



WAUSAU URBAN AREA SEWER SERVICE AREA PLAN 2040



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prepared for:

Marathon County Water Quality Management Technical Advisory Committee

by:

North Central Wisconsin Regional Planning Commission

adopted by:

Marathon County Metropolitan Planning Commission

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This Plan was prepared at the request and under the supervision of the Marathon County Conservation, Planning & Zoning Department (CPZ) by the North Central Wisconsin Regional Planning Commission (NCWRPC). For more information, contact:

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SECTION 1.0 INTRODUCTION

1.1 PURPOSE

This report is intended to update and replace the previous, *2025 Wausau Urban Area Sewer Service Plan* for the City of Wausau and surrounding urban area. These types of plans are also known as areawide water quality management plans.

The general purpose of this areawide water quality management plan, herein referred to as Sewer Service Area Plan, is to maintain a twenty-year sanitary sewer service boundary for the Wausau Urban Area and an institutional structure for implementing the Plan and managing the extension of sanitary sewage services within this urban area.

The urban sanitary sewer service area boundary identifies the geographic land area within which sanitary sewer service could be made available by the year 2040 in a cost-effective, environmentally acceptable manner.

In addition to delineating an urban sewer service boundary, the Sewer Service Area Plan provides a framework for future planning at each individual municipal level. The data, trends, projections and findings developed in this Plan are consistent with detailed community plans for the Cities of Mosinee, Schofield & Wausau, the Villages of Brokaw, Kronenwetter, Maine, Rothschild & Weston, and the Town of Rib Mountain. The goals and policies developed throughout this planning process will also be applicable and useful in the development of local policy direction with respect to land use decisions within these communities.

Thus, the Sewer Service Area Plan will serve the following overall purposes:

- 1) It establishes the geographic boundaries for possible sanitary sewer service to the year 2040;
- 2) It provides a technical basis to anticipate future needs for wastewater collection and centralized treatment facilities for the planning area;
- 3) It establishes an institutional structure for reviewing boundary and plan amendments and for approving sewer extensions and expansions of sewage treatment plants;
- 4) It serves as a guide for community officials as they make land development decisions within their respective communities;
- 5) It identifies areas to be protected from development by designating them as environmentally sensitive areas. Such areas will control and direct the growth of communities in order to protect environmental, social, and economic concerns; and
- 6) The Plan will become a component of the Central Wisconsin River Basin Integrated Management Plan.

1.2 DESCRIPTION OF THE STUDY AREA

The study, or planning, area for this Sewer Service Area Plan is shown in Map 1. The planning area is not to be confused with the actual sewer service area. The planning area is a broader geographic area established by the planning team and/or advisory committee to focus the study and related data collection on that area most likely to be affected by the possible extension of sewer service in any direction. A general understanding of the surrounding area is also necessary for an adequate planning process. The final "planned" sewer service area boundary will fall somewhere inside this greater planning study area.

In this case, the core study area includes the extents of the communities that comprise the Wausau urban or metro area. These communities include the Cities of Mosinee, Schofield & Wausau, the Villages of Brokaw, Kronenwetter, Maine, Rothschild & Weston, and the Town of Rib Mountain. The area immediately surrounding the urban core is also included in the study area due to the potential (may or may not occur) for sewer service to "grow" into these areas. This adds portions of the Towns of Mosinee, Ringle, Stettin, Texas, Wausau and Weston to the planning area. However, sewer service is generally not provided beyond the corporate limits, as a matter of policy, so any new sewered development in this area essentially becomes part of the core area via annexation.

1.3 FEDERAL AND STATE LEGISLATIVE FRAMEWORK

Federal legislation for water quality planning programs was enacted under sections of the Federal Water Pollution Control Act Amendment of 1972, commonly known as the Clean Water Act, and subsequent amendments in 1977 and 1987. These Acts set the framework for a state and national water quality management program with the major goal of making Wisconsin's, and the nation's, waters "fishable and swimmable" and *drinkable* for the future. Congress mandated that this goal be achieved through a comprehensive program of water quality planning, municipal wastewater treatment facilities, and a national discharge permit program for municipal and industrial wastewater discharges. A key section of the Act(s) requires the preparation of Areawide Water Quality Management Plans.

Pursuant to the congressional mandates, the Wisconsin Legislature created chapters 281.11, 281.12 and 283.83 of the Wisconsin Statutes which gives the Wisconsin Department of Natural Resources (DNR) the charge and authority to organize a comprehensive state program for the enhancement and protection of all waters in the state. Under this statutory authority, Chapter NR121 of the Wisconsin Administrative Code was established specifying the policies, procedures and requirements for Wisconsin areawide water quality planning programs.

Under this framework, the state has officially designated three water quality planning areas. These include Dane County, South Eastern Wisconsin Region (SEWRPC) and

the Fox Valley Water Quality Area. Within these areas every community with sanitary sewer service is required to have an areawide water quality management plan (sewer service area plan). Elsewhere in the state, communities with populations over 10,000, such as Marshfield, Merrill, Stevens Point, Wausau and Wisconsin Rapids, are required to develop sewer service area plans through an organizational structure established locally with the assistance of WisDNR. Even though it is prepared under the direction of an advisory committee consisting of local officials from the Wausau Area, this Plan and any subsequent update approved by the DNR technically becomes a state document incorporated into the Central Wisconsin River Basin Integrated Management Plan.

1.4 INTERRELATIONSHIPS BETWEEN THE SEWER SERVICE AREA PLAN, THE FACILITIES PLANS AND THE WISCONSIN RIVER BASIN PLANS

Three types of water quality plans are required under the Federal Clean Water Act. These include basin plans, facilities plans, and areawide water quality management (sewer service area) plans. The relationship of these plans within central Wisconsin is illustrated in Map 2.

The Central Wisconsin River Basin Plan is one of several major river basin plans for the State of Wisconsin. As a whole, these basin plans provide a statewide analysis of water quality and a description of overall goals for protection and enhancement of the state's waters. The primary use of basin plans is as a management guide for specific local governmental actions such as grant awards, setting conditions in waste treatment discharge permits and the identification of needed specific local planning and action.

In contrast with the regional character of basin plans, the facilities plans and areawide water quality management plans are limited to a local area within a major river basin. The facilities plans deal with the planning and preliminary design related to the construction of municipal sewage treatment plants. Through a systematic evaluation of alternatives, the facilities plan is intended to assure that only cost-effective and environmentally sound treatment facilities are constructed.

The sewer service area plan is a local urban area plan that promotes more cost-effective provision of public sanitary sewer through infill and increased development densities. Unlike the facilities plan, which is limited to the treatment plant and the collection system, the sewer service area plan identifies which land areas are likely to be developed with urban service (i.e. sewer) based on community growth trends over a twenty-year period. The types of land uses and population to be served are projected in a sewer service area plan.

The Wausau urban area sewer service area plan will be combined with other like plans from the other urban areas in the Central Wisconsin River Basin to fill in the urban elements of the Central Wisconsin River Basin Integrated Management Plan. The sewer service area plan relates directly to the DNR's sewer extension policy in that once the Plan is approved by the state, all proposals for installation of sewer line extensions

must be in conformance with the sewer service area plan before DNR approval to extend a sewer line will be given.

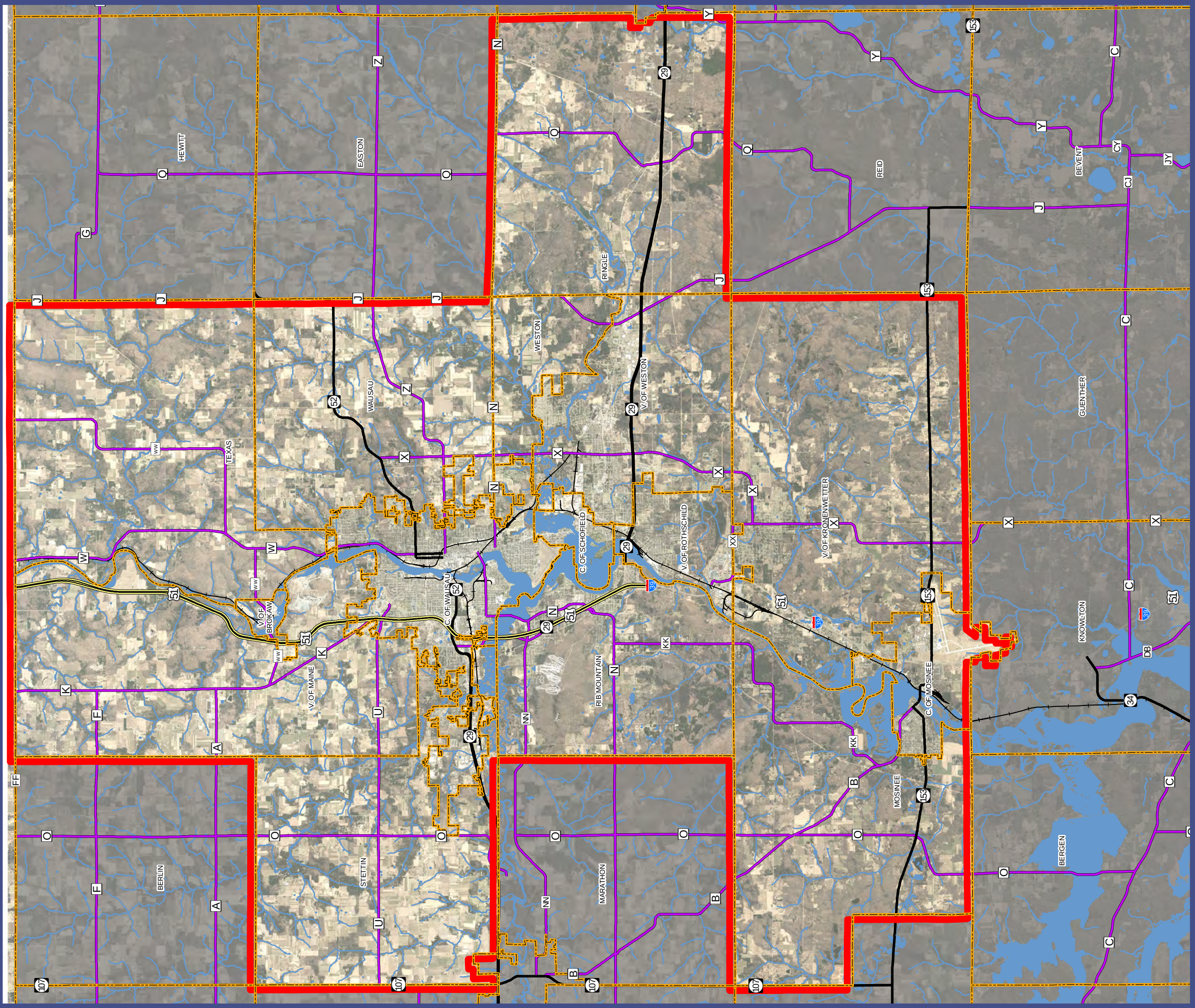
1.5 GUIDELINES FOR PREPARATION OF THE SEWER SERVICE AREA PLAN

- 1) The sewer service area plan shall be consistent with the requirements of Wisconsin Administrative Code NR121 "Areawide Water Quality Management Plans".
- 2) The Plan shall be generally consistent with the land use policies and recommendations of locally adopted comprehensive plans.
- 3) The Marathon County Metropolitan Planning Commission and Water Quality Management Technical Advisory Committee shall oversee the development of the Plan and be responsible for all public policy aspects of the Plan.
- 4) Opportunities for public participation, including at a minimum public hearing per NR121.08, will be provided as part of the development of the sewer service area plan.
- 5) Marathon County Conservation, Planning and Zoning will serve as the designated agent for administration of sewer extension reviews and sewer service area amendments.

1.6 OVERVIEW OF PLANNING PROCESS AND PUBLIC INVOLVEMENT

The process of developing this Sewer Service Area Plan Update was conducted by the North Central Wisconsin Regional Planning Commission (NCWRPC) in conjunction with the Marathon County Conservation, Planning and Zoning Department (CPZ). Development was overseen by the Marathon County Metropolitan Planning Commission and its Water Quality Management Technical Advisory Committee. The process involved a number of meetings with the Advisory Committee and periodic updates to the Full Commission. The Marathon County Metropolitan Planning Commission also held a formal public hearing on the proposed plan. Each of these meetings was open to the public and posted per Marathon County's standard notice procedures.

In addition a series of meetings, one to two with each of the urban area communities, were held to gather community input on the plan update in order to develop a draft plan. The final plan adoption process involved each community moving the Plan through committee to its full council or board at regularly scheduled, open and noticed, meetings.



Legend

- US Highway
- State Highways
- County Highways
- Railroad
- Minor Civil Divisions
- Planning Area Boundary
- Water

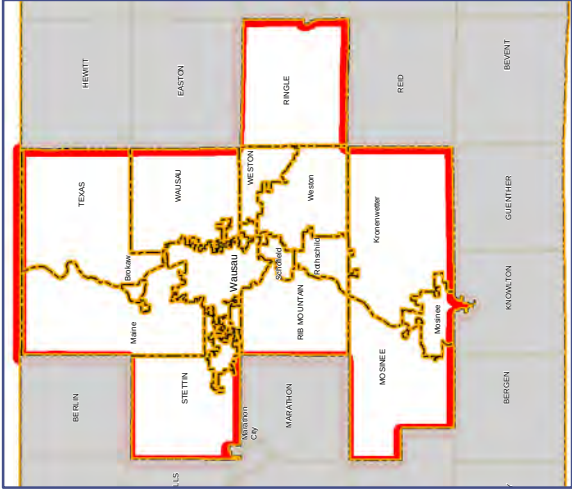
SOURCE: NCWRPC, WiDNR,
Marathon County Geo Services

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.



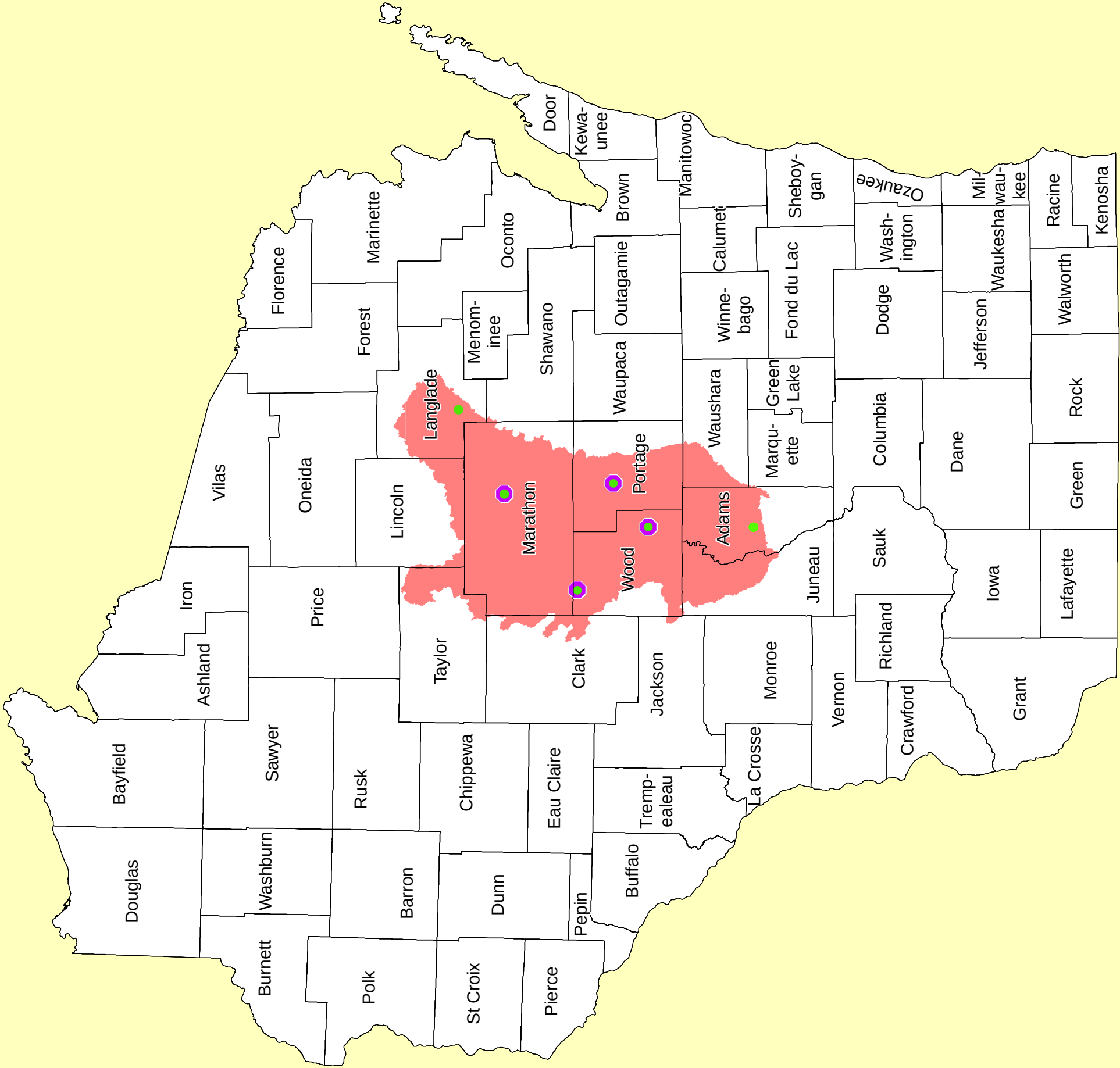
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Planning Area



Water Quality Plan Relationships

Metro Area Sewer Service Area Plan



Legend

- US Highway
- State Highways
- County Highways
- Railroad
- Minor Civil Divisions
- Facilities Plans For Municipal Wastewater Treatment
- Area-wide Water Quality Management Plan

SOURCE: NCWRPC, WiDNR,
Marathon County Geo Services

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SECTION 2.0 CENTRAL WISCONSIN RIVER BASIN INTEGRATED MANAGEMENT PLAN

2.1 BACKGROUND ON BASIN PLAN

The Central Wisconsin River Basin is a subset of the entire Wisconsin River corridor. The River is divided into three segments to distribute the workload between different DNR region offices. Located in Central Wisconsin, the Basin extends south from the Merrill Dam located on the Wisconsin River in Lincoln County to the Castle Rock Flowage Dam in Juneau and Adams Counties, see Map 2.

Completed in 1992, the Water Quality Management Plan for this section of the Wisconsin River has been the basis for water resources management priorities and activities to address water quality issues, providing management and monitoring recommendations for lakes and streams in the Central Wisconsin River Basin.

The DNR continues to use the 1992 plan as a basis for management decisions. In 2002, the DNR completed the State of the Central Wisconsin River Basin Report to provide updated lake and stream tables and other updated background and program information. Together these two plan reports serve as the DNR's Central Wisconsin River Basin Integrated Management Plan.

In previous plans, the municipal point source pollution problems in the basin were not dealt with in very much detail. This "current" basin plan directed more attention on point sources with the Point Source Report, which examines existing and future wastewater treatment facility and management needs.

All future water quality management activities within the basin, including the Wausau urban area Sewer Service Area Plan must be consistent with the basin plan according to state law.

2.2 CONCLUSIONS AND RECOMMENDATIONS OF THE BASIN PLAN REGARDING MUNICIPAL POINT SOURCE POLLUTION

Ultimately, the basin plan outlines steps that are necessary for waters of the basin to meet the "fishable and swimmable" goal. The specific action goals of the basin plan are as follows:

- 1) Identify water quality problems in the basin in order to set priorities and provide guidance for management activities for specific lakes and streams;
- 2) Guide and direct the public, designated management agencies, state and federal agencies, and local governments in efforts to protect and improve Wisconsin's water resources;

- 3) Anticipate future management activities necessary for water quality protection;
- 4) Integrate and coordinate DNR programs for managing both surface and groundwater resources in Wisconsin; and
- 5) Incorporate the public's concerns and increase public awareness of everyone's responsibilities to water quality protection and improvement.

For communities within the Wausau urban area and the various watersheds that surround them, the 1992 basin plan lists the following Point Source Recommendations:

- "125") Rib Mountain Metropolitan Sewerage District should continue biomonitoring.
- "126") Rib Mountain should analyze its effluent for nutrients.
- "134") The Village of Brokaw should analyze its effluent for nutrients for data to verify the wasteload allocation model.
- "168") The City of Wausau should start biomonitoring.
- "169") Wausau should continue toxic monitoring of its effluent.
- "170") Wausau should monitor its effluent for nutrients for data to verify the wasteload allocation model.

Note: The Rib Mountain Metro and Wausau waste water treatment plants routinely monitor their effluent according to their permit conditions and as otherwise required by law or as deemed necessary for public health and safety.

In the 2002 basin plan update, there were no additional recommendations specific to Wausau urban area communities. However, a comprehensive list of and recommendations for other water quality issues generally related to municipal operations and activities are also presented in the basin plan.

2.3 WISCONSIN RIVER TOTAL MAXIMUM DAILY LOAD (TMDL)

In recent years, the Wisconsin Department of Natural Resources' efforts in planning for and managing water quality within the Wisconsin River basin have revolved around the development of a total maximum daily load or TMDL. The Wisconsin River TMDL study area does not just apply to the Wausau urban area; in fact, it spans Wisconsin's central corridor from the river's headwaters in Vilas County to Lake Wisconsin in Columbia County, covering 9,156 square miles – approximately 15 percent of the state.

TMDLs were created by the Clean Water Act in the 1970s, but were not implemented or enforced by EPA until the late 1990s when a string of lawsuits challenged EPA's inaction. The Wisconsin River TMDL process began in 2009 with an extensive water quality monitoring process throughout the watershed to provide data for detailed watershed and reservoir model development.

A TMDL is the amount of a pollutant that can be discharged into a waterway and still meet water quality standards. In the Wisconsin River Basin, the TMDL will include the total amount of phosphorus and suspended solids that can be discharged into the river, its tributaries and reservoirs, and still meet water quality standards. Under existing conditions, many reservoirs and tributaries in the Wisconsin River do not meet water quality standards due to excess pollutant loads, meaning they are not suitable for their designated uses, such as fishing, wildlife habitat, and/or recreational activities such as boating and swimming. The TMDL concept is illustrated in Figure 1.

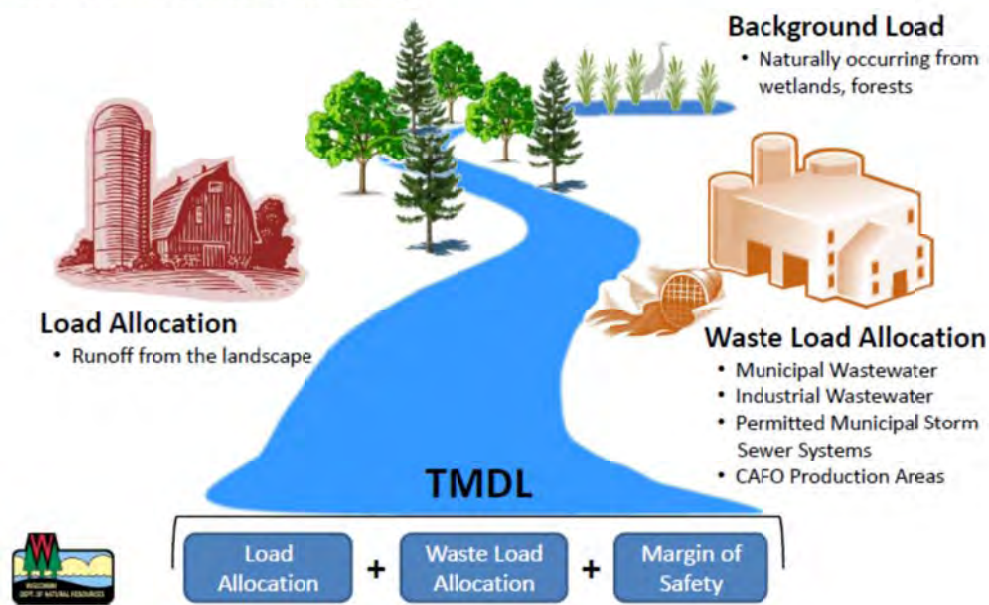
The TMDL study and implementation plan provides a framework and prioritizes resources for water quality improvement in the Wisconsin River Basin by determining: the magnitude of the existing pollutant load; what the contribution is from each pollution source; how much pollution needs to be reduced by in order for each waterway to meet water quality standards and achieve their designated uses (fishing, recreation, habitat etc.); and how the needed pollutant load reductions will be achieved for each waterway. The Wisconsin River TMDL is targeted for EPA approval in 2018.

From the modeling, all point source dischargers within the watershed will receive a waste load allocation. Municipalities will be affected on two fronts: storm water and waste water discharge. Each community will have to work out an implementation plan on how it might best achieve it limits, which will then be incorporated into its discharge permits. Implementation will be phased over a number of permit cycles. There are serious concerns regarding the potential cost for municipalities to implement the TMDL.

FIGURE 1

WRB Total Maximum Daily Load (TMDL)

Each subwatershed is assessed for:



2.4 LOCAL AREA WATER QUALITY ASSESSEMENT

This subsection contains a general assessment of the state of water quality in the Wausau Urban Area as summarized from the Marathon County All Hazards Mitigation Plan and other various sources.

2.4.1 BACKGROUND ON WATER QUALITY THREATS IN MARATHON COUNTY

Groundwater is a very important resource in the County, as it is the major source of all water consumption. All public and private water supplies and most of the domestic, industrial and agricultural supplies rely on groundwater. From 1979 to 2005, total water use in Marathon County increased from 47.7 million gallons per day to 68.2 million gallons per day. Most groundwater reserves are held in glacial drift aquifers consisting of sand and gravel that allows for rapid percolation and flow to most areas.

Due to the County's heavy dependence on groundwater, contamination can be a serious problem. Groundwater contamination occurs when contaminants reach levels that are considered unsafe for humans and/or animals to be exposed to or drink. Contamination can be caused by septic system failures, water treatment problems, agricultural runoff (fertilizers, animal waste), urban runoff (industrial chemicals, yard fertilizer, household chemicals), hazardous waste spills or leaks, and leaking landfills. Three contaminants present in Marathon County that are of particular concern are coli form bacteria, nitrates and volatile organic compounds (VOCs).

Coli form bacteria are microorganisms found in surface water, soil and in the feces of humans and animals. They do not usually cause disease. However, their presence indicates that fecal wastes may be contaminating the water and means that pathogenic (disease-causing) organisms could be present. If human or animal wastes are contaminating the water, gastrointestinal diseases, hepatitis, or other diseases may result. Presence of a specific fecal coli form bacteria, *E. coli*, is more conclusive evidence of fecal contamination, which presents an even greater health risk than total coli form bacteria.

Nitrate nitrogen is a commonly used lawn and agricultural fertilizer. It is also a chemical formed in the decomposition of waste materials, such as manure or sewage. High nitrate levels (> 10 milligrams per liter [mg/L]) can cause birth defects, miscarriages, and infant illness. High nitrate levels also suggest that other contaminants might be present. The natural level of nitrate in Wisconsin's groundwater is less than 0.2 mg/L. Nitrite is an unstable form of nitrogen that might be found in small amounts along with nitrate. Sometimes results of nitrate and nitrite are reported together.

VOCs are a group of commonly used chemicals that evaporate when exposed to air. Since they dissolve many other substances, VOCs are widely used as cleaning and liquefying agents in fuels, degreasers, solvents, polishes, cosmetics, drugs, and dry cleaning solutions. Some common VOC's are trichloroethylene (TCE), tetrachloroethylene (also called "perchloroethylene," which is dry cleaning fluid), trichloroethane, benzene, toluene, and xylenes. VOCs can irritate the eyes and throat if

inhaled in large quantities or consistently over time. Many VOCs are known carcinogens, and many more are suspected.

The State of Wisconsin mandates wellhead protection plans for any municipal drinking well installed after 1996. Currently, all the public water supply wells serving the communities in the Wausau urban area have wellhead protection plans in place. These plans serve to protect the public water supply through proactive steps to prevent contaminants from entering public water supply wells.

2.4.2 HISTORY OF WATER QUALITY PROBLEMS IN MARATHON COUNTY

There have been several instances in Marathon County where groundwater quality has been significantly impacted by contamination. The most notable historical incidents are described below.

In spring 1999, contaminants were detected in the groundwater monitoring wells at the former Gorski Landfill in the Town of Mosinee. In July 2000, an investigation of the former landfill site was initiated after the discovery that potentially hazardous chemicals remained in the local water supply. The primary contaminants found were VOCs. Clean-up and costs have exceeded \$750,000, and funds are still being expended for on-going monitoring and water quality testing.

In 1986, work was completed on the Rib Mountain Metropolitan Sewage District sewer and water facility. The project was in response to long-term groundwater problems experienced in the Town of Rib Mountain. The cost for this project was \$21.6 million. In addition, property owners paid between \$600 and \$4,000 each to connect their homes to the new system.

In May 1985, 95 wells in the Town of Stettin were found to be contaminated and unsafe for cooking and drinking. This problem later expanded to more wells and resulted in the 1986 annexation of more than 700 homes, 1,500 persons and \$39 million in assessed value to the City of Wausau. New municipal water lines were constructed in the area at a cost of \$1.75 million.

In 1982, 35 residential homes located adjacent to a potato field near Mosinee were found to have unsafe levels of Aldicarb, a highly toxic pesticide, in their well water. The incident caused great anxiety among landowners, especially pregnant women and those with small children. It also resulted in some owners deepening their wells at considerable expense, only to find increases in iron and manganese levels replacing the Aldicarb in the water. Although these elements don't represent the risk of Aldicarb, filters are now being used. Other landowners chose not to increase well depth and are still experiencing high Aldicarb levels. The cost to date for well remediation and damages is undetermined.

2.4.3 SURFACE WATER ISSUES

Several reservoir lakes and tributaries in the Wisconsin River Basin are impaired as a result of excessive nutrient loading. As a result, a water quality improvement study and plan is being undertaken in the form of development and implementation of a Total Maximum Daily Load or TMDL.

Low levels of dissolved oxygen and severe algal blooms have decreased opportunities for recreational activities, raised concerns for human health, damaged fish and aquatic life, and impaired the quality of the River. The impoundments along the River provide a setting that is ideal for algae growth. Water from a large watershed is slowed and warmed behind the dams. The water carries high levels of phosphorus, which is a primary food source for algae.

2.4.4 GROUNDWATER VULNERABILITY

Areas become vulnerable to groundwater contamination because they are naturally drainage deficient (porous soils), contain large supplies of valuable water (public water systems), or house a site that presents a risk (e.g. leaking landfill site). The vulnerability assessment will address these areas, as well as sensitive populations.

2.4.4A PUBLIC WATER SUPPLY SYSTEMS

Approximately two-thirds of Marathon County residents obtain their drinking water from public water supply sources. Most are municipal water systems. Other year-round systems that serve the same group of people include mobile home parks and other residential developments. If these sources were to become contaminated, thousands of people could be affected.

The Environmental Protection Agency (EPA) regulates the amount of certain contaminants allowable in public water systems. Public water systems are therefore required to conduct testing for contaminants in the water supply. Required testing includes: disinfection byproducts, inorganic contaminants, microbiological contaminants including pesticides and herbicides, and volatile organic contaminants (VOC).

Wausau urban area communities all report levels of iron and manganese as their top water quality issues for the municipal drinking water supply. Each community currently employs some combination of treatment and filters to reduce levels in their water.

2.4.4B PRIVATE WATER SUPPLY SYSTEMS

In rural areas, residents rely on private wells for their water supply. These rural residents account for about one-third of the County population. Private Wells serve fewer people, but may be at greater risk for certain types of contamination (i.e. nitrates) because they are located in areas that are typically agricultural and have higher instances of fertilizer or animal waste runoff. Private Wells can also be contaminated by private septic systems, which may be more likely to leak.

Of the 1,862 private wells tested in 2008 by the Marathon County Health Department, 16.9% tested unsafe for coli form bacteria. About 8.5% of wells that were tested for nitrate-nitrogen tested unsafe, and 4.7% of the wells tested for fluoride had unsafe fluoride levels.

About 52% of private well samples taken between 1990 and 2006 showed elevated nitrates. Nitrates serve as an indicator that land use is negatively affecting groundwater. The Wisconsin Department of Agriculture, Trade and Consumer Protection and DNR report that 80% of the nitrates in wells originate from the agricultural land-spreading of nutrients and legume cropping.

While public water supply systems are regulated by the EPA and required to undergo periodic testing for a wide range of contaminants, private well testing is on a voluntary basis. Often residents do not have their water tested unless there is a noticeable unpleasant odor, color, or taste. Additionally, private water supplies are usually tested for coli form bacteria, nitrate-nitrogen, and fluoride. More comprehensive water testing, such as what is required for public water systems can be cost-prohibitive.

2.4.4C GEOLOGY

Groundwater characteristics and contamination potential are influenced by the porosity, texture and depth of area soils. A coarse texture makes a soil more porous and allows contaminants to reach groundwater at a faster rate and with less filtering. A finer texture with less pores acts as a natural filter for the contaminant, slowing it down and reducing the potential impact on the groundwater.

Along the Wisconsin River, Rib River and Eau Claire River in Marathon County, the dominant soil formation (Mahtomedi-Fordum-Sturgeon Association) is very coarse. This results in the highest volume yield wells in the County at 2,000 gallons per minute in the Village of Weston. However, the coarse soil type is also conducive to high infiltration and permeability rates. This makes the groundwater vulnerable because the soil does not filter contaminants well, and allows them to reach the groundwater faster. This soil formation is predominant along the USH 51 corridor and spreading east and west from the Town of Rib Falls to the Town of Easton.

Throughout most of Marathon County, groundwater can be found at depths of 20 feet or less. This is good for groundwater availability, but can provide a shorter path for contaminants.

2.4.4D HIGH GROUNDWATER RISK SITES

The United States Geological Survey (USGS) reports that as of 2007, Marathon County has 140 open-status sites of contaminated groundwater and/or soil. Contaminated sites in Marathon County that contain or previously contained hazardous materials may pose a threat to surrounding groundwater resources. Areas around the sites, particularly residential areas and water supply wells, may be more vulnerable to groundwater contamination due to spills or leakage of hazardous materials or contaminants.

The Superfund Program was established in 1980 to locate, investigate, and clean up the worst chemical and hazardous waste sites nationwide. There are three identified Superfund sites in Marathon County: Wausau Groundwater Site, Spickler Landfill, and Mid-State Disposal Inc. Landfill.

The Wausau Groundwater site encompasses an area in the northern section of the City of Wausau. In 1983, three of the City's six drinking water wells on the site were found to be contaminated with high levels of VOCs. Approximately 32,000 people live within a three-mile radius of the site. The contamination was believed to be caused by an old municipal landfill on the Marathon Electric property and the Wausau Chemical facility property. Soils at both of these areas are contaminated with VOCs. The site has been addressed by the responsible parties through installation of a pump and treatment system and construction of two air strippers. The site is monitored every five years and remains within acceptable levels to date.

The Spickler Landfill site is a former open municipal and industrial dump site. It is comprised of two fill areas totaling 10 acres on an 80-acre parcel of land in the Town of Spencer. In 1987, some landfill gas was detected onsite, and asbestos was confirmed in a soil sample. Leachate samples included elevated levels of calcium, magnesium, mercury, and nine organic compounds. Groundwater samples from monitoring wells showed exceedance of acceptable levels for the following chemicals: benzene, vinyl chloride, barium, copper, iron and manganese. Eight private wells near the site were sampled, and four exceeded acceptable levels of one or more of the above-mentioned chemicals. The site has been closely monitored, and modifications have been made to remediation activities to ensure that contamination does not migrate off-site.

The Mid-State Disposal Inc. Landfill site is located four miles east of the Village of Stratford. The site is a 160-acre parcel containing a 35-acre mound landfill, a five-acre "interim expansion" area, and a three-acre sludge lagoon. The landfill was in operation from 1970 to 1979 and accepted paper mill sludge's, asbestos dust, solvents, pesticides, paint sludge's, and metals, as well as municipal waste. In 1983, groundwater in vicinity of the site was shown to contain VOCs. A remediation plan including a gas extraction and collection system among other remedies was implemented in 1994. Further remediation, including construction of an alternate water supply for nine area residents, is contingent upon VOC levels in surrounding residential wells. The site is monitored every five years and remains within acceptable levels to date.

Marathon County Solid Waste Department began operating a landfill in the Town of Ringle on December 1, 1980. Marathon County owns 575 acres of land that can be utilized for waste and recycling materials management. The Solid Waste Department accepts municipal, commercial and industrial waste and recycling for processing. The Resource Conservation Recovery Act (RCRA) Subtitle D regulations, for landfill construction and operations, are employed to protect the environment and public health.

Other facilities in Marathon County that may be at risk of causing groundwater contamination are as follows:

- Confined Animal Feed Operations and barnyards – poor manure management
- Farm fields – overuse of fertilizer and manure spreading
- Chemical/fuel storage facilities – poor or faulty storage, spills
- Stockpiles/tailings piles – leaching of contaminants
- Underground Storage Tanks – leaks
- Industrial/commercial facilities – poor or faulty storage, poorly managed disposal methods
- Pipelines – rupture

2.5 FUTURE WATER QUALITY ISSUES

People of all ages and races are vulnerable to negative effects of contaminants. It has been suggested that small children or elderly may be more susceptible due to weakened or underdeveloped immune systems. Infants less than six months of age and pregnant women may be at particular risk if they drink water containing more than 10 mg/L of nitrates. This would put the infants at risk for methemoglobinemia, a disease that interferes with the blood's ability to carry oxygen. Recent studies also suggest that high nitrate water may be linked to birth defects and miscarriages.

Based on the past occurrences and the trend of continuing contamination, the probability of future water contamination in Marathon County is of concern. Past groundwater contamination events in Marathon County have most often been in the millions of dollars to remediate and improve infrastructure. Typically, the full cost of remediation is not realized even after many years have passed. Groundwater, once polluted, may take decades to be flushed of contaminants. People who drink contaminated water may, immediately or over time, suffer from a variety of health problems including malignant tumors; kidney, urinary and digestive tract disorders; leukemia or birth defects. The health costs associated with a major, long-term contamination incident can be staggering.

The need for clean groundwater is not only a health issue; it is also an economic issue. Where groundwater becomes polluted, property values drop and land may become unsellable. People may relocate to new groundwater resources, perhaps to a new city or county.

SECTION 3.0 LOCAL PLANS FOR WASTEWATER FACILITIES

3.1 BACKGROUND ON FACILITIES PLANS

Although federal and state funding for wastewater systems has declined, facilities plans represent a critical step in ensuring that the system remains up-to-date, cost efficient and able to meet water quality standards. A facilities plan serves the following purposes:

- 1) The development and evaluation of alternative wastewater treatment methods;
- 2) Selection of the cost effective and environmentally sound plan which will best solve the wastewater treatment problems of the area; and
- 3) Presentation of preliminary designs for the selected plan of wastewater treatment.

There are currently three municipal wastewater treatment plants in the study area. These include the City of Wausau, Rib Mountain Metro Sanitary District (RMMSD) and Village of Brokaw. Wausau's current facilities plan was prepared in 1988 by Becher-Hoppe, Inc. under the title, *An Amendment of Wausau Area Facilities Plan for the Cities of Wausau and Schofield, Marathon County, Wisconsin*. RMMSD's facilities plan was prepared by Strand Associates in 2016 and titled, *Wastewater Facilities Plan, Rib Mountain Metropolitan Sewerage District, WI*. Vierbicher Associates, Inc. did a thorough evaluation of condition and needs of the Brokaw wastewater system as part of a study entitled, *Infrastructure Analysis Report Village of Brokaw Marathon County Wisconsin*, which was completed in 2016. Much of the planning data that is found in these facilities plans is applicable and was used in the preparation of this Sewer Service Area Plan.

3.2 EXISTING WASTEWATER COLLECTION & TREATMENT FACILITIES PLANS

The wastewater collection and treatment systems, see Map 3, and the status of the facilities planning for Wausau, RMMSD and Brokaw are described below.

3.2.1 CITY OF WAUSAU COLLECTION AND TREATMENT FACILITIES

The "current" facilities plan for the Wausau wastewater collection and treatment system was originally completed in February of 1982 with a major amendment report released in November of 1987 and further revisions in February of 1988. The upgrades to the Wausau Wastewater Treatment Plant resulting from this facilities plan were completed in June of 1991.

This 1982 plan was actually a joint effort of the Cities of Wausau and Schofield, Village of Rothschild, Rib Mountain, Stettin, and Weston Sanitary Districts and the Town of Kronenwetter; having formed a "Wausau Area Facilities Plan Advisory Committee". The

primary impetus driving development of this plan was that the existing Wausau and Rothschild wastewater treatment facilities were not meeting their effluent limits.

A number of other issues were also involved. Inflow and infiltration (I/I) analysis showed the I/I to be excessive in both systems. Further, development within the Village of Rothschild and Town of Weston were restricted by a sewer connection moratorium because the Rothschild plant had reached its hydraulic limit. The Rib Mountain, which had been formed in 1971, was attempting to determine where its wastewater should be treated and how to pay for it. In the Stettin Sanitary District, many residents were affected by frequent back-ups of raw sewage into their basements due to overloaded sewers. And, rapid growth in the northern part of Kronenwetter was causing concern regarding the potential need for sewer facilities in the future.

Ultimately, the report evaluated sewer service for the entire Wausau urban area, including the siting and construction of a new regional treatment facility. Because of the above cited issues, the "Do Nothing" alternative was not an option. Multiple action alternatives were studied for cost-effectiveness. The final recommendation of the report included several elements, as follows:

- Retain and Upgrade Wausau WWTP. This facility would serve Wausau, Schofield, Stettin Sanitary District (latter annexed), and small parts of the Rib Mountain (later annexed) and Weston Sanitary Districts.
- Abandon Rothschild WWTP.
- Construct Regional WWTP south of Rothschild. This facility would serve the majority of the Rib Mountain and Weston Sanitary Districts, the Village of Rothschild, and the northern portion of the Town of Kronenwetter.
- Sewer rehabilitation to address I/I and reduce unnecessary flow to the WWTPs.

Not all of the recommendations of this study were brought to fruition. The report did recommend that a single sanitary district be formed for the entire area to operate and maintain for the existing Wausau and proposed south regional treatment facilities. This did not occur, and the Rib Mountain Metropolitan Sanitary District (RMMSD) was formed to manage the south plant, see below.

Today, the City of Wausau owns and operates an 8.2 million gallon per day (mgd) wastewater treatment plant (WWTP) and an extensive collection system. The plant provides service to the City of Wausau, the City of Schofield (via its own collection system, and a small part of the Village of Weston (via Schofield). The plant also provides treatment for septic tank and holding tank wastes received from unsewered areas outside the City limits per state regulations.

The facility incorporates conventional activated sludge treatment that includes chemical phosphorus removal. The last major upgrade was completed in 1991 as discussed above with subsequent modifications including aeration tank fine bubble diffusers, new blowers, micro-turbines and gas treatment in 2011, new UV disinfection system in 2012, influent step screens and conveyor in 2013, and primary digester heating / mixing system and secondary digester mixing system in 2016. Improvements currently under

construction include upgrades to the mixing and heating system, digester covers, and gas ball.

The wastewater treatment process includes preliminary treatment (screening and grit removal), primary clarification (4 primary clarifiers), activated sludge aeration (3 active aeration basins, 3 inactive aeration basins), final clarification (3 final clarifiers), and sand filtration (6 cells). Alum is added prior to the primary clarifiers for phosphorus removal and the effluent is seasonally disinfected by the UV system. The average daily flow is approximately 5.5 mgd. The receiving water for the treated effluent is the Wisconsin River.

Waste activated sludge is thickened with a gravity belt thickener and anaerobically digested with the primary sludge in two 60 foot diameter primary digesters. The digested sludge is stored in two secondary digesters before being thickened by two belt filter presses. The sludge cake is stored in an 80' by 300' shed and spread on farm fields by wastewater staff.

The collection system has approximately 225 miles of sewer main and 25 lift stations. Significant I/I issues continue with peak flows of over 20 mgd under heavy storm conditions. Parts of the collection system also have some corrosion issues.

As of this writing, Wausau had contracted with an engineering firm and was in the process of developing a new facilities plan. The scope of work for this new facilities planning process is as follows:

- Description of the wastewater treatment plant process and operations;
- Estimation of the wastewater demand for 5, 10 and 20 year planning;
- Evaluation of the wastewater treatment system and identification of deficiencies;
- Analysis of the available engineering and financial alternatives for maintenance, system and operation improvements;
- Development of recommendations for updates to the maintenance, systems and operational structure of the wastewater collection and treatment facilities;
- Evaluation of the feasibility and development of recommendations for using alternative energy sources;
- Identification of the current and potential future regulatory concerns for the collection and treatment system; and
- Evaluation of the functional feasibility and the economic feasibility of combining with the Rib Mountain Metropolitan Sewerage District and phasing out Wausau's treatment facility.

3.2.2 RIB MOUNTAIN METRO SANITARY DISTRICT COLLECTION AND TREATMENT FACILITIES

Rib Mountain Metro Sanitary District (RMMSD) owns and operates the RMMSD Wastewater Treatment Plant that provides wastewater treatment to parts of the Town of Rib Mountain, the Village of Rothschild, the majority of the Village of Weston, the Village of Kronenwetter, and the City of Mosinee. The District also owns and maintains an interceptor sewer that brings the wastewater to the plant. RMMSD is an independent, special purpose district that evolved out of the recommendations of the joint, 1982 facilities plan, discussed above. Mosinee joined RMMSD in 2011 after determining it was more cost effective than maintaining its own facility. Special purpose districts are a type of local unit of government in Wisconsin.



RMMSD Wastewater Treatment Plant

The WWTP and interceptor sewer have been operating since January 1986. The plant has had interim upgrades for biosolids storage, wastewater screening, phosphorus removal, and ultraviolet (UV) disinfection, but much of the WWTP processes are the same as they were originally installed. The interceptor is in good condition and does not have significant I/I issues. The individual communities own and maintain their own collection facilities that feed into the interceptor.

The current liquid treatment facilities at the plant include influent pumping, raw wastewater screening and grit removal, primary sedimentation, activated sludge treatment with chemical phosphorus removal, final clarification, UV disinfection, and cascade aeration. The receiving water for the treated effluent is the Wisconsin River. The solids processing facilities include waste activated sludge (WAS) thickening by dissolved air floatation (DAFT), primary and secondary stage anaerobic digestion of primary and thickened waste active sludge (TWAS), and liquid biosolids storage.

RMMSD has belt filter presses for dewatering and cake storage; however, biosolids are not dewatered at this time. Biogas generated during anaerobic digestion is used to fire a hot water boiler that provides heat to the digestion process, digester building, and solids processing building. In addition, excess biogas is used to operate gas generators during peak electrical demand hours.

The RMMSD recently completed a new facilities plan in 2016, and is now working towards implementation of plan recommendations. Even though the plant is in good operating condition and consistently meets its permitted effluent limits, a full review and evaluation of maintenance, systems and operational structure to update and modernize aging equipment and address operational issues was warranted. The final plan represents a major undertaking with implementation in two phases from 2016 to 2020 and from 2021 to 2030 at an overall cost of nearly \$17 million.

Since the collection systems beyond the interceptor are the responsibility of the individual communities, they are not addressed in the RMMSD facilities plan. The plan recommendations for the RMMSD plant and interceptor facilities are itemized below. RMMSD is continually reevaluating its processes following the development of the plan, so the list of modifications ultimately completed is subject to change.

1. Replace the five original influent pumps with five new chopper pumps.
2. Replace the existing recycle flow Parshall flume with a larger recycle flow Parshall flume, replace wet well level floats with new radar transmitters, replace influent gates, and replace the recycle flow sampler with a new automatic sampler. Inspect and replace or refurbish wet well piping.
3. Replace the diesel generator with a new natural gas generator and relocate it to the location of the plant electrical service entrance switch.
4. Replace the existing influent mechanical step screen and wash press with a larger new mechanical step screen and new wash press.
5. Replace the existing aerated grit removal system with a vortex grit removal system and grit washer.
6. Replace the primary clarifier flights, chains, and sludge pumps, and add clean outs on the primary sludge lines.
7. Replace one activated sludge blower with a turbo blower and the piping between the blower room and aeration tanks.
8. Replace final clarifier drives, collector mechanisms, and RAS pumps equipped with new VFDs.
9. Evaluate phosphorus removal alternatives during the phosphorus compliance schedule included in an updated WPDES permit.
10. Install an additional ultraviolet disinfection system bank.
11. Replace the internal equipment of the dissolved air floatation thickening system and the thickened sludge pumps.
12. Replace both digester covers (after inspection), digester recirculation pumps, transfer pumps, digester gas safety equipment, the waste gas burner, heat exchanger and add hot water boiler, and install a pumped mixing system for the secondary digester.
13. Demolish biosolids dewatering equipment and refurbish building to be reusable for alternative purposes as part of the phased projects in the future.
14. Update the plant power equipment to provide a new service entrance switchboard, back-up power generator, three new MCCs, SCADA PLC upgrades, and provide a big screen monitor.

15. Replace all existing buried valves, valves in manholes, and interior valves with new valves.
16. Make modifications to the Administration Building including repurposing of garage space, the addition of SCADA displays, and improvements to offices, locker rooms, and storage space to meet staff needs.
17. Paint all interior spaces and piping concurrently with improvements in each building.

The current capacity of the plant is 4.27 mgd, and the design capacity with the planned improvements will be only slightly greater at 4.41 mgd with a peak flow capacity of 12.29 mgd.

3.2.3 VILLAGE OF BROKAW (MAINE) COLLECTION AND TREATMENT FACILITIES

As part of the development of the cooperative boundary plan and to properly plan for the eventual consolidation, the Villages of Maine and Brokaw contracted with an engineering firm to evaluate the Village of Brokaw's infrastructure, including the wastewater collection and treatment systems. This report is a de facto facilities plan in that it gives village officials information they need to make decisions regarding the maintenance and potential for expansion of sewer service. The Village has received and continues to apply for a series of grants from USDA and others to implement the recommendations of this report.

The collection system consists of a series of collection mains, manholes, two lift stations and their force mains. The collection system is divided into east and west sub-collection systems divided by the Wisconsin River. An 8-inch sewer suspended under the bridge over the river conveys wastewater from the westside to the eastside. The Village's wastewater treatment facility is located at the east end of Everest Avenue on the Village's eastside.

Preliminary treatment is provided by a comminutor, and secondary treatment is provided by an activated sludge package plant. The package plant has aeration basins encompassing a circular clarifier in the middle for solids removal and is covered by a fiberglass dome. The positive displacement aeration blowers are located in the lower level of the control building. There is a sludge settling tank just south of the plant. Currently, the Village is receiving holding and septic tank waste from local haulers. This waste is pumped from the trucks and into the sludge settling tank. Decant from this tank is pumped to the head of the treatment plant. Treated effluent is discharged into a small side branch of the Wisconsin River.



Brokaw Wastewater Treatment Plant

The average annual design flow of the treatment plant is 0.0346 MGD, the maximum monthly design flow is 0.073 MGD, and the design biochemical oxygen demand (BOD) load is 52 lbs/day. The average annual flow to the treatment facility has been trending upward over the past three years: 34%, 70% & 127% of the average annual design flow respectively. Similarly, influent BOD loads have been trending upward over the past three years: 56%, 113% & 121% of the annual average design BOD respectively. These upward trends appear to be from infiltration and inflow in wet weather conditions, running tap water to waste to prevent freezing and poor water quality, and septic waste received at the plant.

To address the I/I and effluent exceedance issues, a number of maintenance and improvement projects were recommended by the engineers. Completion of these recommendations would allow for a limited increase in sewer service. More substantial upgrade or replacement of the system or some alternative service arrangements would be required for any significant expansion of sewer service by Brokaw / Maine. The report recommendations for the Brokaw treatment plant and collection facilities are as follow:

1. Reduce the amount of hauled waste received at the treatment plant.
2. Treatment plant blower repair.
3. Sewer rehabilitation by cured-in-place pipe liner.
4. Everest Avenue sewer replacement.
5. Deteriorated manhole replacement.
6. Everest Avenue pumping station replacement.
7. Everest Avenue force main replacement.
8. Add second pump to 4th Street pumping station.
9. Address uninspected sewer segment on westside.

3.3 CAPACITY AND WASTE LOADING FOR FACILITIES PLANNING

Waste load projections are necessary for the preparation of designs and cost estimates for necessary wastewater transport and treatment facilities, which is one of the primary functions of the facilities plans discussed in this section. Sewer service area plans do not deal with detailed, technical design issues, so waste load data and projections are not needed. However, flow / load and the area to be provided with sewer service are based on similar variables, namely projected population to be served and associated uses of water that go with it such as industrial development.

The RMMSD facilities plan uses the same population projection data, the official Wisconsin DOA projections, as this sewer service area plan. The Wausau facilities

plan, currently under development, and any future Brokaw facilities planning are expected to be based on these DOA numbers as well. Current area WWTP flow data is displayed in Table 1.

It is anticipated that the proposed upgrades to the area's wastewater facilities will ensure capacity to handle potential future flow generated by the projected community growth, as well as, what is necessary to properly accommodate projected peak flows. However, the development approval process for each community should include review by wastewater officials to verify that the intended receiving plant is able to handle and properly treat the wastewater to be generated by that development at the time of hook-up and moving forward.

TABLE 1: Capacity/Loading Information - Area Treatment Plants			
	Wausau	RMMSD	Brokaw
DESIGN LIFE:			
Population- Year-	45,120 2005	45,227 2035	N/A N/A
FLOW:			
Average Design Flow-	8.2 MGD	4.41 MGD	0.035 MGD
Peak Instantaneous Flow-	18 MGD	12.29 MGD	0.07 MGD
LOADING:			
Biochemical Oxygen Demand (BOD)-	17,000lb/day	8,529lb/day	52 lb/day
Total Suspended Solids (TSS)-	15,600lb/day	9,798lb/day	85 lb/day
Total Kjeldahl Nitrogen (TKN)-	1,923 lb/day	2,230lb/day	N/A
Phosphorus (P)-	522 lb/day	142 lb/day	N/A
Source: Local facilities plans as noted. Wausau & Brokaw: current facilities. RMMSD: with planned upgrades.			

3.4 WASTEWATER TREATMENT FACILITY REGIONALIZATION

The State of Wisconsin Department of Natural Resources maintains a "non-proliferation" policy regarding wastewater treatment facilities. When a wastewater treatment plant is aging and becoming in need of significant upgrades to maintain its effluent limits, its owner is required to evaluate a range of possible options to address the situation. If there is another wastewater treatment facility within reasonable proximity, the DNR may require that one option considered is the connection to that adjoining facility and closure of the aging facility. This is often referred to as "regionalization".

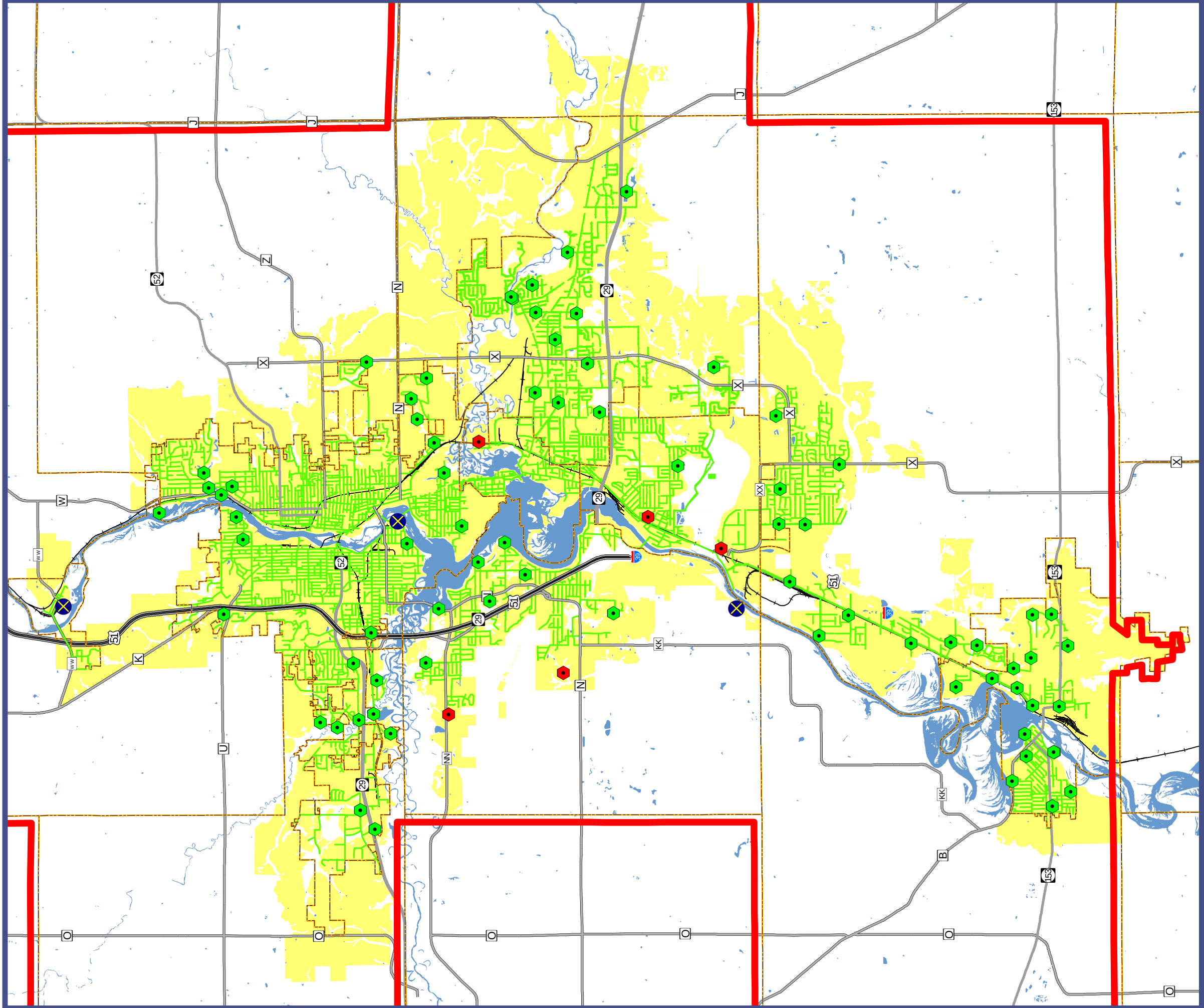
The Brokaw WWTP is an example of a facility in this situation. Brokaw is considering its options, but will likely complete interim upgrades to maintain its current service and allow for a little additional growth. Long-term, the Village will have to consider a broad range of possible options, as a significant increase in capacity will be needed to accommodate anticipated development pressure. A completely new, larger WWTP will be required or an alternative service option such as regionalization will have to be developed.

Wausau's last facilities plan did explore a full range of options including regionalization, which lead to the formation of the Rib Mountain Metropolitan Sewerage District. While development of a new facilities plan is still currently underway for Wausau, the scope of work for the plan calls for an "evaluation of the functional feasibility and the economic feasibility of combining with the Rib Mountain Metropolitan Sewerage District and phasing out Wausau's treatment facility".

The recent RMMSD facility plan did not address regionalization. This may be because they are the product of regionalization and set an on-going example with the addition of Mosinee.

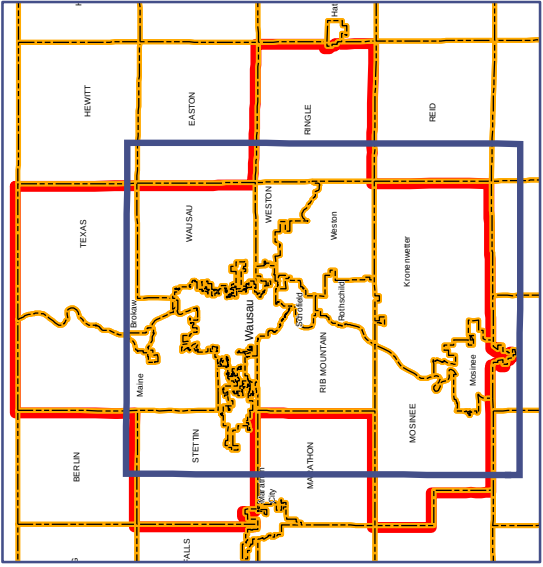
Another recent consideration of regionalization came with planning for wastewater treatment facilities for the Village of Marathon City which lies within 10 miles of the City of Wausau. One of the major issues facing the village was the impact of new phosphorus reduction requirements. Ultimately, the Village of Marathon City decided to maintain its own facility and pursue options for phosphorus reduction. However, the Village of Marathon City and Village of Edgar are considering options for working together which may include consolidation to one wastewater treatment facility, aka regionalization.

The Village of Hatley, within 10 miles of the Village of Weston, is another entity that comes up during discussion of regionalization. The Village has had wastewater treatment issues in the past, but plant upgrades in 2002 addressed many of those problems. Again, the main factor for the Village of Hatley will be impact of phosphorus reduction, and how it decides to handle that problem when the time comes.



Wastewater Collection Infrastructure

Map 3



Metro Area Sewer Service Area Plan

Legend

US Highway

State Highways

County Highways

Railroad

Minor Civil Divisions

Water

Proposed SSA

Planning Area Boundary

Sewer Mains

Lift Station

Proposed Lift Stations

Wastewater Treatment Plant

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

SOURCE: NCWRPC, WiDNR,
Marathon County Geo Services



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SECTION 4.0 GROWTH PROJECTIONS

4.1 INTRODUCTION

Delineation of a year 2040 sewer service area requires the development of a series of assumptions and projections concerning population and economic growth, as well as, overall land utilization in the area.

Communities regularly develop and use population projections for various reasons, including local comprehensive plans, facilities plans for municipal wastewater treatment, and others. The methodology used to generate projections can sometimes skew the numbers in favor of a particular outcome. To avoid such bias, regulatory applications of population projections may specify the required projections or methodologies to be used.

This is the case with the sewer service area planning program in which WisDNR regulations require use of the latest official state population projections developed by the Wisconsin Department of Administration (DOA). Despite the detailed methodology used, communities may sometimes feel that their DOA numbers are not truly representative of how their population base is growing. Alternative numbers can be submitted to DOA for review. If DOA will accept and sign-off on the justifications and methodology behind the alternative projection, WisDNR will allow use of that number in the sewer service area plan.

As part of the sewer service area planning process, the Wausau area communities were asked to review their DOA population projections. All communities were in general agreement that the DOA numbers were acceptable for this application. The DOA's 2040 projections serve as the base from which the various calculations and projections for the sewer service area were developed for this report.

4.2 GROWTH ASSUMPTIONS

Since planning for 20 years into the future cannot be based upon an absolute degree of certainty, it is important that there be a general consensus about the assumed future conditions from which planning projections are made. Changing development goals and policies within each of the area municipalities could require changes in the assumptions over the term of the planning period. The following growth assumptions serve as the basis for the projections found in Section 4.4. In addition, the historical population growth examined in Section 4.3 serves as important underpinning data to the municipal and area projections.

- 1) The Wausau urban area will continue to be a major hub for economic growth within Marathon County and central Wisconsin.

- 2) With the completion of the *Metro Region Economic Development Assessment 2017*, the communities of the Wausau urban area have begun a long-term collaborative economic development push that should lead to greater growth and employment.
- 3) A boom in commercial and industrial development is anticipated with the number of active projects being implemented and planned in each community.
- 4) Population projections used within this report reflect the official numbers established by the Wisconsin Department of Administration per NR121.
- 5) Communities not fully encompassed within the sewer service area are expected to maintain their ratio of population within the sewer service area, as follows: Rib Mountain 80%; Kronenwetter 88%, Weston 99%, and Maine 29%.
- 6) In those communities not fully encompassed in the sewer service area, most of the new commercial and industrial development is expected to locate within the sewer service area based on density, proximity to other business and availability of services.
- 7) Growth in population and housing is expected to outperform official state projections by 2040 as the local economies recover from the 2008 recession.
- 8) The Wausau urban area will continue to provide a satisfactory level of public services and cultural and environmental amenities.
- 9) Wisconsin annexation statutes will continue to be a barrier to the physical expansion of the urban area's incorporated municipalities.

4.3 HISTORICAL POPULATION GROWTH

4.3.1 INTRODUCTION

Though historically known as an agriculture centric area, Marathon County has been urbanizing with a 39 percent population increase over the past 47 years. The growth of the Wausau urban area has been a major portion of the overall growth of the County, increasing 54 percent over this same time period from 1970 to present.

The County has generally maintained a positive population growth, with a period of significant expansion in the 1970's, as Wausau became a dominant employment center. The 1980s saw a slowdown in growth, before a rebound in the 1990s. The pattern of growth has also changed as transportation infrastructure improved; making commutes from the communities surrounding the City of Wausau and the urban area more feasible. Additionally, as the individual communities have each sought to grow and expand, new incorporations have landlocked, or nearly landlocked, several of the older cities/villages, further slowing growth at the urban center.

The following sections review the past population growth of each of the urban area communities. A breakdown of historical population figures and percent change is shown in Table 2.

TABLE 2: Population Trends 1970-2015 Wausau Urban Area

	Maine/Brokaw		Mosinee		Schofield		Wausau		Kronenwetter		Rothschild		Weston		Rib Mountain	
Yr	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ	Pop.	%Δ
1970	2,467		2,395		2,577		32,806		2,595		3,141		6,351		4,785	
1980	2,461	-0%	3,015	26%	2,226	-14%	32,426	-1%	5,012	93%	3,338	6%	11,342	79%	5,344	12%
1990	2,430	-1%	3,820	27%	2,415	8%	37,060	13%	4,850	-3%	3,310	-1%	11,450	1%	5,605	5%
2000	2,514	3%	4,063	6%	2,117	-12%	38,426	4%	5,369	11%	4,970	50%	12,079	5%	7,556	35%
2010	2,588	3%	3,988	-2%	2,169	2%	39,106	2%	7,210	34%	5,269	6%	14,868	23%	6,825	-10%
2015	2,586	-0%	4,021	1%	2,212	2%	39,063	-0%	7,525	4%	5,302	1%	15,276	3%	6,900	1%

Source: U.S. Census & WI DOA, 2016.

4.3.2 VILLAGE OF BROKAW

The Village of Brokaw had been a "company town" since its incorporation in 1903 until the closure of the Wausau Paper Mill in 2012. The population has been in decline since before 1970, with a significant drop off during the 1990's resulting from the company's purchasing of homes surrounding the mill. The population since has partially rebounded due to the Village's efforts to develop a business park and subdivision. The resultant population decline since 1970 comes out to 23 percent, but the population has been relatively stable over the last 7 years.

Due to the major loss of tax base with the closure of the mill, the Village has struggled financially. Under a cooperative boundary agreement with the Village of Maine and Town of Texas, Brokaw will be absorbed into the Village of Maine over a 17 year period.

4.3.3 VILLAGE OF MAINE

Although adjacent to the Wausau urban area and recently incorporated, the Village of Maine has been a rural, agricultural community. Growth has been very low, but steady. Population dips likely represent the impact of annexation prior to incorporation. Overall, population has only increased 9 percent since 1970.

Under a cooperative boundary agreement with the Village of Brokaw and Town of Texas, Brokaw will be absorbed into the Village of Maine over a 17 year period. In order to maintain Brokaw's infrastructure, such as sanitary sewer service, Maine will seek to expand "urban" level development in and around the Brokaw core while maintaining the "rural" character of the remainder of Maine.

4.3.4 CITY OF MOSINEE

The City of Mosinee has experienced significant population growth since the 1970s, increasing by 68 percent. Most of the development occurred in the 1970s and 1980s during which the City experienced growth rates of 26 and 27 percent respectively. Since then, growth slowed in the 1990s, and the 2010 U.S. Census was the first time that the City experienced a population decline, decreasing 2 percent. However, the DOA's recent population estimates indicate at least a partial recovery.

4.3.5 CITY OF SCHOFIELD

The City of Schofield saw a decrease in its population, reducing its count by 365 persons since 1970. Schofield decreased 14 percent in the 1970s. After increasing eight percent in the 1980s, the City population declined again by 12 percent in 1990s. It has seen modest growth since that time with the latest Wisconsin DOA population estimating 2,212 residents on January 1, 2015. The City is mostly developed and landlocked, which has limited its population growth.

4.3.6 CITY OF WAUSAU

Between 1970 and 1980, Wausau experienced a slight decrease in population. The population started to increase again the 1980s, growing by 13 percent in part through annexation of sections of Rib Mountain and Stettin. Additionally, there was an organized effort to settle Southeast Asian immigrants in the City. Since then population growth has slowed increasing only 4 and 2 percent in the 1990s and 2000s respectively.

Overall, population has increased by 19 percent since 1970. In Wausau, growth has been limited by several factors in the recent decades. There is limited land within the City to accommodate new development. Over the years, City growth and expansion has been dependent on annexation, and surrounding municipal incorporations have restricted growth opportunities. Major improvements to the highway system have reduced travel time and made for easy commutes making outlying suburban communities more attractive for residential development as well as commercial and industrial.

4.3.7 VILLAGE OF KRONENWETTER

The Village of Kronenwetter posted a net gain in population from 1970 to 1980 of 93.1 percent, as the then town became a popular "bedroom community". Then, the 3 percent decline in the 1980s was mainly due to annexation by adjacent communities. In the 1990s, growth again took off with another, smaller "boom" in the 2000s showing a 34 percent increase for the decade. Coincidentally, the entire town of Kronenwetter was incorporated as a village between 2002 and 2003. Although the growth rate has dropped to a level more in line with its urban neighbors since 2010, Kronenwetter still posted the highest rate among them at 4 percent. Overall, population has increased an impressive 189 percent since 1970.

4.3.8 VILLAGE OF ROTHSCHILD

The Village of Rothschild lost population in the 1980's (-1%) after gaining 6 percent during the 1970s. In the 1990's, Rothschild greatly expanded its population, by 50 percent, as well as its land area through the Cedar Creek annexation from then Town of Weston. Growth has continued with a six percent increase between 2000 and 2010. The Village has posted a slight increase since 2010. Overall, population has increased 69 percent since 1970.

4.3.9 VILLAGE OF WESTON

Similar to Kronenwetter, Weston blossomed as a "bedroom community" in the 1970s, increasing in population by 79 percent. During the 1980s and 1990s growth was slowed by annexation, and by 1996 a majority of the Town of Weston was incorporated into a village. Due to the geographic split, statistical comparison of numbers prior to 1996 is problematic. Since incorporation, population of the Village has rebounded with a 23 percent increase in the 2000s. Although, like Kronenwetter, Weston's growth rate has dropped since 2010, it ranks second overall in the urban area at 3 percent. Today, the Village of Weston is the second most populous community in Marathon County.

4.3.10 TOWN OF RIB MOUNTAIN

The Town of Rib Mountain saw a significant increase in its population of 12 percent during the 1970s. Growth dropped off to 5 percent over the 1980s. The 1990s saw a population "boom" of 35 percent. Data for the 2000s indicates a decrease in population of 10 percent, however, there is evidence that there was an error in the 2010 Census for Rib Mountain which has skewed the numbers. The Town appears to have posted a slight increase in population since 2010.

4.4 POPULATION PROJECTIONS

4.4.1 INTRODUCTION

For sewer service area planning purposes in Wisconsin, state administrative code requires the use of official DOA projections unless the DOA agrees to "sign-off" on an alternative number. As part of this planning process, planning team members met with each community to discuss use of the DOA projections. A variety of alternative projections, see Appendix A, were presented to put the DOA projections in context. All communities were in general agreement that the DOA numbers were acceptable for use in this plan update.

The standard planning horizon for sewer service area plans is a twenty-year period. Timing of this planning process would put the plan horizon at 2037, however, DOA has projections for 2035 or 2040. As a result, the year 2040 was selected as the plan year for this process. This is consistent with other recent sewer service area plans approved around the state.

4.4.2 URBAN AREA POPULATION PROJECTIONS FOR PLAN YEAR 2040

The Wisconsin Department of Administration is predicting moderate growth overall for the Wausau metro area with a 13 percent increase which equates to 10,265 additional people in the area by 2040. Table 3 compares the DOA projections with the current population. The bulk of the increase is provided by the 3 largest of the metro communities. Wausau, Weston and Kronenwetter are expected to post strong growth rates over the planning period. All the communities have development projects underway or anticipated that have the potential for boosting these growth rates, including Schofield which should have enough going on to avoid the population loss predicted. The Census error affecting Rib Mountain may be skewing its projection numbers as well. Table 4 displays the projected population in 5-year growth increments.

TABLE 3: Wisconsin DOA 2040 Projected Population for Urban Area				
	2015 Estimate	2040 Projection	# Change	% Change
City of Mosinee	4,021	4,235	214	5.3
City of Schofield	2,212	2,135	-77	-3.5
City of Wausau	39,063	41,070	2,007	5.1
Village of Brokaw	241	325	84	34.9
Village of Kronenwetter ^A	6,622	8,862	2,240	33.8
Village of Maine ^B	610	721	111	18.2
Village of Rothschild	5,302	5,790	488	9.2
Village of Weston	15,276	20,330	5,054	33.1
Town of Rib Mountain ^C	5,520	5,664	144	2.6
Totals	78,867	89,132	10,265	13.0
Source: WI DOA, 2013 & 2016.				
^A Note: Only includes sewer service area population estimated at 88% of total population.				
^B Note: Only includes sewer service area population estimated at 29% of total population.				
^C Note: Only includes sewer population estimated at 80% of total population (RMMSD).				

Note that some of the communities actually have within their boundaries large land areas that are more rural in nature and expected to remain that way into the foreseeable future. These include Kronenwetter, Maine, Rib Mountain and Weston. A certain percentage of the population of these communities will continue to reside in these areas and should not be factored into the establishment of an urban service area. For purposes of this plan, it is assumed that the ratio of urban to rural population within each of the four communities will remain relatively the same. These ratios are then used to calculate the urban portion of the population estimates and projections as noted in Tables 3 and 4. The rural areas within Weston have little or no resident population at this time.

TABLE 4: Wisconsin DOA Population Projections for Urban Area by Five-Year Intervals

	2020 Projection	2025 Projection	2030 Projection	2035 Projection	2040 Projection
City of Mosinee	4,160	4,225	4,270	4,270	4,235
City of Schofield	2,205	2,210	2,205	2,180	2,135
City of Wausau	40,460	41,100	41,490	41,450	41,070
Village of Brokaw	270	285	300	315	325
Village of Kronenwetter ^A	7,203	7,713	8,180	8,562	8,862
Village of Maine ^B	705	718	725	726	721
Village of Rothschild	5,525	5,655	5,755	5,795	5,790
Village of Weston	16,770	17,870	18,890	19,700	20,330
Town of Rib Mountain ^C	5,644	5,716	5,752	5,732	5,664
Wausau Urban Area Total	82,942	85,492	87,567	88,730	89,132
Marathon County	142,200	146,595	150,130	152,120	152,790
State of Wisconsin	6,005,080	6,203,850	6,375,910	6,476,270	6,491,635

Source: WI DOA, 2013.

^ANote: Only includes sewer service area population estimated at 88% of total population.

^BNote: Only includes sewer service area population estimated at 29% of total population.

^CNote: Only includes sewer service area population estimated at 80% of total population (RMMSD).

4.5 URBAN AREA LAND USE PROJECTIONS

4.5.1 INTRODUCTION

Precise projections of the future land use requirements of an urban area are often difficult to determine because of continually changing conditions, and the fact that land area needs of an urban area are satisfied in large part by lands throughout the County. The Sewer Service Area Plan recognizes that the primary determinants of land needs on a long-range basis are subject to significant change that will certainly happen over time, and that such change cannot be accurately accounted for.

Such determinants include private sector decisions that determine the market for doing business in the urban area, technological and economic factors which may increase or decrease land needs for certain uses, governmental policy and regulation, energy factors and continually changing cultural preferences for styles of working and living.

This Plan contains projections of the acreage of lands within the urban area judged necessary for and having "potential" for commercial, industrial and residential uses, and which have a reasonable likelihood of development according to current trends and economic outlooks. While these projections are not based exclusively upon future population, they nevertheless were developed with future population needs in mind.

In doing this, the projected quantities of land required to meet the needs of the urban area include excess lands beyond actual need. The excess lands are provided to account for the reality that in a free market economy there is expected to be flexibility of choice of building sites when purchasing land for development. This is necessary to

avoid excessively high prices which would be caused by unreasonable limitations on land availability. This "market factor" is further discussed later in this section.

Planning for an adequate supply of developable land operates within the overall philosophy that restricting development of certain lands for public interest purposes such as environmental and agricultural protection is necessary and desirable. The land use projections and recommendations in this report acknowledge and attempt to serve this overall land use planning philosophy.

4.5.2 URBAN AREA LAND REQUIREMENTS

This Plan recognizes that the actual level of development may vary from the projections shown. The projection figures are intended to be indicators of the nature and intensity of future development, and as such the specific figures themselves do not represent any official or final level of acceptance. The projections should be updated periodically to reflect current levels of development and new development potential.

The projected quantities of future land uses are generally based upon the following factors:

- 1) Future land use plans within adopted community comprehensive plans,
- 2) Land use planning principles and locational criteria,
- 3) Natural land capabilities,
- 4) Potential and likelihood of public utility extensions,
- 5) Degree of access and potential for improvement,
- 6) Availability and use of lands, and
- 7) Local governmental and citizen goals and values already known to exist or emerging in certain areas.

4.5.3 RESIDENTIAL LAND REQUIREMENTS

4.5.3A AVERAGE HOUSEHOLD SIZE

Projections of the average number of persons per household are an important variable in estimating the amount of additional land that will be needed for residential purposes.

On the national level, the population per household has steadily declined since the 1960's, while the nation's total population has increased. The decline in household size is reflected in the large increase in the nation's housing stock.

On a community level, changes in average number of persons per household are influenced by national trends, but even more so by the mix of housing types and the age and cost of the community's housing stock. The factors that influence household size on a community basis make these projections difficult; however, such projections

remain necessary to determine the amount of residential land consumption during the planning period.

The persons per household projections shown in Table 5 were developed by the Department of Administration as part of their population projection program. The decline in average household size for each community in the urban area is shown from 2010 to 2040.

TABLE 5: Projected Change in Average Persons per Household for Urban Area							
	2010	2015	2020	2025	2030	2035	2040
State of Wisconsin	2.43	2.38	2.35	2.32	2.30	2.28	2.26
C. of Mosinee	2.39	2.37	2.35	2.33	2.31	2.28	2.25
C. of Schofield	2.18	2.16	2.14	2.12	2.10	2.08	2.05
C. of Wausau	2.31	2.28	2.26	2.24	2.22	2.19	2.17
V. of Brokaw	2.04	2.02	2.00	1.98	1.96	1.94	1.92
V. of Kronenwetter	2.71	2.68	2.66	2.63	2.61	2.58	2.55
V. of Maine	2.63	2.60	2.58	2.55	2.53	2.50	2.47
V. of Rothschild	2.38	2.35	2.33	2.31	2.29	2.26	2.24
V. of Weston	2.54	2.52	2.50	2.48	2.45	2.42	2.40
T. of Rib Mountain	2.57	2.54	2.52	2.50	2.48	2.44	2.42
<i>Source: WI DOA, 2013.</i>							

4.5.3B AVERAGE RESIDENTIAL DENSITY

Projecting future development density is another important variable in determining residential land needs. Table 6 shows the densities at which the level current development has occurred through 2016 for each community in the planning area. These densities were determined using land areas calculated through the project geographic information system (GIS) database, the DOA 2015 population estimates, and the above persons per household data.

The overall population density of the metro area ranges from 0.25 per persons per acre in the Village of Maine to 3.01 in the City of Wausau. The average density within residential sections of the metro area range from 2.12 persons per residential acre (Maine) to 11.49 (Wausau). This population density converts to residential development densities ranging from about 0.82 (Maine) to 5.04 (Wausau) housing units per residential acre.

These density figures are for the urban portion of the area. Factoring in those rural areas of Kronenwetter, Maine, Rib Mountain and Weston, the overall population density decreases from 1.21 to 0.24, 0.25 to 0.09, 1.21 to 0.43 and 1.73 to 1.11, respectively. The higher density levels are needed for cost-effective sewer service.

TABLE 6: Average Residential Development Density of Urban Area, 2015			
	Overall Average Population Density (persons per acre)	Average Residential Population Density (persons/residential acre)	Average Residential Development Density (housing units per res. acre)
City of Mosinee	0.72	7.05	2.98
City of Schofield	1.22	8.52	3.94
City of Wausau	3.01	11.49	5.04
Village of Brokaw	0.31	7.39	3.66
Village of Kronenwetter	1.21	3.85	1.44
Village of Maine	0.25	2.12	0.82
Village of Rothschild	1.20	6.40	2.72
Village of Weston	1.73	6.10	2.42
Town of Rib Mountain	1.21	4.07	1.60

Source: NCWRPC, 2017.

4.5.3C RESIDENTIAL LAND REQUIREMENTS

An estimated 1,882 net acres will be required to meet the needs of the urban area population by the year 2040. This is determined by dividing the projected population growth from 2015 to 2040 by the projected persons per household in each principal community to arrive at the estimated number of new housing units required to meet the additional need. The number of additional housing units is then divided by the estimated development density of units per acre to determine the additional acreage of residential land that will require sewer service. Table 7 displays the estimated net acres for each principal community.

TABLE 7: Residential Land Requirements by Community for Urban Area 2040							
	2015 Pop	2040 Pop	Pop Change	2040 PPH	New Housing Units	Units per Acre	2040 Acres Needed
C. of Mosinee	4,021	4,235	214	2.25	95.11	2.98	31.96
C. of Schofield	2,212	2,135	-77	2.05	0.00	3.94	0.00
C. of Wausau	39,063	41,070	2,007	2.17	924.88	5.04	183.46
V. of Brokaw	241	325	84	1.92	43.75	3.66	11.95
V. of Kronenwetter	6,622	8,862	2,240	2.55	878.43	1.44	611.79
V. of Maine	610	721	111	2.47	44.94	0.82	55.12
V. of Rothschild	5,302	5,790	488	2.24	217.86	2.72	79.96
V. of Weston		20,330	5,054	2.40	2,105.83	2.42	870.18
T. of Rib Mountain	5,520	5,664	144	2.42	59.50	1.60	37.16
Totals	78,867	89,132	10,265		4,370.31		1,881.57

Source: WI DOA, 2013 & NCWRPC, 2017.

4.5.4 COMMERCIAL AND INDUSTRIAL LAND REQUIREMENTS

Commercial and industrial growth are important determinants of land requirements in the urban area. Base labor force figures were obtained from the U.S. Census Longitudinal Employer-Household Data and the 2017 Metro Region Economic Development Study recently completed for the Wausau urban area. The Metro Study shows an average annual growth in employment of 1.08 percent across the metro area. By 2040, this rate of growth projects an increase of 18,020 jobs over the 2014 base year employment. Although the Metro Study only projects out to 2026, the projections for this SSA plan match very closely when accounting for the differences in geography between the two reports.

The employment projections are used to calculate the acres required to meet the needs of the urban area for economic development through the growth and expansion of its commercial and industrial areas. An estimated 1,624 net acres will be required by the year 2040. Tables 8 and 9 displays the estimated net acres broken down by commercial and industrial for each principal community. Employment percentages by sector are derived from the Metro Region Economic Development Study, and employees per acre is generated through GIS analysis.

Although some employment will be generated in outlying areas of those communities with large rural sections (Kronenwetter, Maine, Weston and Rib Mountain), it is difficult to estimate this split. For purposes of this plan, it is assumed that the urban area will attract most of the new commercial and industrial development based on density, proximity to other business and availability of services, as well as, local comprehensive plans.

TABLE 8: Commercial Land Requirements by Community for Urban Area 2040					
	2040 Total New Jobs	Percentage Commercial	New Jobs - Commercial	Commercial Employees Per Acre	2040 Acres Needed Commercial
C. of Mosinee	851	75.5	643	10.89	58.98
C. of Schofield	1,296	22.6	293	5.81	50.45
C. of Wausau	10,532	85.2	8,973	22.82	393.24
V. of Brokaw	5	78.6	4	0.42	9.44
V. of Kronenwetter	336	70.2	236	3.69	64.01
V. of Maine	227	68.8	156	13.39	11.66
V. of Rothschild	1,111	57.9	643	8.09	79.47
V. of Weston	2,541	79.9	2,030	7.31	277.87
T. of Rib Mountain	1,121	99	1,110	10.70	103.76
Totals	18,020		14,088		1,048.87
Source: Longitudinal Employer-Household Data, 2014 & Metro Region Economic Development Study, 2017 & NCWRPC, 2017.					

According to the Metro Region Economic Development Study, manufacturing will continue to be a major sector of employment in the urban area. However, there will be a transition in the types of industry leading the manufacturing sector of the area economy. For example wood product manufacturing, particularly paper and paperboard mills, along with electrical equipment manufacturing and motor vehicle part manufacturing are expected to decline. While at the same time, machinery manufacturing, particularly the commercial and service industry machine manufacturing subindustry, the industrial and commercial fan and blower and air purification equipment manufacturing subindustry, and the fabricated metal product manufacturing subindustry, are expected to grow.

TABLE 9: Industrial Land Requirements by Community for Urban Area 2040					
	2040 Total New Jobs	Percentage Industrial	New Jobs - Industrial	Industrial Employees Per Acre	2040 Acres Needed Industrial
C. of Mosinee	851	24.5	208	3.02	69.07
C. of Schofield	1,296	77.4	1003	16.23	61.80
C. of Wausau	10,532	14.8	1559	9.62	162.09
V. of Brokaw	5	21.4	1	0.03	36.35
V. of Kronenwetter	336	29.8	100	2.19	45.72
V. of Maine	227	31.2	71	3.41	20.80
V. of Rothschild	1,111	42.1	468	4.41	105.96
V. of Weston	2,541	20.1	511	6.95	73.49
T. of Rib Mountain	1,121	1.0	11	35.55	0.32
Totals	18,020		3,932		575.60
<i>Source: Longitudinal Employer-Household Data, 2014 & Metro Region Economic Development Study, 2017 & NCWRPC, 2017.</i>					

4.5.5 PUBLIC AND INSTITUTIONAL LAND REQUIREMENTS

Public and institutional use of land is typically a smaller but important element of an urban area. In some cases public land consumption may be more significant such as the location of the county seat (as with Wausau) or a heavy federal government presence. Typically, this category of land use includes things like: government services, schools, utilities, churches and hospitals among others. An estimated 128 net acres will be required to meet the needs of the urban area population by the year 2040. This projection is based on the existing level of service in terms of the land area devoted to public and institutional uses per person in each community, see Table 10

TABLE 10: Public & Institutional Land Requirements by Community for Urban Area 2040.			
	Acres per Person	Population. Change 2040	2040 Acres Needed Public & Institutional
C. of Mosinee	0.024	214	5.22
C. of Schofield	0.012	-77	0.00
C. of Wausau	0.018	2,007	35.76
V. of Brokaw	0.004	84	0.35
V. of Kronenwetter	0.008	2,240	17.59
V. of Maine	0.002	111	0.18
V. of Rothschild	0.014	488	6.81
V. of Weston	0.015	5,054	59.55
T. of Rib Mountain	0.017	144	2.45
Totals		10,265	127.91
Source: NCWRPC, 2017.			

4.5.6 PARK AND OUTDOOR RECREATION LAND REQUIREMENTS

Park and outdoor recreation needs can constitute a significant portion of land within the future urban area. The recommended standard used by the NCWRPC in figuring park needs is 10.5 acres per 1,000 persons. This standard is not intended to include specialized outdoor recreational facilities such as nature reserves, hunting grounds, public utility lands, golf courses, athletic fields, private facilities or school lands. The above standard may be conservative in meeting current and future needs. An estimated 109 net acres will be required to meet the needs of the urban area population by the year 2040.

TABLE 11: Park & Outdoor Recreation Land Requirements by Community for Urban Area 2040.			
	Acres per 1,000 Pop.*	Population. Change 2040	2040 Acres Needed Parks & Recreational
C. of Mosinee	10.5	214	2.2
C. of Schofield	10.5	-77	0
C. of Wausau	10.5	2,007	21.1
V. of Brokaw	10.5	84	1.0
V. of Kronenwetter	10.5	2,240	23.5
V. of Maine	10.5	111	1.2
V. of Rothschild	10.5	488	5.1
V. of Weston	10.5	5,054	53.1
T. of Rib Mountain	10.5	144	1.5
Totals		10,265	108.7
Source: NCWRPC, 2017. *NCWRPC Rec. Planning Standard.			

4.5.7 RIGHT-OF-WAY LAND REQUIREMENTS

The space consumed for the transportation facilities which the population uses to access all the land types discussed above is often overlooked when doing acreage allocation for land use needs. Although modern planning practice is often recommending that communities shift to "neo-traditional" standards including narrower streets, right-of-way can still consume significant amounts of land which must be accounted for because other "hard" development should not locate within these reserved areas.

Right-of-way often consumes a significant percentage of the developed area of communities in Wisconsin particularly when including federal and state facilities. For purposes of determining the portion of local development being devoted to right-of-way in the Wausau urban area, the project GIS database was used to calculate right-of-way area for county and municipal streets within each community, see Table 12. An estimated 406 net acres will be required to meet the needs of the urban area population by the year 2040.

TABLE 12: Right-of- Way Land Requirements by Community for Urban Area 2040.		
	% Local R-O-W	New R-O-W in Acres
C. of Mosinee	8.16	13.67
C. of Schofield	8.95	10.05
C. of Wausau	14.38	114.39
V. of Brokaw	3.64	2.15
V. of Kronenwetter	10.38	79.17
V. of Maine	6.53	5.81
V. of Rothschild	10.37	28.76
V. of Weston	10.21	136.18
T. of Rib Mountain	11.03	16.02
Totals		406.19
Source: NCWRPC, 2017.		

4.5.8 ALLOWANCE FOR MARKET FACTORS

As stated earlier, the philosophy of this Plan is to provide additional lands beyond the net needs of the urban area to provide flexibility and choice in development sites. To accommodate factors beyond the control of local government which render lands unavailable for development, a market factor of 1 to 1 has been incorporated. This factor was based on the projected future land area needs and a cursory review of undeveloped lands in and around the urban area, as well as the likelihood that a given piece of property will be available for development at any given time.

Recovery from the last economic recession has been slow, but many economic indicators are nearly back to pre-recession levels, and more robust growth is anticipated, according to economists at the Wisconsin Department of Workforce Development. The projections, on which the allocations of future sewer service area are based, reflect past development conditions that were under the influence of the

economic downturn. Within the long-range, 20-year, planning horizon of this Sewer Service Area Plan, economic recovery and improved development conditions are anticipated. Resulting growth is anticipated to exceed the current projections in the long-term. This market factor allowance is necessary to accommodate this development and provide flexibility and choice in siting.

The market factor makes available an additional 4,149 acres over the actual net need within the year 2040 sewer service area to accommodate market decisions. While not all of this additional acreage would be expected to be developed during the planning period, it is anticipated that this acreage will provide additional opportunities for development in the event of other lands being kept off the real estate market.

4.5.9 INFILL AND REDEVELOPMENT OF VACANT LANDS

A certain amount of undeveloped land exists within the current incorporated limits of the communities of the urban area. A basic analysis of land use inventory data was done to identify potential undeveloped areas within the existing sewer service area, refer to map in Appendix C; note however, that some of these lands may ultimately not be available for development for a variety of reasons. Other lands that may have been previously developed currently lay vacant or under-used. This Sewer Service Area Plan recognizes that infill development and redevelopment are good public policy and establishes goals and objectives to achieve infill and redevelopment. There is a clear cost effectiveness advantage to infill development that has infrastructure like sewer and water lines already installed nearby. Existing developable urban areas already served by utilities and services should be included in the acreage allocated to the future sewer service area. These areas may have been by-passed by development or be available for redevelopment like brownfields.

A detailed inventory of sites available for possible infill and/or redevelopment was beyond the scope of this Plan. However, local officials are promoting and actively working toward infill and redevelopment. There has been a surge in infill and redevelopment projects across the urban area. Based on these considerations, significant infill is expected to take place moving forward. To reflect this, an infill/redevelopment factor of 50% utilization is incorporated into the total urban area land requirements calculation. This recognizes the level of infill activity while maintaining market flexibility.

4.5.10 TOTAL URBAN AREA LAND REQUIREMENTS

The estimated land needs in the year 2040 for the Wausau urban area are projected to be 8,298 acres less infill goal of 2,074 acres for a total need of 6,223 additional acres. This acreage will consist of the following land use needs shown in Table 13.

TABLE 13: Total Additional Land Area Requirements for Wausau Urban Area to Year 2040			
Land Use	Net Acreage Demand	Market Factor	Total Acreage Demand
Residential	1,881.52	1,881.52	3,763.04
Commercial	1,048.88	1,048.88	2,097.76
Industrial	575.60	575.60	1,151.20
Public/Institutional	127.91	127.91	255.82
Recreation	108.67	108.67	217.34
ROW	406.20	406.20	812.40
Subtotal	4,148.78	4,148.78	8,297.56
Less Infill	- 2074.39	---	- 2,074.39
Totals	2594.87	5189.75	6,223.17
Source: NCWRPC, 2017. Some totals may not add due to rounding.			

4.5.11 SSA ADDITIONAL ACREAGE ALLOCATION BY COMMUNITY 2040

The total urban area land area requirements for 2040 are allocated to each community based on their portion of the projected growth as shown in Table 14.

TABLE 14: Additional Land Area Needs by Community for Wausau Urban Area by Year 2040									
	2040 Acres Needed Residential	2040 Acres Needed Commercial	2040 Acres Needed Industrial	2040 Acres Needed Public Institutional	2040 Acres Needed Outdoor Recreation	2040 Acres Needed ROW	2040 Market Factor Acres	Less 2040 Infill Acres	2040 Acres Needed Total
Mosinee	31.96	58.98	69.07	5.22	2.2	13.67	181.10	-90.55	271.65
Schofield	0.00	50.45	61.80	0.00	0.0	10.05	122.30	-61.15	183.45
Wausau	183.46	393.24	162.09	35.76	21.1	114.39	910.04	-455.02	1,365.06
Brokaw	11.95	9.44	36.35	0.35	1.0	2.15	61.24	-30.62	91.86
Kronenwetter	611.79	64.01	45.72	17.59	23.5	79.17	841.78	-420.89	1,262.67
Maine	55.12	11.66	20.80	0.18	1.2	5.81	94.77	-47.39	142.16
Rothschild	79.96	79.47	105.96	6.81	5.1	28.76	306.06	-153.03	459.09
Weston	870.12	277.87	73.49	59.55	53.1	136.18	1,470.28	-735.14	2,205.42
Rib Mountain	37.16	103.76	0.32	2.45	1.5	16.02	161.21	-80.61	241.82
Totals	1,881.52	1,048.88	575.60	127.91	108.7	406.20	4,148.78	-2,074.39	6,223.17
Source: NCWRPC, 2017. Some totals may not add due to rounding.									

SECTION 5.0 ENVIRONMENTALLY SENSITIVE AREAS

5.1 INTRODUCTION

Delineating environmentally sensitive areas (ESAs) is one of the most important components of a sewer service area plan. These areas need to be protected in order to protect water quality.

According to Administrative Code NR 121 provisions, "Major areas unsuitable for the installation of waste treatment systems because of physical or environmental constraints are 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 nonpoint sources of pollution may 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."

Environmentally sensitive areas are defined, generally, as those areas that are unsuitable for sewered development because of the potential significant adverse impact upon water quality (see NR 121.05(1)(g)2.c.). The sewer service area is that area presently served or anticipated to be served by a sewage treatment system within a sewer service area plan's 20-year planning period. Technically, the sewer service area does not include environmentally sensitive areas, which are delineated separately and do not count in acreage allocations for sewered development.

The Plan uses the term "environmentally sensitive areas" rather than "environmental corridors" primarily due to the inconsistent use of the term "environmental corridors" across the state. Additionally, "environmental corridors" implies the need for the subject resource to be linear or contiguous within the sewer service area, however, such contiguity is not required for an area to be sensitive and in need of protection under NR121 for maintenance of water quality. While it is true that many environmentally sensitive areas are associated with streams; many wetlands, steep slopes and groundwater recharge areas are not necessarily linear.

A community may decide to include as "environmental corridors" areas other than those considered environmentally sensitive for water quality. Parks, woodlands and other green spaces can be added to the environmentally sensitive areas component of a sewer service area plan. In this way, the sewer service area planning process helps guide local growth within the myriad planning processes and multi-level authorities involved in development. This integration can help to avoid negative impacts on water resources locally and regionally. However, local communities should supplement the delineation of environmentally sensitive areas with local or regional protections, such as conservancy zoning or wellhead protection programming.

A sewer service plan regulates only sewered development. Its authority does not prohibit unsewered development from occurring in environmentally sensitive areas (although these areas may be regulated by the U.S. Army Corps of Engineers or other

agencies). In rare cases, plan updates or amendments are proposed that would remove land from the environmentally sensitive area designation to allow sewered development. Development in these areas may require a Clean Water Act Section 404 permit, a Wisconsin Statutes Chapter 30 permit and water quality certification for compliance with NR103 , or other permits/approvals in order to protect water quality.

Lands removed from an environmentally sensitive areas designation should not include any areas with development constraints that would adversely impact groundwater or surface water quality. For example, an amendment that removes wetlands from an environmentally sensitive area will not be approved unless it is shown that fill for development of the proposed site has received a valid federal permit and wetland water quality certification.

Environmentally sensitive area delineations sometimes include features that are not water quality related, so not every sensitive area development proposal will require a permit. The DNR has approved amendments to remove land not associated with water from designation, such as some parks and historic sites. Removal of any area from the environmentally sensitive area designation should go through the DNR review process, however, areas that do not involve a water quality concern will generally be processed faster than those which require a permit.

In some cases, the exact boundaries of environmentally sensitive areas may need to be located through a field survey by the appropriate authorities such as Army Corps of Engineers and/or Wisconsin DNR staff.

It is not the intent of designated environmentally sensitive areas to prevent or obstruct necessary maintenance, expansion or construction of transportation or utility facilities intended to serve areas outside of the sensitive area, needed to maintain or improve continuity of those systems, or designed to serve compatible uses in the designated areas such as park shelters or facilities.

The environmentally sensitive areas identified within this plan are comprised of three primary elements: floodway, wetlands and areas of 20+% steep slopes. These have been selected by the Water Quality Management Technical Advisory Committee for purposes of this sewer service area plan.

A new feature of this plan update is the addition of an additional, *secondary* element to be designated as a *conditional* environmentally sensitive area. Steep slopes for planning purposes are generally considered to areas of 12% or greater. In the previous plan, areas of slope 12 to 20% were not considered as environmentally sensitive areas. This plan update incorporates additional protections for these steep slope areas. For more information, see *Section 5.4 Steep Slopes*, below.

This section discusses the delineation of environmentally sensitive areas: floodways, wetlands and steep slopes, see Map 4, to be excluded from the sewer service area and future sewered development as part of this Plan; as well as other measures in place to protect these areas and ensure water quality preservation.

5.2 FLOODWAY

The floodplain is the land calculated to be covered by floodwater during the 100-year flood. The floodplain includes the *floodway* and the flood fringe. The *floodway* is the channel of the river or stream and those portions of the floodplain adjoining the channel required to carry and discharge the flood waters or flood flows associated with the 100-year flood (see NR 116.03 Wis. Adm. Code).

Local, state and federal regulations control development in floodplain areas. Most development is not allowed within the floodway. Development can occur within the flood fringe with appropriate flood proofing measures. The added expense of developing in the flood fringe versus other upland areas will control the rate and extent of floodplain development.

To prevent development in a high hazard area, floodways should be excluded from sewer service areas. The Department of Natural Resources will not approve any sewer service area plan or amendment that is not consistent with an approved floodplain zoning ordinance or which allows new service to new development in the floodway.

Plans or amendments which would result in a reduction of storm or flood water conveyance or storage capacity should be denied unless remedial actions which conform to NR 116 are identified and approved prior. When there is an existing, lawful development within the floodway, a plan or amendment may include the development within the boundaries of the proposed service area.

Lands officially determined to be out of the mapped floodway should be considered removed from the ESA unless other factors dictate. These areas are typically documented with a Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) issued by FEMA.

The FEMA DFIRM, or Digital Flood Insurance Rate Map, data was used to map the floodway as part of the environmentally sensitive area for this Plan. FEMA completed an update of the flood mapping for Marathon County in 2010 and did some supplemental revisions in 2013.

There are several streams and rivers in and around the Wausau urban area, as well as Lake Wausau and Mosinee Flowage. The primary streams include: Wisconsin, Big Rib, and Eau Claire. The Wisconsin River, which flows north-south through the center of the urban area, is the largest river in the County, and most of the other streams in the study area are tributary to it. The Big Rib River flows north-south through the northwest part of the County to its confluence with the Wisconsin along the south edge of the City of Wausau. The Eau Claire River flows from the northeast part of the County south to its confluence with the Wisconsin in the City of Schofield.



Lake Wausau

5.3 WETLANDS

Wetlands are areas where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and having soils indicative of wet conditions (see NR 103 Wis. Adm. Code). The Department of Natural Resources' Wisconsin Wetland Inventory data was used to map the wetlands as part of the environmentally sensitive area for this Plan. DNR completed an update of the wetland mapping for Marathon County in 2015.

Pockets of wetland are scattered across the urban area, although more concentrated and extensive along the various streams and rivers in the area. The Cedar Creek Wetland is a large area within the Village of Rothschild and the Village of Kronenwetter and Town of Rib Mountain have extensive areas of wetland.

Wetlands perform many indispensable roles in the proper function of the hydrologic cycle and local ecological systems. In terms of hazard mitigation, they act as water storage devices in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important.

Wetland plants and soils have the capacity to store and filter pollutants ranging from pesticides to animal wastes. Calm wetland waters, with their flat surface and flow characteristics, allow particles of toxins and nutrients to settle out of the water column. Plants take up certain nutrients from the water. Other substances can be stored or transformed to a less toxic state within wetlands. As a result, wetlands play an important role in water quality.

Local, state and federal regulations control development activities in wetland areas. Permits are required for activities that impact wetlands. In some cases, wetland mitigation or replacement is required.

5.4 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). For this plan, slopes shall be measured over a horizontal distance of 50 feet. Slopes shall be measured as the change in elevation over the horizontal distance between consecutive contour lines and expressed as a percent.

Steep slopes are typically considered to be any area of 12% or greater slope. Bare ground on slopes 12% or greater are considered vulnerable to soil erosion, depending on the characteristics of the site and soil types present. Soil erosion on slopes 12% to 20% is often manageable with good management practices.

The steep slopes in Map 4 were identified using a combination of the steep slopes as mapped in the previous plan and the latest 10-meter digital elevation model (DEM) created by the USGS which Marathon County currently uses as its slopes data layer. It is important to note that digital elevation models do not distinguish between natural and artificial slopes, thus Map 4 includes artificial, man-made slopes, many of which have been carefully engineered to mitigate potential erosion.

Development on slopes greater than 20% should be discouraged 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. Further, DNR guidance states that any SSA Plan amendments for sewered development on steep slopes that would result in direct runoff into a stream should be prohibited or mitigation measures required for the protection of water quality. Allowing sewered development on slopes should be consistent with the existing development pattern and locally approved construction erosion control ordinances.

For delineating environmentally sensitive areas in this plan, steep slope is divided into two categories:

- **Primary Steep Slope Environmentally Sensitive Area** - The primary steep slope area includes lands with 20% or greater slope as identified by civil engineers within the previous plan. This will maintain the exclusion of these steep slopes from the sewer service area.
- **Conditional Steep Slope Environmentally Sensitive Area** - The conditional steep slope area includes slopes 12% up to 20% from the digital elevation model generated by the USGS. These areas are not directly excluded from the sewer service area, but are allowed sewer service subject to the condition that best management practices (BMPs) are required and enforced by the local regulating jurisdiction.

5.5 PROTECTION OF ESAs AND RELATED AREAS

The environmentally sensitive areas delineated in this Plan: floodways, wetlands and 20+% steep slopes, are excluded from the sewer service area, and new sewered development is generally not permitted in these delineated areas. Floodways and wetlands are integral parts of the overall systems of water resources within the Wausau urban area and Marathon County. Protecting water quality is one of the primary functions of a sewer service area plan.

Surface water, including lakes, rivers, streams and their associated shorelands and floodplains, wetlands, and groundwater are protected by a layered system of regulations and programs at all three levels of government: local, state and federal. The primary program effort is identified below by resource element:

- Surface water (Lakes, river & streams) - Development along the shoreline of lakes and streams is controlled through shoreland zoning regulations. The shoreland area is within 1,000 feet of the ordinary high water mark of navigable lakes, ponds and flowages and within 300 feet of navigable rivers and streams. Marathon County establishes and enforces shoreland zoning in unincorporated areas and the DNR maintains oversight responsibilities, see NR 115 Wis. Adm. Code. Incorporated villages and cities are required to adopt and enforce their own shoreland zoning, see NR 117 Wis. Adm. Code.
- Floodplains - Development within the floodplain is regulated through floodplain zoning under NR 116 Wis. Adm. Code. Development can be permitted in the flood fringe if it is adequately flood proofed and meets state development standards. The flood fringe is that portion of the floodplain outside of the floodway covered by water during periods of flooding but generally associated with standing water rather than rapidly flowing floodwaters. Marathon County and each city and village all have floodplain zoning codes in effect.
- Wetlands - Activities in wetlands are regulated by the U.S. Army Corps of Engineers, the Wisconsin Department of Natural Resources and by local counties, cities and villages. Excavating or placement of any material in a wetland requires a DNR permit. Permit reviews include compliance with the requirements of section 281.36, Wis. Statutes, and NR 103 and NR 299 Wis. Adm. Code. Special provisions for shoreland-wetland zoning are established in NR 115 and NR 117 Wis. Adm. Code.
- Groundwater - Wellhead protection programs typically include some kind of zoning controls and implement groundwater pollution prevention measures within the recharge areas of public water supply wells, see NR 811.12(6) Wis. Adm. Code. All of the communities within the urban area have wellhead protection programs in place for their public water supply wells. Marathon County has a groundwater protection guide (2001) designed to help local officials in setting groundwater policy and serves as a resource on strategies to address groundwater issues. The County Planning Department is currently contemplating an update to the County's groundwater protection efforts.
- Steep Slopes - Counties, cities and villages must adopt construction site erosion control and storm water management ordinances that conform to

statewide standards under NR 151 Wis. Adm. Code. These ordinances are expected to accommodate development in areas of steep slope and highly erodible soils. NR 216 Wis. Adm. Code requires communities in the urban area to maintain a storm water permit and implement performance standards to minimize the discharge of pollutants carried by storm water runoff. The Northcentral Wisconsin Stormwater Coalition coordinates the public education and outreach requirements of the permit on behalf of the communities in the urban area.

Best management practices, or BMPs, are encouraged and sometimes mandated to minimize loss of a resource through a variety of techniques to reduce the impact of construction and development on the natural environment.

In general, local planning and zoning should dictate appropriate development conditions in all of the instances noted above. In some cases, sewer service may be a necessary solution to address problems of an existing development with failing on-site systems resulting in health concerns.

5.6 ENVIRONMENTAL IMPACTS OF SSA PLAN

As a matter of course, planning activities do not, in and of themselves, have environmental impacts. Ultimately, however, through the implementation of this 2040 sewer service area plan, there may be impacts on the environment resulting from new sewered development. The intent of a sewer service area plan is to manage and protect water quality, so hopefully the overall effect on the environment is positive.

Long-term, the pre-emption of on-site disposal systems in areas that have moderate or severe soil limitations for septic absorption fields will reduce the potential for public health hazards and improve surface water and groundwater quality. In addition, when sewers are extended, water lines are also extended. Municipal water systems reduce public health risks often associated with private water supplies, including exposure to nitrates, fluorides and radon.

Expansion of the sewer service area will impact land use with the transition from rural to urban. In some cases, agricultural practices may be discontinued. However, much of the expansion area is wooded or open land with relatively few parcels in active agriculture at this time. Removal of land from agricultural use is expected to have a minimal impact on the overall agri-business resources of Marathon County.

There are threatened or endangered resources in the area. Any future sewered development project should involve consulting with DNR specialists and a review of the Wisconsin Natural Heritage Inventory for the specific site(s) to be developed. Most of the threatened or endangered species and high quality natural areas known in the urban area are associated with the river and stream corridors, which will at least in part be protected by the Environmentally Sensitive Areas designation.

According to the DNR, the Wisconsin, Eau Claire and Big Rib Rivers and Black Creek are critical to rare fish, dragon flies, bald eagles, osprey, Blanding's turtles and wood turtles, as well as many more common species. The DNR has also identified the quartzite outcrop of Rib Mountain as important due to the limited number of such features in the state and records of rare plants known there. Weidman Island just south of the City of Mosinee is a floodplain forest with an active great blue heron rookery.

Threatened and endangered species are protected under the Wisconsin Endangered Species Act (29.604 Wis. Stats.). Comprehensive endangered resource surveys have not been completed for the sewer service area. However, the following is a list of threatened or endangered species previously identified in the area by the DNR:

- Mosinee:

- Animals

- bald eagle
 - osprey
 - wood turtle

- Plants

- purple clematis
 - Deam's rockcress



Wood Turtle

Source:DNR

- Kronenwetter:
 - Potential for bald eagle, wood turtle, and Blanding's turtle.
- Rothschild:
 - Henslow sparrow
- Weston:
 - Henslow sparrow
 - redbreast dace (fish: Sampson and Big Sandy Creeks)
 - black redhorse (fish - Eau Claire River)
 - pygmy snaketail (dragonfly)
 - splendid clubtail (dragonfly)
 - skillet clubtail (dragonfly)
 - stygian shadow fly (dragonfly)
 - riffle snaketail (dragonfly)



Henslow Sparrow

DNR

- wood turtle
- bald eagle

- Wausau:

- bald eagle
- osprey
- wood turtle
- Blanding's turtle
- redbreasted dace (fish: Big Rib River)
- riffle snail (dragonfly)
- cyano darner (dragonfly)



Bald Eagle

Source:DNR

- Rib Mountain:

Plants

- drooping sedge
- purple clematis
- Deams' rockcress



Drooping Sedge

Source:DNR

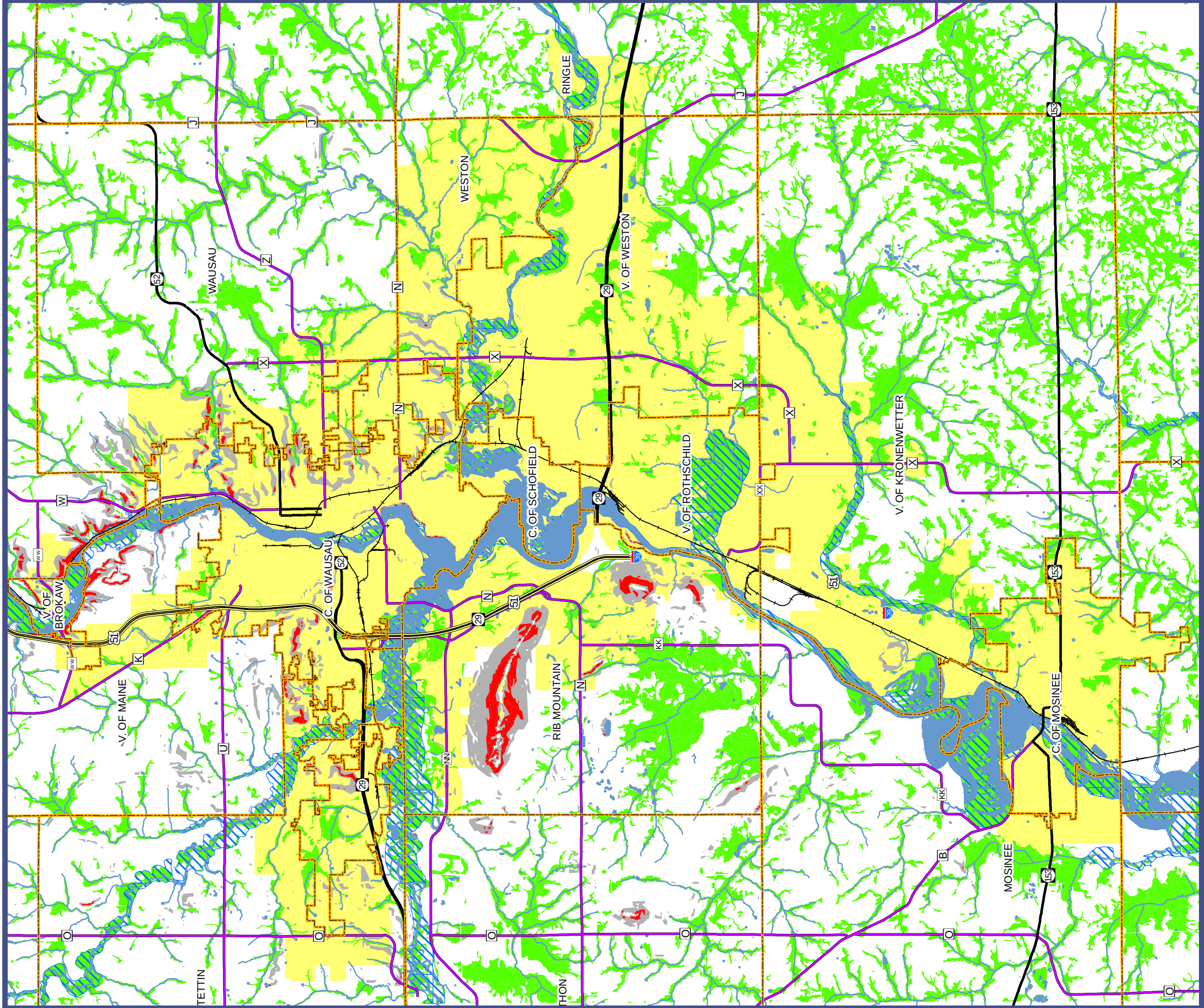
This list should not be considered complete or all-inclusive. The lack of additional known occurrences does not preclude the possibility that other endangered resources may be present. When future projects are proposed in sewer expansion areas, the DNR Bureau of Endangered Resources should be contacted for more detailed site specific analysis and recommendations on how to avoid potential impacts to threatened or endangered species and natural communities.

There are archaeological and historical sites in the area. Any future sewer development project should involve consulting with Wisconsin Historical Society specialists and a review of the Wisconsin Archaeological Site Inventory and Architecture and History Inventory databases for the specific site(s) to be developed. Sites that have not been disturbed may require evaluation for their significance, possibly including detailed archaeological survey. This includes burial sites. All burial sites in Wisconsin, no matter how old they are or who is buried in them, and no matter if they are marked or unmarked, are protected by state law.

Wisconsin's burial sites laws outline procedures that must be followed by people and agencies who own or discover human burial sites, or who wish to work within the boundaries of human burial sites. It is illegal to dig into a burial site or to disturb

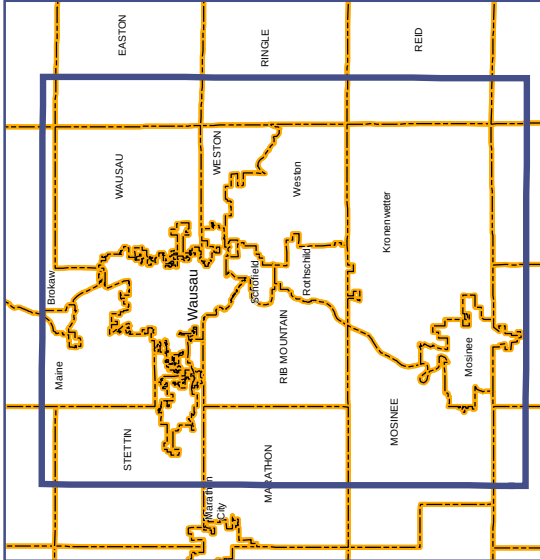
mounds or burial markers without authorization from the director of the Wisconsin Historical Society. Private land owners who own human burial sites have certain rights and responsibilities. They must protect the burials on their land from disturbance. In return, they may be eligible for property tax exemptions. Local governments and agencies must also protect human burial sites on their properties. There are special rules that determine how and when municipalities can sell burial sites. Towns and municipalities may also be responsible for abandoned cemeteries within their jurisdictions. Refer to Wis. Stats. 157.115 and 157.70 and H1.2 and H2 Wis. Adm. Code.

Sites will be handled on a case by case basis as the need becomes known. The need for detailed evaluation will be assessed when sewer projects are proposed.



Environmentally Sensitive Areas

Map 4



Metro Area Sewer Service Area Plan

Legend

- US Highway
- State Highways
- County Highways
- Railroad
- Minor Civil Divisions
- Water
- Proposed SSA
- Floodway
- Wetlands
- Percent Slope**
 - 12 - 20
 - > 20

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

SOURCE: NCWRPC, WiDNR, Marathon County Geo Services



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6.0 URBAN AREA COMMUNITY PLANNING

6.1 INTRODUCTION

Currently, all the municipalities of the Wausau urban area have adopted comprehensive plans, as required under state law. In fact, each community has either recently adopted an updated plan or is currently in the process of updating its plan. A review and analysis of the completed plans and planning efforts in progress for the participating municipalities within the study area is an essential element in the development of the Wausau urban area Sewer Service Area Plan. Consideration of the individual community's comprehensive plans assisted in the development of a Sewer Service Area Plan that safeguards area water quality while being consistent and compatible with the community's view of future development. Likewise, study area communities should develop future plans or updates that are consistent with the goals and objective of this Sewer Service Area Plan.

This section provides an overview of the comprehensive plans and planning efforts of the study area communities available at the time of developing the Wausau urban area Sewer Service Area Plan, refer to Map 5 for a composite future land use plan map. Included in each overview are important points of consistency between the local plan and the Sewer Service Area Plan. The individual plans should be consulted directly for additional detail on specific land use issues in any of the communities in this study area.

Sewerage facilities are an important part of an interactive system of land use and development. These facilities are influenced by the pattern of development and exert a strong force in determining that pattern. The following sections discuss the locally adopted plans which represent the desired development patterns of the urban area communities. These plans will guide the urban area's future growth and will assist local engineers and consultants in designing sewer systems to accommodate expected growth.

6.2 CITY OF MOSINEE COMPREHENSIVE PLAN

The City of Mosinee's current comprehensive plan was adopted by the City Council in 2006. Officials anticipate completing a plan update in the next 12 to 18 months (2018). The City stretches across the Wisconsin River at the southernmost tip of the urban area. Historically, the center of the community was situated on the west side of the river; however most of the recent growth has occurred on the east side, especially along I-39/51 and around the Central Wisconsin Airport. The plan anticipates infill development, particularly within the east side business park, but recognizes that new residential development will eventually push to the west. Much of the existing "undeveloped" land within the City has significant development constraints such as high bedrock or wetlands.

This Sewer Service Area Plan is consistent with the stated goals, objectives and policies of the City's plan. For example, in the *Utilities Element* it states “Plan for sewer and water expansion out the current service area boundaries” by “Monitor[ing] growth and development trends to identify areas where new development is most likely to occur that will require public utilities.” The City owns and operates its sanitary sewer collection system, however, in 2010 it closed down its wastewater treatment plant and joined with the Rib Mountain Metropolitan Sewerage District (RMMSD) to treat the wastewater.

The *Natural, Cultural and Agricultural Resources Element* calls for the continued preservation of the Wisconsin River system (primarily wetlands, floodplains, and woodlands) to preserve natural runoff corridors and stormwater detention areas. This is consistent with sewer service area goals to protect water quality through sound planning.

Under the *Intergovernmental Cooperation* goals and objectives, items such as identifying cooperative solutions for regional development issues that impact the entire community, including areas outside the City's boundaries; and working cooperatively with surrounding governments to protect sensitive environmental features and productive farmland in areas where development is not planned, show coherence with the Sewer Service Area Plan.

6.3 CITY OF SCHOFIELD COMPREHENSIVE PLAN

The City of Schofield completed an update of its comprehensive plan in August of 2016. The City lies at the convergence of the Eau Claire and Wisconsin Rivers and centrally located in the urban area. The City is almost completely “landlocked” between other incorporated communities or otherwise impeded by the Wisconsin River with limited opportunity for annexation, so its focus is on infill and redevelopment. The City does have space available in its industrial park, and some growth is expected.

Schofield maintains its own distribution and collection system but contracts with the City of Wausau for treatment of its wastewater at the Wausau Wastewater Treatment Plant. Some areas in the City maintain private on-site septic systems, and high groundwater and bedrock limit the ability to extend sewer. The goals of the Sewer Service Area Plan are consistent with the policies in the City of Schofield's comprehensive plan. For example, policies under *Housing* include: “The City of Schofield will continue to support and encourage opportunities for housing redevelopment” as well as look for infill opportunities.

6.4 CITY OF WAUSAU COMPREHENSIVE PLAN

The City of Wausau comprehensive plan was updated in 2016. Wausau lies along the banks of the Wisconsin River at the crossroads of Highways 29 and 39/51. Wausau is the largest city in the urban area and is a hub of government, employment, and cultural activities in northcentral Wisconsin. The City promotes infill and redevelopment, but

also emphasizes orderly expansion to the east and west, particularly with the incorporations to the north and south restricting the City's options for growth.

This Sewer Service Area Plan is consistent with the stated goals, objectives and policies of the City's plan, specifically to (under *Utilities Element*) "expand and improve the City's sewer and water utility systems in an efficient and cost-effective manner." The City also supports the consolidation of utility services in the Wausau urban area to increase the cost-efficiency of services. In the *Land Use Element* of the plan, the City discusses the orderly annexation and urban development of land outside of the Wausau city limits, and working with adjacent towns to identify locations where new public infrastructure and facilities will be needed in the future. The City maintains its own distribution and collection system as well as treatment facilities at the Wausau Wastewater Treatment Plant. There are little or no private on-site septic systems in operation within the city limits. The City's current policy is not to extend the municipal sewer and water services to properties located outside of the city limits, and that development must connect to city sewer within one year of its becoming available. However, the City does treat the wastewater from Schofield and part of the Village of Weston, under agreement.

The *Natural, Cultural and Agricultural Resources Element* calls for the protection and preservation of its natural resources, such as groundwater, streams, the Wisconsin River, and its wetlands, as well as, erosion control BMPs on all new development and redevelopment projects. This is consistent with this Sewer Service Area Plan's goals to protect water quality through sound planning and protection of environmentally sensitive areas.

Under the *Intergovernmental Cooperation* goals and objectives, items such as "continue to strengthen and expand cooperative activities with all levels of government to improve the provision of public services and facilities" show coherence with the Sewer Service Area Plan.

6.5 VILLAGES OF MAINE & BROKAW COMPREHENSIVE PLANNING

Conditions involving these two, now linked, communities north of the City of Wausau have changed dramatically in recent years, essentially outdated their current comprehensive plans. Then, "Town" of Maine comprehensive plan was adopted in 2009, and Brokaw's current plan was adopted in 2006. These plans are expected to be replaced by a single, joint *village* comprehensive plan within the next two years (2019).

Despite its incorporation as a village, Maine's intentions are to remain primarily rural in nature featuring agricultural land uses and large lot estate residential areas. However, Maine officials understand there is a demand for urban level development, so the Brokaw core and areas along highways WW and K are being planned for more urban level commercial and higher density residential with sewer service.

Having a sewer system in place, the old Village of Brokaw plan objectives and policies

were fairly consistent with the Sewer Service Area Plan, despite not being part of the planning area at the time. The old Maine plan, with its rural focus, did not necessarily address the same policy issues as the Sewer Service Area Plan, but did recognize the adjacent Wausau and Brokaw service areas with the potential for lands within the town to become urbanized and need sewer service. Under the new conditions moving forward, the villages are supportive of area wide sewer service planning and are promoting a regional sewerage district concept, so policy consistency is not expected to be an issue.

Both plans contain objectives and policies for the protection of water quality and environmentally sensitive areas such as wetlands and floodways consistent with the Sewer Service Area Plan.

6.6 VILLAGE OF KRONENWETTER COMPREHENSIVE PLAN

The current Village of Kronenwetter comprehensive plan document was adopted in 2009, but a revised land use plan map was adopted in 2014. A full update of the plan is expected to begin in 2018. Kronenwetter is situated in the southeastern area of the Wausau urban area and is one of the largest villages by area (53 square miles) in the State of Wisconsin. In October of 2002, the western portion of the Town of Kronenwetter was incorporated into a village. The new village annexed the remainder of the town shortly thereafter.

Part of the Village already had a sewer system with facilities having been installed in 1996 in response to failing septic systems. The Village's waste water is treated by Rib Mountain Metropolitan Sewerage District (RMMSD). However, the majority of the Village area is not served by the wastewater system.

The Sewer Service Area Plan is consistent with the goals and objectives of the Village comprehensive plan, in so far as considering existing infrastructure and cost saving measures when planning for future growth. In the *Housing Element* section of the comprehensive plan, the Village commits to "seek[ing] to utilize available resources to guide development in an orderly fashion" and to "utilize master planning for the orderly and cost effective development of public infrastructure." Additionally, the Village "will encourage infill development of existing neighborhoods". In the *Land Use Element*, the first goal is to "coordinate future growth and land uses with infrastructure capabilities and availability."

The *Natural Resources Element* sets a goal to "preserve existing natural resources," and states that "new development in the Village should be environmentally friendly, including limiting encroachment on natural resource lands and features. Use construction and maintenance methods that protect natural resources from pollution and degradation." This is consistent with the objectives of the Sewer Service Area Plan for the protection of water quality and environmentally sensitive areas such as wetlands and floodways.

Under the *Intergovernmental Cooperation* goals and objectives, goals such as "The Village will seek to increase coordination with neighboring municipalities to efficiently provide services" and an objective specifically referring to coordinating for sewer service area planning show coherence with the Sewer Service Area Plan.

6.7 VILLAGE OF ROTHSCHILD COMPREHENSIVE PLAN

The Village of Rothschild approved its current comprehensive plan in May of 2016. The Village is situated centrally in the Wausau urban area and is bisected by the Cedar Creek. It is flanked by wetlands and floodplain, which puts some constraints on development. Further restricting the Village is the fact that it is almost completely "landlocked" between other incorporated communities or otherwise impeded by the Wisconsin River with limited opportunity for annexation, so its focus is on infill and redevelopment.

The Village of Rothschild manages its own sewer collection system, except for an area of the village east of Volkman which was annexed from the Town of Weston. At the time, the Weston sanitary district retained ownership of those sewer lines which are still managed by the Village of Weston, today. Of course either way, all of this wastewater is treated at the Rib Mountain Metropolitan Sewerage District (RMMSD) plant.

The Sewer Service Area Plan goals are consistent with the goals and policies of the Village's plan. These Village goals and policies include "to provide high quality sewer and water services in a cost efficient manner" and "to protect the Village's water resources, including groundwater."

The *Natural, Agricultural and Cultural Resources Element* sets objectives to minimize development in areas that could affect sensitive natural resources, particularly wetlands and floodplains and to encourage preservation of environmental corridors. This is consistent with the objectives of the Sewer Service Area Plan for the protection of water quality and environmentally sensitive areas such as wetlands and floodways.

Under the *Intergovernmental Cooperation* goals and objectives, items such as "coordinate development and planning activities with surrounding communities", "to work with surrounding communities in preservation of natural resources", and "to cooperate and coordinate with [neighboring communities] to manage growth and development", show coherence with the Sewer Service Area Plan.

6.8 VILLAGE OF WESTON COMPREHENSIVE PLAN

The current comprehensive plan for the Village of Weston was adopted in 2016. The Village occupies the east central part of the Wausau metro area and was incorporated as a village in 1996 from the Town of Weston. Although a large area of sparsely populated land in the southwest corner of the town was included in the incorporation, the rural part of the town to the north and north east of the built-up village core remains as the Town of Weston.

Weston has experienced significant expansion since its incorporation, however, more recently infill and redevelopment has become more of a focus. Overall expansion is expected to continue, but in a more controlled and orderly manner based on the new comprehensive plan.

Much of the Village is served by municipal water and sewer, however, there are significant areas of development, including entire subdivisions, with private on-site septic. There are a number of constraints facing the Village in dealing with service issues, not the least of which is financial. In order to better plan for and manage future sewer installation, the comprehensive plan identifies areas in the Village where municipal sewer is required for development and areas which are not anticipated to be provided with sewer service, at least within the lifespan of the plan. Development in the southwest corner of the Village is limited by high bedrock and extensive wetlands.

Most of the Weston sewage goes to Rib Mountain Metropolitan Sewerage District (RMMSD) for treatment, but a small area in the northwest part of the Village goes to Wausau, as it was more cost effective than routing to RMMSD.

The Sewer Service Area Plan goals are consistent with the goals and objectives of the Village's plan. For example, in the *Community Facilities and Utilities* chapter objectives and policies include: "Plan for an orderly extension and improvement of municipal utilities and facilities within planned development areas," and "Promote utilization of existing utility capacity, such as by encouraging development that makes use of existing sewer, water, and road infrastructure (i.e., infill)."

The *Natural, Cultural and Agricultural Resources Element* indicates "Weston will protect, enhance, and celebrate natural amenities such as the riverway and wetlands, Preserve environmental corridors given their multiple benefits to scenic beauty, recreation, public health, and wildlife habitat, and Cooperate on the protection of regional natural resources and systems, such as the corridors including the Eau Claire River, Sandy Creek, Cedar Creek, and Bull Junior Creek." This is consistent with this Sewer Service Area Plan's goals to protect water quality through sound planning and protection of environmentally sensitive areas.

Under the *Intergovernmental Cooperation* goals and objectives, items such as "Collaborate on regional sewer service area planning, flood protection, stormwater management [with Marathon County, and other communities.] show coherence with the Sewer Service Area Plan.

6.9 TOWN OF RIB MOUNTAIN COMPREHENSIVE PLANNING

The Town of Rib Mountain was in the process updating its 2005 comprehensive plan at the time of this writing. Rib Mountain is located on the Western edge of the urban area. The only remaining unincorporated community with an urban component in the metro area; the Town is built-up on the north and east sides, but the remainder still very rural.

Urbanization continues to expand into the rural parts of the Town.

The urban section of the Town has sewer service with the wastewater collection system operated by the Rib Mountain Sanitary District (RMSD) which sends it to the Rib Mountain Metropolitan Sewerage District (RMMSD) wastewater treatment plant.

Although the Town's plan update is still in process, final drafts of the natural resources and utilities chapters were reviewed for consistency with the Sewer Service Area Plan. Both elements refer to working with RMSD, RMMSD, Marathon County, and other entities on sewer service and environmental protection issues. The Sewer Service Area Plan goals and policies are generally consistent with the objectives of the Town's plans. For example, objectives include: "Monitor growth and development trends to anticipate areas where new development is most likely to occur that will require public utilities", and "Protect and enhance natural resource areas [wetlands and shorelines] in the Town."

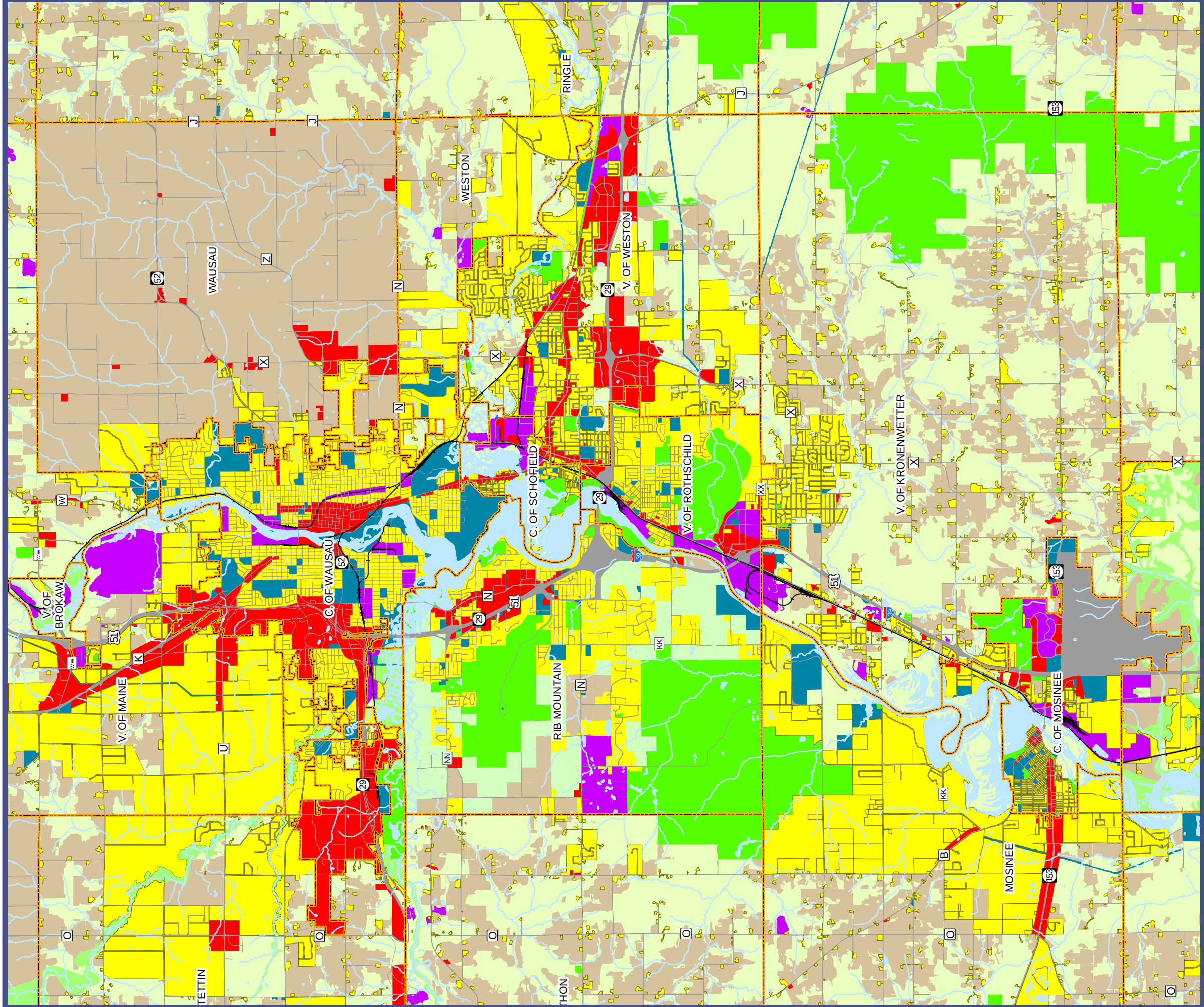
6.10 NORTH CENTRAL WISCONSIN REGIONAL PLANNING COMMISSION REGIONAL LIVABILITY PLAN

The Regional Livability Plan (RLP) was prepared by the NCWRPC staff and adopted by the Commission in April of 2015 to replace the previous Regional Comprehensive Plan. The RLP was prepared under the authority of s.66.0309 and is intended to provide long-range policy direction for guiding growth, development and redevelopment in north central Wisconsin and for making public and private investment decisions in the Region. The RLP does not specify details of local development plans.

The Sewer Service Area Plan is consistent with the following RLP goals and objectives:

- Preserve and protect the region's landscape, environmental resources, and sensitive lands while encouraging healthy communities.
- Encourage land use policies that minimize negative environmental impacts from development.
- Protect natural landscapes and ecosystems in the Region and increase the percentage of land cover [in] wetlands, forestlands, agricultural and open space.
- Protect sensitive lands from overdevelopment.
- Manage and reduce vacant land and structures.
- Reuse vacant land and structures in innovative ways.

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Legend

- Roads
- Railroad
- Minor Civil Divisions
- Water

- Agriculture
- Commercial
- Forestry
- Industrial
- Natural Areas

- Public / Quasi-Public
- Quarry
- Recreation
- Residential
- Transportation

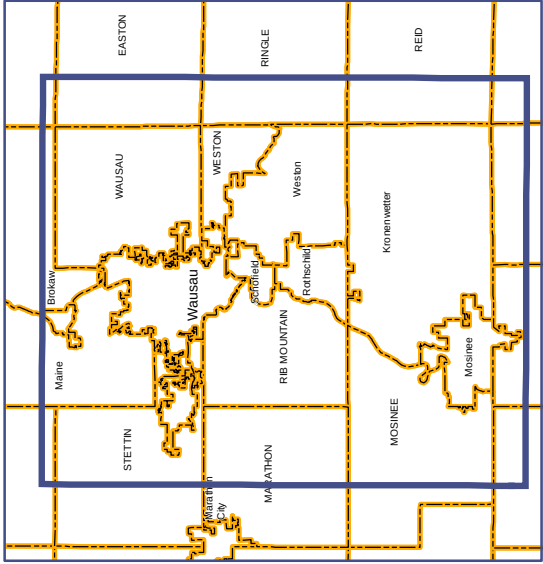
SOURCE: NCWRPC, WiDNR,
Marathon County Geo Services

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.



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Generalized Land Use Plans



Metro Area Sewer Service Area Plan

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SECTION 7.0 GOALS, OBJECTIVES & POLICIES OF THE SSA PLAN

7.1 INTRODUCTION

One of the most important steps in developing an urban sewer service area plan is to establish a set of overall goals and policy objectives to guide the development and implementation of the Plan. The goals and policies presented in the previous 2025 sewer service area plan were thoroughly reviewed and updated by the planning team and technical advisory committee.

The following goals and policies constitute the adopted guidelines by which the Water Quality Management Technical Advisory Committee and its administrative staff will:

- 1) Establish the boundaries of the 20-year sewer service area,
- 2) Review sewer extension requests,
- 3) Review Sewer Service Area Plan amendments, and
- 4) Other reviews related to sewer service.

7.2 GOALS, OBJECTIVES and POLICIES

GOAL 1: To guide urban development away from important natural resources and environmentally sensitive lands in order to protect water quality.

OBJECTIVE 1A: To restrict urban development from floodways, wetlands, and other unique natural areas.

POLICIES:

- 1A-1) Sanitary sewer lines will not be extended into floodways or wetlands except to serve compatible recreation uses or existing development that is experiencing severe on-site sewage disposal problems.
- 1A-2) Subdivision plats which are not designed to protect developments from flooding and wetland drainage problems will not be approved without resolution or mitigation.
- 1A-3) Floodplain and shoreland zoning ordinances will be strictly enforced to ensure that permitted uses in these areas are protected from flooding and do not damage nearby property.
- 1A-4) Sewer extensions will not be approved for development within environmentally sensitive areas, as identified in this SSA Plan, however they may be allowed to cross certain sensitive areas with appropriate permits to facilitate development adjacent to these areas.

OBJECTIVE: 1B) Urban development should be discouraged in areas of steep slope, high groundwater, high bedrock or other suitability limitations.

POLICIES:

- 1B-1) Sanitary sewer extensions into areas with suitability limitations will be given a low priority unless extensions are an integral part of long-range neighborhood development plans for the area.
- 1B-2) Subdivision plan designs which do not provide adequate means of protecting future residents from problems associated with drainage and steep slopes will be not be approved without detailed plans for adequately draining such areas.
- 1B-3) High density residential or commercial uses will be discouraged in areas of steep slopes and low permeability.

GOAL 2: To plan growth so that quality urban services can be provided in the most efficient and economical manner.

OBJECTIVE: 2A) Community comprehensive plans should be referenced in sewer service plan development and reviews.

OBJECTIVE: 2B) New development should be concentrated and contiguous to existing urban development.

POLICIES:

- 2B-1) Where compatible with community plans and other community policies, sanitary sewer extensions into areas adjacent to existing development will be given high priority. Extensions which may cause leap-frog or sprawl development will be discouraged.
- 2B-2) Sewer service extensions will be used as a tool to implement community plans by directing growth into the most desirable areas.
- 2B-3) A "Limited Service Area" concept may be applied to areas where only one or a few urban services, such as sanitary sewer service, are needed to accommodate special or unique facilities or institutional uses which are appropriately located outside urban service areas, or areas of existing development experiencing wastewater disposal or water supply problems.

OBJECTIVE: 2C) To direct growth into areas with adequate or excess public improvement capabilities that can adequately accommodate the added demand for sewer, water, parks, schools and transportation facilities and fire and police protection; with an emphasis on infill and redevelopment.

POLICIES:

2C-1) Neighborhoods with excess public facility capacities will be identified in community plans and be a high priority for additional urban development. Where necessary, sanitary sewers will be extended into these neighborhoods to stimulate development additional and capitalize on the availability of other public services.

2C-2) Where excess service capacities are available in existing low density residential neighborhoods, consideration will be given to increasing the residential density in certain areas through rezoning.

GOAL 3: To eliminate existing health hazards associated with failing on-site wastewater treatment systems and prevent such problems in the future.

OBJECTIVE: 3A) To pursue the most cost-effective long-range means of solving health hazards.

POLICIES:

3A-1) Extension of sanitary sewers to health hazard areas will be given the highest priority in sewer extension programs.

3A-2) Federal and State financial assistance will be sought to help finance sewage disposal improvements in health hazard areas.

3A-3) To eliminate health hazards within the 20 year service area, it will be a preferred alternative to install cluster on-site disposal systems which can be easily adapted to conventional municipal collection systems.

OBJECTIVE: 3B) To develop and implement means of preventing future health hazard problems.

POLICIES:

3B-1) Communities within the Wausau Urban Area will establish an on-going dialog through the Water Quality Management Technical Advisory Committee to evaluate and develop recommended parameters for sound development.

3B-2) Local application of guidelines for waste water treatment by area ("waste water treatment prescriptions") based on local conditions such as soils, density, and availability of facilities is recommended to address wastewater issues as needed on a community-by-community basis. An example of such wastewater treatment guidelines (prescriptions) is contained in Appendix B.

SECTION 8.0 WAUSAU URBAN AREA SEWER SERVICE AREA BOUNDARY PLAN

8.1 INTRODUCTION

This section ties together the previous sections of this report to establish the Wausau Urban Area Sewer Service Area boundary. This official boundary is depicted in the Sewer Service Area Boundary Map, see map 6. This boundary is administered according to the procedures and criteria outlined in Section 9 of this report.

The basin plan, described in Section 2 of this report, is the State level planning framework for water quality management pursuant to the Federal Clean Water Act. This Sewer Service Area Plan is considered an amendment to the Central Wisconsin River Basin Plan.

At the local level, this water quality management framework has two primary components: the planning for facilities to improve water quality through the cost effective collection and treatment of waste water; and the planning for an area within which those wastewater facilities can be extended while excluding environmentally sensitive areas that might impact water quality if developed. This Sewer Service Area Plan provides that second component.

The facilities planning for the Wausau Urban Area is described in Section 3 of this report. The latest round of facilities planning has been done concurrently with the sewer service area planning. The processes for each of the facilities plans/studies and the process for the sewer service area plan have utilized the same population projections and similar growth assumptions, so theoretically, the sewer service area should be sized appropriately for the planned facilities, and the capacity of the facilities should be adequate to handle the anticipated growth. However, review and concurrence from facility managers is built into the administrative procedures of the Sewer Service Area Plan to ensure the plant can handle the development proposed for sewer service.

The growth projections developed in Section 4 of this report determine what size the sewer service area should be to accommodate that growth. The environmentally sensitive areas identified in Section 5 determine where development should be prohibited to protect water quality: the primary purpose of this Plan. The land use elements of the comprehensive plans discussed in Section 6 for the various communities in the urban area are used in conjunction with the environmentally sensitive areas to help determine where the sewer service area boundary lines should be drawn. The goals and objectives of this Plan, as spelled out in Section 7, should be consistent with the local comprehensive plans in calling for orderly growth that protects environmentally sensitive areas and water quality.

8.2 CHANGES TO THE 2025 BOUNDARY

Since the previous Sewer Service Area Plan was adopted, there have been a number of amendments that have changed the sewer service area boundary. These amendments are summarized in the Table 15. The final amended boundary was used as the starting point for this sewer service area update.

TABLE 15: Wausau Urban Area Sewer Service Area Amendments Since 2007					
Year	Location	Purpose	SSA Boundary Impact		
			Acres Added	Acres Removed	Net Change
2010	Rib Mountain	State Park Improvements	38.87	38.87	0.00
2015	Wausau	SE Side Development	37.40	45.60	-8.20
2015	Kronenwetter	Everest Woods Subdivision	35.50	36.48	-0.98
					-9.18
<i>Source: Marathon County CPZ.</i>					

Two other plan amendments over this time period were plan text changes that did not affect the boundary. In addition, the City of Wausau submitted a request for boundary amendment for industrial park expansion concurrently with this plan update. That amendment was incorporated directly into the planning process and is reflected in the new 2040 sewer service area boundary.

8.3 2040 SEWER SERVICE AREA BOUNDARY MAP

The designation of a sewer service area boundary is the major element of the overall planning process of this Sewer Service Area Plan. The boundary takes into account the projections of future population, land demands, environmentally sensitive areas, and extensive input on the part of community representatives through individual community meetings and via the Technical Advisory Committee.

The sewer service area designated on the Boundary Map, see Map 6, in this section provides for the projected land needs of the Wausau Urban Area Sewer Service Area to the year 2040 as identified in Section 4. The boundary *excludes* primary environmentally sensitive areas to prohibit them from sewered development in order to protect water quality. The Sewer Service Area can be amended to reflect changes in growth needs within the urban area. The boundary amendment procedures are located in Section 9 of this report. Additionally, the Sewer Service Area can be reevaluated periodically for a plan update. Update cycles are typically 5 to 10 years.

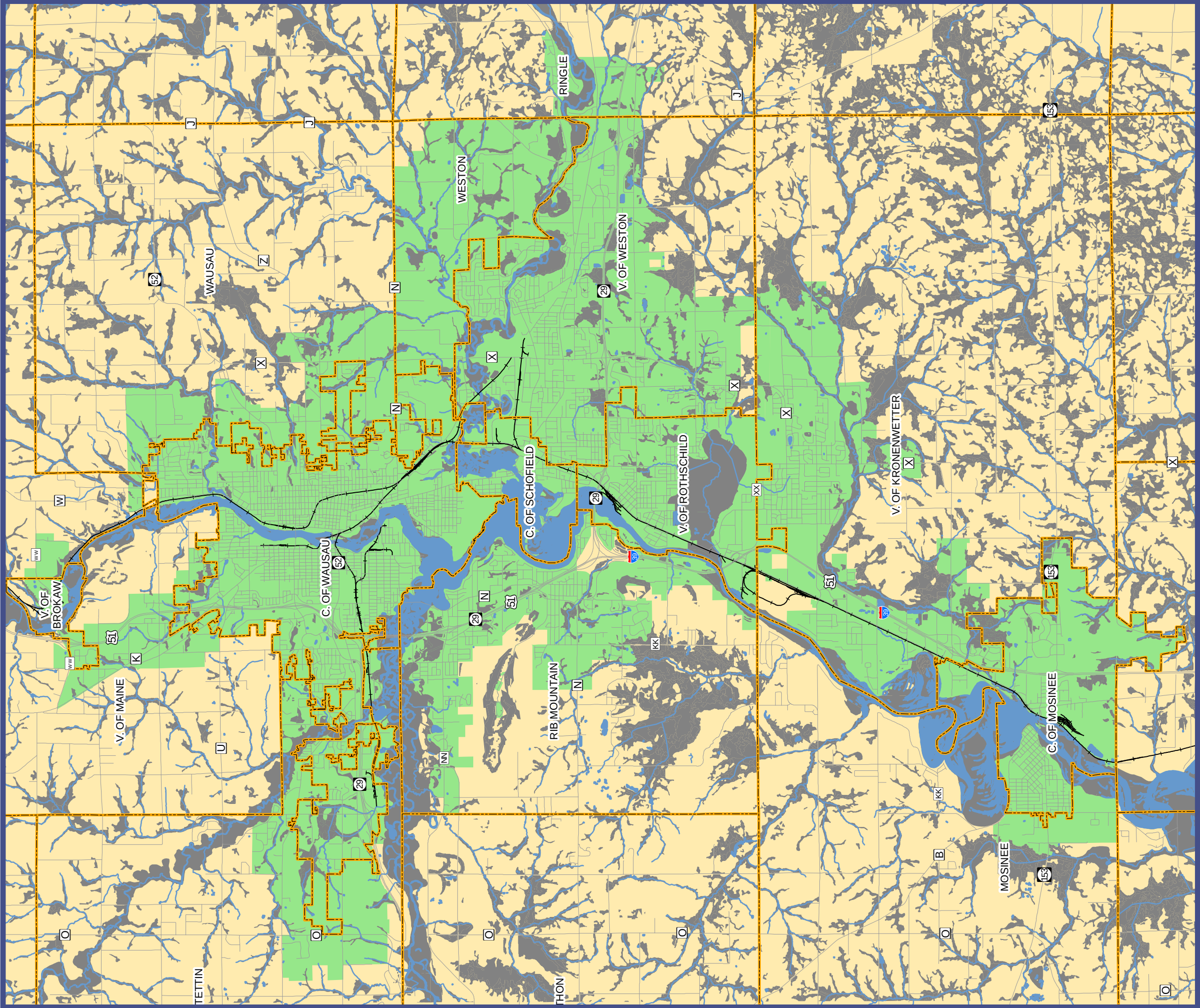
Table 16 displays a summary of the change in the service area from the previous plan (2025 boundary with amendments), see Column B, and the new 2040 plan, see Column I. Overall, the sewer service area increased by 3,235 acres. A number of factors are involved with the transition from the old to the new. First, many of the individual data sets that make up the map, such as parcel lines, road center lines, and environmental

features such as slopes, hydro and wetlands inventory, have all been updated since the last plan and accuracy levels continue to improve. There was a significant difference in the environmentally sensitive areas data from 2007 to 2017. Additionally, the 2025 map was originally created in an AutoCAD environment, and there are always problems, gaps, mismatches, etc, in bringing that data into a full GIS system. Mapping technicians adjusted the boundary line work to match up with current data, fixing gaps, slivers, alignment with obvious physical elements on the ground (parcel lines, roads, tree lines, etc.) and incorporated the updated wetland inventory and FEMA floodway data, see Column C.

The remainder of the changes were the result of planning meetings with community officials. In some cases, communities removed acres from the SSA because conditions have changed, making those areas less likely than other to be developed within the 20-year planning horizon, see Column D. With the incorporation of the Town of Maine into the Village of Maine, area identified as potential growth area for the City of Wausau is no longer available to the City. Village growth projections are not as high as Wausau's, and the Village identified over 1,400 acres to remove from the sewer service area, See Column E. Wausau has had to refocus its growth plans.

The communities also identified new areas to add to the sewer service area to accommodate projected future growth, see Column F. The amount of growth is projected in Section 4. These projected figures act as the "control total" of acres available as communities worked on the map, see Column G. Due to the nature of land, it can be difficult to hit a specific number of acres. Some communities will be slightly over their allocation and some will come in under. The area "pool" concept allows for a small amount of area, less than one percent of total SSA size, to balance those that go over with those that can't find suitable area to allocate, while maintaining the overall urban area control total for area added, see Column H.

Inclusion of lands within the Sewer Service Area does not imply that all of those lands will be developed with sanitary sewer by the year 2040. Many factors including market demand, land availability for sale, accessibility, and political decision making will ultimately determine the amount of land which is sewered by the end of the planning period.



Legend

Roads

Railroad

Minor Civil Divisions

Water

Primary ESA

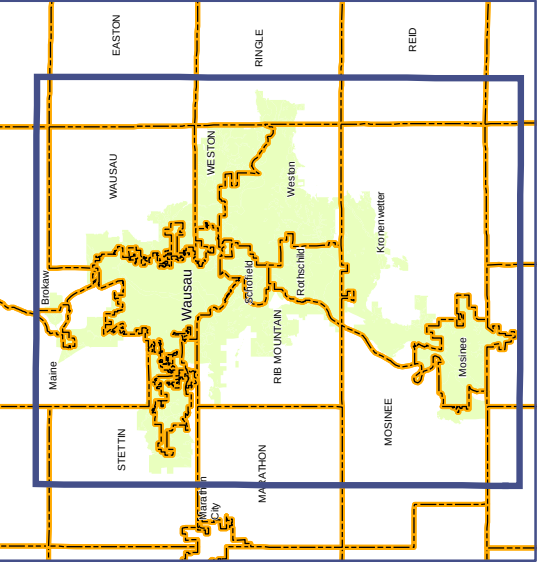
SSA 2040

SOURCE: NCWRPC, WiDNR,
Marathon County Geo Services

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Sewer Service Area 2040

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TABLE 16: Sewer Service Area Acreage Transition 2025 to 2040 Breakdown									
SSA Community	Previous SSA Acres ¹	Mapping Adjustment Acres ²	SSA Acres Removed	SSA Acres Lost to Incorporation	SSA Acres Added ³	Control Total: Acres Available to Add	SSA Acres Pool ⁴	New SSA Acres	
Mosinee	4,581	17	0	0	274	272	-2	4,872	
Schofield	1,530	-637	0	0	62	183	121	955	
Wausau	18,430	-2,514	0	-1,401	2,765	2,766	1	17,280	
Kronenwetter	5,462	-1	-59	0	1,260	1,263	3	6,662	
Rothschild	3,442	-439	0	0	193	459	266	3,196	
Weston	12,047	-603	-285	0	2,493	2,490	-3	13,652	
Rib Mountain	4,578	-683	-247	0	876	489	-387	4,524	
SSA Subtotals	50,070	-4,860	-591	-1,401	7,923	7,922	-1	51,141	
Maine-Brokaw ⁵	0	0	0	0	n/a	n/a	0	2,164	
SSA Totals	50,070	-4,860	-591	-1,401	7,923	7,922	-1	53,305	
Source: NCWRPC									
¹ Includes amendments approved since previous plan was established. ² Includes net change in ESA area with updated wetland & floodway data for the area, and map adjustment/corrections. ³ Includes mapping of projected acres from Table 13. ⁴ Pool to allow for balancing of small amount of overextended / unused acres while maintaining overall metro SSA size. ⁵ Villages of Maine & Brokaw are new communities joining metro SSA group.									

SECTION 9.0 SEWER SERVICE AREA PLAN ADMINISTRATION

9.1 INTRODUCTION

As with any planning program, the success of the program depends on if and how it is implemented. The degree to which the program is implemented will often depend not only on the political atmosphere in the planning area, but on the clarity of the implementation guidelines set forth as part of the plan. The purpose of this section is to establish simple, complete guidelines for putting the Plan to use. Specific topics addressed in this section include how the Plan can be amended and by whom, the local review of sewer line extension proposals, and how the Plan will be subject to comprehensive updating processes.

The Marathon County Metropolitan Planning Commission is the locally established water quality planning agency for the Wausau Urban Area. Responsibilities include developing sewer service area plans, responding to amendment requests, and reviewing sewer extensions for conformance with the approved sewer service area plan. The Water Quality Technical Advisory Committee (WQMTAC) was created by the Commission to oversee the Sewer Service Area planning process, and the Marathon County Conservation, Planning and Zoning Department provides the staffing and administrative support for this function.

9.2 AMENDMENT PROCESS

The following sections detail the process to be followed in amending the sewer service area boundary. Amendments provide communities and private developers with the needed flexibility to incorporate unanticipated community growth, additional technical data, changing community trends and continuous public input into the sewer service area planning process. The Marathon County Conservation, Planning & Zoning Department will administer the amendment process and maintain the records of boundary amendments and incorporate those amendments on the service area map and in the text of the Plan during the updating process.

This Plan categorizes amendment requests into three types.

A "Type I Amendment" involves a situation where the service boundary is changed, but the service area's total acreage is not increased. This is often referred to as a "swap-type amendment": for every acre added to the sewer service area, an area of equal size is removed.

A "Type II Amendment" would increase the service area acreage without a corresponding removal or "swap" of acreage out of the service area. The primary justification for a Type II boundary amendment is to accommodate unanticipated new

population or business growth to be served by sanitary sewer beyond what was projected in the Plan.

A "Type III Amendment" or "Limited Service Area" is a special case where sanitary sewer service is needed to accommodate a special or unique facility or institutional use; or areas of existing development experiencing wastewater disposal problems. An area limited to that needed to cover the special use or problem area is added to the sewer service area.

For all types of amendments, the Wisconsin Department of Natural Resources is the final approval authority. After the DNR approves the amendment, the official sewer service area map, as maintained by the Marathon County Conservation, Planning and Zoning Department, is revised to incorporate the amendment.

Plan boundary amendment procedures are detailed below:

1. A petition to add a particular area(s) to the sewer service boundary is filed with the governing body of the town, village, or city in which the area is located or will be located following annexation. The petition should include:
 - ✓ A map showing the location of the property;
 - ✓ A general development plan for the area to be added, including land use proposals and a preliminary timetable for implementing the development plan; and
 - ✓ An indication of the specific service needs of the site such as to eliminate health hazards, provide sewer and water to a proposed subdivision or to mitigate fire protection deficiencies.
2. If a Type I Amendment is proposed, the community receiving the petition identifies an area of greater or equal size to be removed from the sewer service area to compensate for the area to be added (the swap-type amendment).
3. The governing body refers the petition to the local plan commission for review, public hearing, and recommendation.
4. A Class 1 notice of public hearing is published in the newspaper used by the community for this purpose. The public hearing notice identifies the location of the area proposed to be added to the sewer service boundary as well as the area to be removed from the sewer service boundary.

A copy of the public hearing notice is sent to the director of the Marathon County Conservation, Planning and Zoning Department and the clerk of the community in which the properties are located, if different from the community holding the public hearing. Notice is also sent to the managers of each waste water treatment plant serving the Wausau Urban Area, currently including: City of Wausau WWTP, Rib Mountain Metro Sanitary District WWTP and Village of Brokaw WWTP.

In addition, a copy of the public hearing notice is sent to the clerks of the following communities: City of Mosinee, City of Wausau, City of Schofield, Village of Kronenwetter, Village of Maine/Brokaw, Village of Rothschild, Village of Weston and the Town of Rib Mountain.

5. The local plan commission holds a public hearing on the proposed amendment and formulates a recommendation regarding the amendment. In developing a recommendation, the plan commission should consider:
 - ✓ Testimony received at the public hearing;
 - ✓ Comments from other local communities and staff of the Marathon County Conservation, Planning and Zoning Department;
 - ✓ Information on the impact the amendment would have on sewer line and treatment plant capacity, water supply facilities and other needed services;
 - ✓ Conformance with community plans, especially the community's comprehensive plan;
 - ✓ Development trends in the area;
 - ✓ Features of the physical environment; and
 - ✓ General conformance with the current Update of the Wausau Urban Area Sewer Service Plan.

A record of the public hearing proceedings and testimony shall be kept by the local plan commission.

6. Following the public hearing, the recommendation of the plan commission is submitted to the governing body for review and action.
7. The governing body reviews the petition, public record on the proposed amendment and plan commission recommendation and takes final action on the proposed amendment. If the amendment is not approved by the governing body, the amendment process terminates.
8. Amendments approved by the local governing body shall then be submitted to the Marathon County Conservation, Planning and Zoning Department for review and recommendation by staff, the Water Quality Management Technical Advisory Committee (TAC) of the Marathon County Metropolitan Planning Commission and finally by the Marathon County Metropolitan Planning Commission.

For each amendment submitted to the Conservation, Planning and Zoning Department, the following information shall be provided for the area proposed to be added to the sewer service boundary and also for any area proposed to be removed from the sewer service boundary. This information shall be provided by the community requesting the amendment and is not the responsibility of the Conservation, Planning and Zoning Department to assemble.

Information to Provide for All Proposed Sewer Service Area Amendments:

- A. Applicant Community.
 - B. Title of Proposed Amendment (Number sequentially for the particular community.)
 - C. Location(s) of Amendment.
 - 1. Section(s), Township and Range:
 - 2. Minor Civil Division, i.e. City, Village or (Civil) Town:
 - 3. Area Added and/or Deleted (in acres):
 - D. A map(s) showing the proposed amendment areas, including the addition and deletion areas.
 - E. A map showing existing and projected land use in the amendment area.
 - F. Discussion addressing the consistency of the proposed amendment with local plans.
 - G. Summary description of proposed amendment (brief overview, including purpose, need).
 - H. Anticipated population for the amendment area(s) (estimated present and year 2040).
 - I. For commercial, industrial and institutional or other special facilities, projected wastewater flow and loading information for the amendment area.
 - J. A letter of concurrence with the proposed amendment from the wastewater facility to receive wastewater from amendment area.
 - K. Description/maps of existing environmentally sensitive areas (including location and acreage of wetlands, floodway and steep slopes) and other pertinent environmental features in relationship to delineation of sewer service area.
 - L. Discussion of any alternatives to amending the sewer service area that were considered (i.e. no action, rerouting sewers, staging, etc.) and their impact on the existing environment and community growth and development.
 - M. Discussion of potential controversies and conflicts concerning proposed amendment (including local zoning, plans or policy of local, regional, state, or federal government).
 - N. Public hearing and local amendment approval information (date of hearing, minutes, letters or comments received, copy of approval resolution of governing body).
9. Additional Criteria for Limited Service Areas: A Type III Amendment is intended to accommodate a Limited Service Area, or LSA, where only one or a few urban services, such as sanitary sewer service, are provided to accommodate special or unique facilities or institutional uses which are appropriately located outside urban service areas, or areas of existing development experiencing wastewater disposal or water supply problems. Types of Limited Service Areas include:
- ✓ Special Facilities: including, but not limited to, landfills, park, recreational, and tourist facilities such as park shelters, golf course clubhouses, etc.

- ✓ Institutional Uses: including, but not limited to, schools, correctional facilities, etc.
- ✓ Existing Development: existing residential or commercial development experiencing wastewater disposal or water supply problems. Existing development means development existing in the local unit of government on the date the application for Limited Service Area establishment or expansion is submitted.

An application for establishment or expansion of a Limited Service Area must follow the same procedures as other types of amendments and identify how the proposal meets the applicable criteria outlined below:

Criteria for Establishing a Limited Service Area

A. Special Facilities and Institutional Uses

1. The LSA should be limited to the area needed for use/service;
2. Evaluation of alternative means of providing needed services, including cost effectiveness analyses;
3. Documented agreement from the agencies which will be providing the service(s);
4. If establishment or expansion of an LSA is proposed within one-half mile of the existing sewer service area, a discussion and evaluation of the feasibility of including the proposed LSA in the service area must be submitted.

B. Existing Development

1. Addressed in and consistent with the local comprehensive plan;
2. The LSA should be limited to existing development including infill;
3. Infill should be limited to vacant lots or parcels contiguous to existing development or permanent open space, or a combination thereof, on at least two sides; and immediately adjacent to and having direct access to sanitary sewer and existing public streets or roads. Any area proposed for infill must contribute to the solution of the stated water quality problem and must be consistent with resolution of the problem as defined in the application for creation of the LSA;
4. Documentation of existing and reasonably anticipated on-site wastewater or water supply problems;
5. Evaluation of alternative means of providing needed services, including cost effectiveness analyses;
6. Documented agreement from the agencies which will be providing the service(s); and
7. If establishment or expansion of an LSA is proposed within one-half mile of the existing sewer service area, a discussion and evaluation of the feasibility of including the proposed LSA in the service must be submitted.

Criteria for Expansion of a Limited Service Area

A. Special Facilities

1. Proposals to expand the original use or facility will be evaluated using the same criteria as for establishing the service area. Economic development of an existing facility is not an acceptable criterion for expansion of an LSA. The intent of an LSA is not to support economic expansion.

B. Institutional Uses

1. Proposals to expand the original use or facility will be evaluated, using the same criteria as for establishing the area. These same criteria apply to expanding the area to include related but different uses.

C. Existing Development

Proposals to expand a Limited Service Area which was established to serve existing development may be considered if the following criteria are met:

1. The local comprehensive plan must address the expansion area.
2. The additional development should be consistent with the goals and objectives of the local government's comprehensive plan.

10. The staff of the Marathon County Conservation, Planning and Zoning Department convenes a meeting of the Water Quality Management Technical Advisory Committee (TAC) of the Marathon County Metropolitan Planning Commission and presents its recommendation.

The TAC shall formulate a recommendation regarding the proposed amendment and provide the Marathon County Metropolitan Planning Commission with a recommendation to either approve, disapprove, or approve conditionally based upon a majority vote of the communities represented at the meeting where the amendment is reviewed. For purposes of making these recommendations, each of the following communities shall have one vote at the technical advisory meetings called for this purpose: City of Mosinee, City of Schofield, City of Wausau, Village of Kronenwetter, Village of Maine/Brokaw, Village of Rothschild, Village of Weston and the Town of Rib Mountain. The recommended action requires a majority vote of the communities represented at the meeting. (For example, if only three communities are represented at a meeting for this purpose, support for an action by only two of the communities would carry.)

The Marathon County Metropolitan Planning Commission shall review the TAC recommendation and take final action on the amendment at its next regularly scheduled meeting.

11. The Department of Natural Resources should approve the amendment and certify the applicable Water Quality Management Plan within approximately 45 days after receipt of the amendment request, unless the Department determines that an environmental assessment (EA) is required in accordance with ch. NR 150, Wis.

Adm. Code. If an EA is required, the DNR review period may extend to approximately three months or more. An EA is normally required if the amendment proposal delineates an area of over 1,000 acres that may be served by sewer, or if it may result in the sewered area increasing by more than 5% per year. The DNR may require an EA under any project circumstances if they determine the proposal has the potential to cause significant environmental effects and may involve unresolved conflicts in the use of available resources.

12. Appeals: Any person aggrieved by a Department of Natural Resources water quality management plan decision has the right to file a judicial appeal of the decision. Wisconsin Statutes and Administrative Code establish time periods within which requests to review department decisions must be filed. For judicial review of a decision pursuant to s.227.52 and 227.53, Wisconsin Statutes, a petition for review must be filed within 30 days after service of the decision. The respondent in an action for judicial appeal is the DNR.

9.3 SANITARY SEWER EXTENSION REVIEWS AND CONFORMANCE LETTERS

A primary function of this planning process is to ensure that any sanitary sewers installed within the Wausau Urban Area are also located within the approved sewer service boundary. All local reviews are performed by staff of the Marathon County Conservation, Planning and Zoning Department. The procedures for local sewer extension submittal, review and approval are as follows:

1. Agency proposing the sewer extension identifies in a letter to the Conservation, Planning and Zoning Department the project by name, location, owner or agent for owner (if any) and design engineer.
2. A detailed sewer extension plan map is also provided. This map indicates the location of the sewer service area, the termini of existing sanitary sewers and the exact route and size of the proposed sewer extensions. All environmentally sensitive areas within and near the proposed extension must also be shown on this map. The project location should also be identified by Town, Range, and Section. An estimate of the total number of acres of service area (excluding environmentally sensitive areas) that will be served by the extension should be provided along with the number of probable residential building lots likely to be served by the project. All general land use types to be served by the project should also be listed.
3. Indicate whether the proposed sewer extension is located within the current sewer service area boundary as established as a result of the approval of this updated plan and any subsequent amendment thereto.
4. If the proposed sewer extension is located within the approved sewer service area staff of the Marathon County Conservation, Planning and Zoning Department will provide a letter to the applicant so stating. It is understood that sanitary sewers are generally allowed to extend through environmentally sensitive areas, which are

located outside of the sewer service boundary. Sewer lateral connections, however, are not allowed to be made to the portion of the sewer pipe that is within any primary environmentally sensitive area. This prohibition provides some assurance that environmentally sensitive areas will not be developed as a result of the extension of the community's sewer service.

5. Denial of a request for a Conformance Letter by the Conservation, Planning and Zoning Department may be appealed by the applicant to the Wisconsin Department of Natural Resources.

9.4 SEWER SERVICE AREA PLAN UPDATES

At a minimum of a 5 year basis as required by NR 121.08 (2)(a), the information contained within the plan will be reviewed and compared with updated information, including but not limited to the following in accordance with NR 121.05(1)(g)2.b:

- ✓ Population projections developed by the Wisconsin Department of Administration
- ✓ Official Wisconsin population estimates
- ✓ Locally observed land use trends
- ✓ Density standards
- ✓ Other information as available

If review and comparison of the above information warrants an update, the Water Quality Technical Advisory Committee (WQMTAC) will recommend the initiation of an update to the Wausau Urban Area Sewer Service Plan to the Marathon County Metropolitan Planning Commission.

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APPENDIX A: Population Projection Analysis

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Wausau Sewer Service Area Community Population Projection Comparison^A

	2005	2010	2015	2016	2025	2025	2025	2030	2035	2035	2040	2040	
	DOA Est. ^B	Census	DOA Est.	DOA Est.	1982 Facil. Plan	Prev. SSA Plan ^C	Comp. Plan ^C	Comp. Plan	DOA Proj. ^D	Comp. Plan ^E	DOA Proj. ^F	Comp. Plan	NCWRPC ^G
Mosinee ^H	4,176	3,988	4,021	4,013	n/a		4,693	4,792	4,270		4,235		4,190
Schofield	2,280	2,169	2,212	2,207	6,620		2,580	2,260	2,180		2,135		2,439
Wausau	39,275	39,106	39,063	38,909	53,480		41,831		41,450	41,440	41,070		38,849
Brokaw									315		325		
Kronenwetter ^H	6,034	7,210	7,528	7,536	8,655		8,825	10,989	9,730		10,070		9,325
Rothschild	5,171	5,269	5,302	5,325	8,300		6,671		5,795		5,790	6,275	5,470
Weston	13,195	14,868	15,276	15,338	27,400		18,941		19,700		20,330	20,330	17,478
Rib Mountain ^{HI}	7,657	6,825	6,900	6,917	13,570		8,851	8,851	7,165		7,080		7,287
Totals	77,788	79,435	80,302	80,245	118,025		92,392	n/a	90,605	n/a	91,035	n/a	85,038

A. Methodologies and credits documented in source material.

B. Previous SSA Plan base year.

C. DOA controlled.

D. RMMSD Facility Plan 2016 uses DOA 2035 projections.

E. Wausau Comp Plan draft does not provide direct projection. Value extrapolated from projected land demands.

F. County Comp Plan uses DOA 2040 projections.

G. NCWRPC uses continuation of 2010 to 2015 trend.

H. Comp Plan updates to begin in 2017/18.

I. Estimate for entire town will have to be factored for sewered area.

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APPENDIX B: Sewer Extension Prescriptions

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VILLAGE OF WESTON
MUNICIPAL UTILITY EXTENSION PRESCRIPTIONS

Areas Currently Served by Public Sewer (Yellow):

These areas are currently served with public sewers that have been constructed and are currently in operation. **These areas/properties are considered infill development.**

New Development and Construction

Any new development and/or construction in the yellow areas of this facilities planning area shall be required to connect to the Weston sewerage system to ensure that wastewater will be treated and discharged to the Rib Mountain Metropolitan Sewerage District (RMMSD) or Wausau wastewater treatment facility.

Existing Development and Construction

Private onsite wastewater treatment systems (POWTS) shall be abandoned in accordance with state and county regulations and parcels shall connect to the Weston sewerage system to ensure that wastewater will be treated at the RMMSD or Wausau wastewater treatment facility, unless the Village of Weston determines that public sewer service is not available.

Areas Programmed for Public Sewers Within the Next 20 Years (Orange):

This area contains some existing development, as well as large undeveloped tracts of land and vacant lots subject to improvement. **This area is generally considered infill development even though main extensions will be required to make service available.**

New Development (subdivisions)

All new commercial, industrial, institutional and residential subdivisions, required to be platted, by state, county, and/or local regulations in the orange areas shall be required to connect to the existing Weston sewerage system to ensure that wastewater will be treated and discharged to the RMMSD or Wausau wastewater treatment facility. The developer shall be required to extend new sanitary sewers from any proposed development to the existing public sewer tributary to RMMSD or Wausau.

New Construction (Individual Lots – non-residential)

New commercial development on existing individual parcels or newly created unplatted parcels will be required to provide public sewer service to ensure that sanitary wastewater will be transported to and treated by the RMMSD or Wausau wastewater treatment facility.

New Construction (Individual Lots - residential)

New residential construction on existing, individual parcels/lots or newly created, unplatted parcels will be required to provide public sewer service to ensure that wastewater will be transported to and treated at the RMMSD or Wausau wastewater treatment facility when all of the following apply:

1. It is determined by the Village of Weston that the RMMSD or Wausau treatment facilities and existing public sewerage system have capacity to accept flow from the proposed construction.
2. The Village of Weston deems that public sewer is available.
3. There are no physical, legal or financial barriers prohibiting such connection.

If it is determined that such barriers exist, then documentation that adequately and reasonably supports the claim must be provided to the Village of Weston. The Village, after review of the information, may deem that public sewer is not available and permit the use of POWTS.

When any of items 1-3 above do not apply, it shall be deemed that public sewer is currently not available and individual parcels may be improved with new POWTS in accordance with state and county regulations.

An owner of an existing parcel where new construction will be served by a POWTS shall extend a sanitary sewer lateral to the parcel boundary so that wastewater may be transported to RMMSD or Wausau wastewater treatment facility, when and if the Village of Weston deems that connection to public sewer is available.

Existing Development and Construction

When the Village of Weston determines that public sewer is available, properties served by existing POWTS will be required to connect to public sewer in conformance with Village policies, to ensure that wastewater will be transported to and treated by RMMSD or the Wausau wastewater treatment facility. Upon completing the connection to the Weston sewerage system, existing POWTS shall be properly abandoned in accordance with state and county regulations.

When the Village of Weston determines that public sewer is not available, existing (developed) commercial, industrial, institutional and residential properties within this area may continue to be served by POWTS, except that:

1. Failing POWTS serving one-or 2- family dwellings shall be abandoned and replaced with code compliant POWTS in accordance with state and county regulations.
2. Failing POWTS serving uses other than one-or 2- family dwellings shall be abandoned and the parcel will be required to connect to public sewer to ensure that wastewater will be treated at the RMMSD or Wausau wastewater treatment facility.

An owner of a parcel served by an existing POWTS may extend a sanitary sewer lateral to the parcel boundary so that wastewater may be transported to RMMSD or Wausau wastewater treatment facility, when and if the Village of Weston deems that connection to public sewer is available.

Areas that will be served by the RMMSD or Wausau wastewater treatment facility or a POWTS (Green):

This area may contain some existing development, as well as large undeveloped tracts of land and vacant lots subject to improvement within the Urban Sewer Service Area Boundary. **This area is generally regarded as system extension areas, though some parts may be considered infill**

New Development (subdivisions)

New commercial, industrial and residential subdivisions, required to be platted, by state, county, and/or local regulations will be required to provide public sewer service to ensure that wastewater will be transported to and treated at the RMMSD or Wausau wastewater treatment facility when all of the following apply:

1. An existing public sewer, owned and operated by the Village of Weston, is within 2,500 ft. of the property proposed for development.
2. It is determined by the Village of Weston that the RMMSD or Wausau wastewater treatment facility and existing public sewers have capacity to accept flow from the proposed development.
3. The Village of Weston deems that public sewer is available.
4. There are no other physical, legal or financial barriers prohibiting such connection.

If it is determined that such a barrier exists, documentation that adequately and reasonably supports the claim must be provided to the Village of Weston. The Village of Weston, after review of the information, may deem that public sewer is not available and permit the use of a POWTS.

New, centralized wastewater treatment systems serving new developments with more than one lot/parcel will not be approved.

New Construction (Individual Lots – non-residential)

New commercial development on existing individual parcels or newly created unplatted parcels will be required to provide public sewer service to ensure that sanitary wastewater will be transported to and treated by the RMMSD or Wausau wastewater treatment facility when all of the following apply:

1. It is determined by the utility having jurisdiction that the RMMSD or Wausau wastewater treatment facility and existing public sewer have capacity to accept flow from the proposed construction.
2. The Village of Weston deems that public sewer is available.
3. There are no physical, legal or financial barriers prohibiting such connection.

If it is determined that such barriers exist, then documentation that adequately and reasonably supports the claim must be provided to the Village of Weston. The Village of Weston, after review of the information, may deem that public sewer is not available and permit the use of POWTS.

When any of items 1-3 above do not apply, it shall be deemed that public sewer is currently not available and individual parcels may be improved with new POWTS in accordance with state and county regulations.

When the Village of Weston determines that public sewer is available, properties served by existing POWTS will be required to connect to public sewer in conformance with Village policies, to ensure that wastewater will be transported to and treated by RMMSD or the Wausau wastewater treatment facility. Upon completing the connection to the Weston sewerage system, existing POWTS shall be properly abandoned in accordance with state and county regulations.

New Construction (Individual Lots - residential)

New residential construction on existing, individual parcels/lots or newly created, unplatted parcels will be required to provide public sewer service to ensure that wastewater will be transported to and treated at the RMMSD or Wausau wastewater treatment facility when all of the following apply:

1. It is determined by the utility having jurisdiction that the RMMSD or Wausau wastewater treatment facility and existing public sewer have capacity to accept flow from the proposed construction.
2. The Village of Weston deems that public sewer is available.
3. There are no physical, legal or financial barriers prohibiting such connection.

If it is determined that such barriers exist, then documentation that adequately and reasonably supports the claim must be provided to the Village of Weston. The Village of Weston, after review of the information, may deem that public sewer is not available and permit the use of POWTS.

When any of items 1-3 above do not apply, it shall be deemed that public sewer is currently not available and individual parcels may be improved with new POWTS in accordance with state and county regulations.

An owner of an existing parcel where new construction will be served by a POWTS shall extend a sanitary sewer lateral to the parcel boundary so that wastewater may be transported to the existing RMMSD or Wausau wastewater treatment facility, when and if the Village of Weston deems that connection to public sewer is available.

Existing Development and Construction

When the Village of Weston determines that public sewer is available, properties served by existing POWTS will be required to connect to public sewer in conformance with Village policies, to ensure that wastewater will be transported to and treated by RMMSD or the Wausau wastewater treatment facility. Upon completing the connection to the Weston sewerage system, existing POWTS shall be properly abandoned in accordance with state and county regulations.

When the Village of Weston determines that public sewer is not available, existing (developed) commercial, industrial, institutional and residential properties within this area may continue to be served by POWTS, except that:

1. Failing POWTS shall be abandoned and replaced with code compliant POWTS in accordance with state and county regulations.

New, centralized wastewater treatment systems serving new development with more than one lot/parcel will not be approved.

Areas that will be served by POWTS (Cream):

These areas are, for the most part, a great distance from existing public sewers. Approval of connections to public sewer for treatment of wastewater at the RMMSD or Wausau wastewater treatment facility will be rare. Cream areas that appear closer to existing public sewers are often burdened with other limitations to public sewer connection, such as: public sewer capacity, physical obstructions to public sewer construction, and flood plains.

New Development and Construction

Where public sewer is not available, as determined by the Village of Weston, new POWTS may be permitted for subdivisions or individual parcels, in accordance with state and county regulations.

Existing Development and Construction

When the Village of Weston determines that public sewer is available, properties served by existing POWTS will be required to connect to public sewer in conformance with Village policies, to ensure that wastewater will be transported to and treated by RMMSD or the Wausau wastewater treatment facility. Upon completing the connection to the Weston sewerage system, existing POWTS shall be properly abandoned in accordance with state and county regulations.

When the Village of Weston determines that public sewer is not available, existing (developed) commercial, industrial, institutional and residential properties within this area may continue to be served by POWTS, except that:

1. Failing POWTS shall be abandoned and replaced with code complaint POWTS in accordance with state and county regulations.

Village of Weston
Municipal Utility Extension Prescriptions

Decision making criteria based on location of property to be served relative to sewer utility service area and sewer service boundary.

Location of Property	Cost	Responsible Party	Over-sizing Recommendations	Financing Method(s)	Possible Financial Incentives From Village
Fronted by a main (Infill/Build-out - Yellow Area on Map)	Connection to mains, possible access fee	Property owner/developer	None - Not Applicable	Home equity, Cash, Special Assessment Agreement for access fee	Interest free agreement, Term longer than 10 years
Property not fronted by a main, but located within the overall footprint of the Utility service area - Any subdivisions, any commercial property, and any property within 600 feet of existing main(s), but not dependent on a strict distance criteria. (Infill - Orange area on map)	Main extensions, laterals to property line, and street restoration	Property owner/developer		Private financing, Recapture agreement,	Require connection for property fronted by developer financed improvements
	Main extensions and street restoration	Village	Appropriate up to 50%, plus extraordinary construction	Special Assessment by Village, Revenue bond, Utility operating income, rates	Interest free special assessments, Repayment term longer than 10 years, Interest only or interest free deferred special assessment, Cap on total amount of special assessment
	Connection to mains	Property owner/developer	None - Not Applicable	Home equity, Cash, Special Assessment Agreement for access fee	Deferral of connection up to a maximum number of years - 10?
Property beyond the footprint of the overall boundary of the Utility service area, but within the urban area sewer service boundary - Generally any subdivisions within 2,500 feet of a main(s), non-residential lots within 1,000 feet of a main(s), any new or existing residential lot within 600 feet of a main(s), but availability not predicated on a strict distance criteria. (System Extensions - Green Area on map)	Main extensions, laterals to property line, and street restoration	Property owner/developer		Private financing, Recapture agreement,	Require connection for property fronted by developer financed improvements
	Main extensions and street restoration	Village	Appropriate for over-sizing and system reinforcement possibly up to a fixed percentage.	Special Assessment by Village, Revenue bond, Utility operating income, rates	Interest free special assessments, Repayment term longer than 10 years, Interest only or interest free deferred special assessment, Cap on total amount of special assessment
	Connection to mains	Property owner/developer	None - Not Applicable	Home equity, Cash	Deferral of connection up to a maximum number of years - 10?
Existing properties with private systems which fail and need replacement in any area are subject to determination of "availability" of municipal service (Orange, Green and Cream areas).	Main extensions, laterals to property line, and street restoration		See above for applicable area (Green and Cream would be viewed similarly)		
	Main extensions and street restoration		See above for applicable area (Green and Cream would be viewed similarly)		
	Connection to mains		See above for applicable area (Green and Cream would be viewed similarly)		

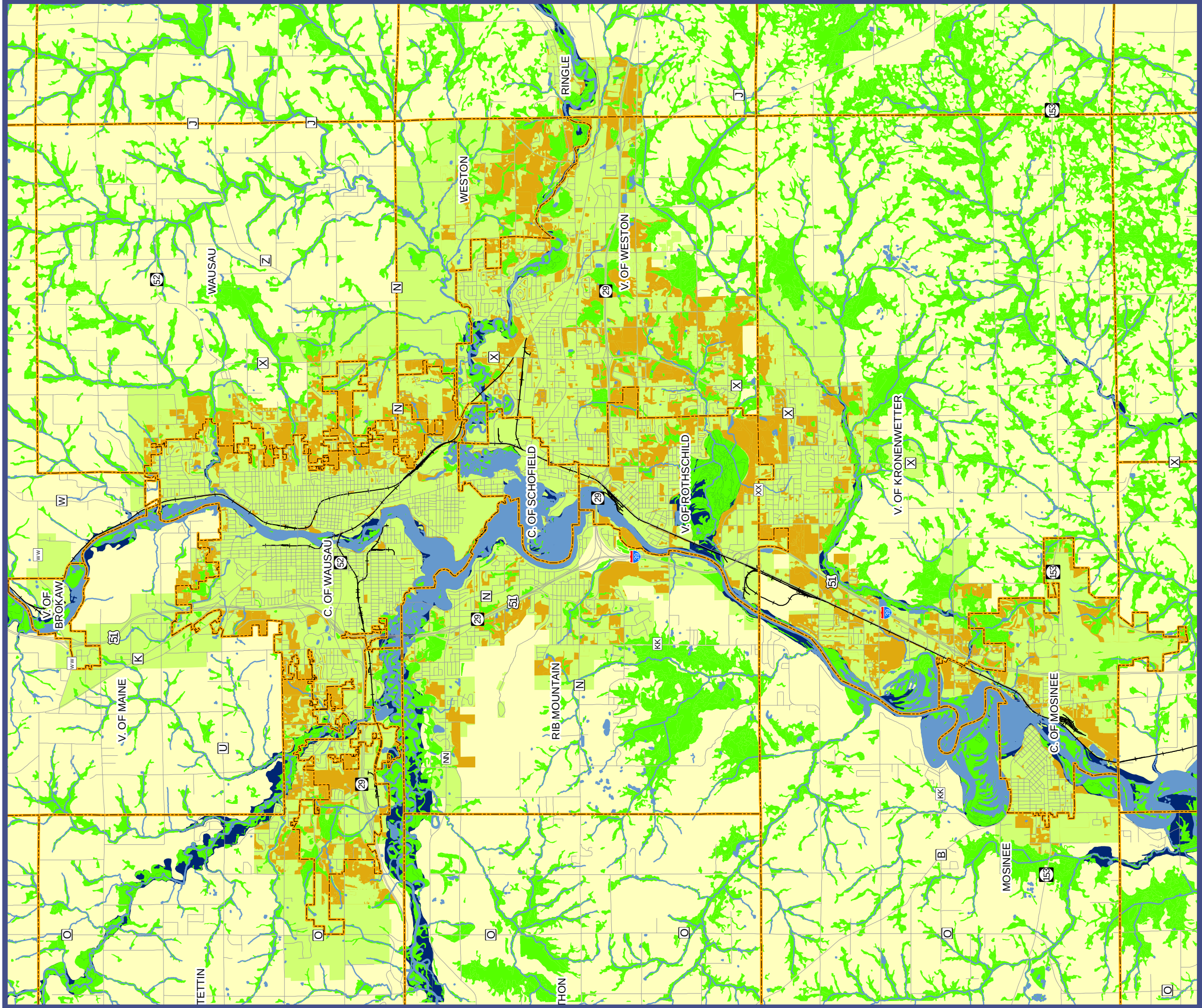
Other incentives:

Provide Engineering and inspection on projects less than 1,000 feet long - Usually can add 25% to base cost of projects

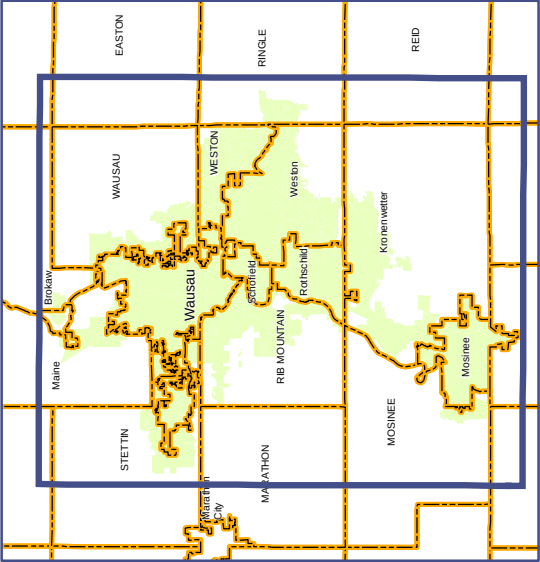
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APPENDIX C: Potential Infill/Redevelopment Areas

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Potential Infill / Redevelopment Areas



Legend

Roads

Railroad

Minor Civil Divisions

Water

Wetlands

Floodway

Proposed SSA

Potential Infill / Redevelopment Areas

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

SOURCE: NCWRPC, WiDNR, Marathon County Geo Services



Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St. Wausau, WI 54403 - www.ncwrpc.org
Date Printed: Friday, April 27, 2018

APPENDIX D: Public Hearing Notice

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Appendix D

WAUSAU URBAN AREA SEWER SERVICE PLAN PUBLIC HEARING NOTICE

Notice is hereby given that the Marathon County Metropolitan Planning Commission will be holding a public hearing to accept comments on the updated Wausau Urban Area Sewer Service Plan, 2040.

The general purpose of the Wausau Urban Area Sewer Service Plan is to maintain a twenty-year sanitary sewer service boundary for the Wausau urban area, provide a structure for implementing the Plan and manage the extension of sanitary sewage services within this urban area. The urban sanitary sewer service area boundary identifies the geographic land area within which sanitary sewer service could be made available in a cost effective, environmentally acceptable manner by the year 2040.

In addition to delineating an urban sewer service boundary, the Sewer Service Plan provides a framework for future planning at each individual municipal level. The data, trends, projections and findings developed in this Plan are consistent with detailed community plans for the Cities of Mosinee, Schofield & Wausau, the Villages of Brokaw, Kronenwetter, Maine, Rothschild & Weston, and the Town of Rib Mountain. The goals and policies developed throughout this planning process will also be applicable and useful in the development of local policy direction with respect to land use decisions within these communities.

The public hearing is being held on **MAY 8, 2018 at 2:00 p.m. in Room 5, 212 River Drive, Wausau, WI**. At the hearing interested persons will have an opportunity to be heard with respect to the proposed plan.

Public Hearing – Wausau Urban Area Sewer Service Plan, 2040

Comment: Peterson read through the public hearing notice for the Wausau Urban Area Sewer Service Plan. The public hearing was then opened. John Robinson, 1226 Highland Court, Wausau, WI 54403 commented as follows: Many of the sections seem to be outdated with the plan being a 20 year plan, looking at the assumptions for the City of Wausau, relative to the acreage required in the future with the population density of over 3 residents per acre with most of the new development in the Fountain Hills and Franklin Heights area having less density. This would then drive up the acreage numbers in the sewer service area. With the updated County's Strategic Plan being concerned with the quality and quantity of ground water, and also making a change to the Environmental Impact Fund by using it to replace Private Onsite Waste Treatment Systems, the concern is the lack of background data and should there be more current background data. The Mid-state and Gorski landfills could be used as some examples for a baseline.

Action taken by the Marathon County Metropolitan Planning Commission, May 8, 2018:

MOTION / SECOND BY FIFRICK / EMERLING TO CLOSE THE PUBLIC HEARING ON THE WAUSAU URBAN AREA SEWER SERVICE PLAN. MOTION CARRIED BY VOICE VOTE, NO DISSENT.

MOTION / SECOND BY GATES / FIFRICK TO APPROVE RESOLUTION 2-18, THE ADOPTION OF THE WAUSAU URBAN AREA SEWER SERVICE PLAN, 2040. MOTION CARRIED BY VOICE VOTE, NO DISSENT.

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APPENDIX E: Approval Resolution

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MARATHON COUNTY METROPOLITAN PLANNING COMMISSION

RESOLUTION 2-18

RESOLUTION APPROVING THE

ADOPTION OF THE WAUSAU URBAN AREA SEWER SERVICE PLAN, 2040 AS PREPARED FOR THE MARATHON COUNTY METROPOLITAN PLANNING COMMISSION

WHEREAS, the Marathon County Metropolitan Planning Commission established the Water Quality Management Technical Advisory Committee for the purposes of preparing a recommended Sewer Service Plan for the Wausau Urban Area; and

WHEREAS, the Plan has been developed in conjunction with and consistent to local Comprehensive Plans pursuant to s.62.23 and s.66.0295, Wis. Stats.; and

WHEREAS, the purpose of the plan is to provide for the orderly development of vacant land in and around the participating communities that will be served by municipal sewer and water services in the next 20 years; and

WHEREAS, representatives of the communities in the Wausau Urban Area provided information at regular and special meetings called by the Water Quality Management Technical Advisory Committee; and

WHEREAS, the Marathon County Metropolitan Planning Commission has reviewed the recommended Update of the Wausau Urban Area Sewer Service Plan at a regular monthly meeting; and

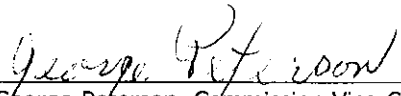
WHEREAS, the recommended Update of the Wausau Urban Area Sewer Service Plan has been submitted to the Wisconsin Department of Natural Resources (DNR) for review; and

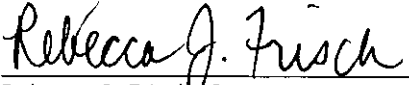
WHEREAS, the Marathon County Metropolitan Planning Commission requests DNR approval of the Plan; and

WHEREAS, members of the public, adjacent and nearby local governmental units, and Marathon County have been given a 30-day review and comment period prior to the public hearing, which was conducted by the Marathon County Metropolitan Planning Commission; and

NOW, THEREFORE, BE IT RESOLVED, that the Marathon County Metropolitan Planning Commission recommends approval of said Wausau Urban Area Sewer Service Plan, 2040 pursuant to Wisconsin Administrative Code, NR 121.

Dated this 8th day of MAY, 2018.


George Peterson, Commission Vice-Chairman


Rebecca J. Frisch, Commission Secretary
Director, Marathon County
Conservation, Planning and Zoning Department