

**Side-by-Side Comparison of Proposed and Current MCWD Rules  
Rule 8. Shoreline and Streambank Stabilization**

This side-by-side comparison has been prepared to aid in review of the proposed rule changes. The existing and proposed rules can be found on the MCWD website, along with the Guidance on Proposed Revised Rules which provides a detailed explanation of all substantive changes: <https://minnehahacreek.org/permits/permitting-rule-revisions/>

<b>Key:</b>
<b>Blue &amp; bold font</b> - Key language that represents a substantive change from current language
Grey shading - Revised rule language is a relocation, consolidation, clarification, and/or simplification of the current language (i.e. housekeeping)
<i>Italics</i> - removed text

Revised Section	Revised Language	Current Section	Current Language
1	POLICY. It is the policy of the Board of Managers to: a. Limit disturbance to the natural shoreline or streambank; b. Where stabilization is needed, promote use of bioengineering and similar naturalized methods; c. Require that stabilization methods follow sound engineering principles and limit impact on water quality and the ecological integrity of the riparian environment.	1	POLICY. It is the policy of the Board of Managers to: (a) Preserve the natural appearance of shoreline and streambank areas; (b) Encourage and foster bioengineering, landscaping and preservation of natural vegetation as preferred means of stabilizing shorelines and streambanks; (c) Assure that improvement of shoreline and streambank areas to prevent erosion complies with accepted engineering principles in conformity with Minnesota Department of Natural Resources construction guidelines; and (d) Preserve water quality and the ecological integrity of the riparian environment, including wildlife, fisheries, and recreational water resources.
2a	APPLICABILITY. A permit is required to disturb the bank of a waterbasin or watercourse, below the ordinary high water level, for the purpose of stabilization, or to serve an amenity or other beneficial purpose. Improvements subject to this requirement include, but are not limited to, bioengineering practices, riprap, retaining walls, boat ramps and sandblankets.	2a	REGULATION. No person shall install an improvement or alteration of the shoreline of a water basin or the bank of a watercourse, including but not limited to a bioengineered installation, riprap, a retaining wall, a sand-blanket or a boat ramp, without first securing a permit under this rule and providing a financial assurance pursuant to the District Financial Assurance Rule. Planting of vegetation not intended to provide deep soil structure stability does not require a permit under this rule.
2b	b. Notwithstanding subsection 2.a, a permit is not required to: 1. Maintain a functioning improvement, if no material is added and the bed or bank is not disturbed; or 2. Plant vegetation not intended to provide deep soil structure stability. 3. Place riprap below a culvert or outfall for energy dissipation purposes if the riprap complies with MnDOT Standard Plates 3133, 3134, and 3139 and appropriate erosion and sedimental controls are utilized.	2b	All permit applications submitted under this rule, except applications for maintenance of an existing improvement that has not degraded to a natural state, shall be required to include a detailed erosion intensity calculation of the shoreline or streambank in accordance with section 3, Shoreline Erosion Intensity Calculation (for shorelines), or section 4, Streambank Erosion Intensity Calculation (for streambanks), of this rule.
		2c	A permit under this rule is required for maintenance of an existing riprap or otherwise hard-armored shoreline or streambank that involves the addition of new material or structural change to the improvement.
2c	A Fast Track permit may be issued for shoreline stabilization projects that conform to the following requirements: 1. An application for shoreline stabilization that conforms to subsection 3.a and section 4; 2. An application for a sandblanket that conforms to section 7.	2d	A fast track permit may be issued for shoreline stabilization projects that conform to the requirements in section 6, Criteria for Stabilization Techniques, of this rule.
		2f	A fast track permit may be issued for routine sandblanket projects that conform to the requirements set forth in sections 9, Criteria for Laying Sandblankets, and 10, Sandblankets Required Exhibits, of this rule.
3a	EROSION INTENSITY STANDARD. a. An applicant must perform an erosion intensity calculation to support an application for a stabilization practice <b>other than a biological practice: (i) where a bioengineering or structural practice does not exist, has degraded to a natural condition, or is proposed to be extended to additional shoreline or streambank; or (ii) where an existing practice is proposed to be upgraded</b>	3	SHORELINE EROSION INTENSITY CALCULATION. (a) Applications for shoreline stabilization shall be required to complete the Erosion Intensity Scoresheet to document the shoreline erosion intensity (low, medium, high). (b) The proposed shoreline stabilization practice shall be consistent with the shoreline erosion intensity calculated (low, medium, high).

	<p><b>to a bioengineering or structural practice.</b> A shoreline or streambank stabilization design must conform to erosion intensity as follows:</p> <ol style="list-style-type: none"> <li>1. Low erosion intensity: must use a biological stabilization practice;</li> <li>2. Medium erosion intensity: may use a biological or bioengineering stabilization practice;</li> <li>3. High erosion intensity: may use a biological, bioengineering or structural stabilization practice.</li> </ol> <p>Erosion intensity is determined in accordance with subsection 5.a, below.</p>		<ol style="list-style-type: none"> <li>(1) Low erosion intensity shorelines shall utilize biological stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.</li> <li>(2) Medium erosion intensity shorelines shall utilize biological or bioengineering stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.</li> <li>(3) High erosion intensity shorelines shall utilize biological, bioengineering or structural stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.</li> </ol>
3b	<p>An applicant may deviate from the requirement of subsection 3.a on demonstrating that the intensity calculation does not accurately capture the erosion potential of the shoreline or streambank because of site-specific conditions. In this case, the applicant must use a design adequate for the erosion potential that best fulfills the policies of section 1, above.</p>	2e	<p>Shoreline or streambank stabilization projects that do not utilize a stabilization practice consistent with the erosion intensity calculation shall be required to document compliance with the design flexibility/minimal impact standard in section 5, Design Flexibility. Such projects shall be subject to the public notice requirements of the District Procedural Requirements Rule.</p>
		5	<p>DESIGN FLEXIBILITY. Where an applicant believes that, as a result of site specific conditions, the shoreline erosion intensity as calculated in section 3, Shoreline Erosion Intensity Calculation, or the streambank erosion intensity as calculated in section 4, Streambank Erosion Intensity Calculation, may inaccurately predict the degree of erosion, the District may approve alternative stabilization techniques if the applicant provides sufficient evidence to demonstrate that the proposed stabilization practice represents the minimal impact solution with respect to all other reasonable alternatives.</p>
4a	<p>STANDARDS FOR STABILIZATION DESIGNS.</p> <p>All stabilization designs other than retaining walls must conform to the following:</p> <ol style="list-style-type: none"> <li>1. The site condition must show that a stabilization practice is needed to prevent erosion or restore shoreline or streambank.</li> <li>2. The slope must not exceed 3:1 (horizontal: vertical), unless impractical due to site-specific conditions. <ol style="list-style-type: none"> <li>a. Encroachment of a shoreline design lakeward must be minimized, should not exceed five feet, and may not exceed 10 feet.</li> <li>b. Encroachment of a streambank design into the channel must be minimized, may not reduce channel cross-section and, must meet the No-Rise standard.</li> </ol> </li> <li>3. The design must reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a shoreline, the design must conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement. For a streambank, design must conform to engineering principles for the hydraulic behavior of open channel flow;"</li> <li>4. The design of a new installation must follow the natural shape of the shoreline or streambank and justify native vegetation disturbance within the stabilization zone.</li> <li>5. Work below top of bank must use a flotation sediment curtain installed and maintained in accordance with best practices. The curtain must be removed on the completion of such work after sediment has settled.</li> </ol>	6a	<p>CRITERIA FOR STABILIZATION TECHNIQUES.</p> <p>General criteria:</p> <ol style="list-style-type: none"> <li>(1) The District will permit the installation of structural stabilization practices only where there is a demonstrated need to prevent erosion or to restore eroded shoreline/streambank;</li> <li>(2) <i>Removal of native vegetation within the shoreline/streambank stabilization zone shall be limited in accordance with the following provisions:</i> <ol style="list-style-type: none"> <li>i. <i>Clear cutting shall be prohibited except within the access corridor;</i></li> <li>ii. <i>Native vegetation shall be preserved outside of the access corridor as much as practicable and, where removed, shall be replaced with other vegetation that is equally effective in retarding runoff and preventing erosion.</i></li> </ol> </li> <li>(3) Stabilization practices shall be installed at a 3:1 slope or flatter where practical and feasible. Practices proposed at slopes steeper than 2:1 shall be evaluated as retaining walls in accordance with section 12, Criteria for Other Shoreline Improvements, of this rule;</li> <li>(4) Horizontal encroachment from a shoreline shall be the minimum amount needed and shall not interfere unduly with water flow. Under normal conditions, hard armoring inert material, such as riprap, or other fill shall be placed no more than 5 feet waterward of a shoreline, measured from the OHW. The maximum encroachment waterward of the OHW is 10 feet. Encroachment from streambanks shall be minimized to the greatest extent practical to limit hydraulic impacts;</li> <li>(5) Streambank stabilization shall not reduce the cross sectional area of the channel nor result in a net increase in the flood stage upstream or at the site of the streambank stabilization practice <i>unless it can be demonstrated to not exacerbate existing high-water conditions;</i></li> <li>(6) Shoreline/streambank stabilization practices shall conform to the natural alignment of the bank (e.g., maintain an undulating or meandering shoreline/streambank);</li> <li>(7) The design shall reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a shoreline, the design shall conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement. For a streambank, design shall conform to engineering principles for the hydraulic behavior of open channel flow;</li> <li>(8) For sites involving aquatic plantings or aquatic plant removal, a separate Aquatic Plant Management permit shall be obtained from the Department of Natural Resources, when applicable;</li> <li>(9) Any work below the normal water level shall be encircled by a flotation sediment curtain. The curtain shall be constructed and maintained as illustrated in "Protecting Water Quality in Urban areas – Best Management Practices for Minnesota" (MPCA 1989). The barrier shall be removed upon completion of the</li> </ol>

			work after disturbed sediment has settled; (10) All shoreline/streambank stabilization applications shall submit the required exhibits as set forth in section 7, Required Exhibits for Shoreline/Streambank Stabilization, of this rule.
4b	In addition to the standards of subsection 4.a, biological and bioengineering designs also must conform to the following: 1. Incorporated live plantings must be aquatic or upland species native to Minnesota. 2. Planting must follow sound practice to limit soil disturbance and provide for successful establishment. 3. Wave barriers, if used, may not be placed beyond a water depth of three feet, may not obstruct navigation, and must be removed within two years. 4. Structural elements within an approved bioengineering designs must conform to subsection 4.c, paragraphs 1 and 2, below.	6b	Criteria for biological and bioengineering techniques: (1) Live plantings incorporated into the shoreline or bank shall be native aquatic and/or native upland vegetation known to occur in the North Central Hardwood Forest eco-region of Minnesota ( <i>refer to the Minnesota Department of Natural Resources "Lakescaping for Wildlife and Water Quality" and the Minnesota Pollution Control Agency "Plants for Stormwater Design"</i> ); (2) Vegetative treatments shall be installed in accordance with the <i>Natural Resource Conservation Service (NRCS) "Engineering Field Handbook Chapter 16"</i> ; (3) If wave barriers are utilized, they shall be located within the 3 foot water depth or less and may not create an obstruction to navigation. Wave barriers shall be removed within 2 years of the installation.
4c	In addition to the standards of subsection 4.a, structural designs also must conform to the following: 1. Riprap may not exceed the top of bank, or two feet above the 100-year high water elevation, whichever lower. 2. Riprap must be durable stone that meets size and gradation standards of MnDOT Class III or IV riprap. Toe boulders may be up to 30 inches in diameter but must be at least 50 percent buried. 3. A transitional granular filter must be placed between the native shoreline and riprap to prevent erosion of fine-grained soils. A nonwoven geotextile filter fabric must be placed beneath the granular filter. 4. A practice should include plantings between boulders and native upland plantings where feasible, to slow runoff and limit erosion. Deviation from paragraph 4.c.3 is acceptable as indicated for proper plant establishment.	6c	Criteria for structural stabilization: (1) Hard armoring inert material, such as riprap, shall be considered wetland fill only if proposed to be placed within an area identified as a wetland; (2) Riprap shall extend no higher than the top of the bank, or two feet above the 100-year high water elevation, whichever is lower; (3) Riprap materials shall be durable stone meeting the size and gradation requirements of MnDOT Class III or IV riprap. Toe boulders shall be at least 50 percent buried and may be as large as 30 inches in diameter; (4) A transitional granular filler <i>meeting requirements of MnDOT 3601.B</i> , at least 6 inches in depth, shall be placed between the native shoreline and the riprap to prevent erosion of fine grained soils. A geotextile filter fabric <i>meeting the requirements of MnDOT 3733</i> shall be placed beneath the granular filler where appropriate; (5) Structural stabilization practices, including riprap, are recommended to include plantings between individual boulders or native upland plantings to retard runoff and prevent erosion wherever feasible and practical.
4d	A structural design with a slope of 2:1 (horizontal: vertical) or steeper is considered a retaining wall and must conform to the following: 1. A new retaining wall, or a retaining wall repair/reconstruction that increases floodplain encroachment beyond what is needed for structural soundness, is permitted only under the Variances and Exceptions Rule. The applicant must demonstrate that there is no adequate alternative. 2. The design must be supported by a structural analysis, prepared by a professional engineer licensed in the State of Minnesota to practice civil engineering, that shows the wall will withstand expected ice and wave action and earth pressures, and otherwise must conform to sound engineering principles. 3. The permit will require that an as-built survey, prepared by a registered land surveyor, be filed with the District.	6d	A structural design with a slope of 2:1 (horizontal: vertical) or steeper is considered a retaining wall and must conform to the following: (1) A new retaining wall, or a retaining wall repair/reconstruction that increases floodplain encroachment beyond what is needed for structural soundness, is permitted only under the Variances and Exceptions Rule. The applicant must demonstrate that there is no adequate alternative. (2) The design must be supported by a structural analysis, prepared by a professional engineer licensed in the State of Minnesota to practice civil engineering, that shows the wall will withstand expected ice and wave action and earth pressures, and otherwise must conform to sound engineering principles. (3) The permit will require that an as-built survey, prepared by a registered land surveyor, be filed with the District.
		10	CRITERIA FOR RETAINING WALLS. (a) A new retaining wall, or repair/reconstruction of an existing retaining wall that increases floodplain encroachment beyond that required by technically sound and accepted repair/reconstruction methods, is permitted only pursuant to a variance or an exception under the District Variance Rule. The applicant must demonstrate that there is no adequate stabilization alternative. (b) Wooden seawalls and/or steel sheetpiling retaining walls shall comply with accepted engineering principles. (c) The applicant shall submit a structural analysis prepared by a professional engineer registered in the State of Minnesota, in the practice of civil engineering, showing that the wall will withstand expected ice and wave action and earth pressures. (d) The applicant shall submit a survey prepared by a registered land

4e	<b>Neither riprap conforming to paragraph 2.b.3, above, nor a stabilization design conforming to section 4, constitutes floodplain fill for the purpose of the Floodplain Alteration rule.</b>	N/A	N/A
5a	<p>SUBMITTALS FOR STABILIZATION DESIGNS.</p> <p>The following items must be submitted with an application for shoreline or streambank stabilization.</p> <p>a. If required by subsection 3.a, an erosion intensity calculation prepared on a form maintained by the District Board of Managers. The calculations are as follows:</p> <p>1. For shoreline designs, the applicant must calculate erosion intensity as outlined on the District form which is available on the District's website.</p> <p>2. For streambank designs, the applicant must calculate bank-full stream velocity <b>and shear stress</b> by the following equations and the higher of the two intensity scores will be used:</p> <p>i. Bankful stream velocity</p> <p>Manning's equation:  <math>v = \text{Average velocity of flow (feet/sec)}</math>  <math>Q = \text{Bankful flow (cubic feet/sec)}</math>  <math>A = \text{Area of flow (square feet)}</math>  <math>n = \text{Manning's number}</math>  <math>R = \text{Hydraulic radius (feet)}</math>  <math>S = \text{Slope of channel bottom (rise/run)}</math></p> <p>Velocity corresponds to erosion intensity as follows:  Below 2 fps Low erosion intensity  2-6 fps Medium erosion intensity  Above 6 fps High erosion intensity</p> <p>ii. Shear stress on the streambank</p> $\tau = \text{Shear stress (pounds / square feet)}$ $d = \text{Bankful flow depth (feet)}$ $\mu = \text{Unit weight of water (62.4 pounds / cubic feet)}$ $S = \text{Slope of channel bottom (rise/run)}$ <p><b>Shear stress corresponds to erosion intensity as follows:</b>  <b>Below 2.5 lb/sq ft Low erosion intensity</b>  <b>2.5 to 5 lb/sq ft Medium erosion intensity</b>  <b>Above 5 lb/sq ft High erosion intensity</b></p>	7a	REQUIRED EXHIBITS FOR SHORELINE/STREAMBANK STABILIZATION. (a) Erosion intensity calculations from section 3, Shoreline Erosion Intensity Calculation, or 4, Streambank Erosion Intensity Calculation, of this rule, whichever is applicable, or materials necessary to make the demonstration required in section 5, Design Flexibility.
		4a	STREAMBANK EROSION INTENSITY CALCULATION. Applications for streambank stabilization shall be required to include the calculations detailed below to document bankfull stream velocity and shear stress: (1) Bankfull stream velocity i. Manning's equation: (see rule text for equation) $v = \text{Average velocity of flow (feet/sec)}$ $Q = \text{Bankfull flow (cubic feet/sec)}$ $A = \text{Area of flow (square feet)}$ $n = \text{Manning's number}$ $R = \text{Hydraulic radius (feet)}$ $S = \text{Slope of channel bottom (rise/run)}$ (2) Shear stress on the streambank $\tau = d \times \mu \times S$ $\tau = \text{Shear stress (pounds / square feet)}$ $d = \text{Bankfull flow depth (feet)}$ $\mu = \text{Unit weight of water (62.4 pounds / cubic feet)}$ $S = \text{Slope of channel bottom (rise/run)}$
		4b	The proposed streambank stabilization practice shall be consistent with the shear stress calculated (low, medium, high). (1) Low erosion intensity streambanks are those where the shear stress calculated is less than or equal to 2.5 lb per square foot and shall utilize biological stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule. (2) Medium erosion intensity streambanks are those where the shear stress calculated is between 2.5 and 5 lb per square foot and shall utilize biological or bioengineering stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule. (3) High erosion intensity streambanks are those where the shear stress calculated is greater than 5 lb per square foot and shall utilize biological, bioengineering or structural stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.
5b	Photographs documenting existing site condition and need for stabilization. Images must be during growing season and must depict, in profile, bank vegetation and slope condition of the subject and adjacent properties, and the existence of emergent or floating vegetation adjacent to the subject property.	7b	Photographs of the project site, showing existing conditions.
5c	Site plan including: 1. Surveyed locations of ordinary high water level, 100-year high water elevation, and property lines in plan view. 2. Landward edge of the stabilization zone and elevation contours within the zone, of no more than two-foot resolution, referenced to NGVD 29 datum. 3. Location of the proposed installation and proposed lineal dimensions in plan view. 4. Proposed method of access. 5. Upland baseline parallel to the shoreline/streambank showing distances to the OHW line at 20-foot stations. The baseline endpoints must be referenced to three fixed features, with	7c	Site plan showing: (1) Survey locating the existing ordinary high water (OHW) elevation, existing shoreline or streambank, 100-year high water elevation, and location of property lines; (2) Elevation contours of the upland within 15 feet of the OHW and referenced to accepted datum; (3) Location of the shoreline/streambank stabilization zone and access corridor; (4) Location of existing trees and shrubs within the shoreline/streambank stabilization zone and an indication of whether they are to be removed or retained; (5) Plan view of locations and lineal footage of the proposed shoreline/bank stabilization treatment; and (6) The location of an upland baseline parallel to the shoreline/bank with stationing. The baseline shall be

	measurements shown and described. The baseline must be staked, and stakes maintained to project completion.		staked in the field and maintained in place until project completion. Baseline origin and terminus each shall be referenced to three fixed features, with measurements shown and described on the plan. Perpendicular offsets from the baseline to the OHW shall be measured and distances shown on the plan at 20 foot stations.
5d	Cross-section with horizontal and vertical scales, depicting or describing: 1. The bank to be stabilized, with OHW level and 100-year high water elevation of the associated waterbody. 2. Description of underlying soils. 3. The proposed stabilization technique, finished slope and distance lakeward from OHW line. 4. Specification of all structural, bioengineered, plant and seed material to be installed.	7d	Cross section, drawn to scale, with the horizontal and vertical scales noted on the drawing, detailing: (1) The existing bank, OHW, and 100-year high water elevation; (2) The proposed stabilization technique, finished slope, and distance lakeward of the OHW; (3) Material specifications; (4) Description of the underlying soil materials
5e	Erosion and sedimentation control and site stabilization plans incorporating best practices.	7e	Specification of erosion control and site stabilization practices.
6a	ADDITIONAL SUBMITTALS. In addition to the items in section 5, the following items must be submitted with the application for shoreline or streambank stabilization, as applicable. a. In addition to the items in section 5, a streambank stabilization design submittal also must include: 1. Cross-sectional, longitudinal and plan views of channel in existing and proposed conditions. 2. Identification of bank-full indicators and in-stream features such as woody debris, riffles and pools. 3. Description of existing slope, bank, channel and adjacent wetland soils and vegetation.	7h	For streambank stabilization: (1) Cross sectional view of stream channel in existing and proposed conditions; (2) Longitudinal view of stream channel in existing and proposed conditions; (3) Plan view of stream channel in existing and proposed conditions; (4) Identification of bankfull indicators; (5) Documentation of existing soils, wetlands, vegetation, slopes, bank and channel material; (6) Identification of in-stream features such as woody debris, riffles and pools, etc.
6b	A biological or bioengineering design also must include a vegetation establishment plan that includes: 1. A plant list with common and scientific names, seed mix specifications, quantities and origin of all material. 2. Methods, schedule and parties responsible to establish and maintain vegetation for three years after installation, including invasive species control and vegetation replacement. c. A bioengineering design also must detail the location of all armoring or inert material and describe how the use of such material has been minimized to the extent practical. d. A design involving aquatic planting or plant removal must include a copy of the Minnesota Department of Natural Resources plant management permit application, if applicable.	7f	For biological and bioengineering stabilization practices, a Vegetation Establishment Plan, including: (1) A plant list with common and scientific names, seed mix specifications, quantities and origin of all material; and (2) Specification of the methods, schedule and party responsible for ensuring establishment and maintenance of the vegetation for the three years following installation or construction. The plan shall include the control of invasive species and replacement of vegetation as necessary.
		7g	For bioengineering: (1) Detail the location of all hard armoring inert material, such as riprap, to be utilized; (2) Provide a written narrative explaining how the use of hard armoring inert
7	STANDARDS FOR SANDBLANKETS. a. An application for a sandblanket must include the following: 1. Site plan showing ordinary high water line, 100-year high water line (if available), property lines, and elevation contours of upland adjacent to application area, referenced to NGVD (1929 datum). 2. Existing and proposed cross-sections and topographic contours, at intervals no greater than 1.0 foot, within application area. b. The application must conform to the following standards: 1. Sand or gravel, before being spread, must be clean excavated or properly washed material, free of any hazardous or petroleum substance, and of any noxious or regulated invasive species of plant or animal, and any seed or larva thereof. 2. The sand or gravel may not exceed a depth of six inches; may not exceed 50 feet parallel to the shoreline or one-half of lot width, whichever less; and may not extend more than 10 feet waterward of the ordinary high water mark. 3. A site may not receive two District permits within four years. The District will permit only two sandblanket applications at a given site. 4. Beaches operated by units of government for public use are exempt from paragraphs 7.b.2 and 3, but must be maintained to limit environmental impact to the extent reasonable.	8	CRITERIA FOR LAYING SANDBLANKETS. All permitted sandblanketing shall comply with the following standards: (a) The sand or gravel used must be clean prior to being spread. The sand must contain no toxins or heavy metal, as defined by the Minnesota Department of Natural Resources, and must contain no weed infestations such as, but not limited to, water hyacinth, alligator weed, and Eurasian watermilfoil, or animal life infestations such as, but not limited to, zebra mussels or their larva. Violators will be prosecuted to the full extent of the law. (b) The sand layer must not exceed six inches in thickness, 50 feet in width along the shoreline, 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 mark. (c) 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 sandblanket. No more than two applications may be made at an individual project site. (d) Exception. Beaches which are operated by governmental entities and available to the public shall be maintained in a manner that represents the minimal impact to the environment, relative to other reasonable alternatives, and shall be exempted from the following restrictions: (1) Sandblankets be no more than 50 feet in width and extend no more than 10 feet waterward of the ordinary high water mark. See paragraph 9(b), specifying sandblanket criteria, of this rule; and (2) Sandblankets be installed no more frequently than once every four years and no more than twice at the same project location. See paragraph 9(c), limiting repeated sandblanket installations, of this rule.

		9	<p>SANDBLANKET REQUIRED EXHIBITS. The following exhibits shall accompany the sandblanket permit application:</p> <p>(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).</p> <p>(b) Profile, cross sections and/or topographic contours showing existing and proposed elevations and proposed side slopes in the work area. (Topographic contours should be at intervals not greater than 1.0 foot).</p> <p>(c) A completed Sandblanket Permit Application form, available from the District.</p>
8	<p>STANDARDS FOR OTHER INSTALLATIONS.</p> <p>a. A boat ramp or other boating access structure is permitted on the applicant's demonstration that there is no feasible alternative for access, and that impacts on aquatic habitat and water quality are minimized.</p> <p>b. The width of disturbance for a boat ramp or other boating access structure is limited to 15 feet, and the volume of material limited to <b>80 cubic yards</b> below the ordinary high water level, except for a commercial marina or public launch facility when it is demonstrated that a larger dimension is necessary. Any material above the ordinary high water level is considered floodplain fill.</p> <p><b>c. If pouring a boat ramp in place, the permittee must conform to containment, dewatering, and other measures as the District requires to protect water quality.</b></p> <p>d. The material to construct an installation must be clean, inert and create no risk of adverse environmental impact. The design must be sound and pose no safety or navigational hazard.</p>	11	<p>CRITERIA FOR OTHER SHORELINE IMPROVEMENTS. Other shoreline improvements, such as boat ramps, shall comply with accepted engineering principles as follows:</p> <p>(a) Boat ramps and other similar improvements shall not be allowed in riparian shoreline areas unless the applicant demonstrates that no feasible alternative riparian access is available, that aquatic habitat and water quality impacts are minimized;</p> <p>(b) Installation of boat ramps shall involve placement of no more than 50 cubic yards of inert and clean material, and the maximum width of shoreline disturbance shall be 15 feet unless the facility is a commercial marina or public launch facility that requires a greater width; and</p> <p>(c) Materials utilized for construction of boat ramps or other similar improvements shall be safe and cause no adverse environmental impacts; the improvement shall be of sound design and construction so that the improvement is reasonably expected to be safe and effective.</p>
9	<p>FINANCIAL ASSURANCE.</p> <p>A bond, letter of credit or cash escrow in accordance with the District's Financial Assurances rule is a condition of permit issuance.</p>	2a	[See section 2a above]