Model Wetland Conservation Ordinance:

A Policy Development Tool for Wisconsin Counties, Cities, Villages, Towns, and Tribes

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The following additional individuals provided valuable input on the goals, content, and distribution plans for this Model Wetland Conservation Ordinance; Mary Bartkowiak, Forest County Potawatomi; Dan Bowers, Portage County Planning & Zoning/ Wisconsin County Code Administrators; Jason Laumann, Deputy Director, North West Regional Planning Commission; Kay Lutze, Wisconsin Department of Natural Resources; Chris Mrdutt, Portage County / Wisconsin County Code Administrators; Julia Noordyk, UW Sea Grant; Jeff Pritchard, Marathon County, Wisconsin County Planning and Zoning Directors; Rebecca Roberts, Center for Land Use Education; Bill Sasse, Village of Mount Pleasant; Tom Slawski, Southeast Wisconsin Regional Planning Commission.

Special thanks go to Brian Ohm for his generous contribution of time, expertise, and ideas to this project, and to Nancy Aten with Landscapes of Place, LLC, for developing graphics that explain important concepts in this publication.

JOSH MAYER

Funding for this project was provided by the Wisconsin Coastal Management Program, and the National Oceanic & Atmospheric Administration, Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act Grant Numbers NA13NOS4190043 and NA15NOS4190094.

WISCONSIN COASTAL MANAGEMENT PROGRAM

Preface

Wetlands contribute to the public health, safety, and welfare of virtually every Wisconsin community. They do this by helping to control the quantity and quality of water that moves across the landscape.

The capacity of wetlands to provide these benefits can be hindered by direct disturbance, as well as by activities outside of a wetland that alter the course of water and sediments flowing into or through the wetland.

The protection and restoration of wetland hydrology, therefore, is a matter of public concern.

This publication is intended to help counties, cities, villages, towns, and tribes exercise their authority to protect and restore wetlands to meet local needs.

It begins with background information on the public benefits that wetlands provide and the consequences of developing in and near wetlands, and concludes with model ordinance language and other tips to help communities adopt and implement local wetland conservation standards.

WHO SHOULD USE THIS PUBLICATION?

- Zoning, planning, and land conservation staff
- Local elected and appointed officials
- Planning consultants
- Local government and natural resource educators
- Tribal governments and staff

For more information on land use and wetlands, visit the *For Communities* section of www.wisconsinwetlands.org.

HEALTHY WETLAND LANDSCAPES BENEFIT YOUR COMMUNITY BY:

- **Reducing** flooding, water pollution, soil loss, and stream erosion.
- **Protecting** roads and other infrastructure.
- **Reducing** water management expenses.
- **Maintaining** stream base flow and temperature, lake levels, and shallow groundwater supplies.
- **Providing** fish and wildlife habitat, recreational opportunities, and open space.

JOSH MAYER

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Contents

This publication is intended to help counties, cities, villages, towns, and tribes exercise their authority to protect and restore wetlands to meet local needs.

DICK LATHROP

I Understanding Wetland Benefits

Wisconsin communities have many opportunities to put wetlands to work to address local water-related problems. To capitalize on the benefits wetlands provide, communities need a basic understanding of these wetland fundamentals:

A. What are Wetlands?

Wetlands exist in the places between areas that are always wet, such as lakes, and areas that are always dry, such as uplands. Wetlands are characterized by three things:

1. Soils that formed under wet conditions (hydric soils).
2. Plants that tolerate wet conditions.
3. The presence of water above or just below the soil surface for at least a portion of the growing season.

Wetland conditions and types can be highly variable. They look and act differently depending on their water source and location, the time of year, and local weather conditions.

Common wetland types in Wisconsin include: emergent marshes, sedge meadows, springs and seeps, ephemeral ponds, bogs, swamps, floodplain forests, and riparian shrub thickets.

More information about wetlands and wetland types in Wisconsin can be found at: **wisconsinwetlands.org**.

TIM MILAND

Dark and grey colors are a characteristic of wet or hydric soils.

JOSH MAYER

Thick, buttressed trunks and visible root systems are signs that plants are adapting to wet conditions.

B. How and Where Wetlands Form

Nature creates wetlands to handle water. The location, type, size, and abundance of wetlands form as a direct response to local water conditions and other landscape features that help or hinder the retention and movement of that water. Common examples of where and how wetlands formed in Wisconsin include areas where:

- The land is flat and water runs off the surface very slowly.
- Water is perched due to underlying clay or bedrock.
- Seasonally high groundwater saturates the soil.
- Ponding of rain and snowmelt occurs in small, shallow depressions.
- Springs and seeps discharge groundwater to the surface.
- Infiltration of rain or snow into the soil is slow.
- Flooding and saturation occurs from interactions of surface water, overland flow, and groundwater fluctuations near lakes, rivers, and streams.

LAURA ENGLAND

Springs and seeps often discharge to wetlands at the headwaters of streams (shown) or the base of slopes.

GARY SHACKELFORD

Floodplain forests form in areas where lakes and rivers leave their banks.

JOSH MAYER

Riparian or shoreland wetlands form adjacent to lakes, rivers, and streams.

C. How Wetlands Work

The work that wetlands perform varies by wetland type, location, and abundance, but most healthy wetlands do the following three things well:

1. **Wetlands help control water**
   The location and topography of wetlands enable them to capture, store, and slowly release precipitation and snow melt. This helps slow the flow of water as it moves across the land, reducing flood peaks, increasing infiltration, and providing a steady source of base flow to many lakes and streams.

2. **Wetlands help cleanse water**
   When wetlands detain high velocity runoff, they improve water quality by reducing stream scour and bank cutting.

   Wetland plants also create friction in moving water, which further slows the flow. This allows suspended sediments to settle to the wetland floor. Harmful nutrients such as nitrates and phosphorus are reduced through vegetation uptake and sediment deposition.

   Finally, deep-rooted wetland plants stabilize soils and protect shorelines from the erosive forces of wind and waves.

3. **Wetlands Provide Fish and Wildlife Habitat**
   Wetlands provide essential habitat for economically important fish and wildlife, including: spawning grounds for northern pike, muskies, walleye, and bass; breeding and migration habitat for waterfowl, cranes, and herons; and year-round habitat for deer, muskrat, mink, beaver, and otter.

   Wetlands also support a variety of turtles, frogs, insects, song-birds, and more. This diversity makes wetlands a great place for hunting, fishing, wildlife viewing, paddling, and hiking.

The Model Wetland Conservation Ordinance Findings of Fact, Purpose and Intent, and Wetland Conservation Standards recognize and protect the benefits wetlands provide (MWCO sections 1.2, 1.3, and 2.2).

JOSH MAYER

The abundance of small ephemeral ponds like this help slow the flow by capturing and slowly releasing large volumes of water in many upper watershed areas.

GARY SHACKELFORD

Healthy wetland vegetation along stream banks filters runoff.

PATTERSON LEETH

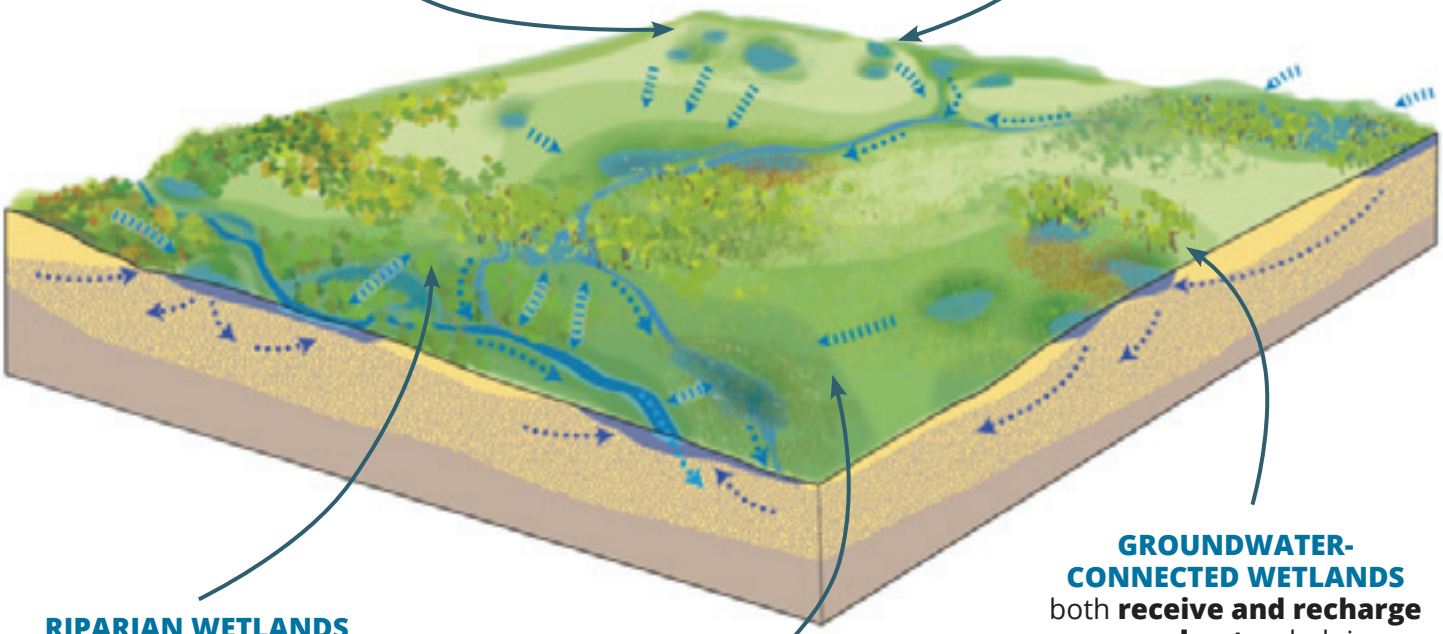
Wetlands provide preferred habitat for popular game species.

D. Wetland Connections

When it comes to the benefits wetlands provide, it's all about the water. In a healthy landscape, connections between wetlands and other waters help regulate the quantity and quality of water that moves across the landscape. Figure 1 illustrates the common ways that wetland connections do this work. Compare this figure to the developed landscape in Figure 3.

EPHEMERAL PONDS
capture and store water in small depressions at predictable times of year, particularly following snow melt and storms. Though small, these abundant wetlands work together to slow the flow and reduce flooding in low-lying areas.

SPRINGS AND SEEPS
create wetlands that **discharge a continuous supply of cold, clean water** to small streams and downstream waters. In hot summer months, these wetlands help maintain the base flow and low temperatures needed to support fish and other aquatic life.



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RIPARIAN WETLANDS
reduce energy and erosion by stabilizing soil, and providing places for water to spread out when storms and snow melt cause lakes and rivers to swell.

FLOODPLAIN AND SHORELAND WETLANDS
remove sediment and nutrients from storm water runoff, and lessen downstream flood impacts.

GROUNDWATER-CONNECTED WETLANDS
both **receive and recharge groundwater**, helping maintain healthy aquifers and drinking water supplies for communities.

FIGURE 1 *Diverse wetland types control and clean water in an undeveloped landscape.*

E. Wetlands Work Together at a Watershed Scale

The influence of wetlands is best understood at a watershed scale, where all wetlands, lakes, rivers, and streams drain to a shared location (Figure 2). It is the combined effects of many large and small wetlands across the landscape that allows wetlands to support watershed health. While all wetlands provide multiple benefits, wetlands in certain locations excel at providing specific benefits. Understanding how watershed position influences certain benefits can help you identify and prioritize certain wetlands as you look to put them to work for specific purposes. For example:

Upper watershed wetlands capture and slowly release rain and snowmelt. Individual wetlands tend to be small and may only be seasonally wet, but combined, they receive, store, and slow the flow for the majority of the water moving across our watersheds.

Middle watershed wetlands excel at slowing and cleaning floodwaters. These wetlands frequently form along the margins of lakes and rivers.

Lower watershed wetlands efficiently prevent shoreland erosion, transform pollutants, and store sediment. These wetlands tend to be larger, and are often found at the outlets of rivers and lakes.

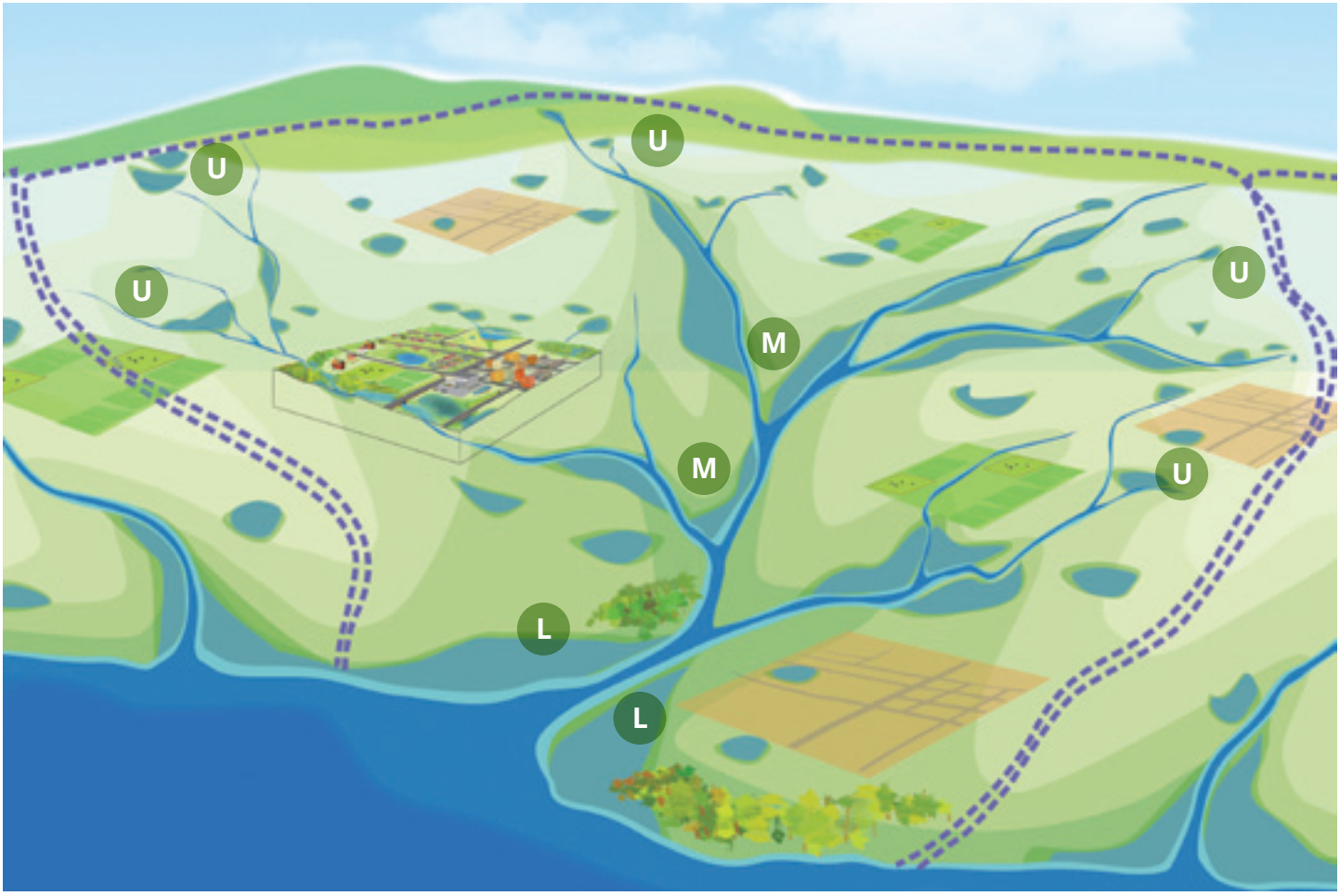

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FIGURE 2

A typical watershed, showing wetlands in the upper (U), middle (M), and lower (L) portions. Upper watershed wetlands slow the flow of water moving towards the town. Land disturbing activities in the town alter the quantity and quality of water that flows downstream.

Why consider wetlands at a watershed scale?

Thinking about the combined effect of all of the wetlands in a given watershed can help us better understand how and where wetlands provide benefits on the landscape. It can also help us understand the legacy of wetland loss, including how historic wetland losses may have contributed to today's water quality and flooding problems.

Finally, understanding the extent of current and former wetlands across a watershed can help communities prioritize where and how to restore wetlands to meet local needs.

Fact sheets describing the extent of current versus historic wetlands by county and how to access watershed-scale wetland data sets can be found at: www.wisconsinwetlands.org under *For Communities*.

KATHY WENDLING

KATHY WENDLING

Two adjacent watersheds respond differently to the same storm event. The river on the top is downstream from an area where abundant upper watershed wetlands control and cleanse storm waters. Note the intact banks and relatively clearer water. The watershed below has experienced greater wetland loss, and consequently, has less capacity to store, infiltrate, and control runoff. Fast moving water has scoured the banks of the river, sending large amounts of sediment downstream. Healthy wetland landscapes also reduce flood peaks and flood damages.

The MWCO Wetland Conservation Standards and Site Plan requirements support consideration of the combined effects of wetland alteration at a watershed-scale (MWCO Sections 2.2(A) and 3.0(C)).

II Risks of Wetland Development and Altering Wetland Hydrology

A. Common Activities with Wetland Impacts

Extensive wetland development, drainage, and other hydrologic alterations occurred across Wisconsin's landscapes long before the enactment of wetland protection laws, and pressures remain today.

Wetland hydrology can be degraded by land disturbing activities both within and outside of a wetland's boundary, or by "direct" and "indirect" impacts, respectively. Most disturbances to wetland hydrology are a combination of both. Figure 3 illustrates examples of both.

As described on the following pages, these changes contribute to today's water resource problems and increase risks of damage to property, infrastructure, and other waters.

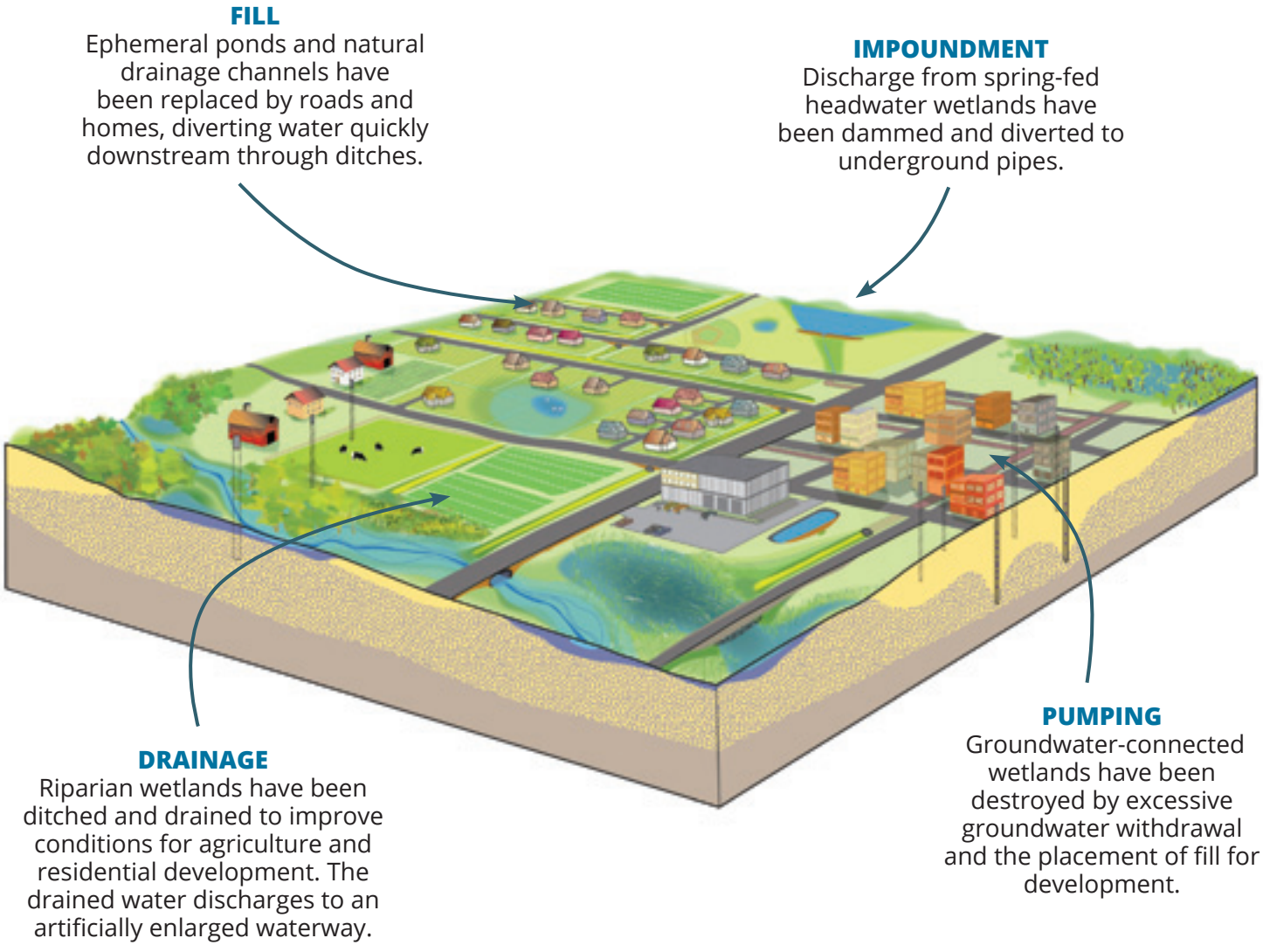

FIGURE 3 *Common examples of direct and indirect wetland impacts. Compare this figure to the pre-settlement landscape shown in Figure 1.*

B. Risks of Developing In Wetlands: Direct Impacts

Fill or drain a wetland, and the water that occupied that space will find a new place to go. This can cause flashier runoff events, lower quality water, and flooding in undesirable places.

FEMA

Downstream/adjacent flood risks increase when water storage is lost due to wetland development.

Water displaced by wetland removal often moves more quickly downstream. Fast-moving water scours and deepens stream channels, transports sediment and nutrients downstream, and can disconnect navigable waters from their natural floodplains and associated riparian habitats.

TROY MAGGIED

Incised streams like this are common in areas where high wetland loss results in too much water moving too quickly downstream.

Placement of roads, sewer lines and other linear structures through wetlands can also disrupt the flow of water and establish "pinch points" where large volumes of water must pass through narrow conduits such as culverts or bridge supports.

Pinch points eliminate the benefits associated with allowing water to move slowly across broad wetland areas, and increase flood risks and potential damages both above and below the infrastructure.

ASHLAND COUNTY LWCD

Catastrophic road failure can result when water that used to flow slowly across broad wetland areas is forced through narrow culverts.

The MWCO identifies Wetland Conservation Standards and conditional Conservation Measures communities can enact to reduce the risks and damages associated with development in wetlands (MWCO Sections 2.2(A) and 4.1(B)).

C. Risks of Developing Near Wetlands: Indirect Impacts

Wetlands contract and expand based on various factors, including the season, sources of water, and land use activities on lands that drain to them. These fluctuating conditions create risks for nearby roads and buildings.

Figure 4 illustrates conditions of a wetland in a normal versus wet year. Note the location of roads and buildings in the area of saturation. These conditions may be undesirable and unstable.

Developing adjacent to or upstream from a wetland can also alter hydrology and disrupt the work that wetlands do. These changes, known as "indirect impacts," can harm wetlands and increase risks to people and property. The impacts can come in the form of too much or too little water reaching the wetland. For example:

1. **Impacts when land disturbing activities send too much water to downstream wetlands** – Too much water can create conditions that allow invasive plants to thrive (Figure 5). This can impair the ability of the wetlands to process storm water, causing pulses of pollutants to be released and flushed downstream during large events. Contrary to popular belief, increasing and stabilizing water levels can also degrade habitat for waterfowl and other wetland-dependent wildlife.
2. **Impacts when land disturbing activities divert water away from downstream wetlands** – Disconnecting wetlands from their natural water source can create a false sense of security that the artificially drier lands are suitable for development. The wetlands may be dry during average years, but remain likely to receive water during years with larger storm events.

The MWCO site plan requirements are designed to help communities identify and avoid problems associated with indirect impacts to wetland hydrology (MWCO Section 3.0(c)(4)). The MWCO also provides language on the establishment of wetland protective areas to protect property from natural fluctuations in wetland water levels.

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FIGURE 4

Roads and homes built near the wetland edge (dark blue) may be adversely affected during wetter years when the wetland expands (lighter blue).

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

FIGURE 5

Dead trees and dense stands of cattails are common indicators of wetlands degraded by receiving too much water from adjacent lands.

D. Risks of Developing in Former (Drained) Wetlands

As communities expand, adjacent agricultural lands are often viewed as attractive sites for new subdivisions and other development. Many of these areas contain drained wetlands and rely on a system of tiles and ditches to ensure the land is dry enough at key times of year to grow crops.

Determining whether drained agricultural lands are suitable for development requires consideration of the extent and effectiveness of the current drainage system, how much water the site continues to receive and infiltrate, and where that water will go if displaced.

Keep in mind that the conditions that originally formed wetlands on a site may persist and pose ongoing risks. Examples include:

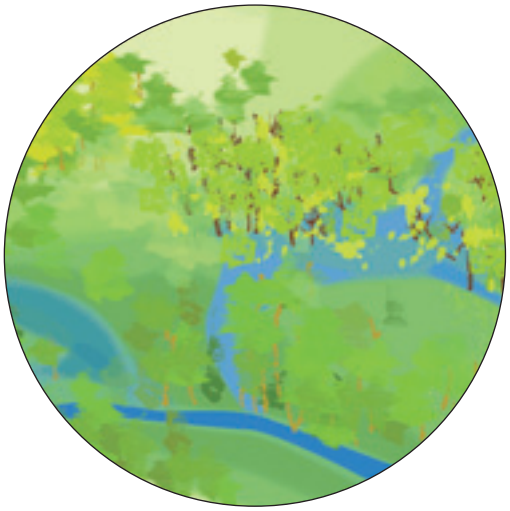
- Development in areas with high or fluctuating groundwater tables can cause wet basements or cracked foundations.
- Lands at the base of slopes or in natural, low-lying depressions may be more likely to see water flow through or pool on the site.
- Areas adjacent to lakes, rivers, or streams may also be flood prone, particularly during severe weather.

Other features, such as rutting, ditching, ponding, and stunted crops, are signs that wetland hydrology may be present on agricultural lands.

See Figure 6 for a specific example of the risks of developing in former wetlands.

The MWCO section on Identifying Associated Hydrologic Features contains provisions to protect property by requiring identification and consideration of drained wetlands and areas with high groundwater tables as part of the Site Plan review (MWCO Section 3.2).

PRESETTLEMENT: ***Forested, floodplain wetlands once connected small channels and oxbows near the main river channel.***



LANDSCAPES OF PLACE, LLC

1930s: ***Trees and vegetation were cleared, ditches and tiles were installed to improve conditions for grazing and row crops.***

LANDSCAPES OF PLACE, LLC

TODAY: ***Even after years of active drainage, wetland hydrology persists, creating conditions that may not be suitable for development.***

PETER ZIEGLER

FIGURE 6 *Risk of developing in former (drained) wetlands:*

III Adopting Standards to Preserve Wetland Benefits

A. Why Adopt Community-Based Wetland Conservation Standards?

1. **Healthy wetland landscapes support healthy communities:**
   The cumulative effects of decades of direct and indirect wetland impacts contribute to water quantity and quality problems in most Wisconsin communities. Establishing goals, priorities, and policies to preserve and restore wetland hydrology can help communities address these problems and improve resiliency.

2. **Wetlands face significant ongoing pressures:**
   Many factors contribute to both planned and unplanned wetland disturbance. Establishing wetland conservation standards can help ensure full consideration of the risks and consequences associated with the approval of land disturbing activities in or near wetlands.

3. **Wetlands can help address local water problems:**
   Through planning and land conservation programs, many communities invest heavily to protect and improve the health of their lakes, rivers, streams, and drinking water. Wetland conservation standards can help communities implement policies and practices to improve the health of local waters.

4. **State and federal laws may not address your community's concerns:**
   State and federal wetland laws tend to discourage development in wetlands, but may not address the broader issues and community goals identified in local plans, ordinances, or priorities. For examples, see the table below.

HOW WETLANDS ARE OR ARE NOT PROTECTED UNDER STATE AND FEDERAL LAWS	
Require permits for development in wetlands (i.e., fill).	Yes
Require permits for impacts to wetland hydrology from activities outside the wetland boundary (i.e., indirect impacts).	No
Require consideration of local plans or policies or consultation with local elected/appointed officials.	No
Require consideration of direct and indirect wetland impacts in the review and approval of subdivisions and lot splits.	No

The MWCO establishes standards and review criteria to ensure local concerns are addressed in the review of projects with direct and indirect wetland impacts.

B. Applicability

The Model Wetland Conservation Ordinance (MWCO) (pg. 19) provides draft language that communities and tribes can adapt and adopt to fit their local situation. Options include:

1. **Adopt as a stand-alone Wetland Conservation Ordinance (WCO):**
   Requires identification of which existing land use ordinances are subject to the stand-alone WCO.
2. **Adopt as a section of the general zoning ordinance**:
   Requires clarification that the wetland conservation standards apply in the administration of the general zoning ordinance.
3. **Incorporate select MWCO policy options into existing ordinances**:
   Ordinances that could be revised include but are not limited to: general or shoreland zoning, land division, and storm water management.

For additional tips on integrating portions of the MWCO into existing policies see:

a. Crosswalk to Zoning ordinances (pg. 19).

b. Crosswalk to Land Division ordinances (pg. 20).

c. Crosswalk to Stormwater ordinances (pg. 21).

C. Authority

State statute grants counties and municipalities the authority to enact ordinances and other policies to promote public health, safety, and general welfare and to further the orderly layout and use of land.[1]

Wetland conservation standards can be enacted in support of these and other goals.

Currently, Wisconsin law places no restrictions on the integration of wetland conservation standards into general, shoreland, stormwater, or land division ordinances.[2]

Authority for Tribal nations is guided by their respective laws and regulation.

JOSH MAYER

By enacting wetland conservation standards, communities can ensure the full consideration of potential impacts to local wetlands like this sedge meadow.

[1] *Enabling language for general and shoreland zoning, stormwater and land division ordinances can be found in various sections of Wisconsin Statutes Chapters 59, 60, 61, 62, and 236.*

[2] *A legal memo addressing local government's authority to adopt wetland conservation standards following recent (2016) changes in state shoreland zoning law is available on the "For Communities" page of www.wisconsinwetlands.org.*

D. Highlights of the Model Wetland Conservation Ordinance

FINDINGS OF FACT

Because wetlands help to regulate the quantity and quality of water that moves across the landscape, and also support ecological and economic health, and human health, safety and welfare, the MWCO finds that **the protection, restoration and enhancement of wetlands is a matter of public concern**.

PURPOSE AND INTENT

The purpose of the MWCO is to protect and restore wetlands to:

- reduce flooding; prevent water pollution; conserve soil; protect lakes, streams, and infrastructure; and improve fish and wildlife habitat, and
- implement the goals and objectives of local plans and policies.

WETLAND CONSERVATION STANDARDS

The MWCO establishes standards for the protection, restoration, and enhancement of wetlands to ensure that land disturbing activities do not:

- adversely impact wetland hydrology or habitat, or,
- substantially degrade a wetland's capacity to: reduce flooding; prevent water pollution; conserve soil; protect lakes, streams, and infrastructure; and improve fish and wildlife habitat.

APPLICABILITY

The MWCO proposes applying wetland conservation standards to all local zoning, land division, erosion control and stormwater management approvals with direct or indirect wetland impacts. It also establishes exemptions for ongoing agricultural activities, commercial forestry operations, and activities that impact artificial wetlands.

SITE PLAN

The MWCO requires identification of wetlands and associated hydrologic features on, adjacent to, and hydrologically connected to the site of the proposed land disturbing activity.

It also requires identification of potential direct and indirect wetland impacts, including impacts to flooding and water quality, and a description of conservation measures that will be utilized to ensure compliance with the wetland conservation standards.

WETLAND PROTECTIVE AREAS

The MWCO establishes a tiered approach using wetland protective areas to preserve wetland hydrology and habitat.

REVIEW AND APPROVAL OF LAND DISTURBING ACTIVITIES

The MWCO establishes criteria for the approval, conditional approval, or denial of land disturbing activities with direct and indirect impacts.

It also provides a menu of conservation measures that can be required or implemented voluntarily to ensure compliance with the standards and the preservation of the public benefits that wetlands provide.

IV Model Wetland Conservation Ordinance and Local Wetland Policy Options

A. Crosswalk to Zoning Ordinances

This Crosswalk identifies wetland policy options from the MWCO that can be used to amend specific sections of zoning ordinances. To assist with implementation, corresponding sections of this MWCO and the WDNR Model County Shoreland Zoning Ordinance (WDNR SZO) are noted for each option.

FINDINGS OF FACT

Include a statement of why the preservation of wetland hydrology and habitat is a matter of public concern *(MWCO Section 1.2 to WDNR SZO Section 1.2)*.

PURPOSE AND INTENT

Include wetland-specific goals and objectives, or amend existing goals to identify wetland conservation as a strategy for achieving goals such as preventing and controlling water pollution and reducing flood damages *(MWCO Section 1.3 to WDNR SZO Section 1.3)*.

MAPS AND DESIGNATION

Clarify that any area that meets the wetland definition, regardless of the area's depiction on maps, is subject to the ordinance *(MWCO Section 1.3(A)(7) to WDNR SZO Section 2.1 and 2.2)*.

Require wetland identification procedures to be followed by applicants and to help staff determine areas that are subject to the ordinance *(MWCO Section 3.1 to WDNR SZO Section 3.1)*.

WETLAND PROTECTIVE AREAS

Establish protective areas or building setbacks with or without vegetation management requirements *(MWCO Section 3.3 to WDNR SZO Section 6.0 or 6.1)*.

SITE PLAN

Require applicants to submit the best available information on the location and condition of wetlands and associated hydrologic features *(MWCO Part 3 to WDNR SZO Section 3.5 and 8.0)*.

Add or amend buildable area or land suitability provisions to clarify that wetlands and associated hydrologic features are generally unsuitable for land disturbing activities.(MWCO Sections 3.1 and 3.2 to relevant land suitability sections).

STANDARDS AND CONSERVATION MEASURES

Identify wetland-specific standards or conditions that require applicants to reduce impacts to wetlands and wetland hydrology. Examples include but are not limited to: reconfiguring lots to avoid wetlands and associated hydrologic features, preserving or restoring drainage features, maintaining upland vegetative cover on areas that drain to wetlands, and preserving existing wetland vegetation, enhancing degraded areas, and placing a voluntary easement on sensitive areas *(MWCO Part 4 to relevant approval/administrative sections)*.

B. Crosswalk to Land Division Ordinances

This Crosswalk identifies wetland policy options from the MWCO that can be used to amend specific sections of a standard land division ordinances (LDO). The State defines subdivisions as a division of a lot, parcel, or tract of land into 5 or more parcels of 1.5 acres each or less. Counties, municipalities, and tribes can elect to control lot splits or smaller subdivisions.

FINDINGS OF FACT

Include a statement of why the preservation of wetland hydrology and habitat is a matter of public concern *(MWCO Section 1.2)*.

PURPOSE AND INTENT

Include wetland-specific goals and objectives, or amend existing goals to identify wetland conservation as a strategy for achieving goals such as preserving natural drainage features; preventing and controlling water pollution, reducing flood damages and damage to public infrastructure; preserving sensitive natural areas, and providing open space *(MWCO Section 1.3 to LDO Purpose and Intent section)*.

MAPS AND DESIGNATION

Clarify that any area that meets the wetland definition, regardless of the area's depiction on maps, is subject to the ordinance, and is to be identified or described on final documents *(MWCO Section 1.3(A)(7) to LDO sections that establish content requirements for preliminary and final plats, and certified survey maps)*.

WETLAND PROTECTIVE AREAS

Establish protective areas or building setbacks with or without vegetation management requirements *(MWCO Section 3.3 to LDO land suitability and/or corridor sections)*.

SITE PLAN

Require applicants to submit the best available information on the location and condition of wetlands and associated hydrologic features *(MWCO Part 3 to LDO site plan sections)*.

Add or amend buildable area or land suitability provisions to clarify that wetlands and associated hydrologic features are generally unsuitable for land disturbing activities. *(MWCO Sections 3.1 and 3.2 to LDO land suitability sections)*.

STANDARDS AND CONSERVATION MEASURES

Identify wetland-specific standards or conditions that require applicants to reduce impacts to wetlands and wetland hydrology. Examples include but are not limited to: reconfiguring lots to avoid wetlands and associated hydrologic features, preserving or restoring drainage features, maintaining upland vegetative cover on areas that drain to wetlands, preserving existing wetland vegetation, enhancing degraded areas, placing a voluntary easement on sensitive areas, dedicating wetlands as parks or open spaces, or encouraging conservation subdivisions *(MWCO Part 4 to LDO approval/administrative sections)*.

C. Crosswalk to Stormwater Ordinances

The MWCO was principally designed to be applicable to zoning and land division ordinances. However, many of the policy options and recommendations can be incorporated into erosion control and stormwater management ordinances to ensure that wetland hydrology is preserved in the review and approval of land disturbing activities.

FINDINGS OF FACT

Include a statement that acknowledges that wetlands can be adversely impacted by uncontrolled runoff during and after the completion of land disturbing activities *(MWCO Section 1.2 to WDNR Section S.02)*.

PURPOSE AND INTENT

Include wetland-specific goals and objectives that establish an intent to preserve wetlands and their associated hydrologic features *(MWCO Section 1.3 to WDNR SZO Section 1.3)*.

WETLAND PROTECTIVE AREAS

Require the establishment of protective areas for land disturbing activities less than one acre, and require the wetland protective area standards for all land disturbing activities that are subject to the ordinance *(MWCO Section 3.3 to relevant protective areas section).*

SITE PLAN

Require applicants to submit the best available information on the location and condition of wetlands and associated hydrologic features *(MWCO Part 3 to relevant sections that describe the content to be included in erosion control and stormwater management plans)*.

Amend buildable area or land suitability provisions to exclude wetlands and associated hydrologic features *(MWCO Sections 3.1 and 3.2 to relevant land suitability sections)*.

Promote the use of wetland conservation within regional, integrated stormwater management.

Require or encourage the use of green infrastructure stormwater management techniques on lands that drain to or are hydrologically connected to wetlands.

STANDARDS AND CONSERVATION MEASURES

Establish qualitative standards to maintain pre-land disturbance wetland hydrologic conditions, including flows into and out of adjacent, downstream, or hydrologically connected wetlands.

Convene experts in your region or community to establish technical standards that preserve wetland hydrology *(MWCO Part 4 to relevant approval/administrative sections)*.

D. Technical and Outreach Assistance Available from Wisconsin Wetlands Association

The Wisconsin Wetlands Association (WWA) offers a variety of services for communities and tribes interested in improving local wetland policies and practices. Examples include but are not limited to:

- Delivering presentations on the content and benefits of the Model Wetland Conservation Ordinance.
- Assisting with the review or audit of existing ordinances.
- Providing guidance or input on potential orproposed ordinance language.
- Delivering wetland education presentations to supervisors, plan commission members, zoning committee members, citizens, lake, river, or watershed groups.
- Delivering field-based trainings on how to recognize wetlands and evaluate wetland hydrology.
- Advising on and/or support the initiation and facilitation of a wetland planning project.
- Helping connect you with wetland experts in your region.
- Collaborating to help your community secure funding for wetland policy development and educational programming support.

Availability of services depends on funding and capacity at the time of the request.

To discuss these or other wetland program development opportunities contact WWA at (608) 250-9971 or www.wisconsinwetlands.org.

More information is also available on the *For Communities* page of www.wisconsinwetlands.org.

WISCONSIN WETLANDS ASSOCIATION

At a field-based workshop, county planning and zoning staff learn how to recognize and evaluate wetlands

E. Model Wetland Conservation Ordinance

Part 1: General Provisions

1.0: Title

This Ordinance is hereby officially known and cited as the Wetland Conservation Ordinance of the [County/City/Village/Town/Tribal Nation] of [name of community], Wisconsin. References to "this Ordinance" or "this WCO" shall be interpreted as references to this Wetland Conservation Ordinance.

1.1: Authority

This Wetland Conservation Ordinance is enacted pursuant to the authority granted by Wisconsin Statutes sections [59.69 for counties, 62.23 for cities, 61.35 and 62.23 for villages, 60.62, 61.35 and 62.23 for towns with village powers, or 60.01 for towns without village powers in counties that do not have county zoning. Tribal Nations should cite appropriate tribal law.]

1.2: Findings of Fact

Healthy wetlands work to regulate the quantity and quality of water that moves across the landscape. These hydrologic functions support ecological and economic health, and the human health, safety, and welfare in our community by: protecting people, property, and public infrastructure from floods; conserving soil and water for farms and forests; controlling water pollution; and maintaining our community's outdoor recreation heritage.

Because the capacity of wetlands to provide these services can be hindered by direct physical disturbance, as well as by activities outside of a wetland that alter the course of water and sediments flowing into or through the system, the preservation and restoration of wetland hydrology and habitat is a matter of public concern to the people of [name of community].

1.3: Purpose and Intent

A. For the purposes of promoting public health, safety, convenience, and general welfare, protecting public and private property and infrastructure, and protecting and enhancing the use and enjoyment of the natural and agricultural resources of [name of community], the WCO has been established to:

1. Implement the goals, objectives, and policies, of the [name of community's Comprehensive Plan or other relevant plans and policies].

2. Coordinate the enforcement of other applicable [County/City/Village/Town/Tribal] ordinances and regulations, including but not limited to [insert list]:

TIP

The Purpose and Intent Section can be tailored to reflect the priorities your community wishes to address through wetland conservation such as advancing hazard mitigation or stormwater management goals. Tribal governments may elect to include goals related to preserving cultural resources.

3. Promote the protection, restoration, and management of wetland hydrology and wetland habitat in order to:

a. Reduce flooding, and flood hazards, damages, and expenditures.

b. Prevent and control water pollution.

c. Prevent soil loss and erosion of stream beds and banks.

d. Preserve natural drainage features and minimize the need to construct, repair, maintain, or replace structural water management systems.

e. Maintain and support stream base flow and temperature, lake levels, and shallow groundwater supplies.

f. Preserve and improve fish and wildlife habitat, recreational opportunities, and open space.

4. Establish guidelines and standards to review and discourage direct and indirect impacts to wetlands, wetland hydrology, and wetland habitat from land disturbing activities.

5. Improve intergovernmental coordination on wetland conservation, including supporting the implementation and enforcement of federal and state laws governing wetland fill and other impacts, and collaborating on wetland mitigation, restoration, and management.

6. Limit the placement and design of structures, impervious surfaces, and other land disturbing activities on lands that contain, drain to, or are hydrologically connected to wetlands.

7. Protect any area that meets the wetland definition provided in this ordinance (Section 1.4), regardless of its size, location or depiction on maps such as the Wisconsin Wetland Inventory.

TIP *Disturbance to wetland hydrology can cause or contribute to culvert and road wash-outs and damage to other public infrastructure.*

TIP *The WCO establishes discretion for communities to evaluate direct and indirect impacts to wetlands and associated hydrologic features. These provisions recognize that wetlands work to support the surrounding hydrologic system and that disturbance to wetland hydrology can result from activities within and outside of the wetland boundary.*

1.4: Definitions

A. Adjacent – contiguous areas within 300 feet of the proposed land disturbing activity. Parcels are adjacent even if a road, waterway, or other barrier separates them.

B. Artificial Wetland – a landscape feature where wetland vegetation may be present as a result of recent human modifications to the landscape or hydrology and for which there is no prior wetland or stream history.

C. Associated Hydrologic Features – the lands or other features that are hydrologically connected to wetlands, and that support or are supported by wetland hydrology. Associated hydrologic features can include, but are not limited to: lakes, rivers and streams, and their shorelands or floodplains; lands drained by tile or ditch systems, or impounded by water control structures; areas with perched groundwater or seasonally high groundwater levels; natural drainage, infiltration, or recharge areas, such as springs, seeps, steep slopes, swales, or channels

D. Coldwater Community – surface waters capable of supporting a community of cold water fish and other aquatic life, or serving as a spawning area for cold water fish species. This includes, but is not restricted to, surface waters identified as trout water by the Wisconsin Department of Natural Resources (Wisconsin Trout Streams, publication 6-3600 (80)).

E. Direct Impact – disturbances that result from activities that occur within the boundary of a wetland, such as dredging, filling, draining, vegetation removal, and soil compaction.

F. Hydrologically Connected – lands that contribute water to, receive water from, or exchange water with a wetland through surface, subsurface, overland, or channelized flow. Hydrologically connected lands can be upstream or downstream from a wetland and may not necessarily be directly contiguous.

G. Hydric Soil – a soil that is formed under conditions of saturation, flooding, or ponding, long enough during the growing season to develop anaerobic conditions in the upper horizon(s).

H. Indirect Impact – alterations to wetland hydrology and habitat that are caused by land disturbing activities on lands outside the boundaries of, but adjacent or hydrologically connected to, wetlands, and that include but are not limited to: changes in the volume and timing of surface, overland, and channelized flow into and out of the wetland, sediment deposition and pollutant accumulation, and increased non-native and invasive species.

I. Infiltration – the entry and movement of precipitation, runoff, or other water into or through soil.

J. Land Disturbing Activity – any human-made land alterations, disturbances, or construction activities including, but not limited to: clearing and grubbing, grading, excavation, drainage, and the discharge of dredged or fill material, that results in a change to existing topography, drainage patterns, rates of soil erosion, or hydrologic conditions.

K. On-Site – a wetland, associated hydrologic feature, or other feature is on-site if it is contained, in whole or in part, within the boundary of the parcel to be developed.

L. Potential Wetland – areas not shown on the Wisconsin Wetland Inventory, but which contain hydric soils mapped by the USDA Natural Resources Conservation Service in the drainage classes of somewhat poorly, poorly, and very poorly drained soils.

M. Runoff – storm water or precipitation including rain, snow, ice melt or similar water that moves on the land surface via sheet or channelized flow.

N. Self-Sustaining Vegetative Cover – site-appropriate native trees, shrubs, grasses, forbs, sedges and duff layers of fallen leaves and woody debris.

TIP

Hydric soils are one of the three key indicators that must be present at a site for an area to be defined as a wetland for regulatory purposes. These soils are generally mapped by the USDA Natural Resources Conservation Service in the drainage classes of somewhat poorly, poorly, and very poorly drained soils.

TIP

Potential wetlands can be identified using the Wetland Indicators Map, available on the Wisconsin Department of Natural Resource's Surface Water Data Viewer. These drainage classes of hydric soils are commonly found within areas that meet the definition of a wetland.

O. Suitable – the lands or areas on a property that allow the land disturbing activity to be designed and implemented in compliance with the Wetland Conservation Standards in Section 2.2, and other applicable federal, state, and tribal laws and local codes, during, and after completion of the land disturbing activity.

P. Watershed – geographic area where all waters drain to a single waterbody.

Q. Wetland – those areas where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which have soils indicative of wet conditions.

R. Wetland Habitat – vegetative communities, hydrologic conditions, and physical features necessary to support wetland-dependent fish, wildlife and plants throughout their lifecycle. For fish and wildlife, this includes conditions which provide protective cover, food, and breeding, nesting, and rearing areas. Healthy wetland habitat is generally dominated by native, non-invasive plants, shrubs, and/or trees, and is most likely to be present in areas with minimal vegetative or hydrologic disturbance.

S. Wetland Hydrology – the processes and conditions that provide and sustain the water levels, flows, fluctuations, and surface water, overland, and groundwater interactions that enable areas to periodically inundate or saturate, and be classified as wetland.

T. Wetland Protective Area – an area of land that commences at the delineated wetland boundary and extends to the boundary of the authorized land disturbing activity.

U. Wetland Restoration or Management Activities – activities that: 1) manipulate the physical, chemical or biological characteristics of a site with the goal of returning natural or historic functions to former or degraded wetland; or 2) establish or maintain desired hydrology, habitat and human use conditions including water level manipulations, herbicide application, wetland species introduction, and control, fencing, monitoring, signage and vandalism repair.

1.5: Areas to Be Regulated

The WCO applies to all lands located within the [in the case of county zoning, list the names of the towns that have adopted county zoning. For communities that have their own zoning, list the name of the city, village, town, or tribal nation].

1.6: Abrogation and Greater Restrictions

The WCO is not intended to repeal, abrogate, annul, impair, or interfere with any existing easements, covenants, deed restrictions, agreements, ordinances, rules, regulations, or permits previously adopted or issued pursuant to laws.

However, wherever the WCO imposes greater restrictions, the provisions of the WCO shall govern.

TIP

Lands with wetlands or associated hydrologic features are prone to seasonal saturation or flooding, and tend to contain unstable soils. See Section 3.1 and 3.2 for the site-specific conditions that shall be identified in the Site Plan and evaluated to determine the suitability of a site for a proposed land disturbing activity.

TIP

Wetland habitat values tend to be lower in areas dominated by dense stands of non-native or nuisance plants. These weedy wetlands develop in response to disturbance. Addressing the root causes of the degradation can help to restore healthy vegetation.

1.7: Interpretation

In their interpretation and application, the provisions of the WCO shall be held to be minimum requirements and shall be liberally construed in favor of the [name of community] and shall not be deemed a limitation or repeal of any other powers granted by Wisconsin Statutes, tribal law, or other applicable laws.

1.8: Severability

If any portion of the WCO is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the WCO shall not be affected.

1.9: Administration

A. Administration. The WCO shall be administered by [name of appropriate county, municipal, or tribal government department, commission, board, or committee responsible for administering the WCO].

B. Variances. Variances from this ordinance shall follow the procedures found in [cite the appropriate variance section in the county, municipal, or tribal government unit's zoning ordinance].

C. Nonconformance. Nonconforming uses, structures, and lots shall be subject to the requirements found in [cite the appropriate sections related to nonconforming uses, structures, and lots found in the county, municipal, or tribal governmental unit's zoning ordinance].

D. Enforcement. Enforcement of this ordinance will follow the process outlined in [cite the appropriate sections of the zoning ordinance related to enforcement].

PART 2: Applicability and Standards

2.0: Applicability

A. Unless exempted by the WCO, any person or entity applying for any of the following permits or approvals proposing land disturbing activities that directly or indirectly impacts wetlands, wetland hydrology, or wetland habitat shall comply with the requirements of the WCO:

1. Land use (or zoning) permits
2. Conditional use permits
3. Rezonings
4. Variances
5. Plat approvals
6. Certified survey map approvals
7. Stormwater management or erosion control permits
8. [List other land use approvals that your community wishes to make subject to the WCO]

TIP

This WCO can be adopted as a stand-alone ordinance or used to help integrate wetland conservation standards into existing ordinances.

B. Permits issued by the Wisconsin Department of Natural Resources (WDNR), U.S. Army Corps of Engineers, tribal governments, or other agencies do not relieve a person of the need to seek approval under this WCO.

C. The WCO shall not relieve an applicant of the need to obtain a permit for activities regulated by other ordinances, or other applicable federal, state, or tribal law; or to ensure compliance with the Wetland Conservation Provisions in the U.S. Farm Bill found in the Code of Federal Regulations at 7 CFR Part 12.

D. Unless specifically exempted by law, all cities, villages, towns, counties, and other municipal corporations are required to comply with the WCO and obtain all required permits pursuant to Wisconsin statutes and administrative rules. State agencies are required to comply if Section 13.48(13) of the Wisconsin Statutes applies.

TIP *Tribal governments may need to revise Section 2.0(d) to reflect their sovereign authority and jurisdiction over land use and wetland matters.*

2.1: Exempt Activities

The following activities are exempt from the WCO:

A. Established (ongoing) agricultural land uses or activities, such as planting, growing, cultivating and harvesting crops, pasturing of animals, and maintenance of existing drainage systems;

B. Growing and tending gardens; harvesting of trees for commercial or forest management purposes;

C. Land disturbing activities in artificial wetlands, as defined in Section 1.4 of the WCO.

D. Wetland restoration or management activities, that meet all of the following criteria:

1. Is sponsored by the WDNR, U.S. Natural Resources Conservation Service, U.S. Fish and Wildlife Service, or other agency or organization with demonstrable experience in wetland restoration or management activities.

2. Addresses a priority and/or water resource management concern identified in a comprehensive plan, hazard mitigation plan, or land and water management plan.

3. Is located outside of navigable waters with prior stream history.

4. Is located outside of a floodplain and does not increase the regional flood elevation, as defined in the [name of community] Floodplain Zoning Ordinance.

5. Does not significantly impact a cold water community.

6. Does not significantly obstruct fish passage to existing spawning areas.

7. Can be completed without the placement and design of dikes, embankments, low berms, or other structures that exceed six feet, measured from natural ground to the top of structure.

TIP *The exemption criteria for wetland restoration and management activities are consistent with the standards contained in Chapter NR 353 of the Wisconsin Administrative Code, which are used by the state (WDNR) to approve similar activities conducted by experienced wetland conservation partners.*

2.2: Wetland Conservation Standards

Wetlands, associated hydrologic features, and Wetland Protective Areas are generally unsuitable locations for land disturbing activities, unless the applicant clearly demonstrates that the proposed land disturbing activity can be sited and designed in compliance with the standards below and other requirements of this WCO.

A. Standards. To protect, preserve, restore, and enhance the benefits that wetlands provide to our community, the proposed land disturbing activity shall not:

1. Harm public interests;

2. Adversely impact wetland hydrology or habitat; or,

3. Substantially degrade a wetland's capacity to:

a. Reduce flooding, and flood hazards, damages, and expenditures.

b. Prevent and control water pollution.

c. Prevent soil loss and erosion of stream beds and banks.

d. Preserve natural drainage features and minimize the need to construct, repair, maintain, or replace structural water management systems.

e. Maintain and support stream base flow and temperature, lake levels, and shallow groundwater supplies.

f. Preserve and improve fish and wildlife habitat, recreational opportunities, and open space.

TIP

These performance standards can be tailored to address local, tribal, or watershed needs. Watershed-scale wetland assessments offer an effective approach to identifying wetland and watershed priorities which can be addressed through implementation of a WCO. See Appendix B for more information.

PART 3: Site Plan

3.0: General Requirements

A. Purpose. The purpose of the Site Plan is to help the [name of appropriate local or tribal department, commission, board, or committee responsible for administering the WCO] determine whether the proposed land disturbing activity complies with the Wetland Conservation Standards in Section 2.2.

B. Pre-Application Meeting. The applicant is encouraged to contact or schedule an appointment with the [name of appropriate local or tribal government official, department, commission, board, or committee responsible for administering the WCO] to discuss the proposed land disturbing activity and determine what information must be submitted to the [name of appropriate local or tribal government official, department, commission, board, or committee responsible for administering the WCO].

C. Site Plan Content. In addition to submitting materials required for the permit or approval listed in Section 2.0, applicants shall submit a Site Plan meeting the requirements outlined below to the [name of appropriate local or tribal department, commission, board, or committee responsible for administering the WCO]. At a minimum, the Site Plan shall include a:

TIP

This WCO prioritizes identifying disturbance to wetland hydrology. This reduces the need to delineate the wetland boundary and elevates the importance of gathering information to understand how the proposed LDA may negatively impact wetlands and associated hydrologic features.

TIP

The WDNR Surface Water Data Viewer can be used to collect the content requested in the Site Plan.

1. Wetland Map showing the location of wetlands and potential wetlands identified following the process outlined in Section 3.1; and the location of the Wetland Protective Areas to be established following the requirements of Section 3.3.
2. Hydrologic Features Map showing topographic contours, lakes, rivers, and streams, watershed boundaries, and Associated Hydrologic Features, identified following the process outlined in Section 3.1 and 3.2.
3. Reestablishment and Long-term Maintenance Plan prepared according to the requirements of Section 3.3.
4. Narrative addressing the following items to support the compliance review:
   - **a.** The anticipated direct wetland impacts of the proposed land disturbing activity. The applicant shall summarize the nature and extent of the anticipated direct impacts, including an estimate of the location, acreage, types, and conditions of the wetlands to be directly impacted.
   - **b.** The anticipated indirect wetland impacts of the proposed land disturbing activity to on-site, adjacent, or hydrologically connected wetlands. The applicant shall summarize anticipated indirect impacts to wetland hydrology or habitat, such as the potential of the proposed land disturbing activity to change pre-construction contours or vegetative cover, and to increase, decrease, or alter the volume, quality, or timing of water flowing to, from, or through on-site, adjacent, or hydrologically connected wetlands.
   - **c.** Whether/how the proposed land disturbing activity will:
     - **i.** Alter the flow of water to flood-prone areas or structures that are vulnerable to flood damage, such as culverts, bridges, roads, or homes.
     - **ii.** Affect the concentration of pollutants such as sediment, phosphorus, nitrogen, bacteria, and other nutrients and chemicals in surface water or ground water.
     - **iii.** Alter the habitat of any endangered, threatened, rare, sensitive, or culturally significant plants, fish, or wildlife on or near the parcel to be developed.
   - **d.** The specific conservation measures or best management practices that will be utilized by the applicant to achieve compliance with the performance standards in Section 2.2 and other applicable codes. See Section 4.1 for the types of measures that may be required in order for the proposed land disturbing activity to be in compliance with Section 2.2.

D. Additional Information. The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] may request additional information that helps determine the presence of wetlands or Associated Hydrologic Features, or that supports a review of the suitability of the site for the proposed land disturbing activity.

TIP

Information required under items 4) a-d could be requested "to the best of the applicant's ability" and modified to be commensurate with the scope of the project. Permit staff will need to use best professional judgment to verify the accuracy of the information submitted.

This information on potential direct and indirect wetland impacts is best reviewed at a watershed-scale and correlated to water resource management concerns. 12-digit hydrologic unit code (HUC 12) watersheds are the recommended scale for evaluating the potential impacts to watershed and wetland health. HUC 12 watershed maps, and current and historic wetland acreage in those watersheds, are available from WDNR.

3.1: Identifying Wetlands

A. Wetland Map(s). The Site Plan shall include a map (or maps) that depict wetlands that are on-site, adjacent, or hydrologically connected to the proposed land disturbing activity. This map shall depict mapped wetlands, as shown on the Wisconsin Wetlands Inventory; potential wetlands, as shown on the Wetland Indicators Map available on WDNR's Surface Water Data Viewer; and/or other potential wetland areas identified using the best available information (e.g., field inspections, aerial photos, other mapping tools). This map shall help inform the need for a wetland delineation in accordance with the following:

1. A wetland delineation is generally required to identify the boundaries of on-site wetlands. Wetlands shall be delineated and mapped by an experienced delineation professional, and in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and relevant regional supplements. Wetland boundaries shall be flagged before any land disturbing activities commence.

2. The requirement to complete a wetland delineation may be waived by the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] if the applicant demonstrates that sufficient area is clearly available on-site to accommodate the proposed land disturbing activity without incurring direct wetland impacts.

3. As an alternative to the procedures in paragraph 1 above, applicants may request assistance from the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] or the WDNR Wetland Identification Program to identify wetlands and potential wetlands.

TIP

The Wisconsin Wetland Inventory maps do not always accurately depict the extent of wetlands. This WCO provides communities the discretion to utilize best available data and site inspections to verify the presence of wetlands and associated hydrologic features. The best option to verify the information submitted is to walk the site to look for wetland indicators. For more information see WDNR's Wetland Clues Checklist.

TIP

Wisconsin does not require wetland delineators to be certified or licensed, however many of the more experienced delineators are certified as Professional Wetland Scientists (PWS) by the Society of Wetland Scientists. Visit the Society of Wetland Scientists' Professional Certification webpage and search for a certified PWS near you.

Your community can clarify wetland delineation requirements by identifying and listing circumstances where delineation will always be required such as on parcels with a high percentage of hydric soils.

3.2: Identifying Associated Hydrologic Features

A. Hydrologic Features Map(s). The Site Plan shall also identify the following hydrologic features through a site inspection and review of aerial photographs and topographic and other maps:

1. On-site or adjacent lakes, rivers, streams, and their shorelands or floodplains.

2. On-site lands drained by tile or ditch systems or impounded by water control structures.

3. On-site areas with perched groundwater, or that are subject to seasonally high groundwater levels;

4. On-site natural drainage, infiltration, or recharge areas that connect or drain to wetlands, such as: springs, seeps, steep slopes, swales, or channels.

3.3: Establishment of Wetland Protective Areas

A. Purpose. Preserving and enhancing the vegetated cover on uplands immediately outside the wetland boundary helps to maintain wetland hydrology, wetland habitat, and the overall health of a wetland. If hydrologic, soil, and vegetation conditions are altered, wetlands can be vulnerable to increased sediment deposition, invasion of non-native or noxious plants, and other disturbances that can degrade or destroy a wetland's capacity to provide the benefits described in Section 1.2.

Based on the wetlands and associated hydrologic features identified following the process in Section 3.1 and 3.2, the Site Plan shall depict and describe a Wetland Protective Area that accomplishes the following:

1. Limits encroachment into and disturbances in wetlands.

2. Minimizes sediment and pollutant runoff.

3. Maintains and improves fish and wildlife habitat.

4. Prevents the spread of non-native and invasive plant species.

B. General Requirements.

1. Land disturbing activities shall be located outside of the Wetland Protective Area to the greatest extent possible.

2. If disturbances cannot be avoided, the applicant shall maintain at least 70 percent self-sustaining vegetative cover.

3. The Site Plan shall identify and mark the boundaries of the Wetland Protective Area and include plans for the establishment and maintenance of the protective areas in accordance with the requirements established under Section 3.3(E).

C. Identification of Wetland Protective Area Boundaries. Applicants shall establish Wetland Protective Areas that conform to the widths prescribed below and the other requirements of Section 3.3.

1. Tier 1: High-Functioning Wetlands. Land disturbing activities shall be located a minimum of [75-125 feet] from the boundary of a wetland, measured horizontally. High-functioning wetlands include, but are not limited to:

a. Wetlands that were rated "high" for specific functions in a watershed-scale wetland assessment [name the specific plan or report].

b. Wetlands that are identified as priority wetlands in the [name of community's] comprehensive plan, land and water management plan, hazard mitigation plan; or [name specific] watershed plan.

c. Wetlands connected to lakes, rivers, or streams with documented water resource management concerns, such as flooding, contaminated drinking water supply, or high levels of phosphorus, sediment, or nitrogen.

TIP

The range of Protective Area widths established in this WCO maximize the community's discretion to establish protective area requirements based on site-specific conditions while still ensuring compliance with the minimum protective area standards for stormwater management established under Chapter NR 151 of the Wisconsin Administrative Code.

TIP

Watershed-scale wetland assessments can help identify the types of wetlands that would be subject to wider Wetland Protective Areas. This information could be paired with current and future land use maps to identify wetlands that are more vulnerable to adjacent land uses, and in need of larger Wetland Protective Areas.

See Appendix B for more information about watershed-scale wetland assessments.

d. Other criteria to consider include:

i. Wetlands within the watersheds of high quality or sensitive lakes, rivers, or streams identified by a lake classification system or other planning processes.

ii. Unique, rare, or valuable wetlands, such as those listed in section NR 103.04 of the Wisconsin Administrative Code, or identified as highly susceptible in chapter NR 151.125 of the Wisconsin Administrative Code.

2) Tier 2: Other Wetlands. Land disturbing activities shall be located a minimum of [50-75 feet] from the boundary of a wetland, measured horizontally. Applies to wetlands that are not rated Tier 1 Wetlands or eligible for width adjustments per Section 3.3(D).

D. Adjustments to the Width of Wetland Protective Areas. Site-specific conditions, including the size and configuration of pre-existing lots, may eliminate the feasibility of the applicant complying with this section. The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] shall have the authority to reduce the required Wetland Protective Area if site conditions warrant the reduction [list types of lots here], or if the [name of department] determines that a decreased protective area will not significantly harm wetland hydrology and wetland habitat.

1. Use of Conservation Measures. Applicants may be required by the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] to use conservation measures, such as those described in Part 4.1, to offset any direct or indirect impacts from the decreased Wetland Protective Area. The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] shall also have the discretion to adjust the Wetland Protective Area widths required for Tier 1 and Tier 2 Wetlands, if the applicant voluntarily uses short- and long-term conservation measures to improve wetland and watershed health.

E. Long-Term Maintenance and Reestablishment Plan. Applicants shall submit a Long-Term Maintenance and Reestablishment Plan that describes how the Wetland Protective Area will be preserved or reestablished. The plan shall describe the location and sequence of conservation or management activities the applicant agrees to take to limit future disturbances and degradation of self-sustaining native vegetative cover within the protective area.

The Long-Term Maintenance and Reestablishment Plan shall document:

1. Type of vegetation. To the greatest extent possible, vegetative cover shall be dominated by a diverse assemblage of native, non-invasive plants, trees or shrubs.

TIP

See Appendix A for the types of wetlands which are referenced in NR 103.04 and NR 151.125.

TIP

Existing lakefront or shoreland lots are an example of when the recommended Wetland Protective Areas may not be compatible with existing land uses. Your community could specify the distance which is authorized when reducing the width of Wetland Protective Areas (e.g., no less than 10-50 feet).

TIP

Section 3.3(E) could include additional requirements which describe timelines and scenarios for when and why the Long-Term Maintenance and Reestablishment Plan needs to be amended. It could also include procedures to ensure that the landowner 1) records the plan with the property deed; 2) remains compliant with the plan, and 3) updates the plan – when appropriate. Your community will need to determine the type and extent of legal requirements it wishes to incorporate beyond the model language.

2. **Conservation and management activities.** Management activities such as burning, mowing, haying, and grazing, may be allowed if the purpose is to preserve, restore, and enhance the Wetland Protective Area. Green infrastructure stormwater management techniques that naturalize hydrology or utilize bioretention may also be allowed within the protective area.
3. **Unique property limitations.** A description of site-specific conditions that may prevent the protective area from consisting of 70% self-sustaining native vegetative cover.
4. **Methods and Schedule.** When vegetation needs to be reestablished, the plan shall identify the method to be used (natural recovery, seeding, planting). The plan shall also outline the timing of reestablishment activities, such as during the growing season or during/after the implementation of the land disturbing activity. The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] may require alternative scheduling if the chances of reestablishing self-sustaining native vegetative cover are greater at another time.
5. **Additional Information.** The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] may request additional information on proposed plant density, plant types, protective area boundaries, and any other information that helps in the review of the protective area design.

TIP

At the site level, green infrastructure stormwater management techniques include best management practices such as rain gardens, bioswales, and permeable pavements. An overlooked technique is the use of wetland preservation and restoration at the site or regional level.

The U.S. Environmental Protection Agency and American Rivers provide informative resources on the types, applications, and benefits of green infrastructure stormwater management techniques.

PART 4: Land Disturbing Activity Review and Approval

4.0: Procedures

A. Timeline. The Site Plan prepared following the requirements in Section 3.0 and the materials for the underlying permit or approval of a land disturbing activity under Section 2.0 shall be submitted to [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO]. Within ten (10) days after submission, the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] will notify the applicant if the materials submitted for review are incomplete.

B. Complete Application. If the materials are complete, the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] shall review the Site Plan following the timeframe for reviewing the application for a permit or approval under Section 4.0(A).

TIP

Timelines established in this section of the WCO will need to be adjusted to conform to local or tribal requirements.

4.1: Final Action

Following review of the Site Plan the [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] shall take one of the following actions on the Site Plan:

A. Approval. Approve the proposed land disturbing activity if the land is suitable for the proposed land disturbing activity, and the applicant demonstrates that the proposed land disturbing activity is designed and can be implemented in compliance with the Wetland Conservation Standards in Section 2.2. The [name of appropriate local or tribal government department, commission, board, or committee responsible for administering the WCO] shall review the Site Plan to determine if the proposed land disturbing activity will generate direct or impacts to on-site, adjacent, and hydrologically connected wetlands.

B. Conditional approval. Attach conditions to the approval or require the applicant to take conservation measures to ensure the proposed land disturbing activity complies with the Wetland Conservation Standards in Section 2.2 and other requirements of the WCO.

1. **Conservation Measures.** Examples of eligible conservation measures include, but are not limited to:
   - **a.** Configuring the layout, dimensions, and intensity of lots, roads, structures, and other land disturbing activities to reduce direct and indirect wetland impacts.
   - **b.** Preserving or restoring topography, drainage patterns, hydroperiod, and the natural flow of surface water to wetlands.
   - **c.** Implementing stormwater best management practices to preserve, restore, and enhance the quality and quantity of water flowing into wetlands, and the natural infiltration of water on lands that drain to or are hydrologically connected to wetlands.
   - **d.** Preserving native and self-sustaining vegetative cover within on-site wetlands; or exceeding the vegetative cover requirements within the Wetland Protective Area.
   - **e**. Conservation and management activities, such as burning, mowing, haying, and grazing, if the purpose is to preserve, restore, or enhance the wetland.
2. **Additional Conservation Measures.** Indirect impacts that cannot be avoided or minimized due to unique property limitations may be allowed if additional conservation measures are carried out to preserve or enhance wetland hydrology or habitat, or the quality of water flowing in and out of wetlands. Examples of these additional conservation measures include, but are not limited to:
   - **a.** Increasing the width of the protective area, especially near surface water inlets or outlets, and entry points of overland flow.

TIP

Every site is different. The conservation measures listed here represent examples of actions that can be required or voluntarily implemented to ensure compliance with the WCO; however, the language also provides communities the discretion to allow additional activities or practices based on site-specific needs or opportunities.

b. Enhancing the vegetative cover that is within the protective area.

c. Engaging in wetland restoration activities that enhance wetland hydrology and wetland habitat (e.g., reconnecting wetlands to their floodplains or water source.)

d. Placing an easement to preserve remaining wetlands and protective areas in perpetuity.

e. Other activities that preserve or improve the health of on-site wetlands or wetlands hydrologically connected to the proposed land disturbing activity.

C. Deny approval. Deny the proposed land disturbing activity if it is not possible to comply with the Wetland Conservation Standards in Section 2.2 and other requirements of the WCO.

4.2: Recording

The final action taken on the proposed land disturbing activity by the [name of appropriate county, municipal, or tribal government department, commission, board, or committee responsible for administering the WCO] shall be recorded with the action taken on the applicable permit or approval under Section 2.0. As required by 2009 Wisconsin Act 373, approvals and conditional approvals shall include the statutory language about the need to comply with state and federal laws concerning construction on or near wetlands.

Appendix A

Wetland types that be could referenced for establishment of Tier 1 Wetland Protective Areas

Option A: Include or reference the list in Chapter NR 103.04 of Wisconsin Administrative Code

NR 103.04 established a list of wetlands that are classified as "wetlands in areas of special natural resource interest (ASNRI)." ASNRI wetlands includes "those wetlands both within the boundary of designated areas of special natural resource interest and those wetlands which are in proximity to or have a direct hydrologic connection to such designated areas:"

1. Cold water communities as defined in s. NR 102.04(3)(a), including all trout streams and their tributaries and trout lakes;
2. Lakes Michigan and Superior and the Mississippi river;
3. State and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways, s. 30.26 Stats., ch. NR 302, 16 USC 1271 to 1287, ss. 30.40 to 30.49 Stats., and s. 30.275, Stats.;
4. Unique and significant wetlands identified in special area management plans (SAMP), special wetland inventory studies (SWIS), advanced delineation and identification studies (ADID) and areas designated by the United States environmental protection agency under section 404 (c), 33 USC 1344 (c);
5. Calcareous fens;
6. Habitat used by state or federally designated threatened or endangered species, s. 29.604, Stats., ch. NR 27 and 16 USC 1531 to 1543;
7. State parks, forests, trails and recreation areas;
8. State and federal fish and wildlife refuges and fish and wildlife management areas;
9. State and federal designated wilderness areas (16 USC 1131 to 1135 and s. NR 1.415)
10. Designated or dedicated state natural areas established under ss. 23.27 to 23.29, Stats.;
11. Wild rice waters; and
12. Any other surface waters identified as outstanding or exceptional resource waters in ch. NR 102.

Option B: Include or reference the list in Chapter NR 151.125 of Wisconsin Administrative Code

NR 151 establishes the state's minimum standards for runoff management. Applicants proposing land disturbing activities of one acre or more must establish a protective area near wetlands based on the wetlands' community type and condition (e.g., presence of non-native species). Local governments administering erosion control or stormwater management ordinances may require protective areas for land disturbing activities which are smaller than 1 acre.

1. Highly susceptible wetlands are considered calcareous fens, sedge meadows, open and coniferous bogs, low prairies, coniferous swamps, lowland hardwood swamps, and ephemeral ponds. NOTE: Under NR 151.125(1)(e), highly susceptible wetlands are subject to a 75-foot protective area.

2. Less susceptible wetlands are considered degraded wetlands dominated by invasive species such as reed canary grass; cultivated hydric soils; and any gravel pits, or dredged material or fill material disposal sites that take on the attributes of a wetland.

NOTE: Under NR 151.125(1)(f), less susceptible wetlands are subject to a 10-30 foot protective area. According to NR 151.125(1)(d), wetlands which do not meet the criteria of highly susceptible or less susceptible are subject to a 50-foot protective area under state law.

NOTE: Less susceptible wetlands may need a larger Wetland Protective Area if there is a need or opportunity to restore or enhance the wetland, or prevent further degradation from land use or development pressures.

Appendix B

Overview of Watershed-scale Wetland Assessments

Watershed-Scale wetland planning helps communities align the services wetlands provide with the problems people want to solve. A watershed is a definable unit of land where all of the surface and subsurface water flows to a common drainage point. The condition of our lakes, rivers, streams, wetlands and soils are impacted by activities within the drainage boundaries, and many water resource problems are the result of the cumulative effects of multiple upstream impacts, largely due to changes in hydrology.

Because wetlands appear where water discharges (e.g., springs), infiltrates, flows, and pools, they help to regulate the quantity and quality of water moving through our watersheds. They provide base flow for streams, filtration, storage, and more. The only way to understand and maximize these benefits is to evaluate, or assess, the functions that wetlands do or could provide to the entire watershed.

Six Steps to Watershed-Scale Wetland Planning:

Step 1: Identify the water resources problems your community wants to solve

These will vary by community depending upon the condition of your local waters and the concerns of local residents. Watershed-scale wetland planning can improve the effectiveness of local efforts to reduce flooding, improve water quality, protect shorelines, enhance hunting and recreation areas, influence where wetland development and mitigation occurs, and more. Projects can be designed to generate decision-support tools to help communities address local priorities.

Step 2: Produce more detailed wetland maps

Wisconsin Wetlands Inventory maps tend to underrepresent the presence of wetlands and do not show areas where wetlands have been drained or developed. Nor do they show or describe the functions the wetlands provide or the benefits of protecting or restoring wetlands in particular areas.

In the first of two technical steps of watershed-scale assessment of wetland functions, wetland mapping experts combine and interpret existing maps, aerial photos, and other data to provide a more complete picture of where wetlands are on the landscape. The maps are also enhanced to show "potentially restorable wetlands" – areas where historic wetlands have been drained but not yet developed.

Step 3: Assess the ecological services wetlands do/could provide

In this step, wetland mapping experts examine various features surrounding the mapped and potential wetlands. For example, is the wetland adjacent to other waterways, does it receive or release water, is it wet year-round? They use this information to characterize the presence and potential significance of wetland functions such as flood abatement, water quality improvement, water flow maintenance. The findings are displayed on easily understandable maps, which also help to illustrate the loss of these functions associated with past land use changes.

Step 4: Identify and prioritize wetland sites for protection and/or restoration

The maps of wetland functions and associated data will be evaluated by the watershed planning committee as well as other land use decision-makers with local concerns in mind. Public participation will be encouraged. The basic question is: How can we put wetlands to work to solve the water issues facing our communities?

Step 5: Amend plans and policies to adopt enhanced wetland maps and revised wetland priorities

In this step, communities incorporate wetland priorities into existing plans and identify activities and actions needed to achieve them. Ordinance updates or budget adjustments may be needed. Establishment of new partnerships, and targeted outreach and education are other common activities.

Step 6: Leverage funding, partnerships, and public input to address the wetland preservation and restoration priorities identified in locally adopted plans

Communities that engage in watershed-based wetland planning exercises have a competitive advantage when applying for state and federal funds for water resource management projects. Establishing clear and compelling wetland priorities also helps to increase and focus the investments that partners such as land trusts and sportsmen's groups make in local wetland preservation and restoration. Finally, these projects enable communities to make more efficient use of limited program dollars.

Read the U.S. Fish and Wildlife Services NWIPlus: Geospatial Database for Watershed-level [Wetland] Functional Assessment fact sheet for more information about the techniques or methods which can be used to generate a watershed-scale wetland assessment:

http://www.fws.gov/northeast/wetlands/factsheets/NWIPlus_FactSheet.pdf

- For more information on opportunities to initiate a wetland planning project in your community, contact:

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Helping people care for wetlands

Wisconsin Wetlands Association is dedicated to the protection, restoration, and enjoyment of wetlands and associated ecosystems through science-based programs, education, and advocacy.

WWA is a non-profit 501(c)(3) organization.

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Front Cover photo: Dick Lathrop

Front Cover inset photos:
Top: Wisconsin Wetlands Association
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Publication designed by Tom Senatori Designs