SHEBOYGAN COUNTY
LAND AND WATER RESOURCE MANAGEMENT PLAN 2026-2035

SHEBOYGAN COUNTY

PLANNING & CONSERVATION DEPARTMENT

ADOPTED XXXX

Sheboygan County

Land and Water Resource Management Plan

Prepared under the guidance of:
The Sheboygan County Planning, Resources, Agriculture and Extension Committee

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Department Mission Statement:

Provide sound information and knowledge on environmental issues that affect our community, protecting our county's natural resources, and, first and foremost, working with the public which we serve in a straightforward, honest approach.

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Executive Summary

Legislative Background

The land and water resource management (LWRM) plan concept was proposed in the fall of 1996 by conservation professionals in response to draft state agency recommendations for redesigning Wisconsin's nonpoint pollution abatement programs. Wisconsin Acts 27 and 9, passed in 1997 and 1999 respectively, required counties to develop Land and Water Resource Management Plans Locally led conservation with the help of private, county, state, and federal partners was envisioned by the state legislature in requiring the development of LWRM's. Sheboygan County's first LWRM was written in 1999. Updates to Sheboygan County's LWRM plan occurred in 2004, 2009, 2016, and of course this 2025 update.

The 1997 and 1999 State Budget Bills contained extensive rewrites of the state's nonpoint source pollution abatement program. The legislation eliminated the priority watershed program. The legislation also established a statewide nonpoint source pollution abatement program that addresses both nonagricultural and agricultural sources. Under this legislation directed the Department of Natural Resources (DNR) to establish performance standards and prohibitions for the purpose of protecting and improving water quality from the effects of nonpoint source runoff. In 2002 and amended in 2009, the DNR passed NR 151 setting new performance standards for agricultural and non-agricultural areas to prevent runoff and protect water quality. These standards and prohibitions have been incorporated into Sheboygan County's LWRM plan updates since 2004.

The Department of Agriculture, Trade and Consumer Protection (DATCP) then passed rules in ATCP 50 that identifies the Best Management Practices (BMP's) that farmers must follow to meet DNR Standards.

Roles

DNR Responsibility

DNR is the state agency responsible for implementing the Federal Clean Water Act in which DNR sets the water quality goals and objectives for different water bodies. The nonpoint redesign did not change this. Under the redesign, DNR was directed to establish agricultural performance standards and prohibitions for agricultural sources of nonpoint pollution.

DATCP Responsibility

DATCP is the state agency responsible for developing technical standards and best management practices for farmers to use to meet the performance standards set by DNR. DATCP also provides counties with funds to hire and support Conservation Department staff and cost-sharing to assist land users in implementing DATCP conservation programs (ATCP 50).

County Responsibility

County Conservation Departments are the entities responsible for implementing the nonpoint program at the local level. Counties are directed to develop land and water conservation plans that identify local conservation issues. These plans become the blueprint for establishing what needs to be done within the county to meet water quality goals and objectives. Counties administer the cost-share funds and provide them to eligible land owners to address nonpoint pollution sources, primarily sediment and phosphorus.

2025 Update

This plan is a working document updated by guidance of the Citizens Advisory Committee to evaluate current and evolving conservation issues. The plan evaluates current water resource conditions and the pollutants impacting those water resources. As with many parts of Wisconsin, nonpoint source runoff in the form of sediment and phosphorus are currently impacting the water resources of Sheboygan County. This plan addresses implementing NR 151 state performance standards and prohibitions with a targeted Priority Area approach to reduce sediment and phosphorus runoff. This approach focuses on current (2024) impaired waters, and exceptional/outstanding resource waters. The data generated from the 2023 Northeast Lakeshore TMDL, the 2018 Milwaukee River Basin TMDL report, and the Pigeon River 9 Key Element Plan was used to better define goals and objectives for this update. Additionally, this update places greater emphasis on the climate resiliency strategies the County is implementing.

Key to successful implementation of this plan will be the collaborate efforts of many partners. A blend of private organizations, County, State and Federal agencies will be vital to provide innovative ideas, implement new programs, coordination of conservation activities, information and education, staffing and cost-share dollars.

Chapter 1 - Introduction

Purpose of the Plan

The purpose of a Land and Water Resource Management Plan (LWRMP) is to identify local conservation needs and set priorities for the Planning & Conservation Department. These priorities must include an implementation strategy to assure compliance with state runoff standards and prohibitions.

Locally led conservation is based on the principle that local leaders are best suited to identify and resolve local natural resource problems. It challenges local, state, and federal agency representatives and urban and rural neighbors to work together and take responsibility for addressing resource needs. Locally led conservation creates new opportunities, but also poses significant challenges to County Committees to take a more active role as conservation leaders in their communities.

Plan Requirements

To receive DATCP approval, a LWRM Plan must meet the requirements listed in ACT 50.12 which includes:

- Describe water quality (WQ) and soil erosion conditions in the county including identification of the causes of water quality impairment and pollutant sources;
- Identify state and local regulations used to implement the plan (DATCP may ask for copies of local regulations and make comments), including NR 151 implementation;
- Identify WQ objectives working with the Wisconsin Department of Natural Resources (DNR);
- Identify key WQ and soil erosion problems, and practices to address those problems;
- Plan to identify priority areas based on WQ needs/objectives, manure management problems, nutrient applications and other criteria;
- Develop strategies to promote voluntary compliance, including information and education, cost sharing and technical assistance, including NR 151 implementation;
- Identify NR 151 compliance procedures, including notice and appeal procedures;
- Develop a multi-year work plan to implement farm conservation practices, and achieve compliance with DNR NR 151 performance standards - include priorities and expected costs;
- Explain how local conservation efforts will be coordinated with state and federal agencies;
- Meet plan development requirements, including a separately-appointed advisory committee, public hearing, and county board approval

Performance Standards and Prohibitions

The NR 151 performance standards and prohibitions are a vital component of this LWRMP. The Department of Natural Resources (DNR) and Department of Agriculture, Trade and Consumer Protection (DATCP) have developed performance standards for agriculture and non-agriculture nonpoint pollution sources. DNR Rule (NR 151) sets performance standards for

agricultural operations to control runoff and protect water quality. The DATCP Rule (ATCP 50) identifies conservation practices available to maintain compliance with the DNR standards. Specifically, the DATCP ACTP 50 rule sets the requirements that Nutrient Management Plans (NMP) must meet NRCS 590 criteria to comply with NR 151 state law. The prohibitions listed in § 281.16(3) Wisconsin Statute and NR 151 are:

- That a livestock operation may have no overflow of manure storage structures.
- That a livestock operation may have no unconfined manure pile in a water quality management area.
- That a livestock operation may have no direct runoff from a feedlot or stored manure into the waters of the state.
- That a livestock operation may not allow unlimited access by livestock to waters of the stat in a location where high concentrations of animals prevent the maintenance of adequate sod cover.
- That a livestock operation may have no direct runoff from a feedlot or store manure into waters of the state.

Other NR 151 standards for agricultural cropland and livestock operations are:

- If you apply manure, commercial fertilizer and other nutrients to cropland they must be applied in conformance with a nutrient management plan (NMP) designed to limit entry of nutrients into state waters (groundwater and surface water)
- If you grow agricultural crops you must meet (T) tolerable soil loss on cropped fields
- No tillage operations may be conducted within 5 feet of the top of the channel of surface waters;
- If you raise, feed or house livestock you must follow a NMP when applying or contracting to apply manure to limit entry of nutrients into waters of the state;
- Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any individual year within the accounting period; the accounting period shall begin once a nutrient management plan meeting the requirements of s.NR 151.07 and s.ATCP 50.14(3) is completed
- You must repair, upgrade, or abandon failing or leaking manure storage facilities that pose an imminent health threat, or violate groundwater standards;
- If you abandon a manure storage facility, it must be closed according to accepted standards;
- Meet technical standards for a newly constructed or substantially-altered manure storage facility;
- If you have land in a Water Quality Management Area (WQMA) divert clean water away from feedlots, manure storage areas and barnyards located within this area;
- There may be no significant discharge of process wastewater to waters of the state

How these NR 151 performance standards and prohibitions are to be implemented and enforced and how violations and appeals are to be handled will be detailed in subsequent chapters of this plan.

Performance Standards and Prohibitions Incorporated into County Ordinances

The NR 151 prohibitions and some of the performance standards have been incorporated into the Sheboygan County Animal Waste Storage Ordinance (Chapter 77) enacted in August of 1996 and amended in 2004. This ordinance, administered by the Planning & Conservation Department, regulates permitting of new and expanding animal waste storage facilities, nutrient management planning, and proper closure of abandoned waste storage facilities.

A comprehensive Erosion Control and Stormwater Management Ordinance (Chapter 75) to better address the nonpoint pollution problems associated with construction development was enacted in 2005 with the latest update to the ordinance occurring in 2018. WiDNR completed an audit of the Planning & Conservation Department Erosion Control and Stormwater Management and program in 2023 and found that the ordinance still meets today's standards. In the next few years the Planning & Conservation Department will be updating the County Animal Waste Storage Ordinance (Chapter 77).

Chapter 2 - County Setting, Topography, Geology, Soils, Soil Erosion, Land Use, Agricultural Trends, and Climate

County Setting

Sheboygan County covers an area of 513 square miles and is bordered by five counties: Manitowoc, Calumet, Fond du Lac, Washington, and Ozaukee, as well as Lake Michigan. **Figure 1** shows the location of Sheboygan County and its municipalities. The County has over 26.3 miles of coastal shoreline along Lake Michigan, and contains three major watershed areas that drain into the waters of Lake Michigan. Twenty-eight municipalities are within the County: three cities, ten villages and fifteen towns. The 2020 United States Census Bureau population total for the County was 118,034 persons. Sheboygan County is strategically located one hour north of Milwaukee, one hour south of Green Bay, and one hour east of the Fox River Valley. The western portion of the County is dominated by a rolling, glacial terrain (the Kettle Moraine) left by the Pleistocene (Ice Age). Eastern Sheboygan County is bordered by Lake Michigan. These two very unique and undeniably beautiful landscape features create an exceptional setting for a number of recreational amenities that attract visitors, seasonal residents, and long-term, permanent residents.

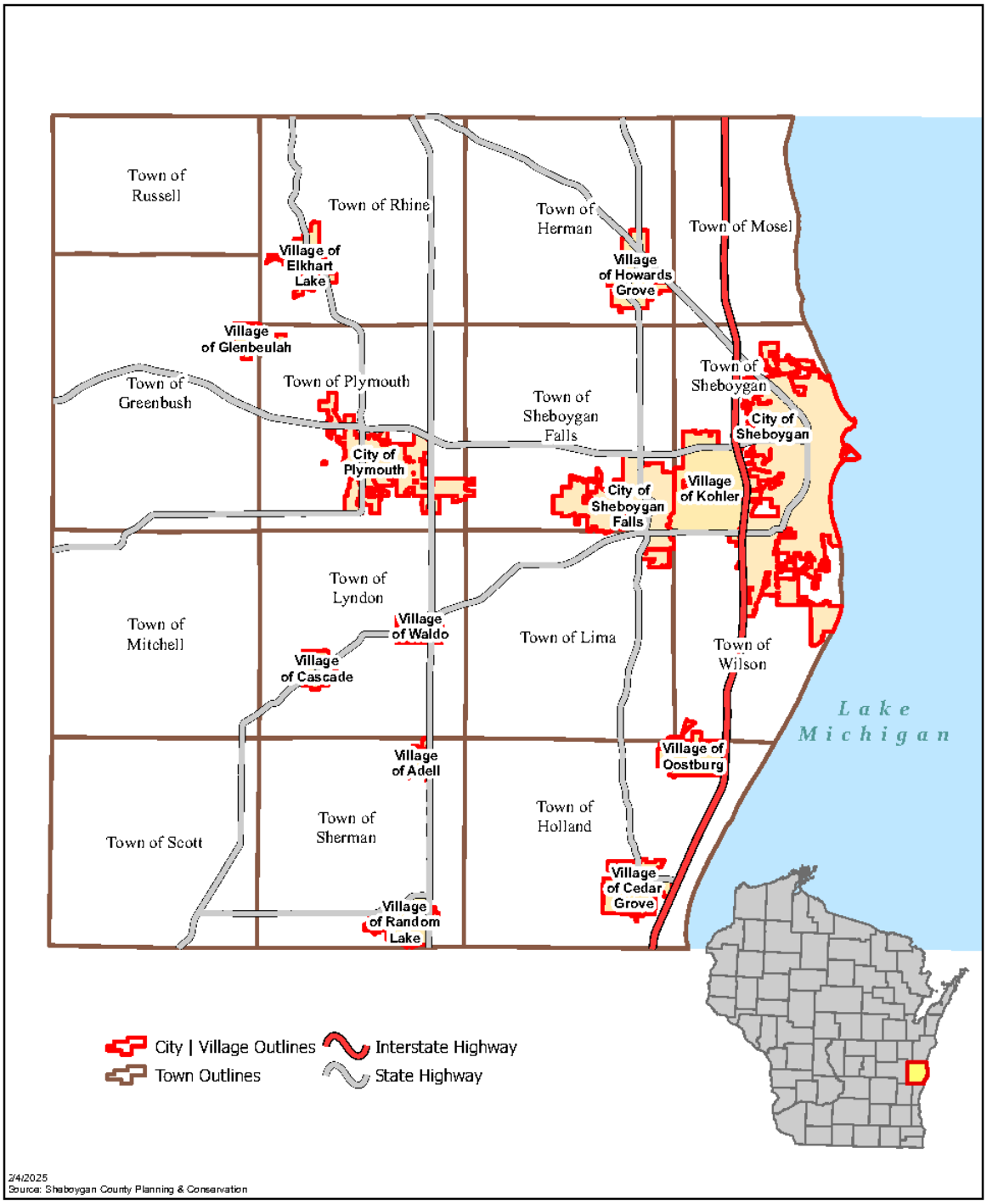


Figure 1 - Sheboygan County Overview

Topography

The surface relief of Sheboygan County ranges from nearly level to very steep and irregular. The landscape is generally a gently sloping plain crossed from northeast to southwest by a range of hills known as the Kettle Moraine. Between the Kettle Moraine and Lake Michigan, the soils are nearly level and near the lake they gently slope to the east.

Within the Kettle Moraine the surface is very irregular and has many kames, eskers, and potholes. The highest points are more than 200 feet above the surrounding landscape. East of the Kettle Moraine, the soils are mostly gently sloping. Elevation ranges from about 600 feet above mean sea level in the eastern part of the county to more than 1,200 feet at the highest point in the Kettle Moraine. The shore of Lake Michigan is very steep in the northern half of the county. The northwestern border of Sheboygan County is located at the western edge of the Sheboygan Marsh.

Geology

Two different types of geologic settings, Quaternary geology and bedrock geology, characterize Sheboygan County. Quaternary geology refers primarily to the effects that continental glaciations have had on the region within the last 20,000 years and to a lesser extent, the surface effects of more recent erosion and deposition. Bedrock geology refers to the much older, solid rock layers that lie beneath Quaternary sediments.

Bedrock Geology

The bedrock units, which underlie Sheboygan County, range in age from Precambrian at depth, to Silurian at the surface. The oldest are impermeable crystalline rock of Precambrian age at depths that average more than 1,500 feet below the land surface. **Figures 2 and 3** show the Bedrock and Pleistocene Geology respectively.

Silurian dolomite, often referred to as Niagara, is the uppermost bedrock in Sheboygan County and reaches thicknesses up to 580 feet. Rocks underlying the Niagara dolomite are not visible in the County. Below the Niagara dolomite is a shale formation known as Maquoketa. It reaches a maximum thickness of 450 feet. The Maquoketa Shale overlies a dolomite formation, termed Platteville-Galena, which is approximately 500 feet in thickness. This rock formation, in turn, overlies Cambrian sandstones, which are 450 feet thick. All of these sedimentary rock formations overlie Precambrian igneous rocks. Figure 2-2 shows the bedrock geology of Sheboygan County.

Quaternary Geology

The last glacial ice of Quaternary glaciation, which left the area approximately 10,000 years ago, modified the bedrock surface by scouring highlands and depositing material in low lands created by ore-glacial erosion. Four types of Quaternary deposits are recognized within the region, including till, glaciofluvial sediments, shoreline deposits and organic deposits. Till or unstratified drift is a mixture of unsorted, angular-to round-shaped sediments ranging in size from clay to boulders. Tills ice-contact deposits originating directly from glacial ice. Unlike till, glaciofluvial sediments are sorted by particle size that delineates the stratification.

Glaciofluvial sediments were deposited in a fluvioglacial environment involving glacial meltwater flow. Each individual layer of glaciofluvial sediments are characterized by a given grain size, ranging from pebbles and cobbles to sand or finer.

Ground and end moraines are two types of topographic landforms found in the region that consist primarily of till. A ground moraine is an irregular surface of till deposited by a receding glacier. The steeper slope points in the direction from which the glacier advanced. An end moraine is an accumulation of earth, stones, and other debris deposited at a glacier's end stage.

At least one type of topographic landform consisting of glaciofluvial sediments occurs in some areas of the County. This type of topographic feature is an outwash plain, which is an apron of well sorted, stratified sand and gravel deposited by glacial meltwater. Glaciofluvial deposits, which contained large ice blocks that eventually melted, were pitted with depressions known as kettles. Glaciofluvial deposits of sand and gravel surround many drumlins; but these are often covered with a thin silt cap. Figure 2-3 shows the Pleistocene Geology of Sheboygan County.

The most prominent ancient shoreline in the area is that of the Nipissing Great Lakes phase, which usually occurs at an elevation of 600-605 feet above sea level. The highest ancient shoreline in the area is that of the Algonquin phase, which occurs at elevations between 620 and 658 feet above sea level.

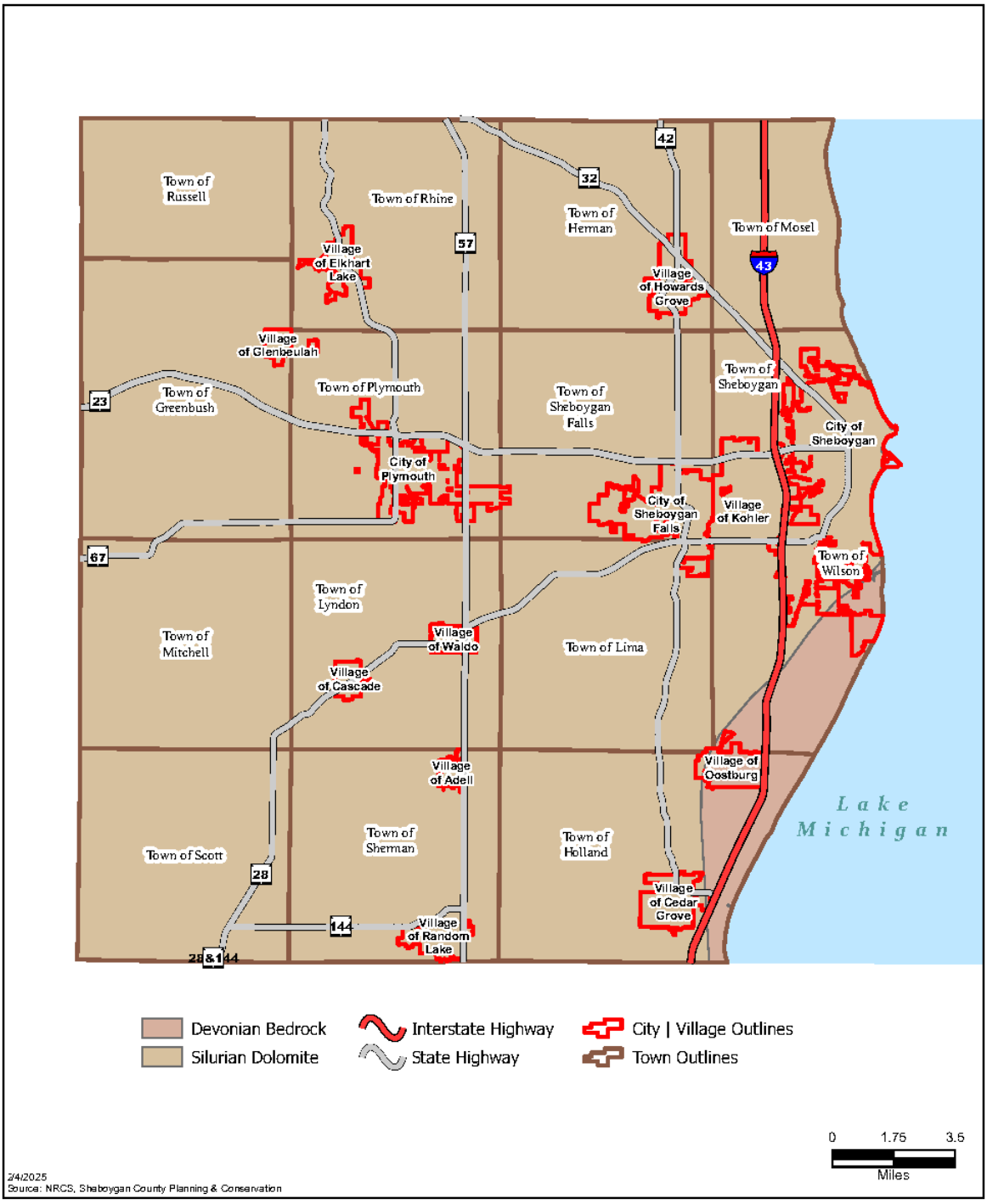


Figure 2 - Bedrock Geology

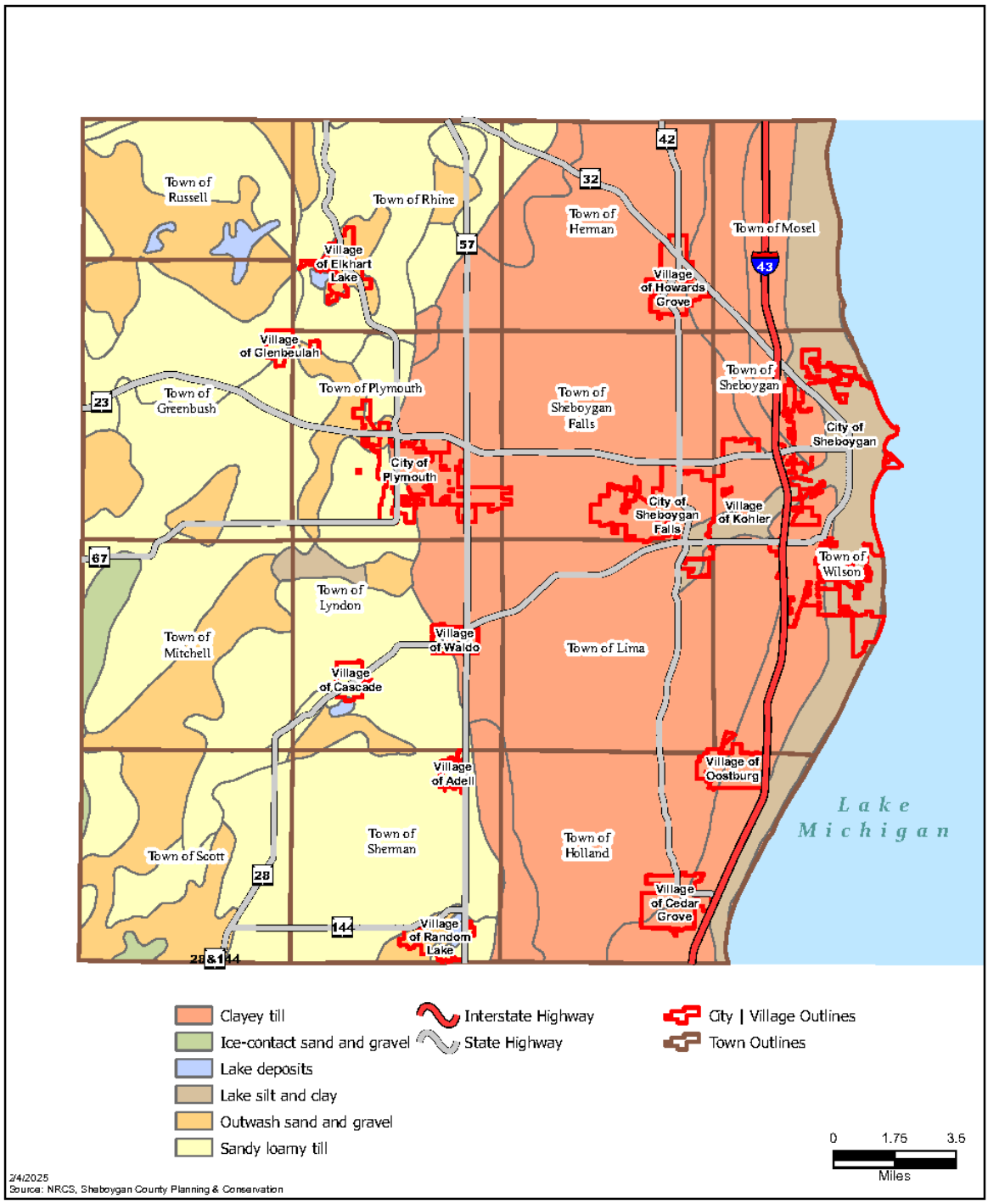


Figure 3 - Pleistocene Geology

Soils

The general characteristics of soils are largely the result of various glacial depositional processes. Outwash soils were formed from glacial deposits that were derived from local bedrock formations. Organic soils developed under a forest cover consisting mainly of conifers and hardwoods in the north, in a cool and relatively moist climate. Sandy soils were formed from parent materials derived from sandstone bedrock pulverized by glacial ice.

Soils, in part, determine how much rainfall or snowmelt directly flows into the rivers, lakes, and wetlands, and how much infiltrates the ground. Water that infiltrates the ground replenishes soil moisture and recharges the groundwater system. Soils are grouped into general soil associations that have similar patterns or relief and drainage. These associations typically consist of one or more major soils and some minor soils. The general soil types can be divided into three broad categories: areas dominated by soils formed in glacial till; areas dominated by soils formed in glacial outwash and till; and areas dominated by organic soils.

The soils in Sheboygan County are diverse ranging from sandy loam to loam or shallow silt loam, and from poorly drained to well drained. In some areas, lacustrine sands are found overlying clays or bedrock within only a few feet of the surface. Poorly drained sands are common in the lake plain or in depressions between dunes and beach ridges. Important soils in the County include clays, loams, sands, and gravels. **Figure 4** shows the general soils in Sheboygan County. The dominant associations found in Sheboygan County include the Houghton, Boots, Casco, Coloma, Oakville, Theresa, Kewaunee, Manawa, and Hochheim soils. The Houghton and Boots series soils are nearly level, poorly drained soils that were formed in herbaceous organic matter greater than 51 inches thick. These soils are typically found in depressions of old glacial lake areas. The native vegetation of these soils included ground cover of marsh grasses, sedges, and cattails and trees included tamarack, white cedar, and alders. The organic layer of these soils is very thick, measuring 60 inches or greater, with the top 14 inches typically black muck. Permeability of these soils is moderately rapid and available water capacity is very high; natural fertility is very low. The root zone of these soils is limited by the water table, which is frequently at or near the surface in areas that have not been drained by artificial means. The Houghton-Boots association can be found in the marsh lands of Sheboygan County such as Broughton Sheboygan Marsh Park and Wildlife Area and Kiel Marsh State Wildlife Area).

The Casco soils are found in nearly level to very steep areas. Casco soils are well drained and are underlain by stratified sand and gravel outwash. These soils are typically found on outwash plains, stream terraces, and the convex side of slopes of glacial moraines. Areas containing Casco soils have complex slopes. Native vegetation on these soils consisted mainly of oak and hickory trees. Permeability of these soils is moderate until approximately 17-inches below the surface where permeability becomes rapid. Available water capacity is low in Casco soils. Organic-matter content is moderate and natural fertility is low. The root zone of vegetation is limited by underlying sand and gravel. Areas where slopes are not too steep typically support corn, small grain, legumes, and other crops commonly grown in Sheboygan County. Casco soils are typically found in the western half of Sheboygan County.

Coloma-Oakville soils are found along the coast of Lake Michigan and inland for several miles. One area they can be found is in the area south of the City of Sheboygan. These are very well

drained soils located on nearly level to sloping areas of old glacial lake plains, old beach ridges, and stabilized sand dunes. The native vegetation consisted of mixed deciduous and coniferous trees. The surface layer of the Oakville soils is dark brown, loamy fine sand approximately 8 inches thick. Permeability of these soils is very rapid and available water capacity as well as organic-matter content and natural fertility are very low. Most of the acreage consisting of these soils is used for woodlands. Some areas are used for pasturing and crops.

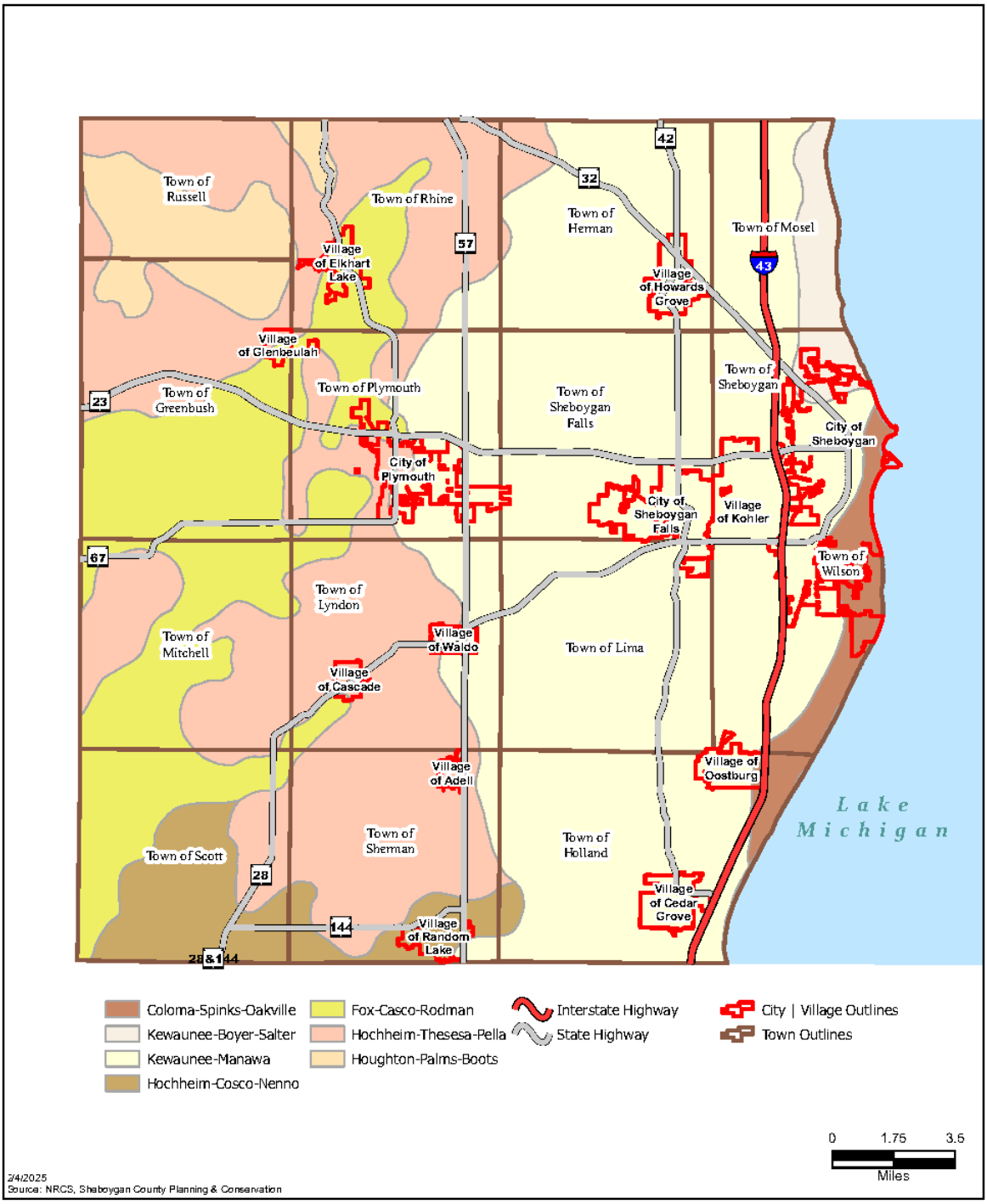
Theresa soils are nearly level to sloping; well-drained soils that are underlain by gravelly sandy loam or gravelly loam glacial till and are typically found on glacial till plains. The native vegetation in the area of these soils included deciduous forests mainly of maple, oak, basswood, beach, and hickory trees. Permeability of these soils is moderate and available water capacity is high. Organic-matter content and fertility is moderate. The majority of acreage consisting of these soils is used for crops. Some of the acreage is used for pasture and woodlands in areas where slopes are steeper. Theresa soils are typically found in the western half of Sheboygan County.

Kewaunee soils are found on nearly level to moderately steep slopes, are well drained and moderately well drained, and are often formed in silty clay loam glacial till. These soils are found on glacial till plains. The native vegetation on these soils was forests consisting mainly of oak, maple, beech, basswood, and white pine. Permeability of Kewaunee soils is moderately slow and available water capacity is moderate. The organic-matter content of these soils is moderately low and natural fertility is medium. Areas with these soils typically are used for crops and pasture, but frequently remain was woodlands. Kewaunee soils are typically found in the eastern half of the county.

An example of Boyer soils can found along Lake Michigan north of the City of Sheboygan. Boyer soils consist of gently sloping and sloping, well drained soils that are underlain by stratified sand and gravel. The native vegetation was a deciduous forest mainly of oak and hickory. Permeability is moderately rapid to a depth of about 26 inches and very rapid below that. Some of these soils are used for cropland, pasture, or woodland. Boyer soils are scattered throughout Sheboygan County.

The Manawa series consists of nearly level and gently sloping, somewhat poorly drained soils formed in silty clay loam glacial till. These soils are in drainageways and depressions on till plains and old glacial lake basins. The native vegetation was forests of mainly maple, oak, beech, ash, and which pine. Permeability is slow, and available water capacity is moderate. The organic matter content of these soils is also moderate and natural fertility is medium. These soils begin a mile west of Lake Michigan and are scattered throughout the eastern half of the county.

Hochheim soils are found on nearly level to steep slopes, are well drained and underlain by gravelly sandy loam or gravelly loam glacial till. These soils are found on glacial till plains and on the sides and tops of drumlins that were formed during the last glaciation process. Permeability and available water capacity are moderate and organic matter content is moderately low; natural fertility is medium. Areas with these soils on slopes less than 15% are typically used for crops; in areas where slopes are steeper are frequently used for pasture and woodlands. Hocheim soils are generally found in the western half of the county.



Sheboygan County, Wisconsin

General Soils

Sheboygan County, WI

Figure 4 - Sheboygan County Soils (General)

Soil Erosion

At the time Sheboygan County's Soil Erosion Control Plan was published in 1988 there were approximately 61,000 acres or 32% of the county's cropland over T-value. Since that time, several programs have played a role in decreasing the number of acres over T-value. Firstly, the Seven-Mile Silver Creek, Sheboygan River, Pigeon River and North and East-West Branch Milwaukee Rivers (all State Nonpoint Priority Watersheds) have been successful in getting landowners to do conservation planning for soil loss reduction. Secondly, the 1985 Federal Farm Bill's Conservation Reserve Program (CRP) provision reduced the soil loss on many steep fields. Thirdly, the Farmland Preservation Program (FPP), which the County adopted in 1979, came into its own as the participation rate continued to climb throughout the late 1980's and early 1990's. Unfortunately, there are indications that overall soil erosion rates are going back up. Several factors that point to this are:

1. A number of dairy farms have been expanding and are putting greater emphasis on corn silage. Growing corn silage on a given field results in more erosion than corn for grain according to the Natural Resource Conservation Service (NRCS) "C" factors. Growing corn for silage practically eliminates the potential for conservation tillage to leave at least 30% residue on the field after planting.

2. Over the last five years, landowners have been dropping out of the FPP due to various reasons. One of the main reasons cited is the cost of a NMP which a requirement for participating in FPP can be greater than the tax credit received. Without the T-value requirement associated with the FPP to contend with, these farms are prone to more erosive cropping practices.

During the next several years our office will focus on phosphorus and sediment reduction in several specific watersheds and sub-basins due to new priorities listed within the new Northeast Lakeshore TMDL, the Pigeon River 9-Key Element Plan, and the Milwaukee River Watershed Conservation Partnership Program. Appendix M of the NE Lakeshore TMDL report provides a recent evaluation (2020-2023 of soil and phosphorus loss conditions within multiple Sheboygan County watersheds, using SNAP-PLUS software. The soil erosion results apply to multiple watersheds within Sheboygan County and confirm higher soil loss rates (tons/ac/year) that need to be addressed. See Appendix 9 for Sheboygan region total suspended solids edge of field targets summary table from the NE Lakeshore TDML report.

Land Use

Sheboygan County encompasses 331,000 acres. The county is bordered on the east by Lake Michigan and on the west by the Kettle Moraine State Forest and the northwest by the Sheboygan Marsh. Since the last plan update, the majority of the County's current land use inventory has not changed. Land use trends was obtained through the Wisconsin Department of revenue shown in the table below.

Historical Land Use Trends by Assessment Classification in Sheboygan County		
Assessment Classification	**2008 County Total Acres**	**2018 County Total Acres**
Residential*	32,634	32,865
Commercial*	7,433	7,294
Manufacturing	2,828	2663
Agricultural	165,489	164,026

*City of Sheboygan not included
Source: 2019 Sheboygan County Comprehensive Land Use Plan

Agricultural Trends

Dairying remains the primary agricultural enterprise in Sheboygan County. While dairy farm numbers are declining the average farm size has been increasing. Cash cropping of canning crops, field corn, soybeans, and winter wheat plays a smaller but significant role in Sheboygan County's agriculture. There has also been an increase in beef operations over the years.

Below are some agricultural statistics from the most recent 2022 Census of Agriculture, which will give an overview of Sheboygan County's agricultural enterprises.

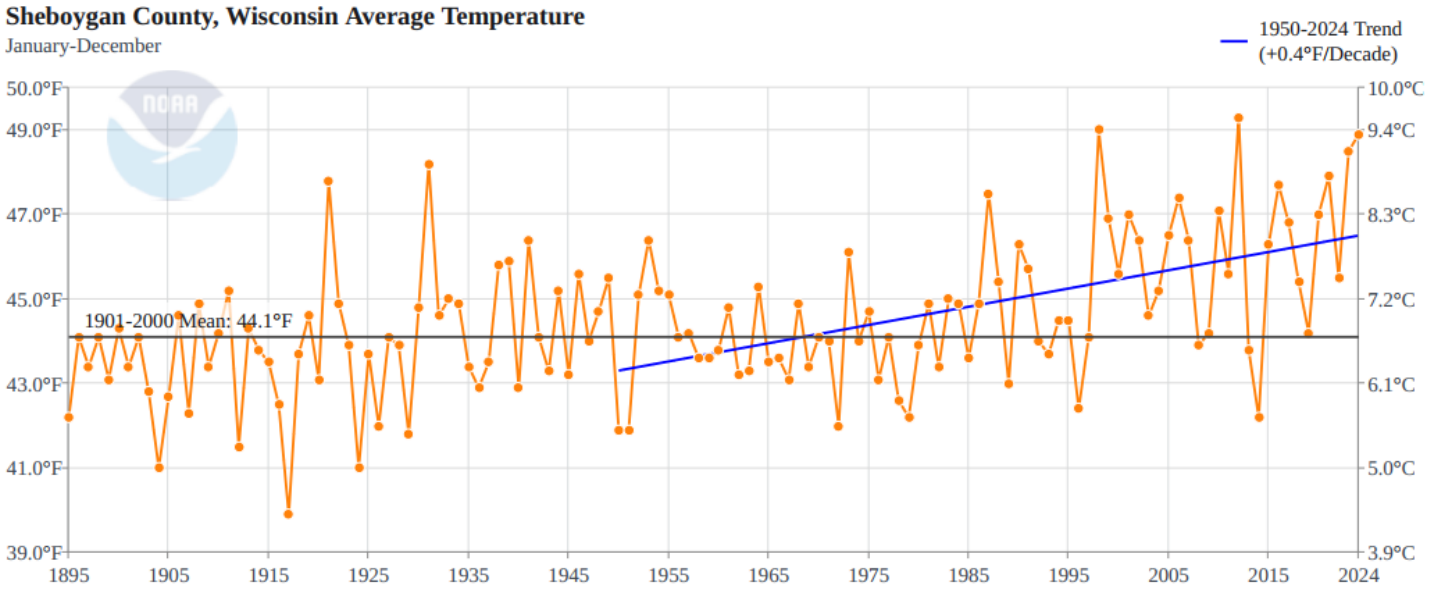
- Sheboygan County has 842 farms (15% decrease from 2012) and an average size of 236 acres per farm (24% increase from 2012). Of the 842 farms, 335 farms had annual sales of $9,999 or less.
- In 2022 of the 842 farms in Sheboygan County, 105 were dairy farms.
- There are 515 total square miles in the County, which means there are about 56 cows per square mile.
- Of the 1.1 million mink pelts produced in Wisconsin in 2013 over 400,000 (35%) were produced in Sheboygan County. The County holds the distinction of being the highest mink-producing County in the nation.
- Total acres of cropland 171,376
- In 2017, 229 farms were using no-till practices, and by 2022, the number of farms increased to 240.
- In 2017, 65 farms were planting cover crops, and by 2022 the number of farms increased to 104.
- In 2022 Sheboygan County farmers harvested 6,488,902 bushels of grain corn, 517,445 tons of corn silage, 1,170,773 bushels of corn, and 158,452 bushels of oats for grain.
- Sheboygan County is ranked 15th in the state and 72nd in the nation in milk production.
- 96% of farms in Sheboygan County are family owned.
- Top crops in acres: soybeans 40,166, forage (hay/haylage) 39,429, corn grain 38,829, corn silage 25,373, wheat 15,083.
- In 2022 there was $166 million in milk sales within the County.
- 9,624 people are employed in agriculture within the County.

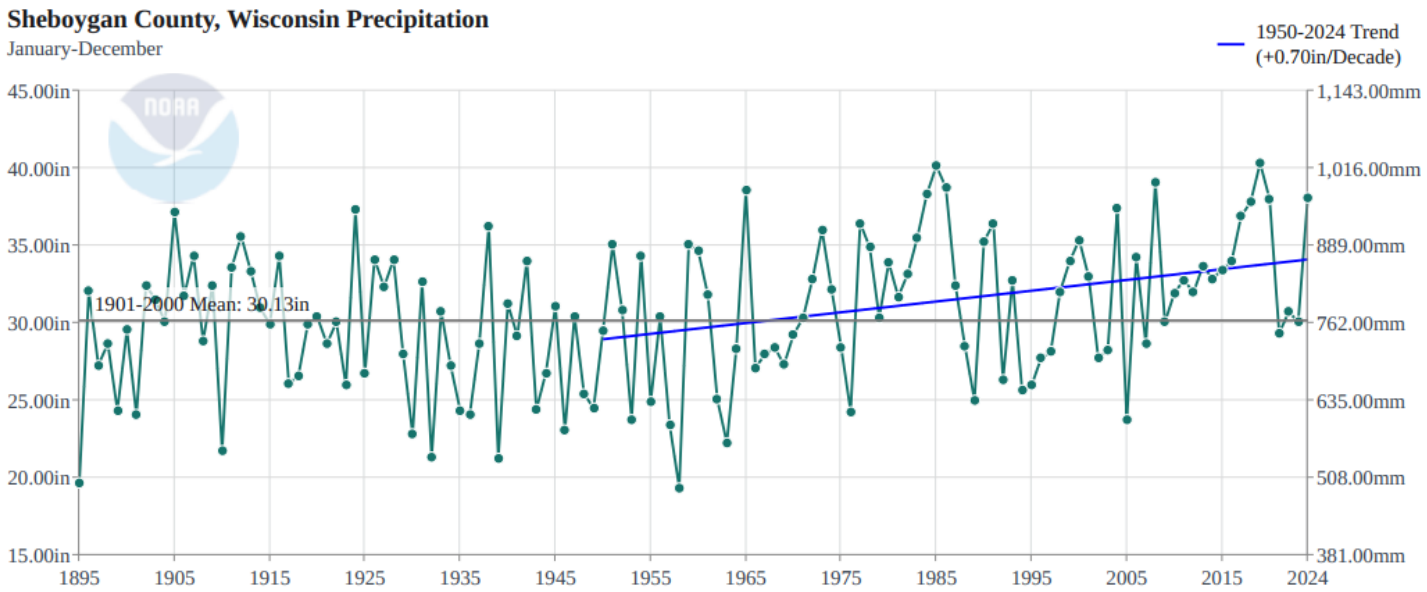
Climate

Sheboygan County, Wisconsin, has a humid continental climate with four distinct seasons, featuring warm, humid summers and cold, snowy winters. Average summer highs reach around 80–82 °F, while winter lows drop to about 10–15 °F. The area receives approximately 33 inches of rain and 44–45 inches of snow annually, with June being the wettest month and February the driest. Lake Michigan causes temperatures to fluctuate slightly, especially in summer. The lake also contributes to wind and occasional lake-effect snow in winter. Spring and fall are highly variable, with abrupt temperature swings and precipitation. Overall, the region experiences about 189 sunny days a year, with comfortable summers and harsher winters.

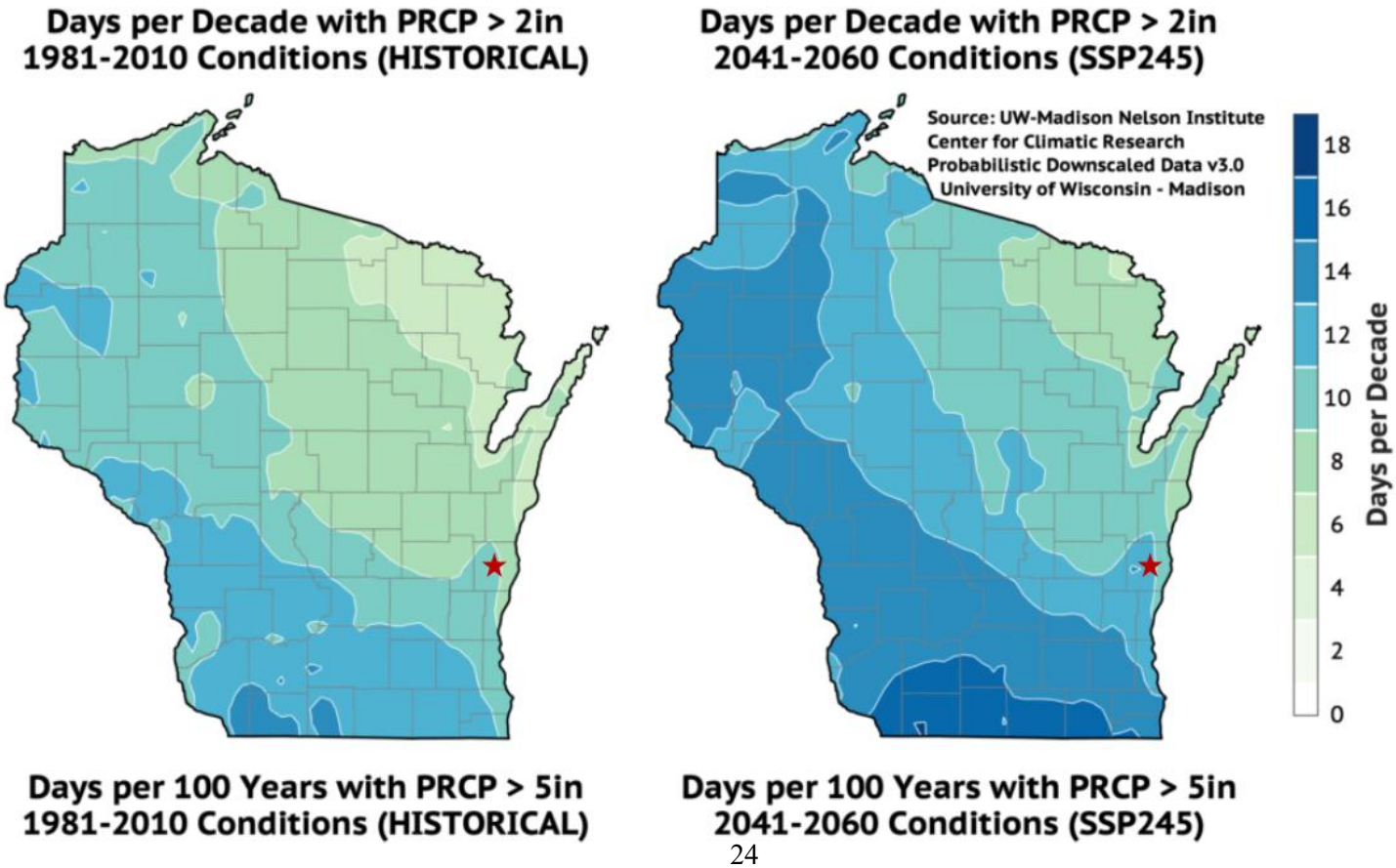
Climate date projections summarized by the National Oceanic and Atmospheric Administration (NOAA) and the University of Wisconsin–Madison highlight potential changes that may impact Sheboygan County. The diagrams below illustrate these changes. Historical data show that Sheboygan County has seen an increase in annual temperature and total precipitation. Like much of Wisconsin, average temperatures in Sheboygan County are expected to rise by approximately 5˚F by the mid-21st century compared to recent historical averages. In addition to rising temperatures, the county is likely to experience warmer winters and an increase in extreme precipitation events.

In response, the Sheboygan County Planning and Conservation Department is developing practices and programs aimed at increasing the county's resilience to these anticipated climate impacts.





Projected Change in Extreme Precipitation



Chapter 3 - Water Resource Evaluations

Sheboygan County's lakes and streams are divided into nine HUC 10 watersheds. **Figure 5** illustrates the location of the watersheds. The individual watersheds are illustrated on the maps on pages 14-28. The evaluations include aspects such as the location, topography, size, water quality and water quality impairments pertaining to each watershed.

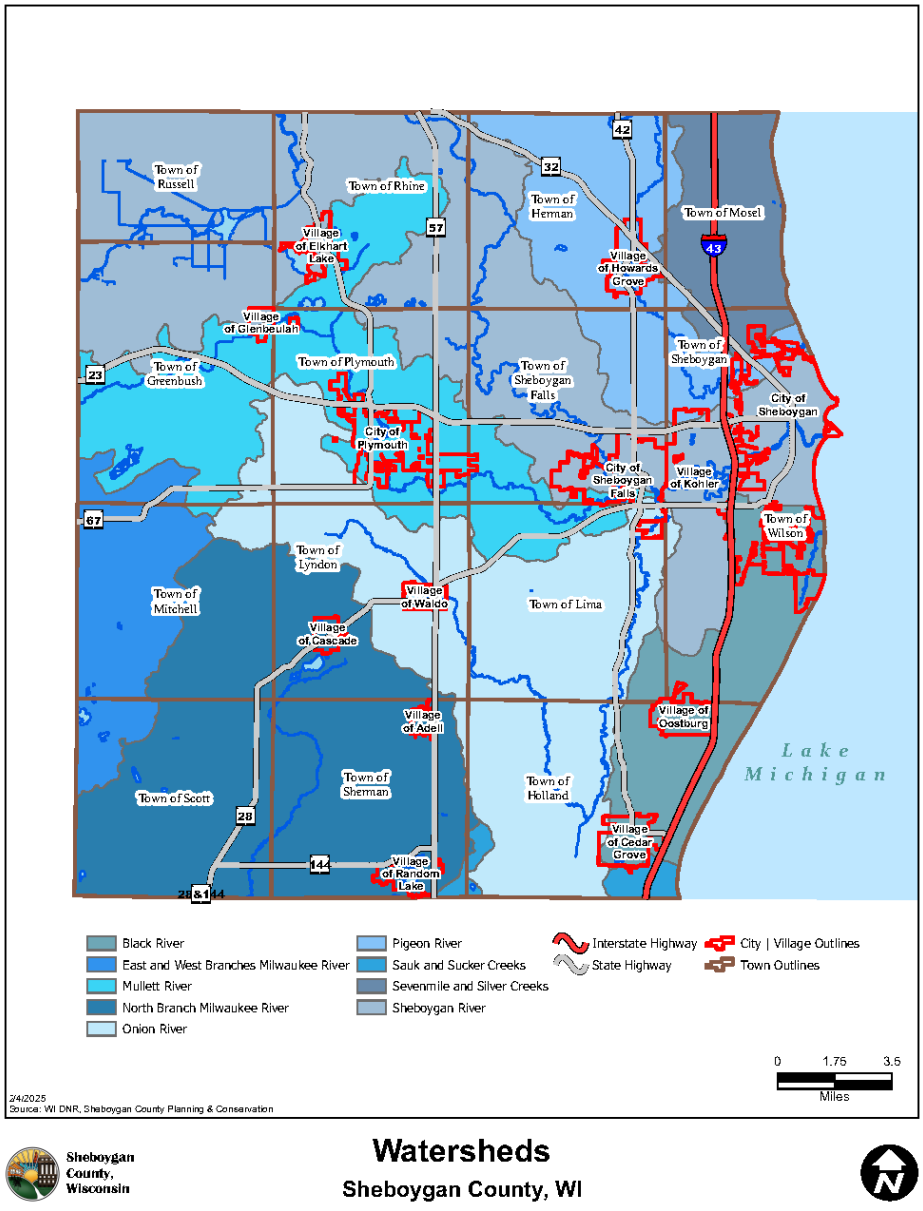


Figure 5 - Sheboygan County Watersheds

Sheboygan River Watershed

The watershed is a sub-basin of the larger Sheboygan River drainage basin that includes: the Sheboygan River, the Pigeon River, Mullet River, Onion River, Black River, and direct tributaries to Lake Michigan. The watershed lies in portions of four counties with Sheboygan County having the largest contributing drainage area of 52% (127 square miles). The remainder is divided as follows: 30% (74 square miles) in eastern Fond du Lac County, 11% (27 square miles) in southwestern Manitowoc County, and 7% (17 square miles) in southeastern Calumet County. The Sheboygan River Watershed drains approximately 245 square miles (equivalent to approximately 156,800 acres.) Surface water in the watershed drains via the Sheboygan River in an easterly direction into the Sheboygan Harbor and eventually Lake Michigan.

The watershed may be divided into three distinct regions based on surface features formed by glacial drift deposits. Soil types vary within the watershed. Soils in the western portion tend to be loamy and light to medium textured, with patches of poorly drained areas. A narrow central band of steep hills is associated with the Kettle Moraine in this region. Poorly drained soils occur in low portions of this region where vast areas of peat and muck deposits are common. Soils in the eastern third of the watershed are "heavy" clay soils that tend to have poor infiltration and poor percolation, but are high in fertility. Following rainfall, the streams of the eastern third of the watershed exhibit a distinct red color from the suspended silts and clays. The entire length of Schuett Creek is classified as a ERW. See *Appendix 2* for a complete ORW and ERW list for Sheboygan County.

Some creeks in the Sheboygan River Watershed suffer from sedimentation delivered primarily from upland erosion. These sediments have blanketed the streambeds, filling in pools and riffles, and degraded reproductive habitat for cold and warm water fish species and associated fauna. At the few locations where cattle have unrestricted access to streambanks, extensive trampling of the banks and bottoms can occur. The severity varies with location based on stocking rate and duration of cattle access. Organic loads from livestock waste runoff also locally affect creeks. It is suspected that the loss of cover and vegetation, along with a shallower streambank, and the input of oxygen- demanding organic substances have caused in-stream temperature to increase and dissolve oxygen levels to fall. Some of the lakes in the watershed suffer from excessive nutrients causing nuisance growths of aquatic weeds and algae. These conditions indicate that rural nonpoint source pollutants (e.g., sediment, phosphorus, and bacteria) are significantly affecting stream and lake water quality in the Sheboygan River Watershed. Otter Creek a tributary to the Sheboygan River is on the 303(d) Impaired Waters List. The Sheboygan River from the Harbor in Sheboygan to stream mile 33.91 is also on the 303(d) list. Elkhart Lake is also on the 303d list. For a complete list 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

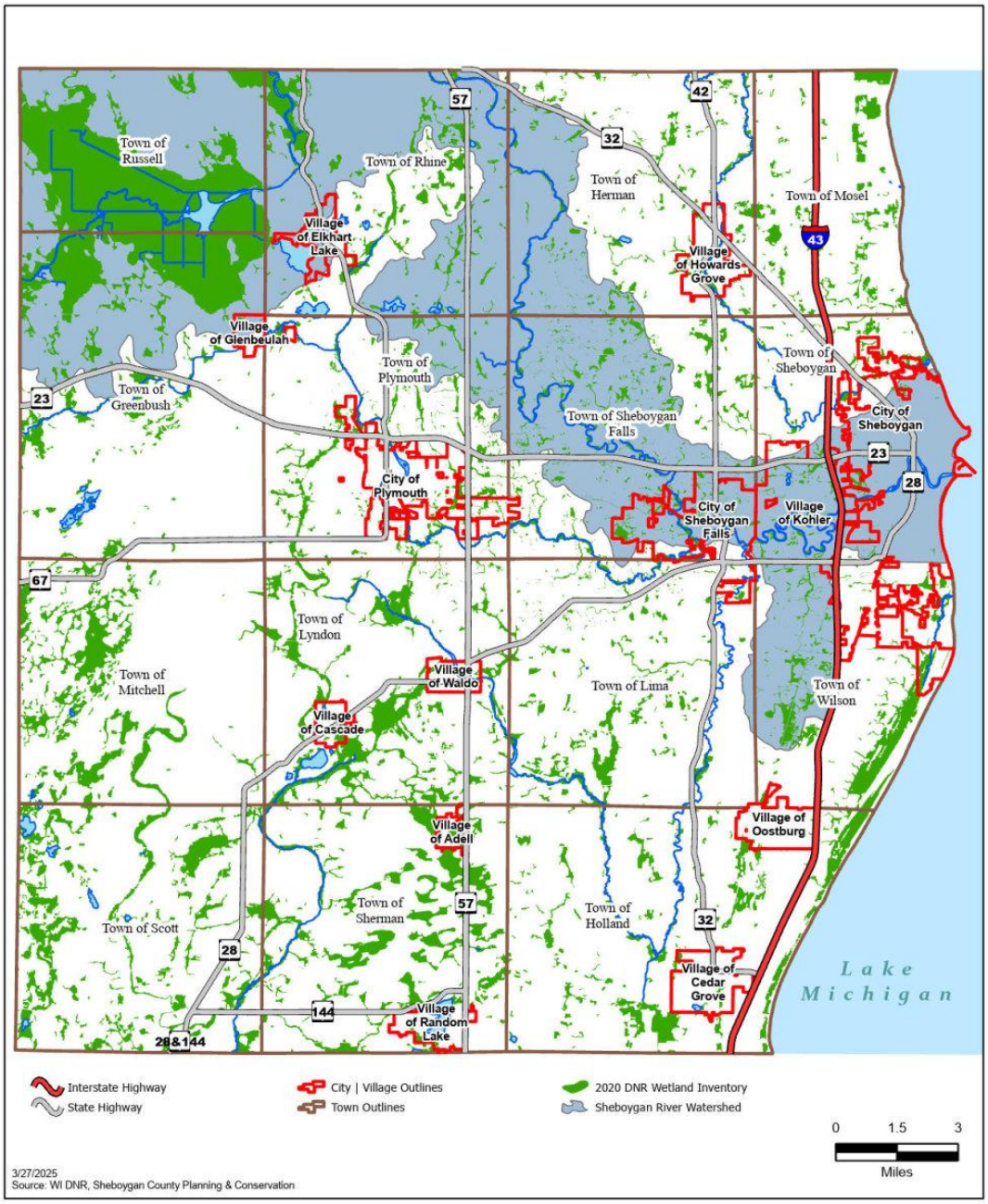


Figure 6 - Sheboygan River Watershed

The Environmental Protection Agency (EPA) declared the lower 14-mile section (from the Sheboygan Harbor up to the City of Sheboygan Falls) of the Sheboygan River a hazardous waste site under the EPA Superfund legislation in 1986. A Sheboygan River Dredging

Workgroup was established in August of 2009 to assist in coordinating these projects, and is represented by officials from the EPA Region 5, Great Lakes National Program Office (GLNPO), Wisconsin Department of Natural Resources (DNR), United States Army Corps of Engineers, City of Sheboygan, Sheboygan County, Wisconsin Public Service Corporation, Pollution Risk Services (PRS), and Tecumseh Corporation. The dredging projects were part of a multi-phase cleanup project located in the Sheboygan River Area of Concern (AOC), and were coordinated by the Great Lakes Program Office of the EPA.

They include:
2006/2007 Superfund Upper River Tecumseh Dredging Project - completed. Approximately 20,728 cubic yards of contaminated polychlorinated biphenyl (PCB) sediment was removed at a cost of $20 million by Tecumseh Corporation and PRS. This Upper River project began in the City of Sheboygan Falls and extended to the Village of Kohler. Dredging materials shipped to an out-of-state licensed landfill.

Lower River Superfund Dredging Project – completed. Approximately 44,972 cubic yards of contaminated PCB sediment were removed at a projected cost of $12 - $14 million, paid by Tecumseh. Tecumseh and PRS were considered the Principal Responsible Parties. PRS is the contractor performing the dredging work. The Lower River project area was between the Chicago & Northwestern railroad bridge and the 8th Street Bridge in the City of Sheboygan. Dredging materials shipped to an out-of-state licensed landfill. Over 204 million gallons of water were treated. There will be follow-up sampling of the wildlife in the area every five years until pollution levels drop.

Camp Marina Superfund Dredging Project - completed. Approximately 24,000 cubic yards of polynuclear aromatic hydrocarbon (PAH is a suspected human carcinogen) contaminated sediment was removed at an estimated cost of $10 million, and was paid by Wisconsin Public Service, the Principal Responsible Party. This project was located within the Superfund Lower River section in the City of Sheboygan adjacent to Boat Island. Dredging materials shipped to an in-state licensed landfill.

The Legacy Act Dredging Project Feasibility Study & Design – completed at a cost of $1,142,857. The project initiated the additional dredging in the Lower River project area.

Non-Federal Sponsors Share:	
Sheboygan County	$100,000
City of Sheboygan	$100,000
DNR	$100,000
WPS	$100,000
Federal Sponsor-EPA Share	$742,847

Legacy Act Dredging Project – completed. Dredging began in August, 2012. Approximately 147,460 cubic yards of PCB and PAH contaminated sediment were removed from the Lower River. The match or non-federal share of the project (40-50%) is the work being performed by Superfund and Camp Marina projects (Principal Responsible Parties), which generates a Legacy project of $30 - $35 million. The federal cost share funds available for this project come entirely from the Great Lakes Legacy Act through the Great Lakes Restoration Initiative (GLRI)

Program of the EPA. The GLRI targets the Great Lakes Areas of Concern of which the Sheboygan River is classified. This project is primarily located in the Lower River from the 14th Street Bridge downriver to the 8th Street Bridge. Dredging materials were shipped to in-state licensed landfills in Menomonee Falls and Whitelaw. Demobilization activities occurred into 2013.

Sheboygan Harbor Improvement Project – completed. Dredging began in August 2012. Approximately 153,500 cubic yards of sediment were removed at a projected cost of $17 - $20 million. The project was funded through the GLRI, DNR, WisDOT, and City/County. The project utilizes the Army Corp's Strategic Navigation Dredging Authority within the navigation channel of the Sheboygan Harbor. This section is located from the 8th Street Bridge east to the Sheboygan Harbor. The City of Sheboygan and Sheboygan County were responsible for providing a local cost share in order to move forward. Each entity contributed $250,000. Dredging materials have been shipped to in-state licensed landfills in Menomonee Falls and Whitelaw. Dredging was completed January of 2013 with some demobilization activities occurring into the spring of 2013.

Sheboygan River AOC Fish & Wildlife Restoration Projects - completed. Approximately $6.4 million was allocated for Sheboygan River shoreline restoration stabilization projects, fish and wildlife restoration and assessment, Wildwood Island restoration, eroding river bank stabilization and invasive species control in the Sheboygan River. These projects are located throughout the entire lower 14-mile section of the Sheboygan River AOC.

Total cost of all projects is between $96 and $107 million. Approximately 400,000 cubic yards of contaminated sediment were removed from the Sheboygan River. This amount equates to approximately 20,000 truckloads of material.

A host of additional projects have happened or are happening in the watershed as well. They include:

Sheboygan River Priority Watershed – completed. The Sheboygan River was selected in 1985 as a priority Watershed under the Wisconsin Nonpoint Source Pollution Abatement Program. The Sheboygan River Priority Watershed implementation period ended as of December 21, 2003.

Wisconsin Buffer Initiative – ongoing. In the summer of 2011, The Nature Conservancy, Sheboygan County PCD staff and other public agencies and private organizations began a pilot project to test the Wisconsin Buffer Initiative (WBI) approach in Sheboygan County. The project is located in Otter Creek, a tributary of the Sheboygan River. Fisher Creek, a tributary of the Pigeon River, serves as the control watershed where no action will be taken. The Mullet River watershed, another tributary of the Sheboygan River, was added in 2013. Staff used a software program called SNAP-Plus, which can calculate soil loss and estimate the risk of phosphorus run-off from farm fields (known as the Phosphorus Index), to test a WBI hypothesis that a handful of fields in a given watershed contribute comparatively large amounts of phosphorus to nearby streams. To date, Sheboygan County PCD staff have worked with many farm owners in the Otter Creek watershed to identify and implement alternative management practices. By providing technical and financial support landowners have implemented the following practices: a bark bed bioreactor to remove nutrients running off farm fields through a tile drainage line, planting cover crops, changing tillage practices, a transition to managed

grazing on one farm, installing buffers along Otter Creek and grassed waterways in fields to reduce gully erosion and developing nutrient management plans to reduce the likelihood of phosphorus runoff

Sheboygan River Basin Partnership (SRBP) Efforts – ongoing. SRBP is spearheading efforts to protect Willow Creek. Willow Creek is a 5-mile tributary to the Sheboygan River and considered a remnant coastal resource that supports reproducing anadromous salmonid populations within a rapidly urbanizing region of east-central Wisconsin. The watershed consists of a mix of agricultural, urban, and undeveloped land uses within multi-jurisdictional municipal boundaries, originating in rural Sheboygan Falls, flowing east through the Town of Sheboygan Falls into the Village of Kohler just south of State Highway 23 and crosses I-43 through the Town of Sheboygan and the City of Sheboygan. These multi-jurisdictional boundaries within an urbanized setting require education and information sharing to make sound land-use decisions. A recent grant funded watershed plan developed for Willow Creek identified the following initiatives that would improve the watershed:

- Promote low-impact development practices and identify a demonstration project.
- Restore floodplain and wetland habitats.
- Implement infiltration projects on municipal and DOT properties.
- Replace culverts to improve fish passage.
- Complete shoreline stabilization and in-stream habitat improvements.
- Conduct annual water quality monitoring with local volunteers.
- Develop educational materials and promote watershed protection and restoration projects.
- Consider watershed scale water quality improvements and pollution trading.
- Control invasive plant species with focus on buckthorn and giant reed grass.

North Branch and East-West Branches Milwaukee River Watersheds

The East-West and North Branches of the Milwaukee River Watershed are two of five drainage areas in the Milwaukee River Basin. The watershed encompasses 414 square miles and lies in portions of five counties – Dodge, Fond du Lac, Ozaukee, Sheboygan, and Washington. The portion in Sheboygan County is 121 square miles or 29%. Sheboygan County's portion of the East-West Branches drains southwesterly into Fond du Lac County. Sheboygan County's portion of the North Branch Watershed drains south and southwesterly into Washington County. Located in southwestern Sheboygan County the topography of the watersheds is undulating and abruptly irregular. The landscape includes steeply sloped hills; shallow depressions and relatively deep holes called kettles. Surface deposits left by the most recent period of glaciation are primarily responsible for the variation in the landscape. The predominant soils are well-drained silt loam with subsoil of clay loam to sandy clay loam.

The Milwaukee River Basin TMDL report was officially approved in 2018. Elevated phosphorus, sediment, and bacteria levels in the Milwaukee River Basin have led to low dissolved oxygen concentrations, degraded habitat, excessive algal growth, turbidity, and recreational impairments of the rivers and its tributaries. As a result, impairments to beneficial uses within the Basin, such as preservation and enhancement of fish and other aquatic life and recreational use, have occurred. The purpose of the TMDL report is to describe the overall

TMDL development process, the water quality impairments within the Basin, the technical approach and assumptions used to develop TMDLs for each impaired waterbody, the load and wasteload allocations by source that must be met to achieve water quality standards and targets, and the management practices that can be considered for TMDL implementation.

A significant effort to help with the implementation of the Milwaukee River Basin TMDL took place from 2020 to 2025 when PCD took part in the Milwaukee River Watershed Conservation Partnership (MRWCP). In 2020, MRWCP received $7 million in conservation in incentives available to area landowners to support agricultural conservation easements and conservation practices throughout river corridors. The incentive funding was made available through the USDA Natural Resources Conservation Service (NRCS) Regional Conservation Partnership Program (RCPP). By investing in no-till farming, grassed waterways, cover crops, vegetated buffers and nutrient management plans, participants helped to build soils that hold nutrients for their crops, retain rainwater during dry weather, prevent silts from leaving fields and keep nutrients from entering waterways. Partners in the project sought to demonstrate that healthy soils can be cost effective for production and beneficial to area waterways The MRWCP is a coalition of agricultural producers, agribusinesses, state and local government, and land trusts coordinated by the Milwaukee Metropolitan Sewerage District (MMSD) and NRCS. The initiative is aimed at encouraging information sharing and collaboratively investing in agricultural conservation. MRWCP participants agree that healthy soils can help mitigate future flooding, improve water quality, and is good for business. MRWCP partners worked with landowners to evaluate benefits of agricultural conservation practices, preserve farmland through conservation easements, and facilitate producer-led watershed protection groups to promote conservation. Even though this program only extends to the end of 2025, the PCD intends to carry the moment forward and to continue working within the basin to promote similar practices to improve water quality.

North Branch

The headwater area of the North Branch watershed, namely Nichols Creeks, supports cold water sport fishery for brook and brown trout. The downstream portions of the watershed have cool to warm water temperatures, moderate flow rates and lower dissolved oxygen concentrations. The primary nonpoint source impact in the headwater area is siltation caused by cropland sediment. In the lower portions of the watershed the primary nonpoint source impacts are phosphorus enrichment are from animal barnyards, winter-spread manure on croplands and siltation from cropland sediment and streambank erosion. The North Branch of the Milwaukee river is on the 303(d) list of impaired waters along with Beechwood Lake due to total phosphorus and other pollutants. For a complete list and map of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

The 19,487-acre North Branch Milwaukee River Wildlife and Farming Heritage area was established in September 2002 to protect the rural/agricultural corridor from development threats and restore plant communities and wetlands to improve wildlife habitat and water quality. The acquisition goals of the NBMR Wildlife and Farming Heritage Area focus on fee title acquisition on land with high conservation value, such as existing and restorable wetlands, river corridors and woodlands, while preserving agricultural lands through the purchase of conservation and development rights easements. Since the NBMR project was approved in September 2002, the

Wisconsin Department of Natural Resources has purchased easements on four farms, preserving 636 acres of farmland and fee title acquisitions on five properties for 243 acres of public land.

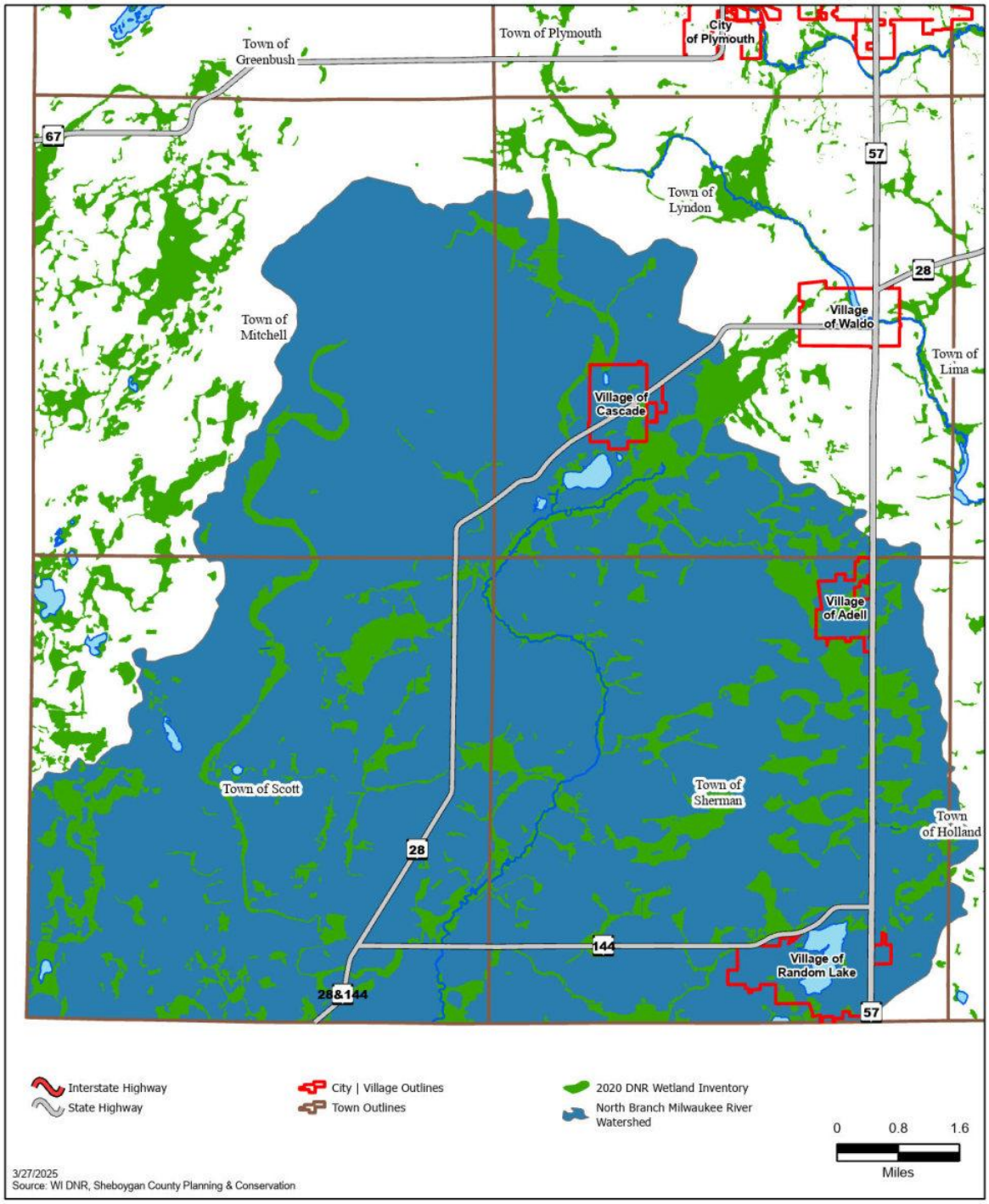


Figure 7 – North Branch Milwaukee River Watershed (Sheboygan County)

East-West Branch

Nearly all the stream miles in this watershed (98%) are partially meeting their biological uses, while two percent of the streams have not been evaluated. Even though general evaluations have been conducted on many of the streams in the watershed, thorough assessments have been conducted on just five percent of total stream miles within the last five years. No streams in this watershed are listed as impaired waters on the state's 303(d) list. For a complete list of the County's Outstanding and Exceptional Waters list see appendix 7.

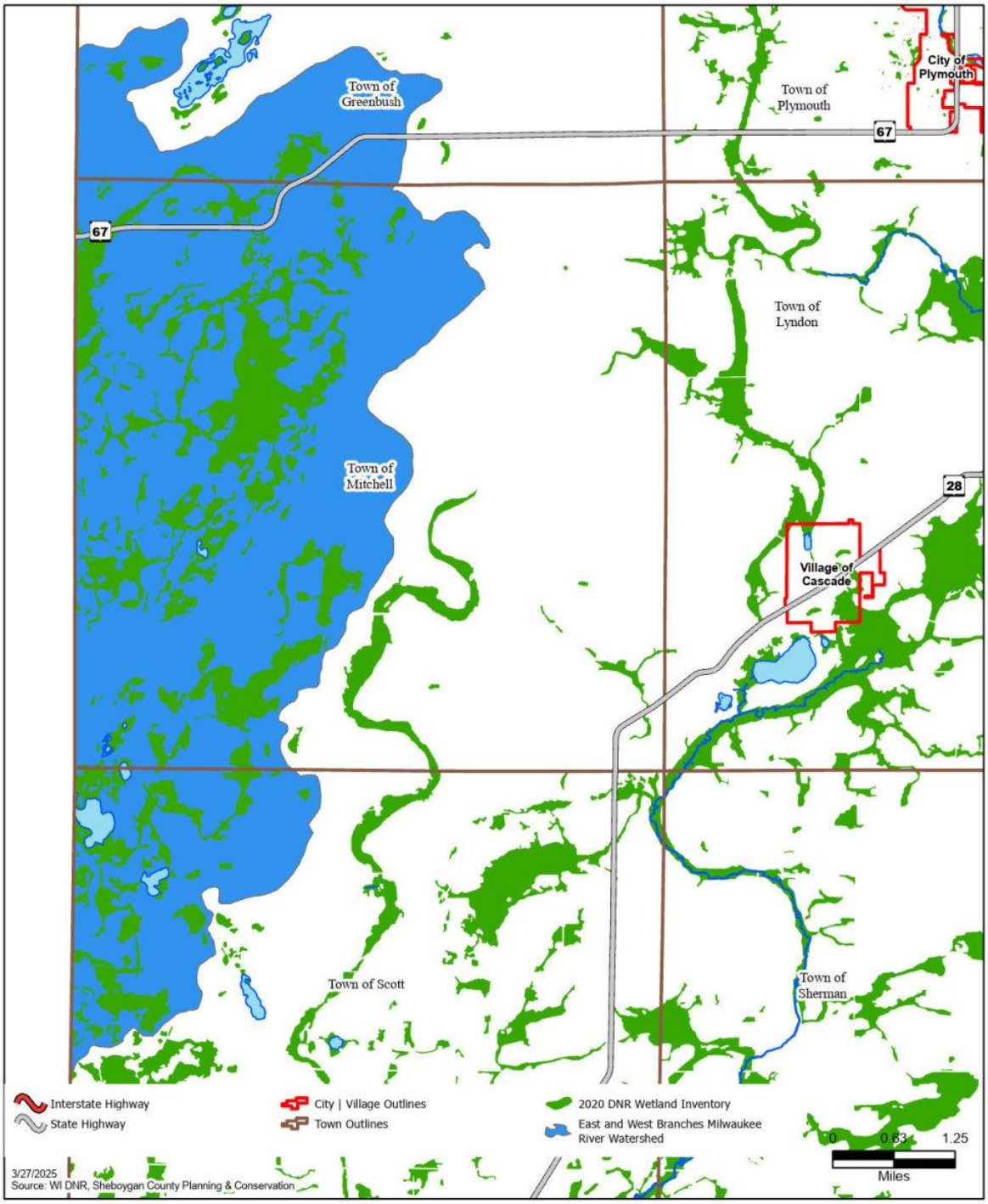


Figure 8 – East & West Branches Milwaukee River Watershed

Pigeon River Watershed

The Pigeon River Watershed is a 74-square mile drainage basin located in Sheboygan and Manitowoc counties. Sheboygan County has approximately 50% of the watershed. The Pigeon River originates as numerous spring-fed tributaries in Manitowoc County and flows south to a point north of the City of Sheboygan Falls and then northeast to its confluence with Lake Michigan in the northern part of the City of Sheboygan. Tributaries to the Pigeon River include Meeme River, Fisher Creek, Grandma Creek, and nine unnamed tributaries.

Water quality in the Pigeon River Watershed is described as poor to fair (WDNR 1995). High turbidity, nuisance algae and vegetative growth, low dissolved oxygen, high levels of fecal coliform bacteria, sedimentation, and channelization have all contributed to the poor water surface water conditions in the watershed (Aartila, 1997). Numerous reports have documented the water quality problems from nonpoint sources, point source effluent discharge and extensive wetland drainage. (WDNR 1980, 1988, 1994, 1995). Both the Jetzers Lake and tributary are listed on the 303(d) list. The predominant sources of nonpoint pollutants in the Pigeon River Watershed originate from croplands, animal barnyards, construction sites and manure spreading on high hazard acres during winter months. Cropland contributes 62% of the total sediment and construction sites contribute an additional 21%. Croplands, barnyard, and manure spreading account for an estimated 81% of the total phosphorus load. The watershed is included in the recently adopted Northeast Lakeshore TMDL (2023) and contains impaired waters due to total phosphorus and other pollutants. For a complete list and map of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

The Pigeon River Watershed Nonpoint Source Pollution Control Project (Project) was identified as a "priority watershed project" in 1995 under the Wisconsin Nonpoint Source Water Pollution Abatement Program with implementation beginning in 1998. Economic trends played a significant role in the level of participation by landowners and/or producers. When the Pigeon River Project began there were over 750 dairy farms within Sheboygan County. Ten years later the number was just over 225, a 70% decrease. It is reasonable to assume then that Barnyard Phosphorus, with a beginning load of 2,392 pounds of phosphorus/year, was reduced to approximately 720 pounds/year by simple attrition. Reported data shows a goal of 1,674 pounds of phosphorus/year with 318 pounds/year (19% reduction) achieved through practice implementation. If you combine attrition with Best Management Practice implementation then the amount of Barnyard Phosphorus reduced through the Project-1,992 pounds (1,674 pounds + 318 pounds respectively) equals 119% of the project goal. The Project was especially successful in establishing wetland restoration projects and involving a citizen's committee of Pigeon River agricultural producers to craft "their" ideal grass buffer strip program. In all, 19 wetland restorations were installed during the Project. This was significant because of the river's tendency to be "flashy'. This quick rise and fall of water levels resulted in considerable bed and bank disturbance. Wetland Restorations were identified as a BMP for the Project to help moderate this condition.

The Wisconsin Department of Natural Resources (WDNR) has developed a Total Maximum Daily Load (TMDL) for the Northeast Lakeshore area in 2023, which includes the Pigeon River Watershed. The TMDL report set reduction goals for total phosphorus (TP) and total suspended solids (TSS) loads for agricultural land and other nonpoint sources throughout multiple Northeast

Lakeshore Area watersheds. Appendix M of the TNDL report describes phosphorus reductions targets for cropland within each TMDL sub-basin, calculated using SNAP PLUS. Appendix M was created to help evaluate how current or planned cropland management practices meet or do not meet the TMDL sub-basin phosphorus reduction targets. Overall. A TMDL defines the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL report describes the methods and data used to develop the TMDL, set pollutant reduction goals, and provide a framework for implementation.

A 9 Key Element (9KE) Plan was also created and adopted for the Pigeon River in 2023 to help provide a framework and help guide implementation of the TMDL for two Northeast Lakeshore TMDL subbasins within the watershed. One of the two 9KE Plan sub-basins is the Fisher Creek (subbasin 42). This subbasin is a 7,446-acre, predominately agricultural subbasin in the Town of Herman encompassing the northwest area of the Village of Howard's Grove and is located within the following USGS 12-digit hydrologic unit code watershed: 0401010813. (Figure 1). The other sub-basin aligns with the City of Sheboygan (subbasin 86). A 9 Key Element Plan is a comprehensive strategy for improving and protecting water quality within a specific watershed area. It serves as a roadmap for addressing nonpoint pollution sources and restoring or maintaining healthy water systems by identifying critical sites/areas, and then setting goals, and outlining specific conservation practices and actions for the critical areas. These plans are crucial for securing funding for watershed restoration projects. The Northeast Lakeshore TMDL goal for the Fisher Creek Subbasin is to reduce phosphorus loadings by 85 percent which the 9KE plan serves as an implementation and prioritization tool to help attain this TMDL based goal.

The Sheboygan County Planning & Conservation Department still implements a grass buffer program called the Water Quality Improvement Program (WQIP) based on the committee's recommendations. Started in 2000 and locally funded initially at $50,000/year our Department concentrated our initial efforts in establishing buffers within the Town of Herman (located within the Pigeon River Watershed). The grass buffer program will also help implement the Northeast Lakeshore TMDL phosphorus and sediment reduction goals.

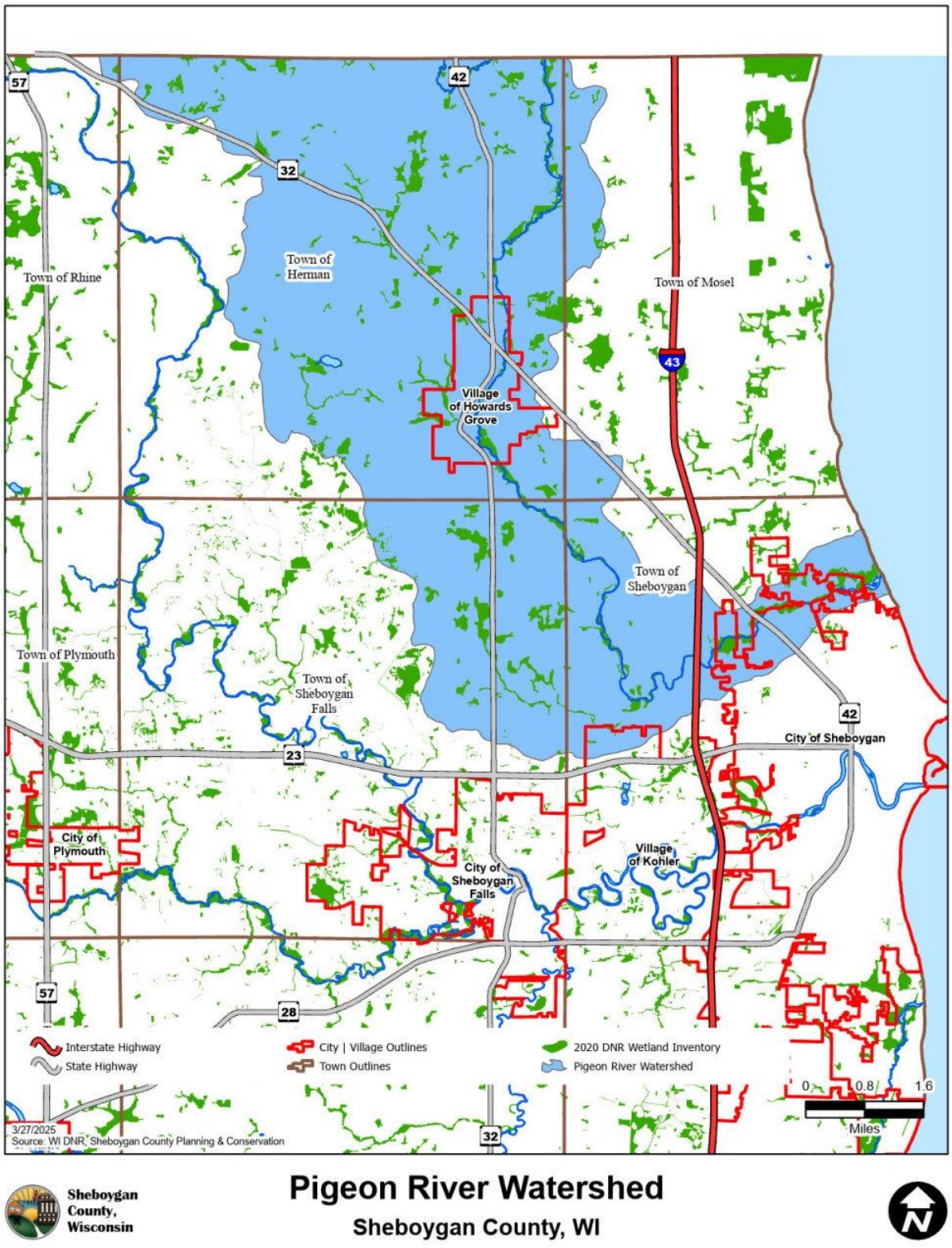


Figure 9 - Pigeon River Watershed

Onion River Watershed

The Onion River drains 99 square miles of the southernmost portion of the Sheboygan River Basin tributary to the Sheboygan River. It is located in southeastern Sheboygan County and northeastern Ozaukee County. Sheboygan County makes up 90 square miles or 91% of the Onion River Watershed.

Source: Water Resources of the Sheboygan River Basin; Publ#WR-669-01

The surface relief of the Onion River Watershed is typical of glacial topography. Slopes across the watershed are complex and range from nearly level to very steep. West of the Village of Waldo, the watershed drains a portion of the Kettle Moraine area. Here the surface is very irregular. The soils in this area being primarily well drained and some well drained to excessively well drained. The eastern portion of the watershed, approximately two-thirds of the total area, is characterized by a nearly level to gently sloping plain. Commonly known as the red clay area, the soils are somewhat poorly drained. These soils are erosive with some soils severely limited for onsite sewage disposal systems due to their moderately low permeability. The soil survey shows that half of the soils in the watershed have lost one to two-thirds of the topsoil by erosion.

The Onion River is classified as a cold water fish community stream, Class II trout stream from the headwaters downstream to the top of the Waldo Dam impoundment. A warm water sport fish community classification exists from the Waldo Impoundment downstream to the confluence with the Sheboygan River. Ben Nutt Creek from its source to the junction with Mill Creek is classified as a ERW. See *Appendix 2* for a complete ORW and ERW list for Sheboygan County.

The headwaters of the Onion River rise from groundwater along edge moraines located in the Kettle Moraine area north and west of the Village of Waldo and exhibit the best water quality conditions of the watershed. This section of the Onion River along with the two major tributaries, Ben Nutt Creek and Mill Creek, supports a fairly well-balanced community of fish and other aquatic life and is classified as Class I trout water. The diversity of macroinvertebrates is only moderate and decreases in the downstream reaches of this segment. Tolerant stream bottom insects dominate, but the HBI falls in the range of "excellent" to "fair" water quality. This segment supports the most balanced fish and aquatic life community in the watershed.

Lakeshore Trout Unlimited is very active in stream restoration and maintenance along the upper reaches of the Onion River. Since 1996 the chapter, in conjunction with the DNR, Sheboygan County Planning and Conservation Department, and other partners have been working on the Onion River in Sheboygan County. In the past two years alone, they have accomplished so much.

- 1,650+ volunteer hours performed by LSTU volunteers in the last two years.
- In 2024 alone, over 60 individual volunteers dedicated more than 830 hours to local programs.
- 600+ hours focused on cold-water habitat restoration and stewardship of the Onion River Public Fishery Area.

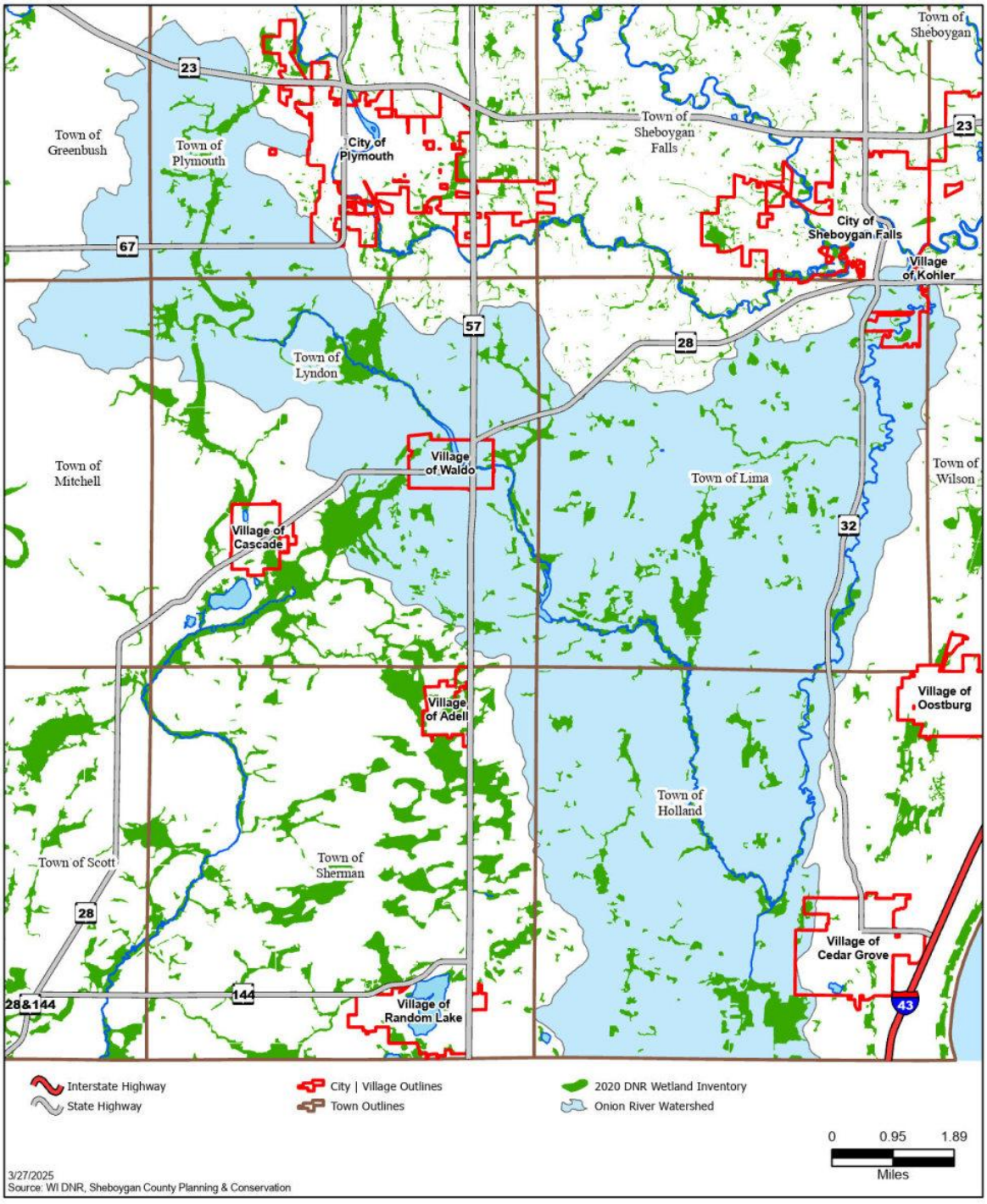
- 10 Water Action Volunteers (WAV) contributed 90 hours to water testing at five local river sites.
- 80 hours spent by 10 volunteers running STREAM Camp 2024, educating 15 youth in partnership with Camp Y-Koda on cold-water ecosystems, clean water, and fly fishing.
- 50 hours supporting the Trout-in-the-Classroom (TIC) program in five local middle and high schools, introducing students to the science of raising and releasing trout.
- Wisconsin DNR Adopt-a-Wildlife/Fisheries Area Program – 2023 Organization of the Year
- Sheboygan County Conservation Association – 2023 Club of the Year
- Lake Michigan Stakeholders – 2023 Champion of Conservation
- Wisconsin Wildlife Federation – 2022 Land Conservationists of the Year
- Wisconsin Conservation Congress – 2022 Conservation Organization of the Year

Lakeshore TU's ability to carry out these important projects relies heavily on the generous monetary donations we receive from our supporters. These funds provide the resources necessary to continue offering youth programs, acquiring equipment, and funding essential conservation initiatives.

The water quality of the lower Onion River is fair to poor. Impoundments at the Village of Waldo and Hingham create optimal carp habitat thereby increasing turbidity. Increases in algae concentrations and increases in suspended solid concentrations through bioturbation are both real threats to water quality downstream of the impoundments. Additionally, these impoundments slow the river's flow allowing warming of the water above the temperature necessary to maintain the upstream trout fishery. There is little groundwater entering this section because of the tight clay soils throughout this area. Most of the water in this section comes from surface water runoff over highly erosive soils and the headwater springs. The lower Onion River supports a degraded warm water fishery and poorly balanced communities of other aquatic life.

Major nonpoint sources of pollution limiting quality of the water are inadequate private waste disposal (septic) systems, poorly managed agricultural and pasturing practices, land spreading of agricultural wastes and streambank erosion. The entire Onion River in Sheboygan County and the lower 4.1 miles of an unnamed tributary to the Onion River through the Waldo Impoundment are on the 303(d) Impaired Waters list for total phosphorus and other pollutants. For a complete list and maps of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

The Onion River Watershed was one of the early Nonpoint Source Priority Watershed Projects in the state (WDNR 1981). In 1984, USGS and WDNR (Field and Lidwin 1984) conducted a study of the water quality of the Onion River. A follow-up report on the Onion River Priority Watershed Project (WDNR 1992) found that the nonpoint source pollution continues to be a major detriment to water quality, with the Onion River being listed on the 303(d) list for phosphorus and the unnamed tributary at Waldo listed for excessive sediment.



Sheboygan County, Wisconsin

Onion River Watershed

Sheboygan County, WI

Figure 10 - Onion River Watershed

Sevenmile-Silver Creek Watershed

The Sevenmile-Silver Creek Watershed includes the 112 square mile land area extending a few miles inland from Lake Michigan between the Cities of Manitowoc and Sheboygan. Approximately 28 squares miles or 25 percent of the watershed is in Sheboygan County. The watershed contains seven small streams draining directly to Lake Michigan. The watershed was named for two of the larger stream systems – Sevenmile Creek in Sheboygan County and Silver Creek in Manitowoc County. The soils of the eastern approximately one half of the watershed were formed in glacial drift and are generally gently sloping, loamy to clayey, with moderate to good potential for agricultural production. The soils of the western half of the watershed were formed in glacial till or old glacial lake basins. These soils are generally level to gently sloping and are heavily dissected by drainage ways. These soils are generally clayey with moderate to good potential for cultivation.

The streams of the watershed support mainly a pollution tolerant fishery. Macroinvertebrates are impacted by organic pollution lowering dissolved oxygen values. The ability of many of the streams to support a viable fishery is further limited by extreme low flow.

The streams of the watershed are of concern because of nonpoint source pollutant transport during high flows to Lake Michigan. Primary nonpoint pollution sources are cropland sediment and attached phosphorus, phosphorus from barnyard runoff, and phosphorus from winter spread manure. The Sevenmile Silver Creek watershed was a priority watershed in Nonpoint Pollution Abatement Program from 1986 to 1996. 303(d) listed waters in the watershed include Pine Creek and Silver Lake both in Manitowoc County; both listed for excessive phosphorus. For a complete list and map of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2.*

The fishery in Sevenmile Creek is dominated by pollution-tolerant forage fish; but, fisheries staff feel there is a high likelihood of native gamefish using the stream or portions of the stream during periods when normal to higher than normal water levels exist. The ability of the creek to support a significant sport fishery is limited due to the extreme low flow. Stream habitat assessments indicate fair habitat although dissolved oxygen readings, obtained in conjunction with habitat survey, were depressed. These low dissolved oxygen readings are indicative of organic pollution. Staff should conduct surveys to assess existing and potential uses during normal to slightly higher water summer periods.

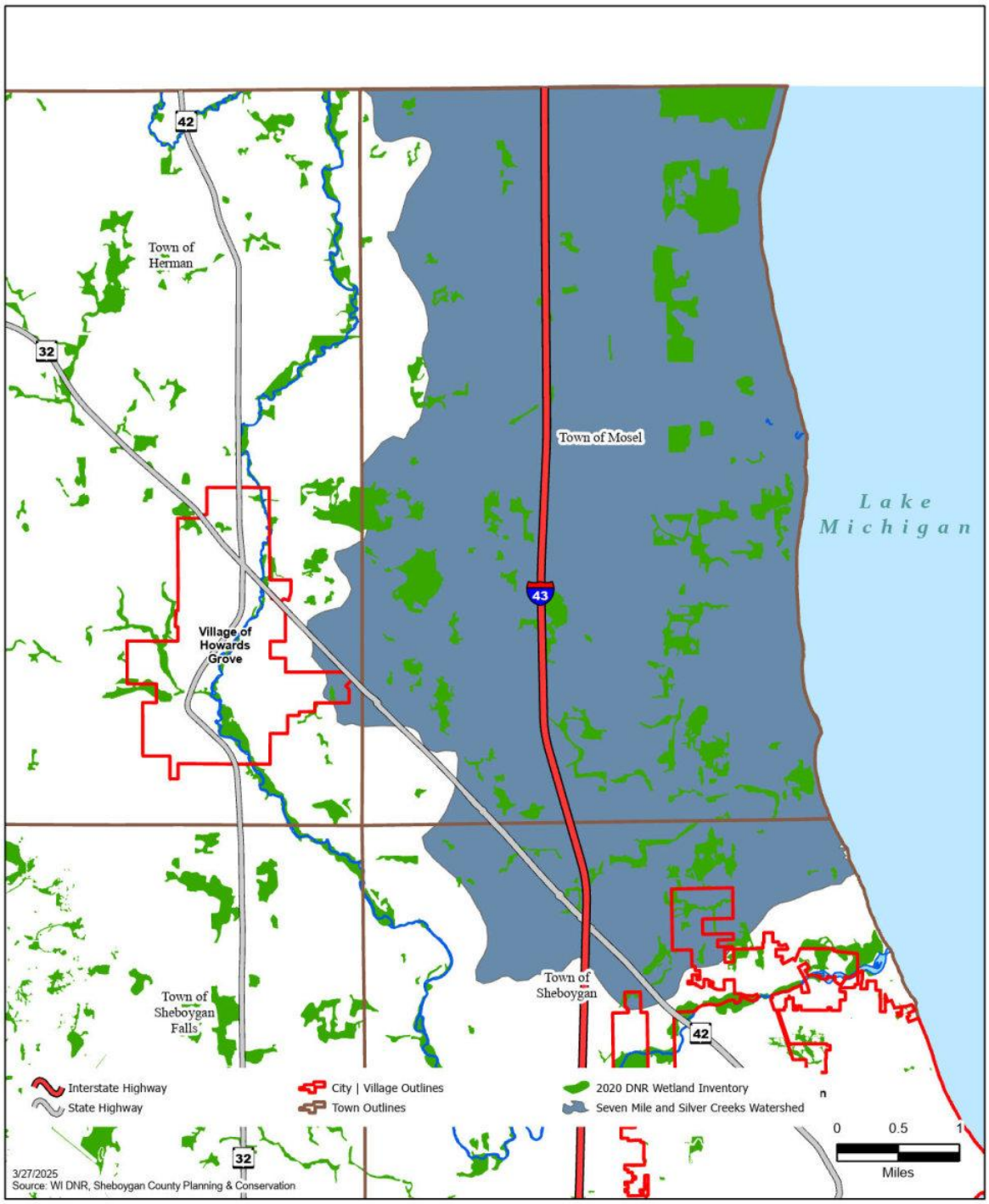


Figure 11 - Seven Mile/Silver Creek Watershed

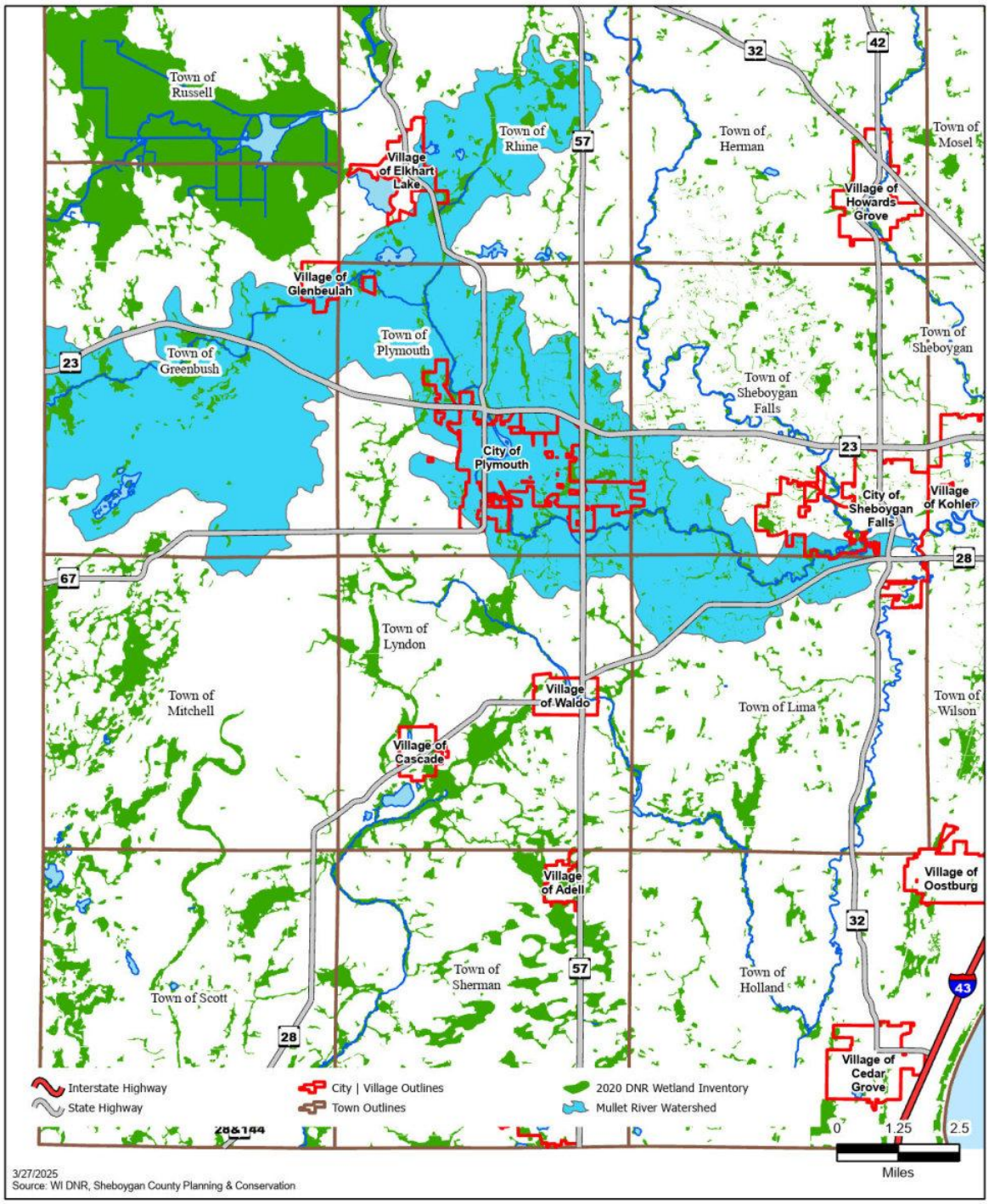
Mullet River Watershed

The Mullet River watershed is approximately 88 square miles in size and is located in eastern Fond du Lac and western Sheboygan counties. The Mullet River watershed ultimately connects to and is part of the Sheboygan River watershed and is located within the Lake Michigan Basin. Tributaries to the Mullet River in its 88 square mile watershed include two trout streams; La Budde Creek, and Jackson Creek, and nine unnamed tributaries. The Mullet River is unique in that it flows from the warm water headwaters into a cold-water segment. All of the other major tributaries in the Sheboygan Basin, including the Sheboygan and Onion Rivers, originate as cold-water streams and change over to warm water further downstream. Crop farming and public and private forestry make up the majority of the land uses in the watershed, with 57% of the land cover in agriculture, followed by 21% in forest. Forested lands occur primarily within the Kettle Moraine sub-watershed and landscape. The City of Plymouth, which encompasses approximately 4% of the land use within the watershed, is the principal urban area.

The watershed includes 3.9 miles of Class I trout water, 9.6 miles of Class II trout water, and 33.9 miles of warm water sport fishery. Water quality is impacted by rural and urban nonpoint source pollution. The Mullet River originates from the outflow of Mullet Lake and the Mullet Creek State Wildlife Area in Fond du Lac County and flows in an easterly direction for approximately 40 miles to its confluence with the Sheboygan River in the City of Sheboygan Falls, 17 miles upstream of Lake Michigan. The water quality of the Mullet River is considered good from its headwaters to Plymouth (approximately 25 miles) and fair from Plymouth downstream to its confluence with the Sheboygan River (approximately 15 miles) (WDNR 1968, 1995). The middle of the river, from Glenbeulah to Plymouth, has an increase in springflow that lowers stream water temperatures and is classified as a Cold Water Community stream (trout). Upstream of Glenbeulah, and downstream of STH 67 near Plymouth, the Mullet River is classified as a Warm Water Sport Fish Community stream. This classification difference is due primarily to the increase in springflow between Glenbeulah and Plymouth. The Mullet River is unique in that it flows from the warm water headwaters into a cold-water segment. All of the other major tributaries in the Sheboygan Basin, including the Sheboygan and Onion Rivers, originate as coldwater streams and change over to warm water further downstream. LaBudde Creek upstream from Badger Road is classified as a ERW. See *Appendix 2* for a complete ORW and ERW list for Sheboygan County.

The headwaters portion of the watershed includes 1.9 miles of Class I trout water, 9.9 miles of Class II trout water, and the lower portions of the watershed have 34.8 miles of warm water that supports a small mouth bass fishery. Lower portions of the Mullet River have problems associated with turbidity, suspended solids, sedimentation, and high nutrient concentrations. Water quality is impacted by rural and urban nonpoint source pollution contributing sediment and phosphorus. Elkhart Lake and Crystal Lake are on the 303(d) of Impaired Waters list. The lower Mullet River from its confluence with the Sheboygan River upstream for 17.8 miles is also on the 303(d) Impaired Waters list for total phosphorus. For a complete list and map of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

Source: 2010 Mullet River Watershed Water Quality Management Plan Update and Water Resources of the Sheboygan River Basin; Publ#WR-669-01



Sheboygan County, Wisconsin

Mullet River Watershed

Sheboygan County, WI

Figure 12 - Mullet River Watershed

Black River Watershed

The Black River Watershed is located in southeastern Sheboygan County. The watershed encompasses 36 square miles and contains three named streams, the Black River, Barr Creek and Fisherman's Creek and 32 unnamed streams. There are no lakes or impoundments in the watershed. Land uses in the watershed are mainly rural, characterized as natural lowlands with adjacent agricultural areas. Fisherman's Creek, which flows through the southern portion of the City of Sheboygan, is characterized as urban. Portions of the Black Ricer are also on the 303(d) Impaired Waters List for total phosphorus. For a complete list and map of 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

Source: Water Resources of the Sheboygan River Basin; Publ#WR-669-01

The overall water quality in this watershed is fair to poor. Tolerant species such as the mudminnow and brook stickleback are common. However, the lower portions of the Black River provide seasonal fishing opportunities during the spawning runs of smelt, trout, and salmon. Rural and urban nonpoint source pollution, point sources, channel modification, construction site erosion, and increased imperviousness contribute to flashy flows, increased nutrients, bacteria, and streambank sedimentation.

The Fisherman's Creek corridor is a unique 2 ½ mile long natural area situated between the City of Sheboygan and the Town of Wilson, both increasingly developing areas. The stream begins about 2 miles from the lake, near the former Conoco Oil Refinery property. From there it flows southeast through commercial, industrial and residential areas. The stream joins the Black River within the Jerving Conservancy immediately to the east of Lakeshore Drive about ¼ mile from Lake Michigan. Fisherman's Creek has been severely degraded by urbanization and storm water inputs along the stream and in its watershed. As a result aquatic and terrestrial habitat has been degraded, the stream channel has been straightened and is incised, the banks are eroded, sediment smothers aquatic life, invasive species have taken over along the stream and associated wetlands, it is often riddled with trash, and flooding of the area and homes has occurred. The stream empties into Black River ¼ mile from its mouth at Lake Michigan and transports sediment and trash into the river, which are then discharged into the lake. With increasing development at its headwaters, the stream will continue to become more degraded.

SRBP has created a master plan for the Fisherman's Creek corridor for the purpose of creating a master plan for physical and biological restoration of the stream and riparian area as well as creating public access within the stream corridor. They are seeking to rehabilitate the stream corridor into an ecologically functioning system while providing improved storm water management and a public open space for recreation. The first step toward this goal was to create a concept plan to guide restoration and recreation activities. This concept plan provides a cohesive plan for public access, restoration of the stream and associated wetlands.

The concept plan includes:

- Over 77 acres of habitat would be made accessible (by trail) and restored or protected.
- Over 10,000 linear feet of stream would be made accessible by trail and restored or protected.
- Many types of habitats would be protected or restored (upland bluffs, meadows, wetlands, stream, etc.).
- 1 ½ miles of vegetative buffer will be created.

Source: Sheboygan River Basin Partners website

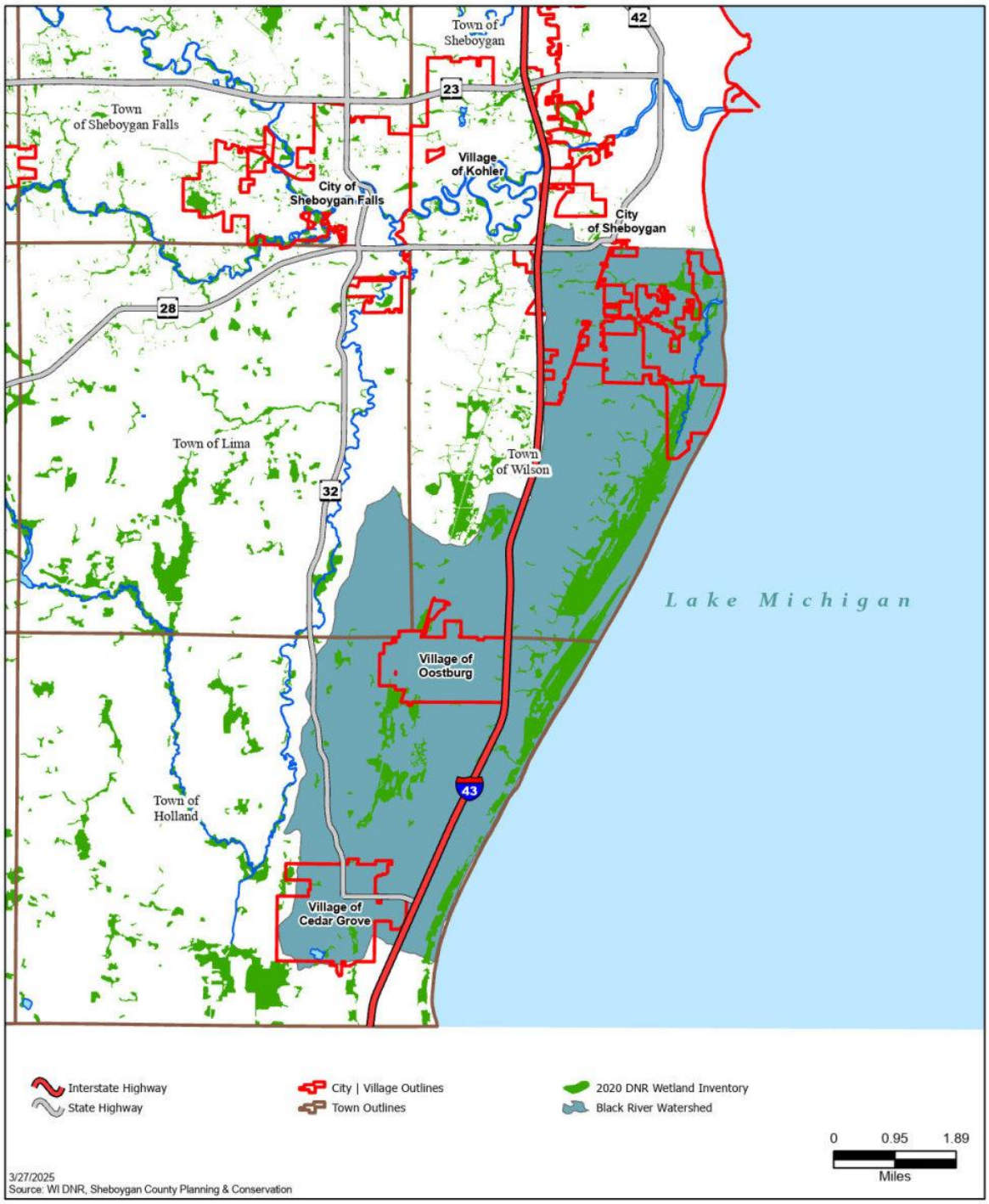


Figure 13 - Black River Watershed

Sauk and Sucker Creeks Watershed

Sauk and Sucker Creeks watershed is the southernmost watershed in the Sheboygan River Basin and includes a small portion of Sheboygan County, but is predominately in Ozaukee County. Sauk and Sucker Creeks flow southward entering into Lake Michigan in and near Port Washington respectively. There are a total of 37 unnamed tributary streams flowing to the Sauk or Sucker Creeks or directly to Lake Michigan within this subwatershed. All streams in the Sauk and Sucker Creeks Watershed ultimately reach Lake Michigan. The endangered striped shiner (*Notropis chrysocephalus*) had been historically found here. The majority of the streams within the Sauk and Sucker Creek watersheds have natural community classifications of cool-warm transition headwaters. There are a few smaller streams that are classified as macroinvertebrate streams or have no classification. These two latter classifications are generally associated with streams so small in size they do not support a fish population and are often intermittent. Overall, the water quality of Sauk and Sucker Creeks is rated from good to poor. Fish and macroinvertebrate communities rated good to fair in the lower reaches of the two watersheds, where stream habitat is in better condition. Upstream reaches of the two watersheds rated fair to poor for fish and macroinvertebrate communities. This is most likely due to degraded stream habitat, especially within the headwater areas. Sucker Creek is the second largest stream in this watershed and originates in Sheboygan County just north of the Ozaukee County line. Sucker Creek flows south along the Interstate 43 corridor, past Lake Church, and enters Lake Michigan north of the City of Port Washington. Fish and habitat surveys were conducted in Sucker Creek during the summers on 1994 and 1999. Fourteen species of fish, primarily consisting of forage fish species, have been historically collected in Sauk Creek. Trout and salmon from Lake Michigan are also found in the stream during their seasonal spawning runs.

Source: Water Resources of the Sheboygan River Basin; Publ#WR-669-01

Sauk and Sucker Creeks watershed was ranked by WDNR in 2007 as a high priority overall for non-point source (NPS) pollution and was similarly ranked for groundwater NPS pollution. Streams in the watershed are ranked as high priority for NPS pollution. Water chemistry monitoring was done in 2009 and 2010 at two individual sites, located at the mouths of Sauk and Sucker Creeks. Water samples collected for chemical analysis from both creeks showed elevated concentrations of total phosphorus that exceed Wisconsin's water quality standard. E-coli bacteria concentrations also exceeded criteria from samples collected within the Sucker Creek watershed. Dissolved oxygen levels did not appear to be a problem in either stream when samples were collected. While agriculture is the major land use, urbanization is also taking place. Nonpoint source pollution and stream channelization are the primary causes of the degraded water quality and habitat throughout the watershed. Polluted runoff from agricultural activities and headwaters development contributes to the high concentration of suspended solids in the stream waters and severe siltation problems in the watershed. Construction site erosion and impervious surfaces (e.g. roads, roofs, parking lots, etc.) are emerging threats to water quality as the watershed undergoes urbanization. Overall water quality is fair to poor in both Sauk and Sucker Creeks. Stream channel modifications and polluted runoff from agricultural activities contributes to the high concentration of nutrient and suspended solids in the streams and severe siltation problems in the watershed. Large sediment plumes into Lake Michigan are frequently observed at the mouths of Sauk and Sucker Creeks during spring melt and heavy

rains. Sucker Creek is on the 303(d) Impaired Waters list. For a complete list 303(d) Impaired Waters for Sheboygan County and the impairments, see *Appendix 2*.

Source: Sheboygaqn River Basin website-WIDNR June 2015

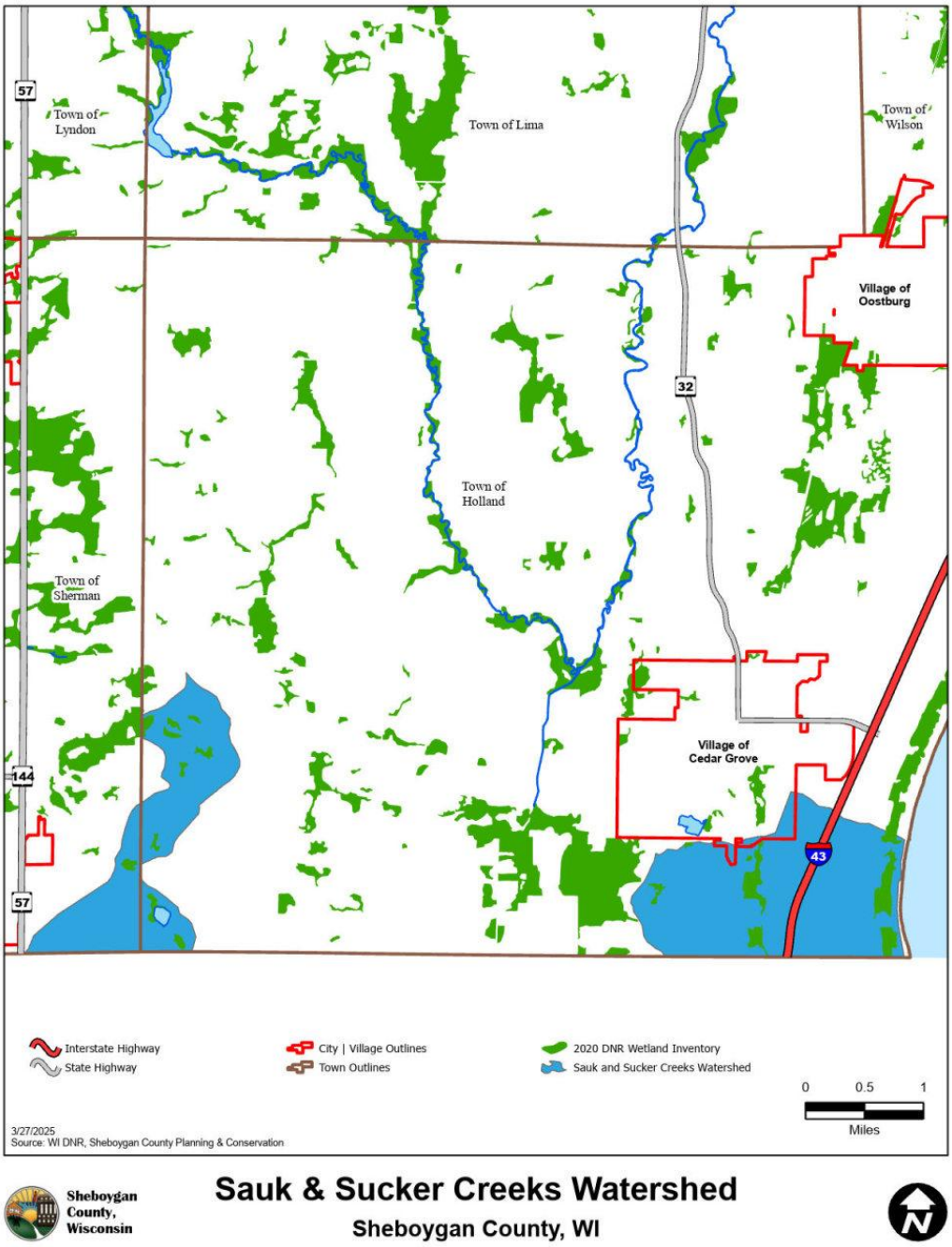


Figure 14 - Sauk & Sucker Creeks Watershed

Dams in Sheboygan County

Dams are predominant features on most of the large streams in Sheboygan River Basin with the exception of the Pigeon River. Most of the dams were constructed during early settlement for the purpose of providing power for mills or for water supply. As the dams aged and their intended use was no longer needed, communities have been faced with the decision to retain and maintain the structures. Maintenance or reconstruction costs can be high whereas removal has been a less expensive alternative. Dam removal serves to improve general water quality and to restore recreational fisheries.

In general, dams impact water quality and fish communities in several ways. Impounded water is able to absorb significantly more solar radiation during summer, warming downstream areas. In winter, the impounded waters reduce water temperatures and can have a negative impact on developing trout eggs. The impounded water on larger streams create habitat that is most suitable for common carp. The carp displace native fish species and create turbid water conditions as they disturb the bottom muds while feeding. The turbid waters are observed for a considerable distance downstream.

Fish communities are impacted in a variety of ways. Fish are blocked from freely migrating upstream and downstream. They lose access to feeding, spawning, and over-winter habitat. While carp benefit from those conditions, native fish (such as northern pike and smallmouth bass) populations are harmed.

Several dams in Sheboygan County have been removed over the past 25 years. The largest dam removed was the Franklin Dam on the Sheboygan River in the Town of Herman. It was removed in the 1990's. Others included the Meyer Park dam in the City of Plymouth, three small dams on the "Kamrath" property on an unnamed tributary to the Onion River, and approximately 12 small dams on the "Silver Springs" property on Mill Creek. A dam in the Mullet will be removed in 2015.

Water quality immediately improved in both the Sheboygan and Mullet Rivers with the removal of the Franklin and Meyer Park dams, respectively. Carp were displaced and native fishes returned. Recreational use of both areas also increased with dam removal. Fishing and canoeing activity noticeably increased.

The dam removals at the "Kamrath" and "Silver Springs" were resounding successes as well. Trout populations in the upper portions of the Onion River had a ten-fold increase as a result of those removals. Temperature improvements were dramatic. Natural reproduction of trout has been highly significant within each property and the upper Onion River trout classification was upgraded to a Class 1 trout water (see the Onion River Watershed narrative). Recreational fishing activity has significantly increased. Dam removal and other habitat improvements were responsible for the change.

Dams on the lower Onion River at Waldo and Hingham remain and their impacts are obvious (see the Onion River Watershed narrative). Both impoundments have large carp populations and highly turbid water conditions. The same is true for some of the dams on the Sheboygan River. The dams at Kiel and Sheboygan Marsh do have some positive impacts as both create habitat for waterfowl and other wetland dependent wildlife species. In fact, the Sheboygan Marsh dam is

set to the height of the original limestone impoundment that was blasted out in the unsuccessful attempt to drain the marsh for farming. Management of vegetation at both locations however, has been challenging. In 2024 the dam at the Sheboygan Marsh was replaced. The $3.7 million project replaced the old dam that was reaching the end of its lifespan. Various groups were involved in the new dam project: Sheboygan County Planning and Conservation Department, Sheboygan County Conservation Association, Wisconsin Department of Natural Sources, U.S. Fish and Wildlife Service, National Fish and Wildlife Foundation, Fund for Lake Michigan, Lunda Construction Co. and Ducks Unlimited. The new dam will restore about 14,000 acres of emergent wetlands now that the water levels can be easily managed.

Groundwater

Sheboygan County's groundwater reserves are being held in three principal aquifers: the eastern dolomite aquifer, the sandstone and dolomite aquifer, and the sand and gravel aquifer.
The eastern dolomite aquifer occurs from Door County to the Wisconsin-Illinois border. It consists of Niagara dolomite underlain by Maquoketa shale. In areas where fractured dolomite bedrock occurs at or near the land surface, the groundwater in shallow portions of the western dolomite aquifer can easily become contaminated. *Figure 15* shows estimates of the depth to the water table. The depth to the water table is the distance from the land surface to the water table that the water must flow to reach the groundwater. Areas adjacent to Lake Michigan appear to have a higher water table, which would mean there may be a higher susceptibility of contamination to the groundwater. The majority of the County appears to have between 20 and 50 feet to reach the water table, while the area near the Sheboygan Marsh has only 0 to 20 feet to reach the water table. The Towns of Greenbush and Mitchell appear to have the largest area where the depth to the water table is greater than 50 feet. It is important to remember that these are all estimates and generalizations, this should not serve as substitute a for an in-depth study of the water table in the area, but as a starting place.

The sandstone and dolomite aquifer consists of layers of sandstone and dolomite bedrock that vary greatly in their water-yielding properties. In eastern Wisconsin, this aquifer lies below the eastern dolomite aquifer and the Maquoketa shale layer. These rock types dip slightly to the east, south, and west, away from north central Wisconsin, becoming much thicker and extending to greater depths below the land surface in the southern part of the state. In eastern Wisconsin, most users of substantial quantities of groundwater tap this deep aquifer to obtain a sufficient amount of water. The sand and gravel aquifer covers most of Wisconsin. This aquifer layer was deposited by glacial ice and river floodplains between 10,000 and 1 million years ago. Many irrigated farmlands in southern and northwestern Wisconsin tap this aquifer. Because the top of the sand and gravel aquifer is also the land surface, the groundwater it contains may easily become contaminated.

Groundwater is vulnerable and if it is not carefully monitored, managed, and protected it has the potential to be depleted or degraded. While much has been done to protect our groundwater supply, we increasingly face the question of how to improve groundwater quality. Wide-spread land-use activities have resulted in elevated concentrations of contaminants such as nitrates and pesticides throughout the state. Cleaning up groundwater after it is contaminated has proven difficult and expensive; therefore it is beneficial to prevent groundwater from becoming contaminated in the first place.

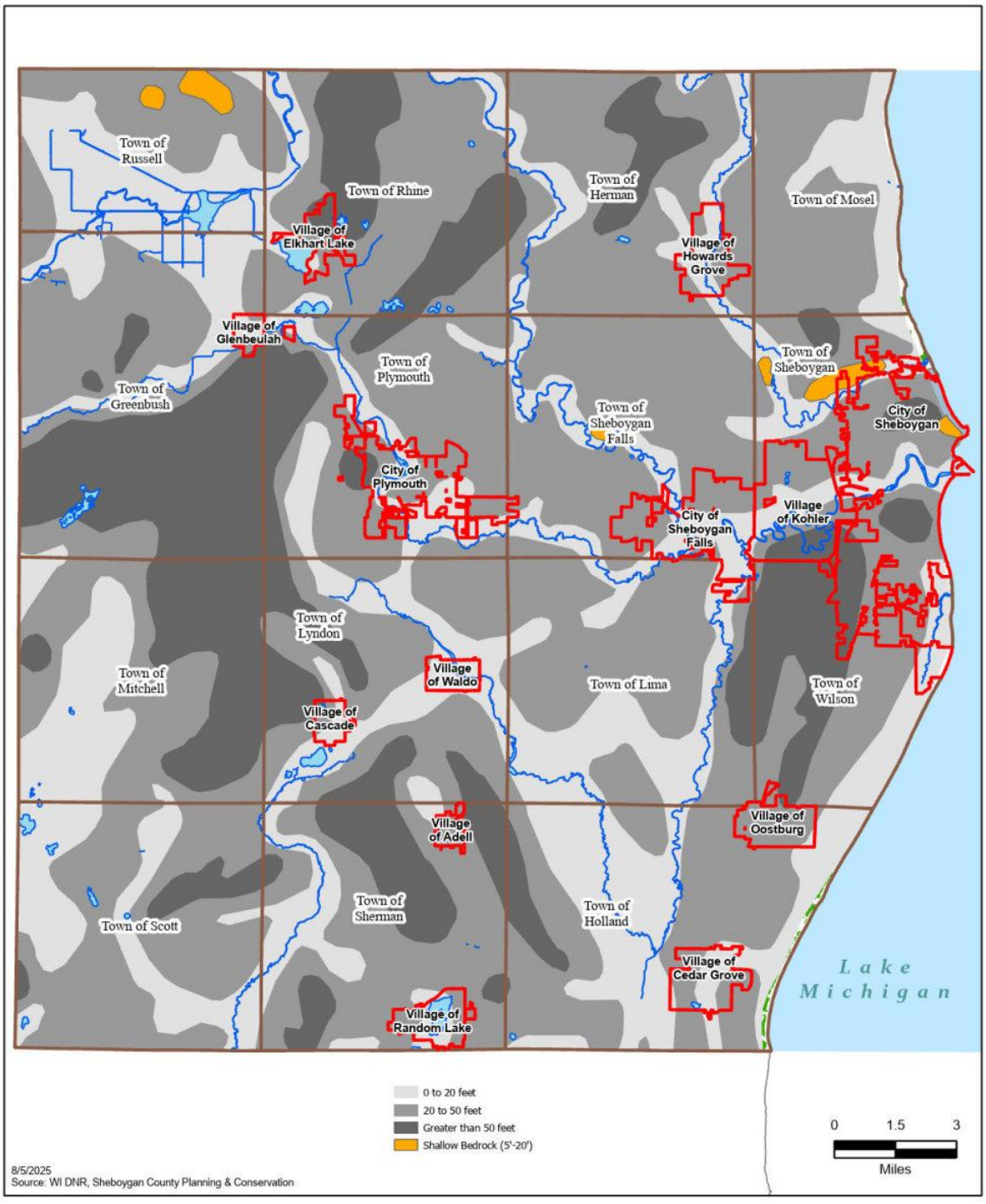


Figure 15 - Depth to Water Table

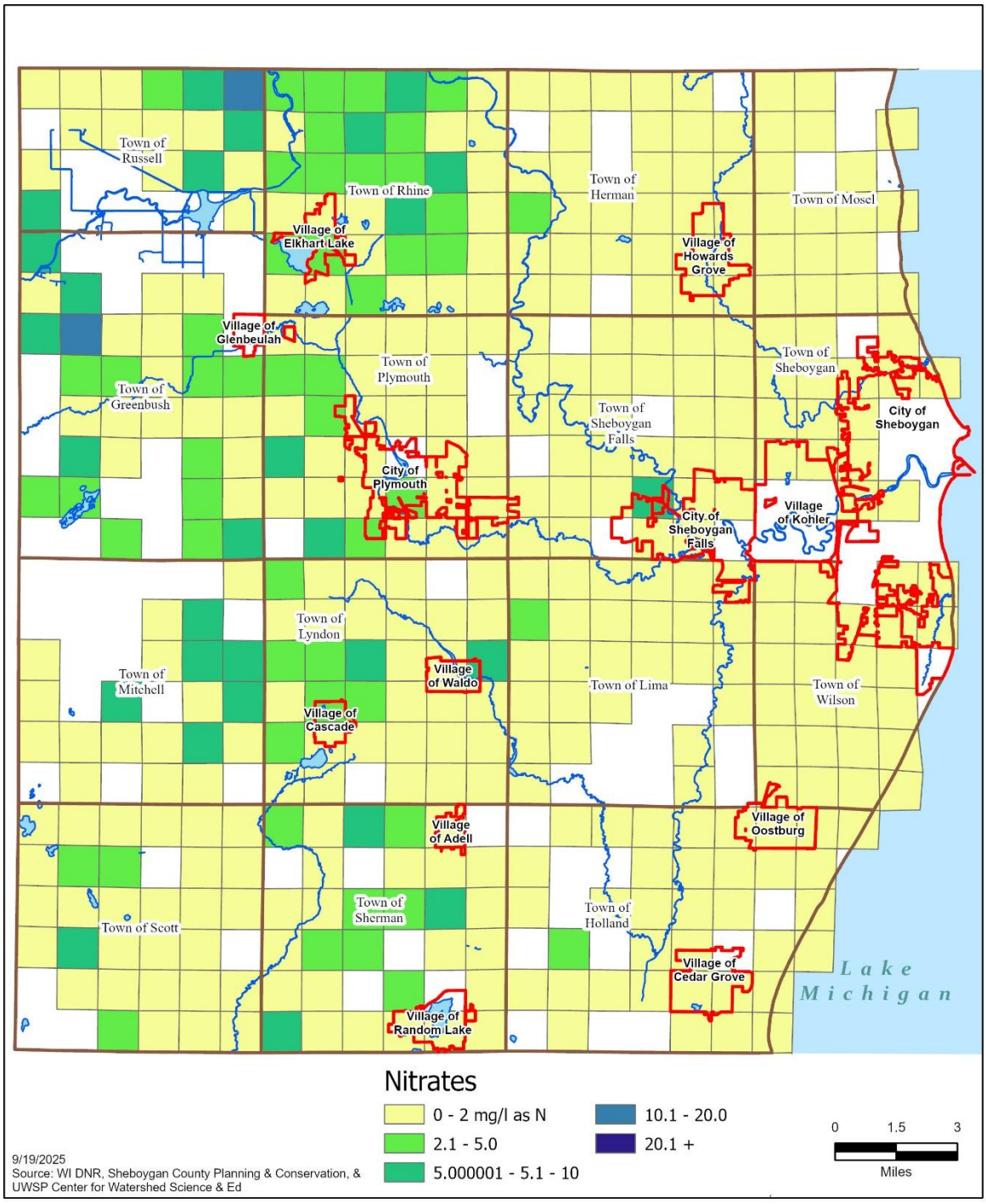


Figure 16 - Nitrite/Nitrate Contamination

In Wisconsin, the primary sources of groundwater contamination are agricultural activities, municipal landfills, leaky underground storage tanks, abandoned hazardous waste sites, and hazardous/toxic spills. Septic tanks and land application of wastewater are also sources for possible contamination. The most common groundwater contaminant is nitrate-nitrogen, which comes from fertilizers, animal waste storage sites and feedlots, municipal and industrial wastewater and sludge disposal, refuse disposal areas, and leaking septic systems. According to the WDNR, there are two (Kohler Co Landfill & WPL – Edgewater I-43 Ash Disposal Facility) solid waste landfills or disposal facilities still operating in the County. One hundred seventeen other solid waste landfills or disposal facilities have closed according to the DNR. Most municipalities closed their sites when the environmental risks became known and cost of operation became too high.

Groundwater commonly contains one or more naturally occurring chemicals, leached from soil or rocks by percolating water, in concentrations that exceed federal or state drinking water standards or otherwise impair its use. Sheboygan County has never tested all private wells in the County, but the UW-Extension and Sheboygan County PCD have worked to test individual wells and in some cases entire municipalities since 1993. Since 1993, 2850 water samples have been tested for known contaminants. The results of these tests show that 71 percent of all samples had a trace (0 parts per million (ppm) – 10 ppm) of nitrates-nitrites, which can be naturally occurring at levels less than 10 ppm. Another item that is tested is coliform bacteria which was found to be present in 509 of the 2850 water samples or about 18 percent of the samples. Coliform bacteria do not usually cause disease, but their presence indicates that wastes may be contaminating the water and that disease causing organisms could be present. The presence of coliform bacteria may also mean there are some defects with the well that are easy to be viewed or other problems may require excavating around a well. *Figure 16* shows the nitrate levels broken down by sections within Sheboygan County. This data was obtained from the Well Water Quality Viewer, an interactive viewer hosted by the University of Wisconsin Stevens Point Center for Watershed Science and Education. See the full summary of sampling data in Appendix #6.

Chapter 4 - The Planning Process, Public Participation and Resource Issue Identification and Prioritization

The Sheboygan County PCD was primarily responsible for developing the 1999, 2004, 2009, 2016 LWRM plans and this 2025 update. The original Citizens Advisory Committee (CAC) was comprised of 37 members in 1999. They brought with them a wide range of views from agriculture, business, riparian property owners, Lake Associations, local government, real estate developers, and sportsman clubs. A nominal group process was conducted with the CAC with the help of UW-Extension to generate and prioritize resource issues.

For the 2004 plan update another CAC was formed to gather consensus regarding resource concerns and goal setting. The work of this committee guided the 2004 update.

For the 2009 plan update another CAC was formed along with Technical Advisory Committee (TAC). The CAC was made up of individuals on the county's Smart Growth Agricultural Subcommittee. Membership included Farmers, Township Supervisors, Realtors & Homebuilders, DNR, Glacial Lakes Conservancy, Sheboygan River Basin Partnership, and Citizens. The TAC was made up of individuals representing the LWCD, UW- Extension, Farm Service Agency (FSA), Planning and Resources Department, Department of Natural Resources (DNR) and Natural Resources Conservation Service (NRCS). Through the nominal group process these two committees helped identify several new goals and refine the original goals from the 2004 plan along with clarifying objective under those goals. Overall, the recommendations of these two committees mirrored the priorities identified by the previous three CAC's.

For the 2016 plan update a CAC was formed with representation of: an agricultural producer, the Nature Conservancy, the Wisconsin Department of Natural Resources, the Natural Resources Conservation Service, the University of Wisconsin-Extension, and the Sheboygan County Planning and Conservation Department. The CAC's first meeting was held on June 1, 2015. This meeting focused on the following topics: explaining the LWRM plan process; reviewing the DATCP LWRMP checklist; reviewing the 2009 LWRMP Goals and Objectives; discussing the 9 Key Element Plan process; reviewing the draft of Chapters 1, 2, and 3 of the 2016-2025 LWRM plan; Resource Issue Identification and Prioritization.

The 9 Key Element Planning process was discussed in detail at the June 1 meeting. The pros and cons of being able to "dovetail" a 9 Key Element Plan into the 2016 LWRMP update were examined. It was pointed out that Sheboygan County currently has a 9 Key Element Plan in effect for one of its watersheds; this being the Pigeon River Priority Watershed Plan. Unfortunately, data generated by the watershed inventory (1996-1997) to identify critical sites for the control of sediment and phosphorus runoff are currently very outdated. The PCD is

currently partnering with the Nature Conservancy (TNC) to focus on either an Adaptive Management or Pollutant Trading project in the Upper Mullet River Watershed. Over the next several years soil loss and phosphorus index baseline values will be generated in the Mullet River to provide more current data to incorporate into a 9 Key Element Plan. This process may also include coordination with DNR and review of the Appendix M of the NE Lakeshore TMDL report. At the conclusion of discussion, the CAC concurred with the Planning and Conservation Department to incorporate a 9 Key Element Plan into the 2020 Workplan update.

Also at the June 1, 2015 meeting the CAC went through the Nominal Group Process (NGP) to identify and prioritize any additional resource issues/concerns that were not addressed by the 2009 LWRM plan. During the NGP the members of the CAC listed any resource issues that they thought needed addressing and were not already in the 2009 LWRM plan. After compiling the list of additional issues/concerns, the committee members each voted for their top three issues/concerns. Below are the results of the ranking from highest number of votes to lowest.

1. Improved Soil Erosion Emphasis – Minimize Runoff Effects From Large Rain Events (15 points)

2. Post-construction Stormwater Management – County Vegetated Buffer Ordinance – Strengthen Ordinance without Jeopardizing Funding (5 points)

3. In-field Conservation Planning (5 points)

4. Acre /A.U. – Farm Planning for Economics & Environment (4 points)

5. Hire Conservation Agronomist (3 points)

6. Building Soil Health – Reduced Energy (tillage) (2 points)

7. Use of Transect Survey (2 points)

The PCD was then given the task of incorporating these items into the Goals and Objectives for the 2016 LWRM plan update.

At the July 8, 2015 CAC meeting the PCD presented the draft 2015 Goals and Objectives along with a draft Workplan as guided by the CAC's NGP at the June 1 meeting. With the CAC's input the Objectives and Workplan were further refined. Also at the July 8 meeting the CAC discussed the remaining steps and timeline to prepare the draft LWRM plan for presentation to the Land and Water Conservation board.

At the July 22, 2015 meeting the CAC reviewed and commented on the draft of Chapters 4-7 of the 2016-2025 LWRMP. Changes were noted during the committee meeting. The noted changes were made to the draft of Chapters 4-7 and these updated drafts were emailed out to the committee members for final approval. The remaining draft Chapters 8-10 were emailed to the CAC for comment. After comments were received the draft of Chapters 8-10 were updated. These updated draft chapters were then emailed back to the committee for final approval.

The Public Hearing was held on August 25, 2015 by the Sheboygan County Planning, Resources, Agriculture and Extension Committee (PRAECOM). After concluding the Public hearing the PRAECOM approved the draft of the 2016 LWRMP update.

As part of the 2025 Land and Water Resource Management (LWRM) Plan update, a new Citizen Advisory Committee (CAC) was formed. The committee includes representatives from a diverse range of backgrounds, including: an agricultural producer, the Natural Resources Conservation Service, a local environmental educator, a retired County Conservationist, the Wisconsin Department of Natural Resources, a local agronomist, a representative from the Sheboygan River Progressive Farmer-Led Group, and the Sheboygan County Planning & Conservation Department.

The CAC held its first meeting on January 22, 2025. The meeting focused on providing an overview of the LWRM planning process, reviewing the goals and objectives from the 2015 LWRM Plan, and discussing current resource concerns in the area.

As with the previous plan update, the CAC utilized the Nominal Group Process (NGP) to identify and prioritize any additional resource issues not addressed in the 2015 plan. During the NGP exercise, each committee member listed resource concerns they believed warranted attention. After compiling the list, members voted for their top five priorities. The issues were then ranked in order of total votes received, from highest to lowest. Below are the listed priorities.

1. Promote sustainable land use practices to protect water quality by reducing runoff and preventing erosion.

2. Encourage the promotion and adoption of soil health practices to enhance ecosystem resilience and improve agricultural sustainability

3. Combat the loss of biodiversity through proactive conservation planning efforts.

4. Accelerate the adoption of innovative conservation practices by providing education, resources, and incentives to overcome barriers and encourage broader implementation.

5. Foster greater collaboration between industry, government, businesses, communities, and farmers to ensure effective and coordinated conservation efforts.

The Public Hearing was held on October 14, 2025 by the Sheboygan County Planning, Resources, Agriculture and Extension Committee (PRAECOM). After concluding the public hearing, the PRAECOM approved the draft of the 2025 LWRMP update. In December a presentation to the Land and Water Conservation Board (LWCB) was given highlighting the updates of the plan. The LWCB recommended the plan for approval by DATCP. DATCP will not finalize approval of the plan until the County Board has approved the plan. The full Sheboygan County Board approved and adopted the 2025 LWRMP on XXXXXX and DATCP finalized the approval then shortly after.

Chapter 5 - Goals and Objectives

Developing the Goals and Objectives

During the next 10 years (2025 - 2035), the goals set forth in this plan will be implemented. These goals will be achieved through a balanced implementation strategy that includes incentives, regulation and enforcement, comprehensive planning, and information and education. Sediment and phosphorus remain the major nonpoint pollutants degrading the water quality of Sheboygan County's streams and lakes. Therefore, the ultimate goal of this plan is to significantly remove sediment and phosphorous delivery to the waters of Sheboygan County. The NR 151 state performance standards and prohibitions provide the framework to address these goals. Goals and objectives were developed to ensure them:

- Comply with the state prohibitions and standards detailed in the plan
- Address the resource concerns identified by the Citizen's Advisory Committee (CAC) in consultation with the Department of Natural Resources (DNR)
- Are ambitious goals yet are realistically achievable as outlined

Goals and Objectives

Goal #1 - Reduce Soil Erosion and Associated Phosphorus Losses

Objectives:

A. Promote sustainable land use practices to protect water quality by reducing runoff and preventing erosion.

B. Continue to explore the options of hiring a Soil Health Specialist/Conservation Agronomist to provide farmers support when adopting soil health practices and conservation planning. Put greater emphasis for existing staff to do in-field planning.

C. Facilitate the adoption of the Farmland Preservation Program conservation standards on all participating lands in Sheboygan County and increase the acres of cover crops and no-till 5% annually on agricultural land.

D. Provide technical assistance to landowners to reduce their soil loss to T-value. In cases where management changes alone will not reduce the soil loss down to T-value offer cost-sharing (if available) for practices such as cover crops, residue management, contour strip cropping and grassed waterways. Promote EQIP participation.

E. Promote soil health and other conservation practices within the NE Lakeshore TMDL high phosphorus load sub-basins and start working towards conducting the TMDL Implementation Plan within the Stormwater Quality Management Plan 2024 Update in order to work towards compliance with TP & TSS reductions.

F. Accelerate the adoption of innovative conservation practices by providing education, resources, and incentives to overcome barriers and encourage broader implementation.

G. Continue to work towards the goal of reducing phosphorus loadings by 85 percent for the Fisher Creek Subbasin which is outline in the 2023 Pigeon River 9KE Plan and the 2023 NE Lakeshore TMDL report.

H. Work with NRCS staff and landowners to enroll sensitive areas along lake and streams in the CREP or Sheboygan County's Buffer Strip Program.

I. Install Water and Sediment Control Structures (WASCOBS) to reduce the impact of sediment and phosphorus runoff occurring in larger storm events.

J. Continue to perform yearly status reviews for conservation compliance of land enrolled in the Farmland Preservation Program.

K. Promote Soil Health initiatives by hosting on-farm field days, workshops, webinars etc. in cooperation with other conservation stakeholders.

L. Partner with the Elkhart Lake Improvement Association (ELIA) to reduce phosphorus inputs to Elkhart Lake from a 200 acre agricultural watershed. Install an iron/sand filter to reduce dissolved phosphorus loading to Elkhart Lake.

M. Support the Sheboygan River Progressive Farmers group with implementing their mission of enhancing farm, land, and water resources in the Sheboygan River basin.

N. Support the Between the Lakes Demo Farm Network

Goal #2 - Reduce Animal Waste Runoff and Associated Phosphorus Losses

Objectives:

A. Enforce state manure management prohibitions identified in Animal Waste Management Ordinance.

B. Target process waste water for treatment measures where there is found to be a significant discharge to waters of the state.

C. Issue county permits, provide design services and cost-sharing when available under the Animal Waste Management Ordinance.

D. Update Sheboygan County's Animal Waste Ordinance

E. Encourage the promotion and adoption of soil health practices to enhance ecosystem resilience and improve agricultural sustainability and water quality.

Goal #3 - Nutrient Management Requirements

Objectives:

A. Continue to require nutrient management plans through the Sheboygan County Animal Waste Ordinance when constructing or altering a manure storage facility, animal housing, or feedlot.

B. Verify compliance with nutrient management requirements of the Farmland Preservation Program.

C. Provide cost-sharing assistance to landowners when available for nutrient management plans that are required under NR 151 State Standards and Prohibitions. Offer Soil and Water Resource Management (SWRM) money when available and also recommend landowners sign up for the Environmental Quality Incentives Program (EQIP).

D. Offer Nutrient Management technical assistance to land owners/operators and private Agronomists.

E. Track nutrient management plan adoption and implementation progress through the use of computer software.

F. Provide learning opportunities and idea sharing among agency staff, producers, and Nutrient Applicators by hosting fields days on the topic of Nutrient Application.

Goal #4 – Groundwater Protection

Objectives:

A. Continue to administer the Sheboygan County well testing program to local townships which used to be conducted through the UW-Extension office.

B. Based on test results target areas needing more comprehensive groundwater protection measures by evaluating nutrient management and land use practices within a ¼ mile of any well testing above the state preventative active limit for nitrates or repeatedly for bacteria. Contact land users within these areas to initiate adaption of additional conservation practices.

C. Continue to offer, when available, SWRM cost-sharing for well decommissioning.

Goal #5 - Reduce Sediment and Phosphorous Loadings from Existing Urban and Developing Areas to Surface Waters

Objectives:

A. Continue to enforce Sheboygan County's Erosion Control and Stormwater Runoff Management Ordinance (ECSM).

B. Combat the loss of biodiversity through proactive conservation planning efforts.

C. Work closely with the WI DNR and other County departments to ensure compliance with the

EPS Phase II Stormwater Management Rules.

D. Monitor more closely ECSM Permit sites if they are within the 300 feet stream/1,000 feet water body Shoreland Management Zone. Encourage the installation of grass buffer zones and other BMP'S to protect shoreline habitat.

E. Distribute informational pamphlets on how homeowners can safely make fertilizer and chemical applications. Provide information on tours, fair booths and other educational venues. Conduct an annual ECSM contractor workshop.

Goal #6 - Continue Efforts on Additional Conservation Programming of Local Significance

Objectives:

A. Develop and implement the Management Plan for the Amsterdam Dunes (AD) property.

B. Continue to manage the county's existing wetland mitigation site.

C. Foster greater collaboration between industry, government, businesses, communities, and farmers to ensure effective and coordinated conservation efforts.

D. Continue to hold the county's annual Tree and Shrub Sale.

E. Continue to provide educational and technical assistance to county landowners experiencing wildlife damage on their cropland. Work cooperatively with APHIS assist eligible landowners in filing claims to be reimbursed for wildlife damage.

F. Complete and submit to the County Board the Departments Aquatic Invasive Species Strategic Plan. Continue to seek funding for supporting staff to implement this plan.

G. Promote Emerald Ash Borer (EAB) awareness and provide information and education to aid in the identification and control of EAB.

H. Continue to apply for and utilize awarded DNR grants for improving fish and wildlife habitat on county owned or managed lands.

I. Continue implementation and enforcement of the County's Nonmetallic Mining Ordinance

J. Continue water sampling of the Reichert Bioreactor (previously owned by Beeck) and Dobrynio P capturing septic tank to evaluate their efficiencies at capturing excess nutrients. Develop a plan to either continue monitoring the projects or replace them within the next five years.

K. Work towards implementing the policy and program recommendations within Sheboygan County's Natural Areas and Critical Resources Plan.

Chapter 6 - Priority Area Strategy and State Performance Standards and Prohibitions

Priority Area Strategy

First Priority: Land where a valid complaint has been received, and a NR 151 violation has been investigated and confirmed, for one or more of the NR 151 state nonpoint performance standards or prohibitions.

Second Priority: Land located in priority areas such as the Pigeon River 9KE plan area, watersheds with impaired 303(d) listed waters, and watersheds of Outstanding or Exceptional Resource waters.

Third Priority: Area of land that are currently enrolled in the Farmland Preservation Program but have not been evaluated for compliance with the NR 151 state performance standards and prohibitions. Also included, would be first time participants of the Farmland Preservation Program and current participants enrolling new land.

Fourth Priority: All other areas not included above as time and resources permit.

Administrative Rule NR 151 first went into effect on October 1, 2002 and has been revised serval times since then. The most recent rule change to NR 151 was in 2021 when the DNR identified sensitive areas for nitrate contamination. Overall, NR 151 outlines **state performance standards and prohibitions** to minimize runoff from cropland, manure, livestock, and production areas with the intent of protecting Wisconsin surface and groundwater.

The goals and objectives detailed in Chapter 5 are the heart of this plan and will guide resource management in Sheboygan County for the life of this plan. Implementing the state performance standards and prohibitions through these goals and objectives, then becomes the engine that drives this plan forward. In this chapter, an outline is presented for how **Goals #1 through #3** and **Goal #6** will specifically deal with these standards and prohibitions and detail how they are intended to be carried out through this plan.

State Standards and Prohibitions Encompassed in Plan Goals

Goal #1 - Reduce Soil Erosion and Associated Phosphorus Losses

- ***Sheet, Rill, and Wind Erosion NR 151.02*** - All land where crops or feed are grown shall be managed to achieve a soil erosion rate equal to, or less than, the "tolerable" (T) rate established for that soil.
- ***Tillage Setback NR 151.03*** - 1) No tillage operation shall impact stream integrity or deposit soil directly into surface waters 2) No tillage may be conducted within five (5) feet of the top of the channel of surface waters. Tillage setbacks greater than five (5) feet

but no more than 20 feet may be required to meet WQIP standards *(Note: Sheboygan County's buffer program installs a minimum of a 20 foot wide buffer).* 3) Crop producers shall maintain the area within the tillage setback in adequate sod or self-sustaining vegetative cover that provides a minimum of 70% coverage.

Compliance Components

The following components will be used to work toward compliance with this standard:

Confirmed Sheet, Rill, and Wind Erosion and/or Tillage Setback violations

While very seldom has a citizen made a formal complaint regarding cropland erosion or farming too close to a stream or lake, any confirmed violation resulting from a complaint will be a high priority with the PCD. The approach to the confirmed Sheet, Wind and Rill Erosion complaints is elaborated below under the section titled "Erosion Reduction". Landowners with confirmed Tillage Setback violations will be encouraged to enroll in the Sheboygan County's Buffer Program. This program establishes a minimum of 20 width of grassed buffer. This program not only pays establishment costs but also makes a one-time payment for the landowner to keep the buffer intact for a minimum of 10 years.

Project Participation

The PCD in conjunction with several partners have been inventorying cropland erosion rates of participating landowners in the Sheboygan River Agricultural Project and the Mullet River watershed. The SNAP PLUS model and EVAAL has been used to verify the cropland erosion rates. Possible Tillage Setback issues are examined on site. Project participants have been voluntarily implementing practices such as cover crops and conservation tillage on fields that were high in Sheet, Wind, and Rill erosion. Several landowners, while not in violation, have also installed grass buffers increasing their Tillage Setbacks. This approach will continue to be applied for the next several years.

303(d) Impaired and ORW/ERW Listed waters

Where currently not available, the watershed boundaries and crop fields located within those boundaries will be identified for both the 303(d) impaired and ORW/ERW areas of Sheboygan County. Producers operating fields within these boundaries will be contacted and erosion rates will be verified. An approach mirroring the one used above under "Project Participation" will be followed.

Program Participation

Under the state's Farmland Preservation Program (FPP) all participants must be in compliance with the state cropland standards and prohibitions and therefore the PCD will continue to verify the compliance status of participants. When administering the FPP our emphasis will be to complete the evaluation of the land owned by current FPP participants.

RUSLE II or SNAP PLUS & EVAAL

After making an initial contact with a landowner, current soil erosion rates will be calculated using the information collected and running RUSLE II or SNAP PLUS on each crop field. Information to be obtained, include soil type, slope length and slope, field management, and conservation practices in use. Erosion Vulnerability Assessment for Agricultural Lands (EVAAL) is a GIS-based tool that uses readily available topographic, soils, and land use information to assess vulnerability of agricultural lands to erosion and nutrients. EVAAL was conducted countywide and the data will be used to help with prioritization of soil erosion and phosphorus loss conservation practices.

Erosion Reduction

Once crop fields with erosion rates over T are verified then they can be addressed in a number of ways. *Voluntary adoption* of rotational changes (e.g. reduction in row crop years), residue management, and cover crop **best management practices (BMPs)** and grassed waterways for **ephemeral erosion** is the initial option. If available, cost sharing can be offered for the BMPs and the grassed waterways. If the landowner does not want to voluntarily take measure(s) to correct the non-compliance, the *second step* would be to require a practice to be installed where cost sharing must be made available. Compliance and enforcement with required erosion standards will follow stepped enforcement guidance set in NR 151.09, which will be further explained in the ensuing chapter.

NR 151 Implementation Summary for Goal #1

- Priority areas will be located through: field validated complaints; by their location in priority areas such as the Pigeon River 9KE area, watersheds of 303(d) impaired listed waters, and watersheds of Outstanding or Exceptional Resource waters; by compliance checks with the FPP
- Verify erosion rates with RUSLE II
- Where allowable erosion levels are exceeded offer solutions to achieve desired soil erosion reduction
- Use EVAAL data to assess erosion and nutrient vulnerability
- For landowners not voluntarily coming into compliance, pursue stepped enforcement
- Keep those in compliance informed (through general I & E effort) of their requirements to maintain compliance.

Goal #2 – Reduce Animal Waste Runoff and Associated Phosphorus Losses

Manure Storage Facilities Performance Standard NR 151.05

- All new or substantially altered manure storage facilities built after October 1, 2002 shall comply with this section.

- Meet technical standards for a newly constructed or substantially-altered manure storage facility
- All new or substantially altered manure storage facilities shall be designed, constructed, and maintained to prevent failure.
- All facilities built or altered after January 2, 2011 shall contain the additional runoff volume of a 25-year, 24- hour storm.
- A manure storage structure where usage had ceased for 24 months shall be abandoned. Facilities where future use is anticipated may be retained under specific conditions.

Process Wastewater NR 151.055

- All livestock producers must comply with this section
- There may be no significant discharge of process wastewater, defined by NR 243.03(53) to waters of the state

Clean Water Diversion NR 151.06

- All livestock producers shall comply with this section.
- Runoff shall be diverted from contacting feedlots, manure storage and barnyard area within the Water Quality Management Area (WQMA)

Manure Management Prohibitions NR 151.08

- No overflow of manure storage facilities
- No unconfined manure piles in a WQMA
- No direct runoff from a feedlot or manure storage into waters of the state
- No unlimited access by livestock to waters of the state which high animal concentrations prevent the maintenance of adequate sod or self-sustaining vegetative cover

Compliance Components

The following components will be used to work toward compliance with this standard:

Confirmed violations of the standards and prohibitions listed above under Goal #2

The PCD currently does on site investigation when a citizen reports a suspected violation of one or more of the state standards and prohibitions for livestock waste and process wastewater handling. In the past, our area's DNR Nonpoint Source Specialist would ask the PCD to do the initial on-site evaluation to determine if indeed there existed a violation. This approach allowed PCD staff to be involved in problem solving of confirmed violations right from the start. These confirmed sites will be a high priority with the PCD and we have a solid working relationship farming community which enables the PCD to provide alternatives in a non- adversarial atmosphere. The majority of these violations are rectified voluntarily. If however, a landowner with a confirmed violation does not want to rectify the violation, the PCD can pursue enforcement following guidance set in NR 151.095 and outlined in the ensuing chapter.

Project Participation

The PCD in conjunction with several partners have been working with participating producers to correct livestock waste handling and process waste handling in all of the Counties watersheds. Project participants have been voluntarily implementing practices such as Process Wastewater treatment and Clean Water Diversion. This approach will continue to be applied for the next several years.

303(d) Impaired and ORW/ERW Listed waters

Regarding livestock operations located adjacent to the 303(d) and ORW/ERW areas of Sheboygan County. Livestock operations within these boundaries will be contacted and compliance with the standards and prohibitions listed above under "Goal #2" will be evaluated. An approach mirroring the one used above under "Project Participation" will be followed for those found in violation.

Program Participation

Under the state's Farmland Preservation Program (FPP) all participants must be in compliance with the state livestock standards and prohibitions and therefore the PCD will continue to verify the compliance status of participants. When administering the FPP our emphasis will be to complete the evaluation of the land owned by current FPP participants.

Chapter 77-Sheboygan County Animal Waste Management Ordinance

Adopted in 1996 and amended in 2004 this ordinance regulates any construction, reconstruction, enlargement, abandonment or substantial altering of any manure storage facility. The Sheboygan County Animal Waste Storage Ordinance, Chapter 77, can be viewed at the PCD. A permit must be secured to proceed with any of the above and the county must review and approve site plans before such permit is issued. Any permitted projects must meet NRCS technical standards for construction. The ordinance incorporates the above prohibitions in writing and enforces them through the permit process and through NR 151.095.
Compliance and enforcement procedures will be further detailed in the subsequent chapter.

NR 151 Implementation Summary for Goal #2

- Priority areas will be located through: field validated complaints; by their location in priority areas such as the Pigeon River 9KE area, NE lakeshore TMDL subbasins with high P loading, watersheds of 303(d) listed waters, and watersheds of Outstanding or Exceptional Resource waters; by compliance checks with the FPP

- Verify compliance with state performance standards and prohibitions applicable to livestock operations

- Where non-compliance with the above standards and prohibitions exists, offer solutions to achieve compliance

- For landowners not voluntarily coming into compliance, pursue stepped enforcement

- Keep those in compliance informed (through general I & E effort) of their requirements to maintain compliance.

- Permit livestock operations through Sheboygan County Animal Waste Management Ordinance; require that design and construction specifications meet NRCS standards before a permit is issued

Goal #3 - Nutrient Management Requirements

- ***Phosphorus Index Performance Standard NR 151.04*** – Croplands, pastures and winter grazing areas shall average a Phosphorus Index of six (6) or less over the accounting period and may not exceed an index of 12 in any individual year. The Phosphorus Index shall be calculated using the version of the Wisconsin Phosphorus Index available January 1, 2011.

- ***Nutrient Management NR 151.07*** - All crop and livestock producers that apply manure or other nutrients directly or through contract to agricultural fields shall comply with this section. Manure, commercial fertilizer, and other nutrients shall be applied in conformance with an approved USDA-NRCS 590 nutrient management plan

Compliance Components

Confirmed Phosphorus Index and/or Nutrient Management standard violations

The PCD currently does on site investigation when a citizen reports a suspected violation of one or more of the state standards and prohibitions for nutrient management. The typical complaint involves either a suspected over application of manure or manure runoff. As stated above under Goal #2 the PCD has had a working relationship with the DNR whereby our Department will do initial on-site investigation regarding complaints. If during an on-site investigation a landowner or producer is found to either: not have a nutrient management plan or not be following an existing nutrient management plan then a violation of the above standards is determined. These violations will receive a high priority with the PCD. The PCD will then work with the landowner or producer to correct any short-comings in following an existing nutrient management plan or assist in obtaining and following a nutrient management plan. The majority of these violations are rectified voluntarily. If however, a landowner with a confirmed violation does not want to rectify the violation the PCD can pursue enforcement following guidance set in NR 151.09 and outlined in the ensuing chapter.

Project Participation

The PCD in conjunction with several partners have been inventorying cropland erosion rates and phosphorus indexes of participating landowners throughout the entire County. The SNAP PLUS and EVAAL model has been used to verify the cropland erosion rates and phosphorus indexes. Project participants have been voluntarily implementing

nutrient management plans. This approach will continue to be applied for the next several years.

303(d) Impaired and ORW/ERW Listed waters

Where currently not available, the watershed boundaries and crop fields located within those boundaries will be identified for both the 303(d) impaired and ORW/ERW areas of Sheboygan County. Producers operating fields within these boundaries will be contacted and erosion rates and phosphorus indexes will be verified. An approach mirroring the one used above under "Project Participation" will be followed.

Program Participation

Under the state's Farmland Preservation Program (FPP) all participants must be in compliance with the state cropland standards and prohibitions and therefore the PCD will continue to verify the compliance status of participants. When administering the FPP our emphasis will be to complete the evaluation of the land owned by current FPP participants.

SNAP PLUS Phosphorus Index Evaluation and Nutrient Management Plan writing

After making an initial contact with a producer, if no current nutrient management plan exists, phosphorus indexes will be calculated using SNAP PLUS on each crop field. If current (4 or less years old) soil tests do not exist, phosphorus indexes will not be calculated. Information to be obtained in order to run SNAP PLUS includes: rate, timing, method of application of nutrients along with soil type, slope length and slope, field management, and conservation practices in use. The producer will be provided a list of certified nutrient planners from which to select a planner to write his/her nutrient management plan. Nutrient management planners will be encouraged to use the SNAP PLUS model when writing a producer's nutrient management plan.

NR 151 Implementation Summary for Goal #3

- Priority areas will be located through: field validated complaints; by their location in priority areas such as the Pigeon River 9KE area, watersheds of 303(d) impaired listed waters, NE lakeshore TMDL subbasins with high P loading, and watersheds of Outstanding or Exceptional Resource waters; by compliance checks with the FPP

- Existing phosphorus indexes will be calculated when possible. In-field determinations may be made to determine if a nutrient management standard is being violated.

- If a current nutrient management plan does not exist the producer will be encouraged to voluntarily have a nutrient management planner prepare one. If it is found that a

current nutrient management plan is not being followed the PCD will work with the producer to have him/her come in compliance.

- For landowners not voluntarily coming into compliance pursue enforcement

Goal #5 - Reduce Sediment and Phosphorus Loadings from Existing Urban and Developing Areas to Surface Waters

- NR 151.11 Construction site performance standard for sites of one acre or more.
- NR 151.12 Post-construction performance standard for new development and redevelopment.
- NR 151.121 Post-construction performance standards.
- NR 151.122 Total suspended solids performance standard.
- NR 151.123 Peak discharge performance standard.
- NR 151.124 Infiltration performance standard.
- NR 151.125 Protective areas performance standard.

Confirmed violations of the standards and prohibitions listed above under Goal #5

The PCD, in their jurisdiction, currently does on site investigation when a citizen reports a suspected violation of one or more of the state standards and prohibitions for erosion control/stormwater. The PCD also performs on site investigations of permitted sites. If a violation is confirmed by an on-site investigation this site would be a high priority for the PCD. Follow-up with the landowner, contractor(s) or both will outline the violation(s) and the steps needed to rectify the violation(s). The party(s) liable for the violation(s) will be given an opportunity to voluntarily come into compliance. If however, the party(s) responsible for the violation(s) do not voluntarily come into compliance enforcement will be triggered following guidance set in Chapter 75- Sheboygan County Erosion Control and Stormwater Management Ordinance (ECSM) which will be further explained in the ensuing paragraph.

Chapter 75- ECSM

Adopted in 2006 this ordinance regulates construction-site standards and prohibitions outlined in NR151.10-NR151.15 that will diminish the threats to public health, safety, welfare, and aquatic environment by minimizing the amount of sediment and other pollutants carried by runoff or discharged from land-disturbing construction activity to waters of the State in Sheboygan County. The ordinance further establishes long-term stormwater management requirements that will diminish the threats to public health, safety, welfare, and the aquatic environment by

limiting the rate of runoff and sediment loads discharged from development to waters of the State and regulatory wetlands in Sheboygan County. The ordinance applies to construction sites over 1 acre situated in unincorporated areas of Sheboygan County All owners of planned construction sites covered under this ordinance must apply for and receive a permit before any land disturbance activities may commence. The Sheboygan County ECSM, can be viewed at the PCD or online SheboyganCounty.com A permit must be secured to proceed with any of the above and the county must review and approve site plans before such permit is issued. Any permitted projects must meet NRCS technical standards for construction. The ordinance incorporates the above prohibitions in writing and enforces them through the permit process.

NR 151 Implementation Summary for Goal #5

- Verify compliance with state performance standards and prohibitions and the Sheboygan County ECSM ordinance applicable to erosion control and stormwater management.
- Where non-compliance with the above standards and prohibitions exits, offer solutions to achieve compliance
- For landowners/contractor(s) not voluntarily coming into compliance, pursue stepped enforcement
- Keep those in compliance informed (through general I & E effort) of their requirements to maintain compliance.
- Permit construction sites through the Sheboygan County Erosion Control and Stormwater Management Ordinance.

Goal #4 and #6

These goals are no less significant than the preceding four goals outlined above. These goals are however more indirectly connected to the implementation of the state standards and prohibitions. These 3 goals were identified by the Citizens Advisory Committee and the Planning, Resources, Agriculture, and Extension Committee. While not all these goals can be achieved via enforcement it is nonetheless important that the PCD strive to accomplish their implementation.

Chapter 7 - Compliance and Enforcement of Performance Standards and Prohibitions

Compliance under the State of Wisconsin's Farmland Preservation Program

If a current FPP participant is found out of compliance during an initial compliance evaluation they will be issued a Schedule of Compliance outlining what NR 151 standards or prohibitions are being violated and a timeline to correct the violations. The PCD will provide technical assistance and cost-sharing (when available) to landowners to correct a violation(s). The land owned by a participant will be inspected at least once every four years. If during this inspection a violation of the state NR 151 standards and prohibitions is discovered a Notice of Non-Compliance (NNC) will be issued and he/she will no longer be able to claim tax credits under the FPP. As is always the case participants can voluntarily correct the violation(s) of the state standards and prohibitions. If a landowner corrects a violation(s) of a state standard or prohibitions a Notice of Cancellation of Non-Compliance will be issued and the landowner may resume claiming the FPP tax credit. If a landowner is unwilling to voluntarily correct a Notice of Non-Compliance (NNC), enforcement action as outlined below will occur.

Compliance or Noncompliance Notification Process

Complete, detailed processes of the sections below are described in NR 151.09 and NR 151.095

NR 151.09 (5) and (6) and NR 151.095 (6) and (7) detail compliance notification requirements with and without cost-sharing. The LWCD and DNR may enter into a Memorandum of Understanding (MOU) detailing responsibilities to complete compliance notification. Following is a general description of the compliance notification process Sheboygan County will follow the more detailed process contained in NR 151. This notification process will be the same followed to fulfill the objectives of *Goals #1 through #3* of the LWRM plan.

The LWCD will consult with DNR on the inventory/compliance determination stage. After the Required inventories are completed for each goal to identify compliance or noncompliance, the procedure for each avenue is as follows:

Compliance Notification Process

- Written notification shall be sent to all landowners or operators indicating when there is a determination of non-compliance pursuant NR 151.09 or NR 151.095.
- Notice shall be sent certified mail.
- Notice shall include a description of the cropland or livestock performance standard(s)/prohibition(s) being violated.

- Notice shall include the cropland or livestock facility status determination made.

- Notice shall include determination if cost-sharing has been made available to cover costs for landowner operator to comply with standard; if cost-sharing has previously been offered it is not required to offered again to gain compliance, according to NR 151.09(5)(6) and NR 151.095(6)(7). If a parcel is found to be in compliance, cost sharing does not have to be offered to keep it in compliance.

- Notification shall include determination of which BMPs are needed to comply with the standard if cost-sharing is required. The PCD may consult with DNR for BMP determinations.
- Notification shall include an offer to provide technical assistance through the PCD or coordinate the provision of technical assistance by other agencies/entities.
- Notification shall include a compliance period for meeting the cropland or livestock performance standard/prohibitions.

- Notification shall include an explanation of the possible consequences if the landowner or operator fails to comply with provisions of the notice, including enforcement, loss of cost-sharing or both.

Enforcement Process LWRM plan Goals #1-#3

NR 151.09 (7) and NR 151.095 (8) detail enforcement of cropland standards and livestock standards/prohibitions respectively. DNR assistance and input may be requested for complicated sites with repeated noncompliance. DNR will be copied on all correspondence regarding NR 151 compliance notification.

- If appropriate action is not taken by the landowner/operator by the end of the compliance period outlined in the compliance schedule included in the noncompliance notification letter, the county will request the assistance of the DNR to pursue enforcement. DNR, with the written support of the county, then may take enforcement actions pursuant to § 281.98 Stats., or other appropriate actions.

Animal Waste Management Ordinance - Chapter 77 (75.25)

Any person, firm, association, or corporation who does not comply with the provisions of this Subchapter B shall be subject to a forfeiture of not less than Twenty-five Dollars ($25.00) nor more than Five Thousand Dollars ($5,000.00) per offense together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.

Enforcement Process LWRM plan Goal #6

Nonmetallic Mining Reclamation Regulations - Chapter 78 (78.33)

Any person who violates this ordinance or an order issued under Section 78.32 of this Code may be required to forfeit not less than Twenty-five Dollars ($25.00) nor more than One Thousand

Dollars ($1,000.00) for each violation. Each day of continued violation is a separate offense. While an order issued under Section 78.32 of this Code is suspended, stayed, or enjoined, this penalty does not accrue.

Erosion Control and Stormwater Management Regulations - Chapter 75 (75.25)

Any person, firm, association, or corporation who does not comply with the provisions of this Ordinance shall be subject to a forfeiture of not less than Twenty-five Dollars ($25.00) nor more than Five Thousand Dollars ($5,000.00) per offense together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.

AUTHORITY

Under authority of Ch. 68 Stats., the Planning, Resources, Agriculture and Extension Committee, (created under Sec. 59.878 Stats., and under Section 2.12(b)(5) of this General Code, and acting as an appeal authority under Sec. 68.09(2), Stats.,) is authorized to hear and decide appeals where it is alleged there is error in any order, requirement, decision, or determination by the County Conservationist, or designated authority, in administering this Ordinance.

PROCEDURES

The rules, procedures, duties, and powers of the Planning, Resources, Agriculture and Extension Committee and Ch. 68 Stats., shall apply to this Ordinance.

WHO MAY APPEAL

Appeals may be taken by any person having a substantial interest which is adversely affected by the order, requirement, decision, or determination made by the PCD or designated authority.

APPEALS PROCESS-STATE STANDARDS

PCD initial determinations can be appealed in regard to compliance status with state standards. If the PCD findings are verified the appeal would proceed to the Planning, Resources, Agriculture and Extension Committee for review and decision. If the Planning, Resources, Agriculture and Extension Committee agree with the initial determinations of noncompliance as made by the PCD, the determination will stand.

Chapter 8 - Information and Education Strategy

The PCD will use the Information and Education Strategy to encourage voluntary implementation of the conservation practices listed in § ATCP 50.04. A detailed description of practices eligible for cost-share is available in Subchapter VIII of ATCP 50. Achieving the Land and Water Plan goals will require reaching out to a wide range of people, from the general public down to specific individual contacts. The Information and Education objectives are a blend of measures designed to give balance and support to the goals while targeting specific audiences. The Information and Education goals and objectives are as follows:

Goal # 1 - Reduce Soil Erosion and Associated Phosphorus Losses

Educational Objectives

- Increase farmers' awareness about the impacts of soil erosion
- Inform farmers of NR 151 performance standards and prohibitions
- Educate farmers about reducing erosion and associated phosphorus losses with residue management, better soil health and conservation crop rotations

Target Audiences

- FPP participants
- Farmers and rural landowners – identified by the priority area strategy
- Farmers in the Pigeon River 9KE area
- Landowners that attend Between the Lakes events

Messages

- Cropland performance standards apply to all agricultural producers
- Effectiveness of vegetated buffers in WQMA
- Nutrients are transported with soils
- Climate resiliency measures
- Loss of agricultural productivity as topsoil is eroded
- Building soil health and reducing erosion by implementing practices such as cover crops and rotational grazing
- Uncomplicated and cost efficient options are available to reduce soil erosion problems
- Residue management such a mulch till and No till will work on red clay soils under certain scenarios

Activities

- Continue direct mailings to FPP participants informing them of the state performance standards and prohibitions, BMP's that can help achieve compliance with these standards, and availability of cost-sharing through various sources

- Have an article in the PCD newsletter outlining the state performance standards and prohibitions
- Work one-on-one with farmers to adapt soil conservation practices to their specific situations such as cover crops and grassed buffers
- Show farmers using the SNAP PLUS program how much phosphorus their fields are losing each year
- Provide publications about cost-sharing opportunities for volunteers to adopt/install practices such as conservation tillage, cover crops, rotational grazing, and grassed waterways
- Work with producers, UW-Extension, NRCS, and the Nature Conservancy to conduct research plots and test trials of conservation practices such as cover crops
- Host field days in partnership with UW-Extension and NRCS, demonstrating soil health building practices such as cover crops and rotational grazing
- Have 2 articles in the PCD newsletter promoting conservation tillage and soil health
- Host a conservation tillage field day in partnership with UW-Extension, NRCS, and the Nature Conservancy to demonstrate proper conservation tillage techniques/equipment
- Continue to support the Between the Lakes Demo Farm Network and the Sheboygan River Progressive Farmer Led Group to foster information exchange and adoption of conservation practices among group members and other producers
- Promote and encourage farmer attendance at UW-Extension's annual Agronomy Day

Goal #2: Reduce Animal Waste Runoff and Associated Phosphorus Losses

Educational Objectives

- Continue to educate livestock producers of Sheboygan County about state livestock standards and prohibitions especially newer standards such as milkhouse and stored feed leachate runoff
- Continue to educate livestock producers of Sheboygan County Animal Waste Management Ordinance requirements
- Educate farmers/landowners within WQMA's as to the need for heightened protection from animal waste runoff in these zones
- Promote nutrient management planning and implementation is a key component of proper livestock waste handling
- Continue to educate farmers and landowners regarding developing and utilizing an Emergency Response Plan regarding manure spills and manure runoff
- Promote the use of manure spreading agreements between livestock producers and cash croppers as a way to distribute manure nutrients evenly, especially phosphorus, and build soil organic matter.

Target Audiences

- Farmers and rural landowners – identified by the priority area strategy
- FPP participants
- Farmers in the Pigeon River 9KE area

- All livestock producers within Sheboygan County
- Livestock producers building new or expanding existing animal waste storage facilities or animal feedlots
- Livestock producers - within WQMA's

Messages

- Permits may be needed for any and all animal waste storage and/or animal feedlot work
- Design services can be provided
- Cost sharing may be available
- Livestock waste sources such as milk house waste runoff and stored feed leachate runoff are part of the livestock production area standards and prohibitions

Activities

- Require permits for projects as determined by Animal Waste Management Ordinance
- Have an article in the PCD newsletter promoting livestock waste treatment BMP's and available cost-sharing sources
- Have an article in the PCD newsletter promoting manure spreading agreements

Goal #3 - Meet Nutrient Management Requirements

Educational Objectives

- Continue to educate farmers/landowners about the benefits of nutrient management planning
- Inform farmers of NR 151 performance standards and prohibitions

Target Audiences

- Farmers/landowners - those who apply organic nutrients and/or commercial fertilizers for the purpose of crop production
- FPP participants
- Farmers and rural landowners – identified by the priority area strategy
- Farmers in the Pigeon River 9KE area

Messages

- Sound nutrient management planning and application maintains or improves farm profitability through reduced purchased fertilizer inputs
- Over application of nutrients can cause off-site environmental problems such as excess algae growth and subsequent die-off resulting in fish kills
- Legume and manure nutrient crediting and balancing the remaining nutrient application based on the current crop needs is key both economically and environmentally

Activities

- Continue direct mailings to FPP participants informing them of the state performance standards and prohibitions, BMP's that can help achieve compliance with these standards, and availability of cost-sharing through various sources
- Document that nutrient management plans are being written as a requirement of the Farmland Preservation Program
- Require nutrient management plans as companion practices for Animal Waste Management ordinance permittees
- Promote cost-sharing of nutrient management plans through the use of SWRM funds and USDA's EQIP funds
- PCD staff conduct Farmer Nutrient Management training classes
- Host a nutrient management field day in partnership with UW-Extension, NRCS, and PCD

Goal #4 - Groundwater Protection

Educational Objectives

- Raise public awareness as to the importance of groundwater protection
- Educate township officials and well owners as to the importance of periodic well testing
- Highlight groundwater protection aspects of NR 151

Target Audiences

- General public
- Town officials
- Townships residents
- Landowners with shallow soil and high bedrock

Messages

- Groundwater needs protecting to provide safe drinking water
- Groundwater, once polluted can be very difficult to clean up
- Periodic well testing is a good practice to determine the health of the local groundwater
- The PCD is willing to assist townships and their residents in well testing
- Make landowners award of the new NR151 silurian beck rock performance standards.

Activities

- Have an article in the PCD newsletter promoting groundwater awareness, protection, and silurian standards.
- Partner with local townships to have their residents' wells tested.
- Work with townships where follow-up measures are needed after well testing results are compiled.

Goal #5 - Reduce Sediment and Phosphorous Loadings from Existing Urban and Developing Areas to Surface Waters

Educational Objectives

- Educate the public and local Town Planning Boards about the need for controlled, wise growth in rural areas
- Educate homeowners on fertilizer and chemical applications
- Inform of NR 151 performance standards and implementation
- Inform landowners of sound stormwater practices

Target Audiences

- Town Planning Boards
- General Public
- Contractors/Builders

Messages

- Importance of the non-agricultural state performance standards in protecting the environment from the impacts of runoff from construction sites
- Vegetated grass buffers can be a low cost way to reduce soil loss and chemical/fertilizer runoff within WQMA's

Activities

- Use site reviews as a time to dialog with contractors/builders regarding BMP's that will help them stay in compliance with the non-agricultural state performance standards
- Offer Informational Workshops for contractors/builders on stormwater runoff
- Distribute information via our Newsletter and other handouts on proper fertilization and chemical applications
- Have PCD staff conduct events to discuss stormwater management with the students and the general public
- Work closely with Sheboygan County Highway Department to identify sites requiring compliance with TMDL Stormwater Management Rules

Chapter 9 - Funding LWRM Plan Implementation

The Sheboygan County LWRM plan will be implemented using a combination of private, local, state and federal funding. Plan goals, objectives, and timeline will be adjusted in accordance with the availability of funding opportunities. This chapter outlines the sources of revenue and proposed partnerships that will support the implementation of the LWRM plan

Local Government Sources

- Sheboygan County Land and Water Conservation Department budget

Other Local Funding Sources

- Local grants
- Individual contributions
- Volunteer hours
- Sheboygan County Conservation Association
- County Stewardship Fund
- Monsanto Endowment Fund

State Government Agencies

- Department of Agriculture, Trade and Consumer Protection (SWRM Grants)
- Department of Natural Resources (TRM), (NOD), (UNPS & SW)
- DNR Lake Planning Grants
- DNR Stewardship Funds

Federal Government Sources

- USDA Natural Resources Conservation Service- (EQIP), (GLRI), (RCPP), (WHIP), (CSP), and (ACEP)
- USDA Farm Service Agency- (CREP), (CRP), and (GRP)
- EPA - Sheboygan River AOC non-point source restoration funding
- Glacierland RC & D
- National Oceanic and Atmospheric Administration

Chapter 10 - Plan Monitoring and Evaluation

Monitoring and Evaluating the implementation progress of the LWRM Plan will occur primarily in two areas. One area will be the tracking of progress made attaining the *Annual Benchmarks* identified in the annual workplans submitted to DATCP. While ultimately the foundation of successful plan implementation may be measured by achieving the benchmarks for BMP's applied to crop land and farmstead's, a more detailed measure of success would be how well these BMP's were targeted in the Priority Areas described in this plan. Therefore, the other area of Monitoring and Evaluation will be to track progress in applying BMP's on priority areas identified in the *Priority Area Strategy* outlined in Chapter 6.

As BMP's are implemented, their location and other pertinent information will be entered into a GIS tracking system. The PCD has been using GIS to track implementation progress throughout the County and this system will be used to track BMP implementation for the next ten years. For example, before and after planning for soil loss or Phosphorus Index will be accomplished through computer models such as RUSLE II or SNAP PLUS. The reductions will then be entered into the GIS tracking system. Also, units of BMP's such as Nutrient Management plan acres or feet of waterway can be entered into the GIS system and summarized quickly whenever needed. At the end of each year this tracking system will provide a summary of benchmark units for each of the BMP's installed/implemented and their location(s). This information along with other administrative information will be used to generate annual reports to DATCP. The Annual Benchmarks identified in the LWRM plan can easily be compared to the annual report numbers.

Currently the PCD reports cost-share practice implementation on DATCP reimbursement forms and indicates on the forms which of our nine main watersheds the practice(s) was applied in. While the main watershed cost-share practice reporting will still occur, the GIS tracking system provides the PCD with the ability to track BMP implementation within even smaller subwatershed areas, such as the drainage area for a segment of a stream with a 303(d) impairment designation or high phosphorus loading TMDL sub-basin. This allows for a more detailed level of Monitoring and Evaluation for LWRM plan purposes. The PCD will use GIS tracking of BMP implementation in the Priority Areas. While some priority areas will be identified through public complaints occurring on an infrequent basis, the majority of the priority areas will be identified by their location in areas such as 303 (d) listed watersheds, TMDL subbasins, ORW/ERW watersheds. Tracking of aggregate BMP installation/implementation will serve as a good indicator of following through with the targeted approach in the Priority Area Strategy. The BMP's implemented/installed to bring farms in the Priority Areas into compliance will leverage a greater aggregate impact to the surface waters found in these areas. Greater information sharing with the NRCS and UW-Extension as to BMP units installed/implemented as well as I&E efforts targeting these Priority Areas will also be vital to getting a complete picture of conservation work accomplished in a given year.

With the above two Monitoring and Evaluation strategies in place the Sheboygan County PCD will be able to have a clear picture of how and where successful implementation of the LWRM plan is progressing on a yearly basis. These two mechanisms for monitoring will help PCD evaluate the total number of BMPs and the actual environmental impact they have.

Appendix 1

SHEBOYGAN COUNTY POPULATION

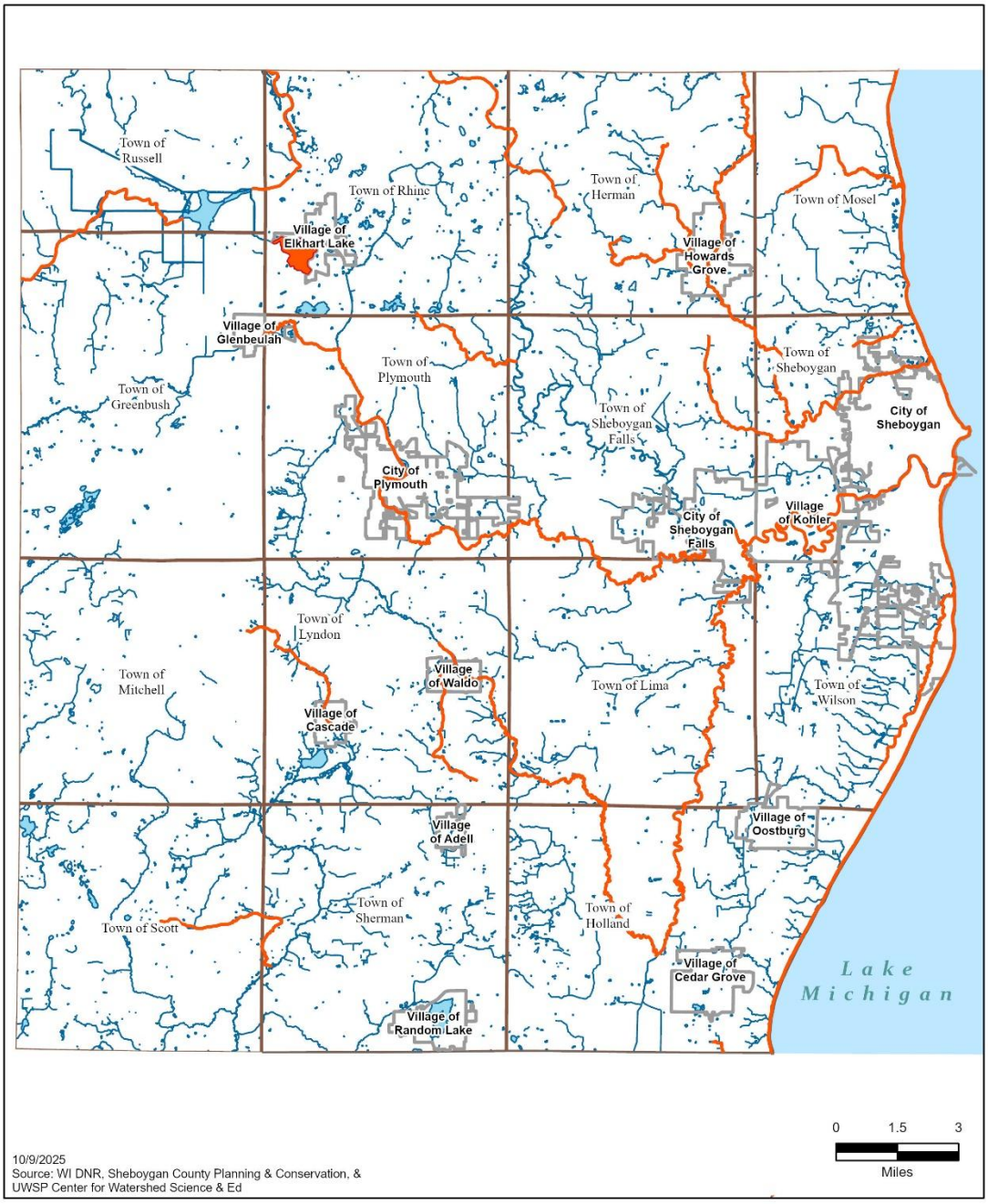
TOWNS	2000	2010	2020
Greenbush	2,619	2,565	1,903
Herman	2,044	2,151	2,162
Holland	2,360	2,239	2,273
Lima	2,948	2,982	2,956
Lyndon	1,463	1,542	1,526
Mitchell	1,286	1,304	1,900
Mosel	839	790	748
Plymouth	3,115	3,195	3,083
Rhine	2,244	2,134	2,139
Russell	399	377	384
Scott	1,804	1,836	1,764
Sheboygan	5,874	7,271	8,136
Sheboygan Falls	1,706	1,718	1,824
Sherman	1,520	1,505	1,452
Wilson	3,227	3,330	3,484
VILLAGES			
Adell	517	516	498
Cascade	681	709	722
Cedar Grove	1,887	2,113	2,101
Elkhart Lake	1,021	967	941
Glenbeulah	378	463	451
Howards Grove	2,792	3,188	3,237
Kohler	1,926	2,120	2,195
Oostburg	2,660	2,887	3,056
Random Lake	1,551	1,594	1,561
Waldo	450	503	467
CITIES			
Plymouth	7,781	8,445	8,932
Sheboygan	50,792	49,288	49,929
Sheboygan Falls	6,772	7,775	8,210
TOTAL	**112,656**	**115,507**	**118,034**

Appendix 2

LOCAL WATERBODY NAME	START MILE	END MILE	WBIC	COUNTY	WATER TYPE	POLLUTANT	IMPAIRMENT	STATUS CODE	TMDL PRIORITY
Onion River	0	31.8	51200	Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Lake Michigan	0	261.05	20	Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan	Great Lakes Shoreline	Mercury	Mercury Contaminated Fish Tissue	303d Listed	Low
Lake Michigan	0	261.05	20	Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan	Great Lakes Shoreline	PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Black River	5.99	11.01	50300	Sheboygan	River	Total Phosphorus	NA	Water Delisted	Delisted 2020
Unnamed Trib to Fourmile Creek	0	1.52	64800	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable
Sheboygan River	56.03	76.85	50700	Fond Du Lac, Sheboygan	River	Total Phosphorus	High Phosphorus Levels	TMDL Approved	Not Applicable
Blue Harbor Beach, Lake Michigan	0	0.14	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2018
Sucker Creek	0	10.19	50100	Ozaukee, Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Unnamed Tributary To Onion River Through Waldo Impoundment	0	0.4	52600	Sheboygan	River	Sediment/Total Suspended Solids	NA	Water Delisted	Delisted 2008
Mullet River	17.76	23.67	53400	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable
Pigeon River	0	18.1	62300	Manitowoc, Sheboygan	River	Total Phosphorus	High Phosphorus Levels	TMDL Approved	Not Applicable
KK Road Beach, Lake Michigan	0	0.56	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2014
Un. Trib. To Onion River via Waldo Impoundment	0.4	4.13	52600	Sheboygan	River	Sediment/Total Suspended Solids	Degraded Habitat	TMDL Approved	Not Applicable
Van Ess Road Beach	0	0.49	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2012
Deland Park Beach, Lake Michigan	0	0.58	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2010
General King Beach, Lake Michigan	0	0.29	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2010

Amsterdam Beach, Lake Michigan	0	0.33	20	Sheboygan	Great Lakes Beach	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low
Kohler Andrae Beach, Lake Michigan	0	3.71	20	Sheboygan	Great Lakes Beach	E. coli	NA	Water Delisted	Delisted 2018
Willow Creek (Greendale)	1.95	3.8	50740	Sheboygan	River	Unknown Pollutant	NA	Water Delisted	Delisted 2018
Jetzers Creek Tributary	0	3.53	62600	Sheboygan	River	Unknown Pollutant	Degraded Biological Community	303d Listed	Low
Grandma Creek	0	4.82	62400	Sheboygan	River	Total Phosphorus	Low DO	TMDL Approved	Not Applicable
Grandma Creek	0	4.82	62400	Sheboygan	River	Sediment/Total Suspended Solids	Low DO, Degraded Habitat	TMDL Development	High
Sheboygan River	0	13.58	50700	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable
Sheboygan River	0	13.58	50700	Sheboygan	River	PCBs	PCBs Contaminated Fish Tissue	303d Listed	Low
Nichols Creek (N. B. Milw R)	23.48	27.8	27100	Sheboygan	River	Unknown Pollutant	Elevated Water Temperature	303d Listed	Low
Sheboygan River	13.58	33.91	50700	Sheboygan	River	PCBs	NA	Water Delisted	Delisted 2008
Sheboygan River	33.91	54.1	50700	Calumet, Manitowoc, Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Milwaukee River North Branch	0	23.5	27100	Ozaukee, Sheboygan, Washington	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Mullet River	0	17.76	53400	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable
Barr Creek	0	3.38	50200	Sheboygan	River	Total Phosphorus	High Phosphorus Levels	TMDL Approved	Not Applicable
Otter Creek	0	4	56400	Sheboygan	River	E. coli	Recreational Restrictions - Pathogens	303d Listed	Low
Fisher Creek	0	4.4	62500	Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Beechwood Lake			8000	Sheboygan	Lake	Unknown Pollutant	Degraded Aquatic Vegetation	303d Listed	Low
Long Lake			38700	Fond Du Lac, Sheboygan	Lake	Mercury	NA	Water Delisted	Delisted 2020
Black River	0	5.99	50300	Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Elkhart Lake			59300	Sheboygan	Lake	Mercury	Mercury Contaminated Fish Tissue	303d Listed	Low

Stony Creek	3.1	13.6	28700	Fond Du Lac, Sheboygan, Washington	River	Total Phosphorus	High Phosphorus Levels	TMDL Approved	Not Applicable
Silver Creek	0	10.5	29900	Ozaukee, Sheboygan	River	Total Phosphorus	Degraded Biological Community	TMDL Approved	Not Applicable
Mink Creek	0	14.49	30600	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable
Batavia Creek	0	4.9	31400	Sheboygan	River	Unknown Pollutant	NA	Pollutant Removed	Delisted 2024
Batavia Creek	0	4.9	31400	Sheboygan	River	Total Phosphorus	High Phosphorus Levels	TMDL Approved	Not Applicable
Adell Tributary	0	4.96	33000	Sheboygan	River	Sediment/Total Suspended Solids	Degraded Habitat	TMDL Approved	Not Applicable
Crystal Lake			45200	Sheboygan	Lake	Mercury	NA	Water Delisted	Delisted 2020
Jetzers Lake			62700	Sheboygan	Lake	Unknown Pollutant	Degraded Aquatic Vegetation	303d Listed	Low
Sevenmile Creek	0	5	65100	Sheboygan	River	Total Phosphorus	Impairment Unknown	TMDL Approved	Not Applicable



10/9/2025
Source: WI DNR, Sheboygan County Planning & Conservation, & UWSP Center for Watershed Science & Ed

Sheboygan County, Wisconsin

303(d) Impaired Waters

Sheboygan County, WI

Appendix 3

Many agencies and organizations are involved in protecting land and water resources in Sheboygan County. Each agency has its own particular mission and leadership, but has a common goal to preserve and protect the environment for future generations. Cooperation is imperative to guarantee successful plan implementation. Many of the agencies below are included in our work plan and will be relied upon for technical support, funding, cooperation and guidance.

Partner Agencies

The agencies listed below are entrusted with protecting and managing our natural resources. All agencies and private groups will be invited to participate in annual reviews and subsequent revisions of this plan.

Sheboygan County Planning, Resources, Agriculture and Extension Committee

Natural Resources Conservation Service

Farm Service Agency

University of Wisconsin Extension

Department of Agriculture, Trade and Consumer Protection

Department of Natural Resources

Sheboygan County Planning and Conservation Department

U.S. Fish and Wildlife Service

Great Lakes Nonpoint Abatement Coalition

Private Voluntary Organizations

The Nature Conservancy

Sheboygan County Lakes Association

Trout Unlimited-Sheboygan County Chapter

Sheboygan County Conservation Association

Glacial Lakes Conservancy

Sheboygan River Basin Partnership

Appendix 4

COST-SHARE FUNDING SOURCE TABLE AND NR151 CODE GUIDANCE

The following will help you in signing cost-share contracts and completing reimbursement requests. It consists of two parts:
(1) A table listing all conservation practices cost-shareable under Ch. ATCP 50, the source of funds you must use for cost-sharing the specific practice, and the units of measurement to quantify each cost-shared practice, and
(2) Guidance for completing the column on the reimbursement form related to the NR 151 compliance.

PRACTICE or ACTIVITY	ATCP 50 Reference	Fund Source	Units of Measurement
Land taken out of agricultural production Cost-share contract must list the new or existing farm practice that takes land out of production	50.08(3)	Bond	Acres
Riparian land taken out of agricultural production (CREP Equivalent) (Cost-share contract must list the new or existing farm practice that takes land out of production)	50.08(4), 50.42(1)	Bond	Acres
Manure storage systems	50.62	Bond	Number
Manure storage closure	50.63	Bond	Number
Barnyard runoff control systems (specify components including heavy use area protection)	50.64	Bond	Number
Access road	50.65	Bond	Linear Ft.
Trails and walkways	50.66	Bond	Linear Ft.
Contour farming	50.67	SEG1	Acres
Cover and green manure crop	50.68	SEG1	Acres
Critical area stabilization	50.69	Bond	Number
Diversions	50.70	Bond	Linear Ft.
Field windbreaks	50.71	Bond	Linear Ft.
Filter strips	50.72	Bond	Acres
Feed storage runoff control systems	50.705	Bond	Number
Grade stabilization structures	50.73	Bond	Number

Livestock fencing	50.75	Bond	Linear Ft.
Livestock watering facilities	50.76	Bond	Number
Milking center waste control systems	50.77	Bond	Number
Nutrient management for cropland or pasture	50.78	SEG1	Acres

Appendix 5

Summary — **Sheboygan County** — 8/6/2025

UWEX Private Well Project — 1993-2024 — 12:07 PM

Total Number Samples: 2850 Sample Dates: 3/15/1993 to 12/2/2024

Reason for Test		Last Test (yr)		Problems		Treatment Sys		Depth (ft) Well		Casing	Water	Well Diam (in)	
Curious	47%	Never	6%	Color	10%	Softener	79%	... 25	<1%	<1%	5%	... 3	<1%
Problems	3%	< 1	3%	Taste	13%	R/O	5%	26-50	<1%	1%	5%	4 - 9	58%
Regular	3%	1 - 2	4%	Odor	20%	Carb Filt	5%	51-100	7%	9%	6%	10 - 18	<1%
Required	<1%	2 - 5	13%	Corr	3%	Neutral	<1%	101-150	10%	10%	2%	18 +	<1%
Bac Retest	<1%	5 - 10	14%	Health	<1%	Part Filt	9%	151-200	13%	4%	1%		
Disinfect	<1%	10 +	19%	Other	7%	Iron Filt	14%	201 ...	11%	2%	<1%		
Infant...	<1%	Unk	26%	None	41%	Other	3%						
Other	3%												

pH		
... 5.00	0	0 %
5.01 - 6.00	0	0 %
6.01 - 7.00	10	<1 %
7.01 - 8.00	785	29 %
8.01 - 9.00	1951	71 %
9.01 ...	1	<1 %

Avg: 8.01 for 2747 Samples

Conductivity (umhos/cm)		
... 100	13	<1 %
101 - 250	25	<1 %
251 - 500	923	34 %
501 - 750	1176	43 %
751 - 1000	423	15 %
1001 ...	184	7 %

Avg: 625 for 2744 Samples

Alkalinity (mg/L CaCO3)		
... 50	15	<1 %
51 - 100	73	3 %
101 - 200	697	25 %
201 - 300	997	36 %
301 - 400	918	33 %
401 ...	46	2 %

Avg: 255 for 2746 Samples

Total Hardness (mg/L CaCO3)		
... 50	347	13 %
51 - 100	69	3 %
101 - 200	500	18 %
201 - 300	644	23 %
301 - 400	773	28 %
401 ...	414	15 %

Avg: 267 for 2747 Samples

Nitrate (mg/L as N)		
None Detected	1955	71 %
... 2.0	380	14 %
2.1 - 5.0	204	7 %
5.1 - 10.0	147	5 %
10.1 - 20.0	51	2 %
20.1 ...	15	<1 %

Avg: 1.1 for 2752 Samples

Chloride (mg/L)		
None Detected	51	2 %
... 10	1525	56 %
11 - 50	803	29 %
51 - 100	231	8 %
101 - 200	100	4 %
201 ...	37	1 %

Avg: 25 for 2747 Samples

Saturation Index		
... -3.0	8	<1 %
-2.9 - -2.0	9	<1 %
-1.9 - -1.0	169	6 %
-0.9 - 0.0	197	7 %
0.1 - 1.0	2002	73 %
1.1 ...	355	13 %

Avg: 0.5 for 2740 Samples

Coliform Bacteria		
Bact Samples	2783	
Pos Bacteria	509	18 %

E. coli Bacteria		
E. coli Samples	557	
Pos E. coli	22	4 %

Atrazine Screen* (ppb)		
None Detected	682	93 %
... 0.3	43	6 %
0.4 - 1.0	8	1 %
1.1 - 2.0	0	0 %
2.1 - 3.0	0	0 %
3.1 ...	0	0 %

Avg: <0.1 for 733 Samples

*Triazine screen before June 2008, then Diaminochlorotriazine (DACT).

Summary
UWEX Private Well Project

Sheboygan County
1993-2024

8/6/2025
12:07 PM

Total Number Samples: 2850 Sample Dates: 3/15/1993 to 12/2/2024

Arsenic (mg/L)		
None Detected	540	56 %
... 0.010	344	36 %
0.011 - 0.050	78	8 %
0.051 - 0.100	0	0 %
0.101 - 0.150	0	0 %
0.151 ...	0	0 %
Avg: <0.005 for	962 Samples	

Calcium (mg/L)		
None Detected	70	7 %
... 25	404	39 %
26 - 50	246	24 %
51 - 75	160	15 %
76 - 100	127	12 %
101 ...	28	3 %
Avg: 35.2 for	1035 Samples	

Copper (mg/L)		
None Detected	178	17 %
... 0.130	643	62 %
0.131 - 0.500	165	16 %
0.501 - 0.900	33	3 %
0.901 - 1.300	8	<1 %
1.301 ...	10	<1 %
Avg: 0.114 for	1037 Samples	

Iron (mg/L)		
None Detected	179	17 %
... 0.300	620	60 %
0.301 - 1.000	144	14 %
1.001 - 2.000	56	5 %
2.001 - 5.000	31	3 %
5.001 ...	10	<1 %
Avg: 0.389 for	1040 Samples	

Potassium (mg/L)		
None Detected	35	3 %
... 20	994	96 %
21 - 40	2	<1 %
41 - 60	1	<1 %
61 - 80	0	0 %
81 ...	3	<1 %
Avg: 2 for	1035 Samples	

Magnesium (mg/L)		
None Detected	110	11 %
... 20	439	42 %
21 - 40	276	27 %
41 - 60	188	18 %
61 - 80	19	2 %
81 ...	3	<1 %
Avg: 20.6 for	1035 Samples	

Manganese (mg/L)		
None Detected	366	35 %
... 0.050	615	59 %
0.051 - 0.300	47	5 %
0.301 - 0.500	1	<1 %
0.501 - 1.000	5	<1 %
1.001 ...	1	<1 %
Avg: 0.017 for	1035 Samples	

Sodium (mg/L)		
None Detected	1	<1 %
... 25	395	38 %
26 - 50	202	19 %
51 - 75	40	4 %
76 - 100	46	4 %
101 ...	352	34 %
Avg: 73.9 for	1036 Samples	

Lead (mg/L)		
None Detected	845	81 %
... 0.015	169	16 %
0.016 - 0.025	11	1 %
0.026 - 0.050	14	1 %
0.051 - 0.100	4	<1 %
0.101 ...	5	<1 %
Avg: 0.004 for	1048 Samples	

Sulfate (mg/L)		
None Detected	12	1 %
...25	383	40 %
26 - 50	258	27 %
51 - 75	119	12 %
76 - 100	77	8 %
101 ...	111	12 %
Avg: 59.4 for	960 Samples	

Zinc (mg/L)		
None Detected	84	8 %
... 0.100	683	66 %
0.101 - 0.500	196	19 %
0.501 - 1.000	38	4 %
1.001 - 5.000	29	3 %
5.001 ...	5	<1 %
Avg: 0.182 for	1035 Samples	

Appendix 6

303(d) Waters: This list identifies waters which are not meeting water quality standards, including both water quality criteria for specific substances or the designated uses. It is used as the basis for development of Total Maximum Daily Loads (TMDLs) under the provisions of Section 303(d)(1)(C) of the Clean Water Act, U.S. Environmental Protection Agency (EPA) EPA requires that the DNR update its list ever two years. Also called List of Impaired Waters. In Sheboygan County Crystal Lake and Elkhart Lake (mercury identified), Otter Creek, Sheboygan River, Grandma Creek, Adell Tributary, and Onion River Tributary are on the 303(d) list of impaired waters.

Planning, Resources, Agriculture and Extension Committee (PRAECom): The portion of county government empowered, by Chapter 92 of the Wisconsin Statutes, to conserve and protect the county's soil, water and related natural resources.

Animal and Plant Health Inspection Service (APHIS): Agency of the United States Department of Agriculture responsible for protecting animal health, animal welfare, and plant health.

Animal Unit (AU): Single animal types or combination of animal types, which are fed, confined, maintained or stabled in an animal feeding operation. 1000 pounds of livestock live weight is equivalent to one AU.

ATCP 50: The chapter of Wisconsin's Administrative Code that implements the Land and Water Resource Management Program as described in Chapter 92 of the State Statutes. It identifies those conservation practices that may be used to meet performance standards.

Best Management Practices (BMPs): The most effective practice or combination of practices for reducing nonpoint source pollution to acceptable levels.

Conservation Plan: A record of decisions and intentions made by land users regarding the conservation of the soil, water and related natural resources of a particular unit of land.

Conservation Reserve Program (CRP): A provision of the federal Farm Bill that takes eligible cropland out of production and puts it into grass or tree cover for 10 – 15 years.

Conservation Reserve Enhancement Program (CREP): Program partnership between USDA, DATCP and Sheboygan County that enhances the conservation payments of the regular CRP.

Department of Agriculture, Trade and Consumer Protection (DATCP): The state agency responsible for establishing statewide soil and water conservation policies and administering the state's soil and water conservation programs. The DATCP administers state cost-sharing funds for a variety of Land Conservation Committee operations, including support for staff, materials and conservation practices.

Department of Natural Resources (DNR): The state agency responsible for managing state owned lands and protecting public waters. DNR also administers programs to regulate, guide and assist Land Conservation Committees, Land Conservation Departments and individual land users in managing land, water, fish, and wildlife. The DNR administers state cost-sharing funds for priority watershed projects, Targeted Runoff Management (TRM) grants, Notice of Discharge (NOD) grants, and Urban Nonpoint Source Construction and Planning grants.

Elkhart Lake Improvement Association (ELIA): A lake association dedicated to maintaining the health and beauty of the waters and shoreland of Elkhart Lake.

Environmental Protection Agency (EPA): The agency of the federal government responsible for carrying out the nation's pollution control laws. It provides technical and financial assistance to reduce and control air, water and land pollution.

Environmental Quality Incentives Program (EQIP): Federal program to provide technical and cost-sharing assistance to landowners for conservation practices that provide water quality protection.

Environmental Vulnerability Assessment for Agricultural Lands (EVAAL): A toolset developed by the Wisconsin DNR to assist watershed managers in prioritizing areas within a watershed which may be vulnerable to water erosion (and thus increased nutrient export) and thus may contribute to downstream surface water quality problems.

Ephemeral Erosion: Channeled, concentrated erosion that results in gullies.

Erosion Vulnerability Assessment for Agricultural Lands (EVAAL): A toolset developed by the Wisconsin DNR to assist watershed managers in prioritizing areas within a watershed which may be vulnerable to water erosion (and thus increased nutrient export) and thus may contribute to downstream surface water quality problems.

Farm Service Agency (FSA): USDA agency that administers agricultural assistance programs including price supports, production controls and conservation cost sharing.

Fish Consumption Advisory (FCA): Food and Drug Administration imposed limit or restriction on fish consumption based on elevated toxicity levels – generally mercury or PCBs.

Geographic Information System (GIS): A computerized system of maps and layers of data about land including soils, land cover, topography, field boundaries, roads and streams. Such geographically based data layers improve the ability to analyze complex data for decision-making.

Glacial Lakes Conservancy (GLC): A land trust that offers conservation options, organizational support, and technical guidance to landowners and organizations in Sheboygan, Manitowoc, Kewaunee, Calumet and Fond du Lac Counties.

Grassland Reserve Program (GRP): Voluntary program that helps landowners and operators restore and protect grassland, including rangeland, and pastureland, and certain other lands, while maintaining the areas as grazing lands.

Impaired Waters List: Same as the 303(d) list.

Land and Water Resource Management Plan (LWRMP): A locally developed and implemented multi-year strategic plan with an emphasis on partnerships and program integration. The plan includes a resource assessment, identifies the applicable performance standards and related control of pollution from nonpoint sources, identifies a multiyear description of planned activities, established a progress tracking system, and describes an approach for coordinating information and implementation programs with other local, state and federal agencies, communities and organization (ATCP 50.12).

Milwaukee Metropolitan Sewerage District (MMSD): MMSD is a regional government agency that provides water reclamation and flood management services for about 1.1 million people in 28 communities in the Greater Milwaukee Area. It serves 411 square miles that cover all, or segments of, six watersheds. Established by state law, the District is governed by 11 commissioners with taxing authority

Natural Resources Conservation Service (NRCS): Part of USDA, NRCS provides soil survey, conservation planning and technical assistance to local land users.

Nonpoint Source Pollution (NPS): Pollution from many small or diffuse urban and rural sources. Livestock waste finding its way into a stream and causing water pollution is an example of nonpoint source pollution.

Nonpoint Source Pollution Abatement Program: A DNR water quality program under Chapters 120 and § 281, Wisconsin Statutes that provides technical assistance and cost sharing to landowners to develop and maintain management practices to prevent or reduce nonpoint source water pollution designated watersheds.

NR 151: DNR's administrative code that established runoff pollution performance standards for non-agricultural facilities and transportation facilities and performance standards and performance standards and prohibitions for agricultural facilities and practices designed to meet water quality standards.

Nutrient Management Plan: A nutrient management plan accounts for all activities on the farm and in individual fields that affect nutrient needs and losses during one crop rotation. Nutrient management planning is based on soil type and slope, crop rotations and residual nutrients, and takes both manure and commercial fertilizers into account. Because the plan includes all these elements, it is also a way to minimize the risk of contaminating ground and surface waters due to runoff.

ORW/ERW: DNR classifies streams as Outstanding Resource Waters (ORW) and Exceptional Resource Waters (ERW) as listed in NR 102.10 and NR 102.11. ORW waters have excellent water quality and high-quality fisheries and do not receive wastewater discharges. ERW waters have excellent water quality and valued fisheries but may already receive wastewater discharges.

Planning & Conservation Department (PCD): Many comprehensive plans are maintained through the office, a number of ordinances are administered in the office, the County's recreational facilities are managed by the office, a number of programs are managed in the office, and finally, in any given year a number of grants or special programs are administered through the office.

Process wastewater: Wastewater from the production area directly or indirectly used in the operation of animal feeding operation. Common examples are milkhouse wastewater, feed storage and runoff

RUSLE2: Revised Universal Soil Loss Equation, Version 2 – equates various factors to determine erosion rates on cropland for sheet and rill erosion.

Sheboygan River Basin Partnership (SRBP): A non-profit organization working to improve water quality and preserve our natural resources within the Sheboygan River Basin.

Soil and Water Resource Management Program (SWRM): DATCP program that provides counties with funds to hire and support Land Conservation Department staff and to assist land users in implementing DATCP conservation programs (ATCP 50).

Soil Loss Tolerance (T): Erosion rate in tons per acre per year at which a soil could maintain productivity.

Soil Survey: NRCS conducts the National Cooperative Soil Survey and publishes soil survey reports. Soils data is designed to evaluate the potential of the soil and management needed for maximum food and fiber production.

The Nature Conservancy (TNC): An international organization dedicated to conserving the lands and waters on which all life depends.

United States Department of Agriculture (USDA): Branch of federal government with responsibilities in the areas of food production, inspection, and storage. Agencies with resource conservation programs and responsibilities include FSA, NRCS and Forest Service.

University of Wisconsin-Extension (UW-EX): The outreach of the University of Wisconsin system responsible for formal and informal educational programs throughout the state.

Waters of the State: Those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, water courses, drainage systems and other surface water or groundwater, natural or artificial, public or private within the state or under its jurisdiction, except those waters which are entirely confined and retained completely upon the property of a person.

Water Quality Management Area (WQMA): Areas within 300 feet of any stream found on U.S. Geological Survey 7.5 Minute Quadrangle maps and within 1,000 feet of a lake ordinary high water mark. Also included are sites susceptible to groundwater contamination or that have a direct conduit to groundwater.

Watershed: The geographic area from which a particular river, stream or water body receives its water supply.

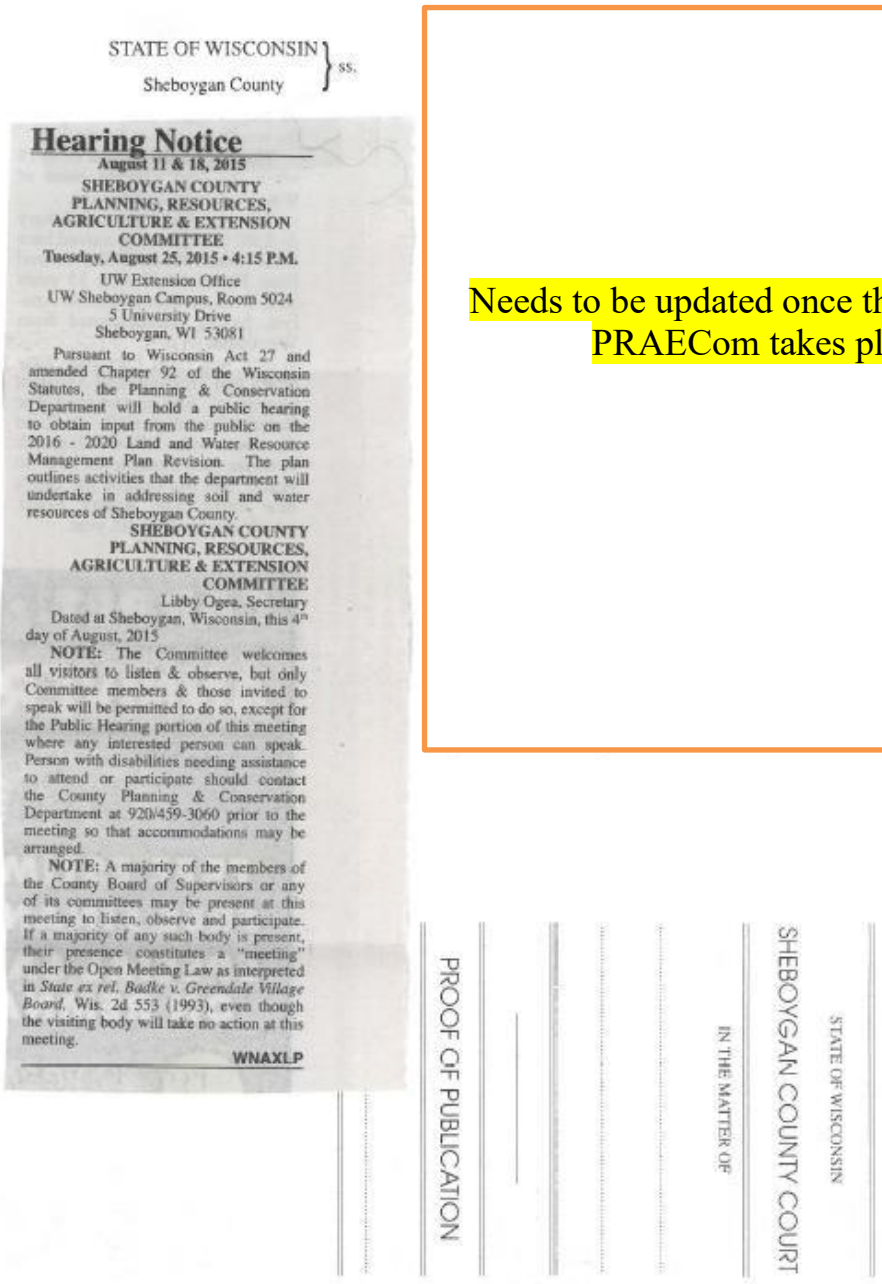
Wetland Reserve Program (WRP): A provision of the federal Farm Bill that compensates landowners or voluntarily restoring and protecting wetland on their property.

Wildlife Habitat Incentives Programs (WHIP): Federal program to help improve wildlife habitat on private lands.

Appendix 7

Outstanding and Exceptional Waters Report: County: Sheboygan										
WADRS ID	Official Waterbody Name	Local Waterbody Name	WBIC	ORW/ ERW	ORW/ ERW ID	Start Mile	End Mile	Mileage/ Acreage	Code Reference	Watersheds
10088	Chambers Creek	Chambers Creek	32200	ERW	1099	0	2.9	2.9	102.11(1)(a)	MI05
10085	Gooseville Creek	Gooseville Creek	32000	ERW	1098	0	0.88	0.88	102.11(1)(a)	MI05
18020	La Budde Creek	Labudde Creek	54800	ERW	1389	3.05	6.97	3.92	102.11(1)(a)	SH05
11362	Millhome Creek	Millhome Creek	57200	ERW	1408	0	1.97	1.97	102.11(1)(a)	SH03
10070	North Branch Milwaukee River	Nichols Creek (N. B. Milw R)	27100	ORW	804	23.48	27.8	4.32	102.10(1)(d)24	MI05
11374	Onion River	Ben Nutt Creek	51200	ERW	1319	31.81	41.88	10.07	102.11(1)(d)33	SH04
903341	Schuett Creek	Schuett Creek	57150	ERW	1405	0	0.63	0.63	102.11(1)(a)	SH03

Appendix 8



STATE OF WISCONSIN } ss.
Sheboygan County }

Hearing Notice
August 11 & 18, 2015

SHEBOYGAN COUNTY PLANNING, RESOURCES, AGRICULTURE & EXTENSION COMMITTEE
Tuesday, August 25, 2015 • 4:15 P.M.

UW Extension Office
UW Sheboygan Campus, Room 5024
5 University Drive
Sheboygan, WI 53081

Pursuant to Wisconsin Act 27 and amended Chapter 92 of the Wisconsin Statutes, the Planning & Conservation Department will hold a public hearing to obtain input from the public on the 2016 - 2020 Land and Water Resource Management Plan Revision. The plan outlines activities that the department will undertake in addressing soil and water resources of Sheboygan County.

SHEBOYGAN COUNTY PLANNING, RESOURCES, AGRICULTURE & EXTENSION COMMITTEE
Libby Ogea, Secretary

Dated at Sheboygan, Wisconsin, this 4th day of August, 2015

NOTE: The Committee welcomes all visitors to listen & observe, but only Committee members & those invited to speak will be permitted to do so, except for the Public Hearing portion of this meeting where any interested person can speak. Person with disabilities needing assistance to attend or participate should contact the County Planning & Conservation Department at 920/459-3060 prior to the meeting so that accommodations may be arranged.

NOTE: A majority of the members of the County Board of Supervisors or any of its committees may be present at this meeting to listen, observe and participate. If a majority of any such body is present, their presence constitutes a "meeting" under the Open Meeting Law as interpreted in *State ex rel. Badke v. Greendale Village Board*, Wis. 2d 553 (1993), even though the visiting body will take no action at this meeting.

WNAXLP

PROOF OF PUBLICATION

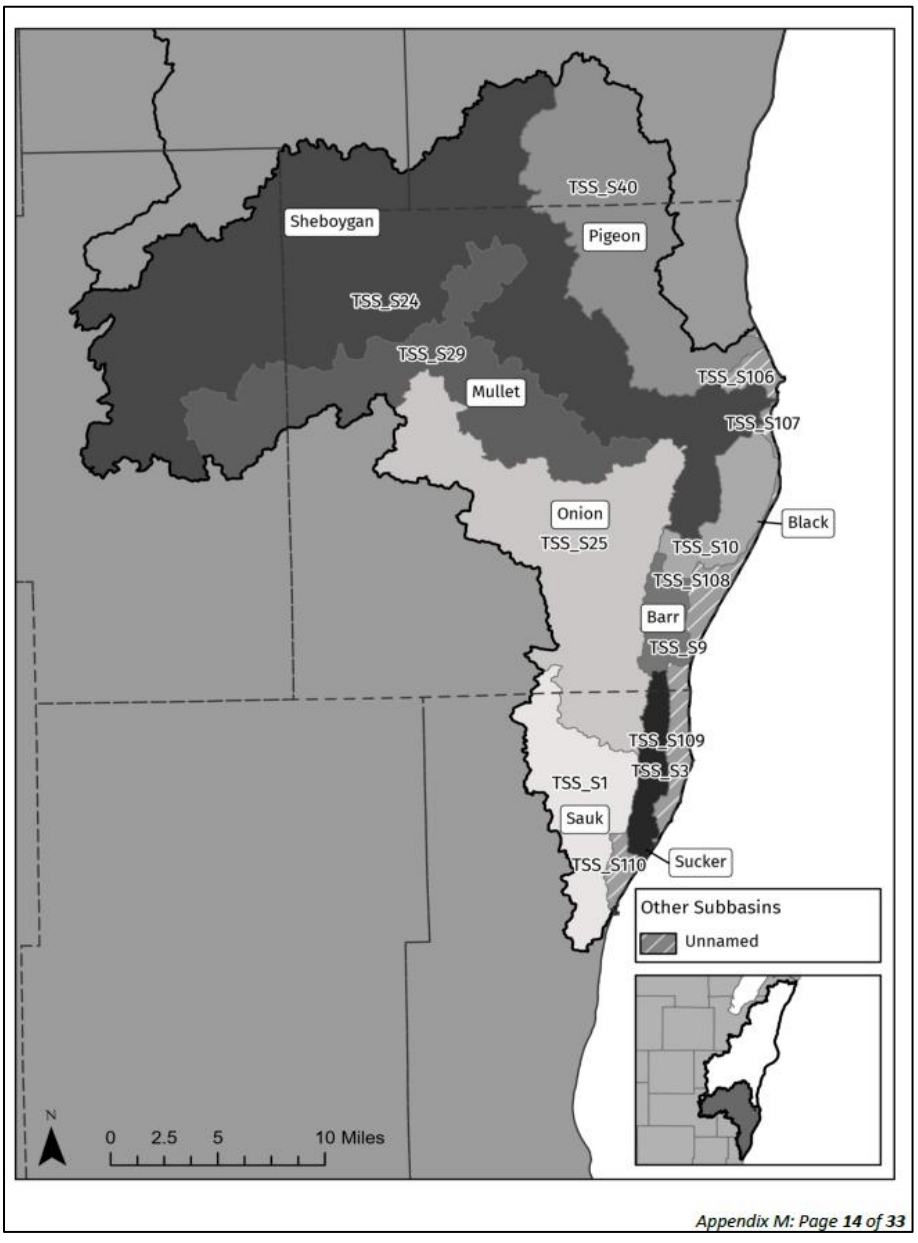
IN THE MATTER OF

SHEBOYGAN COUNTY COURT

STATE OF WISCONSIN

Needs to be updated once the hearing at PRAECom takes place.

Appendix 9


TSS_S40
Sheboygan
Pigeon
TSS_S24
TSS_S29
Mullet
TSS_S106
TSS_S107
Onion
TSS_S25
Black
TSS_S10
TSS_S108
Barr
TSS_S9
TSS_S109
TSS_S3
TSS_S1
Sauk
TSS_S110
Sucker
Other Subbasins
Unnamed
N
0 2.5 5 10 Miles
Appendix M: Page 14 of 33

5.2.3 Sheboygan Region

Table 11 Sheboygan region total suspended solids edge-of-field targets summary table (green)

TMDL Subbasin	Baseline TSS Loss (ton/ac/yr)	TMDL % Reduction (TSS)	Target TSS Load (ton/ac/yr)
TSS_S1	4.0	57.2%	1.7
TSS_S3	3.8	67.7%	1.2
TSS_S9	3.2	42.7%	1.9
TSS_S10	3.4	0.0%	3.4
TSS_S24	4.5	6.8%	4.2
TSS_S25	3.9	57.4%	1.7
TSS_S29	4.4	27.7%	3.2
TSS_S40	3.7	55.9%	1.6
TSS_S106	1.6	0.0%	1.6
TSS_S108	4.0	7.5%	3.7
TSS_S109	3.7	53.5%	1.7
TSS_S110	3.1	49.2%	1.6