MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

5. STORMWATER MANAGEMENT RULE
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted April 11, 2024
Effective April 29, 2024

1. POLICY. It is the policy of the Board of Managers to:

a. Protect and improve the physical, chemical and ecological health of surface waters and groundwater within the District;

b. Protect against local and regional flooding from land use change;

c. Promote reduction of rainfall and stormwater runoff volume to improve water quality, maintain groundwater recharge, reduce flooding and promote the health of native and designed plant communities;

d. For land disturbance subject to regulation under the National Pollutant Discharge Elimination Program, align local and state stormwater management requirements for clarity and efficiency.

2. APPLICABILITY.

a. A permit under this rule is required for the following actions:

1. Development or a Linear Transportation Project that meets criteria for site size, extent of site disturbance and impervious surface change set forth in Table 1 and Table 2 of this rule. In applying Tables 1 and 2, the District will aggregate all activity that it finds to constitute a Common Plan of Development.

2. Subdivision of a tract at least one acre in size into three or more buildable lots.

3. Mass grading or otherwise changing land contours, except for agricultural activity, at a scale that may materially affect the direction, peak rate, volume or water quality of runoff.

b. The following actions, even if subject to paragraph 2.a, do not require a permit if the amount of new and reconstructed impervious surface is less than one acre:

1. Single-family residential Development on an existing lot of record.

2. Construction of a sidewalk or trail not more than 12 feet in width, and bordered downgradient by pervious vegetated buffer averaging at least half the width of the sidewalk or trail.

3. Linear Transportation Projects where the net increase of impervious surface is <10,000 square feet.

4. Sites that reduce impervious surface by 10%.

c. An action requiring a permit under paragraph a.2 that does not propose mass grading or the construction or reconstruction of impervious surface need not demonstrate that it meets the specific stormwater management criteria of this rule. The applicant must provide a conceptual stormwater management plan and the permit will require that subsequent land disturbance within the subdivided tract demonstrate compliance with specific rule criteria.

d. An action requiring a permit under paragraph a.3 is not subject to section 3 of this rule.

e. Surface material such as permeable pavement (asphalt, concrete, pavers), artificial turf, and playground surfacing that is designed to infiltrate stormwater when maintained is considered impervious surface for the purpose of section 2, but may be used as a volume-reduction practice in accordance with Appendix A.

3. VOLUME CONTROL.

a. For purposes of both volume and phosphorus control, an applicant subject to this rule under paragraph 2.a.1 must provide volume reduction equal to the following. Volume reduction is to be calculated in accordance with Appendix A to this rule.

1. For Development, one inch times the area of impervious surface stated in Table 1.

2. For a Linear Transportation Project, either one inch times the area of new impervious surface, or one-half inch times the area of new and reconstructed impervious surface, whichever greater, except that if the total of new and reconstructed impervious surface is less than one acre, the volume is to be calculated only for the net increase in impervious surface as stated in Table 2.

b. Volume reduction practices must be used to meet the subsection 3.a standard, to the extent feasible. An infiltration practice is prohibited in the following circumstances:

1. The area receives discharge from a vehicle fueling and maintenance area.

2. Contamination in soil or groundwater may be mobilized by the infiltrating stormwater.

3. Soils infiltration rate exceeds 8.3 inches per hour.

4. The separation between the bottom of the infiltration system and the elevation of seasonally saturated soils or top of bedrock is less than three feet.

5. Soils are predominantly Hydrologic Soil Group D (clay) or otherwise unreliable for infiltration.

6. The area is within an Emergency Response Area (ERA) in a Drinking Water Supply Management Area (DWSMA), as defined in Minnesota Rules 4720.5100, subpart 13, classified as high or very high vulnerability.

7. The area is within an ERA in a DWSMA classified as moderate vulnerability, or outside of an ERA in a DWSMA classified as high or very high vulnerability. This prohibition does not apply if an engineering evaluation, meeting standards in the Minnesota Stormwater Manual, demonstrates that the system will function and not have adverse impact on groundwater.

8. The area is within 50 feet of a drinking water well or within 100 feet of a sensitive public water supply well.

9. The area is within 1,000 feet upgradient, or 100 feet downgradient, of an active karst feature.

10. The area receives stormwater runoff from one of the following entities regulated under NPDES for industrial stormwater: automobile salvage yard; scrap recycling and waste recycling facility; hazardous waste treatment, storage, or disposal facility; air transportation facility that conducts deicing.

To support a finding of infeasibility, the applicant must document the constraint and examine means to remove or avoid it including modifying the size, scope, configuration or density of the proposed action. To document contamination under paragraph 3.b.2, the permittee must complete the Minnesota Pollution Control Agency site screening assessment checklist, available in the Minnesota Stormwater Manual, or submit an independent assessment.

c. If the required volume reduction cannot feasibly be provided by volume reduction practices listed in Appendix A, the applicant must incorporate filtration or other non-volume-reduction practices to achieve phosphorous control in an amount equivalent to that which would be achieved through the required volume reduction. Equivalent phosphorus control may be demonstrated by any technically accepted method,

including use of a removal rate stated in the Minnesota Stormwater manual. For a filtration practice, in place of specific demonstration, an applicant may treat twice the required volume reduction, as calculated in accordance with Appendix A to this rule.

d. For a Linear Transportation Project, if the required volume reduction cannot be provided within existing right-of-way, the permittee must make a reasonable attempt to obtain additional right-of-way, easement or other permission to site the required volume. Volume reduction is not required to the extent it cannot be provided cost-effectively. If the volume reduction of paragraph 3.a.2 is not fully met, equivalent phosphorus control must be provided to the extent feasible.

e. Runoff volume draining to a landlocked area may not increase during back-to-back 100-year storm events.

4. RATE CONTROL.

a. An action may not increase the peak runoff rate from the site, in aggregate, for design storm events. An applicant proposing to increase peak runoff at a specific point of site discharge must demonstrate no adverse local impact on water resource values or infrastructure. Aggregate compliance for all site boundary discharge will be determined with respect to runoff not managed in a regional facility.

b. For a tract being converted from row crop agriculture, the criterion of no increase applies as compared with an assumed existing meadow condition.

5. BEST MANAGEMENT PRACTICE (BMP). When a BMP is specified in Table 1 or 2, an applicant must incorporate an on-site structural or non-structural practice to achieve one or more of the following: limit impervious surface increase, reduce stormwater volume, reduce pollutant discharge, or control peak flow from the site. The permittee will select the BMP to address the impacts posed by the proposed action. The BMP must be designed and installed in accordance with the Minnesota Stormwater Manual and accepted engineering practice.

6. FLOOD SEPARATION. There must be two feet of vertical separation between the 100-year high water elevation of a waterbody or stormwater practice and the low opening of any structure, unless the structure opening is hydraulically disconnected from the waterbody or practice.

7. IMPACT ON DOWNGRADIENT WATERBODIES.

a. A new point source must treat for sediment and phosphorus removal before discharge to a waterbody. This paragraph does not apply to changes in flow from an existing point source.

b. An action otherwise subject to this rule must meet the following criteria:

Wetland Management Class/ Waterbody	Permitted Bounce for Design Storm Events	Inundation Period for 1- or 2-Year Design Storm Event	Inundation Period for 10- and 100-Year Design Storm Events	Runout Control Elevation
Preserve	Existing	Existing	Existing	No change
Manage 1	Existing plus 0.5 feet	Existing plus 1 day	Existing plus 2 days	No change
Manage 2	Existing plus 1.0 feet	Existing plus 2 days	Existing plus 14 days	0 to 1.0 ft above existing runout
Manage 3	No limit	Existing plus 7 days	Existing plus 21 days	0 to 4.0 ft above existing runout
Lakes	Existing	N/A	N/A	No change

8. LOCATION OF VOLUME AND RATE CONTROL PRACTICES.

a. A volume control practice is to be located on site, unless the applicant demonstrates that this is not cost-effective. An off-site practice must capture runoff from the regulated site impervious surface before it enters a receiving water, if practical, and otherwise before it enters a public water. A rate control practice may be located on- or offsite, but before runoff enters a public water.

b. For use of an off-site facility, the applicant must incorporate an on-site BMP in accordance with section 5, above, and must demonstrate that there will be no adverse water resource impact upgradient of the facility.

c. For use of an off-site regional facility, the applicant must demonstrate that the facility was designed and constructed to manage the stormwater runoff from the site, the applicant has permission to use the necessary part of facility capacity, the facility is subject to satisfactory maintenance obligations enforceable by the District, and its current maintenance conforms with those obligations.

d. A public or private entity may construct a regional volume or rate control facility in advance of its use for compliance purposes. The facility's terms of use will be stated in a regional facility plan approved by the District.

9. SUBMITTALS.

a. The applicant must submit a plan, certified by a professional engineer registered in the State of Minnesota, to the District. The plan must contain the following:

1. Property lines of the tract or contiguous tracts under applicant's ownership.

2. Delineation of subwatersheds that contribute runoff to the site, and of existing and proposed subwatersheds on the site.

3. Delineation of top of bank of existing on-site waterbodies and of floodplain, and notations of ordinary high-water level and 100-year high water elevation of on-site waterbodies.

4. Delineation of any flowage or drainage easements, or of other property interests dedicated to water management or conveyance.

5. Existing and proposed site elevations at two-foot intervals, related to National Geodetic Vertical Datum (NGVD), 1929 datum.

6. Locations, alignments, and elevations of existing and proposed stormwater management facilities, as well as construction plans and specifications for all proposed facilities.

7. All hydrologic, hydraulic and water quality computations on which the design of proposed stormwater management facilities is based, including (i) runoff volume abstractions; and (ii) stormwater runoff volume and rate analyses for design storm events, for existing and proposed conditions, at each point of site discharge. For the purpose of this rule, "design storm events" means either the one- or two-year, 24-hour event, as the applicant selects, as well as the 10- and 100-year, 24-hour events.

b. If proposing to meet this rule by infiltration through site soils, the applicant must characterize soils by use of a method identified in the Minnesota Stormwater Manual, and must document the characterization and the methodology used.

c. If proposing that infiltration is infeasible, the applicant must provide supporting documentation in accordance with subsection 3.b.

d. If proposing soil amendment, the applicant must submit a soil amendment plan for District approval.

e. If proposing capture and reuse, the applicant must submit a system operating plan and calculations that quantify the benefits of the reuse system.

f. The applicant must document application for a National Pollutant Discharge Elimination System (NPDES) permit, if applicable.

10. STORMWATER FACILITY CONSTRUCTION AND MAINTENANCE.

a. Stormwater management facilities must be constructed and functional within 24 months of the start of construction of regulated impervious surface.

b. A stormwater management facility must be designed for maintenance access and maintained in perpetuity to function as designed.

c. As a condition of permit issuance, a permittee must sign and record on the title a declaration or other instrument, in a form supplied by the District or otherwise acceptable to it, that provides for perpetual facility maintenance. A public permittee, in place of a recorded instrument, may enter into a signed agreement with the District by which the permittee assumes permanent maintenance responsibility.

d. A public entity may assume responsibility to maintain a stormwater facility on private property either by: (1) being a signatory to the private-party declaration; or (2) entering into a signed agreement with the District and separately establishing, by means acceptable to the District, its perpetual right to enter the property.

11. FINANCIAL ASSURANCE. A bond, letter of credit or cash escrow in accordance with the District's Financial Assurances rule is a condition of permit issuance. Conditions for release of the financial assurance include, but are not limited to, the applicant’s submittal of certified as-built drawings for structural stormwater management practices.

Table 1: Requirements for Development				
Site Size	**New and fully reconstructed impervious area**	**Site Disturbance**	**Impervious Surface Change***	**Requirement**
< 1 acre	> 0 sq ft	-	0-9% decrease or any increase	BMP
≥ 1 acre	< 1 acre	< 40%	0 - 9% decrease	BMP
			> 0 - < 50% increase	Volume from net added impervious surface, Rate
			≥ 50% increase	Volume from entire site impervious surface, Rate
	≥ 1 acre	< 40%	< 50% increase	Volume from new and fully reconstructed impervious surface, Rate
			≥ 50% increase	Volume from entire site impervious surface, Rate
	-	≥ 40%	-	Volume from entire site impervious surface, Rate
*For sites with no existing impervious on-site, impervious surface change = proposed site impervious surface (percent)				

Table 2: Requirements for Linear Transportation Projects		
New and reconstructed impervious area	**Net increase in impervious area**	**Requirement**
< 1 acre	10,000 sf - 1 acre	Volume from net added impervious surface, Rate
≥ 1 acre	< 10,000 sf	Volume equal to the larger of: one inch of volume from new impervious surface OR 0.5 inches of volume from new impervious and reconstructed impervious surface
	≥ 10,000 sf	Volume equal to the larger of: one inch of volume from new impervious surface OR 0.5 inches of volume from new impervious and reconstructed impervious surface, Rate

APPENDIX A:
Volume Reduction Practice Credit Schedule

Practice	Design Guidance	Volume Control (VC) Credit	Calculation Methods
Surface Infiltration Basin	Minnesota Stormwater Manual	Volume provided	VC= Volume below overflow elevation (1)
Underground Infiltration Trench	Minnesota Stormwater Manual	Void volume provided	VC = Volume below overflow elevation (1)
Capture and Reuse of Stormwater	Submit pump design plans and hydrologic calculations	Volume capacity to capture and reuse runoff from a 1- inch rainfall event	Submit operating plan and calculations for reuse system to document annual volume reuse during dry, wet, and average years
Permeable Surface	Minnesota Stormwater Manual	1-inch credit over the surface area	VC = 1/12 x area of permeable surface
Soil Amendment(s)(2)	Minnesota Stormwater Manual	0.5-inch credit over the area of soil amendment area (3)	VC = 0.5/12 x area of soil amendment

Non-Volume-Reduction Practice Credit Schedule(4)

Practice	Design Guidance	Phosphorus Control (PC) Credit	Calculation Methods
Filtration	Minnesota Stormwater Manual	Volume provided (must be twice the required volume reduction) (5)	PC = Volume below overflow elevation (filtered volume is not considered)

(1) Volume infiltrated during a rainfall event shall not be credited towards the volume reduction requirement. This is a simple approach for designers and for reviewers to verify conformance to the standard; a stormwater model is not needed for calculations. This is a conservative assumption because infiltration of stormwater in Minnesota is an evolving practice. MCWD will continue to research current trends, collect and analyze monitoring data, and utilize modeling and engineering methods to assess the effectiveness of the standards to achieve the water quality goals of the District.

(2) This method is considered as a volume reduction practice only for an application that proposes less than an acre of new or fully reconstructed impervious area.

(3) For SCS TR-55 cover type "open space (lawns)," compacted soil (HSG C, curve number 74) begins to generate runoff with a 0.9-inch rainfall. A HSG B soil (curve number 61) begins to generate runoff with a 1.5-inch rainfall. Therefore, preserving the infiltration capacity of HSG B soil through the use of soil amendments yields an approximate 0.5-inch volume reduction credit.

(4) Other non-volume-reduction practices not listed in this table may be used. Equivalent phosphorus control must be demonstrated in accordance with subsection 3(c) of this rule.

(5) The Minnesota Stormwater Manual reports that nutrient removal (total phosphorus) is approximately half as effective for filtration as infiltration.