director
NCWRPC

APPENDIX D - WATERSHED MAPS

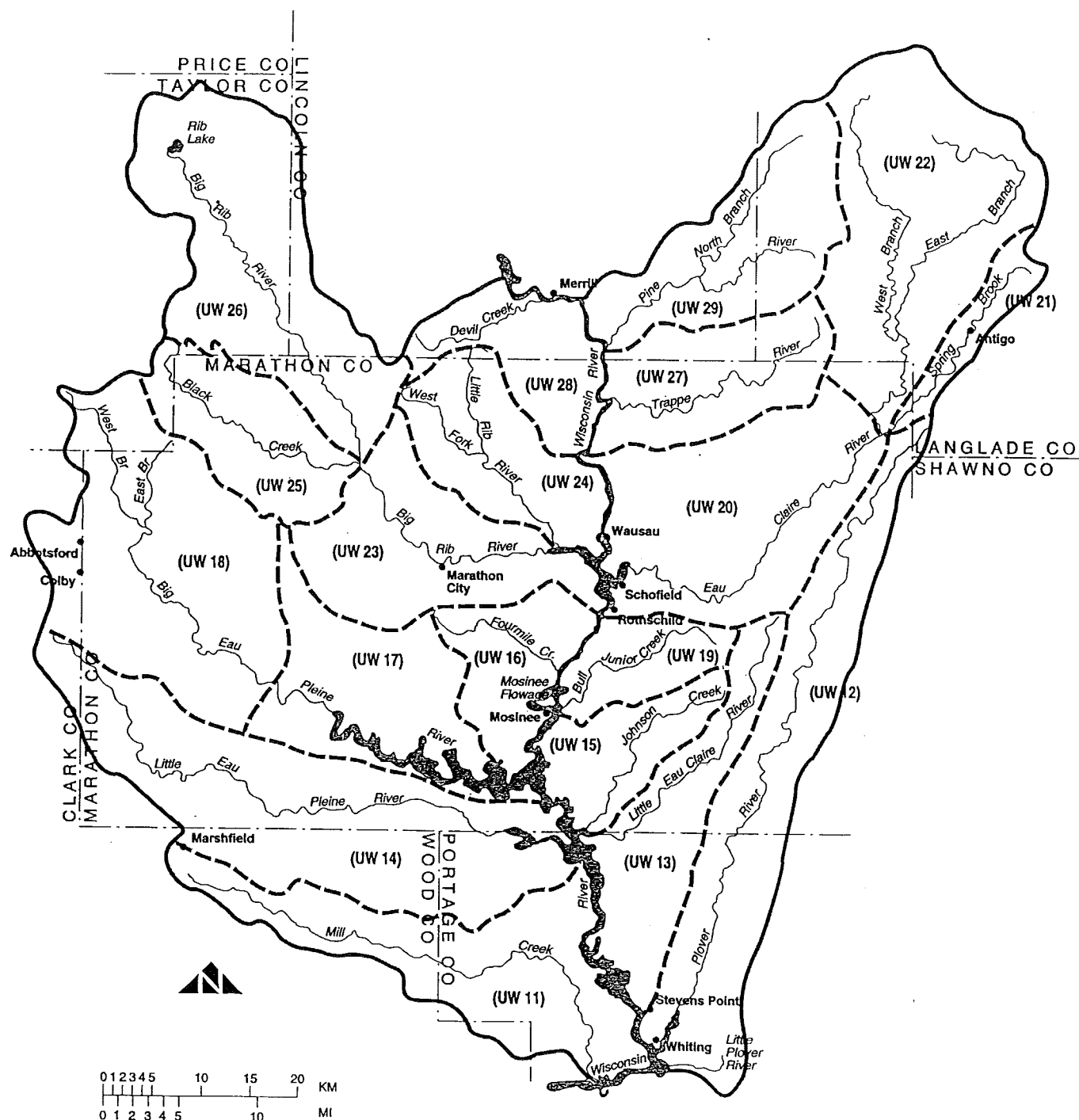
Upper Wisconsin River Northern Sub-basin



Watersheds

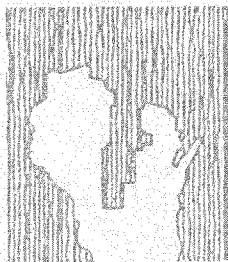
- | | | |
|--------------------------------|--------------------------------|----------------------------------|
| 1. UW 30 Prairie River | 7. UW 36 Lower Tomahawk River | 13. UW 42 Sugar Camp Creek |
| 2. UW 31 Copper River | 8. UW 37 Middle Tomahawk River | 14. UW 43 St. Germain River |
| 3. UW 32 New Wood River | 9. UW 38 Upper Tomahawk River | 15. UW 44 Eagle River/Mud Creek |
| 4. UW 33 Noisy and Pine Creeks | 10. UW 39 Woodboro | 16. UW 45 Tamarack Pioneer River |
| 5. UW 34 Spirit River | 11. UW 40 Pelican River | 17. UW 46 Deerskin River |
| 6. UW 35 Somo River | 12. UW 41 Rhinelander Flowage | |

Upper Wisconsin River, Central Sub-basin



Watersheds

1. (UW 11) Mill Creek
2. (UW 12) Plover/Little Plover Rivers
3. (UW 13) Little Eau Claire River
4. (UW 14) Little Eau Pleine River
5. (UW 15) Johnson Creek
6. (UW 16) Mosinee Flowage
7. (UW 17) Lower, Big Eau Pleine River
8. (UW 18) Upper, Big Eau Pleine River
9. (UW 19) Bull Junior Creek
10. (UW 20) Lower, Eau Claire River
11. (UW 21) Spring Brook
12. (UW 22) Upper, Eau Claire River
13. (UW 23) Lower, Rib River
14. (UW 24) Little Rib River
15. (UW 25) Black Creek
16. (UW 26) Upper, Rib River
17. (UW 27) Trappe River
18. (UW 28) Devil Creek
19. (UW 29) Pine River



NORTH CENTRAL WISCONSIN REGIONAL PLANNING COMMISSION

SERVING ADAMS, FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, ONEIDA, PORTAGE, VILAS, WOOD COUNTIES

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