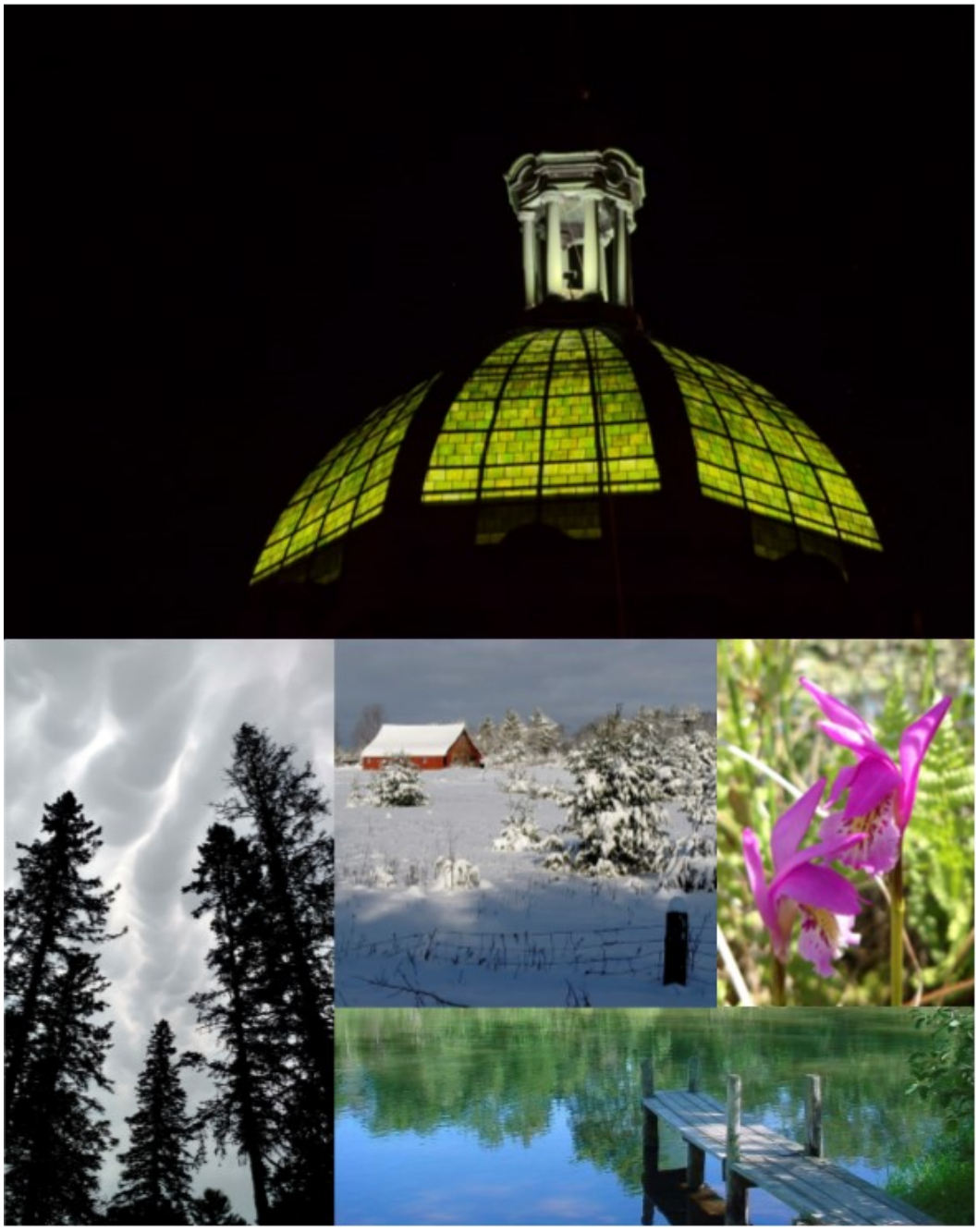
Oneida County
Land and Water Resource Management Plan
2020-2029



Prepared by: North Central Wisconsin Regional Planning Commission

ACKNOWLEDGEMENTS

Oneida County's Land and Water Resource Management Plan was developed with the following residents and staff. Special thanks are extended to the following people:

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Alan VanRaalte, Vice Chair	Jim Winkler	Kim Simac (FSA Representative)

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Alan VanRaalte	CUW Committee Vice Chair
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Beckie Gaskill	Lakeland Times
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July 2019

This plan was prepared under the direction of the Oneida County Conservation and UW-Extension Education Committee by the North Central Wisconsin Regional Planning Commission.

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PLAN SUMMARY
Chapter 1

Introduction
The Oneida County Land and Water Resource Management (LWRM) plan was developed to assist the county's citizens and natural resource agencies with managing and protecting the land and water resources throughout Oneida County.

The goals and objectives in this plan will help resolve local natural resource problems as identified by the Resource Advisory Group. These goals and objectives will also provide the basis for various local, state, and federal agencies to coordinate implementation of their programs of land and water management.

Public Participation
The Resource Advisory Group was assembled in August, 2018 with the Oneida County Conservation & UW-Extension Education (CUW) Committee's appointment of a diverse group of individuals to the group. Resource professionals and citizens participated in group discussions to provide feedback on priority issues for the Plan. All Resource Advisory Group members are listed with their representation on the back of this plan's cover.

In August, 2018, the Regional DNR Office was contacted, and the Water Basin Leader was officially invited to participate in the Resource Advisory Group.

The first Resource Advisory Group meeting on October 30, 2018 began with resource professionals presenting resource assessments of Oneida County. The Resource Advisory Group then broke into three sub-groups to discuss the presentations and began work toward developing new or updating current goals and objectives for the Plan. Each group provided a summary of their discussion. LWCD and NCWRPC staff assimilated all the data and developed five goals with objectives to present at the next meeting.

The second Resource Advisory Group meeting on December 18, 2018. Staff presented revised goals. Both goals and objectives were discussed to verify that all big topics were covered and appropriately articulated.

The following goals were prioritized by the Advisory Group at meeting #2:
Note: The first goal is the highest priority. (Goal _) = Original listing order on worksheet.

#1 (Goal 2): **Protect and enhance wetlands and surface water quality.**
#2 (Goal 5): **Increase our community's level of natural resource knowledge and inspire stewardship.**
#3 (Goal 3): **Protect groundwater quality.**
#4 (Goal 1): **Protect native species, habitats, and landscapes from invasive species.**
#5 (Goal 4): **Protect, enhance, and restore soil resources.**

Both LWCD and NCWRPC believed creating a 5-year Work Plan would be beneficial *before* revising the 2012-2018 LWRM Plan. Additionally, the 5-year Work Plan would be included within the 2020-2029 LWRM Plan. With that in mind, LWCD consulted with individual departments about Work Plan activities, created the 5-year Work Plan, and finally built the 2020-2029 Plan around the Work Plan.

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Public Hearing
The Public Hearing was held at 6:00 p.m. on Wednesday, June 5, 2019, and a quorum of the CUW Committee was present to receive the comments. Three people spoke at the public hearing, and the Lac du Flambeau Tribe sent written comments. Public comment is documented in Attachment F. Also see Attachment B for the public hearing notice.

June 24, 2019 – The CUW Committee approved the LWRM Plan for submission to the Wisconsin Land and Water Board (LWCB).

August 6, 2019 – LWRM Plan was presented to the LWCB.

August 2019 – LWRM Plan was adopted by the Oneida County Board of Supervisors.

December 2019 – DATCP sends letter adopting the LWRM Plan following LWCB recommendations.

Special Resource Concerns
This section was created to identify important emerging issues (Climate Change, Invasive Species, Insect Decline, and Metallic Mining) that the Resource Advisory Group and the CUW Committee identified and wished to include in a 10-yr LWRM plan.

Current Land Use Issues

Oneida County has 1,129 lakes covering 68,447 acres, and over 830 miles of streams, of which 192 miles are classified as trout streams. Overall, the general water quality is good; however, eutrophication is an issue. During the summer, shallow water areas have algae blooms. There are two point sources of water discharge on the Wisconsin River that may affect water quality, although water quality has not deteriorated sufficiently to be listed on the 303(d) Impaired Waters list from the DNR. These point sources originate from Ahlstrom-Munksjö (formerly Expera) paper mill in Rhinelander, and Rhinelander Wastewater Treatment Plant. The amount of outstanding and exceptional resource waters are increasing in Oneida County.

Outdoor recreation is critical to the health of the Oneida County economy. Tourism brings people "Up North;" and seasonal and retirement home ownership props up the local tax base; all of which is dependent upon healthy forested landscapes and clean water.

Performance Standards and Prohibitions Implementation Strategy

Agricultural Performance Standards

A voluntary educational approach will continue to be used to achieve erosion control standards in Oneida County. One-on-one contacts with landowners and operators who request technical assistance is the most common method used to promote soil conservation in Oneida County. The average Universal Soil Loss Equation (USLE) soil loss estimates ranged from 6.4 tons per acre per year to less than 1 ton per acre per year. The average for the County is approximately 0.6 tons per acre per year in 1999.

Conservation plans, which plan individual crop fields to the tolerable soil loss rate or "T", were prepared for participants in the Farmland Preservation Program (FPP). Participation is through voluntary 10-25 year individual agreements, due to no exclusive agricultural zoning in Oneida County. The Oneida County Land and Water Conservation Department manages agreements for the Farmland Preservation Program. One farm is enrolled.

Non-Agricultural Performance Standards

In Oneida County construction site erosion and uncontrolled stormwater runoff from land disturbing and land development activities can have significant adverse impacts upon local water resources; the health, safety and general welfare of the community; and can diminish the public enjoyment of the natural resources.

Major 2012-2018 Work Plan Accomplishments

Goal 1: Slow the spread of invasive species.

- County has funded a full-time Aquatic Invasive Species Coordinator since 2012.

Goal 2: Protect shoreland areas. And **Goal 3:** Restore shorelands.

- Provided assistance to P&Z as needed for mitigation requirements.
- Implemented a number of cost-share projects totaling over $258,916 in DATCP funding from 2012 through 2018. See page 37.

Goal 4: Reduce sources of nonpoint source pollution.

- Provided contractor workshops on construction site erosion control.
- Working with P&Z to develop a CAFO ordinance to reduce non-point source water pollution.

Goal 5: Educate the public on groundwater quality.

- Offered cost sharing and technical assistance for well abandonment.

Goal 6: Protect lake ecosystems from recreational pressure degradation.

- Regular lake association presentations on a variety of topics occurred.

Goal 7: Improve forest silviculture for multiple uses.

- As written, this goal was not successfully met by LWCD. This goal will be revised for the 2020-2024 Work Plan to better reflect the role of LWCD in forest management.

Goal 8: Promote on-line resource information distribution.

- In 2015, LWCD created and currently maintains www.oclw.org, a stand-alone department website which updates viewers on a variety of topics.

Goal 9: Minimize impacts on our natural resources from mining activities.

- County staff position elimination greatly reduced technical assistance for a few years; but department reorganization has now enhanced staff capabilities regarding reclamation of abandoned mining sites.

Goal 10: Reduce wildlife conflicts.

- From 2012 to 2018, LWCD provided assistance and education to 90 landowners providing wildlife abatement and claims services in the amount of $111,101.10 for wild deer, bear, geese, elk & turkey.

Priority Farm Strategy

Agricultural land management is usually the focus of Land and Water Resource Management plans because soil erosion is an important resource concern. Although Oneida County's largest crop is timber; with recreation driving the economy through second home purchases, a priority farm strategy is still in place.

A priority farm is one that is found to be non-compliant with the State prohibitions and performance standards. The **priority farm strategy** will rank priority farms based on geographical location in water quality management areas, and highly erodible lands draining to outstanding and exceptional resource waters. LWCD will offer technical and financial assistance to bring the landowner into compliance. If needed, enforcement procedures will be enacted (described in Chapter 7).

2020-2029 Work Plan

The Work Plan is organized with the most important goals first. Objectives and activities are also prioritized from highest to lowest.

Goal 1: Protect and enhance wetlands and surface water quality.

- Protect and restore shoreland buffers.
- Administer cost share program.
- Encourage conservation and restoration of wetland function.
- Promote a watershed approach to protect and restore water quality.
- Reduce erosion caused by road stream crossings (e.g. culverts).
- Reduce urban non-point source pollution.
- Maintain county mining ordinance(s).
- Reduce agricultural non-point source pollution.
- Promote nutrient management planning.
- Properly manage animal waste.

Goal 2: Increase our community's level of natural resource knowledge and inspire stewardship.

- Provide youth education.
- Build capacity.

- Provide workshops and training opportunities.
- Promote citizen science.
- Participate in professional development.
- Provide news and updates.
- Increase awareness of sensitive areas and species.
- Increase forestry outreach.

Goal 3: Protect groundwater quality.
- Properly maintain septic systems.
- Properly maintain wells.
- Prevent hazardous waste from contaminating groundwater.

Goal 4: Protect native species, habitats, and landscapes from invasive species.
- Continue providing education and outreach.
- Continue early detection and rapid response of invasive species.
- Control and manage invasive species.
- Restore native species and habitat after invasives are removed.
- Build capacity through cooperation with other groups.

Goal 5: Protect, enhance, and restore soil resources.
- Promote healthy croplands and pastures.
- Reclaim abandoned mining sites.
- Preserve productive farmland.

Regulations

Oneida County has reviewed local, state, and federal regulations relating to land and water resource management for implementing this plan. The regulations that cover land or water resources are briefly described in Chapter 7.

Monitoring and Evaluation

The Oneida County LWRM plan is intended to be a working document. The 5-year Work Plan will be reviewed annually by the Conservation and UW-Extension Education Committee to track progress in accomplishing the goals and actions of the plan. Further methods that will monitor and evaluate the Work Plan and specific resource topics are described in Chapter 8. Coordination among many agencies will be necessary to effectively complete Work Plan actions.

Conclusion

The Oneida County LWRM Plan provides a framework for local/state/federal conservation program implementation efforts. It is a working document that will utilize existing partnerships to achieve the goals and objectives identified within this Plan. The availability of funding for staff and cost sharing will determine the progress in achieving the goals and objectives of this plan. Ultimately, implementation of this Plan will protect and improve the valuable natural resources of Oneida County as well as maintain the vision of preserving Oneida County's abundant rural character.

PLAN DEVELOPMENT AND PUBLIC PARTICIPATION
Chapter 2

Introduction

Locally led natural resource management is an important concept in Wisconsin land and water conservation. State and federal agencies support the idea that local residents are best suited to identify and provide solutions for natural resource problems within a county. At the root of the county Land and Water Resource Management (LWRM) plan is the concept of cooperation among local residents and all natural resource agencies operating within the county. The Department of Agriculture, Trade, and Consumer Protection (DATCP) requires that each county Land and Water Conservation Department (LWCD) locally create a Land and Water Resource Management (LWRM) plan (Ch.92, WI Statutes) to coordinate LWCD activities. The Oneida County Conservation & UW-Extension Education (CUW) Committee contracted with North Central Wisconsin Regional Planning Commission (NCWRPC) to assist with facilitating the LWRM planning process.

Chapter ATCP 50 implements Wisconsin's soil and water resource management program under Ch. 92, WI Statutes. The Department of Agriculture, Trade and Consumer Protection administers the Soil and Water Resource Management Program (SWRM) (Ch. ATCP 50) in cooperation with county land conservation committees, the Land and Water Conservation Board, the Department of Natural Resources, and other state and federal agencies. The program has the purposes specified under Sec. 92.14(2), WI Statutes.

Why create a LWRM Plan?

The LWRM Plan serves as a long-term strategic plan for the Land and Water Conservation Department (LWCD), county residents, and partnering state and federal natural resource agencies. The plan directs conservation efforts within the county and assists in forming annual work plans for the LWCD and agencies. It is also used to support applications for conservation grant funds, including annual state grants for Oneida County staff and support costs.

At a minimum, an LWRM plan must describe:

- Water quality and soil erosion conditions throughout the county;
- Water quality objectives;
- Key water quality and soil erosion problem areas;
- Conservation practices needed to address water quality and erosion problems;
- A plan to identify priority farms and other sites within the county;
- Strategies to encourage voluntary implementation of conservation practices;
- State and local regulations that the county will use to implement the plan;
- Compliance procedures that apply if enforcement actions occur;
- Multi-year goals & objectives for the LWCD to implement conservation practices and achieve compliance with state runoff management performance standards; and

- How the LWCD will measure and monitor progress on the goals & objectives, provide information and education, and coordinate its conservation program with state and federal agencies.

Plan Development with Public Participation

The focus of this plan's development process was to identify and prioritize land and water resource issues to develop goals and objectives that address those issues. The goals and objectives coordinate various agencies' efforts to conserve the land and water natural resources in the County.

A good start to any planning process is finding out what currently exists. NCWRPC and LWCD staff collected land and water resource inventories from a variety of sources.

In August 2018, the Regional DNR Office was contacted (Ruth King in Spooner), and the Water Basin Leader was officially invited to participate in the Resource Advisory Group (email on file with LWCD).

The citizens on the Resource Advisory Group were a diverse group that were appointed by the Oneida County Conservation & UW-Extension Education (CUW) Committee to provide priority issue feedback for this plan. Resource professionals from a variety of departments and agencies were asked to present information and participate in group discussion. All Resource Advisory Group members are listed with their representation on the back of this plan's cover.

Meeting #1 of the Resource Advisory Group was held on October 30, 2018 and began with resource professionals presenting resource assessments of Oneida County. The Resource Advisory Group then broke into three sub-groups to discuss the presentations and began work toward developing new or updating current goals and objectives for the Plan. Each group provided a summary of their discussion. LWCD and NCWRPC staff assimilated all the data and developed five goals with objectives to present at the next meeting. Ruth King, DNR Northern Region Water Resources Management Specialist, was unable to attend but provided comments via e-mail that were also incorporated.

Meeting #1 notes from the three tables of Resource Advisory Group members are in **Attachment A**.

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Meeting #2 of the Resource Advisory Group occurred on December 18, 2018. LWCD and NCWRPC staff presented revised goals and potential objectives for everyone to critique and revise. Goals were prioritized from 1 to 5, with "1" being the top priority, and tallied in front of everyone at the meeting.

Here are the prioritized goals:
(#) is the new goal number, and "Goal #" was how it was provided on the sheet.

(1) Goal 2: **Protect and enhance wetlands and surface water quality.**

(2) Goal 5: **Increase our community's level of natural resource knowledge and inspire stewardship.**

(3) Goal 3: **Protect groundwater quality.**

(4) Goal 1: **Protect native species, habitats, and landscapes from invasive species.**

(5) Goal 4: **Protect, enhance, and restore soil resources.**

****

On February 11, 2019, the Oneida County Conservation & UW-Extension Education (CUW) Committee received the prioritized list of goals, and staff generated objectives under each goal. The CUW Committee was tasked with 1) prioritizing the objectives, and 2) considering if the Resource Advisory Group's prioritized goals needed any re-ordering. CUW approved the Resource Advisory Group's list, and discussed topics to verify that forestry was covered enough in the goals and objectives.

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RESOURCE ASSESSMENT
Chapter 3

A. Special Resource Concerns

Climate Change

Already the impacts of climate change to the landscapes, economy and people of Wisconsin are felt with routine flooding occurring throughout Wisconsin, and less ice leading to increased evaporation on lakes.

Wisconsin's average annual amount of precipitation is not expected to change much, but our summers are expected to become drier as warmer temperatures increase evaporation and seasonal precipitation patterns shift. Winter precipitation is projected to increase by as much as 30%, while summer precipitation may decline by as much as 20%. As the amount of water vapor in the atmosphere increases with global temperatures and warmer ocean waters, the air will become more humid. When it does rain or snow, it's likely to be in larger amounts.

All of these changes mean we can expect an increase in extreme heat waves and more frequent droughts in summer. At the same time, severe thunderstorms may double in frequency, increasing the amounts of damage caused by heavy rainfall, hail and strong tornadoes. The winter season is likely to be punctuated with increasingly frequent mid-winter thaws, freezing rains, ice storms, and flooding. We may expect heavier snowfalls, especially over the next few decades, yet the average length of time the ground stays snow covered and our lakes remain ice covered will shrink with each passing decade

If conditions become warmer and drier as projected, the current range, density, and type of forest species could be reduced and eventually replaced by plant communities more suitable for that climate. The acreage of Wisconsin's northern forests of hemlock, spruce and fir, as well as birch and jack pine, are likely to shrink and perhaps disappear from the landscape altogether. These species will likely lose their ability to reproduce and compete with more suitable trees. Southern oaks and hickories are expected to migrate north, but their dispersal may depend on traits of individual tree species, such as seed dispersal methods. The ability of each species to adapt to changing climates also depends on human influences, including development, roads, and fragmentation.

Sport fishing will change as the range of warm-water fish expands northward, while cold-water species such as trout, and even some cool-water fish like walleye and perch, disappear from southern parts of the state. Ice fishing may become extremely limited. Many small streams may dry up, and wetland size and function could be diminished. All fish could face other threats including increased potential for oxygen depletion in waterways and possible increased pollution-related impacts from shallower water and storm-induced heavy erosion. Additional losses of wetland and

forest habitat and food resources for migratory songbirds, shorebirds, and waterfowl will affect Wisconsin's multimillion-dollar bird watching and hunting industries.

> This publication is intended for local government officials and others interested in investigating the connections between climate change and land use. We present an introduction to climate change at the global and state level, examine infrastructure and economic implications, and show how natural resources may change through this current century. We wrap up by looking at state level policies and potential tradeoffs and community level mitigation and adaptation strategies.
>
> **Source:** Wisconsin Land Use Megatrends: Climate Change. Center for Land Use Education, UW-Stevens Point, UW-Extension. Summer 2009.

Forest ecosystems across the Northwoods will face direct and indirect impacts from a changing climate over the 21st century. This assessment evaluates the vulnerability of forest ecosystems in the Laurentian Mixed Forest Province of northern Wisconsin and western Upper Michigan under a range of future climates.

Model projections suggest that northern boreal species such as black spruce, quaking aspen, and paper birch may fare worse under future conditions, but other species may benefit from projected changes in climate. Upland spruce-fir, lowland conifers, aspen-birch, lowland-riparian hardwoods, and red pine forests were determined to be the most vulnerable ecosystems. White pine and oak forests were perceived as less vulnerable to projected changes in climate. These projected changes in climate and the associated impacts and vulnerabilities will have important implications for economically valuable timber species, forest dependent wildlife and plants, recreation, and long-term natural resource planning.

> **Source:** Forest Ecosystem Vulnerability Assessment and Synthesis for Northern Wisconsin and Western Upper Michigan: A Report from the Northwoods Climate Change Response Framework Project. U.S. Forest Service, Northern Research Station, General Technical Report NRS-136, August 2014.

Invasive Species

Invasive species have a wide range of adverse effects on Wisconsin's environment and citizens including negative impacts to natural resources, costs to control damaging species, alteration of aesthetic values, and harm to wildlife and human health. Unfortunately, the costs to manage and control invasive species once they are established represent money that could be spent on something else, or not spent at all, if invasions were prevented in the first place. The following are examples from recent years, including estimates of the economic scope of what is at stake

Aquatic invasive species such as the zebra mussel financially impact industries that use water for cooling and municipalities that rely on lakes for drinking water. Zebra and quagga mussels cost the U.S. economy up to $1 billion annually. The $7 billion Great Lakes fishery has been adversely impacted by pathogens including viral hemorrhagic septicemia (VHS) and invasive fish species like white perch, round goby, and sea lamprey. Costs from invasive species that originate in the ballast water of ocean-going vessels visiting the Great Lakes have been estimated at $138 million annually, but could be as much as $800 million annually.

Invasive species, including weeds, pests, and diseases, also negatively impact Wisconsin's $59 billion agriculture industry (350,000 jobs) by increasing production costs and reducing crop yields. For example, Canada thistle, a major agricultural pest, costs tens of millions of dollars in direct crop losses annually and additional millions in control costs.

Wisconsin's forestry industry, a $28 billion industry (66,000 jobs), is impacted by oak wilt, gypsy moth, and more recently, the emerald ash borer and beech bark disease, which damage and kill trees. Costs to respond to the emerald ash borer in our region, including treatment, removal, and replacement of millions of ash trees, has a current annual effect of $280.5 million on municipal budgets, a figure that does not include the value of trees on private property. This insect also negatively affects electrical utility budgets with the removal of dead trees that could fall onto utility lines.

Natural regrowth of tree seedlings, especially of the sugar maple, our state tree, is being limited by invasive plants and non-native earthworms. Over the long term, this will change the composition of our forests and the economic benefits they provide.

Terrestrial invasive species, such as garlic mustard and wild parsnip, invade and degrade our forests and grasslands and reduce enjoyment of our trails and parks. Eurasian water milfoil and other invasive aquatic plants harm our lakes and rivers. Chemical herbicides used to control Eurasian water milfoil can cost from $200 to $2,000 per acre. Mechanical control methods range from $300 to $600 per acre and must be repeated all summer.

Outdoor recreation is one of the top reasons visitors come to our state. In 2016, Wisconsin visitor numbers reached 107.7 million and visitor spending created an estimated $20 billion impact on the state's economy. As invasive species continue to change our environment and negatively impact the use and beauty of our lakes, forests, and hiking trails, Wisconsin may lose valuable visitor spending.

Source: Invasive Species Interim Performance Report. Prepared by the DNR's Invasive Species Team. July 1, 2016--June 30, 2017.

Insect Decline

The biodiversity of insects on planet Earth is staggering, as many as 30 million species. Insects pollinate our food, recycle dead things, supply fibers and raw materials to humans, provide food for birds, mammals, and fish, and help to reduce each other. Insects make up the base of our food chain and are critical to ecosystems and the health of our planet. Only a small fraction of insects are not beneficial to humans.

Alarmingly, insect populations have been plummeting. *Lepidoptera* (moths and butterflies) have declined by 53%. The iconic Monarch butterfly is threatened by habitat loss, pesticides, and climate change. In the last 22 years, their numbers have decreased by 68%, with the Western population especially at risk of extinction. Native bee populations have also declined dramatically. Historically, the Rusty-patched

bumble bee was found throughout Wisconsin. In 2017, it became the first federally-listed endangered bumble bee species, and is now known to exist only in small pockets in western and southern Wisconsin.

The reasons behind insect population declines are both varied and complex. Habitat loss, climate change, pesticides, and pathogens top the list. As varied as the reasons are behind the widespread declines, the methods we need to halt and reverse declines are as complex. It is easy to say, restore habitat, but as we experience a changing climate, what is the best way? It is easy to say, use less pesticides, but how do we 're-design' our agricultural fields to be productive *and* insect-friendly?

What is known is that changes, both small and large, must occur. In order to help reverse the current loss of insect biodiversity, how we grow our food, build our homes, and live our lives, will need to be examined. Small changes that take place in our backyards, along lake shores, in the city, and in our farm fields, can benefit insects. Activities such as reducing light pollution, installing buffer strips, minimizing pesticide use, planting a pollinator garden, and letting our properties be a little more wild, all start at the local level, but have a much larger landscape-level effect.

Sources: Francisco Sanchez-Bayo, Kris A.G. Wyckhuys. "Worldwide decline of the entomofauna: A review of its drivers." Biological Conservation, Vol. 232, April 2019, pp. 8-27.

"Saving the Monarch Butterfly", Center for Biological Diversity, www.biologicaldiversity.org/species/invertebrates/monarch_butterfly/

Metallic Mining

Preface

In August of 2012, the Oneida County Board established a policy that states it would not pursue leasing County property for metallic mining. In response to 2017 Act 134, Oneida County re-wrote its metallic mining ordinance. The County Board ran an advisory referendum during the November 6, 2018 general election asking the electorate whether metallic mining on County owned lands in the Town of Lynne should be allowed. The electorate responded by a nearly 2-1 margin that metallic mining should not be considered. With regard to metallic mining in Oneida County, it is the intent of the LWCD and the Conservation Committee to establish and oversee goals and objectives that protect water, land, air, and quality of life for Oneida County to the fullest extent provided under law. (OC)

Introduction

Activities and processes that occur at metallic mining sites have the potential to affect the quantity and quality of groundwater surrounding the project area. At most surface or underground mines, groundwater will flow into excavated areas and must then be pumped out in order to dewater places where mining activities are intended to take place. Depending on the site's local hydrology, mining activities may affect groundwater quantity by lowering the water table elevation, which in turn may impact nearby lake levels and base flow in streams. Additionally, groundwater quality may be affected by the handling, storage, and disposal of mining wastes; the mine excavation itself; the water-table drawdown; the wastewater discharge; and the storage and

handling of chemicals, reagents, and fuels at the mine site. (WDNR)

As explicitly stated in Wisconsin's mining laws and regulations, the contamination of groundwater quality must be prevented through compliance with strict performance based standards. (WDNR)

While there have been improvements to mining practices, significant environmental risks remain. Water pollution from mine waste rock (tailings) may need to be managed for decades after closure. These impacts depend on a variety of factors, such as the susceptibility to groundwater contamination, the composition of bedrock being mined, the type of technology employed; the skill, knowledge and environmental commitment of the company; and our ability to monitor and enforce compliance with environmental regulations.

One of the problems is that high-grade ore has decreased, so low-grade ore is being mined. With the mining of low-grade ore comes a much greater tonnage of waste rock, and much smaller pieces that provide a higher surface area to potentially come in contact with water.

Types of Potential Soil and Water Contamination

1. Acid rock drainage

Many waste rocks contain sulfide minerals associated with metals, such as lead, zinc, copper, silver, or cadmium. An important sulfide mineral common in waste rock is pyrite, iron sulfide. When pyrite is exposed to air and water, it undergoes a chemical reaction called “oxidation.” The oxidation process produces acidic conditions that can inhibit plant growth at the surface of a waste pile.

If water infiltrates into pyrite-laden waste rock, the resulting oxidation can acidify the water, enabling it to dissolve metals such as copper, zinc, and silver. This production of acidic water, is commonly referred to as “acid rock drainage.” If acid rock drainage is not prevented from occurring, and if it is left uncontrolled, the resulting acidic and metal-bearing water may drain into and contaminate streams or migrate into the local groundwater, therefore inhibiting its use for drinking water or irrigation.

2. Waste rock (tailings) erosion

Waste rock (also called tailings) disposal areas are either located as close to the mine as possible or as close to the processing plant as possible to minimize haulage costs. If not properly managed, erosion of waste rock into surface waters will most likely oxidize pyrite in the rock, leading to higher concentrations of acid and leached heavy metals into the stream bed and water, because the whole surface of this waste rock is now exposed within running water. When this occurs, the metals are considered to be “bioavailable” in the environment. Bioavailable metals are easily absorbed by plants and animals that are still alive within the acidic water, causing additional detrimental effects.

Seepage from waste rock can be prevented or minimized by locating tailings basins on level topography, and placing a flexible, low-permeable barrier, such as compressed

clay, at the bottom of the impoundment before waste rock disposal. Many pre-1970s tailings impoundments did not have such barriers. The infiltration of surface water into tailings can be prevented by using reclamation methods that facilitate water runoff before contacting the waste rock rather than ponding on tailings piles. If not prevented or controlled, the acidic and metal-bearing waters from tailings can impact stream habitats and groundwater.

Direct Sources:
(OC) – Oneida County's CUW Committee. Material provided after June 5, 2019 public hearing.

(DNR) – Department of Natural Resources. "Protecting Groundwater at Metallic Mining Sites." Mining Information Sheet. Revised: February 2003. Accessed online: June 6, 2019.

Additional Sources:
Minnesota Department of Natural Resources. "Taconite – Digging into Minnesota Minerals." Accessed online: June 13, 2019.

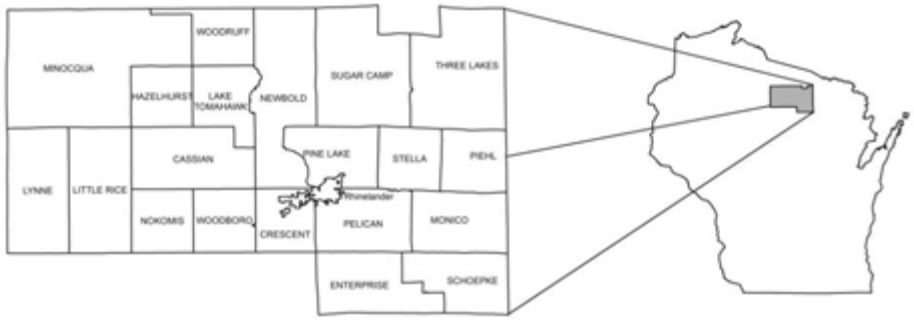
American Geosciences Institute. "How can metal mining impact the environment?" Accessed online: June 13, 2019.

B. Location & Demographics

Location of Oneida County

Oneida County is located in the north central part of the state and is well known for its physical and natural qualities by those who live and vacation here. This area was once part of a vast forest region covering much of the Great Lakes area. Today, Oneida County serves as a popular vacation area and community center of the north. The physical resources are a key factor in the economic structure of the area evidenced by the number of paper and wood industry factories. The County is easily accessible by both highway and airport. Oneida County is adjacent to Forest, Langlade, Lincoln, Price, and Vilas Counties, and is comprised of twenty towns and one city (Figure 1).

Figure 1 Location



Demographics of Oneida County

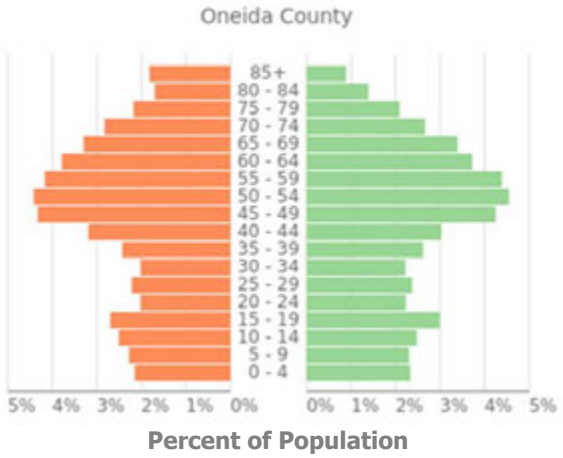
Population

The population is projected to increase between 2015 and 2030 (Table 1). As of 2015, Oneida County's population estimate was 36,232, conducted by the Wisconsin Department of Administration – the same agency that created the 2013 population projections in Table 1.

Table 1	Oneida County Population Projections			
Year	**2015**	**2020**	**2025**	**2030**
Population	35,825	37,265	38,905	39,905

Source: WI DOA, 2013

Figure 2 2010 Population Pyramid



Data Source: 2010 US Census
Image Source: Applied Population Lab

Figure 2 illustrates the county's 2010 population by age and gender. Oneida County's largest population cohorts, for both males and females, are the 45-49, 50-54, and 55-59 year olds. Median age in the County increased from 48.0 years old in 2010 to 50.3 years old in 2015. The population is almost equally balanced male and female until about 80 years and older when females outnumber males, as is expected due to females' naturally longer life expectancy.

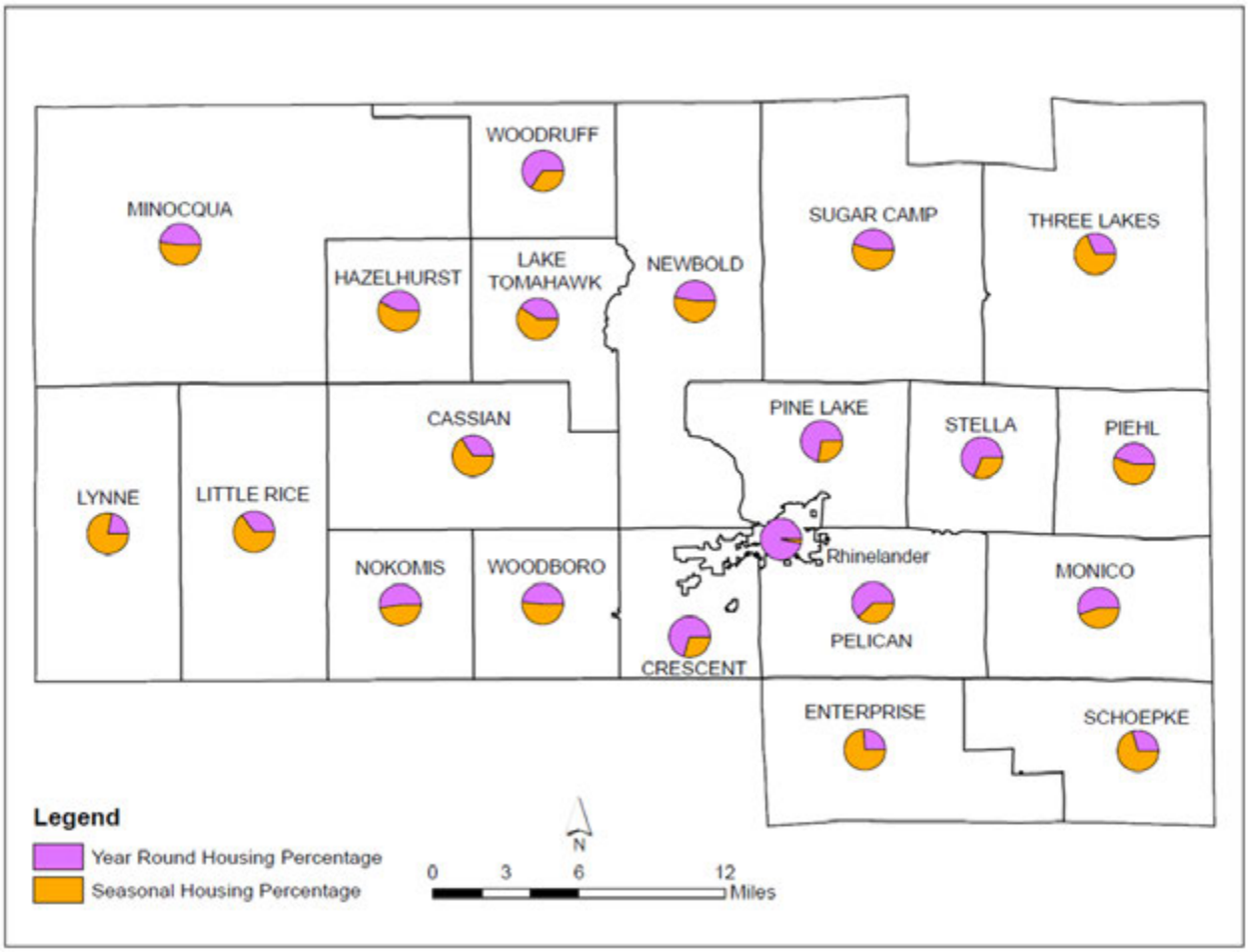
Housing

Figure 3 illustrates the county's permanent and seasonal housing in 2016. Homes that are used on a seasonal basis are a significant part of the housing stock in the county (45%), much more than the level for the State (7.1%). Only in four towns (Crescent, Pelican, Pine Lake, and Stella), three of which are adjacent to Rhinelander, are seasonal dwellings about a third or less of the housing stock. In six towns (Cassian, Enterprise, Little Rice, Lynne, Schoepke, and Three Lakes), seasonal dwellings are at least 60% of all housing units, and in five of the remaining towns (Crescent 29.6%, Pelican 37.2%, Pine Lake 28%, Stella 31.4%, and Woodruff 34.8%), they are less than 40% of the total.

The trend over the last 20 years has been for seasonal home owners to retire in Oneida County, thus becoming permanent residents in their former "cottages." New permanent and seasonal homes are being built too. Both of these trends are projected to continue.

Source: "US Census 2016, American Community Survey", U.S. Census Bureau
https://www.census.gov/programs-surveys/acs

Figure 3 Permanent and Seasonal Housing, 2016



Source: U.S. Census, 2016 ACS

Outdoor Recreation and the Oneida County Economy

Analysis by Myles Alexander, Oneida County UW-Extension

Outdoor recreation is critical to the health of the Oneida County economy.

Tourism: In 2017, visitors to Oneida County spent $229,848,781 according to the Wisconsin Department of Tourism. They spent it at restaurants, hotels, retail establishments, and other local businesses that provided 2,208 jobs and over $52 million in wage income. Visitors are drawn to the lakes and woods in all seasons for the full range of outdoor recreational activities. Data from 2017 visitor surveys suggests tourists are also interested in the growing number and variety of good restaurants. The Northwoods draws visitors to Oneida County. Businesses then provide the changing mix of goods and services visitors expect. Tourist spending in Oneida County grew over 3.6% from 2016 to 2017.

Seasonal and Retirement Home Ownership: As mentioned earlier the 2016 American Community Survey determined 45% of homes in Oneida County are utilized on a seasonal basis. Cottage renovation and expansion, and new construction adds to the number of year-round homes. A 2016 analysis of property values in Oneida County show waterfront properties are 76% of total assessed residential value. The popularity of second and retirement homes in Oneida County is largely due to the appeal of the outdoor environment. Seasonal residents and retirees appreciate the variety of outdoor activities available at their doorstep.

Tourism and second home ownership are critical to the Oneida County economy. Both depend on the quality and availability of outdoor recreational activities and a scenic Northwoods aesthetic.

C. Land Use

Oneida County was once part of a vast forest region covering much of the Great Lakes area. Today, Oneida County is 82% covered with second growth forest, and 2.3% covered in agricultural land. Ever since trains have carried out logs, this area has served as a popular vacation destination. The establishment of paper and wood industries in the county attests to the physical and natural resources of the region. See Figure 1 for the general location of Oneida County.

Commercial, industrial, and residential development is anticipated to need about 1,200 acres of land every five years from 2010 through 2030. Agricultural demand will remain stable over that period, so no additional land is expected to be added, except in the production of cranberries.

Brief descriptions of the major land uses (Map 1) and their trends in Oneida County follow:

Agriculture

Agriculture in Oneida County has a small amount of land at just over two percent. This agricultural land is spread throughout the County, mostly in the Towns of Cassian, Crescent, Hazelhurst, Nokomis, Schoepke, Stella, Sugar Camp, and Three Lakes.

Growing potatoes and cranberries are two of the main agricultural enterprises in Oneida County. Additional enterprises include beef production, Christmas tree growing, and maple syrup production.

Current trends in Oneida County show that potato production will continue as it has for over 50 years, centered around the Town of Sugar Camp. Potato development is supported by the Rhinelander Agricultural Research Station, also known as the UW Lelah Starks Potato Breeding Farm, located in the Town of Cassian, and two commercial seed potato research farms operated by Frito-Lay, one in the Town of Stella and the other in the Town of Three Lakes. Sowinski Farms has a seed potato farm in the Town of Stella. All of the machinery, repair services, growing inputs, and crop storage necessary for potato production are available in the Rhinelander area and the Towns of Stella up through Three Lakes in Oneida County. Potato storage exists and is projected to continue in the Town of Sugar Camp into the foreseeable future. All potato processing is projected to continue outside of Oneida County.

Cranberries are grown in the Towns of Newbold, Three Lakes, Cassian, and Stella, with most of the machinery, inputs, crop storage, and processing originating in Wood County. Oneida County projects that cranberry production will increase wherever beds can be developed. With much of the county having a high water table, many places throughout the county are suitable for new bogs.

Forage was the crop with the largest acreage, which decreased by 7.3% over the period (Table 2), and cut Christmas trees decreased by 12.7%. There was significant growth in berry production, which includes cranberries. Table 2 provides historical data on crop production in Oneida County.

Table 2 Oneida County Cropland by Crop Type (acres)

Crop	2002	2007	2012	2002-2012 % Change	2002-2012 Net Change
Forage	3,801	4,705	3,525	-7.3%	-276
Potatoes	1,985	1,400	D	NA	NA
Berries	890	835	1,000	12.4%	110
Cut Christmas trees	408	255	356	-12.7%	-52
TOTAL	8,742	7,195			

Source: USDA-NASS, 2002, 2007, & 2012
D = Withheld to avoid disclosing data for individual farms. Oats were withheld in 2007 & 2012.

Table 3 provides census data regarding the total amount of farmland and the size of farms in the county and state. Between 1997 and 2007, the amount of land in farms remained almost constant, gaining only 136 acres, but in the intervening years increasing by 11,970 acres in 2002 and then going back down. The most consistent pattern is reduction in the average size of farms by 34%.

A brief description of soils and their limitations for cropland and pasture is described under "Geology & Soils" in the Land Resources section of this chapter.

Table 3	Oneida County Farmland (acres)							
	Land in Farms (acres)				Average Farm Size (acres)			
	1997	2002	2007	2012	1997	2002	2007	2012
Oneida County	39,036	51,006	39,172	34,926	334	279	219	233
State	14,900,205	15,741,552	15,190,804	14,568,926	227	204	194	209

Source: Census of Agriculture, 1997, 2002, 2007, & 2012

Forestry

Oneida County is characterized by well-developed public and private forests with a mixture of hardwoods and conifer stands. In 2006, there were 574,494 acres of forestlands. By 2009, about 82% of the county (650,155 acres) was forestlands. About 20% of the county is owned by the forest industry.

As of 2018, under the Forest Crop Law (FCL) and Managed Forest Law (MFL), there are about 147,700 acres open to the public, and about 57,200 acres closed to the public. *The public shall review official records to determine what uses are allowed on open parcels based upon if they are FCL or MFL before using those parcels.*

The Northern Highlands American Legion State Forest contains 34% of forestland in Oneida County. Twelve percent of forestland is managed by the Oneida County Forestry Department, and another 21% of forestland is owned by Oneida County, school districts, local municipalities, Board of Commissioners of Public Lands, and USDA-NFS (Map 3).

Residential Development

Most of the residential development occurs around lakes throughout the county (76% of total residential assessed value). These homes have their own wells and septic systems. Large urban development also exists in the City of Rhinelander and around the downtown Minocqua area. Rhinelander, downtown Three Lakes, and downtown Minocqua have sewer, water, and natural gas service.

Over the last roughly twenty-five years there have been increases in the number of housing units in the County. In 1990, there were 25,173 housing units; in 2010 there were 30,125 housing units; and by 2017, there were 30,723 housing units in the County; an increase from 1990 of 22%.

Housing will continue to be needed throughout the county as the population continues to increase and the average household size decreases.

Commercial & Industrial Development

Commercial and industrial development in Oneida County is a relatively small land use, and projected employment growth will not use much additional land.

These three industries have the largest share of jobs in Oneida County: Trade, Transportation, Utilities; Education & Health; Leisure & Hospitality. Together, these industry sectors accounted for 63.6% of jobs in Oneida County in 2016.

The bigger challenge to expansion of the commercial and industrial development in Oneida County is not the availability of land, but the availability of workers of all skill levels.

D. Water Resources

Surface Water

Oneida County has 1,129 lakes covering 68,447 acres, and over 830 miles of streams, of which 192 miles are classified as trout streams. Overall, the general water quality is good; however, eutrophication is an issue. During the summer, shallow water areas have algae blooms. There are two point sources of water discharge on the Wisconsin River that may affect water quality, although water quality has not deteriorated sufficiently to be listed on the 303(d) Impaired Waters list from the DNR. These point sources originate from Ahlstrom-Munksjö (formerly Expera) paper mill in Rhinelander, and Rhinelander Wastewater Treatment Plant.

The largest body of water is the Willow Flowage, an impoundment and a drainage lake, covering 6,306 acres. Most of the lakes are spring lakes or seepage lakes. Lake Tomahawk is the largest natural lake, which covers 3,627 acres. The deepest lake is Clear Lake, which is 100 feet deep.

The Wisconsin River flows through the center of the county in the Towns of Crescent and Newbold, and the City of Rhinelander, which along with its tributaries drain most of the county. The most prominent of these tributaries are the Pelican River in the eastern part of the county and the Tomahawk River in the west. The Wolf River flows through the far southeast corner of the county, and the Flambeau River drains the far northwest corner.

Surface water is an important resource to Oneida County and is threatened by both point and nonpoint source pollution. Nonpoint source pollution, often the result of stormwater runoff and erosion, is pollution that cannot be traced to a single source, and can come from roadways, parking lots, farm fields and construction sites. The more impervious the surface (e.g. roads and parking lots), the greater the runoff that is carried into the waterways.

The Wisconsin State Legislature created the Wisconsin Nonpoint Source Water Pollution Abatement Program (NPS) in 1978 (§281.66, Wis. Stats.). The goal of the NPS Program is to improve and protect the water quality of streams, lakes, wetlands,

and groundwater by reducing pollutants from agricultural and residential non-point sources. DNR and DATCP administer the program, which focuses on critical hydrologic units called priority watersheds. The program is implemented through the Targeted Runoff Management Program (TRM) and Urban Non-point Source Water Pollution Abatement and Storm Water Management Grant Program, and is led by local units of government. Landowners, land renters, counties, cities, villages, towns, sewer districts, sanitary districts, lake districts, and regional planning commissions are eligible to participate.

Overall, there are no major or widespread surface water quality problems that can be controlled within Oneida County. Pollution of surface water generally occurs from mercury deposition, the source of which is coal fired power plant emissions and automobile road run-off. Pollution of surface water generally is minimal because the county is relatively undeveloped and there is little municipal or industrial waste.

Basin & Watersheds

There are 14 watersheds contained completely or partially within Oneida County (Figure 4, and Map 4). The drainage pattern is irregular and poorly defined, as is typical in glaciated regions. Most of the county is drained by the Wisconsin River and its tributaries. The Wolf River and its tributaries drain a small acreage in the southwestern part of the county. Watersheds in the extreme northwest corner of the county drain through Squaw Creek and into the Flambeau-Chippewa River system.

A watershed ranking process (Table 4) was developed by DNR to rank watersheds based on the extent of nonpoint source pollution, the effect on water quality, and the ability to manage the pollution sources. In some cases the data was not sufficient to produce a ranking (NR = no ranking).

The rankings are used by DNR as a basis to award nonpoint source pollution grants to local units of government for nonpoint source pollution planning and/or cost sharing of best management practices for agricultural and urban land use.

Figure 4 Oneida County Watersheds

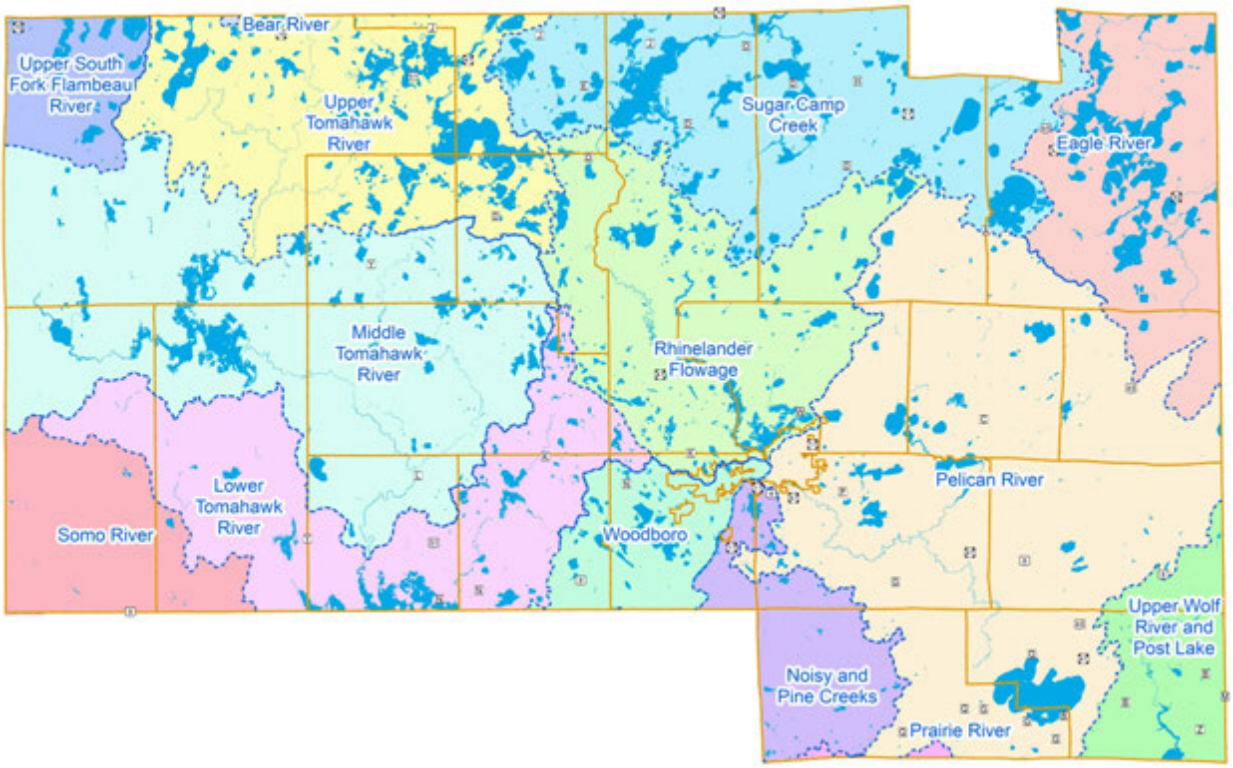


Table 4 Non-point Source Pollution DNR Watershed Rank	
Watershed	Ranking
Bear River	NA
Upper South Fork Flambeau River	NA
Upper Tomahawk River	high
Eagle River	high
Sugar Camp Creek	medium
Rhinelander Flowage	high
Pelican River	medium
Lower Tomahawk River	low
Woodboro	high
Noisy and Pine Creeks	high
Middle Tomahawk River	low
Somo River	low
Prairie River	medium
Upper Wolf River and Post Lake	NA

Source: WDNR, Wisconsin watershed search, https://dnr.wi.gov/water/watershedSearch.aspx

Impaired Waters – 303(d) Waters

The DNR maintains a list of surface waters that do not meet specific water quality standards outlined by section 303(d) of the Clean Water Act. The DNR is required to update the list every two years. A current list of impaired waters exists on the DNR website. The 2018 List of Oneida County 303(d) waterbodies is in Attachment C and shown on Map 2.

In 2018, there were 62 waterbody listings in Oneida County on the 303(d) list. Forty-one waterbodies are listed for fish consumption advisories due to atmospheric deposition of mercury contamination, and are a low priority for clean-up. There are 9 waterbodies that have excessive algal growth, some of which are from an unknown pollutant, with the listing detail stating that a Total Maximum Daily Load (TMDL) is needed. Four waterbodies are listed due to total phosphorus, and are a high priority for clean-up. Slaughterhouse Creek will continue to be listed until leachate from a closed landfill stops seeping in. The remaining 7 waterbodies are listed due to total phosphorus of natural causes.

The Wisconsin River TMDL for phosphorus covers most of Oneida County. This TMDL was developed by the DNR and approved by U.S. EPA per the Clean Water Act. The southeast corner of Oneida County (mostly the Town of Schoepke, east of USH 45) is within the Upper Fox – Wolf TMDL for phosphorus and total suspended solids. In both instances these TMDLs are mainly driven by the need to reduce algae blooms on downstream lakes and reservoirs. The impaired waterbodies addressed by these TMDLs include Wisconsin's two largest inland lakes: Winnebago and Petenwell. While water quality in Oneida County is generally good, waterbodies in the county do contribute phosphorus to these downstream impaired waters. Reducing phosphorus loading to local surface waters acts not only to protect local water quality and local economies which rely on clean water, it also benefits these downstream impaired waters. See the specific pollutant load reductions for each watershed in Attachment G.

Outstanding/Exceptional Resource Waters

Wisconsin has designated many of the state's highest quality waters as Outstanding Resource Waters (ORWs) or Exceptional Resource Waters (ERWs). Waters designated as ORW or ERW are surface waters which provide outstanding recreational opportunities, support valuable fisheries and wildlife habitat, have good water quality, and are not significantly impacted by human activities. ORW and ERW status identifies waters that the State of Wisconsin has determined warrant additional protection from the effects of pollution. These designations are intended to meet federal Clean Water Act obligations requiring Wisconsin to adopt an "antidegradation" policy that is designed to prevent any lowering of water quality – especially in those waters having significant ecological or cultural value.

ORWs typically do not have any point sources discharging pollutants directly to the water (for instance, no industrial sources or municipal sewage treatment plants), though they may receive runoff from nonpoint sources. New discharges may be permitted only if their effluent quality is equal to or better than the background

water
quality of that waterway at all times—no increases of pollutant levels are allowed.

ERWs are more likely designated if a waterbody has existing point sources at the time of designation. Like ORWs, dischargers to ERW waters are required to maintain background water quality levels.

Outstanding Resource Waters in Oneida County include 7 lakes or impoundments, and 4 creeks or rivers.

Exceptional Resource Waters in Oneida County include 42 creek/river segments, and 3 spring segments.

ORWs & ERWs are in Attachment D and on Map 2.

Groundwater

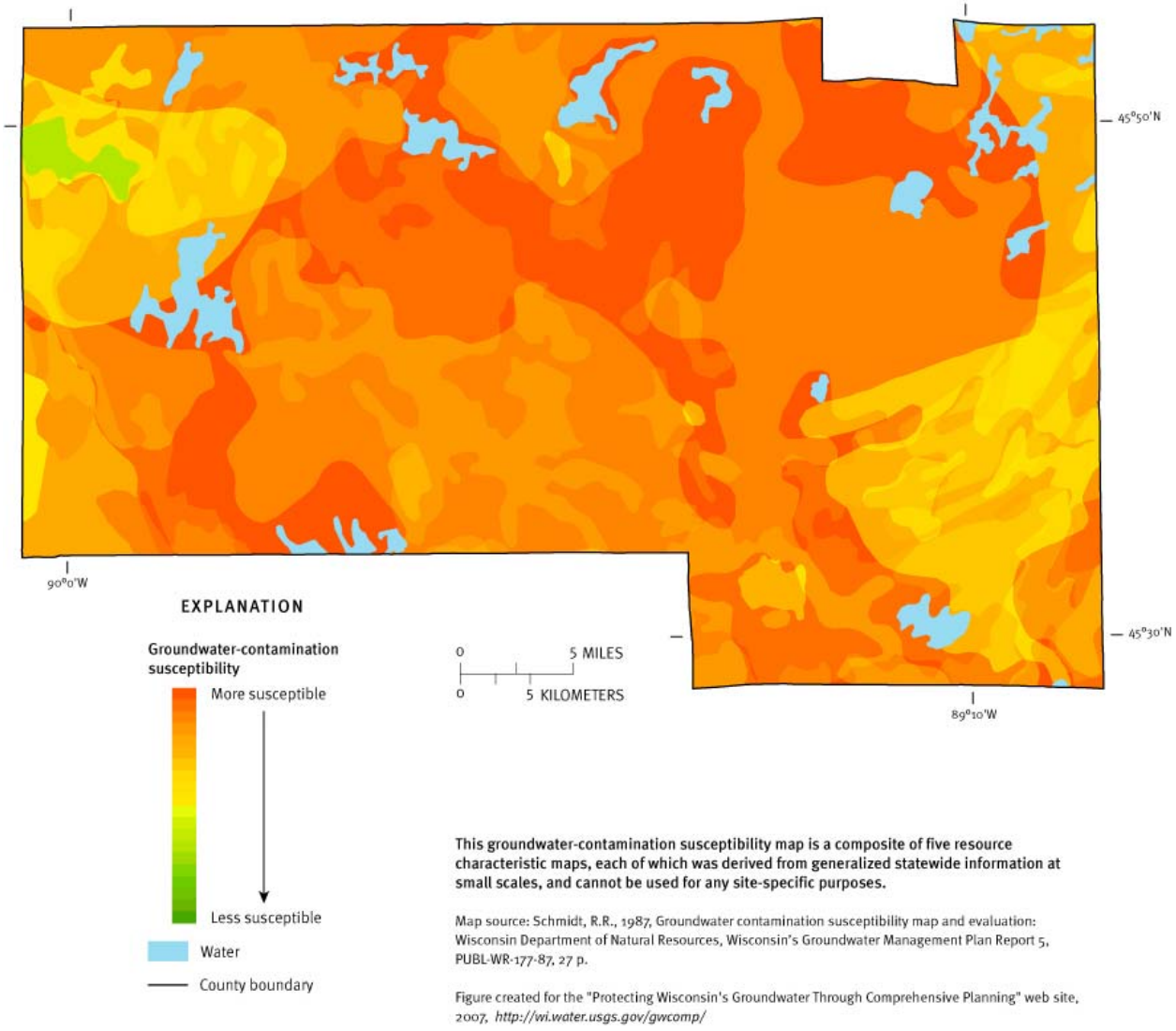
Groundwater supplies nearly all of the water for residential, commercial, and industrial uses in Oneida County. In general, groundwater use has increased in the county as urban areas continue to grow and development increases around the county's lakes. The increase in rural housing developments, each with their own private well, also places demands on groundwater.

The quality of the ground water is generally good. The impact of development and agriculture may cause deterioration of the ground water. Generally, the yield of wells varies based on the depth and nature of the underlying glacial deposits. Where the glacial drift is thin, such as near Monico, wells will yield only a few gallons per minute. In other areas, such as the hilly moraine areas in the southeastern and southwestern sections of Oneida County, wells will produce five to fifty gallons per minute, and in areas of glacial outwash or of thick deposits of saturated sand and gravel, yields can range up to 2,000 gallons per minute. A well at Rhinelander yields more than 1,000 gallons per minute.

Groundwater quality can be impaired by a variety of pollutants including leaking underground storage tanks (LUSTs), landfills, septic tanks, over-application of pesticides and fertilizers, and spills of hazardous chemicals. The most common contaminants found in Wisconsin's groundwater are pesticides, nitrates, nitrogen, and volatile organic compounds. These contaminants come from a multitude of sources including nitrogen-based fertilizers, septic systems, animal waste storage, feedlots, municipal and industrial wastewater discharges, and sludge disposal. Bacteriological contamination can pose a significant threat to the health of those dependent on groundwater for drinking. This contamination can be the result of infiltration from external sources or can enter the aquifer as a result of improper well installation. Groundwater contaminants can affect the health of humans, livestock, and wildlife. Because groundwater seeps more slowly than surface runoff, pollution that occurs today may not become evident for several years. Once polluted, the groundwater is very difficult to purify and may take many years to clean itself by the dilution process.

See Figure 5 to see the susceptibility of Oneida County groundwater to contaminants from surface applications.

Figure 5 Oneida County – Groundwater Contamination Susceptibility Analysis



Potential sources of groundwater contamination summary:

- There are no atrazine prohibition areas in Oneida County.
- There are 22 open-status sites in Oneida County that have contaminated groundwater and/or soil. These sites are composed of 10 Leaking Underground Storage Tank (LUST) sites, 10 Environmental Repair (ERP) sites, and 2 Voluntary Party Liability Exemption (VPLE) sites.
- There are no concentrated animal feeding operations in Oneida County.
- Oneida County operates a construction & demolition landfill on STH 17 (exempt from licensing).
- There is one licensed landfill in Oneida County (Rhinelander Paper Co. on STH Hwy 17).
- The closed Rhinelander landfill (Hwy K) is leaking into Slaughterhouse Creek.
- There are no Superfund sites in Oneida County.

Wetlands

Wetlands are nurseries for fish and wildlife, purifiers for lakes, rivers and groundwater, and storage for floodwaters. They are also playgrounds for birders, hikers, hunters, and paddlers. In terms of hazard mitigation, they act as water storage devices in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage, including shoreline erosion. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important.

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

In Oneida County there are about 222,600 acres of wetlands – 28.2% of the land cover. That is more than the acreage of lakes, rivers, and streams in the County (73,980 acres, 9.4% of land cover in County) (Map 4).

Aquatic Invasive Species (AIS)

AIS such as zebra mussels, financially impact industries that use water for cooling and municipalities that rely on lakes for drinking water. Zebra and quagga mussels cost the U.S. economy up to $1 billion annually. The $7 billion Great Lakes fishery has been adversely impacted by pathogens including viral hemorrhagic septicemia (VHS) and invasive fish species like white perch, round goby, and sea lamprey. Costs from invasive species transported in the ballast water of ocean-going vessels visiting

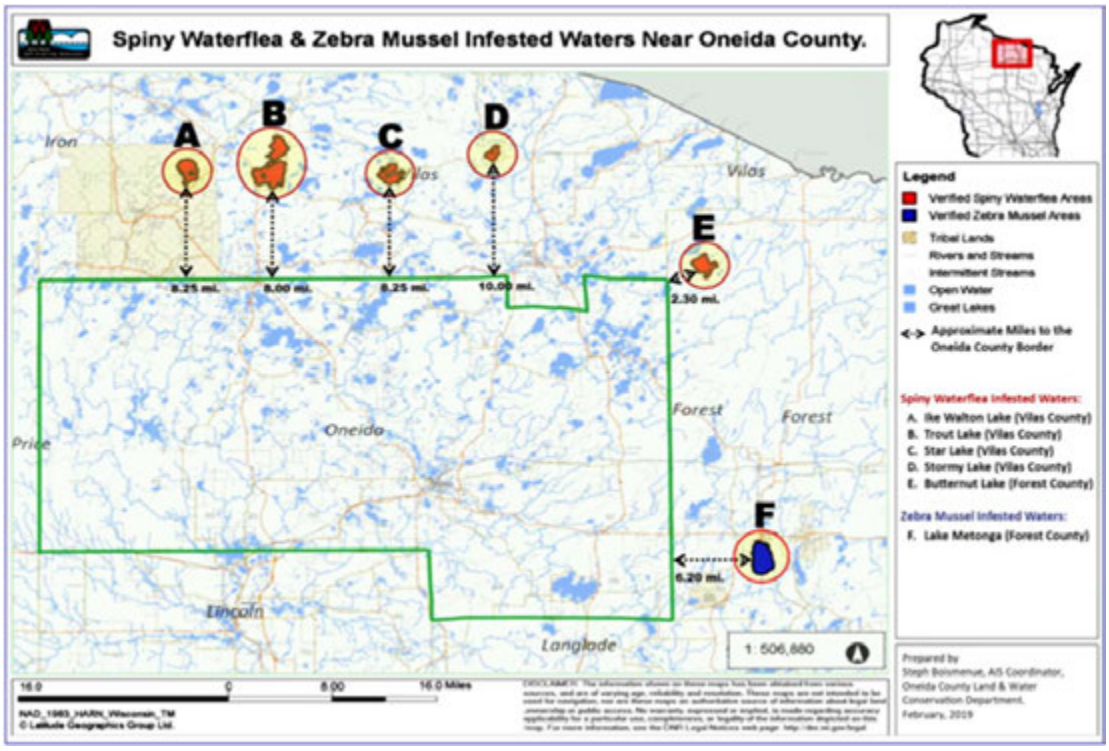
the Great Lakes is estimated at $138 million annually, but could be as much as $800 million annually.

With Oneida County having one of the highest concentrations of natural lakes in the world, water resources are a large part of our lifestyle and economy. Many of Oneida County's lakes are some of the country's premier recreational destinations. In this water-rich county, the impact of AIS introduction can be detrimental to our waters' ecosystems, recreational opportunities, fisheries, human health, and near shore property values. For this reason, Oneida County hired an AIS Coordinator in 2007, who developed a program focusing on AIS education, outreach, technical assistance, prevention, control, and management.

According to the DNR, Oneida County currently has 170 waterbodies that contain at least one NR 40 Regulated AIS. In 1979, curly-leaf pondweed was discovered in Mid Lake and has since spread to 16 waterbodies. Eurasian water milfoil was first discovered in Manson Lake in 1989 and has now spread to 36 waterbodies and hybridized with native Northern water milfoil on two lakes. Both of these invasive plants have drastically impacted many of Oneida County lakes by altering habitats, impairing navigation, interfering with swimming, fisheries, fishing tournaments, and are costly to control. These species have likely found their way into our waters through unclean boats, jet skis, canoes, kayaks, boat trailers, fishing gear, inflatable water toys, waterfowl hunting gear, inappropriate disposal of bait and aquarium species, and migration through connected waterways.

Unfortunately, emerging threats of more problematic AIS are literally on Oneida County's doorstep. To the north of Oneida County, the prohibited spiny waterflea has invaded Butternut Lake in Forest County, the Gile Flowage in Iron County, and four lakes in Vilas County (Ike Walton Lake, Star Lake, Stormy Lake, and Trout Lake). To the east of Oneida County, zebra mussels invaded Lake Metonga in Forest County Both of these destructive invaders are waiting for an opportunity to make their silent onslaught into our waters (Figure 6). One zebra mussel attached to a boat propeller or hiding in the muck on a boat anchor; or one spiny waterflea left in a live well, bait bucket, or trapped in the fur of a bucktail lure is all it may take

Figure 6



Geographic distribution of spiny waterflea and zebra mussel infested lakes and the distance from those lakes to the Oneida County line.

Education and outreach is the most efficient, economical, and effective method to prevent the introduction and spread of AIS. One of the single most important and integral components of this effort has been the Clean Boats Clean Waters (CBCW) Watercraft Inspection program.

Since 2004, the CBCW Watercraft Inspection program has been an opportunity for collaborative efforts between the Oneida County AIS program and DNR law enforcement, state and local government units, local lake associations, concerned citizens, and youth. This program takes a front-line defense against the introduction and spread of AIS from one waterbody to another. From 2004 to 2018, over 200 CBCW watercraft inspectors (including LWCD AIS Staff (Table 5) and lake group inspectors throughout Oneida County) were trained by LWCD and have completed 94,262 hours of watercraft inspections at over 70 boat landings, staff inspected 181,892 watercraft and had direct contact with 429,374 people.

Table 5	**CBCW Hours Performed by LWCD Staff**
Year	Number of hours
2016	863
2017	863.75
2018	806

**More than 90% of CBCW inspection hours occur at lakes with EWM or CLP.*

LWCD offers many educational and outreach opportunities for AIS education. These programs and projects broaden AIS awareness and understanding of the threats that AIS pose, as well as empower citizens to help prevent, manage, and control them. Annual educational opportunities include five CBCW workshops, two Citizen Lake Monitoring Network (CLMN) workshops, one Invasive Species ID Day, five student classroom/field events, an Invasive Species Poster Contest, and an annual Oneida County Stewardship Awards Banquet. LWCD presents at local lake association meetings, fishing tournament meetings, lake fairs, other organization meetings, and at the annual Wisconsin Lakes Partnership Convention. Additionally, LWCD participates in statewide AIS campaigns that include a Drain Campaign, July 4th Landing Blitz, Bait Dealer Outreach, AIS Snapshot Day, Waterfowl Hunter AIS Campaign, and DNR law enforcement group checks. These events are advertised through media releases, email, lakes listserv, posters, newsletters, AIS website, and social media.

Financial support through the DNR AIS grant program is the major source of funding for the AIS program and provides alignment for the program's mission statement: *"to develop and implement an Aquatic Invasive Species (AIS) plan of action that prevents and manages AIS in Oneida County lakes, rivers and wetlands."*

Through that funding, LWCD hires LTE's to assist the AIS Coordinator in delivering program goals. LTE's are also responsible for baseline water quality monitoring on a minimum of 15 waterbodies per year. From 2014 – 2018, LTE's monitored 84 lakes (totaling 11,949 acres). Additionally, volunteers contribute over 100 hours annually towards educational and outreach projects.

Collaborative efforts with strong partners, and continued financial support is critical for Oneida County to provide residents with hands-on opportunities to learn and share knowledge about prevention and stopping the spread of AIS. With 68,447 acres of lake surface area within our County boundaries, LWCD is committed to eliminating or, at the very least, fighting to increase awareness of the potentially harmful effects of AIS.

Sources: "Aquatic Invasive Species-Oneida County", Wisconsin Department of Natural Resources, https://dnr.wi.gov/lakes/invasives/AISByWaterbody.aspx?location=44

"Watercraft Inspection Results-Oneida County", Wisconsin Department of Natural Resources, https://dnr.wi.gov/lakes/invasives/WatercraftSummary.aspx?location=44

E. Land Resources

Geology & Soils

Oneida County's landscape is the result of several glacial advances and retreats that took place over northeastern and central Wisconsin some 12,500 to 20,000 years ago. As a result of this activity, numerous unique geologic and topographic features emerged such as extensive ground moraines in the southeastern and southwestern parts of the county, a remnant end moraine near Rhinelander, and a number of

parallel ridges adjacent to drumlin fields in Forest and Langlade Counties. Oneida County's physical landscape is defined not only by forest, wetlands, streams, woodlots, hills, and other natural features, but perhaps most by its lakes. Few areas in the world have as many lakes as the northern part of the county. Most lakes are relatively shallow, and were formed from ice blocks that were buried in outwash deposits as the glaciers melted and receded.

Oneida County is underlain by Precambrian igneous (granite) & metamorphic (gneiss and quartzite) bedrock that make up the southern extension of the Canadian Shield. Most of the rock is obscured by surficial glacial deposits as much as 300 feet thick, but more than 100 rock outcrops have been noted in the county. The most common exposed outcrops of mainly greenstone or granite occur in the Towns of Monico, Pelican, Schoepke, and Three Lakes.

Limitations for Cropland and Pasture Use

A short growing season limits cropping mainly to forage species, small grain, and suitable vegetables or specialty crops.

The soil potential in Oneida County for increased food production is good. Many areas that are currently woodland could be cleared and used for crop production. Also, the organic soils could be used for cranberries.

Water erosion is a major management concern on about 65% of cropland and pasture in the county. Erosion from runoff is a hazard where the slop exceeds 2%. Cropping systems that keep plant cover on the soil for extended periods can hold soil losses to amounts that do not reduce the productive capacity of the soils.

Wind erosion is a concern on many of the soils in the county, especially sandy soils. Planting windbreaks or leaving natural stands of trees reduces this hazard.

Soil drainage is a major management concern in some of the crop and pasture areas in the county. Cranberries can be grown on some of these soils if the water level is controlled. If organic soils are drained, they oxidize, subside, and are subject to wind erosion when the pore spaces fill with air.

Soil Erosion from Cropland

In 1999 a Cropland Transect Survey was conducted to estimate soil erosion rates in Oneida County. The average Universal Soil Loss Equation (USLE) soil loss estimates ranged from 6.4 tons per acre per year to less than 1 ton per acre per year. The average for the County is about 0.6 tons per acre per year in 1999. The report indicates that 48% of the cropland is on slopes of 0-2%; 28% is on slopes of 3-4%; 20% is on slopes of 5-7%; 2% on slopes of 8-10%; and 2% is on slopes greater than 10%. The report also indicates that erosion is limited due to the present crop rotations that are used in Oneida County. The study found that forage production covers 54% of the cropland and 17% in idle conservation cover. There is also 18% in small grains and 10% in row crops or specialty crops. These types of crop covers help reduce the amount of soil erosion coming from croplands in Oneida County.

A voluntary educational approach will continue to be used to achieve erosion control standards in Oneida County. One-on-one contacts with landowners and operators who request technical assistance is the most common method used to promote soil conservation in Oneida County.

Conservation plans, which plan individual crop fields to the tolerable soil loss rate or "T", are prepared for participants in the Farmland Preservation Program. Participation is through voluntary 10-25 year individual agreements due to no exclusive agricultural zoning in Oneida County. LWCD manages agreements for cropland within mapped areas identified in the 2015 Oneida County Farmland Preservation Plan.

Mineral Resources

There are a number of sand, gravel, rock, and other aggregate mines throughout the County that are often referred to as pits or quarries. Sites are currently producing unconsolidated material such as sand or gravel. Rock, sand, and gravel pits may be found in a variety of locations in the County.

Metallic Minerals
Metallic mineral deposits are defined as naturally occurring, local concentrations of metal-bearing minerals.

The Lynne Deposit was discovered in 1990 by Noranda Exploration and is located on forestry land owned by Oneida County within the town of Lynne. It is primarily a zinc sulfide ore with significant lead and silver and minor amounts of gold and copper. The deposit is estimated to be approximately 5.6 million tons recoverable by open pit mining. (WDNR)

Sand and Gravel
Glacial deposits of sand and gravel provide for a widespread and diverse nonmetallic mining industry in the County. More than a dozen mines in the county provide aggregate (sand, gravel, crushed stone etc.) for construction, road building and maintenance, and agricultural uses.

Sensitive and Rare Natural Communities

Areas of critical environmental sensitivity are those unique areas of the natural environment that should be preserved, and therefore excluded from intensive development. Typically, areas of critical environmental sensitivity include wetlands, floodplains, floodways, shorelands, areas of steep slope (especially those adjacent to wetlands and shorelands), publicly-owned scientific and natural areas (e.g. fish & wildlife habitats), and identified cultural and archaeological sites. The protection of such areas is intended to:
1.) protect the health, safety, and welfare of the general public; 2.) protect surface water and groundwater quality; 3.) reduce damage from flooding and stormwater runoff; and 4.) maintain important wildlife habitats or recreational areas.

Most of the known areas of critical environmental sensitivity within Oneida County are already managed or regulated at the federal, state, and county levels. Wetlands, floodplains, shorelands, and state natural areas are all publicly regulated.

The DNR maintains a listing of all rare, threatened, and endangered species and natural communities within the state. A listing of the species and communities which exist in Oneida County is available by town on the DNR's website under: *Natural Heritage Inventory*.

A comprehensive inventory does not exist, but when rare species or rare natural communities are found, then they are entered into the National Heritage Inventory.

See the "Forestry" section (page 17), and Map 3, for more information about publicly-owned lands.

State Natural Areas (SNAs)

State natural areas were acquired to protect the state's natural diversity, provide sites for research and environmental education, and serve as benchmarks for assessing and guiding use of other lands in the state. Natural areas are defined as tracts of land or water, which have native biotic communities, unique natural features, or significant geological or archeological sites. These sites do not have much facility development, though there may be a designated trail on the site.

The Department of Natural Resources (DNR) listed twenty-three SNAs within Oneida County. Each site has a DNR identification *(#),* and is shown on Map 3 in the order found below (for example: 1. on Map 3 will represent Atkins Lake SNA).

1. ***Atkins Lake & Hiles Swamp*** *SNA (#238)* is 2,527 acres partially located in the Town of Piehl.
2. ***Big Swamp*** *SNA #512* is 2,914 acres located within the Northern Highland-American Legion State Forest in the Town of Sugar Camp.
3. ***Enterprise Hemlocks*** *SNA #608* is 601 acres located within the Town of Enterprise.
4. ***Finnerud Pine Forest*** *SNA #31* is a UW-Madison Arboretum holding of old growth red pine. Contact the Arboretum at 608-263-7344 for access permission.
5. ***Germain Hemlocks*** *SNA #355* is 88 acres located in the Town of Cassian.
6. ***Gobler Lake*** *SNA #115* is 1,085 acres located in the Town of Little Rice.
7. ***Holmboe Conifer Forest*** *SNA #79* is 33 acres located in the Town of Pelican.
8. ***Lower Tomahawk River Pines*** *SNA #588* is 242 acres located in the Town of Nokomis.
9. ***One Stone Lake Hemlocks*** *SNA #629* is 342 acres located near Columbus Lake in the Town of Sugar Camp.
10. ***Pat Shay Lake*** *SNA #446* is 736 acres partially located within the Chequamegon-Nicolet National Forest in the Town of Three Lakes.
11. ***Patterson Hemlocks*** *SNA #216* is 304 acres located in the Town of Minocqua.

12. ***Rainbow Wetlands*** *SNA #513* is 2,357 acres located within the Northern Highland-American Legion State Forest in the Town of Newbold.
13. ***Rice Lake*** *SNA #40* is 1,242 acres located in the Thunder Lake Wildlife Area.
14. ***Shallow Lake*** *SNA #514* is 103 acres located within the Northern Highland-American Legion State Forest in the Town of Newbold.
15. ***Spur Lake*** *SNA #537* is 426 acres located in the Town of Three Lakes.
16. ***Squirrel River Pines*** *SNA #244* is 1,363 acres located in the Town of Minocqua.
17. ***Stone Lake Pines*** *SNA #185* is 206 acres located within the Northern Highland-American Legion State Forest in the Town of Sugar Camp.
18. ***Sugar Camp Hemlocks*** *SNA #594* is 80 acres located near Thunder Lake in the Town of Sugar Camp.
19. ***Tomahawk Lake Hemlocks*** *SNA #510* is 244 acres located within the Northern Highland-American Legion State Forest in the Town of Lake Tomahawk.
20. ***Tomahawk River Pines*** *SNA #239* is 1,040 acres located in the Town of Minocqua.
21. ***Two Lakes Pine-Oak Forest*** *SNA #511* is 112 acres located within the Northern Highland-American Legion State Forest in the Town of Lake Tomahawk.
22. ***Wind Pudding Lake*** *SNA #188* is 340 acres located within the Northern Highland-American Legion State Forest in the Town of Lake Tomahawk.
23. ***Upper Kaubashine Creek*** *SNA #650* is 264 acres located within the Town of Hazelhurst.

Wildlife

Numerous species of songbirds, waterfowl, raptors, shorebirds, reptiles, amphibians, fish and mammals frequent forested areas in Oneida County. Each species, or interacting group of species, do best under different conditions, ranging from recently disturbed ground to old growth. A diversity of plant communities is key to providing a niche for a variety of wildlife species. For example, two very popular wildlife species in the county are white-tailed deer and ruffed grouse. Aspen forests are recognized as key habitat for these species and are important in maintaining biological diversity across North America. Longer rotation forest communities, such as uneven aged northern hardwood, similarly provide important habitat for other, less well-known species, such as pileated woodpeckers or northern goshawk.

State wildlife areas were acquired by the state to protect and manage important habitat for wildlife and to preserve unique wild land features for hikers, wildlife watchers, hunters, trappers, and all people interested in the out-of-doors. Wildlife areas have only minor facility development (e.g. a very small gravel parking lot).

The following wildlife areas are owned by the State of Wisconsin and managed by the Department of Natural Resources. There are no federal wildlife areas in Oneida County:

Thunder Lake Wildlife Area located 1 mile north of Three Lakes is a public hunting area that consists of 3,000 acres. The following recreational opportunities exist at Thunder Lake Wildlife Area: hunting (except the Waterfowl Closed Area around Rice Lake), trapping, hiking, snowmobiling trail, auto travel, berry picking, wildlife viewing, bird watching, and canoeing.

Woodboro Wildlife Area located about 10 miles west of Rhinelander is a public hunting area that consists of 3,000 acres. The following recreational opportunities exist at Woodboro Wildlife Area: hunting, trapping, hiking, snowmobiling trail, auto travel (high clearance and four-wheel drive vehicles—no ATVs), berry picking, wildlife viewing, bird watching, and canoeing.

Forestry

Forests play a key role in the protection of environmentally sensitive areas like steep slopes, shorelands, wetlands, and flood plains. Expansive forests provide recreational opportunities, aesthetic benefits, and economic development.

The pre-settlement composition of forestland in Oneida County was a mix of conifer and deciduous tree species that included white pine, red pine, yellow birch, aspen, cedar, hemlock, and tamarack. (WI Land cover in 1800s poster)

> **Source:** "WI Land Cover in 1800s Poster", UW-Madison, DNR
> https://dnr.wi.gov/wnrmag/2009/08/poster.pdf

All forests are dynamic, always changing from one stage to another, influenced by natural forces and humans. Changes can be subtle and occur over long periods, or can happen in seconds from a timber harvest, windstorm, or fire.

Some private woodlands in the county are enrolled in Managed Forest Law (MFL). This program provides a low annual tax rate per acre and requires a management plan for the property that must include some harvesting along with allowing some public uses based on acreage thresholds. When timber is harvested from MFL properties, a harvest tax is also assessed. This provides an incentive to keep woodlots in active production and allows some community access to the site in exchange for greatly reduced taxes. See the programs section at the end of this chapter for more detail on this program.

See the "Forestry" section (page 17), and Map 3, for more information about publicly-owned forests.

Terrestrial Invasive Species (TIS)

While aquatic invasive species are well known to citizens and receive sizeable funding levels to support management and outreach activities, terrestrial invasive species are somewhat less known and less managed. However, they can still have dramatic effects on our natural resources, economy, and our health. For example, garlic mustard will push out native wildflowers and ferns, and can prevent tree seedlings from regenerating. This can ultimately change our forests and the ecological, recreational, and economic values they provide. The sap of giant hogweed can cause severe burns and blisters, while Japanese knotweed can send rhizomes under, and through, our streets and pavement.

In Oneida County, Japanese knotweed infestations are found in the City of Rhinelander, and in the Towns of Minocqua and Three Lakes. Garlic mustard has been located in the Enterprise block of County forest, exists in small patches in the City of Rhinelander, and occurs on County highway right-of-ways. Spotted knapweed is by far the most prevalent TIS in the County, followed by Buckthorn (common and glossy), and invasive thistles. Although the most prominent and widely integrated into the landscape, these species see very little management activity. Contrary to that, the Town of Three Lakes actively manages its knotweed population, as does the County Forestry Department for their areas of garlic mustard.

Although a County Aquatic Invasive Species (AIS) program has been in existence since 2007, LWCD partners with the Wisconsin Headwaters Invasives Partnership (WHIP) to manage terrestrial invasive species occurring within the county. WHIP is a 15-partner cooperative that services both Oneida and Vilas counties, with a mission that states, *"The Wisconsin Headwaters Invasives Partnership (WHIP) is dedicated to the conservation of the native species, habitats and landscapes of Oneida and Vilas Counties in north-central Wisconsin. WHIP recognizes the threat of invasive species and will work cooperatively to provide education, monitoring and invasive species control."* To that end, WHIP has developed a TIS Management Plan and a Strategic Plan (which includes a Species Priority List), with the help of its partners. Since LWCD played a role in developing the goals, objectives, and activities within WHIP's Strategic Plan, LWCD has incorporated many of these items into the included 5-Year Work Plan.

With assistance from WHIP, LWCD will encourage the use of invasive species BMP's, conduct invasive species early detection monitoring, provide technical assistance with control and management strategies, and encourage the use of native plants for restoration on TIS-affected sites. LWCD will prioritize TIS based on the following Species Priority List, paying particular attention to monitoring those species listed under the 'Early Detection and Response' section, and managing those on the 'Priority Management' section. Additionally, LWCD will collaborate closely with WHIP in revising this list when new invasive species threaten the region. See Table 6.

Table 6	Species Priority List		
Common Name	Scientific Name	Status in Wisconsin R = Restricted P = Prohibited	Management Objective
Early Detection and Response			
Wild Chervil	*Anthriscus sylvestris*	P	
Common Reed (non-native)	*Phragmites australis*	P/R (R in WHIP area)	
Oriental Bittersweet	*Celastrus orbiculatus*	R	
Wild Parsnip	*Pastinaca sativa*	R	
Garden Valerian	*Valeriana officinalis*	R	
European Marsh Thistle	*Cirsium palustre*	P/R (R in WHIP area)	
Butterfly Dock	*Petasites hybridus*	P	
February Daphne	*Daphne mezereum*	not regulated	
Priority Management			
Glossy Buckthorn	*Frangula alnus*	R	
Common Buckthorn	*Rhamnus cathartica*	R	
Garlic Mustard	*Alliaria petiolata*	R	
Purple Loosestrife	*Lythrum salicaria*	R	
Japanese Knotweed	*Polygonum cuspidatum*	R	
Yellow Flag Iris	*Iris pseudacorus*	R	
Eurasian Honeysuckles	*Lonicera tatarica,* *L. morrowii, L. x bella*	R	
Leafy and Cypress Spurge	*Euphorbia esula,* *E. cyparissias*	R	
Plumeless Thistle Canada Thistle Musk Thistle	*Carduus acanthoides* *Cirsium arvense* *Carduus natans*	R	
Japanese Barberry	*Berberis thunbergii*	R	
Garden Yellow Loosestrife	*Lysimachia vulgaris*	R	
Common Tansy	*Tanacetum vulgare*	R	
Black Locust	*Robinia pseudoacacia*	R	
Crown Vetch	*Coronilla varia*	R	
Watch List			
Giant Hogweed	*Heracleum mantagazzanium*	P	
Bohemian Knotweed Giant Knotweed	*Polygonum x bohemicum* *Polygonum sachalinense*	P	
Policeman's Helmet	*Impatiens glandulifera*	P	

Source: Wisconsin Headwaters Invasives Partnership Terrestrial Invasive Species Management Plan 2016. Wisconsin Headwaters Invasives Partnership (WHIP), 2016.

Status in Wisconsin: P = Prohibited, R = Restricted
Species are chosen for regulation by state agencies based on the harm they pose to the State's environment, economy, and/or public health. In general, species that are more widespread or naturalized are restricted while less widespread species are prohibited. The transport, introduction, and sale of all regulated species (P/R) is illegal. In Wisconsin, it is illegal to possess a *prohibited* species, and property owners are legally required to control prohibited species present on their property.

F. Reports Used

Plans that were used to make this LWRM Plan are summarized below:

County Forest Comprehensive Land Use Plan 2006–2020
This plan incorporates or references all county forest policies, pertinent county ordinances, planning documents, and the needs and actions occurring from 2006 to 2020.

Specific flora and fauna within the county forest are described in this plan. The purpose of the County Forest Law as stated in § 28.11, WI Stats., is generally to provide the basis for the planned development and management of the county forests for optimal production of forest products together with recreational opportunities, wildlife production, watershed protection and stabilization of stream flow, to assure maximum public benefits, and to compensate the counties for the public uses, benefits and privileges these lands provide; all in a manner which will provide a reasonable revenue to the towns in which such lands lie.

Oneida County Comprehensive Plan 2011-2021
The comprehensive plan is a combination of nine chapters—Issues & Opportunities; Natural, Cultural, & Agricultural Resources; Housing; Transportation; Economic Development; Land Use; Utilities & Community Facilities; Intergovernmental Cooperation; and Implementation. Zoning and subdivision ordinances must be consistent with the comprehensive plan. An extensive inventory of natural and agricultural resources exists in this plan for use in the LWRMP.

Oneida County Outdoor Recreation Plan 2019-2023
The primary purpose of this recreation plan is to provide continued direction in meeting the current and future recreation needs of the County. This direction takes the form of an inventory and analysis of the county's demographics and outdoor recreational facilities followed by establishing recommendations to meet identified needs. Adoption of this plan and its subsequent acceptance by the Wisconsin Department of Natural Resources (DNR) allows for continued eligibility for financial assistance from the Land and Water Conservation Fund (LAWCON), the Stewardship Fund, and many other federal and state funding programs. The North Central Wisconsin Regional Planning Commission prepared the plan for the Oneida County Forestry, Land and Outdoor Recreation Department.

NRCS Soil Survey for Oneida County, 1993

The Natural Resource Conservation Service (NRCS) is a federal agency that prepared the Oneida County, Wisconsin Soil Survey. The survey contains predictions of soil behavior for selected land uses and also highlights the limitations and hazards inherent in the county's soil. A series of detailed maps identifying the location of soil types in Oneida County accompanies the survey.

The "Geology & Soils" section of the LWRM Plan was based on this Soil Survey.

Wisconsin Headwaters Invasives Partnership Terrestrial Invasive Species Management Plan, 2016

WHIP is a 15-partner cooperative that services both Oneida and Vilas counties, with a mission that states, *The Wisconsin Headwaters Invasives Partnership (WHIP) is dedicated to the conservation of the native species, habitats and landscapes of Oneida and Vilas Counties in north-central Wisconsin. WHIP recognizes the threat of invasive species and will work cooperatively to provide education, monitoring and invasive species control."* The management plan was created to develop a protocol for responding to newly discovered AIS, and to assist partners in prioritizing invasive species management in Oneida and Vilas counties.

Wisconsin's Land cover in the 1800s, 2009 map

This map was produced from work led by David Mladenoff et. al. at the Forest Landscape Ecology Lab, Dept. of Forest & Wildlife Ecology, UW-Madison. Data for the map came from the original survey records done by the Federal government between 1832 and 1866.

PERFORMANCE STANDARDS AND PROHIBITIONS
Chapter 4

The County land and water resource management plans are the local mechanism to implement performance standards and prohibitions. Through Wisconsin Act 27, the Wisconsin Legislature amended State statues to allow LWCCs to develop implementation strategies for addressing local water quality priorities related to controlling erosion, sedimentation, and nonpoint source water pollution.

A. Agricultural Performance Standards

A voluntary educational approach will continue to be used to achieve erosion control standards in Oneida County. One-on-one contacts with landowners and operators who request technical assistance is the most common method used to promote soil conservation in Oneida County. The average Universal Soil Loss Equation (USLE) soil loss estimates ranged from 6.4 tons per acre per year to less than 1 ton per acre per year. The average for the County is approximately 0.6 tons per acre per year in 1999.

Conservation plans, which plan individual crop fields to the tolerable soil loss rate or "T", were prepared for participants in the Farmland Preservation Program. Participation is through voluntary 10-25 year individual agreements, since there is no exclusive agricultural zoning in Oneida County. The Oneida County Land and Water Conservation Department manages agreements for the Farmland Preservation Program. One farm is enrolled.

Agricultural land management is usually the focus of Land and Water Resource Management plans because agricultural soil erosion is an important resource concern. However, in Oneida County, forestry as a land use covers 80% of the county making timber the County's largest crop. The County Forestry Department administers the Oneida County Forest Comprehensive Land Use Plan 2006–2020 (§28.11, WI Stats.), which addresses erosion on County forest lands within Oneida County, while the DNR oversees creation of private forest management plans through Managed Forest Law (property owners receive a low pre-set property tax rate per acre). LWCD will focus on water quality management areas (300' from a stream, 1000' from a lake, or areas susceptible to groundwater contamination), and highly erodible lands draining to outstanding and exceptional resource waters in Oneida County. These shoreland residential and other residential areas consist of about 3.5% of the land in Oneida County.

Priority Farm

A priority farm is one that is found to be non-compliant with the State prohibitions and performance standards. The **priority farm strategy** will rank priority farms based on geographical location in water quality management areas, and highly erodible lands draining to outstanding and exceptional resource waters. LWCD will offer technical and financial assistance to bring the landowner into compliance. If needed, enforcement procedures will be enacted (described in Chapter 7).

Cost-share Program Funding to Minimize Non-point Source Pollution

The program is designed to conserve Wisconsin's soil and water resources, reduce soil erosion, prevent nonpoint source pollution, and enhance water quality. LWCD offers a cost-share program for County landowners through ATCP 50 grant funding. The primary emphasis of the program continues to be restoration of native vegetation to shoreland property in order to reestablish riparian buffer areas, and to reduce erosion of shorelands by installing erosion control practices. Healthy buffer zones reduce nonpoint source pollution and impede soil erosion.

Animal waste is generally not a pollution concern due to the relatively low number of livestock operations. However, the County does provide technical and financial (cost share) assistance, promotes nutrient management plans, encourages rotational grazing, and assists (financial & technical) individuals to bring non-compliant farms into compliance.

B. Non-Agricultural Performance Standards

Oneida County finds that construction site erosion and uncontrolled stormwater runoff from land disturbing and land development activities can have significant adverse impacts upon local water resources, the health, safety and general welfare of the community, and can diminish the public enjoyment and use of natural resources.

Land Disturbance Activities Subject to Stormwater Management and Erosion Control:
All activities directly related to the planting, growing, and harvesting of agricultural crops are not considered land disturbance activities under this section. Land disturbance activities to the shoreland zone are regulated by the Oneida County Zoning and Shoreland Protection Ordinance. Oneida County also requires new businesses to address erosion control and stormwater management through Administrative Review permits and Conditional Use permits.

Standards for Stormwater Management and Erosion Control:
Stormwater runoff, soil erosion, siltation, or sedimentation from all land disturbing and development activities shall meet standards in NR 151 and 216 and COMM 60 and 20-21, Wis. Adm. Code and/or shall be controlled in accordance with Technical Guidelines as developed by the U.S. Department of Agriculture, Natural Resources Conservation Service, or the Wisconsin Department of Natural Resources.

2012-2018 Work Plan Accomplishments
Chapter 5

This chapter is a summary of how each of the Work Plan goals was accomplished. Actions for each goal are described. Knowing what has occurred helps to determine which actions to continue when creating the next 5-year Work Plan.

Goal 1: Slow the spread of invasive species.

Oneida County has funded a full-time Aquatic Invasive Species Coordinator position from 2012-current to coordinate and facilitate a county-wide Aquatic Invasive Species Program.

During that time, LWCD has received AIS Education, Prevention & Planning (AEPP) grants totaling $315,860. Awarded grants are as follows: 2012 ($45,705), 2013 ($47,253), 2014 ($46,859), 2015 ($42,829), 2016 ($35,089), 2017 ($34,247), 2018 ($25,615), 2019 ($38,263), and a 2018 Phragmites Grant for $1,525. These grants allow LWCD to hold Clean Boats Clean Waters workshops, Citizen Lake Monitoring Network workshops, purchase and distribute bobbers, lanyards, wristbands, and pencils, hire Limited Term Employees (LTE's) to assist in boat landing inspections, educational outreach, lake monitoring, and coordinate a biological control program for purple loosestrife control (over 40,000 beetles were released in 2017). LWCD also holds an awards banquet for volunteers, an invasive species poster contest for youth (over 580 posters entered in 2018), and offers citizen science opportunities for volunteers.

In addition, Oneida County works closely with the Wisconsin Headwaters Invasives Partnership (WHIP) to manage TIS in Oneida County. WHIP is a 15-partner cooperative that services both Oneida and Vilas counties, with a mission that states, *"The Wisconsin Headwaters Invasives Partnership (WHIP) is dedicated to the conservation of the native species, habitats and landscapes of Oneida and Vilas Counties in north-central Wisconsin. WHIP recognizes the threat of invasive species and will work cooperatively to provide education, monitoring and invasive species control."* Since 2014, LWCD has devoted time and resources to the organization (e.g. the chair position has been occupied by LWCD's County Conservationist since 2014).

With assistance from WHIP, LWCD has encouraged the use of invasive species BMP's, conducted invasive species early detection monitoring, provided technical assistance with control and management strategies, and encouraged the use of native plants for restoration of TIS-affected sites. LWCD has also created a TIS webpage on www.oclw.org. This page connects citizens to identification guides, species-priority lists, and local TIS projects.

Goal 2: Protect shoreland areas.

In developing new goals for the 2020-2029 LWRM Plan, both staff and Resource Advisory Group members found it difficult to continue splitting the *protection* of shoreland (Goal #2) and the *restoration* of shoreland (Goal #3) into two separate goals (the new goal became "protect and enhance wetlands and surface water quality"). When gathering 2012-2018 accomplishments, LWCD also found it extremely difficult to list accomplishments under just one goal. For that reason, please see Goal 3 (below) for a more detailed description of protecting shoreland areas.

In fulfilling Goal #2, LWCD has provided technical assistance to P&Z on an 'as-needed' basis for mitigation requirements. This includes native plant selection and oversight on design plans. If applicable, P&Z directs landowners to LWCD's Cost Share Program. Clients may originally seek help because of a mitigation requirement, but oftentimes additional shoreline is protected beyond the required mitigation area. LWCD also developed "Building a Raingarden to Reduce Stormwater Runoff" booklet for P&Z, and has web pages devoted to 'Native Plants' and 'Protecting Your Shoreline' to increase shoreline protection and compliance of current ordinances.

Goal 3: Restore shorelands.

From 2012 through 2018, Oneida County received a total of $314,483.00 from DATCP for Cost Share projects. LWCD provided funding and technical assistance to 26 landowners. Projects protected 2,953 linear feet of shoreline, 530' of stream crossing, 60' of access road, and 18,725 square feet of habitat improvement. Table 7 below shows the amount of cost-share funding received each year and the impact that funding had.

Table 7 **Number of Projects by Year Funded Through DATCP Cost Share Program**

Year	DATCP Funding	# of Projects	
2012	$60,242	6	6,098 SF 382 FT 1 Raingarden
2013	$61,741	4	785 FT
2014	$55,000	3	3,800 SF 151 FT
2015	$35,000	3	2,027 SF 405 FT
2016	$35,000	4	6,800 SF 360 FT 1 well - livestock watering
2017	$27,500	2	100 FT 1 Raingarden 1 Culvert Project – (530 FT stream crossing, 60 FT access road)
2018	$40,000	4	770 FT

SF = Square Feet FT = Feet

Additionally, LWCD designed a 6,000 SF demonstration site for Pelican Lake Property Owners and the Town of Schoepke. This lake shore restoration site included a 200 SF rain garden and an ADA accessible pathway along the shores of Pelican Lake. This site provides the public an opportunity to view and learn what lake shore restorations are and how native plantings can protect water quality.

LWCD staff regularly attended Annual Land & Water Conferences, County Conservationist Spring & Fall meetings, technical workshops on erosion control, restoration techniques, fish sticks for habitat, stream crossings, invasive species management, and numerous webinars. These events kept staff updated on the latest products, technology, and techniques, and allowed staff to network with colleagues. Along with attending events, LWCD held multiple workshops that allowed contractors, agency staff, and citizens to develop new skills or refine out-dated knowledge. Workshops included topics on shoreline restoration, pollinator habitat, the LWCD Cost Share Program, and various field experiences. LWCD has also presented at annual lake association meetings, which allowed the Department to reach large crowds that owned lake shore property.

Since 2012, LWCD has worked to increase outreach on the restoration of shorelands to local media, lake associations, and the general public. LWCD regularly writes articles, newsletters, press releases, and updates for lake associations, media, and listservs. Articles are timely, informative, and always direct the reader to www.oclw.org. Furthermore, the media is part of each LWCD listserv, and will regularly write articles and/or attend events due to their inclusion on the list.

Goal 4: Reduce sources of nonpoint source water pollution.

LWCD provided opportunities for contractors to attend workshops on important and up-to-date issues in permitting, construction plans, and landscaping. Additionally, LWCD developed a system that would give professional development credit to those contractors who attended.

LWCD and P&Z are in the process of developing a CAFO ordinance to reduce sources of nonpoint source water pollution. In early 2019, both departments began investigating septic spreading concerns. We are working closely with involved Towns, our CUW Committee, and DNR to rectify the situation(s).

Although there are minimal grazing operations in Oneida County, LWCD promotes rotational grazing within its Cost Share Program (Attachment E). LWCD designed and provided cost share funding to one rotational grazing plan during 2012-2018, and financially assisted with the drilling of one livestock well. LWCD's website includes resources for farmers, such as the webpage 'Successes From the Field", and we have increased our agricultural listserv numbers by reaching out to hobby farmers and small-scale producers. The listserv keeps farmers informed about workshops (e.g. nutrient management and pollinator), pasture walks, and other resources that LWCD can provide to farmers.

LWCD promotes the use of rain gardens through their Cost Share Program and has developed a "Building a Raingarden to Reduce Stormwater Runoff" booklet. A webpage on rain garden resources exists at www.oclw.org.

Goal 5: Educate the public about groundwater quality.

LWCD offers cost sharing and technical assistance to landowners for well abandonment through LWRM Plan implementation funds. LWCD has designed a 'Well Abandonment' web page on www.oclw.org, and LWCD annually releases a cost-share article to media explaining well abandonment projects.

Oneida County has its own Private Onsite Wastewater Treatment System Ordinance (Chapter 13). All new and existing septic tanks must be visually inspected every three years and pumped as required. There are over 24,000 properties on the maintenance program, and over 7,900 inspection notices went out for 2019.

Goal 6: Protect lake ecosystems from recreational pressure degradation.

LWCD received a Lumberjack RC&D grant in 2014 to assess and protect emergent/floating aquatic vegetation and woody habitat resources. With increasing development and recreational pressures on lake ecosystems, these resources are critical for wildlife, water quality, and overall lake health. Two workshops were held to help citizens identify and understand the topics, allowing them to walk away with a deeper understanding on how to help protect these fragile resources. Additionally this grant allowed LWCD to create www.oclw.org and a 'Fish Sticks' webpage.

LWCD regularly presents to lake associations on topics such as shoreline buffers, sensitive areas, and native vegetation, and often brings in relevant speakers at their Annual Volunteer Awards Banquet to inspire citizens to take a larger role in protecting lake ecosystems from recreational pressures.

Goal 7: Improve forest silviculture for multiple uses.

The Oneida County Forestry Department and DNR are the responsible agencies for this goal. As written, this goal was not successfully met by LWCD. This goal will be revised for the 2020-2024 Work Plan to better reflect the role LWCD plays in forest management in Oneida County. In the plan, LWCD will be responsible for forestry educational outreach, prioritizing stream crossings for erosion control, promoting water quality BMP's, and expanding outreach on TIS that affect forests. These activities align and mesh more appropriately with other agencies' forest management goals.

Goal 8: Promote on-line resource information distribution.

New technology has made it faster and easier to get resource information out to the general public. In 2015, LWCD created and currently maintains www.oclw.org, a stand-alone department website which updates viewers on cost share projects, local, area, and state poster and speaking contests, conservation issues, fun facts, Committee meeting agendas and minutes, informative, local, and timely articles, webinars and workshops, mining issues, native plants, contractor lists, shoreline protection, and much more. The website consistently receives over 1,100 weekly hits,

and highly-publicized pages, such as the invasive species poster contest page, claim a 70+ percent viewer increase when the contest is open.

Working with LIO, we have increased the distribution of information through on-line mapping. For example, an aquatic invasive species layer exists on the County GIS mapping system, allowing citizens to identify lakes that have AIS. Additionally, work has begun on developing a TIS layer that will incorporate surveys performed by WHIP and the Towns of Newbold and Three Lakes.

Goal 9: Minimize impacts on our natural resources from mining activities.

Currently, Oneida County has 3,341 acres approved for non-metallic mining (NNM) and 677 active acres. Although 12.68 acres were reclaimed from 2012-2018, LWCD provided minimal technical assistance to P&Z due to loss of one FTE position. In 2016, LWCD and P&Z merged to become one Department, yet each office maintains its own Committee and programs. With the enhanced working relationship, LWCD staff will work more actively with P&Z staff to reclaim abandoned mining sites.

In 2018, LWCD staff worked with P&Z staff and the CUW Committee to revise the Chapter 9, Article 6, Non-metallic Mining and Metallic Mineral Exploration, Prospecting, and Mining ordinance, which allowed greater protections at a local level. With changes in mining legislation and increased citizen attention to water quality, LWCD expanded mining objectives and activities in their 2020-2024 Work Plan.

Goal 10: Reduce wildlife conflicts.

LWCD administers a Wildlife Damage Program with financial assistance through USDA Animal Plant Health Inspection Service (APHIS) and DNR. From 2012 to 2018, LWCD provided assistance and education to 90 landowners providing wildlife abatement and claims services in the amount of $111,101.10 for wild deer, bear, geese, elk & turkey.

A deer processing program is administered annually through the Land & Water Conservation Department. This program is financially supported by DNR which reimburses local participating meat processors who process venison donated to the local food pantries. Two processors participated in the program during 2012-2018 and processed and donated 71 deer.

2020-2024 Work Plan
Chapter 6

Based upon the resource concerns identified by the Resource Advisory Group, and the resource information available, the Work Plan was updated from the 2012-2016 plan. Goals, objectives, and actions in the Work Plan are listed in priority order. This 2020-2024 Work Plan will focus LWCD activities over the next five years.

The LWCD along with agency partners will implement the action items listed in the Work Plan as staff and funding become available.

Additional staff is needed to accomplish all the activities in this plan.

The *Measurement Tools* column provides targeted actions that represent measurable outcomes to each goal. LWCD staff will use these actions to determine progress on each Work Plan activity on an annual basis.

BUDGET ESTIMATE: An annual estimated budget for the 2020-2029 time frame is outlined here. In estimating the budget, it is presumed that the county will continue to staff the Land & Water Conservation Department at its current level of 3.72 (7,254 hours) persons (2 FTE's & 5 grant funded project LTE's). It is further presumed that DATCP and WDNR will meet their financial obligations for staffing of local conservation personnel and projects.

YEAR	COUNTY	DATCP	WDNR	COST SHARE	TOTAL ESTIMATE
2020	$63,000	$96,000	$35,000	$52,000	$246,000
2021	$63,000	$96,000	$35,000	$52,000	$246,000
2022	$65,000	$100,000	$25,000	$52,000	$242,000
2023	$65,000	$100,000	$25,000	$52,000	$242,000
2024	$70,000	$100,000	$25,000	$52,000	$247,000
2025	$70,000	$100,000	$25,000	$52,000	$247,000
2026	$70,000	$100,000	$25,000	$52,000	$247,000
2027	$70,000	$100,000	$25,000	$52,000	$247,000
2028	$75,000	$105,000	$25,000	$52,000	$257,000
2029	$75,000	$105,000	$25,000	$52,000	$257,000

5-year Work Plan – 2020-2024

See Chapter 11 Glossary for definitions of abbreviations used here.

Goal 1: Protect and enhance wetlands and surface water quality.

Objective (Highest priority is first)	**Activities** (Highest priority is first)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools** (Annual)
A. Protect and restore shoreland buffers				
	1. Encourage landowners to establish shoreland buffers.	**LWCD**, EXT		Give 1 presentation to lake associations. Update website 6 times. Write 2 news releases.
	2. Assist in research and design of a demonstration shoreland buffer project.	**LWCD**, EXT, DNR		1 contact.
	3. Provide technical and financial (cost share) assistance to riparian landowners.	**LWCD,** DATCP, NRCS		1 lake association presentation. 1 contractor/landscaper presentation (bi-annually).
	4. Assist P&Z to provide technical assistance to landowners that require mitigation.	**P&Z**, LWCD		1 shoreland zoning fact sheet.
	5. Use the WI Buffer Initiative dataset to create a high priority site list.	**LWCD**, DNR		High priority site list developed. Outreach to 2 high priority sites.
	6. Encourage landowners to establish pollinator gardens.	**LWCD**, EXT, DNR		2 pollinator gardens established.
B. Administer cost share program				
	1. Establish a monitoring schedule for completed cost share projects.	**LWCD**, DATCP		Monitoring schedule established. Monitor 3 cost share sites.
	2. Obtain SWRM funding.	**LWCD**, DATCP		Obtain funding for 4 landowners.
	3. Increase agricultural and river/stream projects.	**LWCD**, DATCP, Forestry		Design & implement 1 river/stream project and 2 agriculture projects.
	4. Develop a watershed priority list for cost share projects.	**LWCD**, DATCP		Priority list developed. Use priority list.
	5. Continue to feature cost share projects on oclw.org.	**LWCD**		Update website 2 times per month.
	6. Work with LIO to map all Oneida County cost share projects.	**LIO**, LWCD		2 meetings per year. Projects mapped.

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	7. Promote pollinator plantings on cost share projects.	**LWCD,** DATCP		Incorporate pollinator plantings in 2 cost share projects.
C. Encourage conservation and restoration of wetland function				
	1. Promote the importance of wetlands to landowners and local units of governments.	**LWCD**, DNR		1 Towns Association presentation. 1 workshop.
	2. Utilize available grant programs to provide cost sharing for restoration of wetland function(s).	**LWCD**, NRCS		Pursue grant(s) for 1 wetland restoration.
D. Promote a watershed approach to protect and restore water quality				
	1. Increase educational outreach on watersheds.	**LWCD**, DNR		1 workshop. 2 classroom visits.
	2. Using the WDNR Watershed Restoration Viewer, develop a priority watershed list for Oneida County.	**LWCD**, DNR		Priority list developed 2020. Use list to prioritize stream crossings.
	3. Continue to collect water quality data on Oneida County lakes.	**LWCD**, DNR,		Collect water quality for 15 lakes.
	4. Begin to collect water quality data on streams and rivers.	**LWCD**, DNR		Collect data on 2 streams/rivers.
	5. List Oneida County watersheds on oclw.org.	**LWCD, LIO,** DNR		Watersheds mapped on website. 2020 goal.
	6. Work with LIO to understand how LiDAR can be used to help identify soil erosion at the watershed level.	LWCD**, LIO**		Meet 2 times per year. Begin identifying areas in priority watersheds that have greatest potential for soil erosion. 2020.
	7. Promote pollinator gardens and the use of native plants.	**LWCD**, NRCS, DNR, EXT		Continue to maintain a pollinator webpage. Hold 1 workshop. Give 2 presentations.
E. Reduce erosion caused by road stream crossings (e.g. culverts)				
	1. Inventory and prioritize stream crossings.	**LWCD**, LIO, Forestry, EM, TU, HWY, DNR, City NCWRPC, Towns		Stream crossings mapped and prioritized (5-year goal).
	2. Obtain grant funding to hire 1 LTE.	**LWCD,** DNR		Grant awarded 2020, 2022.
	3. Provide technical and financial (cost sharing) assistance to reduce erosion.	**LWCD**, DNR, DATCP, EM		Promote 1 workshop.

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F. Reduce urban non-point source pollution				
	1. Promote the use of rain gardens and rain barrels.	**LWCD**, EXT, City		Hold 1 workshop. Develop Backyard Conservation Program (5-year goal).
	2. Provide outreach on sources of urban pollution.	**LWCD**, DNR		1 press release.
	3. Increase educational outreach efforts on construction site erosion.	**LWCD**, DATCP, DNR		Create flier.
G. Maintain county mining ordinance(s)				
	1. Maintain working knowledge of mining.	FLRC, P&DC		As needed.
	2. Stay abreast of new research/policies.	LWCD, P&Z		As needed.
	3. Attend workshops/seminars that expand staff knowledge base.	LWCD, P&Z		Attend 1 conference/webinar.
H. Protect surface water and wetlands from the negative effects of mining				
	1. Provide input to the Mining Oversite/Local Impact Committee.	**LWCD, P&Z**		As needed.
	2. Maintain a mining webpage at oclw.org.	LWCD, P&Z		Update as needed.
	3. Provide technical assistance to P&Z and Forestry.	LWCD		As needed.
	4. Assist with educational outreach material.	LWCD		As needed.
	5. Increase public awareness on ERW & ORW waters.	LWCD, P&Z		Provide background and list ERWs & ORWs online. 1 podcast or video.
I. Reduce agricultural non-point source pollution				
	1. Promote agricultural BMP's to agricultural producers.	**DATCP**, LWCD, NRCS		BMPs listed on oclw.org. Share BMPs via email 1 time.
	2. Estimate P Load Reductions from non-point sources in priority areas using STEPL.	**LWCD**, DATCP, DNR		2 priority areas estimated.
	3. Promote rotational grazing.	**LWCD**, DATCP, DNR		2 priority areas estimated.
	4. Work with NRCS to develop a rotational grazing plan.	LWCD, **NRCS**		1 plan developed.
J. Promote nutrient management planning				
	1. Promote nutrient management training sessions in Lincoln and Langlade counties.	**LWCD**, NRCS		Promote on website and 1 press release.
	2. Promote development of nutrient management plans.	LWCD, **NRCS**		1 news release, meet with NRCS one time, create certified crop consultant list for website, 1 nutrient management plan.

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K. Properly manage animal waste				
	1. Create a county animal waste storage and livestock-siting ordinance (which may include CAFO language).	**P&Z**, LWCD, DATCP		Ordinance created. (2-year goal).
	2. Provide technical and financial (cost share) assistance for animal waste storage facilities.	**LWCD**, NRCS		As needed.
	3. Promote rotational grazing.	**LWCD**, NRCS		As needed.

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Goal 2: Increase our community's level of natural resource knowledge and inspire stewardship.

Objective (Highest priority is first)	**Activities** (Highest priority is first)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools** (Annual)
A. Provide youth education				
	1. Coordinate county-level WI Land & Water Poster and Speaking Contest.	**LWCD**, WLWCA		Update teacher list. Receive 100+ posters, bring on 2 new teachers.
	2. Coordinate the Northwoods' Invasive Species Poster Contest.	**LWCD**, Partner with 18 Co. LWC departments; 30+ schools and 20+ District Libraries		Receive 300+ posters. Update teacher list. 9 press releases/updates.
	3. Students to attend conservation camp.	**LWCD**, WLWCA		Sponsor up to 3 students to attend camp.
	4. Encourage schools to include conservation education in their curriculum.	**LWCD**, DNR, EXT		Participate in 2 student events at the Cedric A. Vig Outdoor Classroom (CAVOC).
B. Build capacity				
	1. Continue to participate in regional projects with partners.	**LWCD**		1 regional project.
	2. Attend WI Land & Water meetings and events.	**LWCD**, WLWCA		Attend 3 events.
	3. Organize, host, and participate in regular meetings among conservation partners.	LWCD, Multiple Agencies		Host and/or participate in 4 events/meetings.
	4. Work with P&Z staff to develop technical/educational material that will benefit field staff.	LWCD, **P&Z**		1 material developed.
	5. Promote and participate in multi-agency conservation projects.	LWCD, Multiple Agencies		1 project.
	6. Promote Town Lakes Committees or Town Natural Resource Committees.	**LWCD**, Towns		Develop/hold 1 workshop.

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C. Provide workshops and training opportunities				
	1. Continue to list local conservation workshops and webinars on website.	**LWCD**		Update as needed.
	2. Host a cost share project field day.	**LWCD**, DNR, DATCP		1 every other year.
	3. Host one 'new' conservation training opportunity.	**LWCD**, DNR, DATCP		1 workshop held.
	4. Develop on-line training opportunities.	**LWCD**, DNR. DATCP		Create one video or podcast.
D. Promote citizen science				
	1. Hold citizen science monitoring workshops.	**LWCD**, DNR, EXT		Hold two formal workshops. Train 5 citizen scientists.
	2. Secure funding to offer citizen science opportunities.	**LWCD,** DNR		1 grant secured.
	3. Involve youth in citizen science projects.	**LWCD**, DNR, EXT		1 classroom visit.
E. Participate in professional development				
	1. Attend conferences that expand staff's knowledge base.	**LWCD**, WLWCA		Attend 2 conferences.
	2. Share knowledge obtained at conferences.	**LWCD**, WLWCA		Update Committee after event. Post entry on oclw.org after event
	3. Continue participation in the WLWCA LCD email listserv.	**LWCD**, WLWCA		As needed.
F. Provide news and updates				
	1. Continue to update website with weekly conservation "news clips."	**LWCD**, WLWCA		2 times per month.
	2. Continue to send out Department updates to 'lake list' 'pollinator/farmer', 'teacher', and 'media' email groups.	**LWCD**		6 times.
	3. Promote department and conservation through the media.	**LWCD**, Media		2 radio interviews, 3 TV interviews, write 4 articles.
	4. Research, develop, and air podcast(s) for the Department.	**LWCD,** OCLRA		Create and distribute 2 podcasts.

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G. Increase awareness of sensitive areas and species				
	1. Develop a sensitive area webpage.	**LWCD**		Web page developed. (2-year goal).
	2. Increase awareness of hubs, corridors and landscape connectivity.	**LWCD**, DNR		Incorporate material in 1 presentation. Distribute one educational piece.
	3. Support landowners utilizing easements, land trusts, and incentive payments to protect sensitive and critical areas.	**Northwoods Land Trust**, LWCD		Communicate with Northwoods Land Trust 1 time for updates.
	4. Provide technical assistance to lake associations/districts to identify and protect sensitive areas.	**LWCD,** DNR, OCLRA		Promote development of 2 lake management plans. Encourage implementation of lake management plans via OCLRA.
	5. Support local governments in adopting ordinances to protect sensitive areas and species.	P&Z, **LWCD,** DNR		As needed.
	6. Support the Oneida County Forestry & Outdoor Recreation Dept. to protect/manage 'exceptional resources' in county forests.	DNR, Forestry **LWCD**		1 new exceptional resource area every 5 years.
H. Increase forestry outreach				
	1. Promote water quality BMP's.	**LWCD,** DNR, Forestry		1 presentation, 1 article written.
	2. Expand outreach on invasive species that affect forests.	DNR, **WHIP**, LWCD		Continued partnership with WHIP. Hold officer positions within WHIP.
	3. Increase communication between LWCD and Forestry & Outdoor Recreation Departments.	**Forestry, LWCD**		Meet 2 times.

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Goal 3: Protect groundwater quality.

Objective (Highest priority is first)	**Activities** (Highest priority is first)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools** (Annual)
A. Properly maintain septic systems				
	1. Work with area septic service companies to provide information.	**P&Z**		Meet with P&Z 1 time a year for updates.
	2. Support efforts to conduct regular monitoring and maintenance of septic systems.	**LWCD, P&Z**		Meet with P&Z 1 time for updates.
	3. Educate landowners about septic system maintenance through oclw.org, listservs, and media.	**LWCD, P&Z**		1 press release, 1 info sheet. Website post.
B. Properly maintain wells				
	1. Educate landowners about proper well monitoring.	**Health,** EXT, LWCD, DNR		Educate 20 landowners, create fact sheet for website.
	2. Offer technical and financial assistance (cost sharing) to properly abandon wells.	**LWCD**, DATCP		1 press release, 1 presentation, assist with abandonment as needed.
	3. Support efforts to increase private well water testing.	Health, **LWCD,** EXT		Have 1 meeting with Health/EXT.
	4. Assess and share results of collected well water data.	**LWCD**, EXT, Health		Publish on oclw.org.
C. Prevent hazardous waste from contaminating groundwater				
	1. Provide educational outreach on proper disposal of batteries, oil, anti-freeze, medications, paint, etc.	**Solid Waste**, LWCD		1 Clean Sweep event. Groundwater info on website. # of attendees/workshop.
D. Protect groundwater from the negative effects of mining.				
	1. Develop a groundwater webpage on oclw.org.	LWCD		Update website as needed.
	2. Provide technical assistance to P&Z and Forestry.	LWCD		As needed.
	3. Assist with educational outreach material.	LWCD		As needed.
	4. Provide input to the Mining Oversight/Local Impact Committee.	LWCD		As needed.

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Goal 4: Protect native species, habitats, and landscapes from invasive species.

Objective (Highest priority is first)	**Activities** (Highest priority is first)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools** (Annual)
A. Continue providing education and outreach				
	1. Obtain funding to assist with invasive species efforts.	**LWCD**		Hire 3 LTEs.
	2. Encourage the use of invasive species BMP's.	**LWCD** (AIS), **WHIP** (TIS), Highway		Meet with Hwy Commissioner 2 times. Meet with Co. Forester 2 times, attend 2 meetings of trail users groups, distribute BMPs electronically to 20, meet once with Towns Association.
	3. Provide Clean Boats, Clean Waters (CBCW) Watercraft Inspection coverage at high-priority boat landings.	**LWCD,** WDNR, EXT		Conduct 625 hours of CBCW inspections; 500 hours will occur at lakes >500 acres and 125 hours will occur at Stacks Bay Landing (AIS Source Water).
	4. Support lake groups, towns, and individuals with CBCW efforts.	**LWCD,** WDNR, EXT		Provide 3 CBCW workshops. Work with 20 lake groups and 13 media entities.
	5. Continue to promote and participate in Statewide AIS Campaigns.	**LWCD**, WHIP, WDNR, EXT, RAW		Host l Drain Campaign, 1 Landing Blitz, and 1 AIS Snapshot Day event. Write 1 Waterfowl Campaign news release. Recruit 10 bait shops to participate in Bait Dealer Initiative. Work with 20 lake groups and 13 media entities.
	6. Work with area schools to create and implement ways of integrating invasive species topics into curriculum. Conduct field trips when possible.	**LWCD** (AIS), **WHIP** (TIS)		Give 5 classroom presentations and host 2 field trips. Invite 13 media entities to field trips.
	7. Provide AIS education during fishing tournaments and speed boat races.	**LWCD,** WDNR, EXT		Give 1 presentation at a fishing tournament. Work with 3 lake groups and 13 media entities.

	8. Create and distribute invasive species educational and outreach information.	**LWCD**, WHIP, WDNR, EXT		Develop 1 brochure, distribute at 6 events, and post on website.
	9. Maintain an inventory of each boat landing in Oneida County and regularly check for proper AIS signage, including replacement of that signage as necessary.	**LWCD,** WDNR, LIO		Inspect 15 landings, update signage as needed, and update database. Work with 1 resort.
	10. Maintain and build upon email "lakes listserv" and AIS website for communicating AIS news.	**LWCD**		Increase listserv by 10. Write 12 AIS updates. Maintain AIS website as needed.
	11. Continue to promote and encourage citizens to plant native species after controlling invasive species.	**LWCD** (AIS), **WHIP** (TIS)		Host 1 Seed Sowing Party. Collect and germinate 10 species of local native seeds. Work with 13 media entities.
	12. Support efforts that eliminate the spread of invasive species in the distribution of soil, gravel, rock, and sand.	**LWCD,** Hwy		Send information packets to 50 owners/operators of non-metallic mines.
	13. Maintain working relationship with the media.	**LWCD**		Work with 7 newspapers, 5 radio stations, and 1 TV station.
B. Continue early detection and rapid response of invasive species				
	1. Conduct invasive species early detection monitoring.	**LWCD** (AIS), **WHIP** (TIS), WDNR, EXT		Monitor 2 known TIS locations and 10 known AIS locations. Monitor 15 lakes, 1 wetland, and 5 boat landings. One lake to be within or adjacent to SNA or other publically owned land.
	2. Promote and encourage lake groups and individuals to participate in the Citizen Lake Monitoring Network (CLMN) volunteer program.	**LWCD,** WDNR, EXT		Provide 1 CLMN workshop. Work with 13 media entities.
	3. Train groups and individuals in invasive species identification and monitoring.	**LWCD** (AIS), **WHIP** (TIS), WDNR, EXT, RAW		Work with 3 lake groups. Host 1 Invasive Species ID Day.
	4. Respond to newly discovered invasive species following WDNR protocols.	**LWCD, WHIP,** WDNR, EXT		As needed.
	5. Maintain database and mapping of invasive species locations and restoration sites.	**LWCD** (AIS), **WHIP** (TIS)**,** WDNR		As needed.
	6. Provide guidance to groups interested in developing rapid response plans for specific AIS.	**LWCD**		Work with 1 lake group.

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	7. Coordinate and implement a CLMN zebra mussel monitoring program.	**LWCD,** WDNR, EXT		Work with 1 lake group and provide 1 workshop.
C. Control and manage invasive species				
	1. Control invasive species utilizing WDNR protocols.	**LWCD** (AIS), WHIP (TIS), WDNR,		As needed.
	2. Provide technical assistance in developing invasive species control and management strategies.	**LWCD** (AIS) WHIP (TIS), WDNR, EXT		Work with 5 lake groups.
	3. Continue to control and monitor Purple loosestrife, Yellow iris, Phragmites, and *Glyceria maxima* sites.	**LWCD,** WDNR		Continue purple loosestrife biocontrol program. Rear 15,000 beetles, work with 3 lake groups, and 13 media entities. Visit 3 Phragmites sites and 1 Glyceria maxima site.
	4. Document control and management efforts.	**LWCD** (AIS), WHIP (TIS), LIO		As needed.
	5. Explore the feasibility of placing decontamination stations at locations with high potential for spreading AIS.	**LWCD,** WDNR, EXT		Review 2 studies and funding.
D. Restore native species and habitat after invasives are removed				
	1. Monitor restoration sites and reevaluate for further management and restoration activities.	**LWCD** (AIS), WHIP (TIS), WDNR, LIO		Monitor 4 sites. Develop 1 restoration evaluation component.
	2. Develop and implement site-specific restoration plans.	**LWCD** (AIS), WHIP (TIS), WDNR, EXT		Plant native species at 4 sites.
	3. Continue using native plants, including nectar-rich species at invasive species controlled sites.	**LWCD** (AIS), **WHIP** (TIS), WDNR, EXT		Collect and germinate 10 species of local native plant seeds. Plant native species at 4 sites.
	4. Encourage the use of native plant species for soil stabilization and re-vegetation on road right-of-way.	**LWCD**, Hwy, Forestry, WHIP, WDNR		Meet with Hwy Commissioner 2 times annually.
	5. Collect and share information on BMP's for restoring native species and habitats.	**LWCD** (AIS), **WHIP** (TIS), WDNR, EXT		Distribute at 6 events, work with 1 lake group, work with 13 media entities, and post on websites.

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E. Build capacity through cooperation with other groups				
	1. Host Oneida County Stewardship Awards Banquet.	**LWCD**		Host 1 banquet
	2. Attend lake groups, OCLRA, partner meetings, and events.	**LWCD**, WHIP		Increase partnerships by 2 and listserv contacts by 10. Work with 13 media entities. Attend 15 meetings. Give 5 presentations.
	3. Stay informed of, and participate in, the development and implementation of current invasive species management and research activities.	**LWCD**, WHIP		Attend 1 WI Lakes Partnership Convention, 2 AIS Coordinators meetings, 4 WHIP meetings, 1 OCLRA meeting, and 1 citizen science meeting.
	4. Support lake groups' grant applications with letters of support.	**LWCD**		Write 1 letter of support and commitment of project resources (in-kind time) as needed.
	5. Continue to be active in WHIP.	**LWCD**		Hold 1 officer position, attend 4 WHIP meetings, and assist WHIP with administrative duties.

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Goal 5: Protect, enhance, and restore soil resources.

Objective (Highest priority is first)	**Activities** (Highest priority is first)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools** (Annual)
A. Promote healthy croplands and pastures				
	1. Promote rotational grazing.	LWCD, **NRCS**		1 listserv share. Update website 2 times.
	2. Provide technical and financial assistance (cost sharing) to landowners who promote healthy cropland and pastures.	**LWCD,** NRCS		As needed.
	3. Promote conservation tillage.	LWCD, **NRCS**		1 listserv share. Update website 2 times.
	4. Participate in venison program.	**LWCD**, APHIS, DNR		Annually.
	5. Provide technical and financial assistance to agricultural producers to reduce wildlife damage.	**APHIS**, LWCD		As needed.
	6. Provide information on the Wildlife Damage Abatement and Claims Program.	**LWCD**, DNR, APHIS		1 news release Update website 2 times.
	7. Provide technical & financial assistance to hobby farms.	**LWCD**, DATCP, **NRCS**		As needed.
	8. Promote the use of buffer strips, to include nectar-rich plant species.	**LWCD**, NRCS, DNR, EXT		Development of 1 outreach piece. 1 news release. Contact with 1 farmer.
B. Reclaim abandoned mining sites				
	1. Provide technical assistance to restore abandoned mining sites.	**LWCD**, DNR, P&Z		As needed.
	2. Use native plant species for soil stabilization and re-vegetation.	**LWCD,** NRCS, DNR, P&Z		As needed.
	3. Use Invasive Species BMP's.	**LWCD**, DNR, WHIP, P&Z		As needed.
C. Preserve productive farmland				
	1. Consider establishing farmland preservation zoning.	**P&Z**		1 meeting with P&Z.
	2. Maintain County Farmland Preservation Plan.	P&Z, NCWRPC **LWCD**		Annual review/ Update every 10 years.

REGULATIONS
Chapter 7

Regulation Types

Oneida County has relied on the following State regulations for the protection of natural resources:

- Department of Natural Resources – Chapter 30, Wisconsin Statutes – Navigable Waters
- Department of Natural Resources – Wisconsin Pollution Discharge Elimination System Permits
- Department of Natural Resources – Performance Standards - Administrative Code NR 151
- Department of Natural Resources – NR 216, Stormwater Discharge Permits and Construction Site Erosion Control
- Department of Natural Resources – Chapter 29.601, Wisconsin Statutes – Noxious Substances
- Department of Agriculture, Trade, & Consumer Protection – ATCP 50, Soil and Water Resource Management Program
- Department of Natural Resources – NR 115
- Wisconsin Department of Safety & Professional Services DSPS 383

Oneida County relies on the following State regulations for protecting groundwater at metallic mining sites:

> The specific guidelines for protecting groundwater quality at a mining site are contained in Chapters NR 140 (Groundwater Quality), NR 182 (Metallic Mining Wastes), and NR 132 (Metallic Mineral Mining), Wisconsin Administrative Codes. Before 1998, the groundwater quality rules for mining sites were contained primarily in Chapter NR 182. However, the administrative rules were revised in 1998 and now specify that mining sites must conform to the State's general groundwater quality code (Chapter NR 140). This rule change means that the Department regulates groundwater quality protection at mining sites in a similar fashion to other facilities where the protection of groundwater quality has regulatory restrictions. (DNR)

Local regulations used to protect natural resources in Oneida County are:

- Oneida County Subdivision Code – Chapter 15 of the General Code of Oneida County
- Oneida County Zoning and Shoreland Protection Ordinance – Chapter 9, Article 9 of the General Code of Oneida County, Shoreland Zoning
- Oneida County Zoning and Shoreland Protection Ordinance – Chapter 9, Article 6, 9.60 Non-Metallic Mining; 9.61 Metallic Mineral Exploration, Prospecting, and Mining of the General Code of Oneida County
- Oneida County Private On-site Wastewater Treatment System Ordinance – Chapter 13 of the General Code of Oneida County

- Chapter 22 Non-Metallic Mining Reclamation, of the General Code of Oneida County

Enforcement Process
A landowner who is out of compliance with State performance standards and prohibitions and refuses technical and financial assistance from LWCD will be notified by mail that they are subject to enforcement actions. A copy of the enforcement letter will be sent to the Department of Natural Resources and DATCP. Landowners who are in violation of the Oneida County Ordinances will be notified, informed of the issue, and provided technical and financial assistance. If the landowner refuses to cooperate, they shall be referred to Oneida County Corporation Counsel.

Enforcement Process at Metallic Mining Sites
If monitoring shows that an Enforcement Standard is reached or exceeded at a monitoring point within the property boundary the DNR would require immediate action necessary to limit the release of additional contaminants. The range of responses for an exceedance of an Enforcement Standard is specified in Chapter NR 140 and include actions such as additional monitoring, design or operational revisions, early closure and abandonment of the facility, and remedial action to prevent or minimize the further releases into the environment. There is no allowance for a "no action" response. (DNR)

Regulatory Exemptions – The mining and groundwater regulations provide for exemptions under certain conditions, should the mining company be able to meet the applicable criteria. However, in no case shall any exemption authorize contaminant concentrations in the groundwater that would exceed the levels required to protect health, safety, or welfare. (DNR)

MONITORING AND EVALUATION
Chapter 8

Introduction

Monitoring and evaluation of specific resource topics, including the LWRM Work Plan, are accomplished in many different ways.

1. Work Plan Progress Assessment
The 5-year Work Plan, within the greater LWRM plan, is a working document that will be reviewed annually by CUW and LWCD to track progress in accomplishing goals and actions. The required DATCP Annual Report is used as an assessment tool.

2. Performance Standards and Prohibitions Monitoring and Evaluation
A voluntary educational approach will continue to be utilized to achieve erosion control standards in Oneida County. One-on-one contacts with landowners and operators who request technical assistance is the most common method used to promote soil conservation in Oneida County. The average Universal Soil Loss Equation (USLE) soil loss estimates ranged from 6.4 tons per acre per year to less than 1 ton per acre per year. The average for the County is approximately 0.6 tons per acre per year in 1999.

Conservation plans, which plan individual crop fields to the tolerable soil loss rate or "T", are prepared for participants in the Farmland Preservation Program. Participation is through voluntary 10-25 year individual agreements, due to no exclusive agricultural zoning in Oneida County. LWCD manages agreements for cropland within mapped areas identified in the 2015 Oneida County Farmland Preservation Plan.

3. Water Quality Monitoring
Volunteers and staff, under the Citizen Lake Monitoring Network (CLMN), are currently monitoring lakes for water quality, water clarity, and aquatic invasive species such as Eurasian water milfoil, Curly-leaf pondweed, Zebra mussels, and Rusty crayfish. Additionally, citizen volunteers monitor for phosphorus and chlorophyll.

LWCD will continue to encourage lake associations, property owners, and lake users to participate in the CLMN program. Additionally, staff will begin monitoring water quality/clarity on our rivers and streams, and will continue to pursue grants to fund future monitoring projects.

4. Phosphorus Loading
Phosphorus loading can adversely affect water quality by promoting excessive plant growth (including algae). In order to reduce nutrient loading by animal waste, all newly installed barnyard systems will be evaluated to ensure compliance with STEPL calculations, which require phosphorus reductions.

5. Nutrient Management
In cooperation with DATCP, Oneida County will monitor and measure nutrient management progress by tracking nutrient management plan checklists with the planner, and by performing periodic plan review to monitor compliance with soil test levels.

6. Compliance checks
LWCD will establish an annual monitoring schedule for client compliance of cost share practices. LWCD staff will monitor at least three installed practices. In addition, DATCP and NRCS conduct annual engineering and conservation planning spot checks to ensure compliance with all applicable technical standards.

EDUCATION STRATEGY
Chapter 9

Educational opportunities for adults and youth are necessary to heighten awareness about protecting and enhancing the land and water resources they enjoy daily. LWCD has developed educational strategies, which are an integral part of this plan. Strategies include; offer trainings and workshops, promote conservation through the media, provide youth opportunities (speaking and poster contests, conservation camps, classroom visits, citizen science projects), engage citizens and partners through an up-to-date website, interactive outreach material, timely and relevant presentations, and utilize current technology.

In addition, LWCD includes educational strategies for staff and partnership development. Strategies include; work with local, area and state conservation associations to coordinate a multi-agency approach to conservation programming, attend conferences and share acquired knowledge, and continue participation in Lumberjack RC&D, WLWCA, NCLWCA, WHIP, etc.

As plan implementation proceeds, LWCD will adapt education strategies, if needed.

COORDINATION
Chapter 10

Coordination

LWCD staff seeks input from and works closely with a diverse group of agencies, associations, and organizations involved in resource management and protection. These agencies and groups include: United States Department of Agriculture {Farm Service Agency (FSA), Natural Resource Conservation Service (NRCS), Animal and Plant Health Inspection Service – Wildlife Services (APHIS-WS), and United States Forest Service (USFS)}, Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP), Wisconsin Department of Natural Resources (DNR) staff {such as Water Resources Management Specialists, Fisheries Biologists, Water Regulations and Zoning Specialists, Water Program Management staff, Watershed Management staff, and Forestry staff}, Army Corps of Engineers, University of Wisconsin–Extension; Oneida County Forestry, Land and Outdoor Recreation, Planning & Zoning, Solid Waste/Recycling, Highway Commission, Land Information Office, and Public Health.

Other organizations involved include Lumberjack Resource Conservation & Development Council (RC&D), Oneida County Lake Associations/Districts, the Oneida County Lakes and Rivers Association (OCLRA), Wisconsin Headwaters Invasive Partnership (WHIP), and multiple Northern Wisconsin Land and Water Departments. In addition, LWCD works actively with many regional organizations promoting resource conservation at a landscape level.

Each agency, organization, association, and individual has its individual resource issues, programs, and plans; but cooperatively we can work together for the greater good of Oneida County's land and water resources.

GLOSSARY
Chapter 11

303(d) Waters – Also called **List of Impaired Waters**. This list identifies waters that are not meeting water quality standards, including both water quality criteria for specific substances or their 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). The EPA requires that the DNR update its list every 2 years.

Animal Waste Management Program – This regulatory program, administered by the DNR via NR 243, seeks to identify and correct animal waste-related water quality problems.

Animal and Plant Health Inspection Service – Wildlife Services (APHIS-WS) – Part of USDA, APHIS-WS provides assistance to manage animal damage.

Aquatic Invasive Species (AIS) – AIS are aquatic organisms that invade ecosystems beyond their natural, historic range. Their presence may harm native ecosystems or commercial, agricultural, or recreational activities dependent on these ecosystems.

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 WI Statutes. It identifies those conservation practices that may be used to meet performance standards.

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

Chapter 92 – Portion of Wisconsin Statutes outlining the soil and water conservation, agricultural shoreland management, and animal waste management laws and policies of the State.

Clean Boats Clean Waters (CBCW) – This is a DNR program to prevent the spread of aquatic invasive species.

Citizen Lake Monitoring Network (CLMN) – A partnership between citizen volunteers statewide and the DNR to collect high quality lake data, to educate and empower volunteers, and to share this data and knowledge.

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 Enhancement Program (CREP) – An add-on to the CRP program, which expands and builds on CRP's success in certain areas of the State.

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.

Cooperator – A landowner or operator who is working with, or has signed a cooperative agreement with, a County LCC.

County Conservationist – County Land and Water Conservation Department head, responsible for implementing programs assigned to the LWCD and for supervising LWCD staff.

Critical Sites – Those sites that are significant sources of nonpoint source pollution upon which best management practices shall be implemented as described in s. 281.65(4)(g) 8.am., WI stats.

Crop Consultants – Independent Crop Consultants provide services to growers in integrated crop and farm management programs, working directly with farmers, and advising them in areas such as watershed management, integrated nutrient and pest management, and animal waste management. Their primary purpose is implementing scientific and technological advances to enhance environmental sustainability and profitability on clients' farms.

CUW Committee (Conservation and UW-EX Education Committee) – The unit of Oneida County's government empowered by Chapter 92 of the Wisconsin Statutes to conserve and protect the County's soil, water and related natural resources. Wisconsin Statute 92 also defines this unit of county government as a *land conservation committee* **(LCC)**.

Department of Administration (DOA) – The State agency responsible for establishing the comprehensive planning grant program.

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 LWCD operations, including support for staff, materials and conservation practices. Referred to in the LWRM plan guidelines as the "department".

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 LCCs, LWCDs 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, and Urban Nonpoint Source Construction and Planning grants.

District Conservationist (DC) – NRCS employee responsible for administering federal conservation programs at the local level.

Emergency Management (EM) – A Department of Oneida County.

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 Repair Program – ERP sites are sites other than LUSTs that have contaminated soil and/or groundwater.

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

Farmland Preservation Program (FPP) – A DATCP land-use program under Chapter 91, Wisconsin Statutes, that helps preserve farmland through local planning and zoning, promotes soil and water conservation, and provides State tax relief to participating landowners.

Forest Crop Law (FCL) – FCL is a landowner incentive program that encourages long-term, sustainable management of private woodlands. The FCL program was enacted in 1927 and enrollment was closed on January 1, 1986. MFL took its place in 1986.

Forestry, Land and Recreation Committee (FLRC) – A committee of the Oneida County Board.

Forest Industry Safety and Training Alliance Inc. (FISTA) – This group creates training opportunities for loggers. This term used in the Work Plan.

Forestry – The Forestry, Land, and Outdoor Recreation Department of Oneida County. This term used in the Work Plan.

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.

Health – The Health Department of Oneida County. This term used in the Work Plan.

Highway (HWY) – The Highway Department of Oneida County. This term used in the Work Plan.

HUC12 – Hydrologic unit code (HUC) consisting of several numbered digits based on the classification in the hydrologic unit system. HUC 12 is a more local sub-watershed level that captures tributary systems. This term is used in Attachment G.

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

Land and Water Conservation Board (LWCB) – This Statewide board is composed of three local elected officials, four appointed by the Governor (one shall be a resident of a city with a population of 50,000 or more, one shall represent a governmental unit involved in river management, one shall be a farmer, and one shall be a member of a charitable corporation, charitable association or charitable trust) and leaders from DNR, DATCP, and DOA. The LWCB oversees the approval of County land and water management plans (s.92.04, stats.).

Land and Water Conservation Fund (LAWCON) – This is a federal program administered in all states that encourages creation and interpretation of high-quality outdoor recreational opportunities.

Land and Water Resource Management Plan (LWRM Plan) – 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 multi-year description of planned activities, establishes a progress tracking system, and describes an approach for coordinating information and implementation programs with other local, State and federal agencies, communities and organization (s. ATCP 50.12).

Land and Water Conservation Department (LWCD) – The department of Oneida County government responsible for administering the conservation programs and policies of the Conservation and UW-EX Education Committee.

Land Information Office (LIO) – a department of Oneida County.

LdF Reservation – The Lac du Flambeau Band of Lake Superior Chippewa have a reservation, located primarily in Vilas County, which is partially within the Town of Minocqua. This is shown on all plan maps.

List of Impaired Waters – Also called **303(d) Waters.** This list identifies waters that 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). The EPA requires that the DNR update its list every 2 years.

Leaking Underground Storage Tank (LUST) – A LUST site has contaminated soil and/or groundwater with petroleum, which includes toxic and cancer causing substances.

Light Detection and Ranging (LiDAR) – A remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.

Limited Term Employee (LTE) – Limited term employees are those persons who are appointed to perform a grouping of duties and responsibilities on a non-project basis. LTE positions are temporary in nature and the conditions for these appointments do not provide for attainment of permanent status.

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

North Central Wisconsin Regional Planning Commission (NCWRPC) – A voluntary association of governments established in 1973 under Wisconsin Statute §66.0309, to provide: economic development, geographic information systems (GIS), intergovernmental cooperation, land use, and transportation services to member communities.

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 non-point 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 in designated watersheds.

Northwoods Land Trust – The Northwoods Land Trust is a non-profit, tax-exempt conservation organization headquartered in Eagle River, WI. They promote conservation of private shorelands, woodlands, wetlands, and other natural resources, as public benefits for present and future generations.

NR 115 – DNR's administrative code that requires counties to adopt DNR's minimum shoreland zoning standards to limit the direct and cumulative impacts of shoreland development on water quality; near-shore aquatic, wetland and upland wildlife habitat; and natural scenic beauty.

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

NR 216 – DNR's administrative code to minimize the discharge of pollutants carried by storm water runoff from certain industrial facilities, construction sites and municipal separate storm sewer systems (MS4s).

Nutrient Management Plan – The Nutrient Management Plan means any of the following: (a) A plan required under s. ATCP 50.04(3) or 50.62(5)(f). (b) A farm nutrient plan prepared or approved, for a landowner, by a qualified nutrient management planner.

Oneida County Lakes and Rivers Association (OCLRA) – The Oneida County Lakes and Rivers Association is a non-profit organization dedicated to acting on behalf of its members with respect to issues such as conservation of natural resources, preservation of environmental qualities, zoning problems, water safety, outdoor recreation, fairness in taxes, and all other appropriate matters concerning lakes and rivers in Oneida County. Their purpose is also to educate, communicate, and promote cooperation among organizations, individuals, governmental bodies, and the general public. This term is used in the Work Plan.

Outstanding Resource Waters/Exceptional Resource Waters (ORW/ERW) – DNR classifies streams as Outstanding Resource Waters (ORW) and Exceptional Resource Waters (ERW) as listed in NR 102.10 and NR102.11. 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 and Development Committee (P&DC) – A Committee of the Oneida County Board.

Planning and Zoning (P&Z) – A department of Oneida County. This term used in the Work Plan.

Priority Farms – Farms identified by the County for having excessive runoff from soil erosion and/or manure resulting in existing or potential water quality problems.

River Alliance of Wisconsin (RAW) – A non-profit environmental conservation organization.

Resource Conservation and Development (RC&D) – Oneida County is one of 10 counties in the Lumberjack Council. This term used in the Work Plan.

Revised Universal Soil Loss Equation 2 – RUSLE2 is used to evaluate potential erosion rates at specific sites as well as guide conservation and erosion control planning by USDA's NRCS.

Shall – The term "shall" in the guideline, represents components of a LWRM plan that are required in law and rule.

Soil and Water Resource Management (SWRM) Program – DATCP program that provides counties with funds to hire and support Land and Water 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 of soil that a field could lose and still 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.

SSC – Site specific criteria, or site-specific water quality criteria. Water quality-based effluent limitations are routinely derived from national ambient water quality criteria for the protection of aquatic life (ALC). U.S. EPA allows ALC to be adjusted to local water conditions through site-specific water quality criteria, which are often less costly to meet than federal or state water quality standards. This term is used in Attachment G.

Solid Waste – The Solid Waste Department of Oneida County. This term is used in the Work Plan.

State Natural Area (SNA) – State natural areas (SNAs) protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations and archeological sites.

Spreadsheet Tool for Eliminating Pollutant Load (STEPL) – A U.S. Environmental Protection Agency tool of algorithms to calculate nutrient and sediment loads from different land uses and the load reductions that would result from the implementation of various best management practices (BMPs).

TP – Total phosphorus (TP) is a way to measure phosphorus in lakes, because it includes both ortho-phosphate and the phosphorus in plant and animal fragments suspended in lake water. This term is used in Attachment G.

Terrestrial Invasive Species (TIS) – TIS are non-native plants, animals and other organisms that evolved to live on the land.

Total Maximum Daily Load (TMDL) – A Total Maximum Daily Load is a regulatory term in the U.S. Clean Water Act, describing a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards.

Targeted Runoff Management (TRM) – The Targeted Runoff Management (TRM) Grant Program offers competitive grants for local governments for the control of pollution that comes from diffuse sources, also called "nonpoint source (NPS)" pollution.

Trout Unlimited (TU) – A non-profit organization.

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, such as FSA, NRCS, APHIS-WS, and Forest Service and others are agencies of the USDA.

Division of Extension, University of Wisconsin-Madison (Extension, or Ext) – This entity was formerly called "UW Extension." The outreach department of the University of Wisconsin–Madison responsible for formal and informal educational programs throughout the State.

Viral Hemorrhagic Septicemia (VHS) – A deadly infectious fish disease caused by viral hemorrhagic septicemia virus.

Voluntary Party Liability Exemption (VLEP) – An elective environmental cleanup program of the Wisconsin Department of Natural Resources.

Water Quality Management Area (WQMA) – The area within 1,000 feet from the ordinary high water mark of navigable waters that consist of a lake, pond or flowage, except that, for a navigable water that is a glacial pothole lake, the term means the area within 1,000 feet from the high water mark of the lake; the area within 300 feet from the ordinary high water mark of navigable waters that consist of a river or stream; and a site that is susceptible to groundwater contamination, or that has the potential to be a direct conduit for contamination to reach groundwater.

Watershed – The geographic area that drains to a particular river, stream, or water body providing its water supply.

Wetlands Reserve Program (WRP) – A provision of the federal Farm Bill that compensates landowners for voluntarily restoring and protecting wetlands on their property.

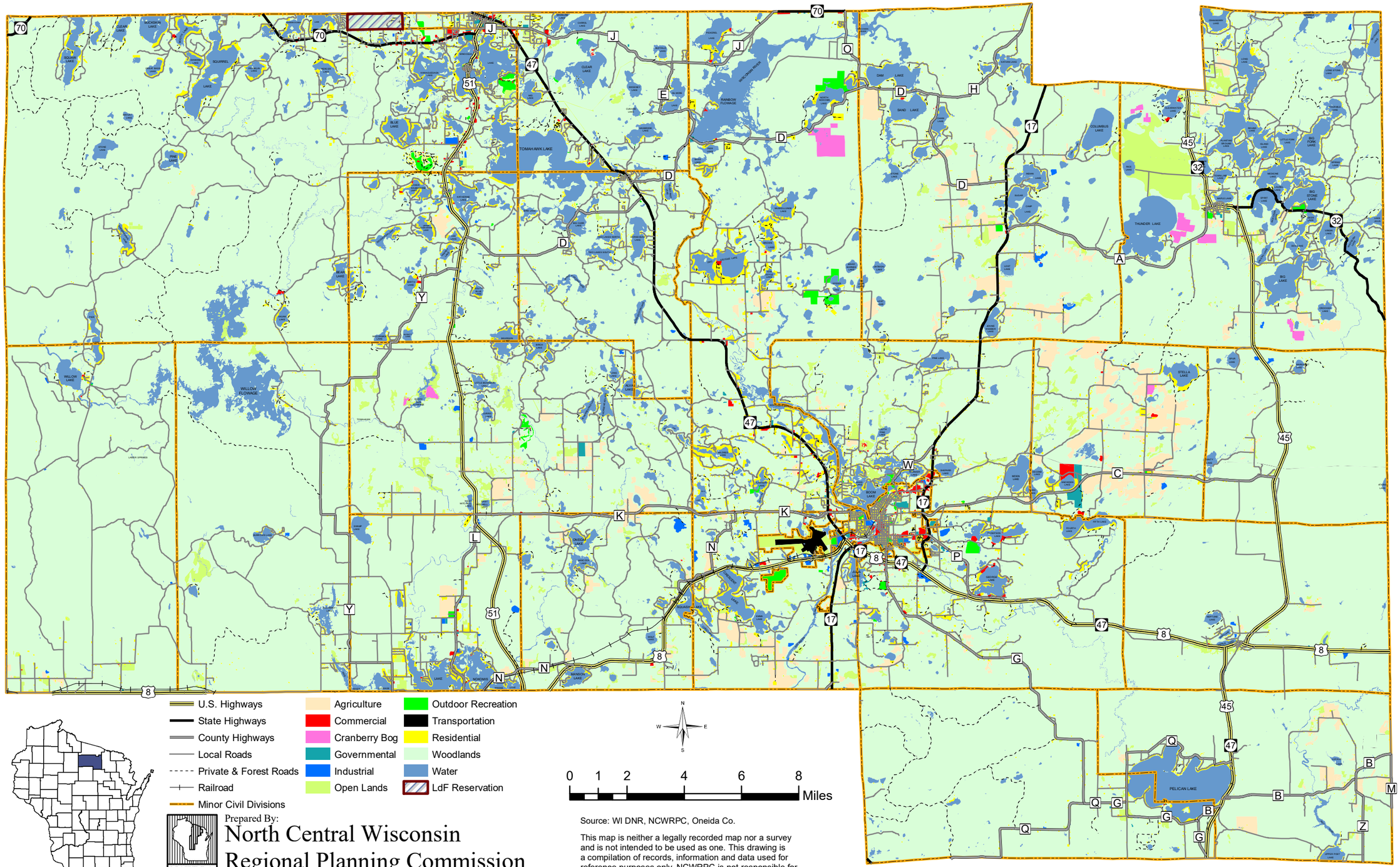
Wisconsin Headwaters Invasive Partnership (WHIP) – A 15-partner cooperative that services both Oneida and Vilas counties.

Wisconsin Land and Water Conservation Association (WLWCA) – Membership organization that represents the State's 72 County Land and Water Conservation Committees and Departments.

Work Plan – Either an annual plan or a 5-year plan of federal/State/local agency activities based upon Advisory Group developed goals, and objectives

Oneida County, Wisconsin

Map 1
Generalized LandUse



Source: WI DNR, NCWRPC, Oneida Co.

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

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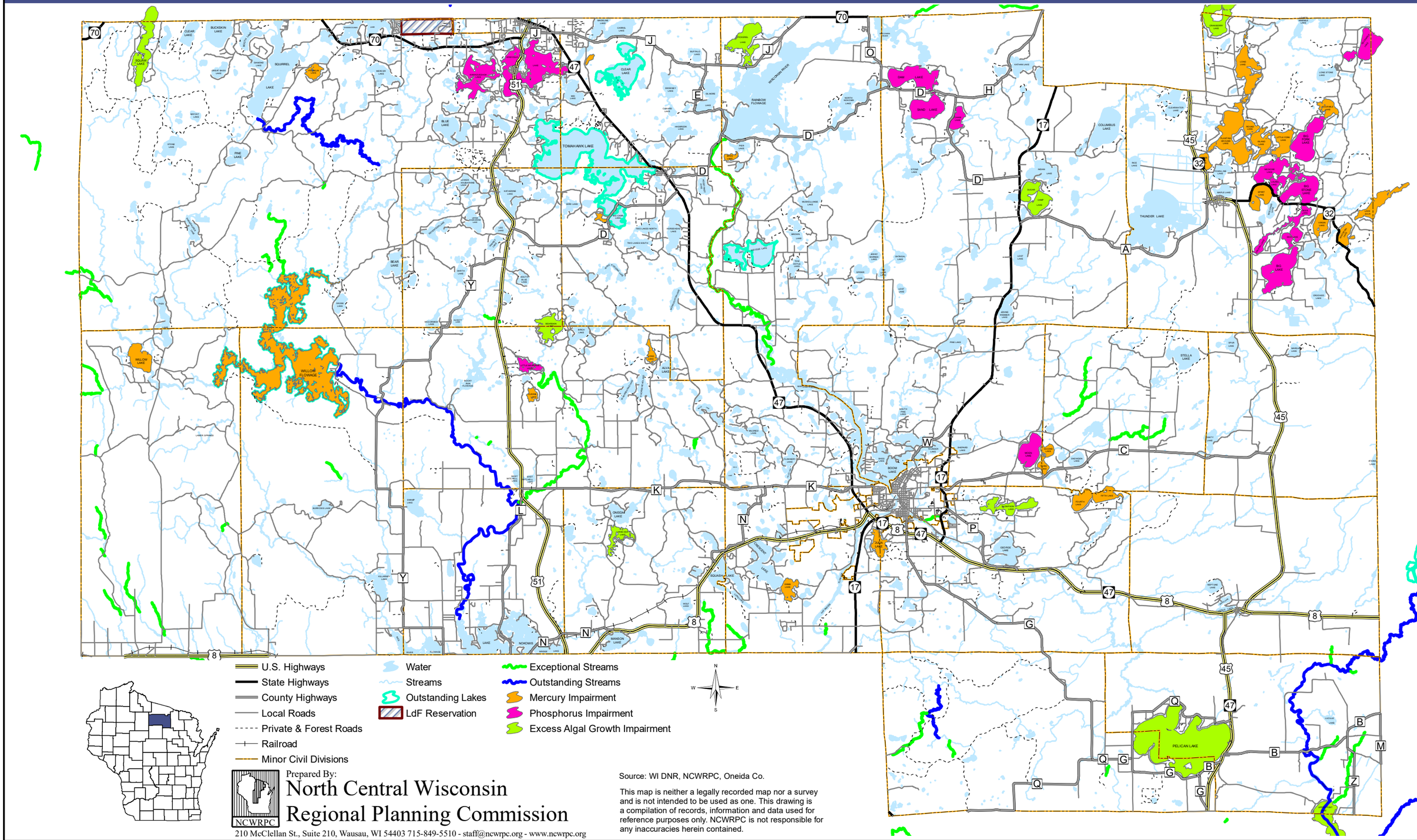
Oneida County, Wisconsin

Map 2
Designated Waters



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Source: WI DNR, NCWRPC, Oneida Co.

Oneida County, Wisconsin

Map 3
Public Forests

MINOCQUA
WOODRUFF
NEWBOLD
SUGAR CAMP
THREE LAKES
HAZELHURST
LAKE TOMAHAWK
CASSIAN
CASSIAN-WOODBORO BLOCK
PINE LAKE
STELLA
PIEHL
LYNNE-LITTLE RICE BLOCK
LYNNE
LITTLE RICE
NOKOMIS
WOODBORO
CRESCENT
Rhinelander
PELICAN
MONICO
ENTERPRISE BLOCK
ENTERPRISE
SCHOEPKE

Willow Flowage Scenic Waters Area
Woodboro Lakes Wildlife Area
American Legion State Forest
Thunder Lake Wildlife Area
Nicolet National Forest

U.S. Highways
State Highways
County Highways
Railroad
Minor Civil Divisions
LdF Reservation
State Natural Areas
Federal
Oneida County
WI DNR
Water

0 1 2 4 6 8 Miles

Source: WI DNR, NCWRPC, Oneida County

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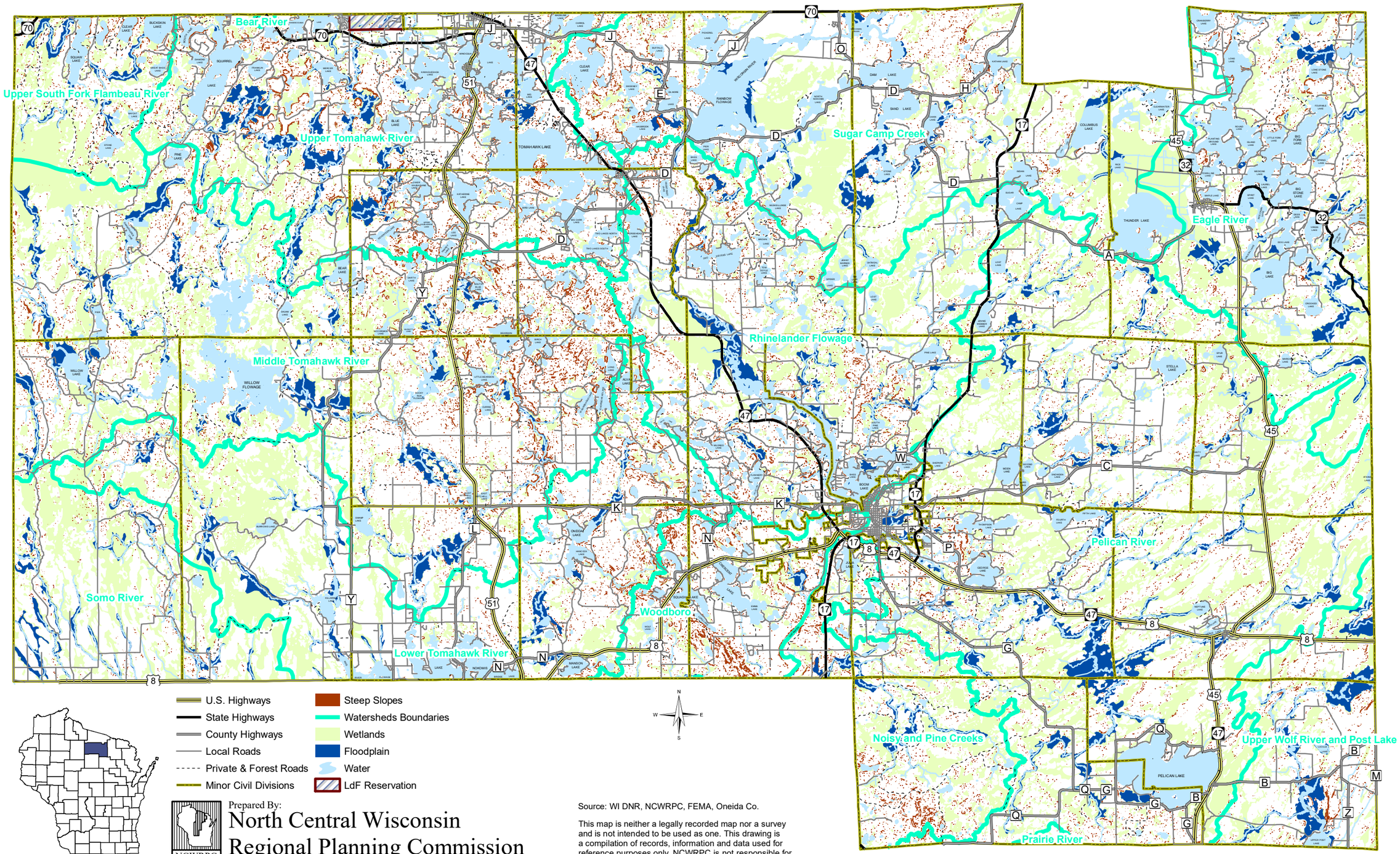
Oneida County, Wisconsin

Map 4
Natural Resources



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Source: WI DNR, NCWRPC, FEMA, Oneida Co.

ATTACHMENT A

Advisory Group Meeting #1
Collaboration Notes

Compiled by: Oneida County Land & Water Conservation; & NCWRPC

RESOURCE ADVISORY GROUP MEETING
October 30, 2018 - 9:30 a.m. to Noon
MEETING #1 - WORKING GROUPS
TOTAL IN ATTENDANCE – 18 Members; 1 Media Representative

Members broke into groups to begin work toward developing new or updating current goals and objectives for the New Land and Water Resource Management Plan.

GROUP MOTT

Bob Mott, Note taker	Conservation & UW-Extension Education Com.
John Bilogan	Oneida Co. Forestry & Outdoor Recreation
Marcia Obukowicz	Community Representative
Michael Stinebrink	Natural Resources Conservation Service
Alan Van Raalte	Conservation & UW-Extension Education Com.

GROUP SADAUSKAS

Michele Sadauskas, Note taker	Oneida Co. Land & Water Conservation
John Engel	Community Representative
Ed Hammer	Town of Newbold
Karl Jennrich	Oneida Co. Planning & Zoning
Ben Niffenegger	Wisconsin Valley Improvement Company
Norris Ross	Three Lakes Waterfront Association
Tamarack Song	Community Representative
Baerbel Ehrig	Conservation Project Assistant (LWCD)

GROUP BOISMENUE

Stephanie Boismenue, Note taker	Oneida Co. Land & Water Conservation
Tracy Beckman	Lumberjack RC & D
Fred Heider (Observer)	North Central WI Regional Planning Commission
Tom Rudolph	Community Representative
Scott Van Egren	Department of Natural Resources

Bob Mott's Table Notes
Oneida County Land & Water Plan – Oct. 30, 2018

Goal 11

Accept the reality and develop responses to the reality of climate change.
- severe weather events
  - rainfall - erosion
  - forest - harvest

Goal 9 – Address land fragmentation
  - management of small tracts

Goal 4 –
1. Add: CAFOs and related issues.
2. Add: spreading of human and animal waste on frozen land.

Where do these go:
- Irrigation
- Pollinators
- Wildlife / fish management
- Recreational trail development
- Density of development
- Transportation (transit commission)
  - Elderly
  - Health / fire / police emergency response
  - Loosing EMTs in outlying areas

Michele Sadauskas' Table Notes
Oneida County Land & Water Plan – Oct. 30, 2018

1. "Water goal" (this would include both surface and groundwater)
    a. Slow the spread of non-native aquatic invasive species
    b. Protect and restore shorelands
    c. Reduce sources of nonpoint source water pollution
    d. Protect groundwater quality
2. "Land goal" (includes both forestry, agriculture, and wildlife)
    a. Slow the spread of non-native terrestrial invasive species
    b. Some type of forest objective here. We wanted to keep a forestry objective, but not sure what it would look like. The one currently in place seems like an objective that should sit in the Forestry Dept., not our Dept.
    c. Some type of mining objective here. The current mining goal seems to be oriented around non-metallic mining. This objective should involve both metallic and non-metallic mining.
    d. Reduce wildlife conflicts. Comments to this section….we should include livestock predation and CWD. I as a county con think this shouldn't be only wildlife *conflicts*, but include positive wildlife activities as well. We perform monitoring on different species, for ex. native mussels and bumblebees, and work towards increasing pollinator habitat.
3. "New & emerging issues goal" (for ex. air quality, air space, noise, etc. what are those issues on the fringe that we should be having staff research, learn about, attend conferences, and relaying info to the general public)
    a. Professional development
    b. Then corresponding outreach to citizens

General comments on how we got to the above:

- ✓ the group felt very uncomfortable with prioritizing goals. So many of the goals interconnect, so how can we truly say what is #1, #2, etc. BUT, there was some consensus that prioritizing would help the department focus their time. So, what happened is the group decided to lump current goals, and prioritizing took a back seat.
- ✓ Education and involvement (engagement) should run through each objective. Group felt very strongly about this. Not only just educating people, but working towards engaging people from their educational learning experience.
- ✓ Instead of listing objectives as a., b., c., etc., just use bullet points. Less confusion, because some people thought a. was higher priority than b.
- ✓ We should get small-scale ag. into the plan somewhere, as well as developing new crops (value added?) such as Bayfield did with hazelnut.
- ✓ A number of people felt strongly and asked the question "what are we doing now that *isn't* in the plan" and said we need to make sure to include those items. some of them are: pollinator conservation, woody habitat, and including rivers…not just lakes.
- ✓ Wetland focus needs to be added, as well as CAFO's and climate change.

Stephanie Boismenue's Table Notes
Oneida County Land & Water Plan – Oct. 30, 2018

I&C Concerns:
Forestry – Conservation – private forest owners –
Engaging / implementing practices.

Ag – Consult with:

- Should include consulting foresters with this group (industrial forests);
- Woodland owners Assoc. should be consulted;
- Cranberry growers;
- Real-estate agents.

- Forestry Education of TIS.
- Ag Potential problems and protecting soil.

- Water
    - Funding for early detection/rapid response for AIS/TIS.
    - Communication between lake groups and cranberry growers.
    - Develop town lakes committees – encourage all towns to financially support lake associations where all town residents would be members.

- Tourism is a driver.
- Engage people in Citizen Science.
- County Forestry & County L&W departments should collaborate/coordinate/cooperate.

- Land Development How is the City of Rhinelander / Minocqua handling non-point water pollution? Are they still dumping snow in the river? How are they managing road salt?

- Climate change education.
- Education on shoreline development and stewardship efforts.
- Look at Great Lakes Indian Fish & Wildlife Commission (GLIFWC) study regarding climate change and impact to species.
- Education with real estate agents and home buyers.
    - Develop partnership with real estate agents;
    - Include Healthy Lakes info and other stuff in welcome packets.

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Under each goal focus on objectives that address:

1. Education;
2. Maintenance/Preservation; and
3. Restoration.

Goal 1: Slow the spread of invasive species.

- Monitor for AIS.
- Review AIS Strategic Plan.
- Engage towns. (Towns could sponsor AIS grants.)
- Prevent introduction of new AIS/TIS; control, manage, reduce, restoration.

Goal 2: Protect shoreland areas.

- Educate shoreline owners – both new & existing.

Goal 3: Restore shorelands.

- Protect shoreland habitats from land development & invasive species.
- Incorporate Healthy Lakes priorities.

Goal 4: Reduce sources of nonpoint source water pollution.

- Adapt to land use & weather – adaption strategies.

Goal 5: Educate public about groundwater quality.

- Educate about connection between wetlands and habitat.

Goal 6: Protect lake ecosystems. ~~from recreational pressure degradation~~.

- Promote Healthy Lakes.
- Protect from recreation pressure.
- Monitor water quality (promote Citizen Lake Monitoring Network participation).

Goal 7: Improve forest silviculture for multiple uses.

- Control illegal garbage dumping on commercial, county, state, and federal forestlands.
    - Landfill has limited hours. Need more transfer stations with longer hours, so it is easier for people to do the right thing.
- Need more resources for dumping deer caucuses (prevent CWD, invasive species, & garbage.

Goal 8: Promote on-line resource information distribution.

Goal 9: Minimize impacts on our natural resources from mining activities.

-

Goal 10: Reduce wildlife conflicts.

- Promote deer donation for food pantrys.

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ATTACHMENT B

Public Hearing Notice

From: Oneida County Land & Water Conservation

NOTICE OF PUBLIC HEARING – Class II

NOTICE IS HEREBY GIVEN that a public hearing will be held on Wednesday, June 5, 2019 at 6:00 p.m. in the County Board Room of the Oneida County Courthouse, 1 South Oneida Avenue, Rhinelander WI 54501. Doors 2, 3 and 12 of the Courthouse will be open at 5:40 p.m. The hearing concerns the Oneida County 2020-2029 Land and Water Resource Management Plan and will be held before the Oneida County Conservation and UW-Extension Education Committee. Written and oral comments on the draft plan will be taken at that time.

Oneida County supports a locally led process that enhances decision-making during their current revision of the 2020-2029 Land and Water Resource Management Plan. The County is in the process of identifying land and water resource concerns and prioritizing work tasks into a five-year work plan. Copies of the draft plan are available upon request at the Oneida County Land and Water Conservation Department, Courthouse, 2nd floor, Rhinelander, Wisconsin from 8:00 a.m. to 4:30 p.m., Monday through Friday or online at www.ncwrpc.org/oneida/lwrm or www.oclw.org/land--water-resource-management-plan-lwrm.html.

For additional information regarding this public hearing, please contact Michele Sadauskas, County Conservationist at the Oneida County Land and Water Conservation Department at 715-369-7835. All interested parties will be heard.

ATTACHMENT C

Impaired Waters List – 303(d) Waters

From: WDNR

Local Waterbody Name	Official Waterbody Name	Water Type	WATERS ID (AU)	Counties	Size	Units	Impaired Water ID	Date Listed	Source Category	Pollutant	Impairment Indicator	Status	TMDL Priority	Listing Detail
Bass Lake	Bass Lake	LAKE	128740	Oneida	67.5	ACRES	26	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Bearskin Lake	Bearskin Lake	LAKE	128040	Oneida	403	ACRES	2016-173	4/1/2016	PS/NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	Natural Conditions (5C)
Big Fork Lake (Three Lakes Chain)	Big Fork Lake	LAKE	128044	Oneida	663	ACRES	41	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Big Fork Lake (Three Lakes Chain)	Big Fork Lake	LAKE	128044	Oneida	663	ACRES	2014-261	4/1/2014	NPS	Total Phosphorus	Impairment Unknown	TMDL Development	High	Phosphorus Listed (5P)
Big Lake (Three Lakes Chain)	Big Lake	LAKE	128045	Oneida	845	ACRES	25	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Big Lake (Three Lakes Chain)	Big Lake	LAKE	128045	Oneida	845	ACRES	2014-263	4/1/2014	NPS	Total Phosphorus	Eutrophication, Water Quality Use Restrictions	TMDL Development	High	TMDL Needed (5A)
Big Stone Lake (Three Lakes Chain)	Big Stone Lake	LAKE	128046	Oneida	607	ACRES	46	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Big Stone Lake (Three Lakes Chain)	Big Stone Lake	LAKE	128046	Oneida	607	ACRES	2014-262	4/1/2014	NPS	Total Phosphorus	Water Quality Use Restrictions, Impairment Unknown	TMDL Development	High	TMDL Needed (5A)
Bird Lake	Bird Lake	LAKE	128863	Oneida	97.3	ACRES	48	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Cranberry Lake	Cranberry Lake	LAKE	128768	Oneida, Vilas	924	ACRES	2014-259	4/1/2014	NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	TMDL Needed (5A)
Currie Lake	Currie Lake	LAKE	128089	Oneida	94.9	ACRES	98	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Dam Lake (Sugar Camp Chain)	Dam Lake	LAKE	128092	Oneida	732	ACRES	2016-234	4/1/2016	PS/NPS	Total Phosphorus	Impairment Unknown	303d Listed	High	Natural Conditions (5C)
Deer Lake (Three Lakes Chain)	Deer Lake	LAKE	128094	Oneida	188	ACRES	2018-262	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Deer Lake (Three Lakes Chain)	Deer Lake	LAKE	128094	Oneida	188	ACRES	2018-263	4/1/2018	NPS	Total Phosphorus	Water Quality Use Restrictions	303d Listed	High	TMDL Needed (5A)
Dog Lake (Three Lakes Chain)	Dog Lake	LAKE	128743	Oneida	202	ACRES	114	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Dog Lake (Three Lakes Chain)	Dog Lake	LAKE	128743	Oneida	202	ACRES	2018-264	4/1/2018	NPS	Total Phosphorus	Impairment Unknown	303d Listed	High	Phosphorus Listed (5P)
Emma Lake	Emma Lake	LAKE	128745	Oneida	227	ACRES	131	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Fifth Lake	Fifth Lake	LAKE	128111	Oneida	238	ACRES	2014-204	4/1/2014	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Foster Lake	Foster Lake	LAKE	128113	Oneida	37.4	ACRES	146	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Fourmile Lake (Three Lakes Chain)	Fourmile Lake	LAKE	128114	Oneida	210	ACRES	2012-154	4/1/2012	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Fourth Lake	Fourth Lake	LAKE	128115	Oneida	253	ACRES	2014-203	4/1/2014	NPS	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Franklin Lake	Franklin Lake	LAKE	128117	Oneida	159	ACRES	158	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Gilmore Lake	Gilmore Lake	LAKE	128123	Oneida	314	ACRES	170	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Hancock Lake	Hancock Lake	LAKE	128130	Oneida	259	ACRES	2014-249	4/1/2014	NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	TMDL Needed (5A)
Hemlock Lake	Hemlock Lake	LAKE	128137	Oneida	38	ACRES	184	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Hodstradt Lake	Hodstradt Lake	LAKE	128143	Oneida	119	ACRES	186	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Island Lake (Three Lakes Chain)	Island Lake	LAKE	128153	Oneida	305	ACRES	199	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Jennie Webber Lake	Jennie Webber Lake	LAKE	128156	Oneida	237	ACRES	205	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Kawaguesaga Lake	Kawaguesaga Lake	LAKE	128163	Oneida	700	ACRES	2014-250	4/1/2014	NPS	Total Phosphorus	Impairment Unknown	TMDL Development	High	Phosphorus Listed (5P)
Julia Lake	Lake Julia	LAKE	128167	Oneida	241	ACRES	213	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Thompson Lake	Lake Thompson	LAKE	128748	Oneida	401	ACRES	2016-231	4/1/2016	PS/NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	Natural Conditions (5C)
Thompson Lake	Lake Thompson	LAKE	128748	Oneida	401	ACRES	485	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Laurel Lake (Three Lakes Chain)	Laurel Lake	LAKE	128175	Oneida	249	ACRES	2018-259	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Laurel Lake (Three Lakes Chain)	Laurel Lake	LAKE	128175	Oneida	249	ACRES	2018-260	4/1/2018	NPS	Total Phosphorus	Water Quality Use Restrictions	303d Listed	High	TMDL Needed (5A)
Little Bearskin Lake	Little Bearskin Lake	LAKE	128180	Oneida	184	ACRES	2016-228	4/1/2016	PS/NPS	Total Phosphorus	Impairment Unknown	303d Listed	High	Natural Conditions (5C)
Little Fork Lake (Three Lakes Chain)	Little Fork Lake	LAKE	128181	Oneida	336	ACRES	2018-257	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Long Lake	Long Lake	LAKE	128190	Oneida	113	ACRES	249	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Long Lake (Three Lakes Chain)	Long Lake	LAKE	128193	Oneida	604	ACRES	250	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)

Local Waterbody Name	Official Waterbody Name	Water Type	WATERS ID (AU)	Counties	Size	Units	Impaired Water ID	Date Listed	Source Category	Pollutant	Impairment Indicator	Status	TMDL Priority	Listing Detail
Mcgrath Lake	McGrath Lake	LAKE	128215	Oneida	51.1	ACRES	275	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Medicine Lake (Three Lakes Chain)	Medicine Lake	LAKE	128218	Oneida	396	ACRES	2016-237	4/1/2016	PS/NPS	Total Phosphorus	Impairment Unknown	303d Listed	High	Natural Conditions (5C)
Medicine Lake (Three Lakes Chain)	Medicine Lake	LAKE	128218	Oneida	396	ACRES	2018-258	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Minocqua Lake	Minocqua Lake	LAKE	128227	Oneida	1339	ACRES	2014-251	4/1/2014	NPS	Total Phosphorus	Impairment Unknown	TMDL Development	High	Phosphorus Listed (5P)
Moen Lake	Moen Lake	LAKE	128230	Oneida	461	ACRES	298	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Moen Lake	Moen Lake	LAKE	128230	Oneida	461	ACRES	2016-232	4/1/2016	PS/NPS	Total Phosphorus	Excess Algal Growth	303d Listed	High	Natural Conditions (5C)
Mud Lake	Mud Lake	LAKE	128234	Oneida	116	ACRES	2016-238	4/1/2016	PS/NPS	Total Phosphorus	Water Quality Use Restrictions, Impairment Unknown	303d Listed	High	Natural Conditions (5C)
North Nokomis Lake	North Nokomis Lake	LAKE	128242	Oneida	470	ACRES	318	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
North Two Lakes	North Two Lakes	LAKE	128244	Oneida	150	ACRES	323	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Pelican Lake	Pelican Lake	LAKE	128252	Oneida	3545	ACRES	2016-233	4/1/2016	PS/NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	TMDL Needed (5A)
Pickerel Lake	Pickerel Lake	LAKE	128257	Oneida	581	ACRES	2014-253	4/1/2014	NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	TMDL Needed (5A)
Planting Ground Lake (Three Lakes Chain)	Planting Ground Lake	LAKE	128261	Oneida	1011	ACRES	2012-154	4/1/2012	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Range Line Lake (Three Lakes Chain)	Range Line Lake	LAKE	128265	Oneida	129	ACRES	377	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Round Lake (Three Lakes Chain)	Round Lake	LAKE	128272	Oneida	151	ACRES	2018-256	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Second Lake	Second Lake	LAKE	128279	Oneida	103	ACRES	2014-201	4/1/2014	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Slaughterhouse Creek	Slaughterhouse Creek	RIVER	12806	Oneida	0.7	MILES	439	4/1/1998	Contam. Sed.	Unspecified Metals	Chronic Aquatic Toxicity	303d Listed	Low	TMDL Needed (5A)
Spirit Lake (Three Lakes Chain)	Spirit Lake	LAKE	128297	Oneida	348	ACRES	2018-261	4/1/2018	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Squaw Lake	Squaw Lake	LAKE	18693	Oneida, Vilas	736	ACRES	2014-278	4/1/2014	NPS	Unknown Pollutant	Excess Algal Growth	303d Listed	Low	TMDL Needed (5A)
Sugar Camp Lake	Sugar Camp Lake	LAKE	128310	Oneida	519	ACRES	473	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Third Lake	Third Lake	LAKE	128317	Oneida	96.7	ACRES	2014-202	4/1/2014	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Virgin Lake	Virgin Lake	LAKE	128371	Oneida	261	ACRES	2016-239	4/1/2016	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Whitefish Lake	Whitefish Lake	LAKE	128378	Oneida	199	ACRES	517	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Willow Flowage	Willow Flowage	LAKE	128380	Oneida	4229	ACRES	2012-151	4/1/2012	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)
Willow Lake	Willow Lake	LAKE	128381	Oneida	410	ACRES	518	4/1/1998	Atm. Dep.	Mercury	Contaminated Fish Tissue	303d Listed	Low	Mercury Atm. Dep. (5B)

ATTACHMENT D

Outstanding and Exceptional Resource Waters

From: WDNR

Outstanding and Exceptional Waters Report: County: Oneida

WADRS ID	Official Waterbody Name	Local Waterbody Name	WBIC	ORW/ERW	Counties
12740	Bearskin Creek	Bearskin Creek	1522500	/ERW	Oneida
12739	Bearskin Creek	Bearskin Creek	1522500	/ERW	Oneida
12738	Bearskin Creek	Bearskin Creek	1522500	/ERW	Oneida
128043	Big Carr Lake	null	971600	ORW/	Oneida
128076	Clear Lake	null	977500	ORW/	Oneida
12823	Gudegast Creek	Gudegast Creek	1573900	/ERW	Oneida
1459598	Invalid WBIC. Not in ROW	Creek 20-11 T38n R5e	91111	/ERW	Oneida
12800	Jennie Creek	Jennie Creek	1563600	/ERW	Oneida
12770	Langley Creek	Langley Creek	1532200	/ERW	Oneida
12829	Lela Creek	Lela Creek	1575200	/ERW	Oneida
12665	Little Pine Creek	Little Pine Creek (T35N R09E S17 SW NE)	1566400	/ERW	Oneida
128186	Little Tomahawk Lake	null	1543900	ORW/	Oneida
12765	Little Willow Creek	Little Willow Creek	1531100	/ERW	Oneida
12660	Noisy Creek	Noisy Creek	1565100	ORW/	Oneida
12821	Outlet Creek	Outlet Creek	1573200	/ERW	Oneida
10666	Palm Creek	Palm Creek	404500	/ERW	Oneida
1527595	Palm Creek	Palm Creek Springs	404500	/ERW	Oneida
12839	Planert Creek	Planert Creek	1579300	/ERW	Oneida
313666	Radtke Creek	Radke Creek	1567300	/ERW	Oneida
12806	Slaughterhouse Creek	Slaughterhouse Creek	1568100	/ERW	Oneida
12779	Squirrel River	Squirrel River	1535300	ORW/	Oneida
12818	Starks Creek	Starks Creek	1572400	/ERW	Oneida
12767	Stony Creek	Stony Creek	1531200	/ERW	Oneida
128323	Tomahawk Lake	null	1542700	ORW/	Oneida
314041	Tomahawk River	Tomahawk River	1515800	ORW/	Oneida
128326	Two Sisters Lake	null	1588200	ORW/	Oneida
23384	Un Spring	Creek 28-2 T37n R6e	1524500	/ERW	Oneida
23862	Un Spring	Palm Springs	404600	/ERW	Oneida
23380	Un Spring	Creek 28-1 T37n R6e	1524700	/ERW	Oneida
12717	Unnamed	Unnamed Creek 7-13 (T36n,R4e,S7,Nese,44)	1553200	/ERW	Oneida
12716	Unnamed	Unnamed Creek 18-1 (T36n,R4e,S18,Sene,44)	1553100	/ERW	Oneida
12750	Unnamed	Unnamed Creek (Creek 34-10)	1526700	/ERW	Oneida
12668	Unnamed	Unnamed Creek (T35n,R9e,S21,Nesw,44)	1566900	/ERW	Oneida

1459604	Unnamed	Creek 3-7 T38n R5e	1535750	/ERW	Oneida
12715	Unnamed	Unnamed Creek 29-8 (T36n,R4e,S29,Senw,44)	1553000	/ERW	Oneida
1440860	Unnamed	Creek 26-13	1518830	/ERW	Oneida
1440854	Unnamed	Creek 2-13	404700	/ERW	Oneida
1440848	Unnamed	Creek 22-16	402600	/ERW	Oneida
18400	Unnamed	Unnamed Creek (T37n,R4e,S30,Swne,44)	1530800	/ERW	Oneida
18394	Unnamed	Creek 27-7 T37n R6e	1524800	/ERW	Oneida
12764	Unnamed	Unnamed Creek 18-3 (T37n,R4e,S18,Swne,44)	1530700	/ERW	Oneida
12712	Unnamed	Unnamed Creek 28-6 (T36n,R4e,S28,Swnw,44)	1552600	/ERW	Oneida
12711	Unnamed	Unnamed Creek 34-6 (T36n,R4e,S34,Nwnw,44)	1552300	/ERW	Oneida
12706	Unnamed	Unnamed Creek (T36n,R4e,S12,Senw,44)	1549800	/ERW	Oneida
12802	Unnamed	Unnamed Creek 31-15 (T36n,R8e,S31,Swse	1563900	/ERW	Oneida
12746	Unnamed	Unnamed Creek 28-1 (T37n,R6e,S28,Nene,44)	1524600	/ERW	Oneida
12735	Unnamed	Creek 34-14 (T37n,R5e,S34,Nwse,44)	1521300	/ERW	Oneida
12763	Unnamed	Unnamed Creek 18-4 (T37n,R4e,S18,Nene,44)	1530600	/ERW	Oneida
1514288	Unnamed	Creek 26-4 (T37N, R7E)	3000208	/ERW	Oneida
10650	Upper Post Lake	Post Lake, Upper	399200	ORW/	Langlade,Oneida
10658	Walczak Creek	Walczak Creek	401400	/ERW	Oneida
12667	White Springs Creek	Creek 21-8	1566800	/ERW	Oneida
128380	Willow Flowage	Willow Flowage	1528300	ORW/	Oneida
1520643	Wisconsin River	Wisconsin River	1179900	/ERW	Oneida
1520635	Wisconsin River	Wisconsin River	1179900	/ERW	Oneida,Vilas
315463	Wolf River	Wolf River-Main Stem	241300	ORW/	Forest,Langlade,Oneida

ATTACHMENT E

Conservation Practices and Cost-Share Rates

Compiled by: Oneida County Land & Water Conservation

Oneida County
Conservation Practices and Cost-Share Rates

Oneida County promotes the following practices and maximum cost share rates:

Wisconsin Department of Agriculture Funding: ATCP 50 SWRMP

Practices – ATCP 50.61 through ATCP 50.98

Maximum Cost Share Rates - ATCP 50.42

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ATTACHMENT F

Public Hearing Comments

Compiled by: Oneida County Land & Water Conservation

From: Allen, Dee <dee.allen@ldftribe.com>
Sent: Wednesday, June 5, 2019 3:01 PM
To: Michele Sadauskas; bobmott329@msn.com; a.evanraalte@gmail.com
Cc: Wildcat Sr., Joseph; Wawronowicz, Larry; Kim Swisher; Tribal Council Members
Subject: Oneida County LWRM Plan Comments
Attachments: LDF Tribe comments Oneida County Land and Water Resource Management Plan 2020.docx

Please see attached comments for the 2020-2029 Oneida County Land and Water Resource Management Plan. We request these comments be put on record or read at the hearing this evening. Thank You.

Dee Ann Allen, Tribal Council
Lac du Flambeau Band of Lake Superior Chippewa Indians Tribal Government Official

Lac du Flambeau Band of Lake Superior Chippewa Tribe comments for the:

Oneida County Land and Water Resource Management Plan 2020-2029
Prepared by: North Central Wisconsin Regional Planning Commission

General/Issues:

The document excludes Tribal Consultation, Coordination, or Involvement at every level.

Tribal representation should have been involved upfront and during the plan development as a resource advisory group member. No participation was requested by either Oneida County Board/Conservation & UW Extension Committee.

Not all user groups had the opportunity to participate or listed in the plan. The Tribe is also a property owner and user group.

Assessments/DATA:

The plan identifies resource assessments with professionals. Did Great Lakes Indian Fish & Wildlife Commission participate or provide input? Assumption is not. The LDF Tribe was not contacted to provide information or participate.

The plan does not include GLIFWC data, Tribal Data, Climate Change Data, etc.

Location/Mapping:

Plan does not include information or mapping of: under Location or any other section of the plan

- Lac du Flambeau Reservation (which is adjacent to Oneida County)and/or Reservation land in Oneida County
- Ceded Territory- Treaties of 1836, 1842, 1854

Note:
The Lac du Flambeau Tribe maintains reservation lands within and adjacent to Oneida County, maintains treaty protected resource use within Oneida County.

The plan does not include a ceded territory map, LDF Tribal Reservation border or map. Should include an insert or addendum to identify this.

Water Resources:

The LDF Tribe maintains federally approved Water Quality Standards within Oneida County, and is a property owner within Oneida County. This plan does not address this and should identify this in the plan. The Tribal Water Resource Department was not contacted to participate or asked to provide input.

The Plan fails to recognize the Lac Du Flambeau Reservation, ceded territory lands and treaty protected resource use, and federally recognized outstanding resource water designations. The Lac du Flambeau Tribe as well as cooperating agencies maintain information and data that would be useful and important to this plan resulting in a missed opportunity to correct errors and include readily available information.

Sensitive and Rare Natural Communities:

The plan identifies cultural and archeological sites within the county. The Tribal Historic Preservation Office was not contacted or asked to participate nor were any other Tribe that has historic sites in Oneida County. (A significant site being McCord Village)

No mention of wild rice, medicinal plants and other species of native cultures. The Tribe and GLIFWC work extensively on wild rice management and restoration in the ceded territory and on reservation.

Climate Change:

The LDF Tribe has a Climate Resiliency Plan initiative and were not contacted regarding this.

Current Land Use Issues:

Does not identify all WPDES municipal and Industrial discharges that are listed on Wisconsin's WPDES listing. More discharge sites than what is mentioned. The Lakeland Sanitary District has a permit to discharge but is not listed. At least 9 other point discharges not listed.

Minimizing impacts to our natural resources form mining activities: GOAL 9

All eleven Tribes oppose Metallic Mineral Exploration, Prospecting and Mining. This plan should identify this as well as include stronger language to protect the resources and land from this activity.

Potential metallic mining should be in each section of the plan the potential to pollute land and all water resources is significant.

Commercial and Industrial Development:

Should include to develop in an environmentally sustainable manner.

Thorough Education Needed- suggestion:
The plan was developed with a Resource Advisory Committee appointed by a UW-Extension Committee and prepared by North Central Regional Planning Commission.

It is suggested that LDF UW Extension staff provide a training to the UW extension committee overseeing the development of this plan to include:

a) Working Effectively with Tribal Governments
b) Awareness of Place- Reservation Location, Treaty ceded territory
c) Coordination of information and data
d) Federal and Tribal Laws

e) Tribes Climate Adaptation Work (climate change was a large portion of the plan)
f) Consultation Policy

This Same Training should be offered to North Central Regional Planning Commission

These are a few of comments and concerns which could have been addressed if the Tribe were included upfront and during the development.

Without proper notification of this plan insufficient information and comments can only be provided at this time.

Request to be consulted with before this plan is approved by the Oneida County Board.

Comments submitted by Dee A Allen on behalf of the Tribe and Tribal Natural Resources
Contact: dee.allen@ldftribe.com

Public hearing

Town of Lake Tomahawk — My name is Eileen Lonsdorf. I live in Oneida City at 7845 Lake Lynard Rd. I am a Retired Registered Nurse. I am here to comment on the April 2018 draft

Just four years ago, in 2015, a flood of thick yellow wastewater sludge from the long abandoned Gold King Mine in Silverton Colorado made headlines, as it flowed down the Animas River toward the Navajo nation, farmland, and the Colorado river. Three million gallons of mine waste water and tailings containing cadmium, lead, arsenic, iron, copper, zinc, and other heavy metals, all flowed into the Colorado and San Juan Rivers...affecting four states. Colorado, New Mexico, Arizona, and Utah.

It is ironic that the damage was actually caused by the EPA. And it is sad and reprehensible that the farmers and Navajo nation that were affected by the toxic Mine spill are still litigating in court against the government for financial compensation.

The reason that I mention this incident here today is because of my concern for a potential duplication in the state of Wisconsin. A spill of toxic mine waste water in Oneida County in the Willow Flowage watershed, (where the proposed Lynn mine site is located), would go directly down into the Wisconsin River, and down the Mississippi river until it reached the Atlantic. Many states south of Wisconsin would obviously be affected.

think this committee should be applauded for its goals. Their oal of protecting and enhancing the wetlands and surface vater quality is of tantamount importance for Oneida County. feel that all actions taken by this committee should be made vith this goal in mind.

lowever I am very concerned about the lack of language nentioning active and preventative measures regarding Mining in Oneida County. When it comes to preventing amage from waste water in the mining process, I see only assive, watch-and-see-what-happens language in the five-ear plan under Item A, on page 42.
or instance, I am concerned about the fact that the Willow lowage is designated as an Outstanding and Exceptional esource Water by the State of Wisconsin. These esignations require Wisconsin to adopt an anti-degradation olicy that is designed to prevent any lowering of water uality, especially in those waters having significant cological or cultural value. I see no language in the five-year oal plan to institute this protection in Oneida County.

see that this committee recognizes the extreme usceptibility of groundwater contamination in Oneida ounty. I see they reflect their knowledge of groundwater eing very difficult to purify and taking many years to clean

itself up after the contamination. Yet, I see no language in the five-year plan to institute protection of groundwater from potential mine waste water contamination in Oneida County.

I see the committees recognition of areas of critical environmental sensitivity such as wetlands. My concern is that most known areas of critical environmental sensitivity in Oneida County are managed and regulated at the federal, state and county levels. My concern is that, due to act 134 passed in December 2017, Oneida County may lack the staffing, the finances, and legal methods of local control over controlling damage from outside industry to our wetlands and groundwater.
Case in point would be the environmental protection agency. The EPA is the agency of the federal government responsible for carrying out our nations pollution control laws. It provides technical and financial assistance to reduce and control air, water, and land pollution.
Just ask the people in Durango Colorado about the effectiveness of the EPA. Just ask all the people along the Animas River about the effectiveness of the EPA.

History tends to repeat it self time and time again, unless individual communities learn from mistakes of others.

In closing, I want to thank this committee for all the hard work

nd environmentally protective goals it has set for it self. My iggest concern, however, is that the committee lacks the ools it needs to implement adequate environmental rotection in Oneida County. It needs to fight hard to gain nose tools. I think that with more education in our ommunity, we will wake up more people and we will all be ble to fight for protecting our rivers, lakes and streams....the eason that we all live here, and the reason our tourism conomy is near a $3 million dollar a year industry.

ileen Lonsdorf
'845 Lake Cunard Rd.
ake Tomahawk, Wisconsin

June 5, 2019

Sarah Juon
Rhinelander, Wisconsin

Comment for the Public Hearing on the Oneida County Land and Water Resource Management Plan

Under Accomplishments for the 2012-18 Work Plan, it states: "With changes in mining legislation and increased citizen attention to water quality, LWCD expanded mining objectives and activities in their 2020-2024 Work Plan."

I looked for these expanding mining objectives and activities in the 2020-2024 Work Plan, and found under Goal 1: Protect and enhance wetlands and surface water quality, only this stated objective:

G. Maintain county mining ordinance(s)
1. Maintain working knowledge of mining. FLRC, P&DC….As needed.
2. Stay abreast of new research/policies. LWCD, P&Z…. As needed.
3. Attend workshops/seminars that expand staff knowledge base. LWCD, P&Z….Attend 1 conference/webinar.

In light of the 2018 referendum results on the Lynne mineral deposit issue, in which 62 percent of the Oneida County voters said they did not want a mine at the Lynne site, with what measures does this Plan reflect the voters' wishes?

The Plan commendably outlines areas of concern for our county. On page 24 it states "Because groundwater seeps more slowly than surface runoff, pollution that occurs today may not become evident for several years. Once polluted, the groundwater is very difficult to purify and may take many years to clean itself by the dilution process." On page 26 it states in poetic terms, "Wetlands are nurseries for fish and wildlife, purifiers for lakes, rivers and groundwater, and storage for floodwaters. They are also playgrounds for birders, hikers, hunters, and paddlers. In terms of hazard mitigation, they act as water storage devices in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage, including shoreline erosion. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important."

Yet when it comes to creating Objectives for protecting these vital resources, the Plan fades into a ~~reactive~~ non-active stance. I realize that Senator Tom Tiffany's 2017 Act 134 was a power-grab designed to limit the ability of local authorities to create standards that would protect our wetlands and surface water quality. But are you not allowed to state at least a few proactive goals? Such as, something along the lines of: "Given the sensitivity of wetland areas, and the importance of DNR

Designated Outstanding Resource Waters, such as the Willow Flowage near the Lynne mineral deposit, we recommend that there shall be no permitting of open pit mining granted in such areas."

If the Plan is to stand for anything more than a poetic tribute to our unique area of wetlands, lakes, forests and rivers, shouldn't there be a stated commitment to improving how we protect these areas? The Plan admits right up front: "Additional staff is needed to accomplish all the activities in this plan." An understatement. It is vital that the Plan include a stated, strong commitment to finding the means to hire the staff needed for monitoring, and fulfilling action plans.

Public Hearing: June 5, 2019
2020 - 2019 Oneida County Land & Water Resource Management Plan [DRAFT]
Testimony of Dave Noel, Sugar Camp

My name is Dave Noel. I live in Sugar Camp at 7279 Saari Pt Dr. I am a retired engineer.
I am here to comment on the April 2019 draft of the *2020 – 2029 Oneida County Land & Water Resource Management Plan*.

I want to thank the Resource Advisory Group and the Oneida County Land & Water Conservation Department for developing this comprehensive look at our land & water resources. I realize that it took many hours of work.

I applaud their conclusion that the primary goal of this Plan should be to Protect and Enhance Wetlands and Surface Water Quality of Oneida County.

I support their list of overall resource concerns, and want to acknowledge the inclusion and description of the impact of climate change on the natural resources of the northwoods, especially in the current political environment.

I was impressed with the comprehensive 5-year Work Plan, the associated action items, and specifically the annual measurement tools and guidelines.

However....I was disappointed in the lack of concern of the risks of metallic sulfide mining.
Yes, mining was mentioned in the 5-year work plan, but the plan hardly addresses the substantial risks of metallic sulfide mining. And, I want to point out that the County's current mining ordinance will not protect the wetlands and surface waters of Oneida County from acid mine drainage from a metallic sulfide mine, so the plan to "maintain the current ordinance" is meaningless.

My recommendations:

In Chapter 3, Section A (page 9) **under Overall Resource Concerns**, I recommend adding a section on the risks of metallic sulfide mining, along with your existing concerns of climate change, invasive species, and insect decline.

In the 5-Year Work Plan, Goal 1, item G (page 43), I recommend the following changes where the plan currently calls for "Maintain county mining ordnance(s)":

G. County metallic mining ordnance.
   1. Create a mining ordinance specific to metallic mining intended to limit environmental impacts within the county.
   2. Create a metallic mining ordinance prohibiting metallic mining in County owned forest land, especially within the proposed Lynn wetlands site.
   3. Hire an independent mining engineer/geologist with experience in metallic sulfide mine remediation to educate the FLRC, P&DC, and interested Board members on the true long-term impact and cost of metallic mining, especially in the proposed Lynn site.
   4. Keep abreast of impacts of the metallic mining on nearby sites (such as Eagle Mine) as well as the proposed North Forty project in Michigan.

Here's why I believe these additions are important. There seems to be a belief by many that modern technology has made metallic mining safe for the environment. This is not true. Modern mining technology is instead making it easier to mine lower-grade ores, which results in larger amounts of reactive wastes requiring permanent safe disposal.

The Ladysmith mine is often showcased as a successful metallic mine that did not harm the nearby groundwater. This is not true. The Ladysmith mine pit continues to leak reactive sulfuric acid which is detected at nearby monitoring sites. But...an important point is that Ladysmith was an extremely small mine site, and therefore the copper-sulfide ore was hauled off-site for processing. There was no on-site storage of the mine tailings. Therefore this is not a representative example.

The Eagle Mine in the UP is also showcased as an example of a model metallic mine without a single environmental mishap. Wrong again. The State of Michigan advises that the mine has exceeded wastewater chronic toxicity limits multiple times since 2017. The mine recently caused a chemical spill of sulfuric acid at the processing plant.

My point here is that there has never been a successful, environmentally safe metallic sulfide mine operation in the US. Never. Metallic sulfide mining represents a clear and present danger to our wetlands and surface water, and because of this it deserves more attention in this natural resource management plan.

Thank you for allowing me to comment.

ATTACHMENT G

Pollutant Load Reduction Tables

Compiled by: WDNR

WATERSHED NAME	HUC12	Row Crop Acres	Translated TMDL Allocations				
				Current Criteria		Recommended SSC	
			TP Baseline (lb/ac/yr)	Reduction Needed	TP Target (lb/ac/yr)	Reduction Needed	TP Target (lb/ac/yr)
Headwaters-Eagle River	070700010201	137	1.8	79%	0.4	63%	0.6
Julia Creek	070700010202	0					
Three Lakes Chain of Lakes-Eagle River	070700010203	111	2.3	79%	0.5	63%	0.8
Ninemile Creek-Eagle River	070700010204	0					
Planting Ground Lake-Eagle River	070700010205	92	1.8	79%	0.4	63%	0.7
Eagle River Chain of Lakes - Eagle River	070700010206	0	0.5	79%	0.1	63%	0.2
Mud Creek	070700010401	47	1.1	79%	0.2	63%	0.4
Sugar Camp Creek	070700010402	631	1.8	79%	0.4	63%	0.7
Little St. Germain Creek	070700010403	0	0.3	79%	0.1	63%	0.1
Rainbow Flowage-Wisconsin River	070700010404	273	1.8	79%	0.4	63%	0.7
Gilmore Creek	070700010503	0					
Tom Doyle Creek-Wisconsin River	070700010601	73	1.2	79%	0.2	63%	0.4
Pine Lake Creek	070700010602	605	1.8	79%	0.4	63%	0.7
Rhinelander Flowage	070700010603	146	1.7	79%	0.3	63%	0.6
Monico Creek	070700010701	64	1.8	79%	0.4	63%	0.7
Upper Pelican River	070700010702	13	1.9	79%	0.4	63%	0.7
Twin Lakes Creek	070700010703	394	2.3	79%	0.5	63%	0.8
Gudegast Creek	070700010704	2006	2.9	79%	0.6	63%	1.1
Headwaters-North Branch Pelican River	070700010705	2281	2.2	79%	0.4	63%	0.8
North Branch Pelican River	070700010706	0					
Middle Pelican River	070700010707	0					
Lower Pelican River	070700010708	112	3	79%	0.6	63%	1.1
Arbor Vitae Lakes	070700010801	0					
Tomahawk Lake-Tomahawk River	070700010802	0					
Mishonagon Creek-Tomahawk River	070700010803	10	0.4	72%	0.1	61%	0.2
Squirrel River	070700010804	0					
Kaubashine Creek	070700010805	24	1.7	79%	0.3	63%	0.6
Cedar Falls-Shishebogama Lake-Tomahawk River	070700010806	4	1.9	79%	0.4	63%	0.7
Headwaters-Willow River	070700010901	0					
Swamsauger Creek	070700010902	0					
Willow Reservoir	070700010903	0					
Rocky Run	070700010904	14	1.3	79%	0.3	63%	0.5
Bear Creek-Tomahawk River	070700010905	0					
Bearskin Creek	070700010906	483	3.6	79%	0.7	63%	1.3
Swamp Creek-Tomahawk River	070700010907	36	1.1	79%	0.2	63%	0.4
Little Rice Creek	070700011001	437	5.4	79%	1.1	63%	2
Little Rice River	070700011002	0					
Rice River Flowage	070700011003	61	0.7	79%	0.1	63%	0.3
Lake Nokomis	070700011004	158	0.9	79%	0.2	63%	0.3
Brant Creek	070700011101	6	3.9	79%	0.8	63%	1.4
Headwaters-Somo River	070700011102	23	3.7	79%	0.8	63%	1.3
Little Somo River	070700011103	4	2.5	79%	0.5	63%	0.9
Noisy Creek	070700011301	116	4.5	79%	0.9	63%	1.7
Crescent Creek-Wisconsin River	070700011302	1325	3.3	79%	0.7	63%	1.2
Big Pine Creek	070700011304	0	3.7	79%	0.8	63%	1.4
Lake Alice-Wisconsin River	070700011305	10	2	79%	0.4	63%	0.7
Upper Prairie River	070700020301	0					

HUC12	Cash Crop	Dairy	Potato/Veg	Developed	Forest	Grassland	Water	Wetland
070700010201	6	131	0	98	8640	14	102	1304
070700010202	0	0	0	156	3236	4	687	258
070700010203	2	109	0	1033	13965	469	4773	3376
070700010204	0	0	0	116	4298	2	674	481
070700010205	0	92	0	595	5176	154	2550	1771
070700010206	0	0	0	39	520	0	363	22
070700010401	0	47	0	337	10724	341	3389	3811
070700010402	0	396	235	782	21653	113	3461	3061
070700010403	0	0	0	29	487	9	8	65
070700010404	0	96	177	488	13334	70	4374	4870
070700010503	0	0	0	333	8403	41	1777	829
070700010601	20	54	0	1013	21205	337	3052	2361
070700010602	0	517	87	516	14564	640	1602	3006
070700010603	1	146	0	1707	18939	376	2895	2982
070700010701	0	64	0	468	12938	39	190	2614
070700010702	0	13	0	866	22389	78	3632	3352
070700010703	4	348	42	356	10686	167	184	2333
070700010704	1	1723	282	510	21446	368	1079	3892
070700010705	706	1452	123	567	9978	338	1839	2221
070700010706	0	0	0	382	15489	53	89	2525
070700010707	0	0	0	313	11712	35	137	2026
070700010708	7	103	2	2221	16231	264	1246	2565
070700010801	0	0	0	70	790	1	479	73
070700010802	0	0	0	1242	13244	73	6475	1199
070700010803	0	10	0	1599	5747	93	2615	1025
070700010804	0	0	0	476	14800	29	1998	2420
070700010805	0	24	0	769	7874	243	920	1085
070700010806	0	4	0	689	12752	75	1588	1820
070700010901	0	0	0	276	14394	9	872	3304
070700010902	0	0	0	144	8695	4	365	1743
070700010903	0	0	0	258	20442	19	5305	3341
070700010904	0	14	0	669	14571	161	920	1455
070700010905	0	0	0	305	9904	62	449	1012
070700010906	0	483	0	1114	18061	436	1844	1852
070700010907	2	34	0	471	14702	382	518	2052
070700011001	0	119	318	1089	24530	595	2206	2512
070700011002	0	0	0	476	20896	161	595	6050
070700011003	0	61	0	283	5441	113	451	1813
070700011004	0	158	0	512	4135	214	1761	774
070700011101	0	6	0	152	6556	21	8	2274
070700011102	0	23	0	162	5141	94	2	1266
070700011103	0	4	0	288	13475	16	133	2220
070700011301	8	108	0	347	17838	163	246	2589
070700011302	65	1120	140	2417	13176	502	2551	1503
070700011304	0	0	0	9	621	0	43	76
070700011305	0	10	0	239	4725	255	217	521
070700020301	0	0	0	8	309	0	0	34