

APPENDIX E:

BROWN'S CREEK WATERSHED DISTRICT RULES

Adopted January 10, 2018
Effective February 1, 2018, except
Rule 2.0 – Stormwater Management Rule amendments
adopted March 11, 2020, effective April 1, 2020

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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 erosion and sedimentation caused by construction and impacts from stormwater runoff on receiving waters and/or groundwater.

“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.

“Emergency Overflow” means a high-capacity weir, spillway, or natural overflow placed at or above the 100-year storage elevation waterbody or constructed pond. It must not be prone to clogging and stabilized such that flow of water does not cause erosion at the waterbody, pond, or downstream.

“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 water resource-protection benefit expected 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 or potential pollution-generating land use, such as a gas station or chemical-storage facility.

“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. Impervious surfaces include, but are not limited to: roofs, parking lots, roads, paved or gravel driveways, sidewalks, pools.

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

“Land-altering activity” means any disturbance of the ground surface or vegetation that could result, through the action of wind and/or water, in soil erosion, substantial compaction or the movement of sediment into waters, wetlands or storm sewers or onto adjacent property. Land-altering activity includes but is not limited to soil stripping, clearing, grubbing, grading, excavating, filling and the storage of soil or earth materials. Routine farming operations (e.g., plowing, harvesting) are not land-altering activities for purposes of the rules.

“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, using the 2000 Washington County Topographic Survey for the pre-event elevation.

“Linear Project” means a roadway, sidewalk, trail, rail line or utility within right-of-way that is not a component of a larger development or redevelopment project.

“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	High
AND Wildlife Habitat	Medium

Stormwater Sensitivity	High
AND Vegetative Diversity	Medium
Vegetative Diversity	Medium
AND Maintenance of Hydrologic Regime	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.

“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 section 103G.005, subdivision 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 Minnesota Statutes section 103G.005, subdivision 15; a lake designated as a public water pursuant to Minnesota Statutes section 103G.005, subdivision 15; or a wetland.

“Reconstruction” means alteration of existing surfaces in manner or to extent that exposes underlying soils. The following do not constitute “reconstruction” for purposes of these rules: impervious surface mill, reclamation or overlay; paving of an existing rural section gravel road; catch basin or pipe repair/replacement that maintains existing hydraulic capacity.

“Redevelopment” means any land-altering activities on an already developed site or any substantial change to existing structures on a parcel or alteration of existing surfaces that exposes underlying soils.

“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.

“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, except that the District engineer may find, based on assessment of site-specific conditions and the capacity of the resulting buffer (under Rule 4.0) to protect water resources and provide habitat, that an existing contour change or changes constitute a break in a steep slope.

“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.

(All references to state statutory and regulatory provisions are to the current adopted and effective text.)

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 must 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 must be submitted using forms provided by the District. Forms are available from the District office and on the District website at www.bcwd.org. Permit applications must be delivered to:

Brown's Creek Watershed District

455 Hayward Ave N

Oakdale MN 55128

or

bcwdpermits@mnwcd.org

1.3 Conformity with Local Requirements. The District will review applications for permits involving land-altering activity. 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) approval process, if applicable. The requirement of preliminary approval means:

- (a) Preliminary plat approval if required for the development; or
- (b) 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.

1.4 Notification Process. District staff will send notice of applications, transfers or renewals to the property owners within at least 600 feet of the project for the applicant at the applicant's expense. A copy of the list will be retained with the application at the District office.

- (a) Notification is required only for an application to be submitted to the Board of Managers for approval.

1.5 Time for Submittal. A complete permit application which includes all required exhibits must 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.

1.6 Permit Renewals and Transfers. Unless specified otherwise by action of the board of managers, a permit is valid for one year 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 BCWD 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 section 1.4 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.

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;

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; and

2.1.6 Create regulatory consistency to the greatest extent possible with neighboring watershed organizations and cities within the Brown's Creek watershed.

2.2 Applicability. Subject to the exceptions in subsection 2.8, the requirements of this rule apply to:

(a) Subdivision of four or more lots;

(b) Development or redevelopment creating impervious surface that, aggregated with existing impervious surface on the site, equals 10,000 square feet or more or creating impervious surface that, aggregated with existing impervious surface on the site, equals 6,000 square feet or more on a site within the surface water contributing area of a groundwater-dependent natural resource. For redevelopment:

(i) If the proposed activity will disturb more than 50 percent of existing impervious surface, the applicable criteria of subsection 2.4 will apply to all impervious surface and disturbed areas on the project site.

(ii) If the proposed activity will disturb less than 50 percent of existing impervious surface, the criteria will apply only to reconstructed and net additional impervious surface, and all disturbed areas on the project site.

(c) Linear projects that create one or more acres of new and/or reconstructed impervious surfaces or that create 6,000 square feet or more of new and/or reconstructed impervious surface within the surface water contributing area of a groundwater-dependent natural resource.

2.3 Regulation. Before any activity subject to this rule commences, a stormwater management plan must be submitted to the District. The plan must conform to the requirements of this rule, and a permit must be secured from the District.

2.4 Standards.

2.4.1 Management Standards – Subdivision, Development, Redevelopment.

(a) Outside the Diversion Structure Subwatershed, an applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not:

(i) 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. (ii) Increase stormwater flow volume from all points where discharge leaves 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. (iii) At the downgradient property boundary or to an onsite receiving waterbody or wetland, increase annual phosphorus loading as compared with the pre-development condition. (iv) 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 2.1.

(b) Within the Diversion Structure Subwatershed shown in Appendix 2.2,¹ which is incorporated into this rule as a term hereof, an applicant must submit a stormwater-management plan providing:

(i) No increase in the existing peak stormwater flow rates from the site for a 24-hour precipitation event with a return frequency of two, 10 or 100 years for all points where discharges leave a site.

(ii) Retention onsite of 1.1 inches of stormwater volume from the regulated impervious surface, except where section 2.4.3 – Flexible Treatment Options applies.

¹ There is a small portion of the City of Grant that drains to the Diversion Structure but is not included within the Diversion Structure subwatershed for purposes of the BCWD rules, except that state-owned right-of-way (Trunk Highway 36) within Grant that drains to the subwatershed is included. The map in Appendix 2.2 shows subwatershed within Stillwater and Oak Park Heights this is subject to the Diversion Structure subwatershed standards.

(iii) No increase in 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 limits specified in Appendix 2.1.

2.4.2 Management Standards – Linear Projects

(a) Outside the Diversion Structure Subwatershed an applicant must provide a stormwater-management plan meeting the criteria in 2.4.1(a)(i), (iii) and (iv), and provide retention of larger of the following:

- (i) 100 percent of the required volume per 2.4.1(a)(ii) from the net additional impervious surface; or
- (ii) 50 percent of the required volume per 2.4.1(a)(ii) from all new and reconstructed impervious surfaces.

Notwithstanding, where the applicant can demonstrate that greater than 50 percent of the soil area within the linear project site is categorized as Hydrologic Soil Group D, the stormwater-management plan must provide retention in accordance with 2.4.2(a)(i).

(b) Within the Diversion Structure Subwatershed an applicant must provide a stormwater-management plan meeting the criteria in 2.4.1(b)(i) and (iii), and provide retention of larger of the following, except where section 2.4.3 – Flexible Treatment Options applies:

- (i) 1.1 inches of stormwater volume from the net new impervious surface created; or
- (ii) 0.55 inches of stormwater volume from the new and fully reconstructed impervious surfaces.

2.4.3 Flexible Treatment Options Within the Diversion Structure Subwatershed. Where an applicant demonstrates that retention of stormwater volume onsite is not reasonably feasible because of soil conditions or other inherent site conditions and/or is reasonably likely to cause or exacerbate migration of underground contaminants or create risk to drinking water, the applicant must provide rate and bounce control, and management of volume and water quality from the regulated impervious surface in accordance with the following priority sequence:

- (a) Retention onsite of 0.55 inches of runoff and removal of 75 percent of the annual total phosphorus loading;
- (b) Retention onsite of stormwater volume to the maximum extent practicable and removal of 60 percent of the annual total phosphorus loading.

A determination that compliance with the applicable stormwater-retention standard is not reasonably feasible requires a demonstration of an assessment by the applicant of the viability of relocation of project elements to address varying soil conditions.

2.4.4 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.

2.5 Management.

2.5.1 Calculating Off-Site Stormwater Flow. To calculate runoff 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 must be used to calculate runoff flows.

An area of the site to be disturbed during construction will 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.

2.5.2 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 must be installed to facilitate cleanup.

2.5.3 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 determined infeasible, 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.

2.5.4 Conformance to Floodplain and Drainage Alteration Requirements. Land-altering activities subject to this rule must comply with lowest-floor elevation requirements in subsection 7.3.2 of these rules.

2.6 Maintenance. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. Permit applicants must provide a maintenance, inspection and, if required, monitoring plan that identifies and protects the design, capacity and functionality of onsite and offsite stormwater management facilities; provides specifications, methods and a schedule for the inspection and maintenance in perpetuity of the facility, with documentation retained onsite and available to the District on reasonable notice; and contains at a minimum the requirements in the District's standard maintenance declaration. The maintenance plan will be recorded on the deed in a form acceptable to the District. A public applicant may comply with this requirement by entering an agreement with the District in lieu of a recorded document.

2.7 Required Exhibits. The following items, certified by a professional engineer licensed in the State of Minnesota, licensed land surveyor, or other appropriate professional, may be required to support a permit application submitted to the District pursuant to Rule 2.0:

2.7.1 BMP Design and Construction Standards. Stormwater management BMPs must be designed and constructed in accordance with the most recently amended editions of the following:

- (a) Minnesota Pollution Control Agency, Stormwater Manual.
- (b) Minnesota Pollution Control Agency, Protecting Water Quality in Urban Areas Manual
- (c) Minnesota Department of Transportation, Erosion Control Handbook II.

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

2.7.3 For existing and proposed conditions, topography showing all on- and off-site subwatersheds contributing to surface flows onto or from the site;

- 2.7.4 The location, alignment and elevation of proposed and existing stormwater facilities;
- 2.7.5 Delineation of existing on-site wetland, shoreland, drain tiling and floodplain areas as defined in the 2010 FEMA study;
- 2.7.6 Existing and proposed normal and 100-year water elevations on site;
- 2.7.7 Existing and proposed site contour elevations at two-foot intervals, related to NAVD88 (geoid09) vertical datum.
- 2.7.8 Elevation of the OHWL of each public water on the site, if determined by the Minnesota Department of Natural Resources;
- 2.7.9 Construction plans, specifications and a maintenance schedule for all proposed facilities;
- 2.7.10 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 2.3 to simulate infiltration losses in designed practices OR stormwater runoff rate analysis for the two-, 10-, and 100-year critical events under existing and proposed conditions and runoff volume for 1.1-inch generated from impervious surfaces;
- 2.7.11 Water-quality analysis for the average annual year.
- 2.7.12 Logs of soil borings, pits and grain size analysis within the proposed boundary of the BMP(s) designed to infiltrate stormwater, showing data in accordance with the table in Appendix 2.4;
- 2.7.13 Soil-type analysis for purposes of demonstration of predominantly Hydrologic Soil Group D soils, where applicable.
- 2.7.14 Delineation of any flowage and drainage easements and other property interests dedicated to stormwater management purposes.
- 2.7.15 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;
- 2.7.16 Thermal impact analysis demonstrating compliance with paragraph 2.5.3, if applicable.

2.7.17 Additional required exhibits for proposed stormwater reuse systems:

(a) Completed analysis using Metropolitan Council Stormwater Reuse Guide 'Water Balance Tool Irrigation Constant Demand' spreadsheet for irrigation practices or 'Water Balance Tool Non-Irrigation Constant Demand' Spreadsheet for nonirrigation practices. The tools are available for download at:

<http://www.metrocouncil.org/Wastewater-Water/Planning/Water-Supply-Planning/Stormwater-Reuse-Guide-Tools-zipped-file.aspx>

(b) Documentation demonstrating suitability of soils, storage system and delivery system;

(c) Operations and maintenance plan; and

(d) Performance monitoring plan.

2.8 Exceptions. No permit under this rule is required for:

2.8.1 Single-Family Home Sites. Construction or reconstruction on a single-family home site consistent with a subdivision, development or redevelopment plan and stormwater management implemented in accordance with a District permit issued after February 1, 2018.

2.8.2 Land-disturbing activities that do not involve creation of new impervious surface or reconstruction of existing impervious surface.

2.9 Regional Treatment. An applicant may comply with applicable BCWD stormwater rate-control, volume-retention and water-quality standards by providing equal or greater peak rate control, volume control and phosphorus control through a regional or subwatershed plan approved by the District. A regional plan must provide for an annual accounting to the District of treatment capacity created and utilized by projects or land-altering activities within the drainage and treatment area to which the plan pertains. District approval of a regional or subwatershed plan will be based on a determination that:

(a) the use of a regional facility in place of onsite stormwater management will not result in adverse impacts to local groundwater or natural resources located upstream of the regional facility, including, but not limited to, reduced water quality, altered wetland hydrology, changes to stream velocities or base flow, erosion, or reduced groundwater recharge; and

(b) the plan incorporates onsite BMPs to mitigate impacts and provide local benefits not provided by the regional facility.

The applicant, before commencing any land-altering activity, must demonstrate that downgradient stormwater conveyance structures and facilities will be adequate to handle proposed increased peak flow or flow volume from the site, it holds the legal rights necessary to discharge to the stormwater facility or facilities in the regional plan,

and that the facility or facilities are subject to a maintenance document satisfying the requirements of paragraph 2.6.

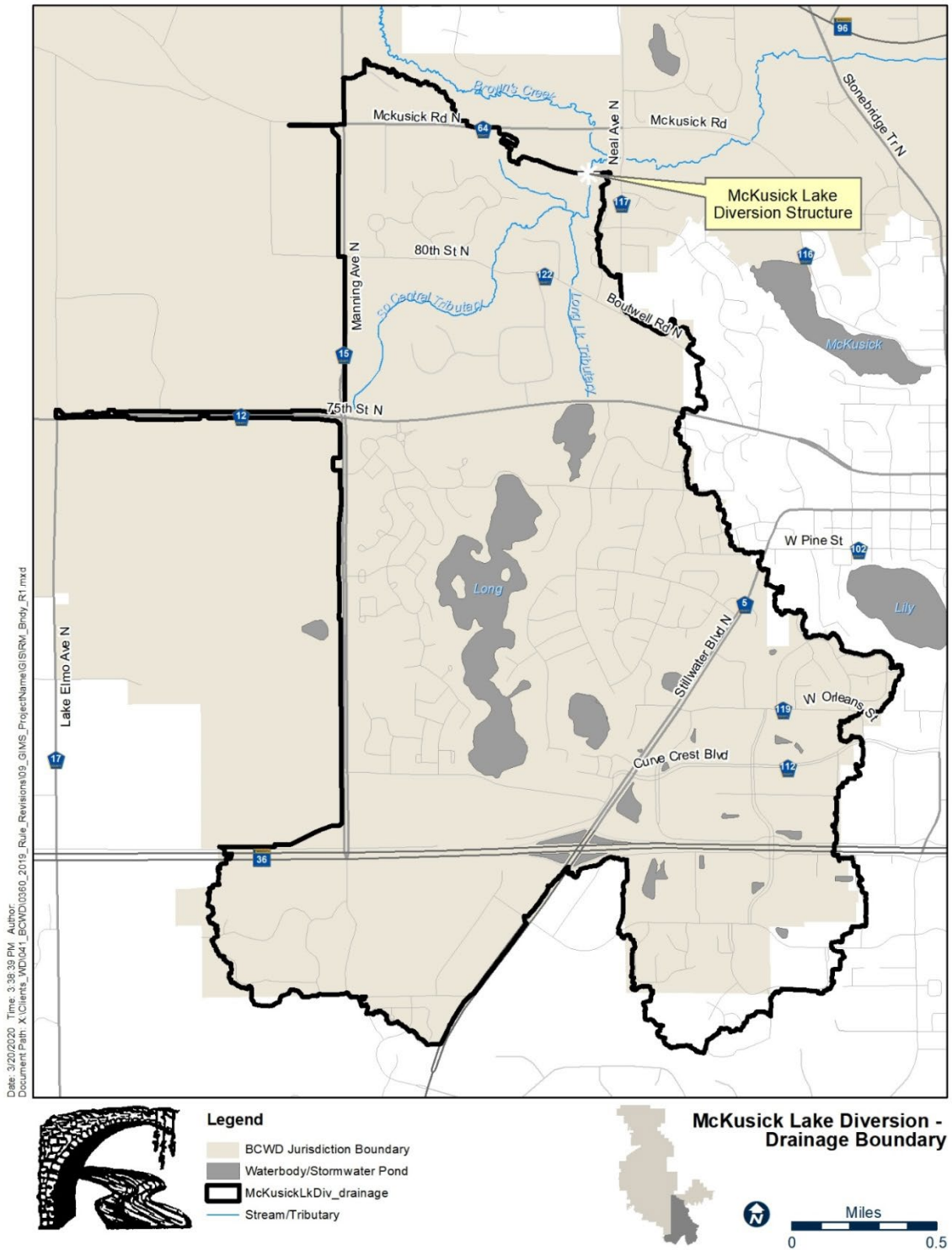
2.10 Groundwater-Dependent Natural Resource Management Plans. If the District has prepared a management plan for a groundwater-dependent natural resource and incorporated management standards in that plan into its rules through a formal rulemaking process, any land-altering activity within the surface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

APPENDICES

APPENDIX 2.1 **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 2.2 Diversion Structure Subwatershed



APPENDIX 2.3 Design Infiltration Rates

HSG	USCS Major Divisions				Letter Symbol	Group Name	USDA Textural Classification	Design Rate (in/hr)		
A	Gravel and Gravelly Soils. <i>More than 50% retained on No. 4 sieve</i>	Gravel with <5% fines	Well graded		GW	Well graded gravel		1.63		
			Poorly graded		GP	Poorly graded gravel				
		Gravel with between 5% and 12% fines	Well graded	Silty	GW-GM	Well graded gravel with silt				
			Well graded	Clayey	GW-GC	Well graded gravel with clay				
			Poorly graded	Silty	GP-GM	Poorly graded gravel with silt				
			Poorly graded	Clayey	GP-GC	Poorly graded gravel with clay				
		Gravel with >12% fines		Silty	GM	Silty gravel				
				Clayey	GC	Clayey gravel				
				Both	GC-GM	Silty, clayey gravel				
A	Sand and Sandy Soils. <i>More than 50% passing No. 4 sieve and less than 50% passing No. 200 sieve</i>	Sand with <5% fines	Well graded		SW	Well graded sand	Sand	1.63		
			Poorly graded		SP	Poorly graded sand	Sand	0.8		
		Sand with between 5% and 12% fines	Well graded	<5% Clay	SW-SM	Well graded sand with silt	Sand-loamy sand	0.8		
			Well graded	>5% Clay	SW-SC	Well graded sand with clay	Loamy sand	0.8		
			Poorly graded	<5% Clay	SP-SM	Poorly graded sand with silt	Sand	0.8		
			Poorly graded	>5% Clay	SP-SC	Poorly graded sand with clay	Loamy sand	0.8		
		B	Sand with >12% fines		<5% Clay	SM	Silty sand	Sandy loam	0.45	
					5-7% Clay	SC-SM	Silty, clayey sand	Sandy loam	0.45	
					>7% Clay	SC	Clayey sand	Sandy loam - loam	0.06	
		C	Fine Grained Soils.	Liquid Limit <50	Inorganic	<5% Clay	ML	Silt		0.2
D	<i>More than 50% passing No. 200 sieve</i>					5-7% Clay	CL-ML	Silty clay		0.06
						>7% Clay	CL	Lean clay		0.06
	B	Organic			OL	Organic soils		0.06		
D	Liquid Limit >50	Inorganic	<5% Clay	MH	Elastic silt		0.3			
			>5% Clay	CH	Fat clay		0.06			
		Organic		OH	Organic soils		0.06			

Note: If soils highlighted in grey are encountered on the site, perform hydrometer analysis.

APPENDIX 2.4 Required number of soil borings, pits or permeameter tests for BMP design

Surface area of stormwater control measure (BMP)(ft ²)	Borings	Pits	Permeameter tests
< 1,000	1	1	5
1,000 to 5,000	2	2	10
5,000 to 10,000	3	3	15
>10,000	4 ¹	4 ¹	20 ²

¹ an additional soil boring or pit should be completed for each additional 2,300 ft² above 12,500 ft²

² an additional five permeameter tests should be completed for each additional 5,000 ft² above 15,000 ft²

Source: Minnesota Stormwater Manual

3.0 EROSION CONTROL

3.1 Policy. It is the policy of the Board of Managers to require erosion control for land-altering 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-altering 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 must 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 must be consistent with the specifications of the Minnesota Stormwater Manual (published by the MPCA) and its current revisions, and specifically must 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) Temporary sediment basins
- (g) Protecting adjacent properties from erosion
- (h) Storm sewer inlet protection
- (i) Riprap at culvert outfalls
- (j) Rock construction entrances
- (k) BMP design and construction details
- (l) Horizontal slope grading
- (m) 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.

3.2.4 Temporary sediment basins must provide live storage for construction phase calculated volume of runoff from a two-year, 24-hour storm from each acre drained to the basin, except that in no case may the basin provide less than 1,800 cubic feet of live storage from each acre drained to the basin. Basin dewatering must 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.

3.3 Site Maintenance Practices

3.3.1 All erosion and sediment control measures must be installed, and the District must be given written notice three business days before land-altering activity commences.

3.3.2 The permittee is responsible at all times for the maintenance and proper operation of all erosion and sediment control measures. On any property on which land-altering activity has occurred pursuant to a permit issued under this rule, the permittee must 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-altering activity has ceased. Thereafter, the permittee must perform these responsibilities at least weekly until vegetative cover is established.

3.3.3 All disturbed areas must be stabilized with erosion control measures, or temporary or permanent cover within seven calendar days after land-altering activity has temporarily or permanently ceased on a property that drains to an impaired water, within 14 days elsewhere.

3.3.4 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 24 hours of connecting to a surface water or property edge.

If an area is not permanently stabilized, it must be managed in accordance with paragraphs 3.3.3 and 3.3.4 above, or 3.3.5 below.

3.3.5 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.

3.3.6 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.

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

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

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 Minnesota Statutes section 103G.005, subdivision 15; a lake, as defined in these rules; a wetland one acre or larger; or a groundwater-dependent natural resource; and
- (b) that has been either (i) subdivided or (ii) subject to a new primary use for which a necessary rezoning, conditional use permit, special-use permit or variance has been approved on or after April 9, 2007, (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 subject to a District permit, or placement of any structure on the ground, a declaration or other instrument incorporating the applicable buffer-maintenance requirements pursuant to Rule 4.0 must be recorded in the office of the county registrar or recorder. On public land or right-of-way, buffer areas and maintenance requirements may be documented in a written agreement with the District in lieu of a recorded document.

4.2.3 A buffer must 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 must 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 subsections 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) Lake 75 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 must be as specified in subsection 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 must extend to the distance specified in subsection 4.3.1 or to the top of the steep slope, whichever is greater. An existing 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 must extend to the upland edge of the floodplain.

4.3.5 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. Where required buffer width is set by operation of paragraph 4.3.2, 4.3.3 and/or 4.3.4, buffer width may not be averaged.

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 must 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 subsection 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 must 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 may not be placed to create an unstable slope.

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

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

4.7 Roads and Utilities.

4.7.1 Construction of a structure, impervious cover or right-of-way maintained permanently in conjunction with a crossing of the waterbody or wetland must minimize associated permanent vegetative disturbance. Minimization includes, but is not limited to, approach roads and rights-of-way that are perpendicular to the crossing and of a minimum width consistent with use and maintenance access needs.

4.7.2 All work must be in accordance with section 4.6.

4.8 Exceptions.

4.8.1 An impervious surface, road or utility in existence on April 9, 2007, (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 subsection 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 must 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 may 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. Grant of a variance will be limited to the extent necessary to put the property to a reasonable or economically viable use, and may be conditioned to actions or terms deemed necessary by the Board of Managers to ensure performance of the buffer to protect water resources.

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 may 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. Bioengineering techniques must be used to the extent possible under the following criteria.

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

5.3.2 Native vegetation must 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 must include a long-term maintenance plan that will ensure that small erosion spots are corrected and native plant materials are successful.

5.4 Criteria for Riprap Placement. Riprap placement must comply with the following criteria:

5.4.1 Riprap 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 must be no steeper than 3:1 (horizontal to vertical). Any rock/boulder stabilization project with a proposed finished slope steeper than 3:1 (horizontal to vertical) will be evaluated in accordance with the conditions for retaining walls.

5.4.3 No riprap or filter materials may be placed more than 10 feet waterward of the shoreline measured from the ordinary high water level (OHWL) 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.

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

5.4.5 Riprap placement may 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 riprap layers must be at least 1.25 times the maximum stone diameter, exclusive of toe boulders at least 50 percent buried.

5.4.7 The riprap must 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 must 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 Riprap-placement projects must contain a native vegetation planting.

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 must 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 buckthorn, 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, will 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 will 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 must 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 must 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 riprap treatment;

(b) Cross-section detailing the proposed riprap, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished riprap slope, transitional layer design and placement, distance lakeward of the riprap placement, ordinary high water level elevation and material specifications;

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

- (d) Gradation, average diameter, quality and type of riprap 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 must 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 will 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 must comply with accepted engineering principles.

6.0 WATERCOURSE & 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 may 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 must:

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 must 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 must 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 must state that if the ownership of the structure is transferred, the owner must 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 may 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 may 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 must be calculated by a professional engineer registered in the State of Minnesota or by a qualified hydrologist.

7.3.2 All new and reconstructed buildings must be constructed such that the lowest floor is:

- (a) At least two feet above the 100-year high water elevation or one foot above the natural overflow of a waterbody;
- (b) At least two feet above the 100-year high water elevation of any open stormwater conveyance; and
- (c) At least two feet above the 100-year high water elevation or one foot above the emergency overflow of a constructed basin.

In addition, no stormwater management facility may be constructed at an elevation that brings an adjacent permanent building into noncompliance with a standard in this subsection 7.3.2.

7.3.3 Within a landlocked basin, the separation cited in paragraph 7.3.2(a), above, must 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 will 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, must 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 will be at least \$35.

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

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

9.0 FINANACIAL ASSURANCES

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 financial assurance to secure performance of the authorized activities and compliance with District rules.

9.2 Form and Conditions of a Financial Assurance.

9.2.1 The District may require a performance bond, letter of credit, escrowed funds or other financial assurance in a form approved by the District for an activity regulated under these rules. A commercial financial assurance must be issued by an entity licensed and authorized to do business in Minnesota. The financial assurance must be submitted by the permit applicant but the principal may be either the landowner or the individual or entity undertaking the proposed activity.

9.2.2 The financial assurance must be issued 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 financial assurance must state that in the event the conditions of the financial assurance are not met, the District may make a claim against it. In the event the District makes a claim against a financial assurance, the District may require that the full or partial amount of the financial assurance be restored within 45 days.

9.2.3 The financial assurance must be valid and in force for at least a one-year period and must contain a provision that it may not be canceled without at least 30 days' written notice to the District.

9.2.4 When escrowed funds will be provided to fulfill a District financial assurance requirement, the applicant/escrow provider will be required as a condition of permit issuance, transfer or renewal to enter into an escrow agreement with the District. Permit approval may be revoked for failure to comply with this requirement. A cash escrow agreement template will be maintained on the District website (<http://www.bcwd.org>) and also will be available from the District office.

9.2.5 The Board of Managers will establish by resolution a schedule of financial assurance rates, which will set rates 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.

9.3 Release of a Surety. On written notification of completion, 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 financial assurance. 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 financial assurance is deemed released unless the District notifies the permittee that compliance matters remain outstanding. In the event a financial assurance is released through expiration of time for confirmation of final inspection compliance, 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. Variance approval may be conditioned on an applicant's preventing or mitigating adverse impacts from the activity.

10.2 Standard. In order to grant a variance, the Board of Managers must 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 will 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 will be a violation of the District rules and will constitute grounds for termination of the variance.

11.0 ENFORCEMENT

11.1 Investigation of noncompliance. District staff and agents may enter and inspect a property in the watershed to determine whether a violation of one or more District rules, a permit or an order exists or whether land-altering activities have been undertaken in violation of District regulatory requirements.

11.2 Administrative compliance order. On finding a probable violation and failure of the property owner to apply or permittee to take necessary corrective actions, the District may immediately issue a compliance order. A District compliance order may require a property owner to apply for an after-the-fact permit and/or effect corrective or restorative actions. A District compliance order may require that land-altering activities on the property cease.

11.2.1 The Board of Managers may delegate the authority to issue compliance orders to the District administrator.

11.3 Board hearing; administrative compliance order. A property owner or permittee will be provided with reasonable notice of a compliance hearing and an opportunity to be heard by the Board of Managers on a finding of probable violation and failure of the property owner to apply for a permit or a permittee to take necessary corrective actions. At the conclusion of the hearing, the District may issue a compliance order. A District compliance order may require a property owner to apply for a permit after the fact and/or effect corrective or restorative actions. A District compliance order may require that land-altering activities on the property cease until corrective or restorative actions take place.

11.4 District court enforcement. 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, along with recovery of associated legal costs and fees, as provided by Minnesota Statutes chapter 103D, through a civil or criminal action pursuant to Minnesota Statutes sections 103D.545 and 103D.551.

11.5 Liability for enforcement costs. The permittee or owner of a property that is the subject of District enforcement action will be liable for associated costs incurred by the District, including but not limited to the costs of inspection and monitoring of compliance, engineering and other technical analysis, legal fees and costs, and administrative expenses.