WISCONSIN DEPARTMENT OF NATURAL RESOURCES
NOTICE OF FINAL GUIDANCE & CERTIFICATION

Pursuant to ch. 227, Wis. Stats., the Wisconsin Department of Natural Resources has finalized and hereby certifies the following guidance document.

DOCUMENT ID WT-19-0001

DOCUMENT TITLE NONFEDERAL WETLAND EXEMPTIONS

PROGRAM/BUREAU WATERWAYS PROGRAM

STATUTORY AUTHORITY OR LEGAL CITATION WIS STAT 281.36(1)(BR)

DATE SENT TO LEGISLATIVE REFERENCE BUREAU (FOR PUBLIC COMMENTS) 8/26/19

DATE FINALIZED 10/21/19

DNR CERTIFICATION

I have reviewed this guidance document or proposed guidance document and I certify that it complies with sections 227.10 and 227.11 of the Wisconsin Statutes. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is not explicitly required or explicitly permitted by a statute or a rule that has been lawfully promulgated. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is more restrictive than a standard, requirement, or threshold contained in the Wisconsin Statutes.

10/11/19

Signature Date

BUREAU OF WATERSHED MANAGEMENT
PROGRAM GUIDANCE

Waterway and Wetland Protection

Nonfederal Wetland Exemptions

Effective Date: November 9, 2018
Guidance #: 3500-2018-02

Notice: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

APPROVED:

_____ _11/9/2018_____

Michael Thompson, Director
Bureau of Watershed Management

Date

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EXECUTIVE SUMMARY

Wisconsin Act 183 was enacted on March 28, 2018. This Act created a wetland permitting exemption for certain types of nonfederal wetlands and established the qualifications and requirements for this new exemption. Act 183 also created a permitting exemption for artificial wetlands. Both exemptions are available to stakeholders starting July 1, 2018 and require a landowner, developer, or builder to submit an exemption request to the department prior to initiating a project. Although the artificial and nonfederal wetland exemptions have similar notification and timeline for review, they have separate eligibility and submittal requirements. For this reason, the artificial wetland exemption is described in detail in separate guidance. For more information about the artificial wetland exemption and to access this guidance, please visit https://dnr.wi.gov/topic/wetlands/permitExemptions.html. The purpose of this guidance is to compare the different applications of the artificial and nonfederal wetland exemptions and discuss the eligibility requirements for the nonfederal wetland exemption. A checklist and online decision module have also been created to help articulate eligibility requirements and guide stakeholders through the eligibility process. Stakeholders interested in requesting a nonfederal wetland exemption should visit https://dnr.wi.gov/topic/Wetlands/identification.html to begin the application process.

Using this Guidance

Using a stepped process, it is possible to determine nonfederal wetland exemption eligibility. The flow chart in this guidance illustrates a series of yes and no questions to make this determination. By clicking on the boxes of the flow chart, you will be directed to the section of the guidance that specifically addresses the question of interest. There is no obligation to use this feature but can be a helpful feature to ensure that all required pieces of information are being reviewed and considered.

Comparing the artificial and nonfederal wetland exemptions

The nonfederal wetland exemption may be particularly beneficial for stakeholders that have worked with US Army Corp of Engineers (USACOE) in the past and have received an approved jurisdictional determination indicating that the wetland in question is not federally regulated. A list of approved jurisdictional determinations can be found on the U.S. Army Corps of Engineers, St. Paul Region's website at http://www.mvp.usace.army.mil/Missions/Regulatory/Delineation/. As you will see in this guidance, an approved jurisdictional determination from the USACOE is required to confirm that a wetland is not federally jurisdictional. Stakeholders are encouraged to submit jurisdictional requests to USACOE at http://www.mvp.usace.army.mil/Missions/Regulatory/.

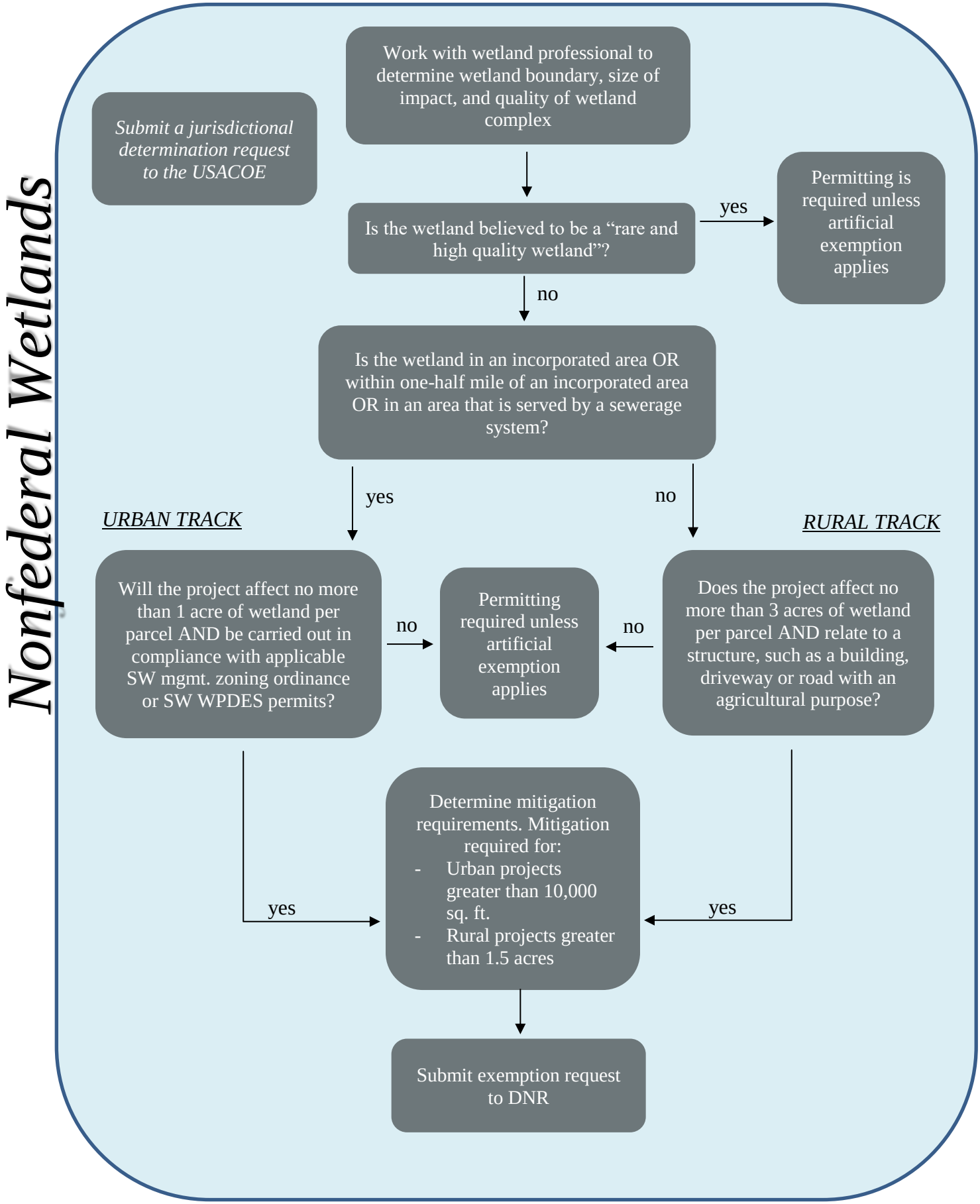
USACOE has indicated that the processing time for these types of requests can be substantial. Given this, the nonfederal wetland exemption may not be viable for time sensitive projects. If a project is potentially eligible for the artificial wetland exemption, it is recommended that stakeholders consider that option instead of the nonfederal wetland exemption. Permitting

options may also be a more viable solution for time sensitive projects. Wetland exemption specialists are available to work with stakeholders to discuss projects and regulatory options to achieve desired outcomes. Please visit https://dnr.wi.gov/topic/waterways/construction/wetlands.html for contact information and other useful information.

Definition of Terms and Abbreviations

Artificial Wetland	"Artificial wetland" is defined in s. 281.36(4n)(a)1, Wis. Stat., as a landscape feature where hydrophytic vegetation may be present as a result of human modification to the landscape or hydrology and for which the department has no definitive evidence showing a prior wetland or stream history that existed before August 1, 1991, but does not include any of the following: a. A wetland that serves as a fish spawning area or a passage to a fish spawning area. b. A wetland created as a result of a mitigation requirement.
Department	Department of Natural Resources
ILF	In Lieu Fee Mitigation Program
Nonfederal Wetland	"Nonfederal wetland" is defined in s. 281.36(1)(br), Wis. Stat., as a wetland that is not subject to federal jurisdiction under 33 USC 1344.
Rural	All areas that do not meet the definition of "urban area" in s. 281.36(4n)(a)5, Wis. Stat.
Urban	"Urban area" is defined in s. 281.36(4n)(a)5, Wis. Stat., as any of the following: a. An incorporated area. b. An area within one-half mile of an incorporated area. c. An area in a town that is served by a sewerage system.
USACOE	United States Army Corp of Engineers
WPDES	Wisconsin Pollution Discharge Elimination System

Nonfederal Wetland Exemption Flow Chart



Nonfederal Wetland Determination

Submit a jurisdictional determination request to the USACOE

Nonfederal wetlands are defined in s. 281.36(1)(br), Wis. Stat., as wetlands that are not subject to federal jurisdiction under 33 USC 1344. To determine if a wetland meets this definition, a jurisdictional determination must be made by the USACOE[1]. An approved jurisdictional determination is an official USACOE determination that jurisdictional waters of the United States, navigable waters of the United States, or both, are either present or absent in a review area. An approved jurisdictional determination precisely identifies the federal jurisdictional limits of those waters under the Clean Water Act or Rivers and Harbors Act. The Request for Corps of Engineers Wetland Delineation Review form can be used to submit jurisdictional determination requests to USACOE. More information is available at http://www.mvp.usace.army.mil/Missions/Regulatory/Delineation/.

The time to process a USACOE jurisdictional determination request can be substantial. Wetland exemption specialists are available to help explore regulatory options and help determine whether the nonfederal wetland exemption process is a good fit for your project. It is not necessary to have an approved jurisdictional determination to submit a nonfederal wetland exemption request to the Department. However, the Department will only be able to approve those requests that include the approved jurisdictional determination. Wetland exemption specialists will review all requests submitted to the Department and will work with stakeholders to address eligibility concerns including absent jurisdictional determinations. Pursuant to s. 281.36(4n)(e)2, Wis. Stat., the Department can put nonfederal wetland exemption requests on hold until this requirement is satisfied.

Step 1. Wetland boundary confirmation

Work with wetland professional to determine wetland boundary, size of impact, and quality of wetland complex

Knowing if wetlands are present on your property is the first step to making an informed permitting or exemption decision. Stakeholders should consider contacting a qualified wetland professional to identify the exact wetland boundary on their property. Typically, a wetland boundary confirmation from the Department is also needed for wetland delineations to provide landowners and developers with certainty that a project's delineated wetland boundary is accurate before a project begins. A nonfederal wetland boundary confirmation is valid for 15 years from the date DNR completed the confirmation and has a 15-day review time unless additional information or a site visit is deemed necessary by the Department. Visit https://dnr.wi.gov/topic/wetlands/identification.html to find out more about this service and to begin the wetland boundary confirmation process. A wetland boundary confirmation is not required for

[1] The Clean Water Act provides states and tribes the option of assuming administration of the Clean Water Act section 404 permit program in certain waters within state or tribal jurisdiction. Pursuant to s. 15.347(22)(b)2, Wis. Stat., the Wetland Study Council will research programmatic and implementation needs to administer the Section 404 program. More information about Section 404 Assumption is available at https://www.epa.gov/cwa-404/state-or-tribal-assumption-section-404-permit-program.

wetland delineations completed by assured wetland delineators. The professional assurance program is a DNR program for professional wetland consultants that meet certain qualifications. Wetland delineations completed by assured delineators typically do not require field reviews by DNR staff. For more information about this program visit https://dnr.wi.gov/topic/Wetlands/assurance.html.

Step 2. Rare and High Quality Wetlands

Is the nonfederal wetland a "rare and high quality wetland"?

To qualify for a nonfederal wetland exemption, a wetland may not be a "rare and high quality wetland" which is defined in s. 281.36(4n)(a)3, Wis. Stat., as a wetland that is directly adjacent or contiguous to a class 1 or class II trout stream or consists of 75 percent or more of any of the following wetland types:

a. Alder thicket
b. Calcareous fen
c. Coniferous swamp
d. Coniferous bog
e. Floodplain forest
f. Hardwood swamp
g. Interdunal wetland
h. Open bog
i. Ridge and swale complex
j. Deep marsh
k. Sedge meadow

Example of Rare and High Quality Wetlands- Hardwood Swamp

Many of these rare and high quality wetland types are defined in the Eggers and Reed "Wetland Community Classification Key, and the Minnesota Bureau of Soil and Water Resources document titled "Eggers & Reed Wetland Plant Community Type Key and Quality Ranking" which is available at http://www.bwsr.state.mn.us/wetlands/wca/Eggers_Reed_Wetland_Class_key.pdf. They are also defined under the DNR's Natural Heritage Inventory (NHI) Wisconsin natural community web pages. Information on Wisconsin's natural communities can be found by visiting dnr.wi.gov, topic keyword "natural communities". Detailed descriptions of Wisconsin's natural communities are also available in Chapter 7 of the Ecological Landscape of Wisconsin. It should be noted that the Eggers and Reed and NHI classifications are two different keys that are commonly used to define vegetation community types and may have have different names for the same community types, along with narrower classification of some communities. The community names from the classification keys also may not always align with the names of the rare and high quality wetlands defined under state law. A crosswalk table (Appendix 2, Table 1) is located within this guidance document to aid the reviewer in determining which Eggers and Reed and which NHI community type would be classified as a Rare and High Quality wetland under s. 281.36(4n)(a)3, Wis. Stat. In addition, a "Key to Wetland Natural Communities" as classified by the WDNR's Natural Heritage Inventory can be located within Appendix 3 of this guidance document.

Clear documentation is needed to support the findings of fact that the wetland in question is not a rare and high quality wetland. A botanical survey must be completed to determine what the dominant wetland community type is. Wherever possible, this survey should be completed for the entire wetland complex and should not be limited to the proposed project area impact. Although many nonfederal wetlands are small isolated systems, the Department recognizes that it may not be possible to complete a botanical survey on an entire wetland complex in all instances, particularly when the wetland crosses multiple private properties. It is encouraged that stakeholders reach out to the adjoining property owners to seek permission to complete botanical surveys in these instances. It may also be possible for a qualified professional to make reasonable inferences about wetland quality from windshield surveys at public access points or from reviewing available aerial photography reflective of current wetland quality. Additional information on conducting a botanical survey for the purposes of documenting a rare and high quality wetland is located in Appendix 1.

Wetland Identification Specialists or Water Management Specialists may also be able to waive the requirement for a complete botanical survey in certain instances, particularly where on-site investigation has already been completed by DNR or USACOE staff. Contact information for your regional Wetland Identification Specialist is available at https://dnr.wi.gov/topic/Wetlands/identification.html. More information about this analysis is also available in Appendix 1.

Step 3. Urban vs. Rural Areas

Is the nonfederal wetland in an incorporated area OR within one-half mile of an incorporated area OR in an area that is served by a sewerage system?

Eligiblity criteria and requirements for the nonfederal wetland exemption differ between urban and rural areas. An urban area is defined in s. 281.36(4n)(a)5, Wis. Stat., as an area that is incorporated or within one-half mile of an incorporated area, or an area in a town that is served by a sewerage system. Areas that do not meet this definition are considered rural or non-urban areas. Water and sewer bills are typically available for stakeholders in urban areas for confirmation. Political boundaries are also available in the surface water data viewer: https://dnr.wi.gov/topic/surfacewater/swdv/. To access this information, activate the “Administrative, Political & Cadastral” layer on the surface water data viewer (Figure 6). The surface water data viewer can also measure distance from these political boundaries for stakeholders to determine if the area of interest is within one-half mile of an incorporated area (Figure 7).

Figure 6. Example urban area boundary illustrated in the surface water data viewer. The red boxes indicate the layers that should be activated to see this information.

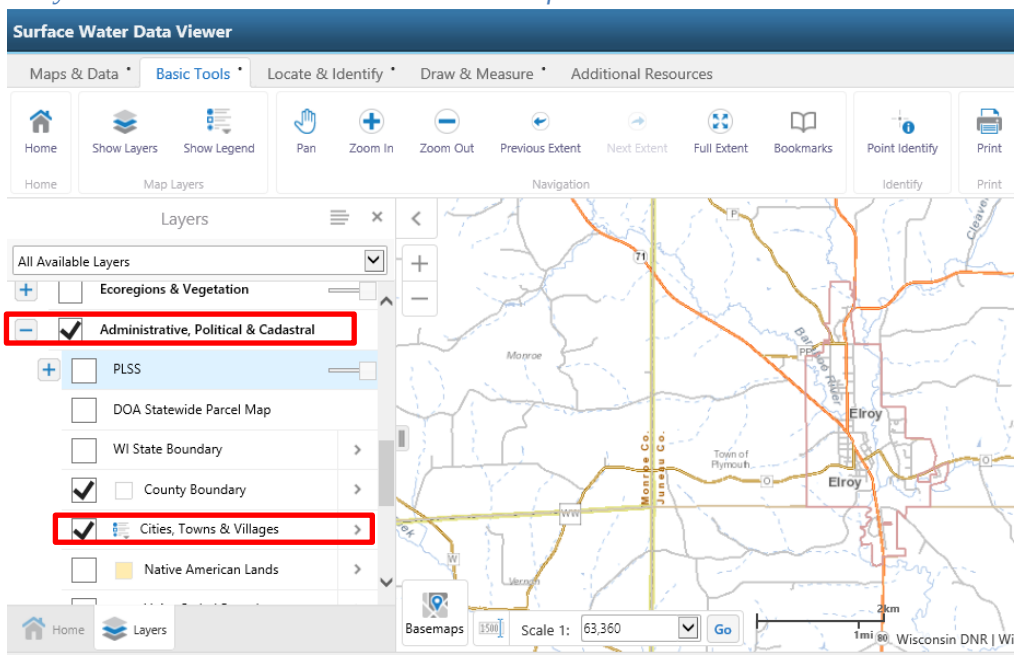
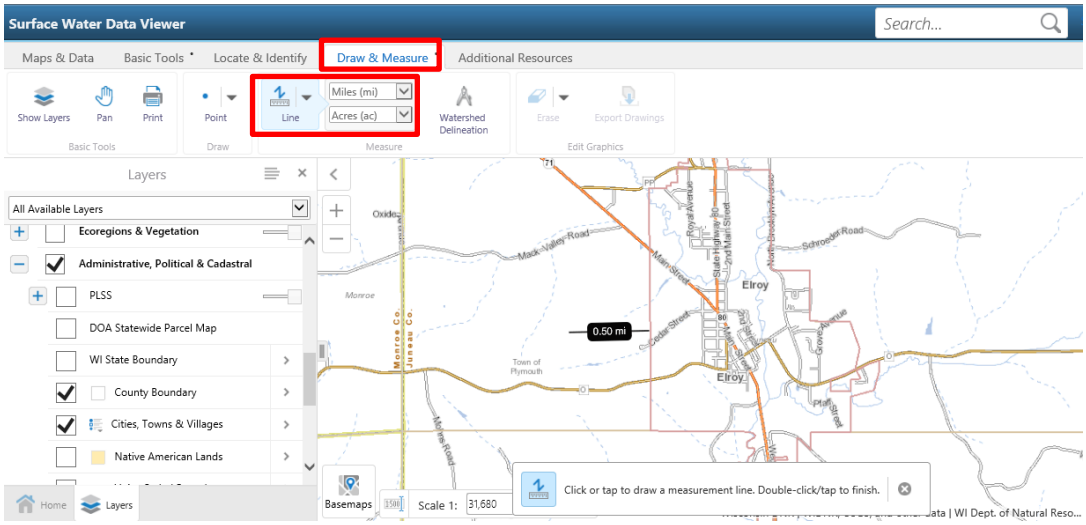


Figure 7. Example measurement within the surface water data viewer to determine if an area is within one-half mile of an urban boundary. The red boxes indicate the features that should be activated to complete these measurements.



Step 4a. Eligibility Requirements for Urban Projects

Will the project affect no more than 1 acre of wetland per parcel AND be carried out in compliance with applicable SW mgmt. zoning ordinance or SW WPDES permits?

Wetland impacts of up to 1 acre per parcel may qualify for the nonfederal wetland exemption (s. 281.36(4n)(b)1, Wis. Stat.). Wetland impacts include both temporary and permanent impacts. Through the data gathering needed for steps 1-3 in the process, stakeholders should have a clear understanding of the wetland boundary that can be used to quantify the anticipated wetland disturbance amount. If a wetland crosses multiple tax parcels, stakeholders should calculate wetland impacts for each parcel to ensure that no more than 1 acre of wetland is impacted on each applicable parcel.

Urban projects must also comply with applicable stormwater management zoning ordinances or stormwater Wisconsin Pollution Discharge Elimination System (WPDES) permits to qualify for this exemption (s. 281.36(4n)(b)3, Wis. Stat.). Stormwater management ordinances and WPDES permits are designed to help decrease the amount of sediment entering Wisconsin's waterways through land disturbing activities. If the construction plans disturb one acre or more of land (wetland and other lands combined) a WPDES Construction Site Storm Water Discharge Permit is needed. Visit https://dnr.wi.gov/topic/stormwater/learn_more/regulations.html for more information. Contact your local municipality in which the property is located (county, city or village) to confirm compliance with other applicable ordinances adopted under s. 59.693, 60.627, 61.354, or 62.234, Wis. Stats., related to stormwater ordinances.

Step 4b. Eligibility Requirements for Rural Projects

Does the project affect no more than 3 acres of wetland per parcel AND relate to a structure, such as a building, driveway or road with an agricultural purpose?

Wetland impacts in rural setting can impact no more than 3 acres per parcel to qualify for the nonfederal wetland exemption (s. 281.36(4n)(c)1, Wis. Stat.). Wetland impacts include both temporary and permanent impacts. Through the data gathering needed for steps 1-3 in the process, stakeholders should have a clear understanding of the wetland boundary that can be used to quantify the anticipated wetland disturbance amount. If a wetland crosses multiple tax parcels, stakeholders should calculate wetland impacts for each parcel to ensure that no more than 3 acres of wetlands are impacted on each applicable parcel.

Pursuant to s. 281.36(4n)(c)3, Wis. Stat., wetland impacts in rural areas must be related to a structure, such as a building, driveway, or road, with an agricultural purpose to qualify for the nonfederal wetland exemption. This means that commercial or residential projects in rural settings are not eligible for the nonfederal wetland exemption. The terms "agricultural purpose" and "agricultural" are not specifically defined in s. 281.36, Wis. Stat. However, s. 30.40(1), Wis. Stat., defines "agricultural use" as aquaculture; beekeeping; dairying; egg production; feedlots; grazing; floriculture; raising of livestock; raising of poultry; raising of fruits, nuts and berries; raising of grains, grass, mint and seed crops; raising of vegetables; and sod farming. This is a reasonable working definition for this section given the linkages between ch. 30, Wis. Stat., and s. 281.36, Wis. Stat. Structures similar to buildings, driveways and roads to support any of the activities listed in s. 30.40(1), Wis. Stat. will be considered for the nonfederal wetland exemption.

Step 5. Mitigation Requirements

Determine mitigation requirements. Mitigation required for:

- Urban projects greater than 10,000 sq. ft.
- Rural projects greater than 1.5 acres

Compensatory wetland mitigation replaces the loss of wetland and aquatic resource functions in watersheds. Compensatory mitigation refers to the restoration, establishment, or enhancement of wetlands for the purposes of offsetting unavoidable adverse impacts. Pursuant to s. 281.36(3n)(d)1, Wis. Stat., mitigation is required for:

- All qualifying urban projects that affect more than 10,000 sq. ft. of wetlands; and
- All qualifying rural projects that affect more than 1.5 acres of wetlands.

If mitigation is required, stakeholders are encoraged to contact the DNR wetland mitigation coordinator to schedule a pre-application meeting prior to submitting an exemption request to discuss mitigation options. This meeting will allow stakeholders to work collaboratively with DNR to determine the best available compensatory mitigation option to replace the lost wetland function. Meeting ahead of time will also help reduce the occurrence of unexpected issues during the review and approval process.

In general, there are three types of mitigation options available: mitigation banking, In-lieu fee program (ILF), and permittee responsible mitigation. Visit https://dnr.wi.gov/TOPIC/WETLANDS/mitigation/ for more information about these programs. Stakeholders can begin the electronic exemption request process once they can confirm mitigation requirements for the project (See Section III). Typical information that is required for wetland mitigation is summarized at: https://dnr.wi.gov/TOPIC/WETLANDS/mitigation/.

To avoid temporary losses of wetland functions in the landscape, mitigation requirements must be satisfied before a wetland exemption is authorized. This means that stakeholders should complete the credit purchase prior to the exemption request being approved. The Wetland Mitigation Bank Registry depicts the DNR–approved banks throughout Wisconsin in each Bank Service Area (BSA) and provides contact information for the bank sponsor, whom stakeholders can contact for credit availability and pricing. A list of available ILF credits and contact information is available at https://dnr.wi.gov/topic/Wetlands/mitigation/WWCT.html.

Pursuant to s. 281.36(4n)(e)2, Wis. Stat., the Department may request additional information within 15 working days of receiving an exemption request. Requests for more information to confirm compliance with mitigation requirements will be likely if sufficient information is not provided with the exemption request. It is advised that stakeholders contact the DNR wetland mitigation coordinator to schedule a pre-application meeting prior to submitting an exemption request to avoid delays in the review and approval timeline.

Appendix 1. Submitting Data for the Documentation of Rare and High-Quality Wetlands

Documenting a Rare and High Quality Wetland Type

Rare and High Quality Wetland types are characterized by the dominant vegetation community that is present. To determine what the dominant vegetation community type is, a botanical survey must be completed to obtain comprehensive species lists. While vegetation data collected during wetland delineations may be a helpful preliminary determination of the community type, these sample points are not sufficient to characterize an entire wetland complex. High quality wetland communities are distinguished on the crosswalk table in Appendix 2 and can be further classified using the WDNR's "Key to Wetland Natural Communities" located in Appendix 3. Furthermore, the rare wetland community must also comprise at least 75 percent or more of the entire wetland complex. For example, in a 100-acre wetland complex, if 10 acres of the wetland is composed of a wet meadow community dominated by reed canary grass (*Phalaris arundinaceae*), and the remainder of the wetland complex is composed of a high quality hardwood swamp, the entire wetland complex would still be considered a rare and high quality wetland.

To document if a wetland is rare or high quality:

1. <u>Complete Wetland Type Mapping</u>
   Using a combination of aerial photography and a field review, map the locations of each wetland community type found within the wetland complex. If the wetland is part of a larger complex that extends off the project area/property, obtain the necessary permissions to enter the off-site properties. If the necessary permissions cannot be obtained, use the best available aerial photographs and desktop review materials to estimate the size and extent of the different wetland community types that comprise the wetland complex.

2. <u>Complete Wetland Type Areal Coverage Estimates</u>
   Determine the percent areal coverage of each wetland type relative to the entire wetland complex using the data collected during the wetland type mapping.

3. <u>Collect Comprehensive Species List</u>
   Collect a comprehensive species list within each wetland community type. The Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessment is the recommend sampling method. Other survey methods may also be utilized. It is recommended that plant species survey protocols are discussed with agency staff prior to initiating any field work.

4. <u>Complete Determination of Wetland Community Type</u>
   Using the data collected during the plant species inventory, determine each wetland community type using the DNR's "Key to Wetland Natural Communities" in Appendix 3. The plant species data must be summarized in a report that includes:
   a. A description of the methods used to complete the plant species survey.
   b. A wetland type map for the entire wetland complex, overlain on the most recent aerial photography.
   c. A table that describes the following for each wetland type:

i. A list of all species observed during the survey, broken up by community type.
ii. An estimated areal coverage for each species observed during the survey
iii. The relative percentage of native and non-native species, based upon the abundance estimates generated during the plant species survey.
iv. The Wisconsin Floristic Quality Assessment Calculator (FQA Calculator) is one example of a tool that can be used for calculating the needed plant species survey metrices.

d. The appropriate vegetation community for the wetland determined from the DNR's "Key to Wetland Natural Communities" and which Rare and High Quality wetland this community would be classified as under in s. 281.36(4n)(a)3, Wis. Stat. from using the crosswalk from Table 1 located in Appendix 2.

If the wetland complex meets the requirements to be considered a rare and high quality wetland under in s. 281.36(4n)(a)3, Wis. Stat, and is comprised of at least 75 percent of that wetland type, then the wetland is considered a rare and high quality wetland under Wisconsin law and cannot be exempted from state permitting requirements.

The FQA Calculator and the Timed-Meander Sampling Protocol, including the instructions on how to use these tools, can be located on the Wisconsin wetlands: assessment and tools segment of the Wisconsin DNR's website at https://dnr.wi.gov/topic/wetlands/methods.html under the Level 3 Approach to wetland assessment and monitoring.

Appendix 2. Wetland Community Crosswalk Table for Determining Rare and High Quality Wetland Types for Non-Federal Wetland Exemptions

Table 1. Crosswalk between generic "Rare and High Quality" wetland types specified in Wisconsin Chapter 281.36 (4n)(a)(3), Eggers and Reed (2015) and WDNR Natural Heritage Inventory natural community types[1].

Ch. 281.36 (4n)(a)(3) List Type		Eggers and Reed (2015)[2]	NHI Natural Community Type[1]
a.	Alder thicket	Alder thicket	Alder thicket
b.	Calcareous fen	Calcareous fen	Calcareous fen
c.	Coniferous swamp	Coniferous swamp	Northern wet-mesic forest
			Southern tamarack swamp
			White pine-red maple swamp
d.	Coniferous bog	Coniferous Bog	Black spruce swamp
			Northern tamarack swamp
e.	Floodplain forest	Floodplain forest	Floodplain forest
f.	Hardwood swamp	Hardwood swamp (vernal pool subtype)	Ephemeral pond
		Hardwood swamp	Forested seep
			Hardwood swamp
			Southern hardwood swamp
g.	Interdunal wetland	N/A	Interdunal wetland
h.	Open bog	Open bog	Bog relict
			Boreal rich fen
			Central poor fen
			Great Lakes shore fen
			Muskeg
			Open bog
			Patterned peatland
			Poor fen
i.	Ridge and Swale complex[3]	N/A	Great Lakes ridge and swale
j.	Deep marsh	Deep marsh	Coastal plain marsh
			Emergent marsh
			Wild rice marsh
k.	Sedge meadow	Sedge meadow	Moist sandy meadow
			Northern sedge meadow
			Southern sedge meadow
N/A		Shrub-carr	Shrub-carr
N/A		Shallow, open water communities	American lotus marsh
			Floating-leaved marsh
			Oligotrophic marsh
			Submergent marsh
N/A		Wet to wet-mesic prairie	Wet prairie
			Wet-mesic prairie

[1]NHI community types are standard classifications used as part of WDNR Environmental Impact Statements/Analyses under the Wisconsin Environmental Protection Act (WEPA) and other documents such as the WDNR Wildlife Action Plan. Moreover, they are the official ecological classifications used for monitoring, assessment and management of natural resources by a majority of WDNR programs. As such, they are cross referenced here for continuity, as the Ch. 281.36 (4n)(a)(3) list types include all of these indicated individual NHI types.
[2] Eggers, S.D. and D.M. Reed. 2015. Wetland Plants and Plant Communities of Minnesota and Wisconsin. Version 3.2 (July 2015) U.S. Army Corps of Engineers Regulatory Branch, St. Paul District. 478pp.
[3]In Ch. 281.36 (4n)(a)(3), this community is incorrectly referenced (typographical error) within "Rare and High Quality" wetlands as "Ridge and Swail complex". The error has been corrected here for clarity.

Table 2. Crosswalk between generic "Rare and High Quality" wetland types specified in Wisconsin Chapter 281.36 (4n)(a)(3), Eggers and Reed (2015) and ruderal wetland community types[1].

Ch. 281.36 (4n)(a)(3) List Type	Eggers and Reed (2015) [2]	Ruderal Community Type[1]
N/A	Deep marsh	Ruderal marsh
N/A	Fresh (wet) meadow (disturbed subtype) OR Seasonally flooded basin	Ruderal wet meadow
N/A	Hardwood swamp	Ruderal flooded and swamp forest
N/A	Shrub-carr	Ruderal shrub swamp

[1]Wetland type that does not naturally occur on the landscape, but rather is the result of disturbance or human influence (i.e. ruderal communities)
[2] Eggers, S.D. and D.M. Reed. 2015. Wetland Plants and Plant Communities of Minnesota and Wisconsin. Version 3.2 (July 2015) U.S. Army Corps of Engineers Regulatory Branch, St. Paul District. 478pp.

Appendix 3.

Wisconsin Department of Natural Resources

Key to Wetland Natural Communities

READ AND UNDERSTAND BEFORE USE:

1) This key should only be used for the purposes of aiding in determination of potential nonfederal wetland exemptions under Chapter 281.36 (4n) unless otherwise explicitly specified by WDNR for other purposes. This key should be used in conjunction with the crosswalk table [Crosswalk between "Rare and High Quality" wetland types specified in WI Chapter 281.36 (4n)(a)(3) and WDNR Natural Heritage Inventory natural community types] noted in WDNR Bureau of Watershed Management Program Guidance "Nonfederal Wetland Exemptions" #3500-2018-02.

2) This key is used as a guide for determining if the wetland or wetlands in question are categorized as subtypes of "rare and high quality" wetland types as defined by WI Chapter 281.36 (4n)(a)(3). Like any key, not all species listed within the description of a given wetland community as present or absent need be present or absent (respectively) in order for a wetland to appropriately be categorized as being that community type. Rather, the community type of a given wetland is determined by meeting a majority of description based on the landscape position, soils, hydrology and plant community composition as a whole. Therefore, it is recommended to have a full and descriptive plant community survey completed using WDNR's Timed Meander Protocol or other pre-approved method for each visually apparent wetland type of the wetland complex(es) in question before using this key to determine their specific wetland community type(s).

3) Where available, links to WDNR Natural Heritage Inventory natural community web pages are provided. More information on Wisconsin's natural communities may be found by visiting dnr.wi.gov, topic keyword "natural communities". Detailed descriptions of Wisconsin's natural communities are also available in Chapter 7 of the Ecological Landscape of Wisconsin. For each community, this includes a general overview, photos, associated rare plants and animals, and a print-ready 2-4 page detailed description featuring the distribution, abundance, environmental setting, ecological processes, community composition and structure, and conservation and management considerations.

1a. Wetland dominated by non-native vegetation, with non-natives comprising >75% of relative cover (ruderal communities)

2a. Wetlands with at least 25% cover of trees or shrubs (ruderal forested and shrub wetlands).

3a. Forested with at least 25% canopy of trees, usually dominated by non-native tree willows [e.g., crack willow (*Salix* X *fragilis*), etc.] or weedy natives such as boxelder. Shrub layer strongly dominated by non-native species such as non-native bush honeysuckles (*Lonicera* spp.), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Frangula alnus*), and multiflora rose (*Rosa multiflora*); herbaceous layer also usually dominated by non-natives such as reed canary grass (*Phalaris arundinacea*), garlic mustard (*Alliaria petiolata*), creeping Charlie (*Glechoma hederacea)*, dame's rocket (*Hesperis matronalis*), and moneywort (*Lysimachia nummularia*). Generalist native tree species may be co-dominant in the canopy, especially green ash or red maple ..... **Ruderal Flooded and Swamp Forest**

3b. Dominated by non-native shrubs (<25% tree cover) such as non-native bush honeysuckles, common buckthorn, or glossy buckthorn, sometimes co-dominated by aggressive native shrubs such as dogwoods (*Cornus* spp.), sandbar willow (*Salix interior*), etc. Ground layer typically strongly dominated by reed canary grass, or occasionally bare ground where shrubs are very dense..... **Ruderal Shrub Swamp**

2b. Wetlands with trees and tall shrubs (>5 feet tall) less than 25% cover (ruderal marshes and meadows).

4a. Dominated by non-native reeds and cat-tails such as common reed (*Phragmites australis* ssp. *australis*), invasive or hybrid cattail species (e.g. *Typha angustifolia*, *T.* X *glauca*), or reed manna grass (*Glyceria maxima*). Non-native forbs may also be dominant, such as purple loosestrife (*Lythrum salicaria*). ..... **Ruderal Marsh**

4b. Dominated by non-native grasses such as reed canary grass (*Phalaris arundinacea*) and redtop (*Agrostis gigantea*), or by weedy native forbs such as giant ragweed (*Ambrosia trifida*), stinging nettle (*Urtica dioica*), Canada goldenrod (*Solidago canadensis*), blunt spike-rush (*Eleocharis obtusa*), etc. ..... **Ruderal Wet Meadow**

1b. Wetland dominated by native vegetation (Wisconsin Natural Heritage Inventory natural communities).

5a. Very small (usually one acre or less) kettle depressions in forested landscapes on moraines or interlobate regions, with standing water in spring, usually drying by late summer..... **Ephemeral Pond**

5b. Larger wetlands, or if small, occurring in a variety of other landscapes and hydrologic setting combinations.

6a. Forested or tall shrub-dominated wetlands. Mature trees contributing greater than 25% overall canopy cover or tall shrubs (> 5 feet) contributing more than 50% canopy cover.

7a. FORESTED WETLANDS. Dominated by mature trees contributing greater than 25% overall canopy cover.

8a. Community occurring adjacent to Great Lakes shorelines on alternating series of narrow, sandy, upland ridges and low swales. Ridges may be open or shrub-dominated closest to the shoreline, and further from the shore are forested with pines, oaks, white spruce, balsam fir, and paper birch. Swales may contain open water, sedge meadow, alder, or be forested with black ash, tamarack, or northern white-cedar ... **Great Lakes Ridge and Swale**

8b. Community occurring adjacent to Great Lakes shorelines or not, but landforms and topography otherwise.

9a. Conifers common to dominant throughout canopy layer.

10a. Canopy strongly dominated by northern white-cedar or white pine. Tamarack and black spruce may be present but are minor canopy components and are not dominant across large areas.

11a. Canopy dominated by white pine, subcanopy dominated by red maple. Groundlayer often dominated by cinnamon fern (*Osmunda cinnamomea*), bristly dewberry (*Rubus hispidus*), and long sedge (*Carex folliculata*). Located mainly in Central Sand Plains ecological landscape on an ancient glacial lakebed. Soils usually acid sands with a thin layer of organic material. ..... **White Pine-Red Maple Swamp**

11b. Canopy dominated by northern white-cedar, sometimes co-dominant with black ash, balsam fir, tamarack, or black spruce. Groundlayer often contains sedges (such as *Carex disperma* and *C. trisperma*) and forbs such as fringed polygala (*Polygala pauciflora*), naked miterwort (*Mitella nuda*), twinflower (*Linnaea borealis*), creeping snowberry (*Gaultheria hispidula*), and Sphagnum and other mosses. Located mainly in northern (occasionally in southeastern) Wisconsin in areas with mineral-enriched groundwater, often on outwash plains and ground moraines. Soils usually minerotrophic, at least where in contact with groundwater.....**Northern Wet-mesic Forest**

10b. Canopy strongly dominated by black spruce or tamarack. Cedar and white pine absent to sparse.

12a. Located mainly in southern Wisconsin. Dominated by tamarack, may be co-dominated by American elm, black ash, red maple, or yellow birch; black spruce absent to sparse. Poison sumac often common in tall shrub layer. Soils usually minerotrophic. ..... **Southern Tamarack Swamp**

12b. Located mainly in northern Wisconsin. Canopy dominated by black spruce or tamarack; most associates above (American elm, red maple, yellow birch) absent or sparse, though black ash may be present. Poison sumac absent to sparse. Soils usually strongly acid to weakly minerotrophic. [Formerly, all northern coniferous wetlands dominated by tamarack or black spruce were termed Northern Wet Forest. While this type is retained to cross-walk legacy data, it has been effectively retired and is now split into the following communities.]

13a. Canopy dominated by black spruce or co-dominant with tamarack. Tall shrub layer (> 5 feet) usually sparse (< 5% total cover, usually much less). Sphagnum moss abundant, often forming a nearly continuous carpet. Soils typically strongly acid. .....**Black Spruce Swamp**

13b. Canopy dominated by tamarack, black ash sometimes co-dominant. Tall shrubs common (> 5% total cover, usually much greater) dominated by species such as speckled alder (*Alnus incana*), mountain holly (*Ilex mucronata*), winterberry (*Ilex verticillata*), black chokeberry (*Aronia melanocarpa*), and bog birch (*Betula pumila*). Sphagnum moss occasional on hummocks, usually discontinuous. Soils moderately acid to weakly minerotrophic ..... **Northern Tamarack Swamp**

9b. Conifers absent, or, if present, less dominant than hardwoods (may be locally co-dominant in hardwood swamps).

14a. Occurring in floodplains of 3rd order or greater streams and rivers. Dominant overstory species include silver maple, green ash, black willow, cottonwood, river birch, basswood, swamp white oak, bur oak, bitternut hickory, and hackberry (boxelder may be dominant in disturbed stands). Where organic soil accumulates in areas such as groundwater seepages, backswamps, and meander scars, tree species may include black ash, yellow birch, red maple, and conifers (tamarack, northern white-cedar, white pine, and hemlock), especially in northern Wisconsin.....**Floodplain Forest**

14b. Occurring along headwater streams (1st and 2nd orders), seeps, and on poorly drained glacial outwash, lakeplain, and/or depressions in moraines or ice-contact topography.

15a. Occurring along seepage areas with active spring discharges in hardwood forests, usually at the head of ravines or at the base of steep bluffs. Found primarily in Driftless Area coulees, end moraines, and clay ravines..... **Forested Seep**

15b. Occurring along headwater streams, basins in outwash plains, lakeplains, or depressions in moraines and ice-contact topography.

16a. Canopy dominated by black ash, often with red maple, yellow birch, or American elm. Conifers such as balsam fir and northern white-cedar may be locally common. Green ash and silver maple usually uncommon. Specked alder common. Groundlayer often dominated by species typical of saturated swamps such as marsh marigold (*Caltha palustris*), swamp raspberry (*Rubus pubescens*), orange jewelweed (*Impatiens capensis*), purple-stemmed aster (*Aster puniceus*), lake sedge (*Carex lacustris*), blue-joint grass (*Calamagrostis canadensis*); many also include groundwater-loving species like bristle-stalked sedge (*Carex leptalea*), American golden saxifrage (*Chrysosplenium americanum*), and swamp saxifrage (*Micranthes pensylvanica*). Soils are mucks or mucky sands, usually constantly saturated with a relatively stable water table. Occurring along lakes, streams, or poorly drained basins. .... **Hardwood Swamp**

16b. Canopy dominated by silver maple, red maple (or the hybrid *Acer* X *freemanii*), and green ash. Associate species may include swamp white oak, bur oak, basswood, and American elm, and may be dominant in stands impacted by emerald ash borer. Black ash may be present but is usually not dominant. Speckled alder uncommon or absent. Groundlayer often dominated by species typical of floodplain forests such as Virginia wild-rye (*Elymus virginicus*), white grass (*Leersia virginica*), common wood-reed (*Cinna arundinacea*), wood nettle (*Laportea canadensis*), false nettle (*Boehmeria cylindrica*), and Ontario aster (*Symphyotrichum ontarionis*). Soils are predominantly mineral rather

than muck, with a water table that fluctuates seasonally (wet in the spring, drying below the soil surface by late summer). Occurring in insular basins on low-lying portions of till plains and on lakeplains. Not restricted to southern Wisconsin; the name rather refers to swamps more commonly found in the southern Midwest..... **Southern Hardwood Swamp**

7b. SHRUB-DOMINATED WETLANDS. Mature trees contributing 25% or less to overall canopy cover. Tall shrubs (> 5 feet) dominant, contributing greater than 50% overall canopy cover.

17a. Occurring in southeastern Wisconsin. Tamarack common, forming a semi-open canopy (may be locally greater than 25% cover, but usually not over entire wetland). Poison sumac usually common, along with ericaceous shrubs (e.g., leatherleaf, bog rosemary, and bog laurel). Soils watery muck to firm peat, usually minerotrophic. ..... **Bog Relict**

17b. Occurring elsewhere, or, if in southeastern Wisconsin, tamarack absent or sparse. Shrubs and soils various.

18a. Shrub layer dominated by speckled alder, with alder contributing to half or more of the shrub canopy cover relative to all other shrubs combined. Occurring mainly in central and northern Wisconsin, rare in southern Wisconsin and Driftless Region. Soils acidic to minerotrophic..... **Alder Thicket**

18b. Shrub layer dominated by a greater diversity of shrubs, often at least 4 or 5 species that are co-dominant. Alder usually present, even common, but contributes less than half of the relative shrub cover. Other common shrub species may include willows (*Salix* spp.), dogwoods (*Cornus* spp.), meadowsweet (*Spiraea alba*), bog birch (*Betula pumila*), nannyberry (*Viburnum lentago*), winterberry (*Ilex verticillata*), poison sumac (*Toxicodendron vernix*), etc. Occurring statewide. Soils acidic to minerotrophic. ..... **Shrub-carr**

6b. OPEN (NON-FORESTED) WETLANDS. Mature trees absent or contributing 25% or less overall canopy cover. Tall shrubs (> 5 feet) contributing to 50% or less canopy cover.

19a. Standing water greater than 6 inches deep usually present throughout community (most marshes).

20a. Vegetation dominated by submergent or floating-leaved aquatic vegetation. Emergent vegetation (1.5-3 feet above surface of water) sparse, though American lotus (*Nelumbo lutea*) may be emergent late in growing season.

21a. Vegetation dominated by near-continuous (>50%) cover of rooted floating leaved vegetation (i.e., not counting free-floating duckweeds) or American lotus (*Nelumbo lutea*).

22a. Vegetation dominated by American lotus. Occurring along margins of large rivers, especially the Mississippi, Lower Wolf and Winnebago Pool lakes.....**American Lotus Marsh**

22b. Vegetation dominated by other species, usually with large round leaves such as white water-lily (*Nymphaea variegata*), bull-head pond-lily (*Nuphar variegata*), or water-shield (*Brasenia schreberi*). Other aquatic macrophytes with long, narrow floating leaves may also be present such as long-leaf pondweed (*Potamogeton nodosus*) and floating-leaf bur-reed (*Sparganium fluctuans*). Occurring in lakes, ponds, or occasionally margins of rivers. .....**Floating-leaved Marsh**

21b. Vegetation dominated by submergent aquatics. Rooted, floating leaved aquatic macrophytes (i.e., not counting free-floating duckweeds) less than 50% cover.

23a. Vegetation dominated by rosette-forming aquatic macrophytes such as seven-angled pipe-wort (*Eriocaulon aquaticum*), yellow hedge-hyssop (*Gratiola aurea*), aquatic lobelia (*Lobelia dortmanna*), dwarf water-milfoil (*Myriophyllum tenellum*), brown-fruited rush (*Juncus pelocarpus*), and quillworts (*Isoetes* spp). Occurring in clear, deep, circumneutral lakes with extremely soft water in northern Wisconsin. Bottom materials usually sand or occasionally gravel. .....**Oligotrophic Marsh**

23b. Vegetation dominated by a wide variety of common aquatic macrophytes, including pondweeds (*Potamogeton* spp.), waterweeds (*Elodea* spp.), coontails (*Ceratophyllum* spp.), slender naiad (*Najas flexilis*), eel-grass (*Vallisneria americana*), water-milfoils (*Myriophyllum* spp.) and bladderworts (*Utricularia* spp.). Occurring in a wide variety of lake types and water chemistries. Bottom materials usually muck or silt but may also include sand and gravel.....**Submergent Marsh**

20b. Vegetation dominated by emergent vegetation, usually 1.5 – 3 feet above the surface of the water by mid- to late summer.

24a. Occurring along the margins of sand-bottomed seepage lakes and ponds on glacial lakebeds (especially Glacial Lake Wisconsin) and outwash plains in south central Wisconsin. Vegetation exhibiting strong zonation with sedges (*Carex* spp.) and bulrush (*Scirpus* spp.) dominant in the emergent zone, aquatic macrophytes (e.g., water-shield, etc.), in deeper water, and with medium-statured grasses, sedges, and forbs disjunct from the Atlantic Coastal Plain in shallow water and along the shore, especially *Fimbristylis*, *Fuirena*, *Lipocarpha*, *Rhynchospora*, *Scleria*, brownfruit rush (*Juncus pelocarpus*), milkworts (*Polygala cruciata* and *P. sanguinea*), tooth-cup (*Rotala ramosior*), meadow-beauty (*Rhexia virginica*), lance- leaved violet (*Viola lanceolata*), and yellow-eyed grass (*Xyris torta*). ..... **Coastal Plain Marsh** (high water phase)

24b. Occurring in a wide variety of hydrologic settings including inland lakes, Great Lakes, and along rivers Vegetation dominated by cat-tail, wild rice, bulrushes, or other species, not strongly zonal, lacking Coastal Plain disjuncts.

21a. Vegetation dominated by northern wild rice (*Zizania palustris*). ..... **Wild Rice Marsh**

21b. Vegetation dominated by species such as cat-tails (*Typha angustifolia*, *T.* X *glauca*, *T. latifolia*), giant reed (*Phragmites australis*), bulrushes (*Schoenoplectus* spp.), river bulrush (*Bolboschoenus fluviatilis*), lake sedge (*Carex lacustris*), bur-reeds (*Sparganium* spp.), water-plantains (*Alisma* spp.), common spike-rush (*Eleocharis palustris*), southern wild rice (*Zizania aquatica*) and occasionally cut grass (*Leersia oryzoides*). ..... **Emergent Marsh**

19b. Standing water absent or less than 6 inches deep throughout community in growing season, though water may be deeper in local pools (peatlands, fens, wetland prairies, sedge meadows, and coastal plain marsh, in part).

26a. Community structure characterized by a repeated, alternating pattern of low peat rises (strings) and hollows (flarks). Strings may support scattered and stunted black spruce, tamarack, northern white-cedar, low shrubs including bog birch, shrubby cinquefoil, bog rosemary (*Andromeda glaucophylla*), leatherleaf (*Chamaedaphne calyculata*), and sedges (*Carex oligosperma C. limosa, C. lasiocarpa*). The alternating flarks are often inundated and may support many sedges of bogs and fens, along with ericads, sundews (*Drosera* spp.), orchids, arrow-grasses (*Triglochin* spp.), and calciphilic shrubs such as bog birch and shrubby cinquefoil (*Dasiphora fruticosa*). Soils are deep peat and slightly acid to circumneutral. Extremely rare in Wisconsin, known from only a handful of sites. ..... **Patterned Peatland**

26b. Community structure lacks repeating pattern of low peat rises and alternating hollows.

27a. Ground layer dominated by a continuous carpet of sphagnum mosses, or sphagnum mosses locally dominant on scattered low peat mounds.

28a. Tree canopy cover typically 10 to 25%, consisting of scattered and stunted black spruce and tamarack. Occurring in central and northern Wisconsin. Soils strongly acidic deep peat. ..... **Muskeg**

28b. Trees absent or occurring in localized areas with overall canopy cover typically less than 10%.

29a. Vegetation surface uneven and dominated by pronounced hummocks (often 2 feet or more in height) with intervening hollows; hummocks dominated by ericaceous shrubs such as leatherleaf, bog rosemary, Labrador tea, and bog laurel (*Kalmia polifolia*). Soil very strongly acidic, deep fibric peat. Occurring primarily in central and northern Wisconsin, usually in the center of large peatland basins or occasionally on firm peat above a lake margin, always where the rooting zone is elevated above the influence of minerotrophic groundwater. ..... **Open Bog**

29b. Vegetation surface more even or with widely scattered low hummocks (usually less than 2 feet high). Soils strongly acidic to weakly minerotrophic. Occurring in broad depressions on lakeplains and outwash plains or along the margins of lakes, usually in contact with groundwater or surface water.

30a. Vegetation dominated by few-seed sedge (*Carex oligosperma*) and/or wiregrass sedge (*C. lasiocarpa*). Common shrubs are leatherleaf, bog rosemary and occasionally bog birch, plus stunted tamarack and black spruce. Other indicator species include mud sedge (*Carex limosa*), pitcher-plant (*Sarracenia purpurea*), round-leaved sundew (*Drosera rotundifolia*), pod grass (*Scheuchzeria palustris*), bogbean (*Menyanthes trifoliata*) and the pink-flowered orchids (*Calopogon tuberosus*, *Pogonia ophioglossoides* and *Arethusa bulbosa*). Occurring north of the climatic tension zone in kettle depressions and on level

areas or shallow depressions of glacial outwash and lakeplains, often on the margins of "bog" lakes with a floating or grounded mat of peat and sedge rhizomes. ..... **Poor Fen**

30b. Vegetation dominated by common yellow lake sedge (*Carex utriculata*), few-seed sedge (*Carex oligosperma*), wiregrass sedge (*C. lasiocarpa*), and bluejoint grass (*Calamagrostis canadensis*); wool grass (*Scirpus cyperinus*) occasional. Small tamarack and white pine scattered. Common shrubs are hardhack (*Spiraea tomentosa*), bristly dewberry (*Rubus hispidus*), leatherleaf, black chokeberry (*Aronia melanocarpa*), Kalm's St. John's-wort (*Hypericum kalmianum*) and sometimes bog birch (*Betula pumila*). Indicator forbs include swamp-candles (*Lysimachia terrestris*) and bog goldenrod (*Solidago uliginosa*). Occurring almost exclusively in the Central Sand Plains on the lakebed of Glacial Lake Wisconsin. ..... **Central Poor Fen**

27b. Ground layer dominated by sedges, rushes, grasses, and/or forbs with sphagnum mosses absent or occurring locally.

31a. Soils loam, silt loam, or silty clay loam, usually at or within 12 inches of soil surface.

32a. Dominated by big bluestem, little bluestem, and Indian grass, with prairie dropseed, bluejoint grass, cordgrass, and tussock sedge locally common. Prairie forbs such as prairie blazing-star (*Liatris pycnostachya*), prairie phlox (*Phlox pilosa*), prairie coneflower (*Ratibida pinnata*), prairie dock (*Silphium terebinthinaceum*), and Culver's-root (*Veronicastrum virginicum*) much more common than marsh forbs (see 32b)..... **Wet-mesic Prairie**

32b. Dominated by cordgrass and occasionally bluejoint grass and tussock sedge. Marsh forbs such as Joe-Pye-weed (*Eutrochium maculatum*), boneset (*Eupatorium perfoliatum*], common water hemlock (*Cicuta maculata*), swamp milkweed (*Asclepias incarnata*), and water smartweed (*Persicaria amphibia*) more common than prairie forbs (see 32a), or both marsh and prairie forbs about equally common..**Wet Prairie**

31b. Soils sand, peat, or muck, usually throughout rooting zone.

33a. Occurring along the shorelines of Lake Michigan and Superior, or in estuarine complexes near the Great Lakes, with hydrology influenced at least indirectly by Great Lakes water levels.

34a. Located in coastal embayments, often behind a barrier sandspit or near the mouth of estuarine rivers. Vegetation usually a floating mat dominated by wiregrass sedge (*Carex lasiocarpa*), twig-rush (*Cladium mariscoides*), sweet gale (*Myrica gale*), and buckbean (*Menyanthes trifoliata*)..... **Great Lakes Shore Fen**

34b. Located in depressions in open dunes or between dune ridges. Soils moist or submerged sand (sometimes covered by a thin layer of muck or marl). Water level sometimes deepening to several feet in center of depression. Species various, but often include Baltic rush (*Juncus balticus*), silverweed (*Potentilla anserina*), seven-angled pipewort (*Eriocaulon aquaticum*), golden-seeded spike-rush (*Eleocharis elliptica*), and sedges (e.g., *Carex aquatilis*, *C. lasiocarpa*, *C. oligosperma*, *C. viridula*). ..... **Interdunal Wetland**

33b. Occurring elsewhere, or, if near the Great Lakes, hydrology not influenced by Great Lakes water levels.

35a. Soils sand or occasionally shallow muck (< 3 feet) over sand or loamy sand. Occurring in shallow sandy depressions or on perimeters or entire basins of softwater seepage lakes with drying shores and other isolated depressions characterized by large water table fluctuations (both seasonally and from year to year).

36a. Occurring along the margins of sand-bottomed seepage lakes and ponds on glacial lakebeds (especially Glacial Lake Wisconsin in the Central Sand Plains) as well as on sandy outwash plains. Vegetation usually exhibiting strong zonation with an aquatic zone, shorted-statured emergent zone, and drier upland zone.

37a. Vegetation includes species disjunct from the Atlantic Coastal Plain, including *Fuirena*, *Lipocarpha*, *Rhynchospora*, *Scleria*, brown-fruit rush (*Juncus pelocarpus*), milkworts (*Polygala cruciata* and *P. sanguinea*), tooth-cup (*Rotala ramosior*), meadow-beauty (*Rhexia virginica*), and yellow-eyed grass (*Xyris torta*); may also contain species listed below (see 37b)..... **Coastal Plain Marsh**

37b. Vegetation lacks Coastal Plain specialists (see 37a), dominated by graminoids such as Arctic rush (*Juncus arcticus*), narrow-panicle rush (*J. brevicaudatus*), Smith's bulrush (*Schoenoplectus smithii*),

little green sedge (*Carex viridula*), yellow sedge (*C. flava*), broom sedge (*C. scoparia*), clustered beak-rush (*Rhynchospora capitellata*), and containing forbs such as silver-weed (*Argentina anserina*), brook lobelia (*Lobelia kalmii*), purple false foxglove (*Agalinis purpurea*), common false foxglove (*A. tenuifolia*), and northern St. John's-wort (*Hypericum boreale*)..... **Inland Beach**

36b. Occurring in moist sandy depressions with a high water table, but with little to no standing water; not associated with seepage lakes. Vegetation zonation weak, usually a mixture of species of coastal plain marsh as well as sedge meadow, oak barrens, and/or pine barrens.....**Moist Sandy Meadow**

35b. Soils typically deep peat (> 3 feet). Occupying depressions in glacial lakeplains and outwash plains, abandoned glacial lakebeds, stream corridors, and margins of lakes.

38a. Dominated by sedges, particularly tussock sedge (*Carex stricta*), wiregrass sedge (*C. lasiocarpa*), and/or lake sedge (*C. lacustris*), with bluejoint grass occasionally co-dominant. Sedge and bluejoint grass tussocks, if present, often tall (> 6 inches). Soils peat or muck, acid to neutral. Wet sedge meadow species such as water smartweed, great water dock (*Rumex britannica*), broad-leaved arrowhead (*Sagittaria latifolia*), marsh skullcap (*Scutellaria galericulata*), and wool grass (*Scirpus cyperinus*) more prevalent than fen specialists (see 38b), which are usually sparse.

39a. Located in northern Wisconsin, north of the climatic tension zone. Vegetation dominated by sedges (*Carex stricta*, *C. lacustris*, *C. lasiocarpa*, *C. oligosperma*, *C. utriculata*) and bluejoint grass. Species such as leatherleaf, marsh cinquefoil (*Comarum palustre*), northern blue flag (*Iris versicolor*), and bog willow (*Salix pedicellaris*) more prevalent than those listed below (see 39b). Soils are neutral to strongly acidic, shallow to deep peat. Frequently invaded by speckled alder with tamarack and/or cedar on the margin ..... **Northern Sedge Meadow**

39b. Located in southern Wisconsin, mostly south of the climatic tension zone. Vegetation dominated by tussock sedge, lake sedge, and sometimes by wiregrass sedge. Species such as Joe-Pye-weed, jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), giant goldenrod (*Solidago gigantea*), glossy-leaved aster (*Symphyotrichum firmum*), and tall meadowrue (*Thalictrum dasycarpum*) more prevalent than species listed above (see 39a). Soils are typically neutral to mildly alkaline peat. Frequently invaded by dogwoods and willows (e.g., *Salix bebbiana*, *S. discolor*); alder absent to sparse ..... **Southern Sedge Meadow**

38b. Dominance usually shared by sedges, grasses, rushes, bulrushes, and forbs (in boreal rich fens, Carex lasiocarpa may be dominant). Sedge tussocks, if present, usually short (< 6 inches). Soils neutral to moderately alkaline deep peat or marl. Vegetation strongly influenced by surface and subsurface groundwater seepage. Fen specialists such as sedges (*Carex buxbaumii*, C*. leptalea*, *C. limosa*, *C. livida*, *C. sterilis*), Kalm's lobelia (*Lobelia kalmii*), bog goldenrod (*Solidago uliginosa*), pitcher-plant (*Sarracenia purpurea*), beak-rushes (*Rhynchospora alba* and *R. capillacea*), bog arrowgrass (*Triglochin maritimum*), twig-rush (*Cladium mariscoides*), golden-seeded spike-rush (*Eleocharis elliptica*), shrubby cinquefoil (*Dasiphora fruticosa*), and alder-leaved buckthorn (*Rhamnus alnifolia*) more prevalent than sedge meadow/marsh specialists (see 38a), which are usually sparse.

40a. Located in northern Wisconsin, often adjacent to lakes or cedar swamps. Northern shrubs and stunted trees present such as bog rosemary, leatherleaf, sweet gale, northern white-cedar, tamarack, and black spruce. ..... **Boreal Rich Fen**

40b. Located in southern Wisconsin or occasionally in central Wisconsin, primarily in interlobate regions. Species of prairies and calcareous southern wetlands present such as big bluestem, little bluestem, whorled loosestrife (*Lysimachia quadriflora*), cowbane (*Oxypolis rigidior*), swamp lousewort (*Pedicularis lanceolata*), Virginia mountain-mint (*Pycnanthemum virginianum*), Riddell's goldenrod (*Solidago riddellii*), and poison sumac (*Toxicodendron vernix*). .....**Calcareous Fen**

CREATED:

Creator, Title Date

APPROVED:

_____ _____

Section Chief Date

Policy Management Team approved on _____ (date).