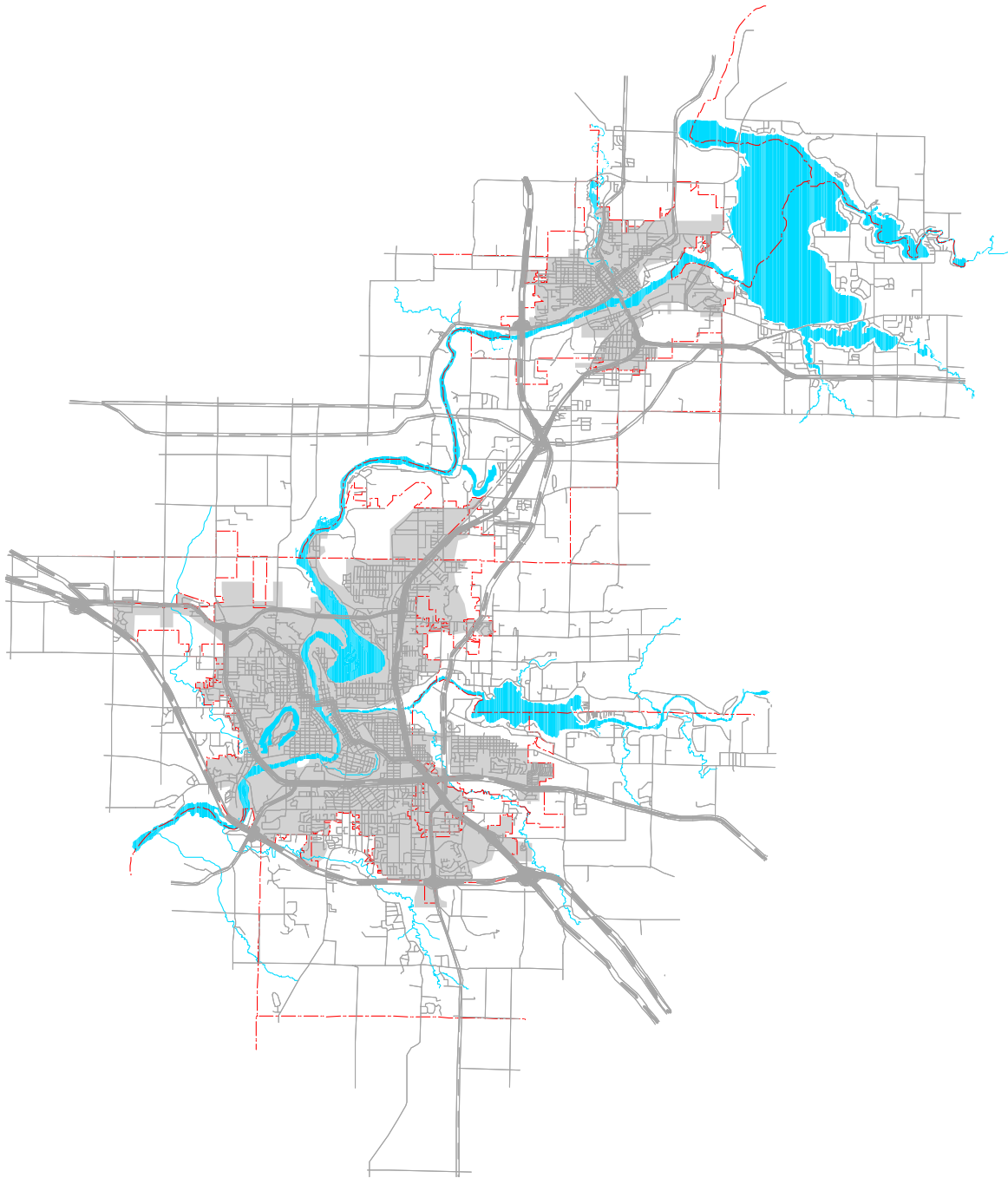


CHIPPEWA FALLS/EAU CLAIRE URBAN SEWER SERVICE AREA PLAN FOR 2025



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Prepared by:

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CHAPTER 1 – INTRODUCTION

1.1 INTRODUCTION

This urban sewer service area plan updates and amends the *Chippewa Fall/Eau Claire Urban Sewer Service Area Plan for 2010* which was completed and adopted in 1990.

Sewer service area plans are a formal element of state areawide water quality management plans (basin plans) which are part of state administrative rules. Being grounded in state law, agency actions on local development proposals must be consistent with sewer service area plans. In addition, urban areas are now more aware of sewer service areas because of their common use in development planning. Now communities with a population over 10,000 must consider sewer service area plans in development decisions where state approvals and permits are needed.

Sewer service area plans, and their subsequent updates, are prepared by local or regional planning agencies, under contract with the Wisconsin Department of Natural Resources. To the extent possible, the preparation of this plan considers already existing documents and other concurrent planning efforts which will be referenced within.

Since 1990, the Chippewa Falls-Eau Claire urban area has experienced considerable growth, in addition to the incorporation of the Village of Lake Hallie, which further supports the need for this update.

1.2 PURPOSE

Sewer service area plans serve as a basis for Wisconsin Department of Natural Resources (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 Commerce (COM) approval of private sewer laterals. In addition, because the service area plans identify environmental constraints, they serve as a guide for environmental permit decisions by federal and state agencies.

The urban sewer service area plan is intended to be an important planning and development guide for local communities¹. 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 to the year 2025.
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 boundary and plan amendments.

¹ While this plan can be an important planning and development tool, the plan should not be used or viewed to promote nor hinder annexation petitions or urban density development.

4. It identifies sensitive environmental areas which will be protected from sewer development.
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 plan will become a companion document to *The State of the Lower Chippewa River Basin*², the Areawide Water Quality Management Plan for the Lower Chippewa River Basin.

The approved urban sewer service area plan is required to be updated every five years to reflect changes in statutes and policies, and to review data, such as population projections and housing densities.

1.3 BACKGROUND

The passage of the Federal Water Pollution Control Act Amendment (P.L. 92-500) in 1972 marked the beginning of a new approach to the planning, design, and construction of municipal wastewater collection and treatment facilities. This law established Areawide Water Quality Management Planning under Section 208, and also the Facility Planning Grant Program under Section 201.

One of the principal purposes of areawide plans is to identify cost-effective solutions to wastewater collection and treatment problems on a regional basis. To accomplish this objective, areawide plans are required to include “the identification of treatment works necessary to meet the anticipated municipal and industrial waste treatment needs of the area over a twenty year period,” and a program to “regulate the location, modification and construction of any facilities within such area which may result in any discharge in such area” [Public Law 92-500, Section 208(b)(2)(A)]. The planning tool used to address these requirements in the Chippewa Falls-Eau Claire area is the urban sewer service area plan.

The Section 201 Facility Planning Grant Program was developed to provide uniform guidelines for the planning, design and construction of municipal wastewater facilities and to provide financial assistance to communities with inadequate wastewater collection and treatment systems. Facility plans prepared under Section 201 must be consistent with the broader framework of the areawide plans prepared under Section 208.

The State of Wisconsin has incorporated many of the Federal areawide and facility planning requirements in the Wisconsin Administrative Code. These administrative rules set forth clear

² Wisconsin Department of Natural Resources. “The State of the Lower Chippewa River Basin”. PUBL-WT-554 2001.

procedures and standards regarding the preparation of these plans and their implementation. Specific sections of the code directly pertaining to these activities are NR121, concerning areawide waste treatment management planning, and NR110, concerning facility planning and sanitary sewer extensions. Chapter NR121, Areawide Water Quality Management Plans, requires urban sewer service area plans to be components of Areawide Water Quality Management Plans. The Chippewa Falls/Eau Claire Urban Sewer Service Area lies entirely within the Lower Chippewa River Basin Water Quality Management Area. Hence, when it is completed, this Plan will be appended to *The State of the Lower Chippewa River Basin* water quality management plan.

NR121, supplemented by WisDNR planning guidance³, largely sets forth the requirements for sewer service area planning. Specifically, NR121 requires that the following major elements be included in the areawide plans: (1) population forecasts for 20 years in five year increments (NR121.05(2)(c)3); (2) existing and projected land-use patterns including the delineation of sewer service areas (NR121.05(2)(c)4); and (3) an identification of sewage collection system needs through the delineation of sewer service areas for existing and proposed treatment systems for the 20-year planning period (NR121.05(2)(g)). Sewer service area plans prepared under NR121 must meet the following specific standards and criteria:

- The sewer service area is determined in such a fashion as to promote cost-effective and environmentally sound waste collection and treatment.
- The sewer service areas are delineated based on a 20-year population forecast and municipally approved population density standards.
- Areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints 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 water quality from both point and non-point sources of pollution include, but are not limited to: wetlands, shorelands, floodways and floodplains, steep slopes, highly erodible and other limiting soil types, groundwater recharge areas, and other such physical constraints.
- The sewer service area plan shall include criteria for the construction of future treatment systems within the areawide planning area [NR110.08(5)]

Upon approval by the state, the *State of the Lower Chippewa River Basin* water quality management plan, and more specifically the sewer service area element, establishes the framework within which facility plans are developed and sewer extensions are reviewed under NR110. NR110 establishes an extensive series of regulations covering all phases of design and construction of sewerage systems. Perhaps the most significant requirement of NR110 in terms of sewer service area planning is found in NR110.08(4) and NR110.08(5)(e) requiring that facilities plans for all projects be subject to review for conformance with the areawide plans. These requirements serve to elevate sewer service areas from a purely advisory planning

³ Wisconsin Department of Natural Resources SSA Planning Guidance can be found at <http://dnr.wi.gov/org/water/wm/glwsp/ssaplan/index.htm>.

guideline to a functional mechanism for directing growth and development. It is important to recognize that regulatory aspects of the sewer service area rest with the State of Wisconsin. The West Central Wisconsin Regional Planning Commission's and the Water Quality Management Technical Advisory Committee's roles remain advisory to the communities and the Wisconsin Department of Natural Resources.

1.4 PLANNING COMMITTEE

Section NR121 requires a local policy committee be established, or an existing one be used, to assist the DNR in the preparation of the plan and act as an advisor in matters concerning implementation.

The West Central Wisconsin Regional Planning Commission utilized the existing Chippewa-Eau Claire Metropolitan Planning Organization (MPO) Policy Council to oversee the preparation of the plan update. The 16-member MPO Policy Council oversees a continuing, cooperative, and comprehensive urban transportation planning process that results in plans and programs consistent with the comprehensively planned development of the Eau Claire Urbanized Area, and thereby satisfies the conditions necessary for the receipt of federal transportation funds. In addition, the MPO also assists the Wisconsin Department of Natural Resources in the development of the municipal point source element of the State's Areawide Water Quality Management Plan and acts in an advisory role to the Department in matters concerning the implementation of the plan. The Policy Council includes representatives from ten towns, three cities, two counties, and one village (see list to right).

Municipalities represented on the MPO Policy Council

Eau Claire County
Chippewa County
City of Altoona
City of Chippewa Falls
City of Eau Claire
Village of Lake Hallie
Town of Brunswick
Town of Eagle Point
Town of Hallie
Town of Lafayette
Town of Pleasant Valley
Town of Seymour
Town of Tilden
Town of Union
Town of Washington
Town of Wheaton

In addition, the Policy Council appointed a Water Quality Management Technical Advisory Committee to assist in the development of the technical aspects of the Plan's development, and includes participation by the Wisconsin Department of Natural Resources. The Policy Council's and Committee's membership is listed at the beginning of this report following the title pages.

1.5 PLANNING AREA

The Chippewa Falls-Eau Claire urban area is located in west-central Wisconsin and encompasses parts of both Chippewa and Eau Claire Counties. The City of Eau Claire is the central city of the Chippewa Falls-Eau Claire Metropolitan Statistical Area which includes all of Chippewa and Eau Claire Counties.

The establishment of a planning area assists by focusing sewer service area study efforts on a defined geographic area and facilitates a comprehensive examination of data needed in the planning effort. The criteria used in delineating the planning area included:

1. The recognition of areawide land-use trends and patterns;
2. The recognition that water quality and growth problems are areawide concerns; and,
3. The delineation of planning areas in previous planning efforts and existing local plans.

Based on these criteria, the MPO Policy Council selected as the study or planning area for the sewer service area plan update the area encompassing parts or all of the following municipalities:

Chippewa County

City of Chippewa Falls
City of Eau Claire
Village of Lake Hallie
Town of Anson
Town of Eagle Point
Town of Hallie
Town of Lafayette
Town of Tilden
Town of Wheaton

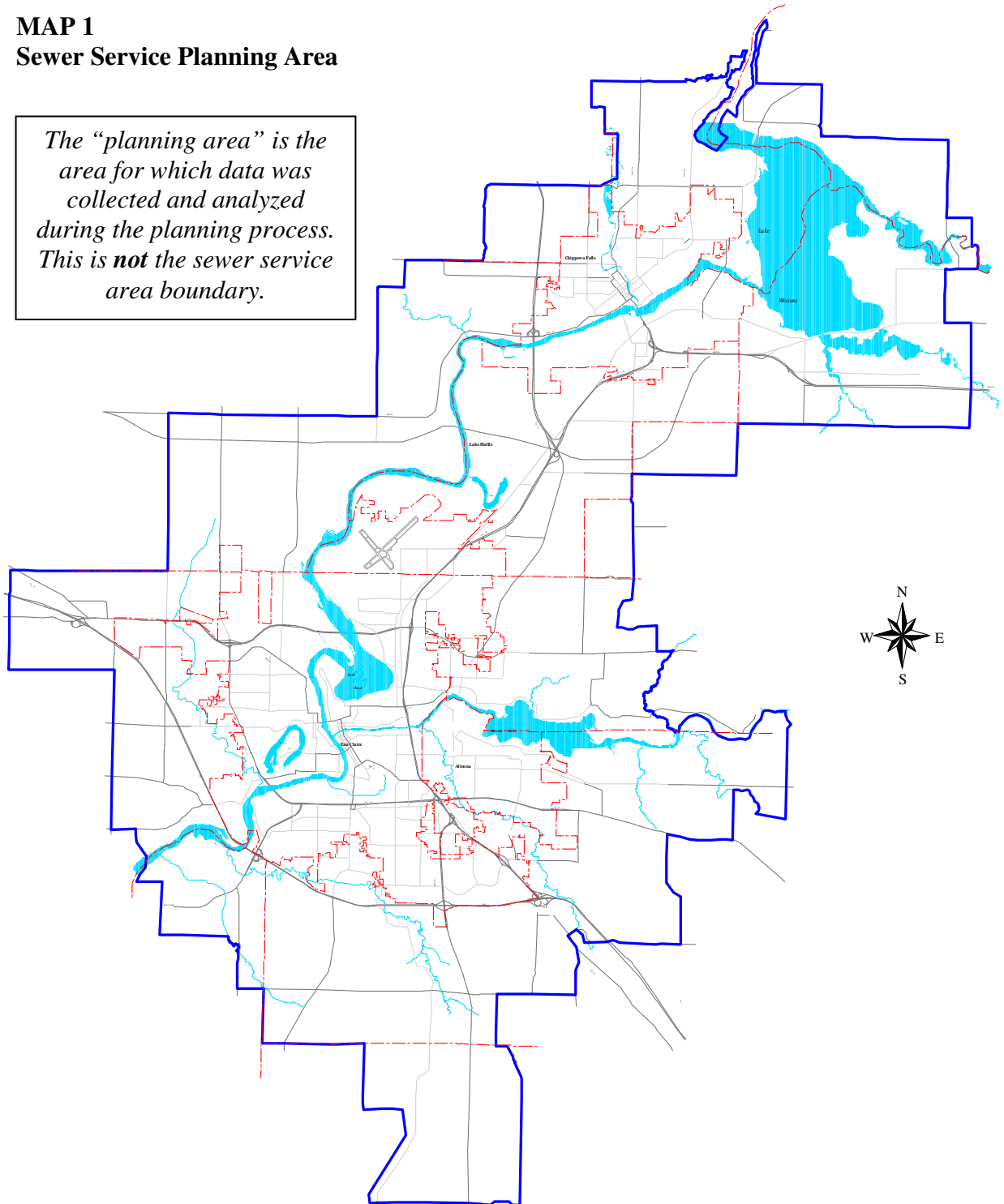
Eau Claire County

City of Altoona
City of Eau Claire
Town of Brunswick
Town of Pleasant Valley
Town of Seymour
Town of Union
Town of Washington

In all, the planning area encompasses approximately 118,652 acres or 185 square miles. Map 1 below outlines the planning area boundary and the municipality boundaries. For the purpose of the Plan, the planning area will also be referred to as the Chippewa Falls-Eau Claire urban area.

MAP 1 Sewer Service Planning Area

*The “planning area” is the area for which data was collected and analyzed during the planning process. This is **not** the sewer service area boundary.*



 **Municipal Boundaries**
SSA Planning Area Boundary



CHAPTER 2 – GROWTH & DEVELOPMENT TRENDS

2.1 GENERAL CHARACTERISTICS OF THE PLANNING AREA

Located approximately 90 miles east of the Minneapolis-St. Paul urban area, the Chippewa Falls-Eau Claire urban area serves as a major employment, trade, service, and governmental center for west-central Wisconsin.

In general, the urban area has developed near and out from the banks of the Chippewa and Eau Claire Rivers, reflecting the importance of these rivers to early travel, settlement, and the timber industry in the region. The urban area is surrounded by fertile agricultural land, remnants of large pine forests, and scenic lakes and rivers.

The City of Eau Claire, located at the confluence of these two rivers, is the ninth largest city in the State of Wisconsin with an estimated 2004 population of 63,897.⁴ With an estimated 2004 population of 13,155, the City of Chippewa Falls is the second largest community in the urban area. Both the City of Chippewa Falls and the City of Eau Claire are the county seat for their respective counties.

In the 1970s and 1980s, the Eau Claire Metropolitan Statistical Area (MSA) was Wisconsin's fastest growing metro area, but growth for the MSA slowed considerably relative to other urban areas in the State during the 1990s, though still experiencing 4.3% growth occurring from 1990 to 1997. Since the mid-1990s, many of the unincorporated towns within the planning area have been experiencing higher rates of population growth than their nearby incorporated counterparts. The planning area also includes the Village of Lake Hallie which was incorporated in 2003 and was part of the Town of Hallie in the prior sewer service area plan for the urban area.

2.2 POPULATION

Population trends and projections play an important role in most planning decisions. There are three major factors determining population change over time: birth, deaths, and migration. In addition, annexation of areas by a city may increase the population of the city, but decrease the population of the town it acquired the land from. Economic and social conditions will greatly affect population changes; thus, the population projections should be revised if growth patterns change from the historic norm.

2.2.1 Population Trends

As Table 1 shows, since 1980, population in the Chippewa Falls-Eau Claire urban area has increased at a rate above the State of Wisconsin average. The growth rate varies substantially by community, with the City of Altoona, Town of Pleasant Valley, and Town of Lafayette experiencing the greatest rates of population growth. Only the Town of Union experienced a

⁴ Wisconsin Department of Natural Resources. Wisconsin Municipalities – Population Change and Rank. <http://www.doa.state.wi.us/docs_view2.asp?docid=2689>. September 2004.

loss of population between 1980 and 2000, though this can be misleading since the population loss (and resultant population gain for the City of Eau Claire) was largely due to annexations. Overall, Eau Claire County's population increased at a rate faster than that of Chippewa County. Table 1 also shows that many of the unincorporated towns in the study area have increased at rates at or above their adjacent incorporated communities. Since the Village of Lake Hallie did not incorporate until 2003, historical population trend data for the Village is unavailable. Its parent town, the Town of Hallie, experienced a 10% increase in population during this time period, though this increase was somewhat deflated due to annexations of portions of the Town into its incorporated neighbors which occurred during the same timeframe.

Table 1. Population Trends* - 1980-2000

	1980	1990	2000	% change
Town of Anson	1,590	1,634	1,881	+18.3%
Town of Brunswick	1,411	1,506	1,598	+13.3%
Town of Eagle Point	2,750	2,542	3,049	+10.9%
Town of Hallie	4,275	4,531	4,703	+10.0%
Town of Lafayette	4,181	4,448	5,199	+24.3%
Town of Pleasant Valley	1,908	2,076	2,681	+40.5%
Town of Seymour	2,824	2,754	2,978	+5.5%
Town of Tilden	1,088	1,079	1,185	+8.9%
Town of Union	2,689	2,456	2,402	-10.7%
Town of Washington	6,489	6,269	6,995	+7.8%
Town of Wheaton	2,328	2,257	2,366	+1.6%
Village of Lake Hallie	<i>incorporated 2003</i>			
City of Altoona	4,393	5,889	6,698	+52.5%
City of Chippewa Falls	12,270	12,749	12,925	+5.3%
City of Eau Claire	51,509	56,806	61,704	+19.8%
Total	70,165	77,437	83,320	+18.8%
Chippewa County	52,127	52,360	55,195	+5.9%
Eau Claire County	78,805	85,183	93,142	+18.2%
Wisconsin	4,705,642	4,891,769	5,363,715	+14.0%

source: U.S. Census

2.2.2 Population Characteristics

Examination of selected characteristics of the Chippewa Falls-Eau Claire area population provides insight into present and future needs of the community. Table 2 shows the median ages of residents in the communities in the planning area. The median age is that age at which there are the same number of people in the population with ages above it and below it, providing a cursory idea of the overall age structure of the communities in the planning area. Over the past decade, the median age has been steadily increasing in all area communities, with some towns experiencing quite dramatic increases. This increase reflects longer life expectancy and decreasing birth rates, but also influences other social factors such as average household size.

Table 2. Median Age Comparisons – 1990-2000

	1990	2000
Town of Anson	32.1	38.7
Town of Brunswick	33.7	40.6
Town of Eagle Point	35.8	41.8
Town of Hallie	31.4	35.2
Town of Lafayette	27.1	38.8
Town of Pleasant Valley	35.3	37.8
Town of Seymour	35.7	39.1
Town of Tilden	30.6	35.7
Town of Union	31.6	37.6
Town of Washington	34.5	38.1
Town of Wheaton	33.8	37.7
Village of Lake Hallie	<i>incorporated 1993</i>	
City of Altoona	32.0	36.1
City of Chippewa Falls	34.2	37.3
City of Eau Claire	28.5	29.4
Chippewa County	33.4	37.6
Eau Claire County	30.3	32.4
State of Wisconsin	32.9	36.0

source: U.S. Census Bureau, 1990-2000

To provide further insight into local demographic trends, Table 3 shows the fertility and death rates for Chippewa and Eau Claire Counties for 1990 and 2000. Birth and fertility rates in the area continue to decline, while the death rates have increased slightly (Chippewa County) or have dropped (Eau Claire County). These trends become even more apparent on Figures 1 and 2 on the following page.

Table 3. Births and Deaths – 1990 & 2000

		1990	2000
Chippewa County			
	number of births	704	673
	fertility rate*	62.68	60.39
	number of deaths	498	533
	death rate (<i>deaths per 100,000 population</i>)	951.11	965.67
Eau Claire County			
	number of births	1,208	1,116
	fertility rate*	54.23	49.02
	number of deaths	658	639
	death rate (<i>per 100,000 population</i>)	772.4	686.05

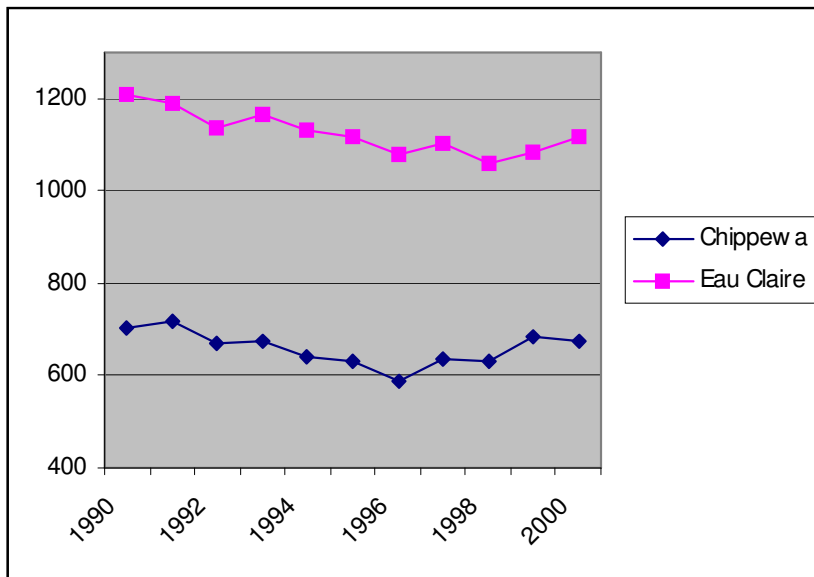
source: Wisconsin Department of Health & Family Services

*fertility rate = births per 1,000 women ages 15-44

Figures 1 and 2 show a relatively steady, albeit slow, decrease in the number of births during the 1990s in Chippewa and Eau Claire Counties. The number of death fluctuated more from year-to-year, but remained fairly even over the same time period as a whole.

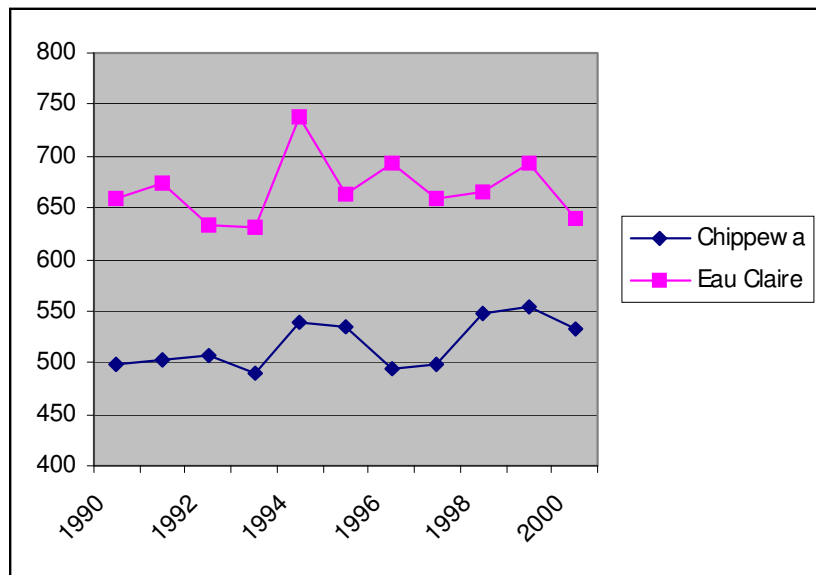
The fertility rate on a national level continues to decline due to a number of factors including concern over a growing population and its demand on natural resources, the general state of the economy, married couples in which both partners work outside of the home, those same married couples having fewer or even no children, a smaller percentage of marriages, and increased divorce rates. The Chippewa Falls-Eau Claire area appears to be also following this trend.

Figure 1. Chippewa & Eau Claire County Births – 1990-2000



source: Wisconsin Department of Health & Family Services

Figure 2. Chippewa & Eau Claire County Deaths – 1990-2000



source: Wisconsin Department of Health & Family Services

Though fertility rates in Chippewa Falls-Eau Claire area are slowly declining, the number of births still outpace the number of deaths and death rates have remained fairly stable. It is probable this trend will continue, although fertility rates may stabilize at some point. Assuming a stable death rate and a slowly decreasing fertility rate, the area is still projected to grow over the next twenty years because of in-migration.

In order to understand the extent to which migration is affecting the area, one must consider what the population would be had no migration occurred and relate that to the actual population.

The resulting figure approximates the in-migration of the area and is derived from the following formula:

Beginning of decennial population + Births – Deaths = Expected end of decennial population

Actual end of decennial population – Expected end of decennial population = Net In-Migration

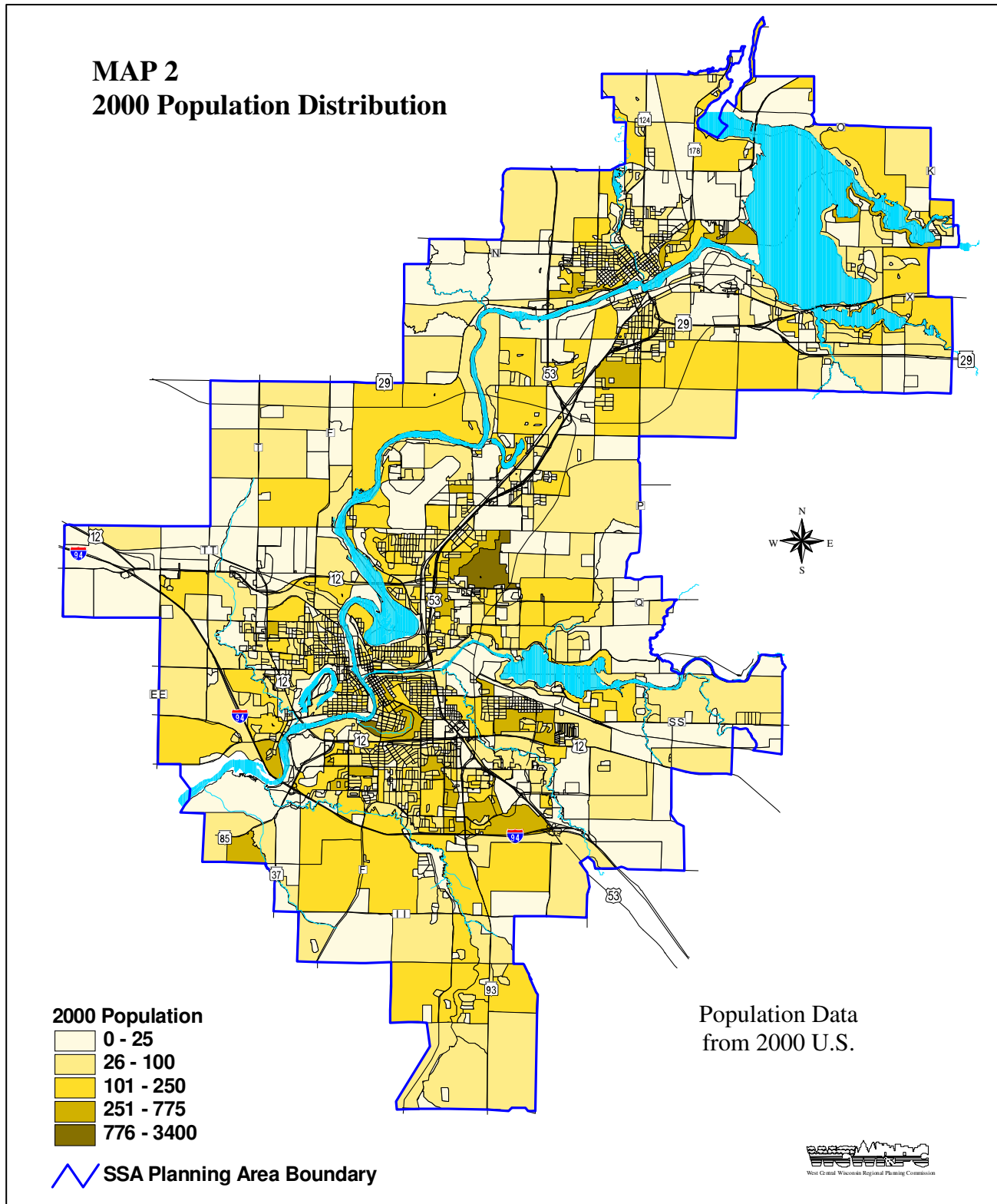
As Table 4 shows, net in-migration was 38.8% of the increase in the population from 1990 to 2000. Hence, net in-migration is a significant component of the area's population increase and will likely remain so.

Table 4. Chippewa & Eau Claire County Net Migration – 1990-2000

	1990 Pop.	Expected 2000 Pop	Actual 2000 Pop	Net In-Migration
Chippewa County	52,360	53,926	55,195	1,269
Eau Claire County	85,183	90,225	93,142	2,917
Total	137,543	144,151	148,337	4,186

sources: Wisconsin Department of Administration; Wisconsin Department of Health & Family Services

The distribution of the planning area's population by census block in 2000 is show on Map 2 below.



2.2.4 Population Projections by Municipality

Table 5 shows the official population projections for the municipalities in the planning area as established by the Wisconsin Department of Administration. These population projections include potential population changes through annexation, based on past trends. Together, the municipalities in the Chippewa Falls-Eau Claire urban area are projected to be home to approximately 80% of the Chippewa and Eau Claire County residents in 2025.

Table 5. Population Projections by Municipality - 2005-2025

	2005	2010	2015	2020	2025	% change
Town of Anson	1,958	2,079	2,191	2,294	2,363	+20.7%
Town of Brunswick	1,644	1,679	1,702	1,740	1,787	+8.7%
Town of Eagle Point	3,236	3,499	3,746	3,978	4,150	+28.2%
Town of Hallie	323	351	374	395	403	+24.8%
Town of Lafayette	5,538	6,006	6,444	6,858	7,167	+29.4%
Town of Pleasant Valley	2,901	3,103	3,277	3,479	3,700	+27.5%
Town of Seymour	3,096	3,196	3,272	3,376	3,499	+13.0%
Town of Tilden	1,217	1,276	1,330	1,378	1,407	+15.6%
Town of Union	2,582	2,756	2,907	3,083	3,275	+26.8%
Town of Washington	7,395	7,756	8,058	8,428	8,843	+19.6%
Town of Wheaton	2,435	2,559	2,672	2,774	2,836	+16.5%
Village of Lake Hallie	4,558	4,942	5,276	5,568	5,685	+24.7%
City of Altoona	7,056	7,369	7,621	7,941	8,303	+17.7%
City of Chippewa Falls	12,935	13,244	13,490	13,690	13,691	+5.8%
City of Eau Claire	64,638	67,180	69,189	71,783	74,723	+15.6%
Total	123,517	129,005	133,564	138,785	143,857	+16.5%
Chippewa County	57,740	60,217	62,375	64,292	65,192	+12.9%
Eau Claire County	97,679	101,580	104,663	108,674	113,270	+16.0%

source: Demographic Services Center, Wisconsin Department of Administration, Jan 2004

However, concern was expressed over the accuracy of these projections for the City of Chippewa Falls. Based on recent trends, it is apparent that the Chippewa Falls will likely grow at a rate faster than projected by the Wisconsin Department of Administration (WisDOA). For instance, the WisDOA 2004 population estimate for the City already exceeded the 2005 population projection provided above by 829 persons. For the Chippewa Falls Wastewater Treatment Facility Plan under development in 2004, the following projections for the City of Chippewa Falls were developed:

<i>Alternative “Unofficial” Population Projection</i>	2005	2010	2015	2020	2025	% change
City of Chippewa Falls	13,764	14,308	14,851	15,394	15,937	+15.8%

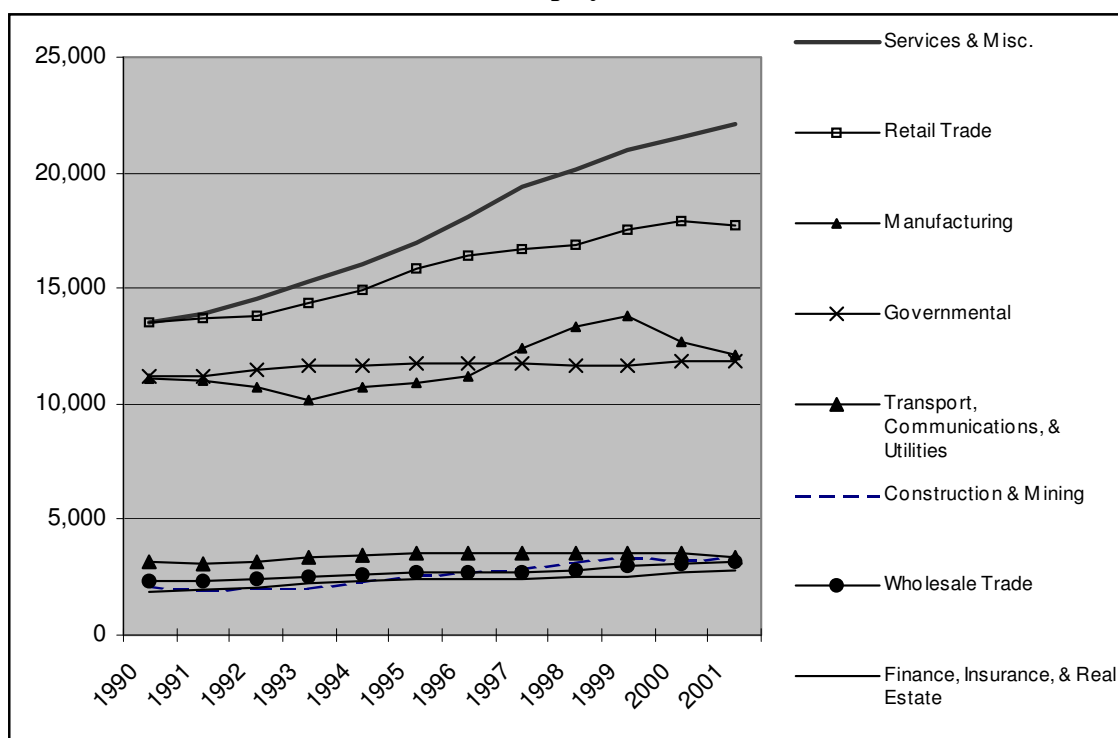
The population projections for the planning area addresses these concerns later in this plan by using traffic analysis zones and census blocks to project future population by sub-areas rather than projecting population for entire communities. This approach yielded total population

projections for the planning area which were comparable to the total official WisDOA projection, adjusted for those portions of the communities in the planning area. Population and development projections for the planning area, as well as the methodology used to develop these projections, is discussed later in the plan in *Section 3.6 Forecast of Urban Growth*.

2.3 EMPLOYMENT & COMMUTING TRENDS

Figure 3 reflects the importance of the Chippewa Falls-Eau Claire urban area as a service and retail trade center for west-central Wisconsin. Employment in the service and retail trade sectors grew considerably during the 1990s while other non-farming sectors remained fairly unchanged overall during the same timeframe. Overall, between 1990 and 2000, employment grew 21% in the urban area. And over the planning timeframe, the Wisconsin Department of Workforce Development projects an average employment growth of 1.5% annually.

Figure 3. Eau Claire MSA Non-Farm Employment -- 1990-2001



source: Wisconsin Department of Workforce Development

The mobility of the residents of the Chippewa Falls-Eau Claire Urban Area is automotive dominated. According to the 2000 U.S. Census, 89.8% of workers 16 years or older in the area use the automobile to commute to work. Of these, 81.3% drove alone, while only 8.5 % carpoolled. The convenience of automotive travel in the urban area contributes to the regional commuting patterns. Approximately 80% of the commuter trips to the urban area originate within the urban area, with an additional 13% of the trips originating in areas of Chippewa, Eau Claire, and Dunn County outside the urban area. In all, an average of 68,031 commuter trips were made to the Chippewa Falls-Eau Claire Urban Area on a daily basis in 2000. These trips

are expected to continue to increase as population increases, with economic growth, and as the number of automobiles per household continues to increase.

2.4 LAND-USE PLANS AND TRENDS

2.4.1 Incorporated Communities' Land-Use Analysis

The planning area includes four incorporated communities: City of Altoona, City of Chippewa Falls, City of Eau Claire, and the Village of Lake Hallie. Table 6 shows the distribution of land uses by acreage for each of these communities in 1973, 1989, and 2005, with the exception of the Village of Lake Hallie which was incorporated in 2003. For Lake Hallie, the current corporate limits were applied against the land-use inventory for 2000 to obtain the acreages in Table 6. The total acres in Table 6 also provide insight into the growth of each community through annexation.

Table 6. Land Uses for Incorporated Communities -- 1973, 1989, 2005

	Total Acres	Residential	Commercial	Industrial	Vacant
Altoona					
1973	1,826	254 (13.9%)	11 (0.6%)	0 (0.0%)	1,043 (57.1%)
1989	2,770	540 (19.5%)	95 (3.4%)	15 (0.5%)	1,370 (49.5%)
2005	3,004	1,363 (38.2%)	149 (5.0%)	100 (3.3%)	847 (28.2%)
Chippewa Falls					
1973	6,166	788 (12.8%)	109 (1.8%)	77 (1.2%)	3,335 (54.1%)
1989	6,400	930 (14.5%)	150 (2.3%)	350 (5.5%)	1,900 (29.7%)
2005	7,284	1,602 (22.0%)	246 (3.4%)	514 (7.1%)	2,120 (29.1%)
Eau Claire					
1973	14,604	2,912 (19.9%)	454 (3.1%)	320 (2.2%)	5,064 (34.7%)
1989	19,600	4,580 (23.4%)	760 (3.9%)	420 (2.1%)	6,150 (31.4%)
2005	20,712	7,246 (35.0%)	1,425 (6.9%)	1,827 (8.8%)	1,731 (8.4%)
Lake Hallie					
2005	9,236	2,102 (22.8%)	401 (4.3%)	1,713 (18.5%)	4,211 (45.6%)

source: West Central Wisconsin Regional Planning Commission Land-Use Surveys, 1973, 1989, 2005

In Table 6, commercial lands include all offices, while warehouses fall within the industrial category. Vacant uses encompass all lands undeveloped (no structures), but considered developable; vacant lands do not include the environmentally sensitive areas of wetlands, steep slopes, and floodplains which were approximately 35% of the planning areas overall. Recreational, governmental, and institutional uses are also not included in Table 6.

City of Altoona Land-Use Analysis

Over the last decade, the amount of residential acreage more than doubled in the City of Altoona. Substantial increases in commercial and industrial acreage also were realized, while the amount of available vacant, undeveloped land shrunk considerably.

Moderate and steady growth is expected to continue for the City of Altoona, with an increase of approximately 1,000 more households anticipated over the next twenty years. To accommodate such growth, annexations are likely, with the majority of this residential growth occurring on the east and southeast side of the City. Much of this residential development will likely occur at relatively low densities, which could be further impacted by how the Town of Washington regulates these areas in the interim.

A second key growth area in the City of Altoona is anticipated around the future U.S. Highway 53 and Birch Street interchange as part of the U.S. Highway 53 bypass improvements. Increased access and visibility will increase the commercial development potential of this area. Some multi-family housing development may accompany the retail, office, or other commercial development which occurs in this area.

The City of Altoona adopted a comprehensive plan in 2000 which was recently amended for consistency with the State Comprehensive Planning Law. Altoona's plan recommendations include:

- Require all new development within the Altoona planning area be served with the full array of municipal services (e.g., water, sewer, stormwater, police/fire).
- Preserve environmental corridor features including waterways, floodplains, wetlands, ground water recharge areas, steep slopes (>15%), wildlife habitat, scenic vistas, drainageways, and woodlands.
- Discourage urban development in areas that cannot be easily or economically served with municipal utilities.
- Guide new urban growth to areas within its sewer service area (SSA) as compact, orderly development.
- The City will generally not extend sanitary sewer lines outside its corporate boundaries and will not extend sanitary sewer lines outside the SSA.
- The City will work closely with WCWRPC to monitor and amend the SSA as necessary; the Altoona SSA should be large enough to easily accommodate projected urban growth over the next 20 years and provide excess acreage to ensure efficient operation of the urban land market.

- The City will work with adjacent communities to ensure that lands within the Altoona SSA will be developed in a logical, orderly and cost-effective manner, with a full range of municipal utilities and services at the time of construction.
- Discourage development of unincorporated lands adjacent to or near the City; development of these lands is generally consistent with annexation.
- Encourage cooperative planning with neighboring communities so that urban development can be guided into the City's SSA.

City of Chippewa Falls Land-Use Analysis

Like the City of Altoona, the amount of residential acreage in the City of Chippewa Falls also more than doubled over the last decade. Substantial increases in commercial and industrial acreage also was realized. While the amount of undeveloped land shrunk considerably, substantial amounts of undeveloped acreage still exists within the corporate limits.

The City of Chippewa Falls Comprehensive Plan adopted in December 1999 identifies two primary single-family residential expansion areas: the former Chippewa County Farm property on the northeast side of the City (250 acres) and an area on the northwest side of the City (300 acres north of Elm St. and west of Wheaton St.). Multi-family residential expansion will be integrated into developments as well, such as the northwest neighborhoods near US 53 and the former Chippewa County Farm Property. To the southeast, the 300+ acres of the former Northern Wisconsin Center property is being developed with a mix of commercial, single-family residential, and multi-family residential uses. The Chippewa County Farm Property and adjoining parcels west of STH 178 were identified as the primary industrial development areas for the next planning period.

The Comprehensive Plan also included the following general policy statements:

- Provide utility expansions in a planned, staged, and orderly manner.
- The City shall maintain the policy of not extending municipal sanitary sewer or water services to areas outside the City limits. Owners may petition for annexation as provided by State statute.
- Annexation proposals will be evaluated based on cost-effectiveness and impact on service needs elsewhere in the City.
- Eventually, all area included within the City's SSA will be a part of the City of Chippewa Falls.

City of Eau Claire Land-Use Analysis

Residential, commercial, and industrial acreage in the City of Eau Claire also increased dramatically during the past decade. With the improved access provided by State Highway 312, commonly referred to as the north crossing, considerable office, commercial, and industrial growth has been occurring on the northwest side of the community, with residential neighborhoods forming along the highway farther to the east as one approaches the Chippewa River.

During the 1990s, the Cameron Street and Sherman School areas on the west side of the community experienced considerable residential subdivision growth; and continued residential growth in this area is anticipated. However, substantial amounts of adjacent land in the Town of Union to the west of Interstate 94 have been developed as unsewered, large residential lots reducing opportunities for more efficient, urbanized growth.

Access to transportation connections and sanitary sewer service, existing topographical challenges, and the existence of large, semi-rural lots all contribute to slow growth for some areas of the City's south side. Primary areas for potential growth south of the City are along Highway 93 to the east of Lowes Creek and along Highway 85 to the southwest, above the floodplain. The north side of Interstate 94 on the south side of the community will continue to develop as experienced in recent years with commercial, office, single-family residential, and multi-family residential uses.

Land uses on the northeastern quadrant of the community along U.S. Highway 53 are a diverse mixture of sewerred and unsewerred residential, commercial, and industrial uses. The new Highway 53 bypass and wooded hillsides to the east further delineate this area and pose development challenges. Substantial growth in this area within municipal limits is not anticipated. Much like the central portion of the City, most development will consist of infill and redevelopment on this northeast side. However, considerable opportunities for redevelopment occur farther to the east in the Town of Seymour, which has been generally agreeable to landowner annexation petitions to date.

The City of Eau Claire adopted its comprehensive plan on September 27, 2005. Much of the previous descriptions of local land-use trends was adapted from the City's comprehensive plan. The *City of Eau Claire Comprehensive Plan* also includes the following policies and comments pertinent to the SSA planning effort:

- Forecasts that 4,200 acres will be needed for urban development between 2004-2025 (more than double the estimated undeveloped acreage currently within the corporate limits).
- The plan includes a proposed future sewer service area (SSA) for the Eau Claire WWTP with forecasted urban growth areas.
- Utilities staging plan w/ trunk lines, force mains, and pump stations identified.
- Village of Lake Hallie has stated it will develop w/ private, on-site sewage systems. As such, the City's comprehensive plan suggests that the SSA map not include parts of Village of Lake Hallie and this acreage should be allocated elsewhere.
- Annexation or agreements to annex should be executed prior to extension of sewer service to areas outside the City.
- The City will not approve sewer extensions beyond the 2010 SSA boundary unless the regional Urban SSA Plan is amended.
- Priorities for annexation and extension of services are: (1) existing sewerred areas, (2) expansion of existing facilities per the C.I.P., (3) trunk line facilities expansion for 5-10 years, and (4) long-term trunk line expansion not to be served in near future.
- Environmentally sensitive areas include wetlands, floodplains, shorelands, and steep slopes (20+%).

- Within the extraterritorial plat review zone and SSA, there should be a maximum number of homes per 40 acres without public sewer. Maintaining a rural density in these areas will improve opportunities to provide efficient community services at a later date.

The City of Eau Claire has adopted extra-territorial plat review for three miles surrounding the City's incorporation limits. Within this area, a 10-acre maximum density standard applies in accordance with the City's recently adopted comprehensive plan. Within the sewer service area boundary within this extra-territorial plat review area, these lots can be further subdivided when public services are made available.

Village of Lake Hallie Land-Use Analysis

The Village of Lake Hallie incorporated from part of the Town of Hallie in April 2003, halting annexations by adjacent incorporated areas, thus protecting its territorial integrity. Historical land-use and demographic information for the newly formed village is not readily available. The community currently does not have public sanitary sewer service within its corporate limits, but part of the community is served by a public water system that was installed due to groundwater contamination from the Presto Superfund site.

The Village is quickly developing, with tremendous commercial growth along U.S. Highway 53 and near the upcoming U.S. Highway 53 and State Highway 29 interchange. Limited industrial uses are also present along the Highway 53 corridor. The remainder of the Town is dominated by large-lot detached single-family housing and agricultural lands.

Based on the 1997 Town of Hallie Land-Use Plan, an estimated 183 acres would be needed by 2015 to accommodate residential growth, at an average of two-thirds of an acre per household. Given recent trends, however, this estimate is likely too low since residential development has often been occurring on larger lots (possibly in part due to the lack of sanitary sewer service) and the substantial commercial growth occurring as a result of the U.S. Highway 53 bypass project.

2.4.2 Unincorporated Communities Land-Use Analysis

In general, the unincorporated portions of the planning area are expected to experience higher rates of population growth, and at lower densities, than their nearby incorporated neighbors. As acknowledged in the *Town of Washington Land-Use Plan*, development occurring in many unincorporated areas within the planning area is "not economically efficient to serve with municipal sewer and water because of their larger lot size, yet do not lend themselves to resubdivision to accommodate a higher density development."

All towns in the planning area fall under their respective county's subdivision ordinance, floodplain ordinance, and shoreland-wetland ordinance, when applicable. With the exception of the Town of Tilden, all towns also participate in county zoning. Some area towns are placing increasing emphasis on land-use strategies which preserve prime farmlands and valued open spaces.

Town	Comp or L-U Plan	Other Comments
Town of Anson	may partner w/ County on Comp. Planning	A relatively small portion of the Town of Anson is located with the SSA planning area, of which a large portion is Lake Wissota State Park. Additional residential growth can be expected near Lake Wissota surrounding the park, but on larger lot sizes and not at densities to efficiently serve with community sewer or water.
Town of Brunswick	L-U Plan 2000; agreed to participate in County Comp. Planning	Housing is primarily large-lot single-family homes scattered throughout the town. There is very little commercial development and gravel mining constitutes the primary industry. Population growth has been slow, but steady, not experiencing the growth rates of its neighbors. from Plan: Mixed farming and housing along Highway 37. Large-lot residential development closest to Eau Claire, essentially creating a barrier for sewer service expansion. The owners of the large gravel mine west of Highway 37 are contemplating the residential development of this property after the mining operation is closed.
Town of Eagle Point	L-U Plan 2000	Located immediately north of the City of Chippewa Falls, the Town of Eagle Point has been experiencing residential development pressure in the southern part of the town, especially adjacent to the Chippewa River and the Highway 124 and 178 corridors. The Town enforces a minimum 30,000 square feet (0.46 acre) lot size. from Plan: environmentally sensitive lands include steep slopes (12+%), surface waters, wetlands, floodplains, and shorelands Much of the Town's acreage in the planning area has been designated an urban transition area within the Town's Land-Use Plan. The plan encourages min. lot requirements and ghost platting in this area for when future public services are imminent.
Town of Hallie	L-U Plan 1997	Residential growth is anticipated for most of the Town of Hallie which falls within the SSA planning area. Currently, higher density subdivision growth has been occurring in the areas closest to the City of Chippewa Falls, while larger

		<p>residential lot sizes and agricultural uses predominate in areas farther from incorporated communities. The Town enforces a minimum 20,000 square feet (0.46 acre) lot size in most areas.</p> <p>from Plan: environ. corridors include steep slopes (12-20% managed; 20+% prohibited); .67 acre avg. lot size; promote infill & compact development; protect prime agri. lands; explore options for providing sanitary sewer; public water to portions since 1992 due to groundwater contamination concerns; complete a stormwater management plan to address Town Water Quality Management Planning Project.</p>
Town of Lafayette	L-U Plan 1995	<p>The Town of Lafayette has experienced tremendous residential and commercial growth nearest the City of Chippewa Falls and Lake Wissota, especially along Highway 29 and Highway X. Additional residential growth pressures are anticipated for areas south of Highway 29 along Highway J and towards the west closer to the Town of Hallie and City of Chippewa Falls. Based on recent trends, the Town of Lafayette is projected to increase in population at a faster rate than any other community in the planning area. The Town enforces a minimum 30,000 square feet (0.69 acre) lot size.</p> <p>from Plan: primary sensitive areas include steep slopes (12+%), wetlands, prime farmlands, and surface water resources/floodplains; promote larger lot development and contiguous residential growth; limit m.f. housing to areas where it can be adequately served by public utilities.</p>
Town of Pleasant Valley	L-U Plan 1998; agreed to participate in County Comp. Planning	<p>Pleasant Valley has been experiencing substantial, unsewered, residential development on very large lots along the Highway 93 and Lowes Creek Road corridors.</p> <p>from Plan: primary sensitive areas include steep slopes (20+%), wetlands, and prime farmlands; 1.5 acre min. lot size/unit w/in subdivision; promote infill, compact, & contiguous residential growth; identifies high & med. density resid. growth areas.</p>

Town of Seymour	L-U Plan 1989; agreed to participate in County Comp. Planning	The portion of the Town east of Eau Claire and north of Lake Altoona continues to experience considerable residential growth at semi-rural or larger lot sizes making the provision of community services inefficient in many instances.
Town of Tilden		To date, the Town of Tilden has experienced only a limited number of large residential subdivisions. This subdivision growth has been limited to areas immediately adjacent to the City of Chippewa Falls and near the unincorporated community of Tilden along County Highway B. The majority of residential growth that has been occurring in the Town has primarily been on large lots of 2 acres or more, with many lots of 10+ acres. The Town has adopted minimum lot size requirements.
Town of Union	L-U Plan adopted; developing Comp Plan	<p>The Town has its own subdivision control ordinance and recently adopted a minimum 5 acre lot size. During the last decade, the population actually shrunk due to annexations.</p> <p>Half-acre to one-acre residential development has been occurring nearest Eau Claire along county highways and east of I-94. Many of these semi-rural residential lots are inefficient for the provision of public water and sewer. Substantial commercial and industrial development has been occurring east of I-94 along Highway 124.</p> <p>A potential future I-94 interchange at Cameron Street has been under discussion and could further increase development pressure in this area.</p>
Town of Washington	L-U Plan 2000; agreed to participate in County Comp. Planning	Town population has grown rapidly as farmland is fragmented into very large residential lots. Much of this residential development has been occurring in the Lowes Creek Road and Highway 93 corridor just south of Eau Claire. A portion of the Town is included within the urban sewer service area. Some future commercial and/or industrial development may occur along Highway 93 within the urban sewer service area.

		From their Plan: +33 housing units per year through 2020 projected; 1.5 acre min. lot size outside SSA; primary sensitive areas include steep slopes (20+%), wetlands, and prime farmlands; development in SSA should be coordinated w/ availability of municipal sewer & water service at urban standards.
Town of Wheaton	developing L-U Plan; has 5-acre min. lot size in subdiv ord	The future U.S. Highway 29 project is anticipated to increase growth in the Town of Wheaton. Commercial and some industrial development is anticipated near the Highway 29 and County Highway T interchange down to the City of Eau Claire. Unsewered residential subdivisions at semi-rural densities are anticipated near County Highway F and near the Chippewa River. Significant residential subdivision development, primarily on 5 to 8 acre lots, has occurred in the western portion of the Town of Wheaton near the unincorporated community of Pine Grove. While notable, this is outside the SSA planning area.

2.4.3 Overall Land-Use Patterns

Map 3 at the end of this section shows the general land uses for the SSA planning area as of January 1, 2005. The land-use mapping incorporated available land-use data from the MPO's Long-Range Transportation Plan, current municipal plans, input from Water Quality Technical Advisory Committee, and field inventories in some rural areas where current information was not readily available. However, the land-use patterns of the planning area are continuously changing, and notable changes since the land-use inventory were incorporated into the map when possible, but some variation from existing land-use should be expected.

The mapping process was automated through the application of the computerized Geographic Information System (GIS) which allows the integration and comparison of databases to provide various overlay coverages for information analysis. The GIS also allows land-use acreage to be calculated for the various land-use categories. Table 7 on the following page provides the approximate land-use acreage for the planning area as of 2005. Land-use patterns shown on the map are generally urbanized areas of contiguous similar development, and some isolated parcels with differing use categories may not be shown. The character of the development varies, with larger residential lot sizes more common in areas located farther from existing incorporated boundaries and the older residential neighborhoods within the cities.

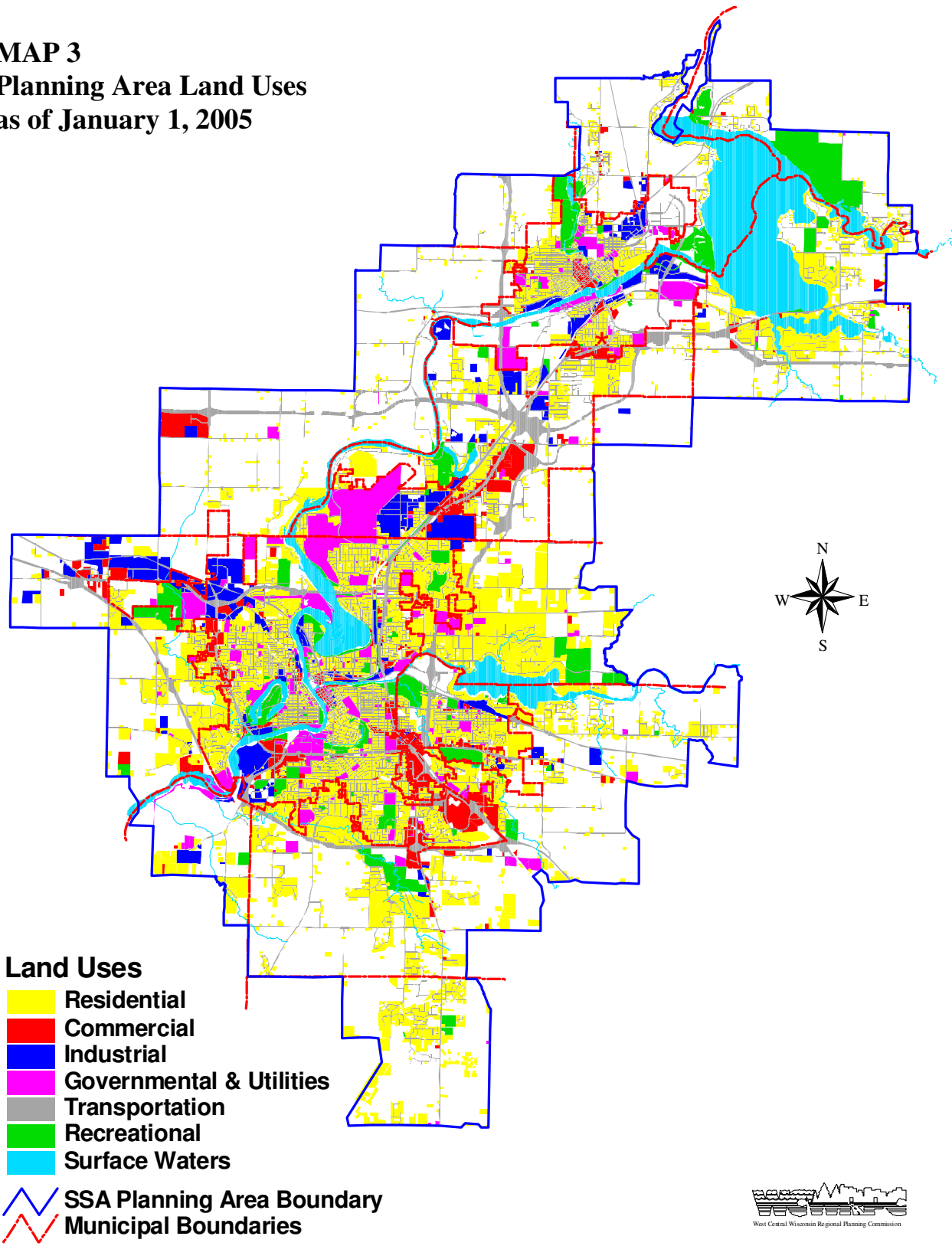
**Table 7. Land-Use Acreage by General Classification
for the Sewer Service Planning Area – January 1, 2005**

Land-Use Categories	Acreage	Percent of Developed Area	Percent of Total Planning Area
Residential	27,528	49%	23%
Commercial	3,307	6%	3%
Industrial	5,264	9%	5%
Government/Institutional	3,683	6%	3%
Recreational	5,064	9%	4%
Transportation & Utilities	11,912	21%	10%
TOTAL DEVELOPED ACRES	56,758	100%	48%
TOTAL UNDEVELOPED ACRES	53,013		45%
PRIMARY SURFACE WATERS	8,851		7%
TOTAL PLANNING AREA ACRES	118,652		100%

source: West Central Wisconsin Regional Planning Commission, 2005

Please note that the above acreages were primarily gathered on a parcel-by-parcel basis. As such, environmentally sensitive areas are included within the above land-use categories, since portions of a developed or undeveloped parcel may include a feature of environmental significance. These environmentally sensitive areas are defined and delineated in latter sections of this plan, most notably sections 3.2, 3.3, and 3.4.

MAP 3
Planning Area Land Uses
as of January 1, 2005



CHAPTER 3 – SEWER SERVICE AREA DELINEATION

3.1 PLANNING PROCESS

To delineate the sewer service area boundary, four primary factors need to be considered:

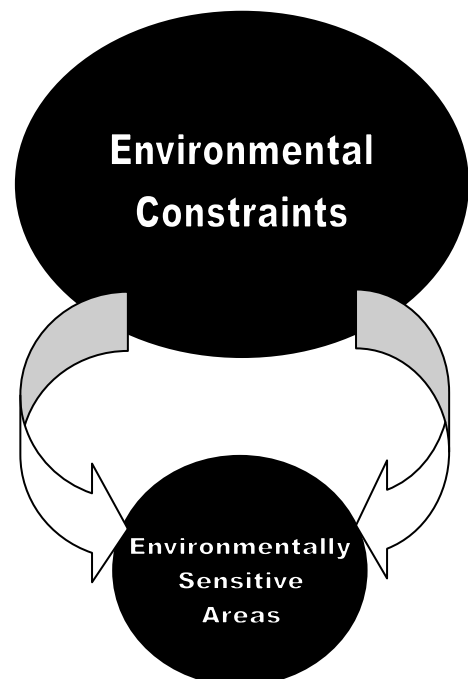
- 1) environmental constraints and environmentally sensitive areas,
- 2) local water quality resources and issues,
- 3) existing sewer systems, service areas, and engineering constraints, and
- 4) projected population, land-use patterns, and growth data.

This comprehensive look at the Chippewa Falls-Eau Claire planning area will form the basis for the determination of the sewer service boundary. By excluding environmentally sensitive areas from development, our natural resources will be protected for future generations to enjoy. An inventory of the existing sanitary sewer systems and related engineering constraints (e.g., topography) will determine the effect future development will have on the sewage capacities and the feasibility of extending sewer services to new areas. Identification of urban development areas will aid in determining what infill and expansion alternatives should be used in delineating the sewer service area. In addition, projected population and growth data will estimate the acreage needed for future development within the sewer service area.

3.2 DELINEATION OF ENVIRONMENTAL CONSTRAINTS OR LIMITING LOCAL CONDITIONS

The purpose of using environmental features to help determine a sewer service area is to preserve and protect valuable areas from urban development or degradation. To do this, environmentally sensitive areas are delineated and urban growth is prohibited from occurring in these areas. Prior to determining the types of environmentally sensitive areas which should be excluded from the sewer service area, a broader range of environmental constraints and local limiting conditions is first considered.

Environmental constraints are potentially limiting conditions to development or environmental features which could benefit from protective measures. Environmental constraints may include, but are not limited to: wetlands, shorelands, floodplains, steep slopes, highly erodible soils, bedrock outcrops, other limiting soil types, groundwater recharge areas, wellhead protection areas, prime farmlands, unique



or threatened natural resources, parks, and sites of special historical or cultural significance.

While all environmental constraints should be considered during the planning process, not every constraint may constitute an environmentally sensitive area which should be excluded from the sewer service area. And in some instances, sanitary sewer service may be preferred as a protective measure for an environmental feature or constraint.

It is important to note that NR 121 does not provide the authority to require protection of areas based on criteria other than water quality maintenance. Though not directly related to water quality, areas such as parklands, prime farmlands, and historic sites may still be deemed of sufficient importance to local communities to be afforded special consideration and protection as local environmentally sensitive areas. But communities may also need to pursue appropriate regulatory authority, in addition to the sewer service area plan, in order to preserve these other resources.

During the planning process, the following environmental constraints were identified as particularly important to the urban area in the context of this planning effort:

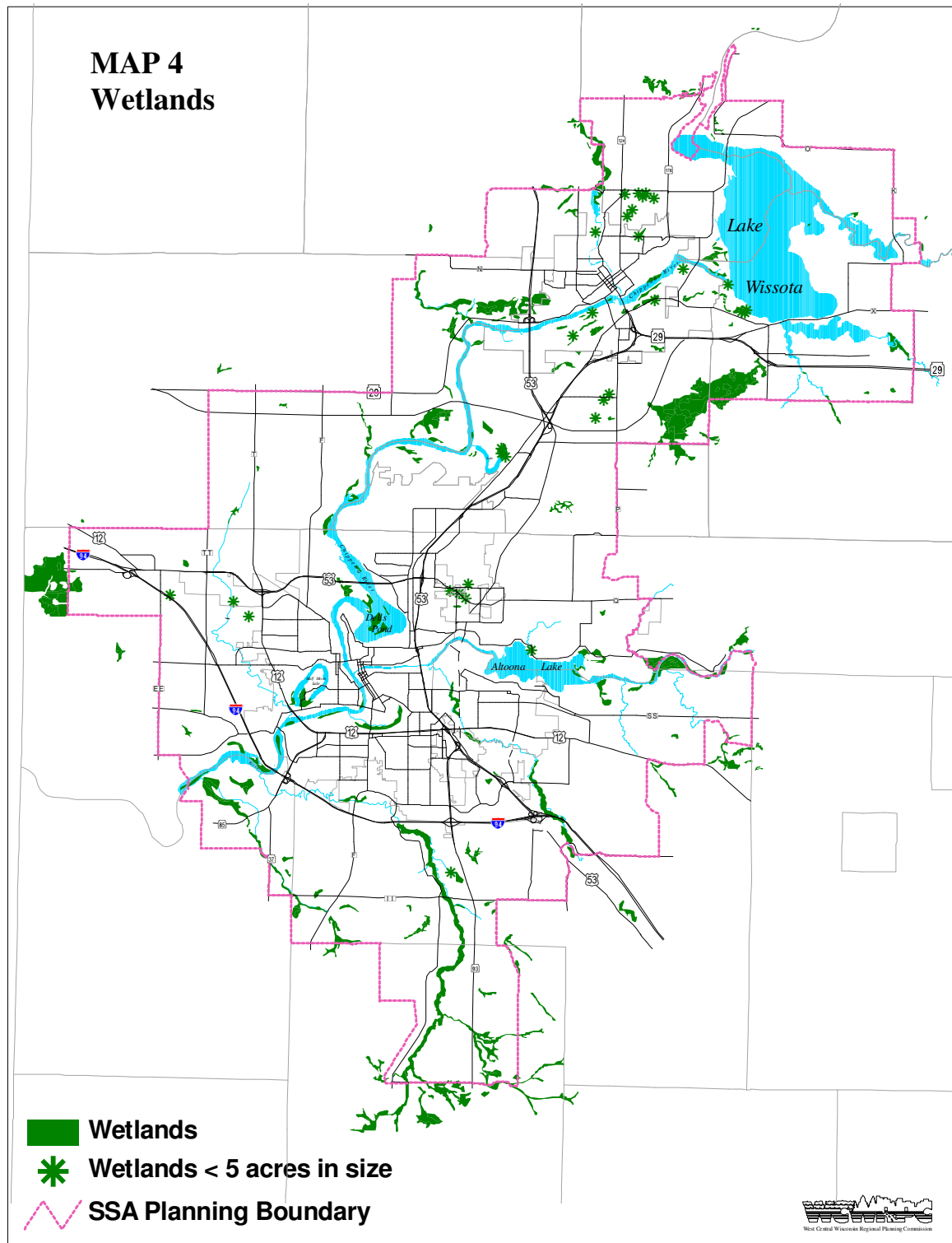
- wetlands
- shorelands, using WisDNR definitions
- floodplains
- steep slopes
- natural areas and endangered habitats
- parks and recreation areas
- trout streams
- prime farmlands
- wellhead protection zones

3.2.1 Wetlands

A wetland is any area in which water is at, near, or above the surface long enough to support hydrophytic vegetation or water-loving plants and which has soils indicative of wet conditions (NR 103, Wisconsin Administrative Code). Wetlands may be seasonal or permanent and are commonly referred to as swamps, marshes, or bogs.

Wetland areas serve as groundwater recharge zones, as water storage areas during flooding events, and also as a habitat for a variety of plants and animals. Wetlands act like a sieve, filtering out silts before they can enter streams and lakes. Particular attention must be given wetlands within shorelands to assure protection from development. Activities such as flooding, draining, ditching, excavating and building are all regulated in wetlands. The Wisconsin Department of Natural Resources' (WisDNR) guidelines for sewer service area planning state that all wetlands should be identified as environmental constraints and be excluded from local sanitary sewer areas. The WisDNR guidelines offer additional direction for the evaluation of plans and plan amendments which would

impact a wetland. Wisconsin Wetland Inventory maps and 1"=400' scale aerial photographs were used to delineate all regulated wetlands within the planning area as shown in Map 4.



3.2.2 Floodplains

A floodplain is typically an area of relatively flat land on either side of a water body covered by water during a regional (100-year) flood event. It contains layers of sediments deposited by the river or lake during floods and encompasses both the floodway and flood fringe. The floodway is the main channel of the river and the adjoining land which are required to carry the main flow of a 100-year flood event. The flood fringe is that part of the floodplain outside the floodway which plays a water storage role during a flood event, but water depth and velocity is generally much lower than compared with the floodway.

Floodplains play an important role in filtering stormwater before it reaches surface water and by removing pollutants and debris from inland river waters during a flood event. Floodplains also offer important water storage areas during flood events to help reduce the impacts of flooding downstream.

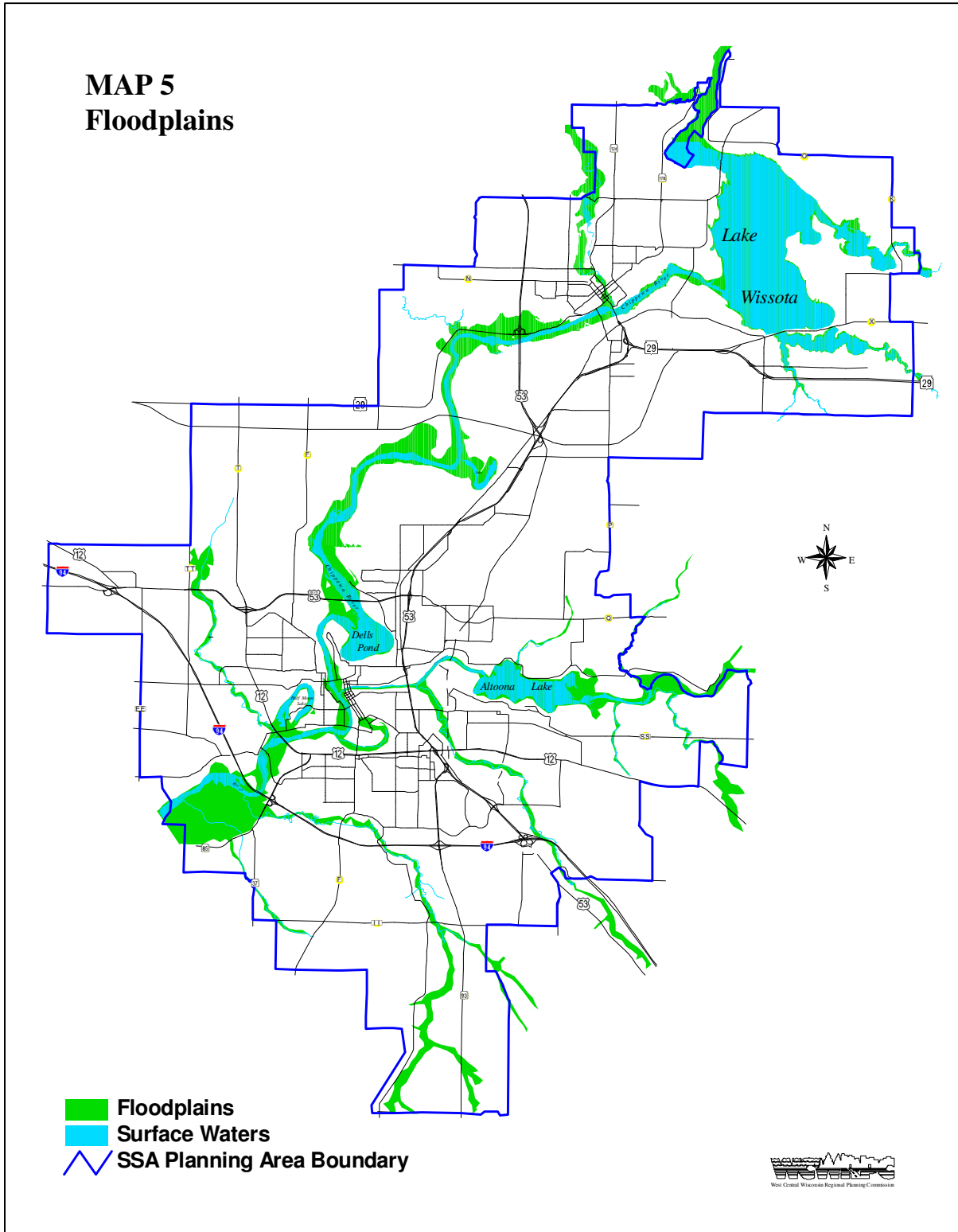
Floodplain zoning is required to be implemented by counties, cities and villages by Wisconsin Statute 87.30(1); and the WisDNR will not approve a sewer service plan which is inconsistent with local floodplain ordinances. The purpose of Wisconsin Administrative Code NR116, Floodplain Management Program, is the protection of property and public investments from the effects of flooding. Federal Emergency Management Agency Flood Insurance Rate Maps (FIRMs) identify the 100-year floodplain and were used to delineate flood hazard areas within the planning area. These are shown on Map 5 on the following page.

Flood hazard areas are prevalent throughout the planning area, though many local governments question the accuracy of the FEMA FIRM maps. Variations in the width of the flood hazard zones are common due to topography and water volumes. FEMA and WisDNR are currently in the process of updating the FIRM maps for Wisconsin, though this update will not be complete for the planning area prior to completion of this plan.

In the planning area, there is considerable existing development within 100-year floodplains. The largest concentrations of existing floodplain development lie along the Chippewa River in downtown Eau Claire, in downtown Chippewa Falls, and in the Village of Lake Hallie. A considerable amount of potential floodplain development has also occurred along Lowes Creek in the Towns of Washington and Pleasant Valley. However, local topography may effectively minimize the risk of flooding to structures in many of these areas. Flooding for all communities in the planning area has been covered by natural hazards or flood mitigation plans which encourage restrictions on future floodplain development. Area counties and communities have limited future development within floodplains through ordinances.

Due to the inherent risks to development in floodplain areas, the WisDNR guidelines for sewer service area planning recommend that floodplains should be excluded from local sewer service areas. In particular, the guidelines recommend that floodways not be included in the sewer service area, except in cases where development already exists. The WisDNR guidelines also state that amendments or plans which result in a reduction

of the floodwater conveyance capacity should be denied unless remedial actions (in conformance with NR 116) are identified and approved. Amendments or plans which result in a reduction of storm or flood water storage should also be avoided or remedial actions identified.



3.2.3 Shoreland Zoning

Shorelands are lands within the following distances above the ordinary high-water mark of navigable waters: (a) 1,000 feet from a lake, pond, or flowage and (b) 300 feet from a river or stream to the landward side of the floodplain. Shorelands are usually considered prime residential building areas because of their scenic beauty. However, shorelands provide valuable habitat for both aquatic and terrestrial animals and vegetation. Shorelands also act as buffers and thus serve to protect water quality.

Wisconsin requires counties to protect and prevent the loss and erosion of these valuable resources by adopting and enforcing a shoreland ordinance. The authority to enact and enforce this provision comes from Chapter 59.97 of the Wisconsin Statutes, and Wisconsin Administrative Code NR115 dictates the shoreland management program. County ordinances can be more, but not less, stringent than NR115. Shoreland regulations govern lot size, setbacks of structures from waters, landscaping, siting of wastewater systems, and filling.

The WisDNR will not approve a local sewer service area plan which is inconsistent with local shoreland ordinances. In addition, when evaluating a plan or amendment, the WisDNR will consider potential adverse effects of shoreline development on water quality (e.g., erosion, filtering, recharge), fish and wildlife habitat, storm/flood water storage capacity, and nearby scientific study areas, refuges, or scarce wetlands.

3.2.4 Steep Slopes

Slope is defined as RISE divided by RUN. Slope is measured by the amount of elevation increase over a certain distance; slope is not equal to the degree of the angle. For instance, a 100% slope would be a 45 degree angle over the length of the run, since the rise and run would be equal (a 200 foot lot with a 200 foot elevation increase over its distance forms a 45 degree angle of the slope).

Steep slopes are considered, in this plan and by the WisDNR, to be any area of 12% or greater slope and consisting of any soil type. Bare ground on slopes 12% or greater are considered vulnerable to soil erosion, depending on the characteristics of the soil type and site. Soil erosion on slopes 12% to 20% is often manageable with good practices. The WisDNR discourages development of slopes greater than 20% since they are more prone to erosion without more intensive or engineered best management practices and erosion control planning (e.g., retaining walls, stormwater management systems, terracing).

Any development on these slopes could result in high construction costs and severe erosion with resultant negative impacts to surface waters. Therefore, development on steep slopes should be discouraged. The WisDNR guidance goes on to specify that sewer service area plans should exclude steep slopes greater than 12%, which are near a stream, from the sanitary sewer service.

Any amendments to allow development on steep slopes must consider direct runoff into streams or rivers and must follow locally approved construction erosion control

ordinances and the institution of best management practices to control on-site runoff. Amendments or plans which are inconsistent with local erosion control ordinances or for sewered development on steep slopes which would result in direct run-off into a stream should be prohibited.

One method of identifying the steep slopes within the planning area is locating those slopes classified as having a severe or very severe erosion hazard potential (category D through F) by the Natural Resources Conservation Service. Topographic mapping and digital elevation modeling can also be used to identify steep slopes. The steep slopes shown on Map 6 on the following page were identified using a combination of these tools. In the implementation of this plan however, each property and proposal should be evaluated on a case-by-case basis to determine the extent of any steep slopes.

The definition and regulation of steep slopes by the communities within the planning area vary and are summarized below:

Chippewa County & Chippewa Falls -- steep slopes regulated in shoreland areas only

Eau Claire County – development prohibited on slopes greater than 6% in shorelands; subdivision plats must identify all slopes of 20% or greater, and development of these areas is discouraged

City of Eau Claire – slopes 20+% require engineered management practices

City of Altoona – slopes 20+% must be identified on site plans

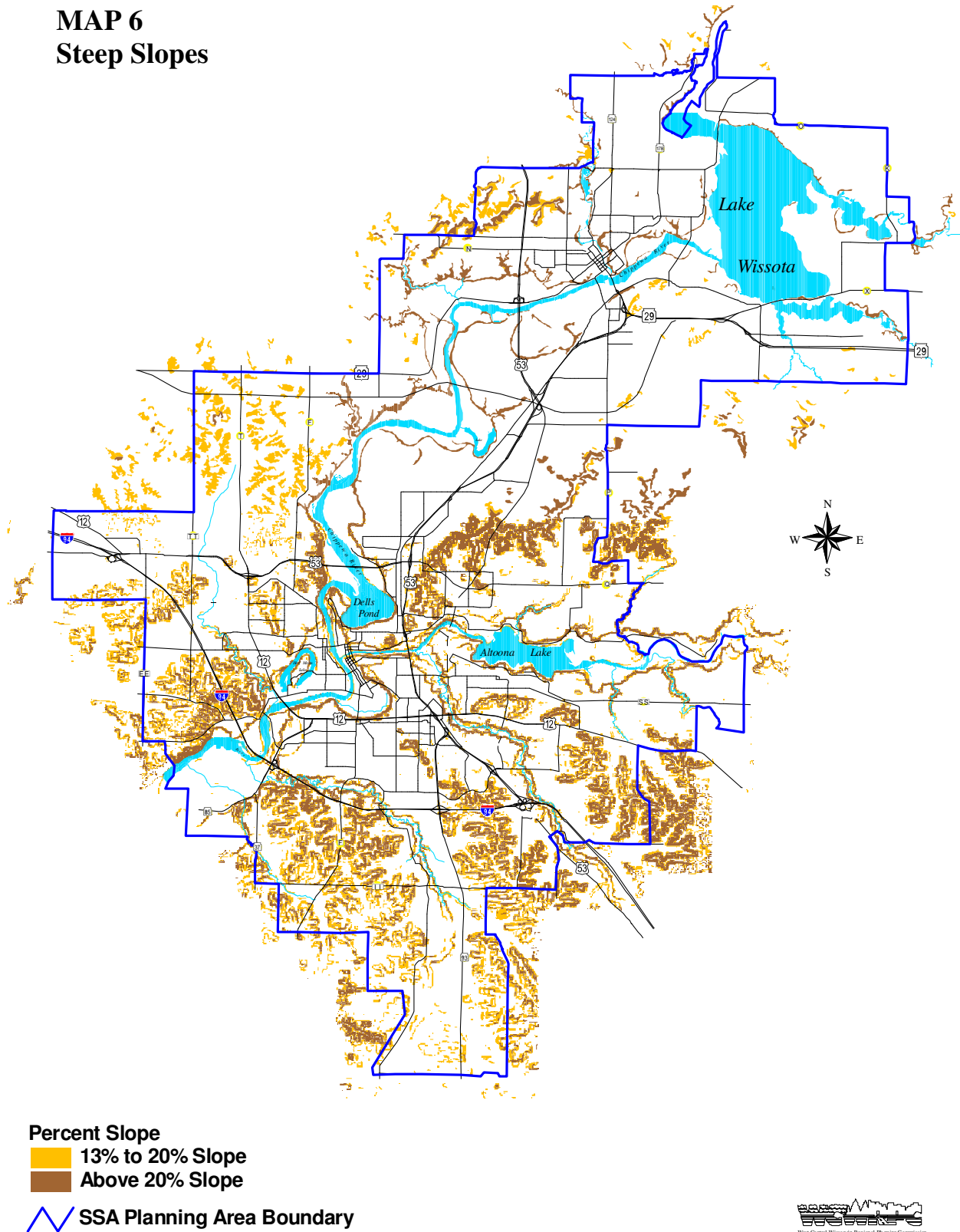
Town of Union – discourages development on slopes 12+% in its land division regulations

Other – varies in community plans, with most towns falling under their respective county

Within the 1990 sewer service area plan for the Chippewa Falls-Eau Claire area, steep slopes were defined as any area of 20% or greater slope and consisting of any soil type. The plan further delineated all areas of 20% or greater slope as environmentally sensitive areas which should be excluded from intensive urban use. Under the existing plan, sewer extensions on slopes greater than 20% within the sewer service area require a Type IV plan amendment and an erosion control plan which are reviewed on a case-by-case basis to ensure that there will be no significant adverse water quality and/or environmental impacts.

MAP 6

Steep Slopes



3.2.5 State Natural Areas and Endangered Habitats

The WisDNR Bureau of Endangered Resources conducts data searches for natural areas and endangered plants and animals and maintains the Wisconsin Natural Heritage Inventory (NHI). The NHI program focuses on locating and documenting occurrences of rare species and natural communities, including state and federal endangered and threatened species. The Bureau urges that special notice be taken to protect any and all endangered resources from development.

Both aquatic and terrestrial occurrences of rare, threatened, or endangered plant and animal species and habitats have been found throughout much of the planning area as shown on Maps 7 and 8 on the following pages produced by the Wisconsin Department of Natural Resources using NHI data. Such occurrences have been identified for large portions of the urban area, including the majority of the City of Eau Claire and City of Altoona as well as much of the Village of Lake Hallie. Potential aquatic occurrences of rare species occur throughout the lengths of the Chippewa and Eau Claire Rivers within the planning area. Locations of the endangered resources can change and a full inventory of existing locations is not readily available, so each development project should be analyzed on a case-by-case basis.

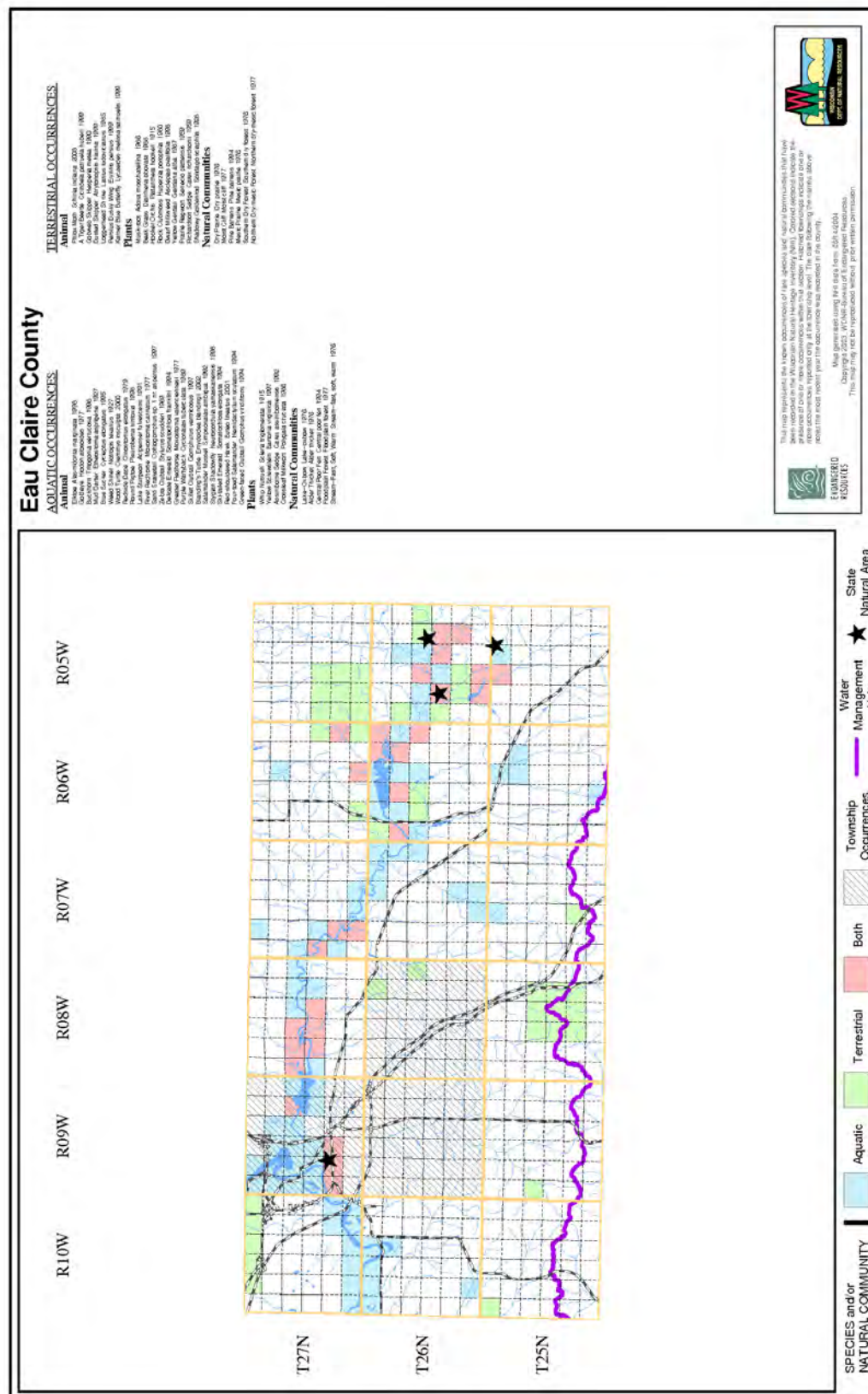
Only one State-designated natural area—Putnam Park Natural Area—exists in the planning area. The 105-acre Putnam Park Natural Area is located within the City of Eau Claire and is home to one State-designated threatened plant species. Located east from the University of Wisconsin-Eau Claire campus and following Putnam and Little Niagara Creeks, the Putnam Park Natural Area is owned by the UW-Eau Claire and was designated a State natural area in 1976. Mostly forested, the flora is dominated by impressive white and red pines, with birch, maple, hackberry, tamarack, and white cedar in the wetter portions. With varied topography, bedrock exposures, seepage springs, and a variety of soil types all in close proximity, Putnam Park possesses many plant and animal habitats. More than 400 species of plants, 100 species of birds in summer, 23 mammal species, and 6 reptile species can be found.

According to the 2001 “The State of the Lower Chippewa River Basin” report, there is a general lack of information on the biological community of the Chippewa and Eau Claire Rivers which contributes to sub-optimal management of these complex resources. Additional information and monitoring is needed in a wide range of areas, including non-point source influences, water quality impacts of reservoirs, impacts of agricultural run-off, fish migration, and effects of local land-use changes. In addition to these larger rivers, many of the streams in the areas (e.g., Lowes & Sherman Creeks) also provide important wildlife habitat and opportunities to establish and preserve greenways or wildlife corridors.

Chippewa County Rare Species & Natural Communities



Eau Claire County Rare Species & Natural Communities



3.2.6 Parks and Recreation Areas

Parks and recreation areas are important environmental assets to local communities but can vary greatly in use, size, recreational amenities, and natural features. The largest park in the planning area is the 1,062-acre Lake Wissota State Park, east of Lake Wissota in the Town of Anson.

Though only Putnam Park has been officially designated as a State Natural Area, there are other recreation areas and open spaces scattered throughout the planning area which are important environmental features which may compel or necessitate local protection. Such conservancy and passive recreation locations include:

- Kalk-Fatu Woodland Park (Chippewa Falls)
- Goldsmith Wildlife Refuge(Chippewa Falls)
- Hurd Park (Chippewa Falls)
- Riverside Industrial Park Conservancy Area (Chippewa Falls)
- Chippewa River Corridor (Chippewa Falls)
- Chippewa Falls-Eau Claire Railroad Prairie Remnants (Lake Hallie)
- Sherman Creek (Town of Union)
- Town of Washington Conservancy Area (Town of Washington)

This list is not complete, and new parks and recreation areas with significant environmental features may be designated in the future to meet community needs and/or protect natural resources. For instance, the draft *City of Eau Claire Comprehensive Plan* contemplates the acquisition of considerable floodplain property in the Town of Brunswick as a future park.

During the planning process, it was determined that parks and recreation areas are environmental constraints which should be carefully considered during local planning efforts and afforded adequate protections to preserve these important community assets. However, due to site characteristics, there may be instances where municipal sanitary sewer is preferred in some of these areas in order to best protect localized environmental features while supporting related recreational amenities (e.g., restrooms, concessions, visitors/interpretative centers). As such, parks and recreation areas do not necessarily constitute environmentally sensitive areas for which no sanitary sewer service should be provided; and sewer extensions into these areas should be evaluated on a case-by-case basis.

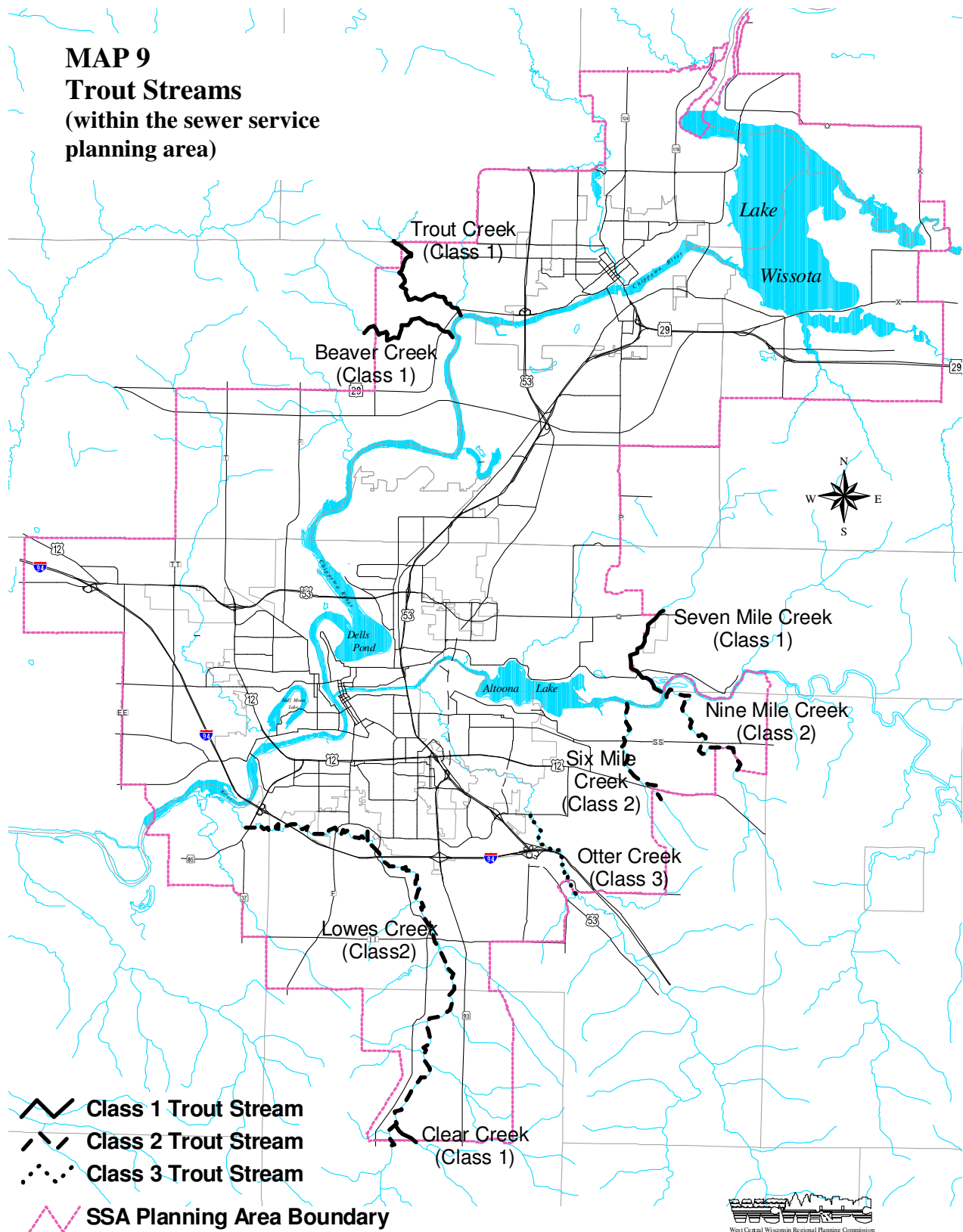
3.2.7 Trout Streams

Map 9 on the following page shows the currently designated trout streams in the planning area. Portions of two Class 1 trout streams (Trout Creek and Beaver Creek) are located in Chippewa County in the Town of Wheaton. Portions of six trout streams are located in Eau Claire County, varying from Class 1 to Class 3. The different trout stream classes are defined below:

- Class 1** – High-quality trout waters that have sufficient natural reproduction to sustain populations of wild trout, at or near carry capacity. Consequently, streams in this category require no stocking of hatchery trout. These streams or stream sections are often small and may contain small or slow-growing trout, especially in the headwaters.
- Class 2** - Streams in this classification may have some natural reproduction, but not enough to utilize available food and space. Therefore, stocking is required to maintain a desirable sport fishery. These streams have good survival and carryover of adult trout, often producing some fish larger than average size.
- Class 3** - These waters are marginal trout habitat with no natural reproduction occurring. They require annual stocking of trout to provide trout fishing. Generally, there is no carryover of trout from one year to the next.

Trout fishing is an intimate recreational activity with avid participation among many anglers. Over the past ten years, about 135,000 inland trout stamps have been sold in Wisconsin annually. Because brook and rainbow trout require cold, clear waters with silt-free bottoms, their presence is also considered an indicator of good water quality and adequate water quantity. Trout habitat can degrade due to numerous factors such as bank and upland soil erosion, loss of riparian vegetation, water diversion, logging and mining activities, and point and non-point source pollution from municipal development and agriculture. In addition, construction of dams, road crossings, and other structures impede the ability of rainbow trout to migrate upstream and down-stream, which is critical to successful completion of their life cycles.

MAP 9
Trout Streams
 (within the sewer service
 planning area)



3.2.8 Prime Farmlands

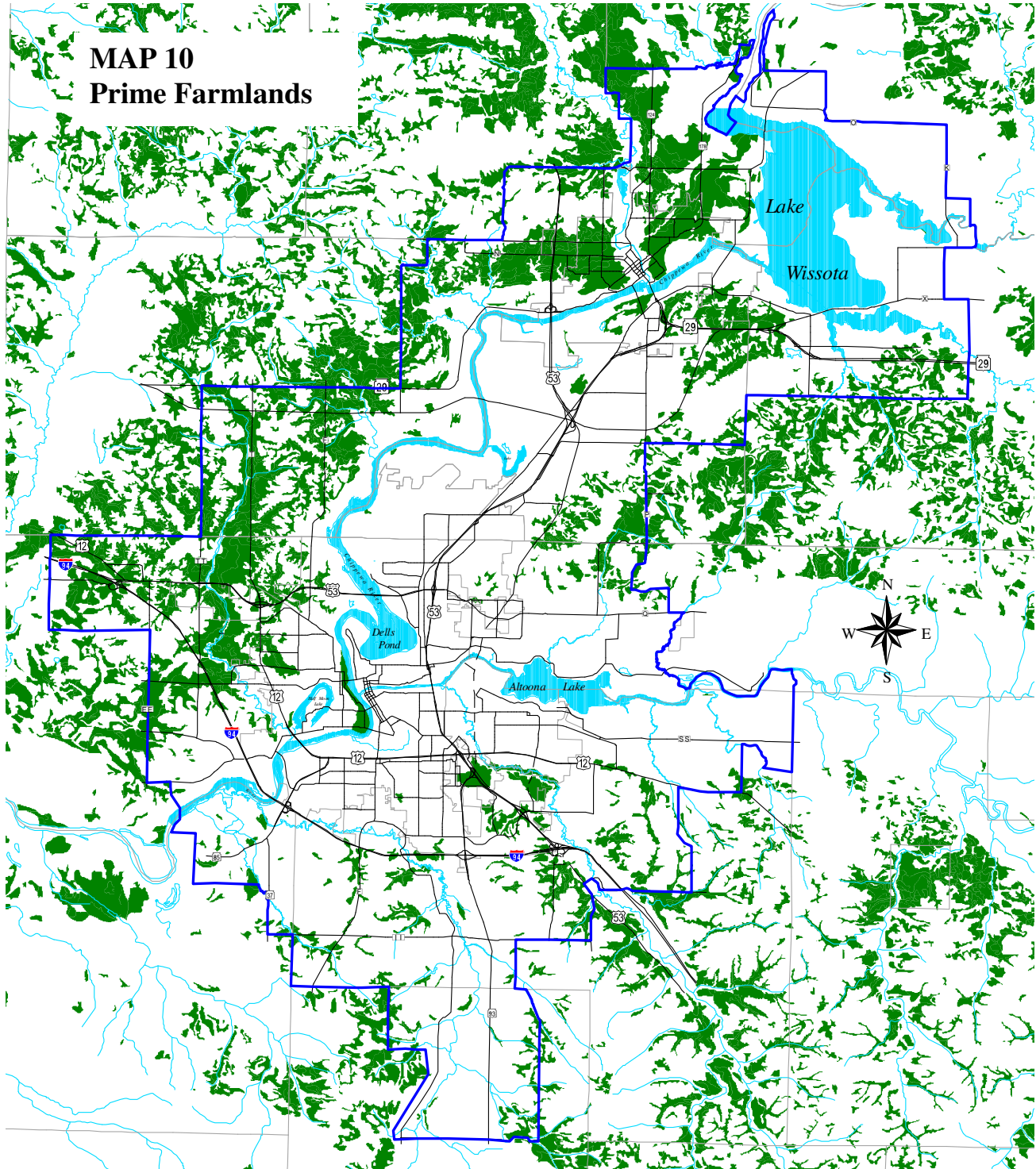
Following the timber boom of the last half of the 1800's, agriculture has been the predominant land use in the region. Most local land-use and comprehensive plans emphasize the importance of preserving and protecting valuable, productive farmland. Agriculture still maintains a very important role in the local and regional economy. As farmland is lost, other agricultural-related services also decrease (e.g., implement dealerships, transportation), making it more difficult for other area farmers to maintain operations and encouraging the further sale of farmlands. Further, farmlands are an important component of the rural character of the area, which is valued by many local communities as expressed through their respective plan vision statements.

A substantial challenge which local communities face is that prime farmlands are often also very suitable for residential construction and other development. Consideration of new development within prime farmland areas must be given in accordance with County Farmland Preservation Plans, local zoning, and other applicable local policies. These documents have implemented procedures to direct non-farm development away from prime farmland. Most prime farmlands within the unincorporated areas of the planning area have been afforded some level of protection, though the level of enforcement of these regulatory policies varies by community. As such, development pressure within the planning area continues to fragment area farmlands and convert these farmlands to other uses. And given the large, cleared acreage of many farmlands, there is often a tendency to develop these with large residential lots which are inefficient for the provision of public water, sewer, and other services.

Any developments requesting sewer hookups or extensions should consult the appropriate farmland preservation instruments to determine if the proposals are in accordance with current regulations and consistent with the visions of the local communities as expressed through their respective comprehensive plans.

Soils that fall into classes I, II, and III of the Natural Resources Conservation Services capability unit classification system are usually considered prime agricultural lands. These prime farmlands in the planning area are considerable, especially north and west of Chippewa River as shown on Map 10 on the following page. Due to the hilly topography and soil types found throughout much of the area, large portions of the existing farmland is used for dairy and pasture rather than row crops.

MAP 10 Prime Farmlands



 **Prime Farmland**
 **SSA Planning Area Boundary**

Prime Farmlands are identified by the USDA Natural Resources Conservation Service based on soils, slopes, hydrology, and other natural features.

Additional prime farmlands may exist if an area is drained, protected from flooding, or not frequently flooded during the growing season.



3.2.9 Wellhead Protection and Groundwater Recharge Areas

Municipal water suppliers are required by state administrative code to establish wellhead protection plans for new public water supply wells constructed after May 1, 1992. It is also appropriate to establish protection measures for existing public water supply wells to protect the public health, safety and welfare, and to reduce public costs should a pollution event occur. Because it is difficult to adequately react to a pollution event which occurs in proximity to a well, strict prohibitions of certain high-risk land uses should be established for that area (within the 30-day time of travel of contributing groundwater to a well). Certain high-risk land uses should be limited, and best management practices and monitoring established in the area between the 30-day and 5-year time of travel of contributing groundwater to a public water supply well.

Currently, only Chippewa County, the City of Chippewa Falls, and the Village of Lake Hallie have adopted wellhead protection plans and ordinances within the planning area. The City of Eau Claire has studied and mapped the groundwater recharge areas for its eighteen municipal wells, but has not adopted a formal wellhead protection plan or ordinance. However, a wellhead protection plan is expected to be completed for Eau Claire within the next three years as part of proposed new well construction. The City of Altoona is planning to construct a new water tower and well within the next 1-3 years which will require the development and adoption of a wellhead protection plan. In some cases in the area, wellheads and zones of contribution extend across municipal boundaries, necessitating intergovernmental cooperation to help protect water supplies.

Though some development may be allowable within wellhead protection and recharge areas, protection of the groundwater in these areas is of utmost concern to the local communities. In these areas, municipal wastewater connections might be preferred over private, on-site treatment systems for some uses. As such, these groundwater recharge areas are a very important environmental constraint but are not necessarily environmentally sensitive areas for which sanitary sewer connections should be discouraged.

3.2.10 Historical Resources

During the planning process, historical resources were not included as an environmental constraint in the context of this plan since these resources typically have no unique, direct impact on water quality management. However, historic sites are of great importance to area residents, as they are reminders of the past and also of the progress which has taken place since their construction. Therefore, they are briefly mentioned here since proposed sewer extensions and development have the potential to jeopardize these unique resources.

The Wisconsin Historical Society maintains the Wisconsin Architecture and History Inventory (AHI). This is a database of approximately 120,000 buildings, structures and objects that illustrate Wisconsin's unique history. The AHI documents a wide range of historic properties, mostly privately owned, such as the round barns, log houses, metal truss bridges, small town commercial buildings, and Queen Anne houses that create Wisconsin's distinct cultural landscape. The inventory is not comprehensive; and, in some cases, the inventory may be outdated if structures are altered or no longer exist.

A record search of the AHI database revealed a significant presence of architectural, historical, and archeological properties in communities represented in the planning area totaling 1,356 structures and sites. The far majority of these historical resources (78.8%) were found within the City of Eau Claire.

Distribution of AHI Properties	
City of Eau Claire	1,069
City of Chippewa Falls	109
City of Altoona	9
Other	<u>169</u>
Total	1,356

There may also be undiscovered prehistoric and early historic sites present. In accordance with Federal law, a listing of these archeological sites and their location is not provided so as to protect them from disturbance. However, any development requiring extensions to the sanitary sewer must be reviewed by the WisDNR, pursuant to Wisconsin Statute 44.40 (1989), against the historical resource list to determine whether historic properties within the project area will be affected. If it is determined that a historical property will be affected, the Wisconsin State Historical Society must be notified by WisDNR to determine whether the proposed extension will have possible adverse effects on the historical property.

The Wisconsin State Historical Society strongly recommends that all development proposals be surveyed by a qualified archeologist to identify any sites. Also, if the removal or alteration of any building or structure over 50 years old is proposed, the State Historical Society should be contacted so they may assist in evaluating any historical significance. Cooperation of all developers, public and private, will assure preservation of these valuable resources of our community. While these historical assets are important environmental constraints to be considered when evaluating proposed development projects, in most case they are not environmentally sensitive areas for which sanitary sewer connections and extension should not be allowed.

3.3 WATER QUALITY ASSESSMENT

According to the Wisconsin Department of Natural Resources (WisDNR) planning guidance, sewer service area plans must:

“Inventory and discuss the areas contributing to local adverse water quality impacts including industrial, agricultural and other pollutant sources. Review applicable local priority watershed reports, basin plans, wellhead protection plans, wastewater facility plans and local knowledge for pollutant factors.”¹

The guidance also states that discussion “should” be included in the sewer service area plan on local stormwater management and erosion control issues, plans, ordinances, and any related recommendations.

The development of sewer service area plans for urban areas is mandated to maintain compliance with the Federal Water Pollution Control Act Amendment (P.L. 92-500) in 1972 which established Areawide Water Quality Management Planning requirements under Section 208. As these titles suggest, the protection of water quality is an inherent goal of this planning process; and a review of local water quality issues and programs is necessary. The assessment provided here is an overview, and the reader should refer to “The State of Lower Chippewa River Basin” report prepared in 2001 by the Wisconsin Department of Natural Resources for a more detailed discussion of area water quality issues.

3.3.1 Point Source Water Quality Impacts

A point source is a stationary location or fixed facility from which pollutants are discharged or emitted (e.g., smokestack, pipe). Potential point sources for water quality pollution in the planning area are numerous. Map 11 at the end of this sub-section shows the water resources and the locations of the primary outfall points and structures in the planning area, such as wastewater treatment plant discharge points.

The WisDNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) identifies 1,066 contaminated sites, including spills, leaking underground storage tanks, and Superfund sites, in the Cities of Eau Claire, Chippewa Falls, and Altoona. Spills and leaking underground storage tanks are the most common causes of contamination in the three cities, constituting 457 (43%) and 339 (32%) of the database entries respectively.

There are five sites within the planning area which are listed in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) database as Superfund sites by the Federal Environmental Protection Agency due to contamination which poses a risk to human health and/or the environment. Three of these sites have been remediated and may be removed from the list in the future. Groundwater contamination from volatile organic compounds (VOCs) has been identified at the other two sites, National Presto Industries, Inc. and the Eau Claire Municipal Well Fields; and both have been designated as Superfund sites

¹ Wisconsin DNR. *Draft Sewer Service Area Planning Guidance*. 7/97.

and are being monitored. According to the CERCLIS database, there is a “direct relationship between the contaminants at the [Presto Industries] site and those found at the Eau Claire Municipal Well Field.”² VOC’s are a group of commonly used chemicals found in fuels, degreasers, solvents, cosmetics, drugs, and dry cleaning solution. At both sites, under current conditions, potential or actual human exposures are under control. The City of Eau Claire municipal water supply is monitored closely, and there have been no violations of Clean Water Act water quality standards for tested contaminants for over the past five years.

The planning area is also home to over 125 Tier Two facilities and over 40 Extremely Hazardous Substances (EHS) facilities. By Federal law, Tier Two facilities must annually file a Material Safety Data Sheet which identifies any hazardous chemicals present at or above 10,000 pounds at the site. EHS facilities store and/or use at least one of over 300 chemicals with extremely toxic properties and requires the development of an emergency response plan. A number of exemptions are allowed from these reporting requirements, however, including gas stations, routine agricultural products, and hospitals. Within the cities of Altoona, Chippewa Falls, and Eau Claire alone there are over 1,400 storage tanks, mostly for gas, diesel, or fuel oil, registered with the Wisconsin Department of Commerce.

Growth which occurs outside the sewer service area will most likely utilize on-site wastewater treatment systems which can pose significant groundwater quality contamination hazards if not properly designed or maintained.

3.3.2 Non-Point Water Quality Impacts

Portions of the planning area are still in agricultural production. The application of fertilizers, herbicides, and pesticides in crop production can all have negative impacts on surface and groundwater quality if not managed properly. Likewise, animal waste and manure storage can have additional negative impacts. Excessive bank erosion in wooded or heavily pastured areas continues today on some local streams and rivers, and 150 years of soil erosion has led to heavy deposition of fine sediment in many streambeds. Local farmers utilize a variety of conservation management practices to reduce such impacts and to maintain compliance with applicable State and Federal regulations. Additional measures, such as bank restoration, have been undertaken in more critical occurrences.

Currently, the planning area includes approximately 53,000 acres of undeveloped land. Continued urbanization in the Eau Claire and Chippewa Falls area increases the number of potential non-point sources of water pollution affecting both surface and groundwater resources. As impervious surfaces increase (i.e., roads, parking lots, buildings/roofs) and natural groundwater recharge areas are encroached upon (i.e., wetlands, shorelands), the amount of surface stormwater runoff can increase, resulting in flooding damage, increasing erosion, and/or increasing organic and inorganic pollutant loadings. This run-off can carry oil and fluids from roads and parking lots, pesticides and herbicides from lawns, and other contaminants which impact water quality. Over the long term, if natural surface water systems are destroyed or

² Environmental Protection Agency, “Website: NPL Fact Sheets for Wisconsin: National Presto Industries, Inc.”, www.epa.gov/R5Super/npl/wisconsin/WID006196174.htm, March 4, 2004.

fragmented, recharge areas can dry up and baseflows in streams can decrease, resulting in a loss of wildlife habitat and increasing flood potential. Also, as the amount of surface waters decrease, the proportion of nutrients, suspended solids, or pollutants increases which can further contribute to water quality problems (e.g., eutrophication).

Other contributing sources of non-point water quality concerns include the development of steep slopes and construction sites which have the potential to both increase stormwater erosion and decrease water quality. Stormwater management systems, appropriate site planning, preservation of environmentally sensitive areas, and proper agricultural practices can all help mitigate non-point source impacts on water quality.

3.3.3 Groundwater Impacts

As land is developed and converted from open space, forests, or farmlands, it can have a cumulative effect on the quality and quantity of groundwater. Groundwater recharge is expected to continue to decrease as impervious surfaces increase as the ground is paved over. Concurrently, with the increase in residential, commercial, and industrial development, there will be an increasing demand for groundwater. And, as discussed, development on private wastewater systems outside the sewer service areas can pose significant risks, especially since the majority of these structures also utilize private wells. Run-off from heavily-used roads, parking lots, lawn pesticides, and other activities can also pose a risk to these private wells.

According to “The State of the Lower Chippewa River Basin” report, all five of the watersheds in the planning area are ranked high for potential groundwater contamination based on land-use, presence of confined animal feeding operations, and sample data for nitrates and pesticides from private wells. In the Lower Chippewa River Basin, 15% of the 1,114 public and private potable wells tested exceeded the 10 part per million (ppm) drinking water and groundwater enforcement standard for nitrate levels. The groundwater prevented action limit of 2 ppm was exceeded in 58% of the samples. For pesticide contamination, 1% of samples exceeded the preventive action limit and 0.12% of samples exceeded the enforcement limit. Six percent of wells had detectable levels of pesticides but were below the limit.

3.3.4 Water Quality Protection

Numerous activities are undertaken at the Federal, State, regional, and local levels to protect surface and groundwater quality. The laws, regulations, and programs are too numerous to mention all within this plan, though some key programs which relate to this planning effort are described here or in the previous plan sections (e.g., wetlands, shoreland zoning, steep slopes, wellhead protection). Through the implementation of applicable Federal, State, and local permitting processes (e.g., siting of structures, storage tanks, erosion controls, stormwater management, environmental constraints), significant water quality impacts should be avoidable as the planning area develops.

State of the Lower Chippewa River Basin Report

Completed in 2001 as required by Section 208 of the Federal Clean Water Act, this document was prepared by the Wisconsin Department of Natural Resources and guides water resource activities in the Lower Chippewa River Basin. This water quality management basin plan includes an analysis and recommendations on surface water quality, non-point sources, and groundwater, expanding on the assessment provided in the previous subsections. The *Chippewa Falls/Eau Claire Urban Sewer Service Plan for 2025* is a companion document and addendum to the basin plan.

Chippewa Falls/Eau Claire Urban Sewer Service Plan for 2010

The current planning effort is an update of the previous sewer service area plan completed in 1990. The plan identifies environmental corridors (sensitive areas), delineates the sewer service boundary, and provides procedures for new sewer connections or extensions.

Local Wastewater Treatment and Facility Plans

The Chippewa Falls and City of Eau Claire wastewater treatment plants must maintain permit compliance. Descriptions of these plants are provided later in this report. Individual septic systems also must abide by applicable State laws covering system design and obtain sanitary permits.

Erosion Controls and Stormwater Management Planning

By State of Wisconsin law (NR 216, NR 151), construction sites that disturb one or more acres of soil are required to obtain a construction site erosion control permit and develop a stormwater management plan.

Chippewa County

Steep slopes are regulated in shoreland areas only. It is anticipated that the County may adopt stormwater management and erosion control ordinances in the near future fairly similar to the existing ordinances for the City of Chippewa Falls.

Eau Claire County

Stormwater management and erosion controls are addressed when proposing a land division as part of the County subdivision regulations. SEH, Inc is currently under contract with the County to prepare a county stormwater management plan. The County will be preparing a stormwater management ordinance and erosion control ordinance in accordance with State models at some time in the future once the plan is complete.

Eau Claire County has a policy prohibiting development on slopes of 20% or greater. Approval of subdivision plats and Certified Survey Maps are contingent upon delineating areas that have slopes of 20% or more and specifying that these areas are unavailable for development. On existing lots, development is discouraged on slopes of 20% or greater, although the County cannot prohibit development in such areas.

City of Eau Claire

The City of Eau Claire continues to refer to its *1992 Comprehensive Stormwater Management Plan* when making decisions regarding stormwater volume, rate, storage, quality, and erosion

control. The *City of Eau Claire Comprehensive Plan* includes recommendations to review and amend the Stormwater Management Plan for certain sub-areas and watersheds based on changing land uses. The comprehensive plan goes on to recommend that a regional stormwater management plan for all watersheds in the metropolitan area should be prepared. Slopes 20+% require appropriate, engineered erosion control practices. Wastewater connections to development on slopes of 20-30% require a special sewer service area plan amendment.

City of Chippewa Falls

The City of Chippewa Falls does have a stormwater management ordinance and a construction site erosion control ordinance. Currently, a stormwater management plan is being developed. A base model of stormwater flows for the City is being created to help identify possible trouble spots; best management practices will then be recommended in the stormwater management plan to address these trouble spots and help reduce suspended solids. Slopes along rivers would be most vulnerable to erosion. Current local ordinances do not regulate steep slopes.

City of Altoona

Per its comprehensive plan, the City will require new development projects to include City-approved stormwater management facilities. Slopes 20+% are identified and considered as part of the their environmental assessment for review of land divisions. Their comprehensive plan includes the objective of preserving steep slopes (15+%). Per its comprehensive plan, all site plans, preliminary plats, and CSMs are required to accurately depict all environmental corridor natural resource elements, including steep slopes. In general, areas prone to erosion concerns tend to be located in shorelands with sandy soils.

Priority Watershed Planning

The planning area intersects five different watersheds—Lower Eau Claire River, Otter Creek, Lowes Creek, Muddy & Elk Creeks, and Duncan Creek. Three of these watersheds (Lower Eau Claire River, Lowes Creek, & Duncan Creek) have been identified by the Wisconsin Department of Natural Resources as priority watershed projects in order to reduce the likelihood of non-point pollutants entering surface waters.

These three priority watersheds, and 83 others in the State of Wisconsin, were selected as priority watersheds based on the following factors:

- potential to respond positively and/or be protected by non-point source controls
- unique environment for endangered or threatened species
- water quality and habitat degradation impacts on fish populations and biodiversity
- water chemistry criteria
- macro invertebrate biotic index rating
- negative changes in stream morphology and vegetation
- classification as a threatened stream
- classification as an outstanding or exceptional resource water
- sensitivity of a lake to phosphorus loading
- classification of a lake as a high resource or high recreation use lake
- susceptibility of groundwater to contamination based on depth to bedrock, bedrock type, depth to water table, soil characteristics, and surface deposits

For each designated priority watershed, WisDNR develops a non-point source control plan with management actions, implementation policies, and procedures which encompass:

- erosion control and sediment management
- specific pollution reduction goals, including goals for each urban area
- animal waste, nutrient, and pesticide management
- stormwater, groundwater, and surface water management
- related information, communication, and educational efforts
- related ordinances, enforcement, and monitoring

Watershed plans were implemented locally, with the WisDNR providing up to 70% cost sharing for the installation of best management practices, generally over a ten- to twelve-year period. Currently, the program is being phased out; and no new grants are being awarded. The Lower Eau Claire River and Lowes Creek projects have been completed and only the Duncan Creek project remains open. Since many of the ongoing recommendations in these plans will no longer be directly linked to a funding source for implementation, the continued applicability of these priority watershed plans is uncertain.

Local Impaired Waters (2004 303D List)

Section 303(d) of the Federal Clean Water Act requires each state to periodically submit to EPA for approval a list of impaired waters. Impaired waters are those that are not meeting the state's water quality standards. The Department of Natural Resources last submitted an updated list to EPA in April 2004.

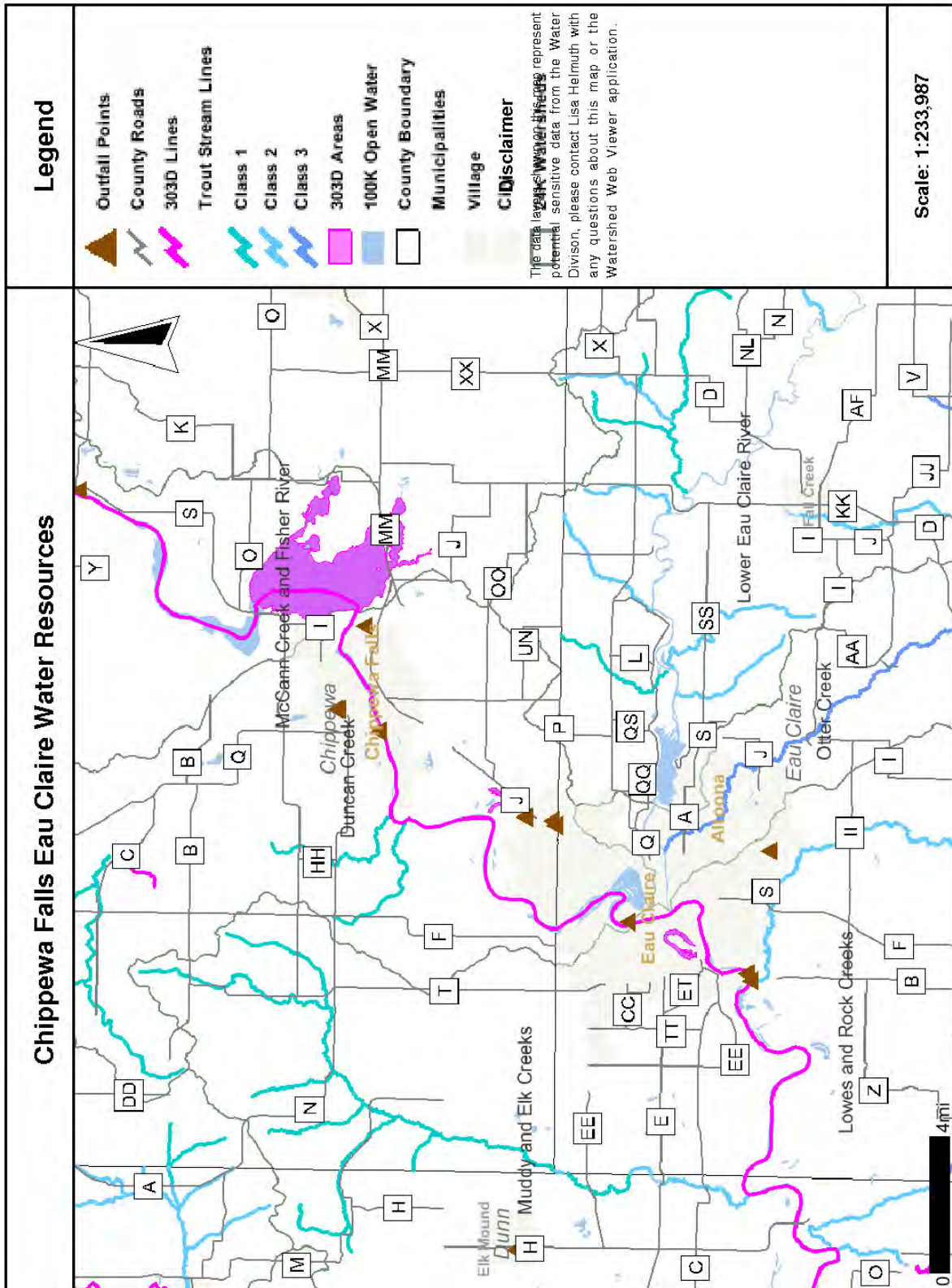
To address impaired waters, the U.S. Environmental Protection Agency has established the Total Maximum Daily Load (TMDL) Program. TMDLs specify the maximum amount of a pollutant a water body can assimilate and still meet a state's water quality standards. The TMDL process links the development and implementation of control actions to the attainment and maintenance of water quality standards and designated uses.

The following are the impaired surface waters within the planning area:

Chippewa River (low priority):	pollutants -	mercury, metals, PCBs
	impairments -	aquatic toxicity, fish consumption advisory
Lake Hallie (medium priority):	pollutants -	sedimentation, phosphorus
	impairments -	eutrophication, pH, sedimentation
Lake Wissota (medium priority):	pollutants -	sedimentation, phosphorus
	impairments -	eutrophication, pH, sedimentation
Half Moon Lake: (approved TMDL Plan)	pollutants -	phosphorus
	impairments -	pH, eutrophication

Provided by the Wisconsin Department of Natural Resources, Map 11 on the following page shows the extent of the local impaired waters and other water resources in the area.

MAP 11 Water Resources



Other Local Land-Use Controls and Plans

Local governments utilize a variety of land-use controls to further protect water quality, such as shoreland/wetland zoning, floodplain zoning, and wellhead protection planning discussed previously. Proposed projects located in wetlands and navigable waters must also be reviewed by the U.S. Army Corps of Engineers under the Federal Clean Water Act.

The following are some additional plans and ordinances applicable to the planning area which are related to water quality management:

- Lake Altoona Management Plan, 1981
- Lake Altoona Protection & Rehabilitation District Implementation Plan, 1988
- Eau Claire County Groundwater Management Plan, 1994
- Chippewa County Animal Waste Management Ordinance
- Eau Claire County Animal Waste Storage Ordinance

3.4 ENVIRONMENTALLY SENSITIVE AREAS

Environmentally sensitive areas (f/k/a environmental corridors) are...

"[m]ajor areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints...to be excluded from the 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 of the state from both point and non-point sources of pollution include but are not 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." NR 121.05(1)(g)(2)(c).

Environmentally sensitive areas are significant areas of environmental resources characterized by often continuous systems of open space, physical features, environmentally sensitive lands, and natural or cultural resources which can be adversely impacted by development. These areas are often evident to people in the area and they identify with them as significant natural areas in their surroundings. Environmentally sensitive areas, as implemented in this plan, also include isolated, non-continuous natural and cultural features which meet specified resource criteria. The environmental constraints, environmental conditions, and other significant local features identified in the previous two sub-sections may also be environmentally sensitive areas.

Environmentally Sensitive Areas versus Environmental Corridors

In past plans, environmentally sensitive areas were referred to as "environmental corridors" and the terms were often used interchangeably.

The WisDNR recently amended their guidelines to state their preference for use of the term "environmentally sensitive areas" since the sensitive resources in need of protection may not be a part of a linear, contiguous corridor.

The adverse impacts caused by development in these areas can create undue costs to society in the attempt to alleviate those problems. Managing development in these areas either eliminates or reduces the adverse impacts from development. The impacts of developing in some of these areas cannot be overcome by management; in those areas, it is prudent to prohibit development. In managing the development in those areas which can accommodate it, the costs associated with the adverse impacts of development can be shifted from society as a whole to those who choose to develop in them. This is accomplished by ensuring development occurs using engineering, site design, construction and management practices which address or mitigate potential adverse impacts.

3.4.1 Delineation of Environmentally Sensitive Areas

WisDNR recommends lands delineated as environmentally sensitive areas not be developed for intensive urban use. NR121.05(g)(2)(c) of the Wisconsin Administrative Code identifies those environmental constraints which should be excluded from the sanitary sewer service area due to the potential for adverse impacts on water quality from point and non-point pollution.

The identification of environmentally sensitive areas is intended to: reduce runoff and erosion damage around lakes and rivers, preserve the quality of surface and ground water, guide development to protect environmental constraints, prevent excessive non-point source pollution, provide long term protection of wildlife habitats and recreation areas, and reduce public utility costs. Prohibiting development of environmentally sensitive areas is an effort to become more critical of the degrading effects development can have on our environment. Directing sewer development into areas with minimal environmental impact to protect water quality is the overreaching goal of this plan.

This Sewer Service Plan defines the environmentally sensitive areas as being:

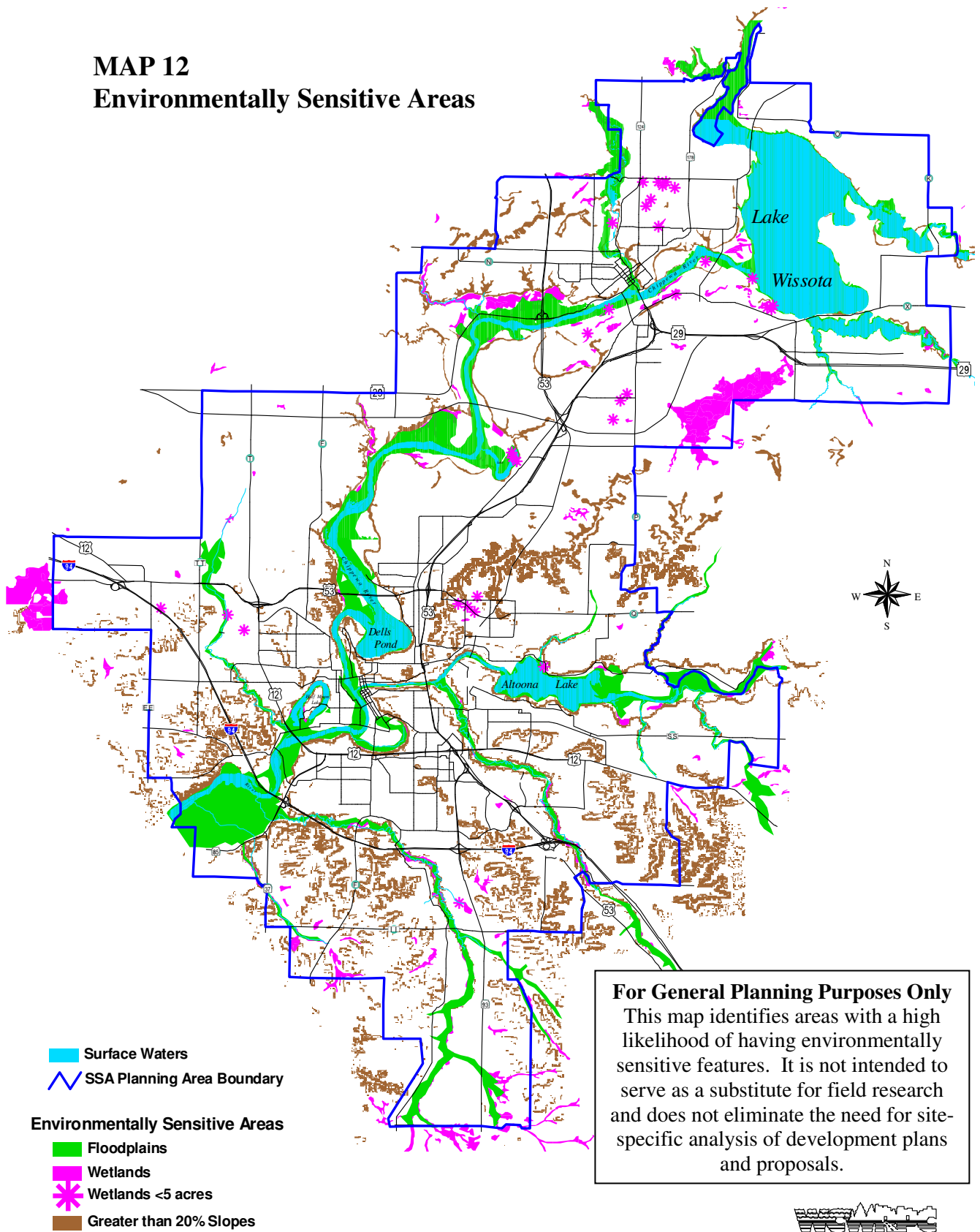
- **Wetlands** – Defined and regulated by the Wisconsin Department of Natural Resources.
- **Floodplains** – Identified as all areas within the Federal Emergency Management Agency 100-year flood hazard zones.
- **All areas of 20% or greater slope** – Erosion control management practices should be further required for any development on slopes greater than 12%.
- **Endangered species and habitats** -- Evaluated on a project-by-project basis since specific locational data for endangered species and habitats in the area are not readily available and such locations are subject to change.
- **Closed depressions or sinkholes** – No known closed depressions or sinkholes of significant size have been identified in the planning area. However, if closed depressions or sinkholes are found, sanitary sewer connections or extensions to such areas should not be allowed due to potential erosion and vulnerability to water quality vulnerability.

The environmentally sensitive areas for the planning area are depicted on Map 12 on the following page. It should be noted that maps delineating the environmentally sensitive areas will be used for review of proposed sewer extensions and hookups. However, due to the accuracy limitations of these maps, field research is also needed and actual site-specific data will also be used to determine plan conformance, especially in the case of endangered species and habitats.

One change from the previous plan is that **shorelands** are now excluded as an environmentally sensitive areas in the context of this plan. However, local governments should enforce existing shoreland ordinances and implement existing plans/programs to deter new development from these areas. Concurrently, these existing protections should also help protect the water quality of area trout streams. Shorelands were excluded as environmentally sensitive areas since there may be previously existing development in shoreland areas on private septic systems for which a sanitary sewer connection is preferred.

Similarly, prime farmlands, wellhead protection/recharge areas, and parks are also important environmental assets which should be protected and conserved. However, there may be instances where the provision of sanitary sewer to these areas is preferred or desirable.

MAP 12 Environmentally Sensitive Areas



Generally, there are two criteria which may permit sewer extension or hookups to lands upon which there are environmentally sensitive areas:

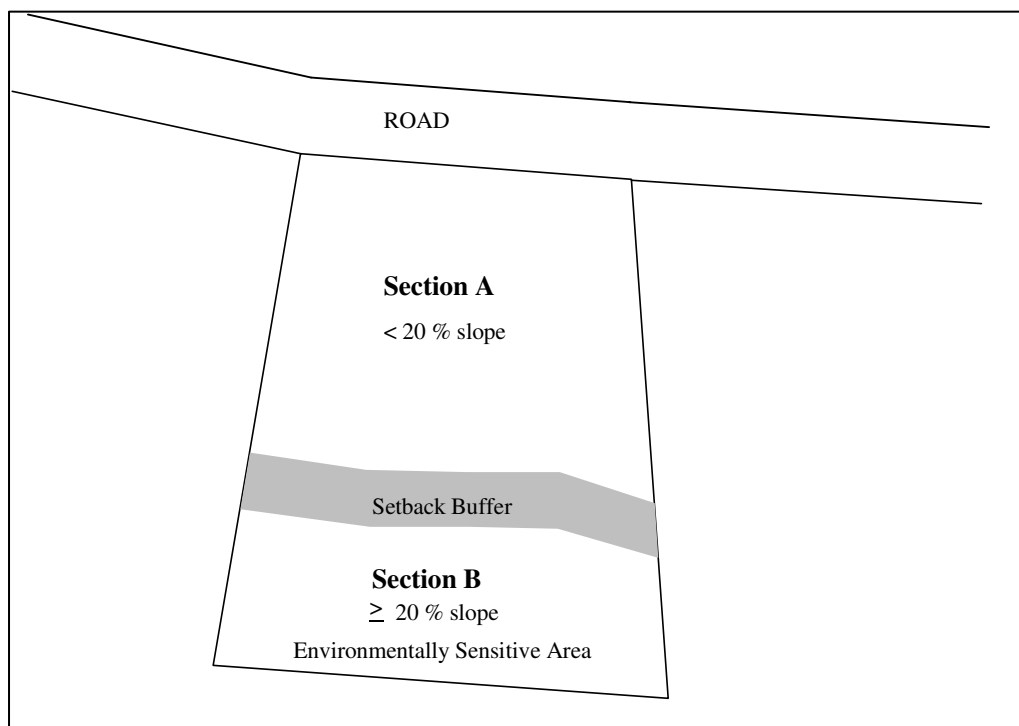
- 1) non-encroachment of the environmentally sensitive portion of a site (see subsection 3.4.2); and,
- 2) enforcement of the Uniform Dwelling Code and local erosion controls allowing sewer extensions into 12% to 20% steep sloped areas (see subsection 3.4.3).

3.4.2 Non-Encroachment of the Environmentally Sensitive Portion of a Site

The plan does allow sewer extensions or hookups to buildings on lots which are partially within an environmentally sensitive area if the actual construction is not on that portion of the lot affected by any one of the five criteria (wetlands, floodplains, 20% or greater slope, endangered species/habitats, and closed depressions). In addition, there must be sufficient setbacks and erosion control measures taken, as determined by local zoning or land development controls.

An example of this may be a residential subdivision lot, of which only a portion is greater than 20% slope, as depicted in Figure 4. Section B has a slope greater than 20%, which defines it as an environmentally sensitive area. Section A is the portion of the lot with less than 20% slope and thus, with locally acceptable setbacks and erosion control measures, would be permitted extension of sewer service by the local municipality without a plan amendment.

FIGURE 4. Environmentally Sensitive Area Setbacks



Any alteration of wetlands, floodplain, slopes 20% or greater, endangered species/habitat, or closed depressions to remove these areas from an environmentally sensitive area, and hence

make them available for sewer development, is prohibited. Any change to the environmentally sensitive area delineation requires WisDNR approval and a plan amendment.

3.4.3 Enforcement of the Uniform Dwelling Code and Local Erosion Controls Allowing Sewer Extensions Into 12% to 20% Steep Sloped Areas

The need to extend sewer lines indicates impending development of land. Naturally, the exposure of soils during the excavation and building process soon follows. The potential for these exposed soils to either reach a surface water or storm sewers leading to surface waters increases without adequate construction site erosion controls. Soil loss rates increase exponentially as slope increases; therefore, greater damage may result from development on lands with 12% to 20% slope without properly installed and maintained construction site controls. Sedimentation of surface waters can be a serious problem in developing areas and can result in reduced habitat for fish spawning and aquatic insects.

The Department of Commerce requires all communities to conduct inspections in order to determine compliance with the Wisconsin Uniform Dwelling Code (IHLR 20-25). The Uniform Dwelling Code (UDC) applies to all one- and two-household homes, manufactured buildings for dwellings, and newly constructed community-based residential facilities providing care, treatment and services for three to eight unrelated adults constructed after June 1, 1980. The UDC contains many provisions, one being containment of soils on the developing site with erosion control measures.

Each municipality is responsible for proper implementation and enforcement of the UDC and their respective erosion control ordinances. Failure to do so may impact sewer extension approvals within those municipalities where improvements in enforcement are needed.

3.4.4 Other Environmentally Sensitive Area Considerations

While this sewer service plan emphasizes preservation of environmentally sensitive areas, it also recognizes the possibility of a conflict between environmental preservation and legitimate local and regional development. An example may be the need to cross an environmentally sensitive area to service an outdoor recreation facility with sanitary sewer lines. When such a conflict occurs, the problem should be resolved with utmost care taken to minimize damage to the environment. Any changes to the environmentally sensitive areas delineation of this plan requires WisDNR approval and a plan amendment.

3.5 ANALYSIS OF WASTEWATER TREATMENT SYSTEMS AND DEVELOPMENT AREAS

3.5.1 Current Sanitary Sewerage Systems

The Chippewa Falls/Eau Claire Urban Area is served by two wastewater treatment facilities – the Chippewa Falls and Eau Claire Wastewater Treatment Plants. The City of Altoona also owns and manages a sewage collection system which is connected to the City of Eau Claire treatment facility. Thus, the Cities of Altoona, Chippewa Falls, and Eau Claire are the designated management agencies for the area.

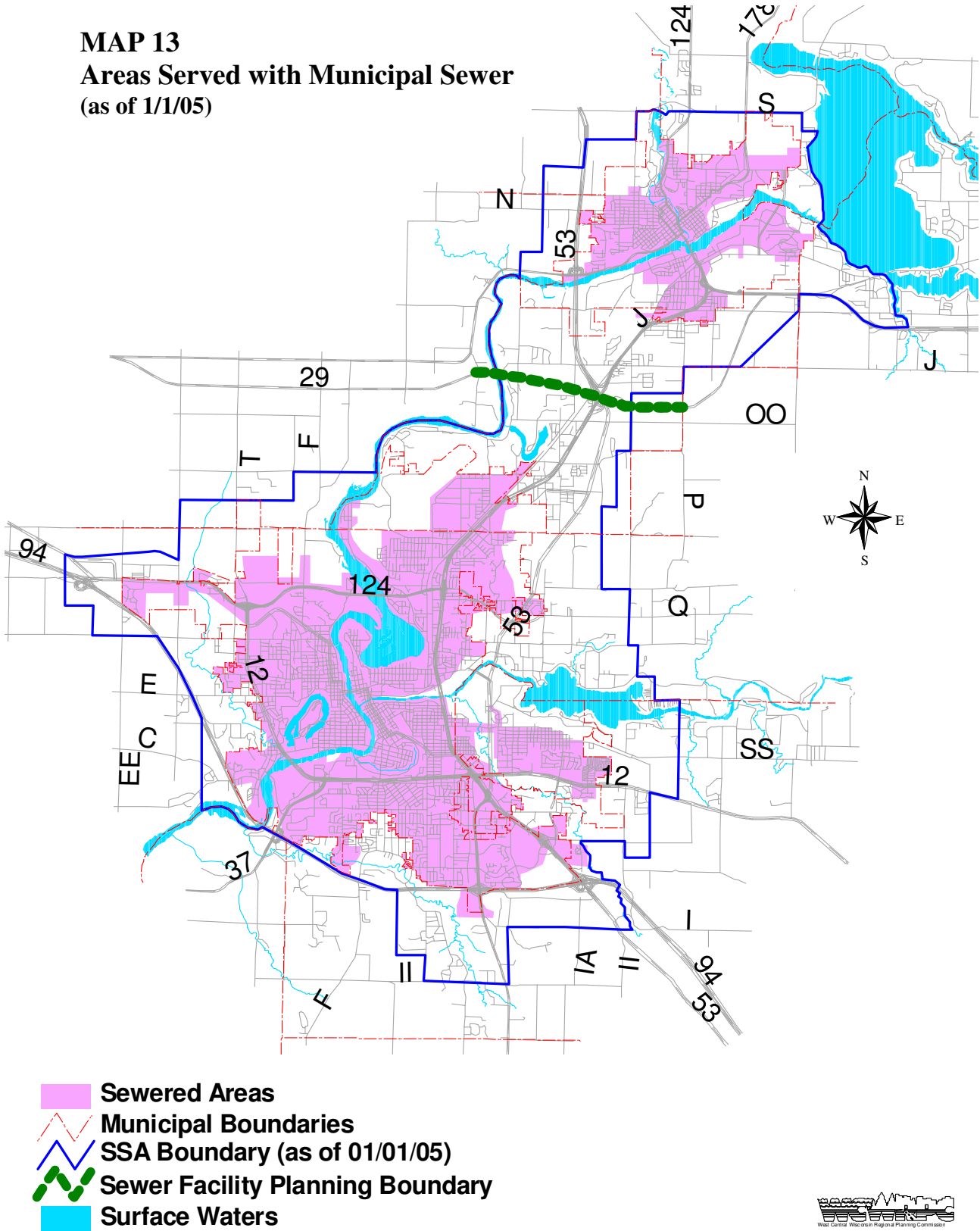
The Chippewa Falls plant serves the City of Chippewa Falls and the Eau Claire plant serves the Cities of Eau Claire and Altoona, in addition to portions of the Washington Heights area. Map 13 on the following page shows the sanitary sewer trunk systems and areas currently served with municipal sewer for both sanitary sewer systems as of January 1, 2005, along with the current (prior to this plan) sewer service area for reference.

Both the City of Chippewa Falls and City of Eau Claire have long-standing policies that sanitary sewer service would only be provided to properties located within their respective municipal limits. Landowners of unincorporated properties would need to petition for annexation, and meet all applicable standards for annexation, prior to receiving sanitary sewer service. As could be expected, at times this has resulted in some strained relationships between the cities and their respective neighboring towns. This policy was upheld in the 1970s after the City of Eau Claire participated in a lengthy legal battle which went to the U.S. Supreme Court.

In April 2003, the Village of Lake Hallie was incorporated under Wisconsin Statutes Section 66.0207. This is especially relevant to this plan due to the Village's location between the two cities and since those landowners within the Village would no longer be able to petition either the City of Chippewa Falls or City of Eau Claire for annexation and, thus, water and sewer services. Currently, the Village of Lake Hallie is experiencing considerable growth, though no community sanitary sewer service is provided within the community.

Map 13 also shows an important boundary used during facility planning. State Highway 29 is used as a break or boundary during wastewater treatment planning facility planning in the urban area due primarily to topography, with the City of Eau Claire Facility Plan encompassing those areas to the south and the City of Chippewa Falls Facility Plan encompassing those areas to the north. The STH 29 corridor is roughly where a natural drainage break exists, with drainage flowing towards each respective facility. Sewer service could be extended further from either city with appropriate engineering (and likely increased construction costs), but natural drainage patterns combined with the physical barrier which the highway and its associated stormwater improvements impose makes State Highway 29 an appropriate planning boundary.

MAP 13
Areas Served with Municipal Sewer
(as of 1/1/05)



3.5.2 Description of Wastewater Treatment Plants

Chippewa Falls Wastewater Treatment Plant

Located at 1125 West River Street, this facility on the north side of the Chippewa River is somewhat centrally located to the community. Initial portions of the Chippewa Falls Wastewater Treatment Plant were constructed in 1952. The project included the control building and raw sewage pumping stations, the primary clarifiers, and two digesters which currently serve as secondary digesters.

The secondary treatment facilities were added in 1968 to allow the City to meet increasing wastewater flow and organic load demands. The major units included the four aeration basins, two final clarifiers, return sludge pumping facilities, engine-driven blowers, and the primary digester.

Improvements in 1984 increased the hydraulic capacity of the preliminary treatment units, increased raw sewage pumping capacity, added a third clarifier, and provided for the construction of a new chlorine contact tank. In addition, flood protection and effluent pumping facilities were provided to ensure that treatment plant operation can be maintained during high river stage.

A \$5,000,000 expansion was completed in 1997. The expansion upgraded the removal system to include biological phosphorous removal, additional bio-solid handling, and automated facilities.

In 1999, a digester cover was replaced and additional sludge heating and mixing equipment was installed at a cost of \$1,000,000. An effluent diffuser was also constructed to help reduce the concentration of copper in the effluent, thus allowing for an increase in the permitted amount of copper able to be discharged at the plant.

Between 2003 and 2005, both secondary digester covers were replaced and external heat exchange and mixing systems were installed. The three 1960's vintage engine-driven blowers were replaced with 150hp electric motors and new blowers and controls. Two 30 kw Capstone Micro-turbines were installed to utilize methane gas produced in the anaerobic digesters. A heat exchanger for micro-turbine exhaust was added to increase efficiency, and the digester heating boiler was replaced. The control building size was doubled to include a new laboratory, office space, and personnel facilities. The grit removal system was also replaced. New motors were installed on the existing raw sewage pumps and one new pump and motor were added.

The treatment plant has a design capacity of 5.61 MGD and can treat a momentary peak flow of nearly 15 MGD. The plant is currently operating at 75% of BOD capacity with a current average sewer flow of 2.2 million gallons a day.

The Chippewa Falls plant provides physical and biological treatment to obtain a secondary level of treatment. The physical treatment is provided by a bar screen, grit removal, and primary and

secondary clarifiers. The biological treatment is provided through the activated sludge process in which organisms and bacteria are allowed to feed on the organic matter in the wastewater in the presence of oxygen. Chlorine is then added to kill the remaining micro-organisms and the treated wastewater is discharged into the Chippewa River. The settled solids, or sludge, from the primary clarifiers and scum from the primary and secondary clarifiers are pumped to anaerobic digesters. The anaerobic digestion system consists of one primary and two secondary digesters. Once the sludge has been stabilized and thickened, the sludge is applied to agricultural land or stored for later application.

<i>Chippewa Falls Wastewater Treatment Plant Design Wastewater Flows and Characteristics</i>	
<u>Parameter</u>	<u>Design Characteristic</u>
Design Flow	5.61 MGD
Average Monthly Flow	3.099 MGD (high) 2.200 MGD(low)
Peak Flow	5.0 MGD (10/10/2000)
Design BOD-5 day loading	5,330 lbs/day
Monthly Avg BOD-5 day loading	5,100 lbs/day (high) 3,200 lbs/day (low)
Monthly Avg BOD-5 effluent concentration	7 mg/l (high) 5 mg/l (low)
Monthly Avg Suspended Solids concentration	17 mg/l (high) 9 mg/l (low)

The 2004 Compliance Maintenance Annual Report (CMAR) rated the plant at 3.5 points. Several plant processes are at performance limit capacity, including: RAS pumping, final clarification, and solids handling. Very high summer weekday organic loads (>5,000 lbs/day BOD) and low weekend organic loads make control of the biological phosphorus removal process very difficult and sometimes unreliable. It has also led to settlability problems in the final clarifiers due to filamentous microorganism growth. Some form of flow/load equalization may be necessary.

Eau Claire Wastewater Treatment Plant

The initial wastewater treatment plant in Eau Claire was built in 1940 at the present plant location on Ferry Street on the Chippewa River on the southwest corner of the community. This plant consisted of settling tanks, digesters, and sludge drying beds. The treatment facility was expanded in 1960 with construction of additional settling tanks and chlorination facilities.

The present secondary treatment plant was built in 1980 and consists of grit tanks, primary clarifiers, rotating biological contractors (RBC's), final clarifiers, and a chlorine contact system. The biosolids produced from the treatment process are treated in four anaerobic digesters and then applied to agricultural fields. The biosolid storage capacity is inadequate to meet the six-month storage requirements and expansion is being considered.

The Eau Claire treatment plant has a design flow capacity of 11.5 million gallons per day (MGD) and currently treats an average of about 6.5 MGD. The current Facilities Plan, dated December 1992, indicates that the plant will require updating by 2015. Trace copper from local manufacturing can be found in the sewage, but this has not been a problem due to pretreatment and current lower levels of manufacturing activity, but could become an issue in the future.

The Eau Claire wastewater treatment plan is presently meeting applicable wastewater quality standards. The Wastewater Pollution Discharge Elimination Permit (WPDES) for the plant was reissued in 2005 and contains an ammonia limit to the discharge, which will involve plant modifications.

<i>Eau Claire Wastewater Treatment Plant Design Wastewater Flows and Characteristics</i>	
<u>Parameter</u>	<u>Design Characteristic</u>
Design Flow	11.5 MGD
Average Monthly Flow	7.835 MGD (high) 6.095 MGD(low)
Peak Flow	11.99 MGD (5/14/2003)
Design BOD-5 day loading	33,700 lbs/day
Monthly Avg BOD-5 day loading	17,901 lbs/day (high) 13,002 lbs/day (low)
Monthly Avg BOD-5 effluent concentration	15 mg/l (high) 6 mg/l (low)
Monthly Avg Suspended Solids concentration	17 mg/l (high) 10 mg/l (low)

The December 1992 Facilities Plan amendment includes an implementation plan for facility improvements. Additional attention to the phosphorus removal system may be required within the next 6-8 years. The 2003 Compliance Maintenance Annual Report (CMAR) rated the plant at 32 points, noting the overall age of the facility and the fact that only four to five months of sludge storage capacity was available.

3.5.3 Regional Treatment Alternatives

The existing *Chippewa Falls/Eau Claire Urban Sewer Service Area Plan for 2010* analyzed a variety of wastewater treatment alternatives, including having a single regional facility, three regional facilities, and on-site systems. Based on the analysis, it was determined that utilizing the existing two sites and facilities was the most cost-effective method of providing treatment for the service area.

The Wisconsin Department of Natural Resources maintains a non-proliferation policy for wastewater treatment. The first sentence of NR 110.08(5), Wis. Admin. Code reads, “It is the policy of the department to restrict the construction of new sewage treatment facilities in order to preserve and protect the quality of waters of the state.” Any proposals for new or upgraded facilities must be “necessary” and “cost-effective” (NR 110.08(5), 110.08(6), and 110.08(4)). Regionalization alternatives typically provide certain efficiencies in management and operation from one plant versus multiple smaller plants, though these alternatives should be individually assessed on a project-specific basis for environmental pros and cons.

Recently, the Village of Fall Creek to the southeast of Eau Claire investigated alternatives for the future of wastewater services for their community, including potentially connecting to the City of Eau Claire system. Given the distance, approximately twelve miles, it was determined that this alternative would not be cost-effective at this time.

3.5.4 Engineering Constraints

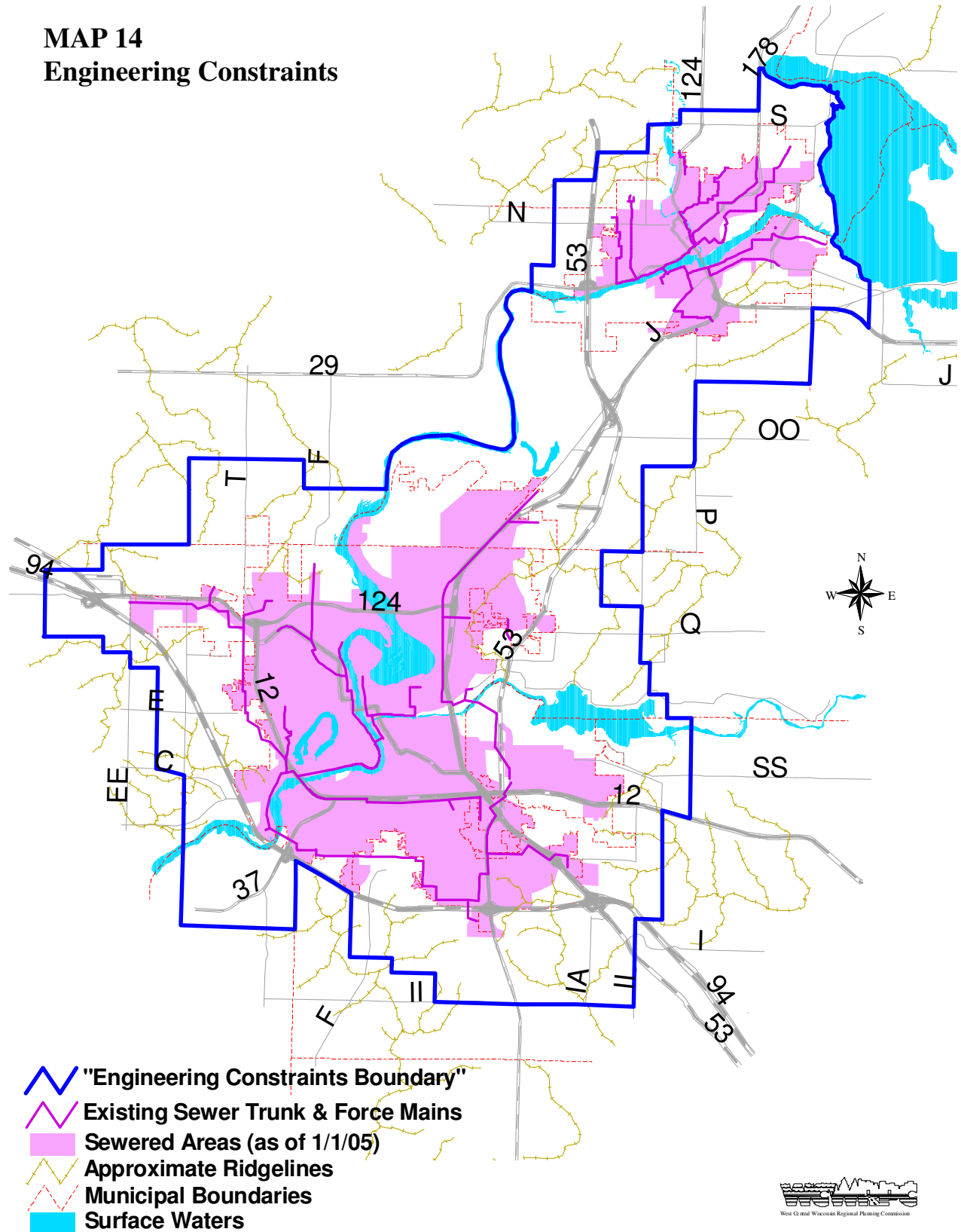
In the context of this plan, “engineering constraints” are directly related to the technical feasibility of providing cost-effective municipal sewer services. Three primary factors constitute these engineering constraints—the existing sanitary sewer infrastructure, topography, and other significant barriers (e.g., interstate highways, large water bodies, existing development). These constraints can then be compared to expected growth areas to help establish the sewer service boundary. Fragmented or semi-large lot residential development on private sewer systems can be an engineering constraint since it would not be cost-efficient to provide sanitary sewer services to non-contiguous, individual parcels.

Map 14 on the following page generally delineates those unsewered areas which can be most cost-effectively served by municipal sanitary sewer based on engineering constraints, also keeping in mind local growth trends of where development is occurring. This map was created by working closely with the engineering personnel from the Cities of Eau Claire and Chippewa Falls to identify physical (and related financial) barriers to expanding existing sewer service to potential growth areas. Topography was a principal driving factor during this analysis. As shown on Map 14, the area delineated as being most cost-effective for future sewer service closely follows ridgelines; in many of these cases, to extend sewer service beyond these ridgelines would require costly infrastructure improvements (e.g., liftstations).

For other areas, such as near the south end of Lake Wissota, existing development on individual septic systems was determined not to be cost-effective for the provision of municipal sanitary sewer for the foreseeable future. The existing land-use map (Map 3) was compared to the existing sewer services map (Map 13) to help identify such areas where existing, unsewered development may pose engineering constraints.

The engineering constraints boundary is different than the sewer service area boundary which gives additional consideration to population projections, local land-use plans, and intergovernmental relationships. However, the engineering constraints boundary should still be considered in local planning efforts and intergovernmental discussions due to the ability to possibly provide cost-effective municipal sewer services to these areas at some time in the future, but not necessarily within the 20-year planning horizon of this plan.

MAP 14 **Engineering Constraints**



3.6 FORECAST OF URBAN GROWTH

With anticipated improvements to the existing treatment facilities as defined in the respective facility plans, adequate plant capacity should exist to provide sewage treatment for expected future development in the planning area during the 20-year planning horizon. The next step is to look at where development can and should occur within the urban area.

3.6.1 Methodology for Population, Housing, and Employment Projections

For demographic trends and population projections for the planning area, smaller geographic units were utilized instead of municipal boundaries.

1) Defining the Sub-Areas -- The planning area was subdivided into traffic analysis zones (TAZs) as defined by the 2000 Census Transportation Planning Package distributed by the U.S. Census Bureau. For each TAZ, a wealth of 2000 Census information is available and land-uses were identified. Seven additional sub-areas, following census blocks when possible, were amended to the Chippewa-Eau Claire Metropolitan Planning Organization (MPO) transportation planning area based on local plans and discussion of the Water Quality Technical Advisory Committee. For each of these additional seven sub-areas, census block data was used in conjunction with on-site visits and review of remote imagery.

2) Comparison of 2000 Population -- The 2000 population for the sub-areas combined was compared to 2000 Census population estimates by municipality, interpolated from census block data for those portions of each community in the planning area. In total, there was less than a 1% different between the two methods, which was deemed to be acceptable.

3) Projecting 2025 Planning Area Population -- Since 1980, the Chippewa-Eau Claire Urbanized Area has experienced an average annual population growth rate of approximately 1.1%. However, this 20-year historical population growth trend has slowed during the past decade to just under 1.0% annually. Therefore, the MPO has selected a 1.0% average annual growth rate as the basis for preparing the population forecast for the next 25-year planning timeframe. The 1.0% average annual growth rate produces a year 2025 population forecast of 130,027 for the entire planning area.

4) Comparison of 2025 Planning Area Population -- The 2025 population for the planning area using the method in Step #3 above was compared to total 2025 population estimates by municipality, derived from an interpolation of Wisconsin Department of Administration projections for those portions of each municipality within the planning area and using estimates provided by the City of Chippewa Falls. In total, there was less than a 0.5% difference between the two methods, which was deemed to be acceptable.

5) Projecting 2025 Sub-Area Population & Housing Units -- For each TAZ, population projections were developed based on existing and planned land-use, reflecting available land, existing land-use plans, and excluding environmentally sensitive areas and transportation rights-of-way. For incorporated, planned residential portions of each TAZ, an average of three homes per acre was applied, while an average of one home per acre was applied to unincorporated

residential portions. Based on the 2000 Census, an average household size of 2.5 persons per household was applied to the planned residential areas, then added to the 2000 population for the remaining portions to project a 2025 population for each TAZ. The total of all TAZ projections were compared to the total population for the entire planning area, then evenly adjusted downward so the total population for the entire planning area is maintained.

With local input and based on existing plans, individual TAZs were then further adjusted based on known or proposed development projects, constraints on the provision of services, or expected areas of low growth. The total population for the entire planning area remained unchanged from the projection established in Step #3.

6) Projecting 2025 Employment – The employment projections are based on recent trends and the assumption that the Chippewa-Eau Claire Urban Area will continue to be an important regional employment center. The regional employment projections developed by the Wisconsin Department of Workforce Development (WisDWD) accounts for changing demographics which make up the workforce. The WisDWD projects an average employment growth of 1.5% annually over the planning timeframe which was applied to the total planning area to project future employment.

To forecast employment growth by sub-unit, employment by TAZ from the 2000 U.S. Census was analyzed for different types of employment land uses (e.g., retail commercial, manufacturing, government). For each type of employment land use, an average employees per acre was identified. The WisDWD projected growth rate were then applied to each TAZ by anticipated future land uses for the planning area while adjusting appropriately to maintain consistency with the overall employment projection for the planning area.

3.6.2 Population Projections for the Planning Area

The first component in forecasting urban growth for the planning area is to consider the projected population for 2025. The population of the planning area is expected to grow by 19.5% between 2005 and 2025 to 130,854 persons (see Table 8).

Table 8. Population Projections for Planning Area

	2005	2010	2015	2020	2025	% change
Incorporated Municipalities	89,187	92,735	95,576	98,982	102,402	+14.8%
Unincorporated Municipalities	20,307	22,102	24,604	26,541	28,462	+40.2%
Planning Area Population	109,494	114,837	120,180	125,523	130,864	+19.5%

sources: Wisconsin Department of Administration, 2000 Census Transportation Planning Package, and West Central Wisconsin Regional Planning Commission

Map 15 identifies the projected high growth areas by TAZ taken from the recently completed MPO's *Long-Range Transportation Plan*. As Map 15 shows, the highest growth areas tend to be located outside incorporated areas, with the possible exception of the Village of Lake Hallie.

Many of these areas are also located near water bodies, such as Lake Wissota, Altoona Lake, Chippewa River, Sherman Creek, and Lowes Creek. However, the map does not reflect density and current total population, so some of the areas shown to have the highest population increases are also some of the larger TAZs within the planning area. The MPO's *Long-Range Transportation Plan* does provide additional confidence in these forecasts by including a comparison with previous such analyses which demonstrates the similarities between projected high population growth areas.

3.6.3 Employment Projections for the Planning Area

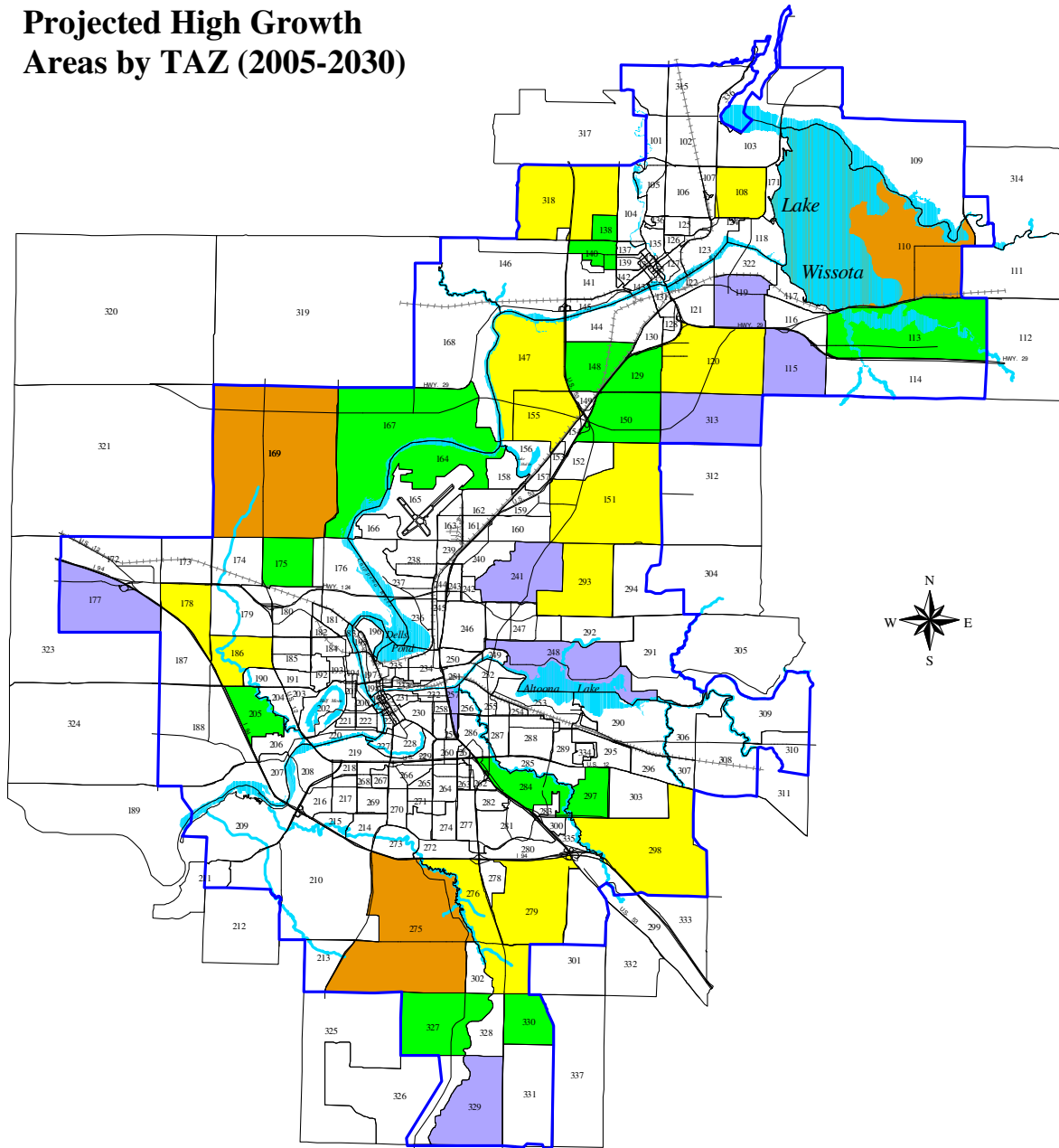
Employment growth in the Chippewa Falls-Eau Claire area has been particularly strong over the past decade, increasing by 21% between 1990 and 2000 in the planning area. The Wisconsin Department of Workforce Development projects an average employment growth of 1.5% annually over the planning timeframe, and the planning area will continue to grow as the primary employment center for west-central Wisconsin. Table 9 incorporates the Department of Workforce Development's forecasts in the preparation of employment projections for the planning area. In accordance with local plans, it is anticipated that the majority of employment growth within the planning area will occur in incorporated areas.

Table 9. Employment Projections for Planning Area

	2005	2010	2015	2020	2025	% change
Planning Area Employment	71,287	76,242	81,197	86,152	90,715	+27.3%

sources: Wisconsin Department of Workforce Development, 2000 Census Transportation Planning Package, and West Central Wisconsin Regional Planning Commission

MAP 15 **Projected High Growth** **Areas by TAZ (2005-2030)**



 **SSA Planning Area Boundary**

Projected Population Growth

-  **1501 to 2000**
-  **1001 to 1500**
-  **751 to 1000**
-  **501 to 750**
-  **250 to 500**

source: Chippewa-Eau Claire MPO.
Long-Range Transportation Plan. 2005.



3.6.4 Acreage Allocations for Future Development

Population is a key determinant in establishing the sewer service area boundary. According to Chapter NR 121.05(1)(g)(2) of the State of Wisconsin Administrative Code...

“b. The sewer service areas are delineated based on a 20-year population forecast approved by the department, and municipality approved population density standards.”

This subsection of the plan identifies projected needed acreage for the 2025 sewer service area based the 20-year population forecasts and related employment projections discussed in the previous sections. This approach assumes that most, if not all, development in unincorporated areas will continue to occur on private septic systems, which is consistent with local policies.

Residential Development

To estimate the acreage needed to accommodate future residential growth, two key statistics are needed: (1) a projection of dwelling units that will be built and (2) a projection of the density at which those homes will be built. The previous population projections are used in combination with the anticipated number of persons per household to determine how many housing units are likely to be developed by the year 2025 in the planning area.

Based on the 2000 Census, there were 42,533 housing units in the sewer service planning area. The Chippewa-Eau Claire Urban Area has followed national trends with a decline in household size from 2.6 persons per household in 1990 to 2.5 persons per household in 2000. The smaller household size, combined with a growing overall population, tends to stimulate housing demand.

Housing unit projections for the planning area for the year 2025, as depicted in Table 10, were developed using the population projections shown previously and the most current average household size of 2.5 persons per household.

Table 10. Projected Dwelling Units for the Planning Area

	2005	2010	2015	2020	2025	change
Incorporated Municipalities	35,675	37,094	38,230	39,593	40,961	+5,286
Unincorporated Municipalities	8,123	8,841	9,842	10,616	11,385	+3,262
Planning Area Dwelling Units	43,798	45,935	48,072	50,209	52,346	+8,548

The resulting year 2025 projections identify a need for an additional 8,548 housing units in the planning area, or 393 housing units per year, to accommodate projected population growth between 2005 and 2025. However, if the average household size continues to decrease, this demand could be larger.

Regulatory standards for residential density vary throughout the planning area due to the number of municipalities, and can vary within an individual municipality by zoning district or due to extraterritorial subdivision regulations. The residential density in incorporated areas is

significantly higher than residential areas in unincorporated towns. Based on the 2000 estimates of dwelling units and residential land use, the residential density of the planning area is approximately 2.1 dwelling units per acre in residential areas, which is relatively low density for urban development. Given market trends for increasing lot sizes which has been reducing the number of dwelling units per acre on average, the density of 2.1 dwelling units per acre is used in the plan to project future residential acreage needs.

With a projected demand for 8,548 additional housing units between 2005 and 2025, at an average of 2.1 housing units per acre, a total of 4,071 acres for new residential development is needed within the sewer service planning area. It can be further projected that 62% (or 2,517 acres) of these residential acres will be needed within the incorporated municipalities, and, thus, within the sewer service area boundary.

Commercial, Industrial, & Other Development

By comparing the current employment estimate to current commercial, industrial, and governmental/institutional acreage for the planning area, an average of 8.3 employees per acre of commercial, industrial, or governmental/institutional use can be derived.

As shown previously, an increase of 19,428 employees is projected between 2005 and 2025. Applying the 8.3 employees per acre average, this increase in employment would have a corresponding demand for 2,341 acres additional acres of commercial, industrial, and governmental/institutional lands. And as previously discussed, the majority of this commercial and industrial development is expected to occur within incorporated areas.

Other Development Factors

To estimate future needed acreage, three additional factors were considered:

- **Market Factor** - A market factor of 30% was added to offer additional flexibility to the real estate market and to account for landowner choice. The market factor recognizes that petitions to connect to municipal sewer are primarily landowner- or developer-initiated. Likewise, a landowner in an area with high development pressure may select to keep their property undeveloped or to restrict development rights through tools such as conservation easements. By using a market factor, the uncertainty of where municipal sewer service may be provided for in the future is accounted for while helping to mitigate undue influence on land and housing prices in specific areas. The 30% market factor was selected after review of local plans, consideration of local circumstances, and a review of other such market factors used in similar planning efforts in the State.
- **Environmentally Sensitive Areas** - Those areas identified as having environmentally sensitive areas must be excluded from the available acreage for development. Comparing currently developed parcels with the map of environmentally sensitive areas, approximately 35% of the acreage of these developed parcels is considered environmentally sensitive due to shorelands/floodplain, wetlands, or steep slopes.
- **Public Rights-of-Way** - Public rights-of-way for roads, sidewalks, utilities, recreational trails, etc., should also be excluded from the available acreage for development. After consultation with Wisconsin Department of Transportation, and based on similar experiences

for residential subdivision growth, a factor of 12% was used to account for public rights-of-way.

Estimated Additional Acreage Needed for Development – 2005 to 2025

Based on population and local development projections in the previous subsections, Table 11 summarizes the acreage demand forecasts for the planning area.

Table 11. Allocation for Future Development by Land Use (in acres)
Estimated Additional Acres for Development -- 2005 to 2025

	Incorporated Areas	Unincorporated Areas	Planning Area
Residential	2,517	1,554	4,071
Commercial, Industrial, & Governmental/ Institutional	2,341 <i>primarily in incorporated areas</i>		2,341
Other Factors (+77%)	3,741	1,197	4,938
Total³	8,599 acres	2,751 acres	11,350 acres

The distribution of the allocated needed acreage is not evenly distributed throughout the planning area. A majority of this growth is projected to occur within the City of Eau Claire and City of Altoona which together constitutes 53% of the projected residential needed acreage for the planning area and nearly 56% of the of all employment in the planning area.

3.6.5 Projected Growth Areas

Previous plan sections identified existing land uses, the extent of municipal sewer services, environmental constraints, engineering constraints, and the projected acreage needed for development. This section focuses on where this development will most likely occur within the planning area.

Map 16 at the end of this sub-section shows those areas which were undeveloped as of January 1, 2005, but likely to be developed over the next 20 years. This map was created based on available local planning documents, the MPO's *Long-Range Transportation Plan for the Chippewa-Eau Claire Metropolitan Planning Area*, and input from those participating on the MPO's Water Quality Technical Advisory Committee. Not reflected on Map 16 is the character and density of the future development. For instance, as discussed previously, residential densities in the incorporated areas are significantly higher than those of the unincorporated areas. In some cases, residential development in unincorporated areas may be occurring at low densities or at substantial distances from municipal sewer trunk lines that it may not be cost-effective to provide municipal wastewater services.

³ The incorporated areas total includes all commercial, industrial, & governmental/institutional acreage, though a smaller portion of these development types may occur in some unincorporated areas.

In addition, Map 16 delineates the current extent of municipal sewer services. Sewered but undeveloped areas are of importance because they will likely be developed within the planning horizon and additional loadings from them will add to the wastewater treatment flow. In most cases, it is more cost-effective to provide sewer service to these infill areas rather than expanding services to new areas. Local plans for some sewerred but undeveloped areas may discourage development due to environmental features, engineering constraints, or the community's desire to maintain the land for open space and/or recreational purposes. As Map 16 shows, there are a very limited number of large sewerred-undeveloped parcels which are available to be developed over the next 25 years. There are also a very limited number of undeveloped parcels within the incorporated municipalities available for development, with the exception of the recently incorporated Village of Lake Hallie.

Map 16 was used in the context of this planning for general planning purposes only. It provides one picture into a possible future for the development of the urban area based on existing planning documents and known land-use trends. However, landowner decisions, market forces, and local regulatory activities over the next 20 years will all influence and determine how and where actual development will occur.

During the planning process, the following general growth trends were discussed and considered as the updated sewer service area boundary was identified:

CHIPPEWA FALLS AREA

Minimal development to the west of the City of Chippewa Falls is expected due to topography and Highway 53 which both form considerable barriers to urban expansion. The Village of Lake Hallie lies along the City's southern boundary. Some development is expected to the south-east of the City, but existing, non-sewered development on private sewer systems in the Town of Lafayette prohibits cost-efficient expansion of municipal wastewater services any significant distance to the east at this time.

Immediately to the east of the City is Lake Wissota which forms an additional barrier to the expansion of wastewater services. Residential infill development is expected to continue in unincorporated areas to the east and north of Lake Wissota. The north side of Chippewa Falls and adjacent portions of the Town of Eagle Point are expected to incur significant development over the next twenty years, in part due to recent and planned road improvements in this area. The relatively flat topography which gently slopes southwards to the City also makes the area cost-feasible for the potential future provision of municipal wastewater services.

LAKE HALLIE AREA

The Village of Lake Hallie has been experiencing tremendous commercial and residential growth over the past five years, spurred by the recently completed U.S. Highway 53 bypass through the Village. Commercial growth within the Village is anticipated to continue along U.S. Highway 53, with increasing residential development to the east, potentially including unincorporated areas. The bypass, topography, and other natural constraints (e.g., wetlands) will guide and limit the extent of this easterly development.

EAU CLAIRE/ALTOONA AREA

Residential infill development is expected to continue along the City of Eau Claire's northeast side and adjacent areas of the Town of Seymour. Topography and large areas of existing residential development on private sewer systems combine to decrease the likelihood of expanding municipal wastewater services into this area in the near future. Development is expected east of the Cities of Altoona and Eau Claire, such as along U.S. Highway 12 and adjacent areas within the Town of Washington.

Commercial development is underway in the area near the Interstate 94 and U.S. Highway 53 interchange on the southeast side of the City of Eau Claire. Residential development pressure is expected to be significant south of the City of Eau Claire with some commercial development along larger roadways closer to the City. However, development densities farther from the City, such as in the Town of Pleasant Valley, may not be high enough for the cost-effective provision of municipal sewer services. Most unincorporated communities participating in the planning process expressed a desire to preserve prime farmlands by encouraging higher density residential development closer to incorporated areas.

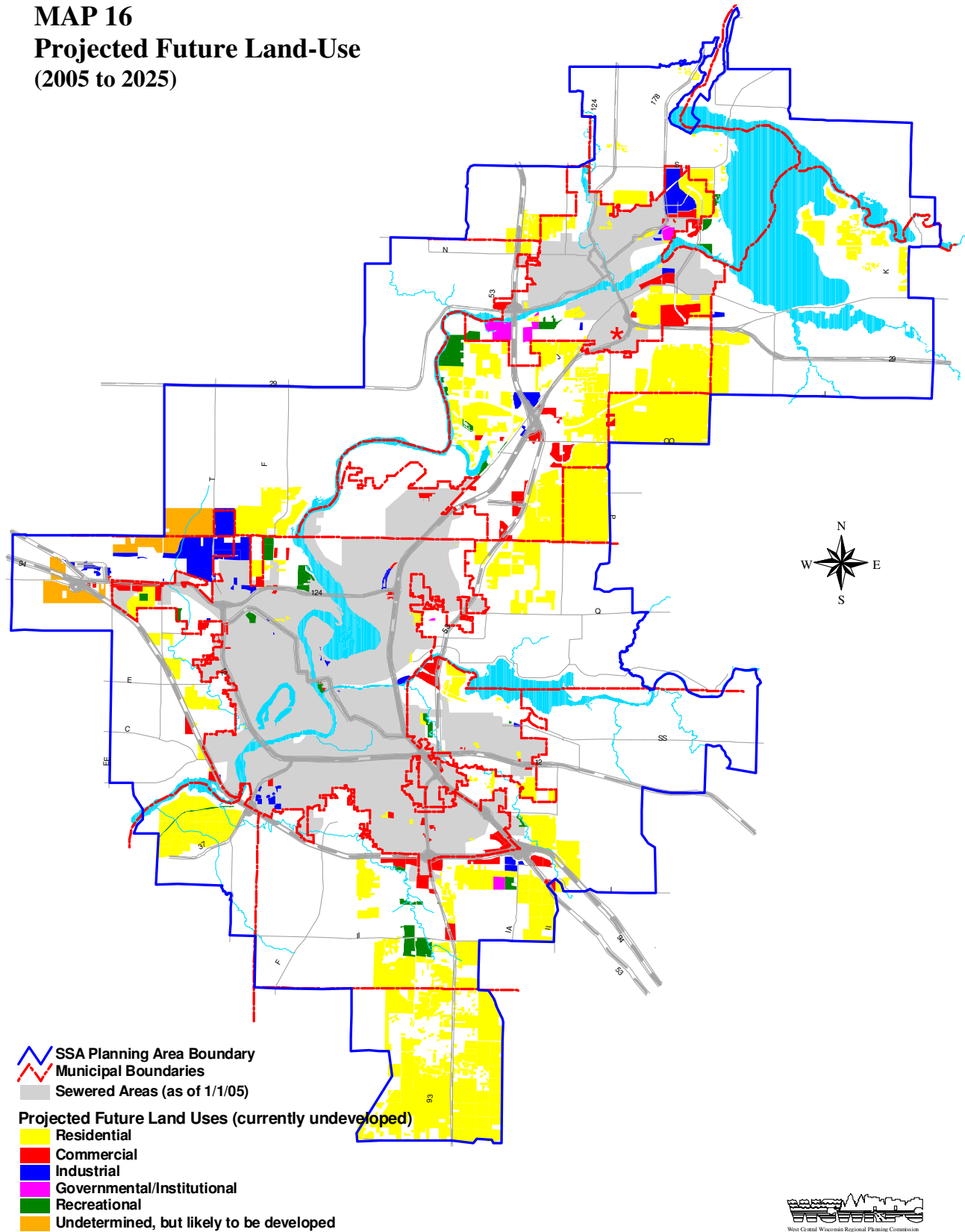
Topography hinders significant development in a large area east of State Highway 37 to County Highway "F". A preliminary proposal has been made for a significant residential development in the Town of Brunswick north of Highway 37 and south of the Chippewa River, though the development would be clustered, preserving large areas of open space and floodplain.

West of the City of Eau Claire and adjacent areas of the Town of Union have been experiencing substantial development pressure. Residential development east of Interstate 94 has been considerable during the past decade, with some newer development occurring recently or is underway to the west of I-94. The Town has expressed a goal of limiting future development of prime farmlands in this area, and some local landowners have considered other mechanisms, such as land trusts, to conserve farmlands or open space for the future. A mix of commercial, industrial, residential development has occurred near the I-94 and State Highway 124 interchange, with increasing commercial pressure expected in the future. Topography constrains the possible expansion of municipal sewer services to the southwest, in areas north of the Chippewa River. However, more directly to the west in Cameron Street/CTH "E" area, such topographical constraints are more limited.

Industrial development has predominated the area north of State Highway 124 on Eau Claire's northwest side. Expansion of these industrial uses, along with areas of commercial and residential development, are expected in the future in this area and the adjacent unincorporated areas of the Town of Wheaton. Generally, the topography of this area is slowly rolling, but is generally favorable to the possible expansion of sewer services in the future.

The recently completed four-lane U.S. Highway 29 project in the northern part of the study area is expected to increase development pressure northwest of the City of Eau Claire. Already, new commercial development is occurring adjacent to the new interchange of Highway 29 and CTH "T" in the Town of Wheaton.

MAP 16
Projected Future Land-Use
(2005 to 2025)



3.7 DELINEATION OF THE 2025 SEWER SERVICE AREA BOUNDARY

The previous sections of Chapter 3 reviewed the following characteristics and trends for the planning area:

- 1) environmental constraints and environmentally sensitive areas,
- 2) local water quality resources and issues,
- 3) existing sewer systems and related urban development areas,
- 4) engineering constraints, and
- 5) projected growth data and growth areas.

Based on these characteristics and projected growth trends, and in consideration of local political circumstances and challenges, the Technical Advisory Committee proposed Map 17 at the end of this section as the new sewer service area boundary for 2025. Appendix A at the end of this report contains a legal-type description of the boundary. The boundary follows easily identifiable landmarks and section lines (or fractions thereof) for ease of use.

The Technical Advisory Committee looked at many alternatives during the planning process. In general, the new sewer service area boundary reflects the following primary changes from the sewer service boundary in place prior to this plan's completion:

- The boundary was expanded in portions of the Town of Eagle Point based on projected development trends, existing lakeshore development, planned road improvements, and cost-effectiveness to serve the area.
- The boundary was contracted to the east of the City of Chippewa Falls based on the low likelihood of expanding sewer services into the Town of Lafayette in the future due to significant amount of existing residential development on private sanitary sewer systems.
- The boundary was expanded in three areas of the Town of Washington based on development plans, available services, and topographical constraints.
- The boundary was expanded to include a portion of the Town of Brunswick along Highway 37 based on currently proposed development plans.
- The boundary was expanded to include areas of the Town of Union adjacent to the existing boundary based on development trends, existing services, and topographic constraints.
- The boundary was expanded in the Town of Wheaton based on development trends in this area, projected future development based on the new U.S. Highway 29, and the ability to provide sewer service to the area.

The new Chippewa Falls-Eau Claire Urban Sewer Service Area encompasses 65,264 acres of land, an increase of 7,058 acres when compared to the 58,206 acres delineated in the sewer service area boundary as of January 1, 2005, prior to completion of this plan.

In total, the new sewer service area boundary encompasses 26,786 acres of undeveloped land as of January 1, 2005. This undeveloped acreage is considerably larger than the projected demand determined in Section 3.6.4. However, after considerable discussion by the Technical Advisory

Committee, a decision was made to continue to include most of the Village of Lake Hallie within the sewer service area boundary for water quality management and local planning purposes. Over 3,600 acres in the Village within the proposed sewer service area were undeveloped as of the beginning of 2005. At this time, the Village has no plans to pursue municipal wastewater services, so these acres may be cautiously excluded from the total available undeveloped lands at this time.

The amount of undeveloped land within the sewer services area accounts for a variety of other factors discussed during the planning process:

- The existing sewer service area boundary was maintained in many locations, which was strongly influenced by topographical barriers and other environmental constraints.
- The boundary accounts for existing infrastructure. In some cases, areas were included within the sewer service area due to their proximity to sewer trunk lines or pump stations, and the possible future need to expand such infrastructure through these areas to serve other developing properties.
- Recently completed or planned road projects influenced the boundary in some locations. The recently completed U.S. Highway 29 project influenced the boundary's determination in the Town of Wheaton. Similarly, in the Town of Eagle Point, the boundary considers the Seymour-Cray Boulevard improvement project scheduled to be completed within the next two years and a possible jurisdictional transfer with State Highway 178.
- Contemplated or planned development projects also influenced the boundary, adding to the amount of undeveloped acreage. For instance, a proposed residential project in the Town of Brunswick resulted in a considerable boundary change along State Highway 37. However, the current plans for the development call for the clustering of residential development, while retaining large areas of open space and floodplain within the sewer service area which would likely not be considered as available for future development.

PLEASE NOTE

The Sewer Service Area delineates those areas with a *potential* for future sewered development by 2025, excluding environmentally sensitive areas.

Inclusion of lands within the Sewer Service Area boundary does NOT determine or guarantee that these lands will be developed, sewered, or annexed by 2025.

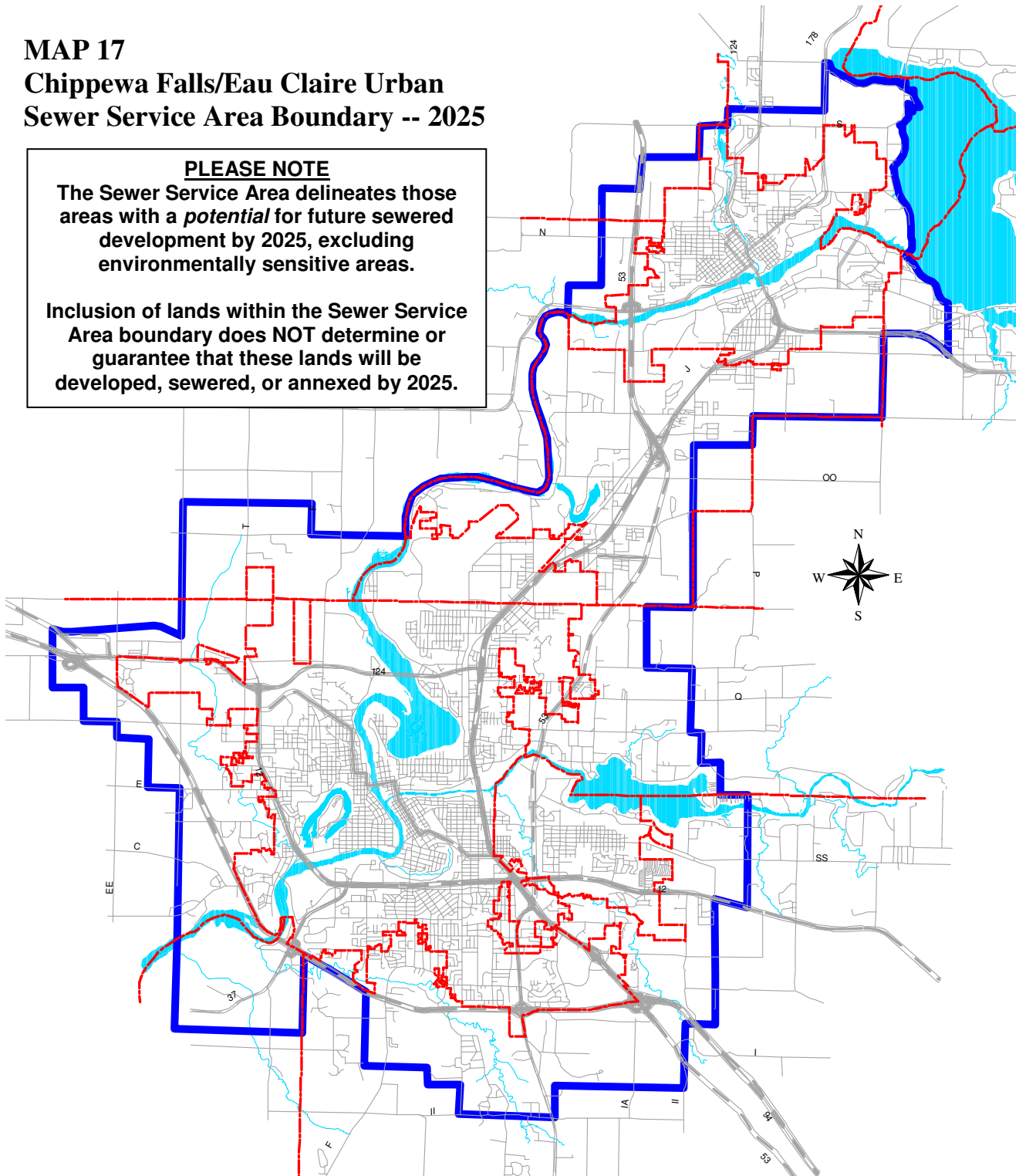
In short, there are many additional factors, beyond market factors, which influenced the determination of the updated sewer service area boundary. The sewer service boundary as presented attempts to accommodate these factors and reflects the uncertainty of where and when development will occur in the future in the urban area.

MAP 17 **Chippewa Falls/Eau Claire Urban** **Sewer Service Area Boundary -- 2025**

PLEASE NOTE

The Sewer Service Area delineates those areas with a *potential* for future sewered development by 2025, excluding environmentally sensitive areas.

Inclusion of lands within the Sewer Service Area boundary does NOT determine or guarantee that these lands will be developed, sewered, or annexed by 2025.



Sewer Service Area Boundary - 2025
Municipal Boundaries



CHAPTER 4 - GOALS AND POLICIES

Goal is a long-term end toward which programs or activities are ultimately directed, but might never be attained. It represents a general statement which outlines the most preferable situation which could possibly be achieved if all the objectives and policies were developed to their fullest degree.

Objective is a specific, measurable, intermediate end that is achievable and marks progress toward a goal.

Policies are the way in which programs and activities are conducted to achieve an identified objective and goal. They are courses of action selected to guide and determine present and future decisions.

The policies stated in this plan represent an effort to improve the quality of life in and around the Chippewa-Eau Claire Urban Area through the protection of surface water quality, while recognizing the diversity in character and resources of the area's communities. Those policies that direct action using the words "will" or "shall" are mandatory and regulatory aspects of the *Chippewa-Eau Claire Urban Sewer Service Plan*. In contrast, those policies that direct action using the word "should" are advisory and serve as guides, reflecting a common vision of the communities within the planning area. These communities are strongly encouraged to pursue these policies toward their preceding stated objectives and goals. Communities can effect these policies by implementing the regulatory tools they are authorized to use, such as, planning, zoning, subdivision controls, impact fees, and site plan review.

Goal 1 To create an orderly and planned pattern of community growth and development that will provide a high quality living environment.

Objective 1.1 *By guiding future growth within the defined urban service area in an efficient and orderly manner to promote contiguous, compact, and cost-efficient development.*

Policy 1.1.1 *Community comprehensive plans should be updated every ten years to reflect changing economic and physical conditions.*

Policy 1.1.2 *Urban development should be encouraged to "infill" vacant developable lands within city boundaries, then be staged outward according to local plans.*

Policy 1.1.3 *Sewer extensions that reflect the contiguous and compact pattern of development should receive priority over extensions which will contribute to urban sprawl.*

Policy 1.1.4 The supply of land dedicated to urban development should approximate current and future needs as determined from population, employment, and land-use projections, and be based on a locally determined density standard.

Policy 1.1.5 Future commercial and industrial development should expand upon existing areas and be readily accessible to major transportation systems.

Policy 1.1.6 Future residential development should occur adjacent to existing development to contain costs of public service provisions, and reflect compact and orderly development.

Policy 1.1.7 Generally, the Cities of Altoona, Chippewa Falls, and Eau Claire will not extend sanitary sewer service beyond their corporate limits unless there is a negotiated agreement between the involved governmental entities.

Furthermore, the Sewer Service Area Plan and boundary should not be used to promote nor hinder annexation petitions or urban density development.

Policy 1.1.8 Sewer extensions will not be made beyond the 20-year urban sewer service area, unless the plan is amended.

Objective 1.2 By guiding future rural development in an efficient, orderly, and compatible manner to maintain a rural character.

Policy 1.2.1 Rural development should take place adjacent to existing development to prevent further scattered development.

Policy 1.2.2 Future residential development should be directed to existing platted subdivisions.

Policy 1.2.3 Commercial and industrial development should be clustered around existing development to prevent scattered or strip development.

Policy 1.2.4 Development into areas identified as prime agricultural land will be discouraged according to county farmland preservation plans.

Goal 2 To protect water quality, natural resources, and sensitive natural areas from the encroachment of development.

Objective 2.1 By delineating environmentally sensitive areas and discouraging development in areas environmentally unsuitable for development.

Policy 2.1.1 Local land-use plans and ordinances should be used to guide development away from environmentally sensitive areas.

Policy 2.1.2 Sewer extensions shall not be permitted into areas identified as environmentally sensitive areas unless the extension is to serve compatible uses such as public parks and outdoor recreation facilities. Sufficient setbacks and erosion control measures should be taken, as determined by local zoning or land development controls.

Policy 2.1.3 Sewer extensions into physical or cultural resource areas not included in environmentally sensitive areas shall conform to applicable rules and regulations, and shall be reviewed on a case-by-case basis.

Policy 2.1.4 Rural development should be discouraged where soils are unsuitable for conventional on-site disposal systems.

Policy 2.1.5 Encourage best management practices for erosion and stormwater control where sewer development is proposed for areas with slopes of 12% or greater.

Any land disturbance or the footprint of any building or structure associated with sewer development, including but not limited to principal or accessory building, parking areas, or retaining walls, shall not encroach upon slopes 20% or greater, without a Type IV Sewer Service Area Plan amendment. Open decks and/or stairways on post and pier foundations may encroach upon slopes 20% or greater with approval of the local regulating authority.

A naturally occurring steep slope of 20% or greater shall not be graded, filled, or otherwise altered to avoid these requirements.

Policy 2.1.6 Development in municipal wellhead protection areas should be connected to a municipal wastewater system or connected to a private system which is constructed, operated, and maintained by a named, responsible party.

Policy 2.1.7 On a case-by-case basis, allow connection of parks and existing development to sanitary sewer systems in environmentally sensitive areas, if deemed environmentally beneficial or will remedy an existing environmental problem.

Goal 3 To provide and maintain a full range of community facilities and services which are efficient, economical, and environmentally sound.

Objective 3.1 To provide sanitary sewer systems which will effectively and economically serve urban development.

Policy 3.1.1 Sanitary sewer extensions should occur consistent with the timing or provision of other public facilities and services.

Policy 3.1.2 Sewer extensions should occur contiguous to existing systems, according to local staging plans, where facilities can accommodate them.

Policy 3.1.3 Sanitary sewer systems should be provided for existing development whenever they are the most cost-effective alternative for addressing failing on-site disposal systems.

Policy 3.1.4 Sanitary sewer system construction and sizing should be staged to encourage lower capital investment and flexibility.

Policy 3.1.5 Existing capacity in sanitary sewer systems should be used before making substantial expansions or extensions.

Policy 3.1.6 The number of waste treatment plants should generally be minimized to avoid duplication of facilities, institute economies of scale, and lessen environmental degradation.

CHAPTER 5 - HOLDING TANK SERVICE AREAS

In some cases, municipalities are faced with high cost alternatives to improving their wastewater treatment and disposal situations. With the number of affordable alternatives diminishing, holding tanks may be the only alternative. As of October 1, 1987, a revised Chapter NR113 of the Wisconsin Administrative Code took effect to consistently handle this alternative. At the same time NR113 was being changed, NR205 was being revised to clarify Publicly Owned Treatment Works (POTW) obligations to accept septage¹. The provisions of this section can only relate to programs and policy as they are currently enforced. Three terms should be defined here to aid in understanding the requirements of NR113:

1. "Publicly owned treatment works planning area" means the area delineated in a map form in which the planning for a specific POTW is being or has been prepared to cover. In other words, the area that a POTW is responsible to consider in planning a cost-effective regional wastewater treatment alternative.
2. "Publicly owned treatment works sewer service area" means the area presently served and anticipated to be served by a sewerage collection system as approved under ch. NR121 or as a facility planning effort done under ch. NR110, if no NR121 designation has been made.
3. "Publicly owned treatment works holding tank service area" means the area outside the POTW's sewer service area, but inside or equal to the POTW's planning area where a contract has been developed for holding tank wastewater to be treated at the POTW.

The five (5) general requirements applicable to the Chippewa Falls-Eau Claire Sewer Service Area are:

1. If a holding tank or septic tank is located within the sewer service area boundary, the disposal of septage from that system must be at its corresponding POTW, as required by NR113 and NR205.
2. New holding tanks for new development, outside of the sewer service area and inside the planning area, which receive more than 3,000 gallons of wastewater per day 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 WCWRPC with approval by the WisDNR. The amendment is needed to put the area tributary to the holding tank within a holding tank service area of the POTW. The new holding tank cannot be approved until the amendment has been completed or until the WisDNR has received adequate assurance that it will be completed. This type of amendment does not require an acreage swap. The WCWRPC will evaluate the amendment request and may recommend the holding tank owner consider other POTWs because of cost effectiveness or environmental concerns.

¹ The current Chapter NR113 was created effective January 1, 1997 with subsequent corrections. The current Chapter NR205 of the Wisconsin Administrative Code was created effective October 1, 1984.

3. Holding tanks to replace existing failed onsite systems, which will receive more than 3,000 gallons of wastewater per day, should also be included in the designated POTW holding tank 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 the owner has a multi-year contract with a POTW, of sufficient capacity, to provide treatment for all wastewater tributary to the holding tank. Further, the owner must provide satisfactory assurance all such wastewater will only be disposed of at a POTW.
4. Small holding tank (generating under 3,000 gallons per day) and septic tank wastewater must be taken to a POTW if:
 - a. The septic tank is located in the POTW's sewer service area.
 - b. The holding tank is located in the POTW's sewer service or holding tank service areas².
 - c. The holding tank is located inside the POTW's planning area, but outside the POTW's sewer service and holding tank service area(s); if the POTW will accept the wastewater and; the cost to the disposer/hauler is less than or equal to the amounts calculated pursuant to NR113.07(1)(f)³.

The above requirements (in 4., including 4a., 4b., and 4c.) do not apply if the wastewater from small holding tanks and septic tank systems will be land spread in accordance with a WisDNR or WPDES permit.

5. POTW's are required to accept, treat, and dispose of septage under certain circumstances as directed by 281.49 State Statutes and ch. NR205. The following is a summary:
 - a. Winter disposal (November 15 - April 15)
 - i. Each year, prior to September 1, licensed disposers/haulers may apply to a POTW for permission to dispose of septage during the winter.
 - ii. Applications submitted to the POTW by licensed disposers are subject to review by the POTW and the POTW shall:
 - A. Review septage applications and provide a written denial or approval to the licensed disposer/hauler by October 1 of each year.
 - B. Develop a disposal plan for each licensed disposer/hauler approved for septage acceptance. A disposal plan, at a minimum, shall contain the following terms and conditions:

² The POTW acceptance requirement, for holding tank wastewater within the sewer service and holding tank service area and septic tank wastewater within the sewer service area is in NR205.07(2)(i).

³ The current maximum fee of \$20 per thousand gallons as defined in NR113.07(1)(f)4 remains in effect as of plan adoption until such time as it is revised.

- (1) Specific quantities, location, times, and methods for the discharge of septage to the sewerage system.
- (2) Requirements to report the source and amount of septage placed in the sewerage system.
- (3) Requirements (if any) for the licensed disposer/hauler to pay to analyze other than residential septage.
- (4) Actual and equitable disposal fees based on the septage introduction into the sewerage system and calculated at a rate applied to other users of the sewerage system, and including the cost of additional facilities or personnel necessary to accept septage at the point of introduction into the sewerage system.
- (5) All terms and conditions imposed on the disposer of septage.
- (6) A formal approval that the licensed disposer/hauler has permission to discharge septage into a specific POTW under specific conditions.

C. Accept and treat septage from licensed disposers/haulers unless:

- (1) Treatment of the septage would cause the POTW to exceed its operating design capacity or to violate any applicable effluent limitations or standards, water quality standards, or other legally applicable requirements, including court orders or state or federal statutes, rules, regulations or orders; or
- (2) The septage is not compatible with the sewerage system; or
- (3) The disposer/hauler has not applied for and received approval to dispose of septage in the sewerage system or the disposer/hauler fails to comply with the disposal plan; or
- (4) The licensed disposer/hauler fails to comply with the septage disposal rules promulgated by the POTW or the conditions of the disposal plan.

b. Area the POTW is Required to Accept Septage from Year-Round

- i. Septage that is generated within its sewer service area.
- ii. Holding tank wastewater that is generated outside the POTW's sewer service area, but inside or equal to the POTW's planning area where a contract has been developed for acceptance, treatment, or disposal.

c. Priority System (NR205.07(2)(h))

- i. 'First Priority'. Wastes from existing or new holding and septic tanks within the POTW's sewer service area and holding tanks within the POTW's holding tank service area(s).
- ii. 'Second Priority'. Wastes from existing holding tanks for residential or commercial establishments outside the POTW sewer service area and holding tank service area(s), but inside the POTW's planning area where the holding tank was installed to replace an inadequate private sewerage system.
- iii. 'Third Priority'. Wastes from existing septic tanks and holding tanks that were installed not as replacement to an inadequate sewerage system for residential or commercial establishments outside the POTW's sewer service area and holding tank service areas, but inside the POTW's planning area.
- iv. 'Fourth Priority'. Wastes from new or existing septic and holding tanks for residential or commercial establishments outside the POTW's planning area.

The service area for a POTW may include both a urban sewer service area and a holding tank area. The POTW should have the capacity to accept wastewater from both areas. A holding tank service area must be delineated for any holding tank outside the sewer service area, but within the planning area, generating 3,000 gallons or more of septage a day. The difference between the sewer and holding tank service areas is the holding tank service area includes areas not intended to be sewered during the design life of the POTW. Also, holding tanks may be located in either service area.

No holding tank service area has been delineated in this plan, because there were no identified contracts to dispose of large holding tank wastewater into either the Chippewa Falls or Eau Claire treatment plants. In addition, to the knowledge of the treatment plant staff, there were no holding tanks in the planning area, and outside the sewer service area, required to contract with the POTW.

A service area amendment is required when a holding tank service area is added within the Chippewa Falls/Eau Claire Sewer Service Area. An amendment request for a holding tank service area for new development cannot be approved if the area encroaches on an environmentally sensitive area. The amendment will be allowed if it is determined that the actual construction of all buildings and the holding tank are not on those portions of the holding tank service area within an environmentally sensitive area, and there are sufficient setbacks and erosion control measures taken, as defined by local zoning and land development. The procedures for amendments are outlined in Plan Amendment Process section of this plan.

CHAPTER 6 – PLAN IMPLEMENTATION & AMENDMENT

The *Chippewa Falls-Eau Claire Urban Sewer Service Area Plan* is the primary tool to be used in the review of proposals for sewer extensions and hookups. To be in conformance with the plan, a proposed sewer extension or hookup must be within the sewer service area and also not within an environmentally sensitive area. Developers and local officials must be aware of the environmentally sensitive area criteria detailed within this plan when proposing or considering new development.

The Chippewa-Eau Claire Metropolitan Planning Organization (MPO), West Central Wisconsin Regional Planning Commission (WCWRPC), Wisconsin Department of Natural Resources (WisDNR), and all municipalities represented in this planning effort recognize the importance of residential, commercial, and industrial development in the urban area. Likewise, the importance of preserving water quality and the environment is also recognized. The implementation of this plan will be accomplished through site specific review to ensure sensible decisions are made to protect our natural resources, but, also, to not unduly prevent development from occurring.

6.1 PROCEDURES FOR SEWER EXTENSION REVIEW

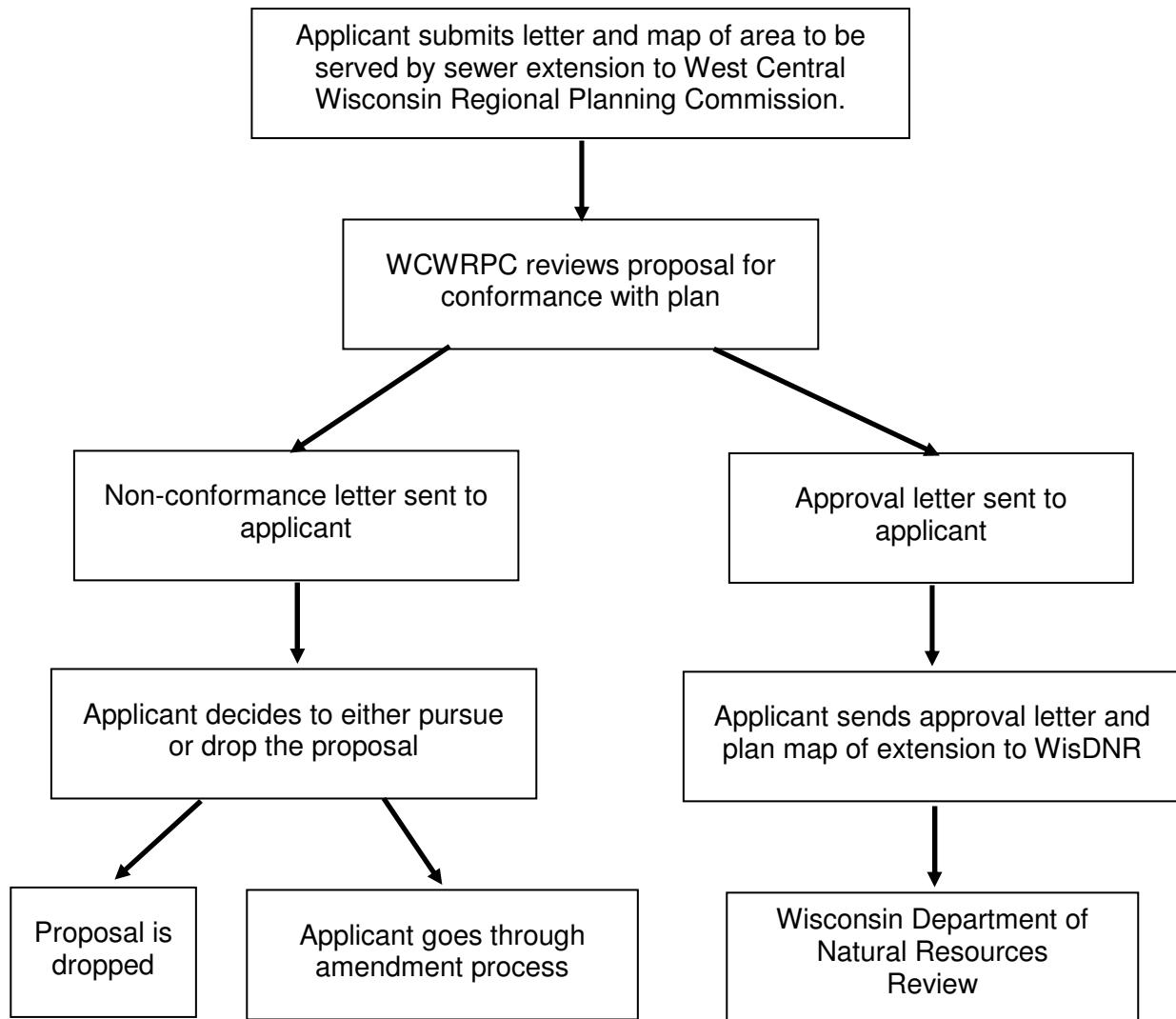
The WCWRPC will be responsible for advising the WisDNR on the consistency of proposed sewer extensions with the Sewer Service Area Plan. The local review procedures for sewer extensions are outlined below and are also illustrated in Figure 5. NR 110 should be reviewed by the applicant for detailed WisDNR plan approval requirements.

1. Applicants for sewer extensions will submit a letter and a plan map showing the proposed sewer extension and the Service Area (with acreages) to the West Central Wisconsin Regional Planning Commission. This should be done early in the process, prior to detailed plans, to help avoid delays of the project and added costs. Early submittal of the plans will ensure the local review process is completed prior to final submittal of the plans to WisDNR.

1a. If there is any doubt as to the proposed extension infringing on an environmentally sensitive area (as delineated on the review maps), the West Central Wisconsin Regional Planning Commission will consult with and request site specific information from the local municipality and/or developer. This information, along with the environmentally sensitive area criteria from this plan, will be used to make a recommendation on the proposal.

1b. If the proposed extension infringes on an unrestricted wetland (one of less than 5 acres), the local municipality will be notified and requested by WCWRPC to ensure the character of the wetland is maintained in cooperation with the proposed development if the extension is approved.

FIGURE 5. Review Procedures for Sewer Extension Requests



2. The WCWRPC staff will review all submissions for conformance with the plan, specifically ensuring the proposed extension does not infringe on an environmentally sensitive area, and is within the sewer service area.

- 2a. If the requested sewer extension is in conformance with the plan, a sewer service area conformance letter will be sent to the applicant within 15 days of receipt of the plan map and all required information necessary to perform the review. The sewer service area conformance letter and other materials required by NR110 must then be submitted by the applicant to WisDNR for final review and approval of the sewer extension.
- 2b. If the proposed extension is not in conformance with the plan, or if there are questions about consistency, a letter of non-conformance will be sent to the applicant within 15

days. The applicant should then decide if it wants to further pursue the sewer extension. If not, no further action is necessary.

3. If the applicant decides to pursue the sewer extension which received a letter of non-conformance, the plan must be amended for the proposed extension 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.
4. If the plan is amended or the request altered, the applicant must notify the WCWRPC that it wishes to have the proposed extension re-evaluated.

It must be also noted that inadequate enforcement of the Uniform Dwelling Code or local erosion controls may also result in Wisconsin Department of Natural Resources denial of sewer extension requests into areas of 12% to 20% slopes. This monitoring process and related enforcement policies are discussed previously in Section 3.4.3 of this plan.

6.2 PROCEDURES FOR SEWER HOOKUP REVIEW

In contrast to the review of sewer extensions and plan amendments, the municipality providing sewer services will serve as the water quality management agency for the review of proposed private sewer hookups (laterals) to confirm conformance with the Urban Sewer Service Area Plan.

COM 82.20(4) requires a Water Quality Management (WQM) letter if the project requires plumbing plan review AND conveys sewage to a municipal sewer in the sewer service area⁴ AND if any of the following are true:

- 1) The project creates a new private interceptor main sewer (PIMS) or extends an existing PIMS.

OR

- 2) The project discharges more than 54 drainage fixture units to the proposed building sewer AND the new building sewer will be installed to connect to a PIMS or the proposed building sewer will connect to a point outside the lot line or private easement to a municipal sewer?

The municipality providing sewer services will review submissions for conformance with the Urban Sewer Service Area Plan, specifically ensuring the proposed hookup does not infringe on an environmentally sensitive area and is within the sewer service area. Specific requirements are outlined in COM82 and NR110, which should be reviewed by the applicant for detailed WisDNR plan approval requirements.

If the proposed hookup infringes on an unrestricted wetland (one of less than 5 acres), the local municipality will ensure the character of the wetland is maintained in cooperation with the proposed development if the hookup is approved.

⁴ Tables Comm 82.20-1 and Comm 82.20-2 list the projects which require general plumbing plan review.

If the requested sewer hookup is in conformance with the plan, a sewer service area conformance letter will be sent to the applicant within 15 days of receipt of the plan map and all required information necessary to perform the review. The sewer service area conformance letter and other materials required by Wisconsin Department of Commerce (WisCOM) must then be submitted by the applicant to WisCOM for approval. Submittal to and approval by WisCOM of a WQM letter is not required for hookups within the City of Eau Claire, since the City is an agent municipality which reviews and approves those plumbing installations within its municipal limits. However, the City must still meet the requirements of COM 82.20(4) and have an appropriately filed WQM letter.

If the proposed hookup is not in conformance with the plan, or if there are questions about consistency, a letter of non-conformance will be sent to the applicant within 15 days of receipt of the plan map and all required information necessary to perform the review. The applicant should then decide if it wants to further pursue the sewer hookup. If not, no further action is necessary.

If the applicant decides to pursue the sewer hookup, the plan must be amended for the proposed hookup to be in conformance. The amendment procedures can be found in the Plan Amendment Process section of this plan. An applicant can also alter the proposal to pursue conformance and re-apply. If the plan is amended or the request altered, the applicant must notify the municipality that it wishes to have the proposed hookup re-evaluated.

It is advisable that water quality management review is performed early in the planning process, prior to detailed plans, to help avoid delays of the project and additional costs. Early submittal of the plans will ensure the local review process is completed prior to final submittal of the plans to WisCOM if required.

6.3 SEWER SERVICE AREA AMENDMENT PROCESS

With the possibility of a shift in development patterns, a mechanism for reviewing and revising the sewer service area boundary is essential. The amendment process will allow the communities and developers to alter the service area by using additional technical data, new community needs and trends, and possible facility changes. All amendment records and updated boundary maps will be maintained by the West Central Wisconsin Regional Planning Commission.

Four types of amendments may be made to the Sewer Service Plan:

- Type I** amendments requests for boundary changes without the total acreage of the service area changing.
- Type II** amendments requests to alter the boundary and the acreage of the service area.
- Type III** amendments requests to add holding tank service areas to the plan.
- Type IV** amendments requests for development of an environmentally sensitive area.

Proposals for an amendment to the Sewer Service Plan should include:

1. The exact acreage.
2. Legal description of the lands to be added or deleted.
3. A detailed map of the area and surroundings.
4. Land-use proposals.
5. A list of specific service needs to the area (i.e., water, sewer, roads).

The WCWRPC, Metropolitan Planning Organization, or WisDNR may request that the applicant or governmental entity servicing the proposed area provide additional studies or data needed to fully consider the potential impacts of the proposed amendment.

6.3.1 Type I Amendment. The Sewer Service Area Boundary is Altered Without the Total Acreage Changing

With this amendment, acreage can only be added to the service area if a corresponding number of acres is subtracted. This "swap" requirement will keep the locally approved population density figures unchanged. Requests of this type should be submitted to the WCWRPC by the governmental entity that will be servicing the proposed area.

WCWRPC staff will then review the proposed amendment based on these criteria:

1. Such sewerage service can be provided in a cost-effective manner.
2. There will be no significant adverse water quality and/or environmental impact associated with providing sewer service to the area.
3. The proposed amendment is in compliance with the policies and goals of this plan.
4. Existing or planned sewerage systems have sufficient capacity to treat projected flows.
5. The areas to be swapped are of the same acreage.

Upon WCWRPC review, the amendment must be reviewed by the MPO which will recommend approval or disapproval of the amendment. Following the MPO's action, the amendment request shall be submitted to WisDNR for final approval.

6.3.2 Type II Amendment. The Sewer Service Area Boundary is Modified and the Total Acreage is Altered

With this amendment, acreage cannot be added to the sewer service area unless the following circumstances exists: (1) area is needed to accommodate unanticipated population growth; (2) a change in local population densities has been approved by the local municipality; and (3) failing on-site wastewater systems. Requests of this type should be submitted to the WCWRPC by the governmental entity that will be servicing the proposed area.

In addition to the above requirements of an amendment proposal, a Type II amendment proposal should also include:

1. Actual population increases in the municipality
2. Actual amount of vacant lands within the portion of the municipality in the sewer service area.
3. Current development density of the municipality
4. Current levels and capacities of the treatment facility to serve the proposed area.

WCWRPC staff will then review the proposed amendment based on these criteria:

1. There is a significant difference in the projected population and the actual population of the municipality.
2. Such sewerage service can be provided in a cost-effective manner.
3. There will be no significant adverse water quality and/or environmental impact associated with providing sewer service to the area.
4. The proposed amendment is in compliance with the policies and goals of this plan.
5. Existing or planned sewerage systems have sufficient capacity to treat projected flows.

Upon WCWRPC review, the amendment must be reviewed by the MPO which will recommend approval or disapproval of the amendment request. Following the MPO's action, the amendment request shall be submitted to WisDNR for final approval.

6.3.3 Type III Amendment. The Addition of a Holding Tank Service Area to the Plan

A holding tank service area is required if there is a holding tank within the planning area and outside the sewer service area which generates 3,000 gallons or more of septage per day. Further explanation of holding tank service areas is contained in Chapter 9 of this plan. A request for this type of amendment must be made by the wastewater treatment facility that will service the tank.

Requests for a Type III amendment should be submitted to the WCWRPC and include:

1. A map of the proposed holding tank service area.
2. The exact acreage of the proposed area.
3. Proof there is a contract with the POTW to handle the septage from the tank.

WCWRPC staff will review the proposed amendment based on the information above. The proposed amendment must be in compliance with the policies and goals of this plan.

In addition, a request for a Type III amendment for new development utilizing a new holding tank that encroaches on an environmentally sensitive area will be denied. The amendment will be allowed if it is determined that the actual construction of all buildings and the holding tank are not on those portions of the holding tank service area within an environmentally sensitive area, and there are sufficient setbacks and erosion control measures taken, as defined by local zoning and land development regulations.

Upon WCWRPC review, the amendment must be reviewed by the MPO which will recommend approval or disapproval of the amendment request. Following the MPO's action, the amendment request shall be submitted to WisDNR for final approval.

6.3.4 Type IV Amendment. The Development of an Area Designated as an Environmentally Sensitive Area

All requests for Type IV amendments will be reviewed on a case-by-case, site-specific manner. A Type IV Amendment is requested by the municipality wishing to extend sewer service to an area delineated as an environmental sensitive area. The plan recognizes the possible conflict between development and preservation of environmentally sensitive area and this amendment is an attempt to allow both to co-exist.

Requests of this type should be submitted to the WCWRPC by the governmental entity that will be servicing the proposed area. Information (e.g., maps, studies, surveys, technical data) needed to fully analyze and make an informed recommendation on the proposed amendment should accompany the request; failure to provide such needed information may result in delays during the approval process.

A proposed Type IV amendment necessitates a meeting between the developer, the municipality, WCWRPC, and WisDNR during the analysis of a proposal to eliminate or minimize disagreements and misunderstandings early in the process. WCWRPC and regional WISDNR staff will cooperatively review and analyze the proposed amendment based on the following criteria:

1. There will be no significant adverse water quality and/or environmental impact associated with providing sewer service to the area.
2. The proposed amendment is in compliance with the policies and goals of this plan.
3. Such sewerage service can be provided in a cost-effective manner.
4. All appropriate local, state, and federal environmental permits (such as erosion control, wetland preservation, floodplain, etc.) have been granted for the proposed development.

Based on the cooperative review, WCWRPC will report the findings of the analysis to the MPO . The MPO will then review the request and recommend approval or disapproval of the amendment. Following the MPO's action, the amendment request will be forwarded to the WisDNR for final approval.

When a municipality applies for a Type IV Amendment involving areas with slopes greater than 20%, it shall require from the developer an erosion control plan incorporating the best available management techniques using guidance from the Wisconsin Construction Site Best Management Handbook (WisDNR, April 1989). The developer must also satisfy the following hydraulic criteria on all sites of the proposed development: all post-development discharges from the site for a 3-year, 24-hour frequency storm shall be equal to or less than the pre-development peak discharges from the site for a 3-year, 24-hour frequency storm. However, this stormwater management requirement is not to supercede any local ordinances in place.

It is the responsibility of the municipality to review and ensure proper implementation of the proposed erosion control plan. Upon approval of the erosion control plan by the municipality, it will send a letter stating approval to WisDNR. Approval of the erosion control plan by the municipality is needed for the issuance of a Type IV Amendment by the WisDNR. Once approval of the amendment is made by the WisDNR, the environmentally sensitive areas map of the Sewer Service Plan will be updated to eliminate the proposed development from within the environmentally sensitive area, thus including it as a developable area within the sewer service area.

An approved Type IV amendment is one which allows development of an environmentally sensitive area with minimal environmental impacts. To that end, the WisDNR may approve the amendment with specific conditions, such as erosion control and/or stormwater management requirements, which must be met to ensure protection of the potentially affected resources.

6.4 SUMMARY

The *Chippewa Falls/Eau Claire Urban Area Sewer Service Plan* is intended to be a guide for local municipalities in water quality management. The plan map is based on the preceding data and maps, especially the population projections, growth areas, and environmental sensitive areas. Together this information has been analyzed and translated into the sewer service area for 2025. There is substantial acreage of developable land within the sewer service area which should be used before developing extensions. Inclusion of lands within the sewer service area does not imply they will be developed and sewered by 2025. And though the sewer service boundary is sometimes discussed in the context of proposed annexations, the Urban Sewer Service Area Plan and boundary should not be used to promote nor hinder annexation petitions or urban density development.

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 MPO with final approval being made by the WisDNR, with the exception of a Type IV amendment which only requires WisDNR approval. As discussed in the previous sections, changes to the plan could include altering the sewer service area boundary, adding holding tank service areas, or the addition of an environmental sensitive area into the sewer service area.