

RILEY-PURGATORY-BLUFF CREEK WATERSHED DISTRICT
RULES

Adopted as revised December 11, 2019

DRAFT

Rule D – Wetland and Creek Buffers

1 Policy

It is the policy of the Board of Managers to ensure the preservation of the natural resources, recreational, habitat, water treatment and water storage functions of water resources. This rule is intended to:

- Support municipal enforcement of the Wetland Conservation Act and the policy of no net loss in the extent, quality and ecological diversity of existing wetlands in the watershed.
- Preserve vegetation and habitat important to fish, waterfowl and other wildlife while also minimizing negative impacts of erosion.
- Require buffers around wetlands, water basins and watercourses affected by land-disturbing activities.
- Ensure the preservation of the natural resources, habitat, water treatment and water storage functions of wetlands, water basins and watercourses.
- Maintain wetland integrity and prevent fragmentation of wetlands.
- Prevent erosion of shorelines and streambanks, and foster the use of natural materials for the protection, maintenance and restoration of shorelines and streambanks.

2 Regulation

2.1 Compliance with the criteria in section 3 of this rule is required for any activity that requires a permit under Rule B – Floodplain Management and Drainage Alterations, Rule E – Dredging and Sediment Removal, Rule F – Shoreline and Streambank Stabilization, except sand blanketing, Rule G – Waterbody Crossings and Structures or Rule J – Stormwater Management. The requirements of the rule apply to property:

- a encompassing or adjacent to a public watercourse, public waters wetland or other protected wetland in the watershed; or
- b encompassing or adjacent to any other watercourse within a High-Risk Erosion Area, unless the applicant submits data demonstrating a Stream Power Index rating of 3 or less and an absence of any significant existing erosion.

2.2 The requirements of this rule do not apply to:

- a incidental wetlands;
- b to wetlands that are disturbed solely by utility improvements or repairs that are the subject of a no-loss determination from the relevant Wetland Conservation Act Local Government Unit; or
- c to projects approved under the ~~fast-track~~-maintenance provisions of Rule F, paragraph 3.4.

3 Criteria

3.1 **Buffer area.** Buffer must be created or maintained:

- a Around a wetland disturbed by land-disturbing activity regulated by the District;
- b on that portion of the edge of a wetland that is downgradient from land-disturbing activity regulated by the District; and
- c on streambank downgradient from the land-disturbing activity regulated by the District and 50 feet from each of the upstream and downstream extent of the disturbance.

3.2 **Buffer width.** Buffer must be created or maintained upgradient of regulated features in accordance with the following criteria:

- a Wetland values will be determined in accordance with Appendix D1, which is incorporated into and made a part of this rule.
- b Subject to paragraphs 3.2c through g, buffers must extend:
 - i An average of 80 feet from the delineated edge of an exceptional value wetland, minimum 40 feet;
 - ii An average of 60 feet from the delineated edge of a high value wetland, minimum 30 feet;
 - iii an average 40 feet from the delineated edge of a medium value wetland,¹ minimum 20 feet;
 - iv an average 20 feet from the delineated edge of a low value wetland,¹ minimum 10 feet;
 - v an average of 50 feet from the centerline of a public waters watercourse, minimum 30 feet;
 - vi an average of 50 feet from the thalweg of any watercourse within a High-Risk Erosion Area, minimum 30 feet.
- c **Steep slopes.** Where a buffer encompasses all or part of a slope averaging 18 percent or greater over a distance of 50 feet or more upgradient of the regulated feature, calculated using a reasonably precise topographic surface model, the buffer will extend to the width specified under section 3.2a or to the top of the slope, whichever is greater. An existing contour alteration or artificial structure on a slope constitutes a break in slope only if it will indefinitely dissipate upgradient runoff velocity and trap upgradient pollutant loadings.
- d **Existing single-family residential properties:** Paragraphs a through c do not apply. When required on an existing single-family home property, buffer must extend an average of 20 feet from the delineated edge of a wetland or OHW of a watercourse, minimum 10 feet.
- e **Buffer averaging.** Buffer width may vary, provided that the minimum buffer width is maintained at all points, there is no reduction in total buffer area, and the buffer provides wetland and habitat protection at least equivalent to a buffer of uniform width. Buffer wider than 200 percent of the applicable width calculated in accordance with above provisions will be excluded from the buffer-averaging calculation. Buffer width may not be averaged on a steep slope.
- f Buffer is only required on the property owned by the applicant that is the

subject of the District permit, and is required where the regulated feature is either on or within the applicable buffer width of the subject property.

- g Buffer required for linear projects will be limited in width to the extent of available right-of-way.

- 3.3 Buffer areas must be planted with native vegetation and maintained to retain natural resources and ecological value. Existing buffer areas preserved in compliance with this rule must be managed in a naturalized condition to encourage growth of native vegetation and eliminate invasive species. Buffer vegetation must not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality and performance, each as approved by the District in advance in writing or when implemented pursuant to a written maintenance plan approved by the District.

- a Diseased, noxious, invasive or otherwise hazardous trees or vegetation may be selectively removed from buffer areas and trees may be selectively pruned to maintain health.
- b Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines.
- c No fill, debris or other material will be placed within a buffer.
- d No structure or impervious cover (hard surface) may be created within a buffer area, except that boardwalks, sidewalks and trails designed for nonmotorized use may be constructed within a buffer area as long as the minimum and average buffer widths are maintained from the regulated feature. Stormwater-management facilities may be constructed within buffer area. Plans and specifications must be approved by the District prior to construction. Existing impervious surface that will not otherwise be disturbed need not be removed.
 - i Hydrants, utility manholes, piers, docks, canoe racks, information kiosks, signage, retaining walls and benches may be located within a buffer in a public park.
- e A pervious path or boardwalk, not more than 12 feet wide, may be created or maintained to provide access to a regulated feature or within the required buffer area outside the minimum buffer width. Access paths or boardwalks may not be located where or constructed such that concentrated runoff will flow to the regulated feature.

- 3.4 Buffer will be indicated by permanent, free-standing markers at the buffer's upland edge installed in accordance with a plan and specifications providing:
 - a Installation date, which must be set to ensure protection of buffer area during and after land-disturbing activities;
 - b text in material conformity with a design and text provided by the District;
 - c location(s) for markers, at a minimum along each lot line, with additional

markers at an interval of no more than 200 feet and, for subdivisions, on each lot of record to be created.

On public land or right-of-way, the monumentation requirement may be satisfied by the use of a marker flush to the ground or breakaway markers of durable material.

- 3.5 Before any work subject to District permit requirements commences, buffer areas and maintenance requirements must be documented in a declaration or other document approved by the District and recorded in the office of the county recorder or registrar. On public land or right-of-way, buffer areas and maintenance requirements may be documented in a written agreement with the District in lieu of a recorded document.
- 3.6 In establishing buffer pursuant to this rule, the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) must be minimized to the maximum extent possible.

5 Temporary alterations

Temporary alteration of buffer areas permitted under this rule or in writing by the District must comport with the requirements of this section.

- 5.1 Compliance with District Rule C – Erosion Prevention and Sediment Control is required, irrespective of the area or volume of earth to be disturbed.
- 5.2 Buffer zones and the location and extent of vegetation disturbance will be delineated on the erosion control plan.
- 5.3 Alterations must be designed and conducted to ensure only the smallest amount of disturbed ground is exposed for the shortest time possible. Mulches or similar materials must be used for temporary soil coverage and permanent native vegetation established as soon as possible.
- 5.4 Fill or excavated material may not be placed to create an unstable slope.

6 Roads and utilities

A structure, impervious cover or right-of-way maintained permanently in conjunction with a crossing of a waterbody or wetland may be constructed and maintained in buffer area that would otherwise be required under this rule. The structure, impervious cover or right-of-way must be designed to minimize the area of permanent vegetative disturbance. Minimization includes, but is not limited to, approach roads and rights-of-way that are perpendicular to the crossing and of a minimum width consistent with use and maintenance access needs.

- 6.1 All work will be conducted in accordance with section 4 of this rule.

7 Shoreline or streambank improvements

A shoreline or streambank improvement subject to District Rule F, including a sand blanket, is excepted from the prohibitions of subsection 3.2, provided the improvement complies with District Rule F – Shoreline and Streambank Stabilization. The applicable

buffer width may overlap shoreline or streambank improvements other than a sand blanket.

8 Required information and exhibits

The following exhibits must accompany the permit application:

- 8.1 One 11 inch-by-17 inch plan set , and electronic files in a format acceptable to the District, as well as a plan set 22 inches by 34 inches if requested by the District.
- 8.2 For work on any property subject to this rule:
 - a A scaled site plan showing existing conditions, including the following elements:
 - i Topographic contours at two-foot intervals;
 - ii Existing streets, roads and trails;
 - iii Existing structures and facilities;
 - iv Extent of regulated feature as delineated in the field;
 - v Location of existing trees and tree masses;
 - vi Soil types and locations.
 - b A scaled proposed site plan showing proposed development that include the following elements:
 - i Topographic contours showing finished grade at two-foot intervals;
 - ii Proposed streets, parking, trails and sidewalks;
 - iii Location of proposed structures and facilities;
 - iv Extent of regulated feature and associated buffers as delineated in the field;
 - v Location of major landscaping including those existing trees and tree masses to be retained.
 - vi Property lines and corners and delineation of lands under ownership of the applicant
 - vii Street rights-of-way;
 - viii Utility easements;
- 8.2 For projects on properties on which wetlands are located, exhibits must be submitted as follows:
 - a For existing single-family home properties encompassing all or part of a wetland: A wetland delineation.
 - b For all other properties encompassing all or part of a wetland: A wetland delineation, type determination, and function and values assessment of any regulated wetland using the Minnesota Routine Assessment Method (MnRAM) or another wetlands-assessment method approved by the District. The delineation and function and values assessment must be conducted by a certified wetland delineator and supported by the following documentation:
 - i Identification of the methods used;
 - ii Identification of presence or absence of normal circumstances or problem conditions;
 - iii Wetland data sheets, or a report, for each sample site, referenced to the location shown on the delineation map. In each data sheet/report applicant

- must provide the reasoning for satisfying, or not satisfying each of the technical criteria and why the area is or is not a wetland;
 - iv A delineation map showing the size, locations, configuration and boundaries of wetlands in relation to identifiable physical characteristics, such as roads, fence lines, waterways or other identifiable features;
 - v The location of all sample sites and stakes/flags must be accurately shown on the delineation map.
- 8.3 For properties adjacent to but not encompassing any portion of a wetland, the District will determine the need for wetland buffer and applicable buffer width using best available data, including any wetland functions and values data submitted by the applicant.

Appendix D1 – Wetlands Definitions

“Exceptional value wetlands” are those meeting one or more of the following rating levels, as determined by application of the current edition of the Minnesota Routine Assessment Method (MnRAM) or another wetlands-assessment method approved by the District.

Function or Value	Rating
Vegetative Diversity	Exceptional
Wildlife Habitat	Exceptional
Amphibian Habitat AND Vegetative Diversity	High High
Fish Habitat	Exceptional
Shoreline Habitat	High
Aesthetics/education/recreation/cultural AND Wildlife Habitat	Exceptional High
Stormwater Sensitivity AND Vegetative Diversity	Exceptional Medium or greater
Vegetative Diversity AND Maintenance of Hydrologic Regime	High High

“High value wetlands” are those meeting one or more of the following rating levels, as determined by application of the current edition of MnRAM or another wetlands-assessment method approved by the District.

Function or Value	Rating
Vegetative Diversity	High
Wildlife Habitat	High
Amphibian Habitat	High
Fish Habitat	High
Shoreline Protection	Medium
Aesthetics/education/recreation/cultural AND Wildlife Habitat	High Medium
Stormwater Sensitivity AND Vegetative Diversity	High Medium or greater
Vegetative Diversity AND Maintenance of Hydrologic Regime	Medium High or greater

“Medium value wetlands” are those that do not qualify as high value wetlands but that meet one or more of the following rating levels, as determined by application of the current edition of MnRAM or another wetlands-assessment method approved by the District.

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Function or Value	Rating
Vegetative Diversity	Medium
Wildlife Habitat	Medium
Amphibian Habitat	Medium
AND Vegetative Diversity	Medium
Fish Habitat	Medium
Shoreline Habitat	Low
Aesthetics/education/recreation/cultural	Medium
AND Wildlife Habitat	Low
Stormwater Sensitivity	Medium

“Low value wetlands” are those that do not qualify as “exceptional,” “high,” or “medium” wetlands.

Rule F – Shoreline and Streambank Stabilization

1 Policy

It is the policy of the Board of Managers to prevent erosion of shorelines and streambanks, and to foster the use of natural materials and bioengineering for the maintenance and restoration of shorelines and streambanks.

2 Regulation

A permit from the District is required to install or maintain an improvement to stabilize a shoreline or streambank, including but not limited to riprap, a bioengineered installation, a sand blanket or a retaining wall, on any watercourse or a public water. ~~Maintenance of an existing stabilization improvement may be approved under the fast track application provisions in paragraph 3.4 below.~~ No District permit under this rule is required for:

- 2.1 Activities conducted pursuant to a project-specific permit from the state Department of Natural Resources, but the District buffer requirements apply to activity that would otherwise require a District permit;
- 2.2 activities in incidental wetlands or for utility improvements or repairs that are the subject of a no-loss determination from the relevant LGU;
- 2.3 removing accumulated sediment from a water basin; or
- 2.4 maintenance or in-kind replacement of existing public infrastructure on non-public waters that does not increase the length, width or depth of the existing infrastructure.

3 Criteria

Except for shoreline maintenance that qualifies for approval under paragraph 3.4 below, a permit will be issued on demonstration by the applicant of compliance with the applicable criteria in subsections 3.1 through 3.3.

- 3.1 An applicant for a permit under this rule must demonstrate a need to prevent erosion or restore an eroded shoreline or streambank,¹ unless the proposed improvement is designed to restore natural shoreline or streambank.
- 3.2 **Sequencing.** Stabilization practices must be consistent with the erosion intensity or shear stress rating calculated for the property proposed to be stabilized. The District will approve proposed stabilization practices in accordance with the applicable sequencing priority:
 - a **Shoreline erosion intensity calculation.** Applications for shoreline stabilization must include a completed RPBCWD Erosion Intensity Scoresheet²

~~¹ All references to “shoreline” in these rules should be read to refer to both shoreline and streambank, except where context clearly requires distinction between the two.~~

² The Erosion Intensity Scoresheet is incorporated into and a part of these rules. It may be obtained from the District office or the permitting section of the District website: www.RPBCWD.org. The website

to determine the erosive energy ranking for the site (low, medium, high). The proposed shoreline stabilization practice must be consistent with the shoreline erosion energy rating calculated.

- i Low-energy site means a site where the erosion intensity score is 47 or less. Low energy shorelines may be stabilized using bioengineering stabilization practices.
 - ii Medium-energy site means a site where the erosion intensity score is 48 to 67. Medium energy shorelines may be stabilized using a combination bioengineering and vegetated riprap stabilization practices.
 - iii High energy site means a site where the erosion intensity score is greater than 67. High energy sites may be stabilized with riprap and vegetated riprap practices.
- b **Streambank shear stress calculation.** Applications for streambank stabilization must include a shear stress calculation for the site.³ The proposed streambank stabilization practice must be consistent with the shear stress calculated.
- i Low energy streambanks are those where the shear stress calculated is less than or equal to 2.5 pounds per square foot and may be stabilized using bioengineering practices.
 - ii Medium energy streambanks are those where the shear stress calculated is between 2.5 and 5 pounds per square foot and may be stabilized using a combination of riprap and bioengineering.
 - iii High energy streambanks are those where the shear stress calculated is greater than 5 pounds per square foot and may be stabilized using riprap and vegetated riprap.
- c **Design flexibility.** The District may approve alternative stabilization techniques if the applicant provides sufficient evidence from an engineer registered in Minnesota to demonstrate that the proposed stabilization practice represents the minimal-impact solution with respect to all other reasonable alternatives. A detailed alternatives analysis must be provided.

3.3 Design criteria.

a **Vegetative, bioengineered and hard-armored stabilization.**

- i Live plantings must be native aquatic vegetation and/or native upland plants.

also provides guidance on how to complete the scoresheet. The scoresheet may be periodically updated, on approval of the RPBCWD Board of Managers, to account for improved understanding of shoreline-erosion factors.

³ Shear stress must be calculated in a manner consistent with the Natural Resources Conservation Service's National Engineering Handbook (including Technical Supplement 14I: Streambank Soil Bioengineering); Stability Thresholds for Stream Restoration Materials published by the U.S. Army Corps of Engineers; NRCS Engineering Field Handbook Streambank and Shoreline Protection (Chapter 16); or Wisconsin Supplement Engineering Field Handbook Chapter 16 Streambank and Shoreline Protection. The RPBCWD website – www.rpbcwd.org – provides guidance on how to calculate shear stress.

- ii The finished, stabilized slope of any shoreline or streambank will not be steeper than 3:1 (horizontal to vertical) waterward of the OHW except where necessary:
 - (a) to match existing slopes and certified by registered professional engineer for continued slope stability, or;
 - (b) for bridges, culverts and other structures regulated under Rule G – Waterbody Crossings and Structures.
 - iii Horizontal encroachment from a shoreline or streambank will be the minimal amount necessary to permanently stabilize the shoreline or streambank and will not unduly interfere with water flow or navigation. No riprap or filter material may be placed more than 6 feet waterward of the OHW. Streambank riprap may not reduce the cross-sectional area of the channel or result in a stage increase at or upstream of the installation.
 - iv The design of any shoreline or streambank erosion protection will reflect the engineering properties of the underlying soils and any soil corrections or reinforcements necessary. The design will conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement, considering prevailing winds, fetch and other factors that induce wave energy.
- b **Riprap-**
- i Riprap to be used in shoreline or streambank erosion protection must be sized appropriately in relation to the erosion potential of the wave or current action of the particular waterbody, but in no case will the riprap rock average less than six inches in diameter or more than 30 inches in diameter. Riprap will be durable, natural stone and of a gradation that will result in a stable ~~shoreline embankment~~slope. Stone, granular filter and geotextile material will conform to standard Minnesota Department of Transportation specifications, except that neither limestone nor dolomite will be used for shoreline or streambank riprap, but may be used at stormwater outfalls. All materials used must be free from organic material, soil, clay, debris, trash or any other material that may cause siltation or pollution.
 - ii Riprap must be placed to conform to the natural alignment of the shoreline or streambank.
 - iii A transitional layer consisting of graded gravel, at least six inches deep, and an appropriate geotextile filter fabric will be placed between the existing shoreline or streambank and any riprap. The thickness of riprap layers should be at least 1.25 times the maximum stone diameter. Toe boulders, if used, must be at least 50 percent buried.
 - iv Riprap must not cover emergent vegetation, unless authorized by a Department of Natural Resources permit.
 - v Riprap must not extend higher than the top of bank or two feet above the 100-year high water elevation, whichever is lower.

- vi Placement of riprap for cosmetic purposes alone is prohibited.
- c **Retaining walls.** Retaining walls extending below the OHW of a waterbody are prohibited, except where:
 - i there is a demonstrable need for a retaining wall in a public improvement project, and
 - ii the design of the retaining wall has been certified by a registered engineer.
- d **Sand blankets.** The following standards apply to sand blanketing:
 - i The sand or gravel used must be clean prior to being spread. The sand must contain no toxins or heavy metals and must contain no weed infestations such as, but not limited to, water hyacinth, alligator weed, and Eurasian watermilfoil, or animal infestations such as, but not limited to, zebra mussels or their larva.
 - ii The sand layer must not exceed six inches in thickness, 50 feet in width along the shoreline ~~or streambank~~, or one-half the width of the lot, whichever is less, and may not extend more than 10 feet waterward of the ordinary high water level.
 - iii Only one installation of sand or gravel to the same location may be made during a four-year period. After the four years have passed since the last blanketing, the location may receive another sand blanket. No more than two applications may be made at an individual project site.

Public beaches. Beaches operated by public entities and available to the public must be maintained in a manner that represents the minimal impact to the environment, relative to other reasonable alternatives, but otherwise are exempt from the criteria in paragraphs (b) and (c) of this section.

- e In installing or maintaining any shoreline or streambank stabilization, the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) must be minimized to the maximum extent possible.

3.4 ~~**Fast-track m**~~**Maintenance.** ~~Notwithstanding the requirements and criteria in subsections 3.1 to 3.3, where an applicant can establish that a shoreline stabilization practice was constructed before February 1, 2015, or after that date in compliance with a duly issued District permit, †~~The District will issue a permit for maintenance of the practice an existing shoreline stabilization in its established form if the stabilization was installed before February 1, 2015, or after that date in compliance with a duly issued District permit on submission by as long as the applicant of submits plans documenting that the maintenance work will not increase the length of the stabilization along the shoreline and will the length, width or depth of the practice, and will not disturb underlying soils comply with all applicable criteria of subsection 3.3.

4 Required information and exhibits.

The following exhibits will accompany the permit application:

- 4.1 One 11 inch-by-17 inch plan set, and electronic files in a format acceptable to the District, as well as a plan set 22 inches by 34 inches if requested by the District.

- 4.2 A site plan, including:
- a Documentation, including at a minimum photographs, of existing erosion or the potential for erosion;
 - b a survey locating the existing OHW level~~—contour~~, existing shoreline/streambank, floodplain elevation and location of property lines;
 - c elevation contours of the upland within 15 feet of the OHW level and referenced to accepted datum; and
 - d plan view of locations and lineal footage of ~~the~~any proposed riprap.
- The plan must show the location of an upland baseline parallel to the shoreline with stationing. The baseline will be staked in the field by the applicant and maintained in place until project completion. Baseline origin and terminus each must be referenced to three fixed features, with measurements shown and described on the plan. Perpendicular offsets from the baseline to the OHW must be measured and distances shown on the plan at 20-foot stations. The plan will be certified by a registered engineer or landscape architect.
- 4.3 A construction plan and specifications certified by a registered engineer or landscape architect, showing:
- a A sequencing analysis in compliance with section 3.2;
 - b materials to be used, including the size(s) of any riprap to be used;
 - c cross section detailing the proposed riprap, if any, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished riprap slope, transitional layer design and placement, distance waterward of the riprap placement and OHW.
 - d Description of the underlying soil materials.
 - e Material specifications for stone, filter material and geotextile fabric.
- 4.4 For sites involving aquatic plantings, a separate Aquatic Plant Management permit will be obtained from the Department of Natural Resources.
- a This provision does not apply to slope protection projects using woody species such as willow and dogwood.
- 4.5 An erosion control and site restoration plan.
- 4.6 For an application for a sand blanket, the following exhibits are required:
- a Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, ordinary high—water elevation, and 100-year high water elevation (if available). All elevations must be reduced to NGVD (1929 datum).
 - b Profile, cross sections and/or topographic contours showing existing and proposed elevations in the work area. (Topographic contours should be at intervals not greater than 1.0 foot).
 - c A completed Sand Blanket Permit Application form.