Following changes in shoreland regulations in 2018, certain activities in navigable **waters are exempt from needing a permit under chapter 30, Wisconsin Statutes.** Some projects still require permitting based upon what is proposed as well as what navigable waters may be impacts. Attached are recommendations for shoreland owners that are considering a riprap or shoreland project for shoreland erosion which is commonly known as ice-push. Using a DNR checklist that can be found online, you can determine if your project qualifies for an exemption. Your proposed rip rap placement, rip rap replacement or rip rap repair project may eligible for an exemption under Wis. Stat. 30.12(1g)(jm) if your project will meet **all of the following conditions**:

**1.** The riprap **must not be located in an area of special natural resource interest (ASNRI)**– see the Designated Waters Search on DNR’s website to determine if your waterway is an ASNRI or has another special designation.

* **In Forest County the following waters are ASNRI and require extra efforts through the DNR for permitting:**
	+ **Outstanding and Exceptional Waters (Lakes): Butternut Lake, Franklin Lake, Pine Lake, Metonga Lake, Lake Lucerne**
	+ **Wild Rice Areas (Lakes): Wabikon Lake, Riley Lake, Scattered Rice Lake, Little Rice Lake, Bishop Lake, Mole Lake, Pat Shay Lake, Kaine Lake**
	+ **Wild and Scenic Rivers: Pine River, Popple River**
	+ **All rivers and streams within the county have high potential of ASNRI designation and the DNR should be contacted to determine ASNRI designations**
	+ **Any projects which impact areas below the waterline in these waters require DNR permitting.**

**2**. The riprap must be placed and maintained only by a riparian (an authorized agent or contractor may do the work on behalf of the riparian).

* **Only the shoreland owner or a contractor authorized by the owner can place riprap on a project.**

3. Rip rap, rip rap replacement, or rip rap repair may not exceed 200 linear feet of shoreline on an inland lake, flowage stream or river.

* **Rip-rap placement on over 200 linear feet of shoreline on any one property requires additional DNR review and permitting.**

**4.** Rip rap must be field stone or quarry stone with a diameter of no less than 6 inches and no greater than 48 inches.

* **Recommended field stone mixture is usually designated by an engineer based upon water distance (fetch) across the neighboring waterbody which determines average and normal wave height and force.**
* **When it comes to the force of ice in the spring, rock size is really irrelavent, the weight of ice is astronomical as compared to any rock that may be installed. The ability of the owner to reposition and replace rocks without the need for equipment, to maintain the rip-rap should be a primary consideration**
* **In Forest County some of the largest fetchs recommended use rock grade mixture commonly known as D50- multiple suppliers of rock product in Forest County carry this grade mixture with rock sizes from 6” to 24”.**

**5.** The toe of the rip rap may not extend more than eight feet waterward of the ordinary high-water mark.

* **Toe location is a design factor that should be calculated in the design plan usually by an engineer.**
* **Toe location in design is a factor dependent upon slope of shoreland and slope of rip-rap.**
* **Steeper slopes require toe locations to be farther into the water to meet the rip-rap slope requirements as below.**

**6.** The rip rap slope as installed must not be steeper than one foot horizontal to 1.25 feet vertical.

* **This design factor is based upon engineering to insure that ice push in the spring rides up and over the rip-rap to prevent ice destruction of the rip-rap and prolong life expectancy.**
* **Improperly sloped riprap will fail in a short time and may result in property damage and loss of investment in the project**

**7.** Rip rap must not reach an elevation higher than 36 inches above the ordinary high-water mark or above the storm wave height, as calculated using the Department’s erosion calculator, whichever is lowest.

* **The design of the rip-rap must be calculated based upon the wave energy tool in the following website:** <https://dnr.wi.gov/topic/Waterways/shoreline/erosioncalculator.html>
* **This tool will give the elevation required for the top of the riprap to be placed.**
* **The calculation of the elevation of the top of riprap should be calculated in the design plan, usually by an engineer.**
* **No riprap is allowed to exceed 36” above the ordinary high-water mark regardless of calculations of wave energy.**

**8.** No material or soil may be placed in a wetland.

* **The landowner needs to determine if the area of the proposed riprap qualifies as a wetland as determined by the Wisconsin DNR.**
* **The Forest County Land Conservation department can assist with this and provide further guidance if needed.**
* **Some areas may need delineation by a certified Wetland Delineator**

**9.** No fill material or soil may be placed below the ordinary high water mark of any navigable waterway.

* **Ordinary high water mark should be delineated and mapped in the design plan usually by an engineer.**
* **An engineer is not required but a plan should be created and followed to document prior conditions and steps taken to insure compliance with environmental regulations.**
* **Providing information on this factor provides documentation to protect landowners for environmental regulations reviews.**

**10.** The rip rap must follow the natural contour of the shoreline.

* **Natural contour of the shoreline should be delineated and mapped in the design plan usually by an engineer.**
* **Providing information on this factor provides documentation to protect landowners for environmental regulations reviews**

**11.** Filter fabric or clean-washed gravel must be used as a filter layer under the rip rap.

* **Although clean washed gravel works for a short time, many projects erode behind the riprap over time when the gravel falls down. This is commonly noted in old failing riprap in many areas.**
* **Geotextile fabric with a minimum grade standards meeting**  grab test 200 minimum in any principal direction 120 minimum in any principal direction 180 minimum in any principal direction Elongation at failure (percent) 1/ ASTM D 4632 grab test  **is the commonly prescribed product for State and Federal cost share programs to protect investment.**
* **Forest County Land Conservation Recommends that landowners utilize the geotextile fabric to reduce potential erosion behind riprap installation. Standard requirements are for class 1 non-woven geotextile fabric.**

**12.** Any grading, excavation and land disturbance shall be confined to the minimum area necessary for the construction and may not exceed 10,000 square feet.

* **Check with your county zoning department for before commencing land disturbing or vegetation removal activities.**
* **Construction in excess of 10,000 square feet requires additional permitting from the Wisconsin DNR**

**13.** Erosion control measures shall meet or exceed the technical standards for erosion control approved by the department under subch. V of ch. NR 151.

* **Any area where topsoil is exposed during construction shall be immediately sodded, seeded and mulched, covered with an erosion mat or riprapped to stabilize disturbed areas and prevent soils from being eroded and washed into the waterway.**
* **These standards can be found at the following website:**

**12.** Unless part of a permanent stormwater management plan, all temporary erosion and sediment control practices shall be removed upon final site stabilization. Areas disturbed during construction or installation shall be restored to a vegetated stable condition

* **The landowner will likely be responsible for removing erosion controls like silt fence once vegetation has been re-established on disturbed areas.**

**13.** All equipment used for the project shall be designed and properly sized to minimize the amount of sediment that can escape into the water.

* **Contractors should utilize the equipment and practices available to minimize land disturbance during operations on riprap projects. Smaller tracked equipment, use of wooden matting material, and frozen ground operations often reduce impacts.**

**14.** No waterward extension of the property is permitted other than what is reasonably necessary to conduct the project and protect the existing bank. No soil or similar fill material may be placed in a wetland or below the ordinary high water mark of any navigable waterway.

* **Landowners are not allowed to put soil back into eroded areas to bring their land back to where shorelands used to be. This practice would be illegal. Landowners can only protect what currently exists.**
* **Existing shoreland should be delineated and mapped in the design plan usually by an engineer.**
* **Providing information on this factor provides documentation to protect landowners for environmental regulations reviews and violations.**

**15.** Dredging is not allowed for the placement or maintenance of any shore erosion control structure.

* **Dredging is defined as removal of material from the lakebed, removal of any of the lakebed during a riprap project is not allowed.**
* **Riprap material and geotextile must be laid to match the current lakebed elevation with geotextile fabric tied in at the top and bottom..**
* **Project designs must meet or exceed slope restrictions without dredging.**

**16.** Landowners are not required, but are encouraged to request an endangered resources (ER) review before completing a project or applying for any required permits. Information on how to obtain a review can be found by visiting the website at http://dnr.wi.gov/topic/ERReview/Review.html. The applicant can also visit the NHI Public Portal, http://dnr.wi.gov/topic/ERReview/PublicPortal.html, to determine if a full ER Review is required. Read the ‘What is an ER Preliminary Assessment and what do the results mean?’ section to determine follow-up steps.

**17.** County recommends that you request an Exemption Determination from DNR. Obtain Form 3500-107,“Chapter 30 Exemption Determination Request” from a DNR service center or visit the website http://dnr.wi.gov/files/PDF/forms/3500/3500-107.pdf or search for it on the DNR website at www.dnr.wi.gov under the topic “Waterway and Wetland Permits.” The exemption checklist is also available on the DNR Website: <https://dnr.wi.gov/topic/Waterways/shoreline/lake_erosion.html> The DNR local contact for water permitting is Kyle McLaughlin, Phone: (715) 360-6148 Kyle.McLaughlin@Wisconsin.gov

**Cost share programs:**

Multiple cost share programs exist to provide assistance to landowners for areas where there is soil erosion that can be proven and where this erosion is resulting in water quality reductions.

These programs take some time to process requests and have various application and completion deadlines based upon programs funding and have various planning and permitting requirements. Landowners who would like consideration for cost share programs should make contact with the appropriate agencies for assistance.

Natural Resource Conservation Service provides assistant under EQIP practice 580 “Streambank and Shoreland Protection. Program contact for these programs is:

**Michael Stinebrink,** District Conservationist**,** Natural Resources Conservation Service

2187 N Stevens St, Suite A

Rhinelander, WI  54501-8043

715-362-5941, x111

920-420-1087 (mobile/text)

[www.wi.nrcs.usda.gov](http://www.wi.nrcs.usda.gov)

Department of Agriculture, Trade and Consumer Protection (DATCP) SWRMP Program provides limited cost share funding through the County Land Conservation Department.

Please contact the Forest County Land Conservation Department at 715-478- 3897 or lcc@co.forest.wi.us if you have any additional questions on any of the above information.

**“DO IT RIGHT ON SHORELINES!”**

**Properly protecting your property from shoreland erosion is important!**

**Meeting regulatory requirements for shorelands is your responsibility as a shoreland owner!**

**Recommendations for Landowners Considering a shoreland protection projects related to riprap:**

* **Establish a Written Contract with a Responsible Contractor**
* **Consider Hiring an Engineer for Design**
* **Require a Detailed Construction Plan including:**
	+ Practices Utilized for Determination of ANSRI Status
	+ Practices Utilized for Determination of Potential Wetlands
	+ Practices Utilized for Determination of Endangered Resources
	+ Mapping of Existing Highwater Mark and How it was Delineated
	+ Mapping of Existing Shoreland Contour including:
		- Intervals no more than 10 feet apart to define average profile
		- Top of Bank Shoreland Elevation tied to a benchmark
		- Lake Surface Elevation tied to a benchmark
		- Lakebed Elevation tied to a benchmark
	+ Mapping of proposed riprap placement location
	+ Erosion Control Plan to meet or exceed DNR Technical Standards
	+ Specifications of acceptable materials
		- Riprap stone size, gradation, and quantity
		- Filter Fabric specifications and quantity
	+ Detailed scaled cross section of proposed riprap (sample attached) including:
		- Elevation of top of riprap as determined by storm wave height, as calculated using the DNR erosion calculator, tied into a benchmark
* **Require a Clause for the Contractor to Accept Responsibility for Meeting Plan Specifications**
* **Require Contractor Certification of Exemption Determination from DNR or Presentation of Permitting Documents prior to beginning of construction**
* **Require a Clause for the Contractor to Meet requirements of environmental regulations including but not limited to Wisconsin DNR and the Army Corps of Engineers.**

**PROTECT YOURSELF AND YOUR PROPERTY,**

**DO IT RIGHT!**

