

BROWN'S CREEK WATERSHED DISTRICT RULES

**Adopted April 9, 2007
Effective May 1, 2007**

Brown's Creek Watershed District Board of Managers

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- ° Enabling Resolutions: 07-05 - Resolution Adopting Amended Rules
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BROWN'S CREEK WATERSHED DISTRICT

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DEFINITIONS

“Agricultural activity” means the use of land for the production of agronomic, horticultural or silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, forages, cover crops, grains, and Christmas trees. Agricultural activity also includes grazing.

“Best Management Practices (BMPs)” means measures taken to control impacts from stormwater runoff on the receiving water or groundwater. BMP specifications for design and construction follow, in order of priority, the Minnesota Stormwater Manual (MPCA, 2005); Protecting Water Quality in Urban Areas (MPCA, 2000); and Minnesota Construction Site Erosion and Sediment Control Planning Handbook (MBWSR, 1988); as such documents may be amended, revised or supplemented.

“Better Site Design practices” means development design oriented to conserve natural areas, limit hard cover, use natural pervious areas and integrate stormwater management features to more effectively manage stormwater runoff.

“Buffer” means an upland area adjacent to a lake, stream or wetland that is maintained in or restored to primarily native vegetation.

“Distributed CN-value approach” means an approach that assigns a curve number to each land use to more accurately reflect volume and timing of site-generated runoff.

“Facility” means any part of a natural or constructed system contributing under the stormwater management plan to meeting a standard of section 2.4.

“Feasible” means technically achievable at a cost, in the District’s determination, not substantially disproportionate to the stormwater management benefit to be gained.

“Floodplain” means the area adjoining a watercourse, or a natural or constructed water basin, including the area around lakes, wetlands, stormwater ponds, depressions, and intermittent and perennial streams, that is inundated by the 100-year 24-hour rainfall event or, for landlocked basins, the 100-year 10-day rainfall event.

“Groundwater-dependent natural resource” (GDNR) means a feature with surface emergence of groundwater at a spring or seepage area, sufficiently mineral rich to support a plant community or aquatic ecosystem listed in the Appendix to these Definitions.

“Hot Spot” means a point source potential pollution generating land us such as gas stations, chemical storage facilities, industrial, etc...

“Impervious surface” means a surface that has been compacted or covered with a layer of material, or is likely to become compacted from expected use, so that it is highly resistant to infiltration by water.

“Lake,” within the District, means Bass, Benz, Goggins, Kismet, Long, Lynch, Masterman, North School Setion, South School Section, Plaisted and Woodpile basins.

“Landlocked basin” means a basin or localized depression that does not have a natural outlet at or below the water elevation of the 10-day precipitation event with a 100-year return frequency (10.8-inch event), using the 2000 Washington County Topographic Survey for the pre-event elevation.

“Manage 1,” as a wetland classification, means a wetland that does not qualify as a “Preserve” wetland but that meets one or more of the following rating levels pursuant to the Minnesota Rapid Assessment Method (MnRAM) 3.0 or other method approved by the District:

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

“Manage 2,” as a wetland classification, means a wetland that does not qualify as a “Preserve” or “Manage 1” wetland but that meets one or more of the following rating levels pursuant to the Minnesota Rapid Assessment Method (MnRAM) 3.0 or other method approved by the District:

	Vegetative Diversity	Medium
	Wildlife Habitat	Medium
	Fisheries Habitat	Medium
	Aesthetics/education/recreation/cultural	Medium
	AND Wildlife Habitat	Low

“Manage 3,” as a wetland classification, means a wetland that does not qualify as a “Preserve,” “Manage 1” or “Manage 2” wetland.

“Mapped natural community” means a natural community identified in “Natural Communities and Rare Species Map for Washington County” (Minnesota Department of Natural Resources, Natural Heritage Program, 1990), or in a natural resources inventory using the same protocol as established by the Minnesota Department of Natural Resources.

“Middle zone” is a vegetative buffer zone that extends from the upland edge of the streamside zone to the interior edge of the outer zone of a watercourse.

“Natural environment lake” means a lake so designated by the Minnesota DNR pursuant to Minn. Rules 6120.3000.

“NURP standard” means the design criteria developed pursuant to the Nationwide Urban Runoff Program (U.S. EPA, 1983) and published by the Minnesota Pollution Control Agency in “Protecting Water Quality in Urban Areas 1991” (sections 4.1-4 through 4.1-7), as may be amended.

“Ordinary high-water level” or "OHWL" means the boundary of a public water or wetland, and is an elevation indicating the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape, commonly indicated by a change from predominantly aquatic to predominantly terrestrial vegetation. For watercourses, the ordinary high-water level is the elevation of the top of bank of the channel. For basins and flowages, it is the operating elevation of the summer pool.

“Outer zone” is a vegetative buffer zone that extends from the upland edge of the middle zone of a watercourse to a point specified in these Rules.

“Preserve,” as a wetland classification, means a wetland meeting any of the following rating levels pursuant to the Minnesota Rapid Assessment Method (MnRAM) 3.0 or other method approved by the District:

	Function or Value	Rating
	Vegetative Diversity	Exceptional
	Wildlife Habitat	Exceptional
	Fish Habitat	Exceptional
	Aesthetics/education/recreation/cultural	Exceptional
	AND Wildlife Habitat	High
	Stormwater Sensitivity	Exceptional
	AND Vegetative Diversity	Medium or greater
	Vegetative Diversity	High
	AND Maintenance of hydrologic regime	High or greater

“Pre-settlement” means soil permeability conditions existing before European settlement.

"Public water" has the definition at Minnesota Statutes § 103G.005, subd. 15.

“Pre-development” means soil permeability conditions at the time preceding the proposed creation of impervious surface or substantial change in site hydrology or infiltration by alteration of site vegetation or contour.

“Receiving water” means the first of the following encountered by stormwater flow from the site: Brown’s Creek; a tributary of Brown’s Creek designated as a public water pursuant to Minn. Stat. §103G.005, subd. 15, as amended; a lake

designated as a public water pursuant to Minn. Stat. §103G.005, subd. 15, as amended; or a wetland.

“Reconstruction” means the rebuilding, repair or alteration of a structure, surface, or facility for which the cost would equal or exceed 50 percent of the replacement cost.

“Recreational development lake” means a lake so designated by the Minnesota DNR pursuant to Minn. Rules 6120.3000.

“Revegetation” means the planting of native indigenous species.

"Shore impact zone" means land located between the OHWL of a public water and a line parallel to it at a setback of 50 percent of the structure setback applicable under the governing shoreland ordinance.

“Site design practice” means a method of managing stormwater peak flow, flow volume or quality listed in Appendix 2.1 to Rule 2.0.

“Steep slope” means land with an average slope exceeding 12 percent over a distance of 50 feet or more upgradient of the water resource, calculated using a reasonably precise topographic surface model.

“Stream” means Brown’s Creek or any tributary to Brown’s Creek.

“Stream buffer zone” means a streamside zone, middle zone or outer zone.

“Streamside zone” is a vegetative buffer zone that extends from the ordinary high-water mark of a watercourse to the interior edge of the middle zone.

"Structure" means anything that is constructed or placed on the ground and that is, or is intended, to remain for longer than a brief, temporary period of time.

“Subwatershed” means the drainage area of the receiving water for the site.

“Utility” means a facility, or part thereof, that conveys water, wastewater, steam, gas, electricity or a similar commodity, including but not limited to cable access television and data transmission lines, but excluding stormwater management facilities.

“Waterbody” means a watercourse or waterbasin.

“Waterbasin” means an enclosed natural depression with definable banks, capable of retaining water.

“Watercourse” means a natural channel that has definable beds and banks capable of conducting confined runoff from adjacent land.

“Wetland” means land transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland (a) is predominated by hydric soils; (b) is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (c) under normal circumstances, supports a prevalence of hydrophytic vegetation. A wetland is a waterbasin if it meets the definition of that term.

DEFINITIONS – APPENDIX
 Groundwater-Dependent Natural Resource Types
 (Following Minnesota Land Cover Classification System protocol)

Cold water trout stream	Wet prairie seepage subtype - saturated soils
Spring creek	Calcareous seepage fen
Groundwater-dependent lake	Calcareous seepage fen boreal subtype
Tamarack swamp seepage subtype	Calcareous seepage fen prairie subtype
Tamarack swamp minerotrophic subtype	Poor fen
Tamarack swamp sphagnum subtype	Poor fen sedge subtype
White cedar swamp seepage subtype	Poor fen patterned fen subtype
Black spruce bog	Rich fen
Black spruce bog intermediate subtype	Rich fen sedge subtype
Black spruce bog raised subtype	Rich fen floating-mat subtype - saturated soils
Black ash swamp seepage subtype	Rich fen patterned fen subtype
Mixed hardwood swamp seepage subtype	Open bog Open sphagnum bog schlenke subtype
Scrub tamarack poor fen	Graminoid bog
Birch bog, spiraea temporarily flooded shrubland	Wet meadow floating mat subtype
Shrub fen	Rich fen floating-mat subtype - semipermanently flooded
Poor fen shrub subtype	Rich fen floating-mat subtype - intermittently exposed
Rich fen shrub subtype	Rich fen floating-mat subtype - permanently flooded
Wet brush-prairie seepage subtype	Talus slope algific subtype
Shrub swamp seepage subtype	Seepage meadow
Alder swamp - saturated soils	Wet cliff
Birch bog, spiraea shrubland - saturated soils	Moderate cliff
Alder swamp	Midwest sedimentary dripping cliff
Birch bog, spiraea shrubland - seasonally flooded	Saline spring mud flats
Birch bog, spiraea shrubland - semipermanently flooded	

1.0 PROCEDURAL REQUIREMENTS

1.1 Application Required. Any person undertaking any activity for which a permit is required by these Rules shall first submit for review a permit application, engineering design data and such other information to the District as may be required by these Rules to determine whether the improvements are in compliance with the criteria established by these Rules. All permit applications must bear the original signature of the landowner.

1.2 Forms. Permit applications shall be submitted using forms provided by the District. Forms are available from the District Office located at District, 1380 West Frontage Road, Hwy 36, Stillwater, Minnesota 55082 and on the District website at www.bcwd.org. Permit applications shall be addressed to:

Brown's Creek Watershed District
1380 West Frontage Road, Hwy 36
Stillwater, MN 55082

1.3 Action by Board of Managers. The managers shall act within 60 days of receipt of a completed application and complete set of required exhibits, and the District will provide at least ten (10) days notice to permit applicants of missing items.

1.4 Conformity with Local Requirements. The District will review applications for permits involving land development. The permit will be issued only after the applicant demonstrates that the plan has received preliminary approval from each local government in which development is to take place and completion of the Wetland Conservation Act (WCA) process. The requirement of preliminary approval shall mean:

- (a) Preliminary plat approval if required for the development; or
- (b) If plat approval is not required, approval by the local planning commission or a written statement from the responsible local official that, on preliminary review, the development appears to meet local approval requirements.

1.5 Notification Process. Persons applying for, transferring or renewing a District permit must supply a certified list of property owners obtained from Washington County who reside adjacent to the subject property, and all property owners within 600 feet of the property boundary of a proposed project. District staff will send notice of the proposed project to the individuals on the mailing list for the applicant at the applicant's expense. A copy of the list will be retained

with the application at the District office. The application will not be processed until the list has been submitted to the District.

1.6 Alternative Notification. Before application is made, the Board, on written request, may approve alternative notification for any of the following projects:

- (a) A linear project, including but not limited to a road, sidewalk or trail, one-half mile or more in length.
- (b) A project on a parcel or contiguous parcels with an area of 100 acres or more, where no more than five percent of the area will be disturbed, provided the disturbed area does not include a wetland.
- (c) A project where the applicant proposes to combine notification under this Rule with notification required under the approval procedures of another governmental body.

The applicant must demonstrate that an alternative means of notification will provide adequate notice to residents near the proposed activity.

1.7 Time for Submittal. A complete permit application which includes all required exhibits shall be received by the District at least 28 full days prior to the scheduled meeting date of the Board of Managers. Late submittals or submittals with incomplete exhibits will be scheduled to a subsequent meeting date.

1.8 Tabled Permits. Permit applications tabled at a board meeting due to revisions needed for compliance with District rules will be addressed at the next board meeting if the revisions are submitted within three (3) working days of being tabled. Otherwise, permit applications will be treated pursuant to section 1.7 of this Rule.

1.9 Permit Renewals and Transfers. A permit is valid for a one-year period from the date the applicant is advised in writing that the Board has approved the permit unless it is otherwise suspended or revoked. To renew or transfer a permit, the permittee must notify the District in writing, prior to the permit expiration date, of the reason for the renewal or transfer request. The request will be reviewed by the Board of Managers at the next available board meeting provided all information submitted to the District is current. The Board, in its discretion, may grant a permit of a duration longer than one year if a request to do so is included in the duly-noticed application. In accordance with § 1.5 of these Rules, District staff will send notice of the proposed project to the individuals within 600 feet of the project for the applicant at the applicant's expense.

1.10 Regular Meetings. Regular meetings of the Board of Managers are held on the second Monday of the month at the Washington Conservation District Office at 1380 West Frontage Road, Hwy 36, Stillwater, MN, unless otherwise noticed. Meeting schedules may be obtained by contacting the District office or checking the District website at www.bcwd.org.

2.0 STORMWATER MANAGEMENT

2.1 Purposes and Policy. It is the policy of the District to:

- 2.1.1 Preserve natural infiltration, groundwater recharge and subsurface flows that support groundwater dependent resources including lakes, streams, wetlands, plant communities and drinking water supplies;
- 2.1.2 Work toward restoration of natural hydrology by limiting peak off-site stormwater flow to pre-settlement rates;
- 2.1.3 Limit off-site stormwater flow volume to prevent down-gradient flooding and thermal impacts to Brown's Creek and its tributaries;
- 2.1.4 Require management of stormwater flow to limit sediments, phosphorus and other pollutants conveyed to ground and surface waters and promote water quality; and
- 2.1.5 Minimize connectivity of impervious surfaces to stormwater conveyance systems and preserve the natural hydrology of landlocked basins to minimize basin and downgradient flood risk.

2.2 Applicability. Subject to an exception in section 2.7, the requirements of this section apply to:

- (a) Residential subdivision or development of four or more lots;
- (b) Non-residential development creating impervious surface that, in the aggregate, exceeds either one acre or five percent of a site;
- (c) Redevelopment on a site of five acres or more, where pervious surface is disturbed and final impervious surface, in the aggregate, exceeds one acre or five percent of a site.
- (d) The creation of 5,000 square feet or more of additional impervious surface appurtenant to existing non-residential development.
- (e) The creation of road, bikeway, sidewalk or other linear impervious surface of one acre or more.
- (f) Land disturbance of 5,000 square feet or more within the surface water contributing area of a groundwater-dependent natural resource.

2.3 Regulation. Before any activity described at § 2.2 commences, a stormwater management plan shall be submitted to the District in conformity with the requirements of this Rule, and a permit shall be secured from the District. The managers will review a stormwater management plan; however, the permit will be issued only after the applicant demonstrates that the project has received preliminary approval from the local land use authority, in accordance with § 1.4 of these Rules, indicating compliance with existing local requirements and completion of the Wetland Conservation Act (WCA) process.

2.4 Standards.

2.4.1 Management Standards. An applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not:

(a) Increase peak stormwater flow from the site, as compared with the pre-settlement condition, for a 24-hour precipitation event with a return frequency of two, 10, or 100 years for all points where discharges leave a site.

(b) Increase stormwater flow volume from the site, as compared with the pre-settlement condition, for a 24-hour precipitation event with a return frequency of two years, or five years within a landlocked basin or a subwatershed draining to a landlocked basin.

(c) At the downgradient property boundary, increase annual phosphorus loading as compared with the pre-development condition.

(d) Increase the bounce in water level or duration of inundation, for a 24-hour precipitation event with a return frequency of two, 10, or 100 years in the subwatershed in which the site is located, for any downstream lake or wetland beyond the limit specified in Appendix 2.3.

2.4.2 Obligation to Ensure Performance. A permit granted by the District on a finding that stormwater management facilities, as they are to be constructed and maintained under the permit, will meet applicable performance standards under Rule 2.0, does not require additional steps if the permit is complied with but standards are not met. Notwithstanding, as a specific condition to a permit, the District may impose monitoring, performance evaluation, additional compliance measures or other requirements for the purpose of meeting performance standards.

2.4.3 Assurance of Downgradient Capacity. An applicant may be required to demonstrate that downgradient stormwater conveyance structures and features will be adequate to handle proposed increased peak flow or flow volume from the site.

2.4.4 Redevelopment. If the proposed activity will disturb more than 50 percent of existing impervious surface, the criteria of subsection 2.4 will apply to all impervious surface on the project site. Otherwise, the criteria will apply only to net additional impervious surface. Notwithstanding, for road and other linear projects, only net additional surface will be considered.

2.5 Management.

2.5.1 Sequence of Management Methods. To meet the standards of section 2.4, site-based stormwater management methods shall be used in the following sequence. A preferred method shall be used to the degree feasible before a less-preferred method is used. Treatment in a regional facility shall be governed not by this sub-section, but by sub-section 2.7.4.

- (a) Better Site Design practices.
- (b) On-site infiltration.
- (c) Off-site infiltration.
- (d) Wet detention in accordance with NURP standards.
- (e) Other methods.

2.5.2 Site Design Practice Infeasibility. If a claim that a site design practice is infeasible rests on its inconsistency with a local ordinance or state standard, reasonable attempts to gain permission to incorporate the practice into site design must be documented. Satisfactory documentation includes denial of an exception or variance or a written statement by the authority that an exception or variance would be unlikely to be granted.

2.5.3 Calculating Off-Site Stormwater Flow. To calculate off-site flow under pre-settlement condition, pre-development condition or the stormwater management scenario proposed for approval, Soil Conservation Service TR-20 method is to be used. Pre-settlement CN-values will be as follows:

Hydrologic Soil Group	Curve Number
A	30
B	57
C	70
D	77

All assumptions for CN-values and impervious surface area estimates must be clearly stated. A distributed CN-value approach shall be used to calculate runoff flows.

An area of the site to be disturbed during construction shall be assigned a CN-value corresponding to a soil permeability class one step below that of the undisturbed soil unless the permit specifies a District-approved method to restore soil structure.

2.5.4 Acquisition of Property or Contract Rights. An applicant relying on on- or off-site facilities for complying with the standards of section 2.4 must possess all land access rights necessary for design, construction, and long-term operation and

maintenance of the facilities. This sub-section does not apply to treatment in a regional facility pursuant to paragraph 2.7.4(a).

2.5.5 Infiltration Pretreatment. Surface flows to infiltration facilities must be pretreated for long-term removal of at least 50 percent of sediment loads. In the event an infiltration facility is constructed in the vicinity downstream of a potential Hot Spot, a skimmer shall be installed to facilitate clean-up.

2.5.6 Basin in Contributing Area to Groundwater-Dependent Natural Resource. A stormwater basin within the surface contributing area to a groundwater-dependent natural resource must contain and infiltrate the volume generated by a two-year, 24-hour storm event, if feasible. The basin bottom must be at least three feet above the seasonally high water table, bedrock or other impeding layer. If this infiltration standard is not met, basin outflow must be non-erosive and routed through a subsurface system, flow spreader or other device that discharges water through or across the ground to lower discharge temperature to that of the ambient soil.

2.5.7 Stormwater Management Facility Maintenance Instrument. If a developer proposes to construct a wet detention basin, infiltration or pretreatment facility, outlet structure, culvert, outfall structure, or other stormwater management facility in order to meet the requirements of this Rule, the developer must submit with the permit application a maintenance instrument. The maintenance instrument shall identify and protect areas of stormwater detention, infiltration, treatment and overflow; specify the methods, schedule, and responsible parties for maintenance; provide for perpetual facility maintenance; and contain at a minimum the requirements in the District's standard maintenance declaration. The executed maintenance instrument must be recorded with the County before permit issuance or immediately after plat approval and filing, if applicable.

2.5.8 Form of Recordation. Rights under sub-section 2.5.4, a maintenance instrument under sub-section 2.5.6, and any commitment of indefinite duration that is a condition of a District permit shall be recorded with the County as an easement or declaration in a form acceptable to the District.

2.5.9 Conformance to Floodplain and Drainage Alteration Requirements. In addition to all other legal requirements that may apply, all land-altering and related stormwater management activity pursuant to Rule 2.0 shall comply with building elevation requirements of Rule 7.0.

2.6 Required Exhibits. The following items, submitted in duplicate and certified by a professional engineer registered in the State of Minnesota, registered land surveyor, or other appropriate professional shall accompany all permit applications submitted to the District pursuant to Rule 2.0:

2.6.1 Property lines and delineation of lands under applicant's ownership;

- 2.6.2 For existing and proposed conditions, topography showing all on- and off-site subwatersheds contributing to surface flows onto or from the site;
- 2.6.3 The location, alignment and elevation of proposed and existing stormwater facilities;
- 2.6.4 Delineation of existing on-site wetland, shoreland, drain tiling and floodplain areas as defined in the 1982 FEMA study;
- 2.6.5 Existing and proposed normal and 100-year water elevations on site;
- 2.6.6 Existing and proposed site contour elevations at two-foot intervals, related to NGVD, 1929 datum;
- 2.6.7 Elevation of the OHWL of each public water on the site, if determined by the Minnesota Department of Natural Resources;
- 2.6.8 Construction plans, specifications and a maintenance schedule for all proposed facilities;
- 2.6.9 Stormwater runoff rate analyses for the two, 10, and 100 year critical events and runoff volume for the two-year event (or five-year event for a landlocked basin) under pre-settlement and proposed conditions, using Appendix 2.4 to simulate infiltration losses in designed practices;
- 2.6.10 All hydrologic, water quality, and hydraulic computations completed to design the proposed facilities, including a demonstration of conformance, in the site aggregate, to phosphorus treatment efficiency requirements of Appendix 2.2;
- 2.6.11 Documentation of conformance with an existing local stormwater management plan, or in cases where such a plan does not exist, documentation that the local government has reviewed the project;
- 2.6.12 Delineation of any flowage and drainage easements and other property interests dedicated to stormwater management purposes, including, but not limited to, county or judicial ditches;
- 2.6.13 Documentation as to the status of a National Pollutant Discharge Elimination System stormwater permit for the project from the Minnesota Pollution Control Agency and provide the Storm Water Pollution Prevention Plan (SWPPP) as it becomes available;
- 2.6.14 Geotechnical information including soil maps, borings, site-specific recommendations and other information needed to evaluate the proposed stormwater management design; and
- 2.6.15 Thermal impact analysis demonstrating compliance with paragraph 2.5.6, if applicable.

2.7 Exceptions.

2.7.1 Infeasibility of On-Site Infiltration. If the District finds that site design practices and on-site infiltration, applied to the extent feasible, do not suffice to maintain stormwater flow volume off-site at the level specified in paragraph 2.4(b), the applicant will be excepted from strict compliance with that paragraph. The use of site design practices, on-site

infiltration and off-site infiltration shall be required to the extent feasible to reduce flow volume to the level specified in paragraph 2.4.1(b) before discharge into a receiving water.

2.7.2 Performance Standard. The District may grant an exception to the sequencing requirements of paragraphs 2.5.1(d) and (e) on an applicant's demonstration that an alternative management technology or method would achieve the same levels of performance and reliability as the method specified at paragraph 2.5.1(d).

2.7.3 Variance. The District may grant a variance to any requirement of Rule 2.0 under Rule 10.0. An exception shall be limited to the extent necessary to put the property to a reasonable or economically viable use.

2.7.4 Regional Treatment. Management of site stormwater in a regional facility constitutes compliance with Rule 2.0 in any of the following circumstances:

(a) Management is pursuant to and in accordance with a local water management plan approved by the District under Minnesota Statutes §103B.235.

(b) An applicant has demonstrated infeasibility of on-site and off-site infiltration under sub-section 2.7.1 and the District, in writing, finds that the proposed method of management would meet all standards of section 2.4 except for paragraph 2.4.1(b).

(c) Management is pursuant to and in accordance with a cooperative agreement with the District that explicitly recognizes alternative compliance with Rule 2.0 under specified conditions.

2.7.5 Basin Outlet. Rule 2.0 does not apply to a capital project in a watershed management or approved local water management plan intended to create an outlet for a landlocked basin.

2.8 Groundwater-Dependent Natural Resource Management Plans. If the District has prepared a management plan for a groundwater-dependent natural resource and incorporated management standards in that plan into its Rules through a formal rulemaking process, any land-altering activity within the surface contributing area or overlying the groundwater recharge area of that

resource must conform to applicable standards in the plan. Plan standards that have been incorporated into these Rules are listed in Appendix 2.5.

APPENDICES

APPENDIX 2.1

Inventory of Better Site Design Practices (Non-Inclusive) for Stormwater Management.

- o Avoid conversion of high-permeability soils.
- o Avoid soil compaction.
- o Target high-permeability soils for infiltration.
- o Use natural depressions and swales for runoff storage and infiltration, with overflow to vegetated areas.
- o Crown roads and driveways to encourage runoff to swales.
- o Increase stormwater flow path length to receiving water.
- o Use filter strips at edges of impervious surfaces, property boundaries and receiving waters.
- o Avoid curbs and gutters on roadways.
- o Direct rain gutter downspouts to pervious surfaces or below-grade tiles.
- o Use pervious surfaces for roads, driveways, parking areas and walkways.
- o Design street widths less than 26 feet and appropriate for projected traffic load.
- o Design streets for parking on one side only.
- o Design streets with sidewalk on one side only.
- o Limit road and driveway lengths.
- o Design smaller (e.g., 9' x 18') parking stalls.
- o Design for shared parking stalls and driveways.
- o Reduce cul de sac radius and use pervious center; use T or V turnaround.
- o Design with reduced structure setback and frontage.

APPENDIX 2.2

Treatment Efficiency Required to Match Pre-Development Conditions (Note: “Phosphorus treatment efficiencies” are illustrative only; applicants must calculate treatment efficiency and demonstrate Rule 2.0 compliance on the basis of site-specific soil types and design.)

APPENDIX 2.2 Treatment Efficiency Required to Match Pre-Development Conditions

Land Use	CN ¹				Phosphorous Treatment Efficiency necessary to match pre-development conditions			
	A	B	C	D	A	B	C	D
Pre-development	50	67	77	83	-	-	-	-
LDR ²	53	69	79	85	67%	36%	33%	32%
L/MDR ³	56	71	81	86	85%	55%	51%	47%
MDR ⁴	59	74	82	87	90%	63%	54%	50%
HDR ⁵	67	79	86	89	96%	73%	63%	55%
HDR ⁶	77	85	90	92	98%	81%	70%	61%
I ⁷	81	88	91	93	98%	80%	65%	54%
CI ⁸	89	92	94	95	99%	84%	70%	59%

¹ Hydrology Guide for Minnesota

² Low density residential (1/2 to 1 ac lots) ~ 20 - 25% Impervious

³ Low/Medium density residential (2-3 units per acre) ~25 - 30% Impervious

⁴ Medium density residential (3 - 4 units per acre) ~ 30 - 38% Impervious

⁵ High density residential (4 - 7 units per acre) ~ 38 - 62% Impervious

⁶ High density residential/town homes (more than 7 units per acre) ~ more than 62% Impervious

⁷ Industrial development/Districts ~ 70 - 75% Impervious

⁸ Commercial/Industrial/Business ~ 80 - 90% Impervious

APPENDIX 2.3

Bounce and Inundation Period Standards

<u>Management Classification</u>	<u>Permitted Bounce</u>	<u>Inundation Period for Two-Year Event</u>	<u>Inundation Period for 10-Year or Greater Event</u>
Preserve wetland	Pre-development	Existing	Existing
Manage 1 wetland	Pre-development plus 0.5 feet	Existing plus 1 day	Existing plus 2 days
Manage 2 wetland	Pre-development plus 1.0 feet	Existing plus 2 days	Existing plus 14 days
Manage 3 wetland/Lake	No limit	Existing plus 7 days	Existing plus 21 days

APPENDIX 2.4

Design Infiltration Rates

Hydrologic Soil Group	Soil Textures*	Corresponding Unified Soil Classification**	Infiltration Rate [inches/hour]
A	Gravel, sand, sandy gravel, silty gravel, loamy sand, sandy loam	GW - Well-graded gravel or well-graded gravel with sand GP - Poorly graded gravel or poorly graded gravel with sand	1.63
		GM - Silty gravel or silty gravel with sand SW - Well-graded sand or well-graded sand with gravel SP - Poorly graded sand or poorly graded sand with gravel	0.8
B	Loam, silt loam	SM - Silty sand or silty sand with gravel	0.6
		ML - Silt OL - Organic silt or organic silt with sand or gravel or gravelly organic silt	0.3
C	Sandy clay loam	GC - Clayey gravel or clayey gravel with sand SC - Clayey sand or clayey sand with gravel	0.2
D	Clay, clay loam, silty clay loam, sandy clay, silty clay	CL - Lean clay or lean clay with sand or gravel or gravelly lean clay CH - Fat clay or fat clay with sand or gravel or gravelly fat clay OH - Organic clay or organic clay with sand or gravel or gravelly organic clay MH - Elastic silt or elastic silt with sand or gravel	< 0.2

Source: Minnesota Stormwater Manual (2005)

3.0 EROSION CONTROL

3.1 Policy. It is the policy of the Board of Managers to require erosion control for land disturbing activities to prevent the siltation and sedimentation of streams, lakes, wetlands, and groundwater recharge areas in the District.

3.2 Regulation. All persons undertaking any grading, filling, or other land disturbing activities which involve movement of more than fifty (50) cubic yards of earth or removal of vegetative cover on five thousand (5,000) square feet or more of land shall submit an erosion control plan to the District, and secure a permit from the District approving the erosion control plan. The plan must meet the following standards:

3.2.1 An erosion control plan must be prepared by a qualified individual showing proposed methods of retaining waterborne sediments on site during the period of construction and showing how the site will be restored, covered, or revegetated after construction, including a timetable for completion;

3.2.2 The erosion control plan shall be consistent with the specifications of the MPCA manual "Protecting Water Quality in Urban Areas" and its current revisions, and specifically shall conform to manual recommendations on the following subjects, as applicable:

- (a) Implementation schedule and construction sequencing
- (b) Critical erosion areas
- (c) Limits of disturbed areas
- (d) Stabilizing exposed and soil stockpile areas
- (e) Stabilizing waterways and outlets (including managing five-year, 24-hour event)
- (f) Protecting adjacent properties from erosion
- (g) Storm sewer inlet protection
- (h) Riprap at culvert outfalls
- (i) Rock construction entrances
- (j) BMP construction details
- (k) Horizontal slope grading
- (l) Permanent erosion control;

3.2.3 Sites with high erosion potential characterized by steep slopes or erodible soils may require the permit applicant to post a surety pursuant to Rule 9.0.

3.3 Site Maintenance Practices

3.3.1 All erosion and sediment control measures shall be installed, and the District shall be given three business days' notice in writing, before land disturbance commences.

3.3.2 The permittee is responsible at all times for the maintenance and proper operation of all erosion and sediment control facilities. On any property on which land-disturbing activity has occurred pursuant to a permit issued under this Rule, the permittee shall, at a minimum, inspect, maintain and repair all disturbed surfaces and all erosion and sediment control facilities and soil stabilization measures every day work is performed on the site, and at least weekly, until land-disturbing activity has ceased. Thereafter, the permittee shall perform these responsibilities at least weekly until vegetative cover is established.

3.3.3 All exposed soil areas and soil stockpiles within 200 lineal feet of a wetland, a waterbody, a discernable surface drainage feature or a stormwater system inlet, and with a continuous positive slope to that water feature, must be stabilized with erosion control measures, or temporary or permanent cover, within the indicated time after final grade is established:

<u>Slope</u>	<u>Time</u>
Steeper than 3:1	7 days
10:1 to 3:1	14 days
Flatter than 10:1	21 days

If an area is not permanently stabilized, it shall be managed in accordance with paragraph 3.3.4, below.

3.3.4 The weekly inspection requirement of paragraph 3.3.2, above, may be reduced to monthly between November 15 and snowmelt if site management conforms to the following:

- (a) Exposed soils are stabilized with established vegetation, straw or mulch, matting, rock or other approved product such as rolled erosion control product. Seeding is encouraged, but alone is not sufficient.
- (b) Temporary and permanent ponds and sediment traps are graded to capacity before spring snowmelt. This does not include infiltration/filtration facilities, which must be kept free of sediment until the site is fully stabilized.
- (c) Sediment barriers are properly installed at necessary perimeter and sensitive locations.

(d) Slopes and grades are properly stabilized with approved methods. Rolled erosion control products must be used on slopes greater than 3:1 (H:V) and where erosion conditions dictate.

(e) Stockpiled soils and other materials subject to erosion are protected by established vegetation, anchored straw or mulch, rolled erosion control product or other durable covering; a barrier prevents movement of eroded materials from the location.

(f) All construction entrances are properly stabilized.

(g) Snow management protects erosion and sediment control measures.

3.3.5 If a site is actively worked after November 15, all steep slope measures, downgradient and perimeter sediment controls, stockpile stabilization and sediment control measures, swales, channels, culvert outfalls and storm sewer inlets must be maintained in proper working condition at the end of each work day.

3.3.6 After construction is complete, design contours must be established for permanent wet detention basins used as sediment basins during construction.

3.3.7 Erosion control measures such as silt fences and hay/straw bales shall not be removed until after the project is complete and the District determines that all disturbed areas have been fully stabilized, and shall be removed within 14 days thereafter.

3.4 Agricultural practices. A Rule 3.0 permit is not required for agricultural activity, provided that a grass or natural vegetation buffer zone extending sixteen (16) feet or the width of an applicable shore impact zone, whichever wider, is maintained along any waterbody, wetland or surface drainage conveyance and no fertilizer is used in the zone.

4.0 LAKE, STREAM, AND WETLAND BUFFER REQUIREMENTS

4.1 Purposes and Policy. Natural vegetation bordering the bed and banks of lakes, streams and wetlands serves a critical role in maintaining the ecological function of and societal benefits deriving from those water resources. Purposes served by vegetative buffers include bank and shoreline stabilization; erosion prevention; filtration of nutrients, sediments and other pollutants from storm flows; protection of stream beds and banks and mitigation of downstream flooding through moderation of peak flows both into and within the resource; regulation of in-stream temperatures; preservation of aquatic and terrestrial habitat; protection of scenic resources; and maintenance of property values. The purpose of Rule 4.0 is to afford the greatest possible protection to these buffers, and to the water quality, flow regime and habitat of Brown's Creek and its tributaries, consistent with the interest in avoiding undue disturbance to established public and private activities in littoral and riparian zones.

4.2 Applicability.

4.2.1 Rule 4.0 applies to land:

(a) adjacent to Brown's Creek; a tributary of Brown's Creek designated as a public water pursuant to Minn. Stat. §103G.005, subd. 15, as amended; a recreational development or natural environment lake designated as a public water under Minn. Stat. §103G.005, subd. 15, as amended; a wetland one acre or larger; or a groundwater-dependent natural resource; and

(b) that has been (i) subdivided; or (ii) subject to a new primary use for which a necessary rezoning, special use permit or variance has been approved; on or after [the date of rule adoption] (for wetlands and groundwater-dependent natural resources other than public waters) or January 1, 2000 (for other waters).

4.2.2 Before any disturbance of ground vegetation or contour, or placement of any structure on the ground, a declaration or other instrument incorporating the applicable requirements of Rule 4.0 shall be recorded with the County.

4.2.3 A buffer shall be indicated by permanent, free-standing markers at the buffer's upland edge, with a design and text approved by District staff in writing. A marker shall be placed at each lot line, with additional markers at an interval of no more than 200 feet. If a District permit is sought for a subdivision, the monumentation requirement will apply to each lot of record to be created. On public land or right-of-way, the monumentation requirement may be satisfied by the use of markers flush to the ground, breakaway markers of durable material, or a vegetation maintenance plan approved by District staff in writing.

4.2.4 Rule 4.0 applies in addition to, and not in place of, any local shoreland ordinance.

4.2.5 Minnesota Department of Agriculture requirements governing herbicide and pesticide application adjacent to water bodies preempt District regulation.

4.3 Zone Widths.

4.3.1 Subject to the special provisions in sub-sections 4.3.2 through 4.3.5, buffer zones are as follows:

(a) Stream/Tributary

(1) Streamside zone 25 feet

(2) Middle zone 50 feet from upland edge of streamside zone

(3) Outer zone from upland edge of middle zone to structure setback line under applicable shoreland ordinance

(b) "Preserve" wetland type 100 feet

(c) "Manage 1" wetland type 75 feet

(d) "Manage 2" wetland type 50 feet

(e) "Manage 3" wetland type 25 feet

(f) Natural environment lake 75 feet

(g) Recreational development lake 50 feet

If a lake or wetland is a groundwater-dependent natural resource, the buffer will be 100 feet. If a stream is a groundwater-dependent natural resource, the streamside zone will be 50 feet, and the middle zone 100 feet.

4.3.2 Where a mapped natural community is associated with a stream, lake or wetland subject to Rule 4.0, the upland edge of the buffer or, for a stream, the middle zone shall be as specified in sub-section 4.3.1 or contiguous with the upland edge of the mapped natural community, whichever is greater.

4.3.3 Where a lake or wetland buffer, or a streamside or middle zone of a stream buffer, encompasses all or part of a steep slope, the zone or buffer shall extend to the distance specified in sub-section 4.3.1 or to the top of the slope, whichever is greater. A contour alteration or artificial structure on a steep slope constitutes a break in slope only if it indefinitely will dissipate upgradient velocity and trap upgradient pollutant loadings.

4.3.4 Where the 100-year floodplain extends further than the upland edge of the middle zone, the lake buffer or the wetland buffer specified in subsection 4.3.1, the zone or buffer shall extend to the upland edge of the floodplain.

4.3.5 Where a lake or wetland of any size is encompassed within or contiguous to a stream to which Rule 4.0 applies, the lake or wetland buffer specified in subsection 4.3.1 shall apply in addition to, and not in place of, the applicable stream buffer.

4.3.6 Buffer width may vary where the applicant can clearly demonstrate the need to vary from the District's rule or when there is a potential to provide benefits to the resources of the District, provided that the average width at least equals the applicable width of subsection 4.3.1, the buffer is at least half of that width at all points, and the buffer provides water resource and habitat protection at least equivalent to that of a uniform buffer of the required width. Buffer area calculation will exclude any part of the buffer exceeding twice the width specified in subsection 4.3.1.

4.4 Limitations in Buffer Zones.

4.4.1 At the time a buffer is created under Rule 4.0, the District may require a planting or landscaping plan to establish adequate native vegetative cover for area that:

- (a) Has vegetation composed more than 30 percent of undesirable plant species (including, but not limited to reed canary grass, common buckthorn, purple loosestrife, leafy spurge, bull thistle, and other noxious weeds); or
- (b) Consists more than 10 percent of bare or disturbed soil or turf grass.

4.4.2 Lake and Wetland Buffers; Streamside Zone of Stream Buffer. The following activities are prohibited within a lake or wetland buffer, and within the streamside zone of a stream buffer:

- (a) Creating impervious cover.
- (b) Excavating fill or placing fill or debris, except for temporary placement of fill or debris pursuant to duly-permitted work in the associated watercourse, in compliance with all conditions of the permit, and in compliance with section 4.6.
- (c) Altering vegetation, except for (i) vegetative enhancements, as approved in writing by staff; and (ii) the removal of invasive exotic species or of trees for disease control or revegetation. A tree larger than six inches in diameter at a point two feet above the ground may be removed only on written authorization from District staff on a determination that the function of the buffer will not be diminished.
- (d) Applying phosphorus-containing fertilizers, except on written authorization from District staff on a determination that phosphorus application is appropriate and will not injure the waterbody.

(e) Locating roads or utilities, except pursuant to a crossing of the associated watercourse in accordance with section 4.7. Structures and appurtenances associated with the road or utility shall not be located within the streamside zone unless no feasible alternative exists. Outlet, flood control and stormwater treatment facilities may be located within the zone if so approved under Rule 2.0, except that a stormwater basin is not permitted:

- (i) within the streamside zone of a stream buffer; or
- (ii) within the buffer of a groundwater-dependent natural resource, unless the basin bottom is at least three feet above the seasonal high water table, bedrock or other impeding layer and the basin and associated facilities are designed and maintained to infiltrate the two-year, 24-hour precipitation event.

4.4.3 Middle Zone of Stream Buffer. The streamside zone prohibitions of subsection 4.4.2 apply in the middle zone of a stream buffer, except that dead trees, limbs or branches may be removed from the buffer for any reason and without District approval.

4.4.4 Outer Zone of Stream Buffer. The following are prohibited in the outer zone of a stream buffer:

- (a) Creating impervious cover.
- (b) Placing fill or excavation, except in accordance with section 4.6 and other applicable law.
- (c) Locating roads or utilities that involve the creation of impervious surface within the outer zone, except pursuant to a crossing of the watercourse and in accordance with section 4.7. Outlet, flood control and stormwater treatment facilities may be located within the zone if so approved under Rule 2.0.

4.5 Shoreline and Bank Stabilization. A measure to stabilize a shoreline or bank otherwise regulated under Rule 5.0 must comply with sub-section 4.6.1 but otherwise is excepted from the prohibitions of section 4.4.

4.6 Temporary Alterations.

4.6.1 Compliance with Rule 3.0 is required, irrespective of the area or volume of earth to be disturbed.

4.6.2 Buffer zones and the location and extent of vegetation disturbance shall be delineated on the erosion control plan.

4.6.3 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.

4.6.4 Fill or excavated material shall not be placed to create an unstable slope.

4.6.5 When construction, land disturbance, fill or excavation activity occurs within the outer zone, the boundary between the outer and middle zones shall be demarcated with siltation or other fencing to prevent disturbance of vegetation within the middle zone. When construction, land disturbance, fill or excavation activity occurs within the middle zone, the boundary between the middle and streamside zones shall be demarcated with siltation or other fencing to prevent disturbance of vegetation within the streamside zone.

4.7 Roads and Utilities.

4.7.1 A structure, impervious cover or right-of-way maintained permanently in conjunction with a crossing of the waterbody or wetland shall minimize the area of permanent vegetative disturbance to the degree feasible. 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.

4.7.2 All work shall be in accordance with section 4.6.

4.8 Exceptions.

4.8.1 An impervious surface, road or utility in existence on [the date of adoption of this rule] (for wetlands and groundwater-dependent natural resources other than public waters) or January 1, 2000 (for other waters), its maintenance, and maintenance of its existing right-of-way are excepted from the operation of Rule 4.0. Any increase in area or reconstruction of a surface, road or utility excepted under this sub-section is subject to the Rule. A public road or a utility may be located within a buffer zone on a finding that avoiding the buffer is infeasible and in accordance with the standards of section 4.7.

4.8.2 Access to a waterbody or wetland for a lawful private or public use of the resource may be created and maintained. All access surfaces within the buffer zone must be pervious and permanent vegetative disturbance shall be limited to that necessary for access in light of the nature and

extent of the permitted use. No facility, other than a footpath or a facility accessory to a permitted use of the waterbody or wetland and required by its nature to be adjacent to the water, may be located within the streamside zone.

4.8.3 The District may grant a variance from any requirement of Rule 4.0 pursuant to Rule 10.0 of these Rules. In determining the appropriateness of a variance, the District shall consider, among other factors, the parcel or lot of record as of the date Rule 4.0 was adopted; the common ownership of the property in question and adjacent property; and the availability of clustering, density compensation, variances and other means under applicable land use law that would allow desired uses to be located on portions of the parcel or lot not within buffer zones. An exception shall be limited to the extent necessary to put the property to a reasonable or economically viable use.

5.0 SHORELINE & STREAMBANK ALTERATIONS

5.1 Policy. It is the policy of the District to:

5.1.1 Limit alteration of a shoreline or streambank under Rule 5.0 to instances where erosion of the shoreline or streambank is occurring or likely to occur.

5.1.2 Assure that improvements or alterations of shoreline and streambank areas comply with accepted engineering principles to prevent erosion; and

5.1.3 Preserve and, wherever feasible, enhance the ecological integrity and natural appearance of shoreline and streambank areas.

5.2 Regulation. No person shall disturb the natural shoreline or streambank partially or wholly below the ordinary high water mark of a waterbody, without first securing a permit from the District and posting a surety. Disturbance of a shoreline or streambank wholly above the ordinary high water mark of a waterbody may require a permit under Rule 7.0. A permit will issue only on a demonstration that erosion is occurring or likely to occur.

5.3 Criteria for Bioengineering. The use of bioengineering is encouraged as an alternative to traditional engineered stabilization techniques for its cost advantage, aesthetic superiority and ecological integrity. Bioengineering techniques should be used to the extent possible under the following criteria.

5.3.1 The resultant project shall be structurally stable. Special emphasis shall be given to the stability of the toe of slope where traditional engineering techniques may be more appropriate.

5.3.2 Native vegetation shall be used in all cases. Preferable species include those that form dense root systems or can be planted from cuttings.

5.3.3 Bioengineering projects shall include a long-term maintenance plan which will ensure that small erosion spots are corrected and native plant materials are successful.

5.4 Criteria for Rip Rap Placement. Rip rap placement shall comply with the following criteria:

5.4.1 Rip rap material should be durable, natural stone common to the setting and of a gradation that will result in a stable shoreline embankment able to withstand ice and wave action.

5.4.2 The finished slope of the rock fragments, boulders and/or cobbles should not be steeper than a ratio of 3 feet horizontal to 1 foot vertical (3:1) under normal conditions. Steeper slopes will generally require larger sized rip rap. The finished slope shall be no steeper than 2:1 (horizontal to vertical). Any rock/boulder stabilization project with a proposed finished

slope steeper than 2:1 (horizontal to vertical) shall be evaluated in accordance with the conditions for retaining walls.

5.4.3 No rip rap or filter materials should be placed more than 5 feet waterward of the shoreline measured from the ordinary high water level (OHW) elevation under normal conditions. The encroachment into the water is the minimum amount necessary to provide protection and does not unduly interfere with the flow of water. The maximum encroachment waterward of the OHW is 10 feet.

5.4.4 A transitional layer consisting of graded gravel, at least 6 inches deep, and an appropriate geotextile filter fabric shall be placed between the soil material of the existing shoreline and the rip rap to prevent erosion of the embankment and to prevent settlement.

5.4.5 Rip rap placement shall not be attempted when underlying soils are not capable of supporting resulting loads. In these cases, a professional engineer registered in Minnesota should be consulted.

5.4.6 The thickness of the rip rap layers shall be at least 1.25 times the maximum stone diameter, exclusive of toe boulders at least 50 percent buried.

5.4.7 The rip rap shall conform with the natural alignment of the shoreline (i.e., maintaining an undulating or meandering shoreline).

5.4.8 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 wave energy dispersion and resistance to deformation from ice pressure and movement, considering prevailing winds and fetch. For a streambank, the design shall conform to engineering principles for the hydraulic behavior of open channel flow, considering channel slope, velocity, tractive forces and upstream and downstream impacts.

5.4.9 Rip rap placement projects shall contain a native vegetation planting element equal to at least five percent of the overall cost of the project.

5.5 Criteria for Retaining Walls.

5.5.1 A shoreline or streambank structure with a finished slope steeper than 2:1 (H:V), including but not limited to a rock, boulder or masonry installation, seawall, sheetpile structure or gabion basket, is subject to this section. A single course of riprap or other permanent material less than 18 inches in height is excepted.

5.5.2 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. The applicant must demonstrate there is no adequate stabilization alternative.

5.5.3 The applicant must file with the District a certificate of survey prepared by a registered land surveyor locating the finished wall.

5.6 Criteria for Laying Sandblankets. All permitted sandblanketing shall comply with the following standards.

5.6.1 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 MDNR, and must contain no weed infestations such as, but not limited to, purple loosestrife, glossy buckthorne, reed canary grass and Eurasian watermilfoil, or animal life infestations such as, but not limited to, zebra mussels or their larva.

5.6.2 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 ten (10) feet waterward of the ordinary high water mark.

5.6.3 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.

5.6.4 Beaches that are operated by governmental entities, and available to the public, shall be exempted from the following restrictions: (i) that sandblankets be no more than 50 feet in width and (ii) that sandblankets be installed no more frequently than once every four years. Permits shall be required for all public beach sandblankets.

5.6.5 A natural zone of native shoreline plants of the same depth and equal to 20 percent of the width of the sandblanket shall be maintained adjacent to the sandblanket.

5.7 Required Exhibits. In addition to the District's standard application form, fees and sureties, the following exhibits shall accompany a permit application (one full-size; one set-reduced to maximum size of 11" x 17"):

5.7.1 A riprap application must include the following:

(a) Site plan showing property lines, delineation of lands under ownership of the applicant; delineation of the existing shoreline; delineation of wetland within the project area; existing contour elevations (if available); and locations and lineal footage of the proposed rip rap treatment;

(b) Cross-section detailing the proposed rip rap, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished rip rap slope, transitional layer design and

placement, distance lakeward of the rip rap placement, ordinary high water level elevation and material specifications;

(c) Description of the underlying soil materials that will support the rip rap and, if the underlying soils will not support the rip rap, the recommendations of a professional engineer registered in the State of Minnesota;

(d) Gradation, average diameter, quality and type of rip rap material to be used (need must be demonstrated for use of rock larger than a Class III gradation, other than for buried toe boulders);

(e) Gradation, quality and type of filter blanket material to be used (normally, Type I gradation is sufficient);

(f) Manufacturer's material specifications for proposed geotextile fabric(s); and

(g) Materials used shall be non-polluting.

(h) Detailed planting plan for native vegetation planting element of the project.

5.7.2 An application for a streambank structure or installation must contain the following:

(a) Site plan prepared by a professional engineer registered in the State of Minnesota showing property lines; the ordinary high water level (OHWL) elevation and 100-year floodplain elevation; and existing streambank and contour elevations up to the 100-year elevation, for at least 50 feet upstream and downstream of the project location or for the reach for which the project will affect flow conditions, whichever greater, or as otherwise required by District staff;

(b) Cross-section of proposed project including slope dimensions (length, width, height) and distance waterward;

(c) Material specifications including plant species and whether species are rooted, seed or cutting;

(d) Design calculations and documentation of structural stability, accounting for physical and flow characteristics of the watercourse, by a professional engineer registered in the State of Minnesota; and

(e) Detail of proposed site-specific erosion and sediment control practices.

5.7.3 A bioengineering application must contain the following:

- (a) Complete set of project plans that details project setting in relation to adjacent water body;
- (b) Information sufficient to demonstrate ability of installation to withstand wind fetch-induced waves and current, including orientation of installation relative to fetch distance and current;
- (c) Planting plan, planting list with species and planting density, and specifications;
- (d) Project timeframe and schedule, including any work contingencies or restrictions due to high water; and
- (e) Inspection and maintenance schedule to ensure project success.

5.7.4 A retaining wall application must contain a structural/geotechnical analysis prepared by a professional engineer, practicing in civil engineering and registered in the State of Minnesota, showing that the design conforms to accepted engineering principles and will withstand expected ice and wave action and earth pressures.

5.7.5 A sandblanket application must contain the following:

- (a) Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, delineation of wetland within the project area, ordinary high water elevation, and regional flood elevation (if available), with all elevations reduced to NGVD (1929 datum);
- (b) Profile, cross-sections and topographic contours (intervals no more than one foot) showing existing and proposed elevations and proposed side slopes in the work area; and
- (c) Planting plan and site plan indicating area to be maintained in native shoreline plants.

5.8 Guidelines. The engineer shall publish or make available to interested persons a typical riprap cross-section for shoreline protection in compliance with this Rule.

5.9 Other Shoreline Improvements. Shoreline improvements not specifically addressed by Rule 5.0 shall comply with accepted engineering principles.

6.0 WATERCOURSE AND BASIN CROSSINGS

6.1 Policy. It is the policy of the District to discourage the use of lake beds and beds of waterbodies for the placement of roads, highways, and utilities.

6.2 Regulation. No person shall use the beds of any waterbody within the District for the placement of roads, highways and utilities without first securing a permit from the District.

6.3 Criteria. Use of the bed shall:

6.3.1 Meet a demonstrated public benefit;

6.3.2 Retain adequate hydraulic capacity;

6.3.3 Retain adequate navigational capacity;

6.3.4 Not adversely affect water quality; and

6.3.5 Represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives.

6.4 Required Exhibits. The following exhibits shall accompany the permit application (one set - full size; one set - reduced to maximum size of 11"x17"):

6.4.1 Construction plans and specifications;

6.4.2 Analysis prepared by a professional engineer or qualified hydrologist showing the effect of the project on hydraulic capacity and water quality; and

6.4.3 An erosion control and restoration plan.

6.5 Maintenance. A declaration or other recordable instrument stating terms for maintenance of hydraulic and navigational capacity and approved by the District shall be recorded in the office of the county recorder or registrar before permit issuance. In place of recordation, a public permittee or a permittee without a property interest sufficient for recordation may assume the maintenance obligation by means of a written agreement with the District. The agreement shall state that if the ownership of the structure is transferred, the owner shall require the transferee to comply with this subsection.

7.0 FLOODPLAIN AND DRAINAGE ALTERATIONS.

7.1 Policy. It is the policy of the District to:

7.1.1 Promote the reasonable use of water resources, such that a landowner may dispose of surface water only in a manner that does not unreasonably burden downstream landowners;

7.1.2 Preserve existing water storage capacity in the hundred-year floodplain of all waterbodies and wetlands in the watershed to minimize the frequency and severity of high water;

7.1.3 Promote rational land development and protect property investments by limiting development within and adjacent to the 100 year floodplain; and

7.1.4 Preserve the natural hydrology of landlocked basins to minimize flooding risks to structures and ecological impacts within or downgradient of those basins.

7.2 Regulation. No person shall alter or fill land below the 100-year flood elevation of any waterbody, wetland, or stormwater management basin, or place fill in a landlocked basin, without first obtaining a permit from the District. No person shall alter stormwater flows at a property boundary by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet, without first obtaining a permit from the District.

7.3 Criteria for Floodplain or Drainage Alterations.

7.3.1 Floodplain filling must be accompanied by a replacement of flood volume between the ordinary water level and the 100 year flood elevation. The floodplain mitigation area shall be calculated by a professional engineer registered in the State of Minnesota or by a qualified hydrologist.

7.3.2 The construction of a stormwater basin or open stormwater conveyance, and of any residential, commercial, industrial or institutional building, shall maintain:

(a) A separation of at least two feet between the lowest basement floor elevation and the 100 year high water elevation; or

(b) A separation of at least one foot between the lowest basement floor elevation and an emergency overflow.

7.3.3 Within a landlocked basin, the separation cited in paragraph 7.3.2(a), above, shall be at least three feet, unless the building is at least one foot above the natural, operating basin overflow.

7.3.4 The separation required by paragraphs 7.3.2 and 7.3.3 may be measured to the lowest grade elevation in contact with the structure rather than the lowest basement floor elevation if the following criteria are met:

(a) Geologic mapping and all available data sources indicate the adjacent waterbody is not a surface expression of a regional water table but is a perched groundwater system;

(b) The basement floor elevation will be four (4) feet above the currently observed ground water elevations in the area as demonstrated by two borings or observation wells located between each structure and the waterbody or basin; and

(c) The basement floor elevation will be two (2) feet above the elevation of any known historic high groundwater elevation for the area.

7.3.5 The District will issue a permit to alter surface flows under paragraph 7.2, above, only on a finding that the alteration will not have an unreasonable impact on an upstream or downstream landowner and will not adversely affect flood risk, basin or channel stability, groundwater hydrology, stream baseflow, water quality or aquatic or riparian habitat.

8.0 FEES

8.1 Policy Findings. The Board of Managers finds that:

8.1.1 public awareness of and compliance with the permitting process will be served by a policy of not charging a permit application fee. By encouraging applicants to seek permits for potential projects, the public benefits by reduced inspection and enforcement costs;

8.1.2 it is in the public interest that certain projects, involving larger scale development or development in sensitive locations, be inspected and analyzed by District staff to provide the Board of Managers sufficient information to evaluate compliance with District Rules and applicable law. The District's annual tax levy should not be used to pay such costs for these development projects; and

8.1.3 from time to time persons perform work requiring a permit from the District without a permit, and persons perform work in violation of an issued District permit. The costs of engineering inspection and analysis in such cases exceeds those costs where the applicant has complied with District requirements. The District's annual tax levy should not be used to pay such costs which are incurred because of a failure to meet District requirements.

8.2. Site Inspections. A site inspection by District staff shall be performed in the following cases:

8.2.1 commercial, industrial, or multi-family residential developments;

8.2.2 single family residential developments greater than five (5) acres;

8.2.3 any alterations of a floodplain;

8.2.4 where any person performs any work for which a permit is required under these Rules without having first obtained a permit from the District, or, performs any work in violation of any terms or conditions of a permit issued by the District under these Rules; or

8.2.5 any project which, due to its location, scope, or construction techniques, requires inspection in order to determine compliance with District Rules and applicable law.

8.3 Calculation of Fees. In all cases described in section 8.2, the applicant, or person responsible for the violation, shall pay to the District a fee equal to the District's actual costs of field inspection of the work, including investigation of the area affected by the work, analysis of the work, services of a consultant, including engineering and legal consultants, and any subsequent monitoring of the work, which in the case of a violation are incurred after notice of violation from the District. Inspection fees shall be at least \$35.

8.4. Violation Procedures and Payment of Fees.

8.4.1 The District shall notify any person performing work described in sub-section 8.2.4 of this Rule of the violation. If a permit has not been issued for the work, the person performing the work shall promptly apply for a permit. If a permit has previously been issued, the Board shall rescind the permit if it finds violations of permit terms.

8.4.2 On receipt of a permit application, exhibits and completion of any necessary inspection and analysis showing that the work to be performed is in accordance with District requirements, the Board may issue a permit. On permit approval, the Board shall notify the permit applicant of the fee due. The fee shall be paid to the District within thirty (30) days from the date of permit approval and shall be received by the District prior to actual issuance of the permit.

8.4.3 In cases where the permit approved by the Board requires further monitoring of the project by District staff or consultants, the District shall notify the applicant of the monitoring fee due. The fee shall be paid to the District within thirty (30) days from the date of notice and failure to pay the fee shall constitute a violation of the permit terms and the Board may rescind the permit.

8.5 Recovery of Fee. The fee provided for in this Rule may be recovered by the District by any legal action authorized by law.

8.6 Governmental Agencies Exempt. The fee provided for in this Rule shall not be charged to any agency of the United States or any governmental unit in the State of Minnesota.

9.0 SURETIES

9.1 Policy. It is the policy of the District to protect and conserve the water resources of the District by assuring compliance with the District's Rules in the performance of activities within the District, and to assure compliance where necessary by requiring a bond or other surety with a permit application that is conditioned on adequate performance of the authorized activities and compliance with District Rules.

9.2 Form and Conditions of a Performance Bond or Letter of Credit.

9.2.1 The District may require a performance bond, letter of credit or other surety in a form approved by the District for an activity regulated under these Rules. A commercial surety shall be from [a surety] an issuer licensed and doing business in Minnesota. The surety shall be submitted by the permit applicant but the surety principal may be either the landowner or the individual or entity undertaking the proposed activity.

9.2.2 The surety shall be in favor of the District and conditioned on the applicant's performance of the activities authorized in the permit in compliance with all applicable laws, including the District's Rules, the terms and conditions of the permit and payment when due of any fees or other charges authorized by law, including the District's Rules. The surety shall state that in the event the conditions of the surety are not met, the District may make a claim against it.

9.2.3 The surety must be valid and in force for at least a one-year period and shall contain a provision that it may not be canceled or released except pursuant to the terms of section 9.4 of these Rules.

9.3 Surety Amount.

The amount of the surety shall be set by the Board of Managers by resolution as the amount the Board deems necessary to cover the following potential liabilities to the District:

- (a) Application, field inspection, monitoring and related fees authorized under Minn. Stat. § 103D.345;
- (b) The cost of maintaining and implementing protective measures set forth in or incorporated into the permit; and

- (c) The cost of remedying damage resulting from permit noncompliance or for which the permittee otherwise is responsible.

9.4 Release of a Surety. On written notification of completion of a project, the District will inspect the project to determine if the project is constructed in accordance with the terms of the permit and District Rules. If the project is completed in accordance with the terms of the permit and District Rules and there is no-outstanding balance for unpaid inspection fees, the District will release the performance bond or letter of credit. If the District has not inspected the project and made a determination about the project's compliance with the above criteria within 45 days of District receipt of written notification of project completion, the surety is deemed released. In this event, the District will provide a writing releasing the surety if needed to meet the issuer's requirements.

10.0 VARIANCES

10.1 Variances Authorized. The Board of Managers may hear requests for variances from the literal provisions of these Rules in instances where their strict enforcement would cause undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be keeping with the spirit and intent of these Rules. A variance shall contain conditions to prevent or mitigate adverse impacts from the activity.

10.2 Standard. In order to grant a variance, the Board of Managers shall determine that the special conditions that apply to the structure or land in question do not apply generally to other land or structures in the District, that the granting of the variance will not merely serve as a convenience to the applicant, and that the variance will not impair or be contrary to the intent of these Rules. A hardship cannot be created by the landowner, the landowner's agent or representative, or a contractor, and must be unique to the property. Economic hardship alone is not grounds for issuing a variance.

10.3 Term. A variance shall become void after one year after it is granted if not used.

10.4 Violation. A violation of any condition set forth in a variance shall be a violation of the District Rules and shall automatically terminate the variance.

11.0 ENFORCEMENT

11.1 Violation of Rules a Misdemeanor. Violation of these Rules, a stipulation agreement made, an order or a permit issued by the Board of Managers pursuant to these Rules is a misdemeanor.

11.2 District Court Action. The Board of Managers may exercise all powers conferred upon it by Minnesota Statutes Chapter 103D in enforcing these Rules, including criminal prosecution, injunction, action to compel performance, restoration, abatement, or other appropriate action.

11.3 Administrative Order. The District may issue a cease and desist order when it finds that a proposed or initiated project presents a serious threat of flooding, soil erosion, sedimentation, or adverse effect on water quality or otherwise violates any Rule of the District.