

ENVIRONMENTAL ASSESSMENT

Wisconsin Statewide General Permit for Municipal Highways, Bridges, Arches and Culverts

Prepared by Wisconsin Department of Natural Resources, Office of Energy and Environmental Analysis
August 2012

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150. 22, Wisconsin Administrative Code.

Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4: 30 p.m., September 2, 2012

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DESCRIPTION

Municipal Highways, Bridges, Arches and Culverts General Permit Process

The Wisconsin Department of Natural Resources (WDNR) general permit for construction, reconstruction and maintenance of municipal transportation projects, WDNR-GP2-2012, has been developed for the purpose of allowing municipalities to design and build small road and bridge projects that will not have a significant adverse impact to waterways and wetlands. The purpose of the general permit is to streamline and improve the application and review procedures, consistent with federal agencies, but not change the overall process. WDNR-GP2-2012 was developed to address general permit provisions of the navigable waters regulations under Chapter 30, Stats., and the GP provisions of the wetland permitting regulations under 281.36, Stats. This document summarizes the proposal and the expected impacts.

Historically, municipal transportation projects have been reviewed under TRANS 207 for municipal bridges, arches and culverts, and Chapter 30 and Water Quality Certification permits for municipal road projects. The projects addressed by WDNR-GP2-2012 are administered and directed by counties, cities, villages or towns. Transportation projects administered and directed by the Wisconsin Department of Transportation must follow a process as outlined under s. 30.2022, Stats.

In 1981, Chapter TRANS 207, Wisconsin Administrative Code, became effective. It was an unusual code because it was adopted by Wisconsin Department of Transportation, but administered almost exclusively by Wisconsin Department of Natural Resources. For over 30 years, municipal bridge, arch and culvert projects were reviewed and approved by Environmental Analysis and Review staff in the Office of Energy and Environmental Analysis. Permitting of waterway and wetland impact associated with municipal highway and road projects were handled by staff in the Water Division. Since 2010, Environmental Analysis and Review staff have been handling the Chapter 30 and Water Quality Certification workload for municipal road projects.

General Permit Issuance:

Waterway legislation, 2011 Wisconsin Act 167, was enacted on April 2, 2012, and this act resulted in changes to Chapter 30, the navigable waters statute. The Department was given authority, as laid out in s. 30.123, Wis. Stats., to issue Statewide General Permits for municipal transportation projects. Wetland legislation, 2011 Wisconsin Act 118, was enacted on February 29, 2012. This legislation replaces the state's water quality certification program with an independent Wetland Permit state law that directly regulates all Wisconsin wetlands. The Department was given authority, as laid out in s. 281.36 Wisconsin State Statutes, to issue statewide wetland general permits for specific categories and limited acreages of wetland discharges. Minor municipal transportation projects are activities that have been historically authorized as state water quality certification confirmation letters without controversy and with minor if any adverse environmental impacts.

General Permit Coverage:

Individuals may apply for coverage under a statewide general permit to perform work in accordance with the terms and conditions of the general permit. Coverage under a general permit will be valid for a period of 5 years from the date of issuance. The Department has the authority to reevaluate the permits effectiveness and will give public notice of its intention to issue, renew, modify or revoke a statewide wetland general permit as well as provide a period for generating public comments. The Department continues to have authority to establish requirements, conditions and exceptions for statewide general permits to ensure that the authorized discharges will cause only minimal adverse environmental effects. The Department will make a determination to either issue coverage to the applicant or require an individual review process. The Department determination will depend on whether or not the discharge complies with the eligibility requirements and standard conditions outlined in the general permit.

The application review process, as outlined in s. 281.36 Wisconsin State Statutes, requires the Department to determine whether a practicable alternative exists. This is achieved by requiring applicants to explore various project alternatives that would avoid and minimize wetland impacts. The Department review process will rely upon a vigorous application of this process to assure that avoidance and a full search for practicable alternatives is completed so that the projects will have only minimal impacts on wetland functions and values. These wetland permitting procedures will apply to permit applications received after August 1, 2012. Existing water quality certification permits and confirmations will remain effective until reissued or revoked.

General Permit for Municipal Highways, Bridges, Arches and Culverts

Authorized Activities:

In compliance with the provision(s) of Chapter 281.36 (3g)(a)10 and Section 30.123, Wisconsin Statutes, municipalities are authorized to construct, reconstruct or maintain highways, bridges, arches and culverts and will comply with the terms and conditions of WDNR-GP2-2012. Projects must meet all eligibility standards, terms and conditions of the general permit to be eligible for coverage. WDNR-GP2-2012 authorizations are provisional and require that project proponents obtain any other local, state or federal permits before any work is authorized. MUNICIPAL HIGHWAYS / BRIDGES / ARCHES / CULVERTS General Permit (WDNR-GP2-2012) authorizations are subject to all applicable terms and conditions specified in the permit.

Excluded Activities:

WDNR-GP2-2012 excludes projects that do not meet all the eligibility criteria as outlined in the general permit. The department has the authority to require an individual permit in lieu of a general permit if it determines that conditions specific to the site require additional restrictions to provide reasonable assurance that no significant adverse impacts to wetland functional values will occur.

WDNR-GP2-2012 includes the following restrictions:

- The project shall not impact more than 10000 square feet (0.23 acre) of wetland or waterway for a single and complete project. Disturbance should include only the amount of wetland fill necessary to properly construct the highway and shall minimize alteration of critical features of waterway or wetland habitats.
- Structures over lake outlets and lake systems or any culvert installed with the intent to back up water are not eligible for a general permit.
- Projects that are administered (or “let”) by WisDOT are not eligible for this general permit.
- Projects that are new roads or new crossings of a navigable waterway where there was previously not a crossing, are not eligible for this general permit.
- The permit does not authorize the placement of a culvert on a stream that is more than 35 feet wide, measured from ordinary high water mark to ordinary high water mark, unless otherwise approved by the WDNR Transportation Liaison.
- Bridges authorized by this permit must be clear-span, with no piers in the waterway.

Furthermore, WDNR-GP2-2012 does not authorize any activity that would take place in, or result in adverse impacts to, the following “Wetland Types” identified as being rare or sensitive:

- Great Lakes ridge and swale complexes
- Interdunal wetlands
- Coastal plain marshes
- Southern Sphagnum bogs
- Boreal rich fens or
- Calcareous fens

Permit Changes:

The Department can revoke coverage of any permit found not to be in compliance with the terms and conditions of the permit, or if at any time the Department determines the project will be detrimental to Wetland Water Quality Standards. Furthermore, the Department has the authority to reevaluate the effectiveness of WDNR-GP2-2012 and may modify or revoke it if determined necessary.

PURPOSE AND NEED

The purpose of issuing a Statewide General Permit for municipal highways, bridges, arches and culverts is to establish a stable, relatively simple permit program that is specifically designed to effectively and efficiently regulate minor discharges of dredged or fill material into wetlands and waterways for the purpose of building public roads and bridges. The legislative intent of 2011 Wisconsin Act 167 and 2011 Wisconsin Act 118 was to establish clear criteria, conditions and timelines to ensure more predictable permit review processes and decisions as well as to provide consistency with federal permit processes and requirements.

The new Municipal Highways, Bridges, Arches and Culverts General Permit (WDNR-GP2-2012) satisfies a need for the Department to administer its waterway and wetland regulatory program in the most economical and streamlined manner while maintaining an effective level of protection for aquatic resources.

ALTERNATIVES

No person may proceed with a project to discharge dredged material or fill into a wetland as part of a municipal highway, bridge, arch or culvert transportation project unless the discharge is authorized for coverage under wetland general permit WDNR-GP2-2012 or under an individual permit issued by the Department. Though legislation requires the Department to issue and provide coverage under WDNR-GP2-2012, the Department retains authority, under s. 281.36 (3g) (i), Stats., to require a wetland individual permit in lieu of a wetland general permit.

Coverage under WDNR-GP2-2012 may be granted for projects meeting all applicable purpose, design, construction and location terms and conditions. The Department has 30 days to review the application, notify the applicant of any further required information or missing application items, and make a determination regarding the applicants' eligibility for coverage. When Department review of the proposed project indicates that terms and conditions of the general permit are not sufficient to ensure only minimal adverse environmental effects to wetlands, the Department may require an individual permit to allow a more detailed review.

Projects requiring individual permits do not fit the pre-approved designs and terms and conditions necessary to be eligible for coverage under a general permit. Individual permit procedures require a pre-application meeting to discuss the purpose and scope of the proposed project. A more detailed permit application and Department review is required including a more comprehensive practicable alternatives analysis and a compensatory wetland mitigation plan. Through the individual permit process Department staff may advise applicants on project modifications needed to reduce wetland impacts and ensure that the project will not result in any significant adverse environmental consequences. Additionally, individual permits require a public notice, public comment period and an opportunity for an informational hearing. Individual permit decisions are subject to appeal for review by an administrative law judge within 30-days of the decision.

Although the Department has the authority to require an individual permit in lieu of a general permit, the alternative of strictly permitting all discharge activities as individual permits is deemed unnecessary. The Department has the authority to establish requirements, conditions and exceptions for statewide wetland general permits and WDNR-GP2-2012 has been designed to produce and achieve the same regulatory results as an individual permit review for projects with minor impacts. Furthermore, individual permit reviews for all projects is beyond the ability of the Department's limited resources. Individual permit review will be required of proposed projects not meeting the terms and conditions of WDNR-GP2-2012 or on a case-by-case determination of specific site conditions that necessitate additional restrictions in order to provide reasonable assurance that no significant adverse impacts to wetland functional values will occur.

AUTHORITIES AND APPROVALS

Wetland general permit authorizations are provisional and require that the applicant obtain any other federal, state, local or tribal permits or approvals that may be required for the project or activity involving a discharge into a wetland, and before any work is authorized. For example, under section 404 of the Clean Water Act, the U.S. Army Corps of Engineers may require permits for dams, dikes and other structures in federal navigable waters and for the discharge of dredged or fill material into waters and wetlands. This federal permit is in addition to a state wetland permit. The type of permit needed and the length of the ACOE review of a proposal will depend on the extent of wetland alteration proposed. More information about federal requirements can be found at: www.mvp.usace.army.mil/regulatory.

Furthermore, while the state wetland permit program governs the determination of whether a discharge is in compliance with state Water Quality Standards, it does not affect the authority of the Department to otherwise regulate the discharge of dredged or fill material into a wetland. For example, several types of activities related to collecting, storing, transporting, treating and disposing of solid waste, or the discharge of industrial or municipal waste waters, require permits or licenses from the Department. Under Chapter 30 of the Wisconsin Statutes, the

Department of Natural Resources also requires permits for the placement of structures, dredging and similar activities in or adjacent to navigable waters. Additionally, local governments use floodplain and shore-land zoning to control development along lake shores and streams. Local zoning officials administer permit programs for buildings, land disturbance and other activities in shore-land and floodplain areas.

ENVIRONMENTAL IMPACTS

This analysis briefly describes potential effects that would be attributable to activities authorized by WDNR-GP2-2012 for discharges of dredged or fill material, less than or equal to 10,000 square feet, into wetlands and waterways as part of a municipal highway, bridge, arch or culvert project. This analysis further addresses any expected difference in environmental effects and impacts between the issuance of a statewide general wetland permit versus the alternative of issuing an individual permit.

Affected Environment

Wisconsin has a large variety of wetlands with vegetation differing from northern to southern portions of the state due to differences in climate and soils. Wisconsin's history of glaciations favored the formation of wetlands and wetland complexes throughout most of the state. While the hilly "driftless area" of western Wisconsin was not included in the last glacial advance, the region is rich in floodplain and riparian wetlands. In *Wetland Plants and Plant Communities of Minnesota and Wisconsin*, by Eggers and Reed, Wisconsin wetlands are classified into 15 different communities defined by a unique combination of plants, soil types and water levels. In many areas of Wisconsin, several kinds of wetlands occur together to form a mosaic or wetland complex.

Wetlands, whether part of a complex or isolated, are valuable in the environmental, economic and aesthetic benefits they provide. Wisconsin wetlands serve many important functions. They provide habitat for a diversity of fish and wildlife, help alleviate flooding, reduce soil erosion, cleanse polluted waters, provide groundwater recharge and contribute to regular water flow in streams and rivers throughout the year. They also provide opportunities for recreation, research and education. These societal benefits and ecological functions are discussed in further detail in *Wetland Functional Values*, a Wisconsin Department of Natural Resources publication available online at www.dnr.wi.gov/topic/wetlands. Wetland connections to lakes, streams, groundwater, each other, and terrestrial habitat are not always immediately obvious, yet impacts to one wetland may influence the functioning of other wetlands as well as other natural systems due to hydrological and biological connections. Only relatively recently have we begun to understand the many ecological functions associated with wetlands and their significance to society.

General Impacts to Waterways and Wetlands

Many animals, most obviously fish, depend entirely on waterways survive. There are also other animals that live most of their lives in upland areas but depend on wetlands for breeding. Many mammals, amphibians, reptiles, and birds may depend on wetlands and waterways for feeding, nesting, migration stopovers or for wintering habitat. Even small waterways and wetlands that appear dry much of the time are crucial to the survival of certain species. Wetland fill authorization will result in a permanent displacement to areas of aquatic habitat. Discharge activities may also cause a temporary, minor adverse impact to aquatic habitat in the adjacent wetlands and waterways. Site filling activities result in the existing natural vegetation being replaced with impervious surfaces and upland sites eliminating aquatic habitat.

Significant adverse impacts to aquatic species will be avoided by requiring applicants to avoid construction during fish spawning periods, as outlined in the general permit eligibility standards. Applicants are required to use Best Management Practices (BMPs) during construction to avoid siltation of wetlands and waterways. Adherence to NR 40 is required in order to avoid the spread of aquatic and terrestrial invasive species. The eligibility standards of the general permit also provide a link to a worksheet that will help applicants to determine if existing structures over waterways are a barrier to aquatic organism passage and how to design a structure that is not a barrier.

Construction activities may temporarily disrupt, permanently degrade or remove terrestrial and aquatic habitat. Site filling activities result in the existing natural vegetation being replaced with impervious surfaces and landscaped sites which provide minimal habitat value.

Municipal highways, bridges, arches and culverts need to meet the requirements of NR 116, Wisconsin Administrative Code. The existing highway water-crossing must have a history of adequately passing flood water, be free of significant controversy concerning public rights in navigable waters, and shall conform to the requirements of NR 116. Eligibility standards in the general permit require that the grade-line of any existing overflow sections passing a portion of the regional flood will not be raised. The minor loss of wetlands associated with small municipal road and bridge projects may displace flood storage, but properly designed bridges, arches and culverts should maintain or improve flooding issues with roadways.

Impacts Due to Permit Processes

Development of wetlands by allowing discharge and fill impacts has resulted in an irreversible loss of wetland acreage because it is unlikely that these wetlands will ever be restored. Over the last two years that the Department authorized municipal highway, bridge, arch and culverts projects, over 75% of those projects resulted in less than 10,000 square feet of fill per project. These conversions have caused an irretrievable loss of wetland function. The commitment of these nonrenewable wetland resources is based on the premise that the benefits of public road safety would outweigh the loss of the resources.

The Department does not anticipate that the issuance of WDNR-GP2-2012 will result in a net increase of fill activity authorization beyond what has historically been authorized under the water quality certification permitting program previously in place. Based on current permit data for the time period of 2010 to 2012, approximately 18 acres of fill has been reported statewide as a result of municipal transportation projects. Given the 10,000 square feet impact threshold of WDNR-GP2-2012, over 75 percent of permits previously reviewed through the individual permit process would potentially become eligible for the new wetland general permit.

WDNR-GP2-2012 and individual permits provide terms and conditions that address direct, secondary and cumulative impacts to wetland functions and values. Permit requirements to decrease wetland impacts include maintaining wetland hydrology in the remaining wetland complex, construction measures to minimize erosion and siltation into surface waters and wetlands, use of suitable fill material, avoidance of the spread of invasive species, and prevention of potential pollutants from entering a wetland or water body. Both permitting processes prevent adverse impacts to historical and cultural resources, state and federal designated threatened or endangered species, fishery spawning habitat, fish passages, bird breeding areas, and movement of migratory species. Neither the general permit nor individual permit authorizations are to be contrary to wetland water quality standards or result in adverse impacts to adjacent landowners. Both general and individual permitted projects are required to be maintained in good condition to ensure that there are no additional impacts to remaining wetlands or waterways.

Evaluating the overall extent of secondary and cumulative impacts of wetland fills and their associated effects can be difficult since wetland impacts that may seem minor when considered individually may become major if considered collectively over time and space. Wetland individual permit review requires a more intensive analysis of practicable alternatives that will avoid and minimize the adverse impacts of the discharge on wetland functional values, and will provide that the project will not result in any other significant adverse environmental consequences. The Department considers direct impacts, cumulative impacts and potential secondary impacts of proposed projects in determining that each permitted project represents the least environmentally damaging practicable alternative, and that the project will not result in significant adverse impacts to wetland functional values, or water quality, or result in other significant adverse environmental consequences. WDNR-GP2-2012 does not require a full analysis of practicable alternatives, but includes standards and conditions in which applicants are required to justify why wetland impacts cannot be avoided, and how impacts will be minimized to the greatest extent practicable, so that proposed projects will have minimal adverse environmental effects. In either case, proposed wetland losses will be closely evaluated and alternatives vigorously pursued.

Wetlands are to be restored, enhanced, created or preserved to meet the regulatory requirements in an individual wetland permit. Compensatory mitigation at a ratio of at least 1.2 acres mitigated to every acre filled is required with all individual wetland permits. Mitigation means the restoration, enhancement, creation or preservation of wetlands to compensate for adverse impacts to other wetlands. While this would hypothetically result in a replacement of wetland acreage, mitigation projects are not comparable in size, location, type and quality, nor in

the replacement of functional values, of the destroyed wetland. Fill projects authorized under WDNR-GP2-2012 do not require compensatory mitigation.

Regional variations in wetland type and distribution, variations in land use throughout the state, economic trends, and potential impacts of future climate changes provide uncertainties in predicting the environmental effects of future wetland fills authorized under either WDNR-GP2-2012 or individual wetland permits. Both general and individual wetland permits may be revoked if the Department determines that the applicant failed to comply with the terms and conditions of the permit or if the information provided by the applicant proves to be false, incomplete or inaccurate. Either permit may also be revoked if new information indicates that the project will cause significant environmental impacts.

The establishment of this general permit as a streamlined permit process for activities of minimal impact will have the advantage of allowing more Department resources to be allocated to the review of individual permits of greater complexity and greater potential for significant adverse wetland impacts.

Risk

Reliance on Applicants Data:

Department staff reviews all general permit applications to determine that projects meet all permit terms and conditions, and are eligible for coverage. In making these determinations, the Department relies on the information provided by applicants, and any other required information. The Department has authority for site access to investigate the project construction, operation, maintenance or permit compliance. The Department may deny coverage or reevaluate its decision on any authorization under this GP at any time circumstances warrant. Circumstances include, but are not limited to, failure to comply with the terms and conditions of the general permit; information provided by the applicant proves to have been false, incomplete, or inaccurate; or significant new information surfaces which was not considered in reaching the original determination. Any act of noncompliance constitutes a permit violation and is grounds for enforcement action ranging from fines to required wetland restoration.

Presumptive Approval

Under WDNR-GP2-2012, if the Department fails to make a determination regarding coverage under the general permit within 30 days, the project is presumed to be authorized under s. 281.36, Stats., and the applicant may proceed. According to recent wetland permitting data, the average general permit decision issued by the Department has been within this 30 day timeframe. The Department cannot guarantee that statutory presumptive approval will never occur, however. Any presumptively approved project must still adhere to the terms and conditions of the general permit with any act of noncompliance constituting a permit violation that is grounds for enforcement action.

Degree of Controversy

The authority and requirement of the Department to issue statewide general permits for municipal transportation projects was legislatively established. The process involves public notice of the Department's intent to issue, modify or revoke a statewide general permit, and allows for public input to address potential concerns. The issuance is not expected to be controversial. The authorization of coverage for WDNR-GP2-2012 permit activities provides no public comment opportunity, nor does it require notification to adjacent landowners of any proposed fill activity. However, this is no change from prior general water quality certification procedures and is not expected to be controversial.

Degree of Precedence

While this is the second statewide general permit to be issued under the new "Wetland Permit" process established by legislation, the Department has issued water quality certifications and confirmation letters for both federal and nonfederal wetlands historically. The new wetland general permit program continues the Department's practice of consistently providing conditions and standards for projects in low functional wetlands. The waterway permitting aspects of this GP are consistent with the review conditions and process that has been used for municipal waterway crossing reviews for the last 30 years.

Project Name: General Permit WDNR-GP2-2012 for Municipal Highways, Bridges, Arches and Culverts

County: Statewide

PRELIMINARY DECISION

In accordance with s. 1.11, Wis. Stats., and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code.

The Department has made a preliminary determination that the Environmental Impact Statement process will not be required for this action/project. This recommendation does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Evaluator

Date Signed

Maureen Millmann

August 2, 2012

FINAL DECISION

The public review process has been completed. The Department received and fully considered responses to the news release or other notice.

Pursuant to s. NR 150.22(2)a., Wis. Adm. Code, the attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action, and therefore the environmental impact statement process is not required prior to final action by the Department.

The Department has determined that it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code. This decision does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Environmental Analysis Program Staff

Date Signed

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with section NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with section NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30 day period for filing a petition for judicial review.

DOCUMENTS USED IN ANALYSIS:

- Eggers, S.D, and Reed, D.M. 1997. Wetland Plants and Communities of Minnesota and Wisconsin. U.S. Army Corps of Engineers, St. Paul District. www.npwrc.usgs.gov/resource/plants/mnplant/index.htm (Version 03SEP1998).
- Kent, P.G and Dudiak, T.A. 2001. Wisconsin Water Law: A guide to Water Rights and Regulations. Second Edition. University of Wisconsin Extension. www.learningstore.uwex.edu/assets/pdfs/g3622.pdf.
- Thompson, A.L. and Luthin, C.S. 2004. Wetland Restoration Handbook for Wisconsin Landowners. Second Edition. Bureau of Integrated Science Services, Wisconsin Department of Natural Resources. Publication #SS-989 (2004).
- Trochlell, P. and Bernthal, T. May 1998. Small Wetlands and the Cumulative Impacts of Small Wetland Losses. www.dnr.wi.gov/wetlands/documents/SmallWetlandLosses.
- U.S. Army Corps of Engineers Website. 2012. Wetland Regulatory Program. www.usace.army.mil/inet/functions/cw/cecwo/reg.
- U.S. Environmental Protection Agency Website. 2012. Section 404 of the Clean Water Act. www.epa.gov/owow/wetlands/laws.
- U.S. Environmental Protection Agency Website. 2012. Wetlands and People. www.water.epa.gov/type/wetlands/people.cfm.
- U.S. Environmental Protection Agency Wetland Website. 2012. www.epa.gov/owow/wetlands/regs.
- U.S. Environmental Protection Agency. April 2012. The Economic Benefits of Protecting Healthy Watersheds. Fact sheet EPA 841-N-12-004. www.epa.gov/healthywatersheds.
- Wisconsin Department of Natural Resources Website. 2012. Wetland Functional Values. PUBL-WZ-026 93. www.dnr.wi.gov/waterways/shoreline_habitat/wetland_IP/wz026.pdf.
- Wisconsin Department of Natural Resources Website. 2012. Wetlands Benefit People and Nature. www.dnr.wi.gov/topic/wetlands.
- Wisconsin Wetland Team. June 2008. Reversing the Loss: A Strategy to Protect, Restore and Explore Wisconsin Wetlands. Wisconsin Department of Natural Resources. www.dnr.wi.gov/topic/wetlands/documents/ReversingLoss08_gs.