

**MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS**

**REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341**

Adopted January 13, 2005

RULE N: STORMWATER MANAGEMENT

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

(a) Require stormwater facilities to be included in land development projects where practicable and effective.

(b) Manage stormwater and snowmelt runoff on a regional or subwatershed basis throughout the District to:

(1) promote effective water quality treatment, where feasible, prior to discharge to surface waterbodies and wetlands;

(2) limit developed peak rates of runoff into major surface water bodies to less than or equal to existing peak rates;
and

(3) promote infiltration of both precipitation and runoff.

2. APPLICABILITY OF STORMWATER MANAGEMENT PERMIT REQUIREMENTS.

FIGURE 1. SUMMARY OF STORMWATER MANAGEMENT PERMITTING AND REGULATORY REQUIREMENTS ON THE BASIS OF DEVELOPMENT TYPE AND DENSITY

PROJECT	REGULATORY REQUIREMENTS									
SINGLE FAMILY HOME CONSTRUCTION	NO PERMIT									
SUBDIVISION SINGLE FAMILY DENSITY ≤ 2 UNITS/AC	NO PERMIT	BMP'S		RUNOFF RATE CONTROL, BMP'S	RUNOFF QUALITY AND RATE CONTROL, BMP'S					
SUBDIVISION SINGLE FAMILY DENSITY > 2 UNITS/AC; MULTI-UNIT RESIDENTIAL DENSITY < 8 UNITS/AC	NO PERMIT	BMP'S	RUNOFF RATE CONTROL, BMP'S	RUNOFF QUALITY AND RATE CONTROL, BMP'S						
COMMERCIAL INDUSTRIAL AND INSTITUTIONAL; MIXED USE; MULTI-UNIT RESIDENTIAL DENSITY ≥ 8 UNITS/AC	BMP'S	RUNOFF RATE CONTROL, BMP'S		RUNOFF QUALITY AND RATE CONTROL, BMP'S						
ROADS, STREETS & HIGHWAYS (< 1 ACRE NEW IMPERVIOUS SURFACE)	BMP'S									
ROADS, STREETS & HIGHWAYS (≥ 1 ACRE NEW IMPERVIOUS SURFACE)	RUNOFF RATE CONTROL, BMP'S		RUNOFF QUALITY AND RATE CONTROL BMP'S							
	1/2	2	3	4	5	8	10	15	20	>20
	SITE ACREAGE									

NOTE: Density calculation is based on total site area including dedicated areas.

As provided herein, before creating any impervious surface or changing the contours of a parcel of land in a way that affects the direction, peak rate or water quality of storm flows from the parcel, a developer of land for residential, commercial, industrial, institutional, or public roadway, sidewalk or trail uses shall submit a stormwater management plan to the District, and secure a permit from the District approving the plan. Any activity that will divert storm flows out of the watershed must demonstrate that the diversion is not injurious to water resource management purposes set forth in sections 103B.201 and 103D.201 of the Minnesota Statutes. All permit applications shall conform to and be reviewed in accordance with the provisions of Rule A of these rules. The plan shall provide for compliance with the requirements of this rule for BMP's, rate control and water quality control, as applicable. The applicability of the stormwater management requirements set forth in this rule to a given development or redevelopment is set forth at paragraphs (a) through (e) of this section and summarized in Figure 1.

(a) **Single-Family Homes.** A permit is not required for the construction or reconstruction of a single-family home or its residential appurtenances.

(b) Single-Family, Developed or Redeveloped Subdivisions. A permit is not required from the MCWD for construction on less than two (2) acres with a density of two (2) units or less per acre. A permit is required for residential development or redevelopment of subdivisions with a density of two (2) units or less per acre on sites of two (2) acres or more, as follows:

(1) For development or redevelopment of subdivisions of two (2) acres or more but less than eight (8) acres, the best management practices provisions set forth in section 3 of this rule are required;

(2) For development or redevelopment of subdivisions of eight (8) acres or more but less than twenty (20) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;

(3) For development or redevelopment of subdivisions of twenty (20) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required.

(c) Medium Density Residential Land Development. A permit is not required for the development or redevelopment on a site of less than two (2) acres of residential subdivisions with single-family units at a density of more than two (2) units per acre or multi-unit residential development or redevelopment, at a density of less than eight (8) units per acre. A permit is required for development or redevelopment on a site of two (2) acres or more of residential subdivisions with a density of more than two (2) units per acre or multi-unit residential development or redevelopment at a density of less than eight (8) units per acre, as follows:

(1) For development or redevelopment of two (2) acres or more but less than five (5) acres, the best management practices provisions set forth in section 3 of this rule are required;

(2) For development or redevelopment of five (5) acres or more but less than eight (8) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;

(3) For development or redevelopment of eight (8) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in

section 4, and the water quality provisions set forth in section 5 of this rule are required.

(d) Commercial, Industrial, or Institutional Development or Redevelopment; Mixed Use; High Density Residential Development or Redevelopment. A permit is required for commercial, industrial, institutional or mixed use development or redevelopment, or for multi-unit residential development or redevelopment at a density greater than or equal to eight (8) units per acre, as follows:

(1) For all development or redevelopment, the best management practices provisions set forth in section 3 of this rule are required;

(2) For development or redevelopment activities on sites of one-half (1/2) acre or more but less than eight (8) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;

(3) For development or redevelopment activities on sites of eight (8) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required.

(e) **Roads, Streets, Highways, Sidewalks, and Trails.** A permit is not required for the maintenance or improvement of a public or private road, street, highway, sidewalk, trail or other linear way not otherwise regulated under paragraphs (a) through (d), if the project does not result in a net increase in impervious surface. A permit is required for a public or private road, street, highway, sidewalk, trail or other linear way that results in a net increase in impervious surface area, as follows:

(1) For projects that result in a net increase in impervious surface of less than one (1) acre, the best management practices in section 3 of this rule will be required;

(2) For projects that result in a net increase in impervious surface of one (1) acre or more, but the total project area is less than five (5) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 are required to treat the increase;

(3) For projects that result in a net increase in impervious surface of one (1) acre or more and the total project area is five (5) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required to treat the increase;

(4) Sidewalks and trails that do not exceed ten (10) feet in width and are bordered by a pervious buffer of at least five feet on each side do not require a permit and are not included in any calculation of net increase in impervious surface when part of a road or street project. The interruption of pervious buffer by streets, driveways or other impervious surfaces crossing a sidewalk or trail does not invalidate this exception provided that these impervious surfaces do not exceed 25 percent of the area of the required pervious buffer.

(f) **Surety.** A performance bond or other surety in a form satisfactory to the District is required for all activity, including clearing, grading, and excavation, that results in the disturbance of five (5) or more acres of land. The District will not require a performance bond or other type of surety from cities, townships, municipal corporations, counties, the state or federal government, or agencies of any of the aforementioned.

(g) **Common Scheme of Development.** In determining stormwater management requirements under this section, development or redevelopment on adjacent sites under common or related ownership shall be considered in the aggregate. The requirements applicable to a development or redevelopment under this section shall be determined with respect to all development that has occurred on the site, or on adjacent sites under common or related ownership, since the date this rule took effect.

(h) **Additional Development or Redevelopment on Developed Sites.** When the impervious area on a site is increased by 50 percent or more, the requirements imposed by this rule will be determined with respect to the site in a pre-development condition. When the impervious area on a site is increased by less than 50 percent, the requirements imposed by this rule will be determined with respect to only the additional impervious surface and site alteration proposed.

(i) **Impact on Downstream Waterbodies.** No activity subject to a permit under MCWD Rule B, C, D or N may alter stormwater flow so as to:

(1) Increase the bounce in water level for any downstream lake or wetland beyond the limit specified below for the lake or wetland susceptibility class, during a precipitation event of critical duration with any return frequency up to 100 years in the subwatershed drainage area in which the site is located; or

(2) Increase the duration of inundation for any downstream lake or wetland beyond the limit specified below for the lake or wetland susceptibility class, during a precipitation event of critical duration with a return frequency of one, ten, or 100 years in the subwatershed drainage area in which the site is located.

No water may be discharged from a point source onto or into the ground, or into a waterbody, so as to: (a) increase the bounce in water level or duration of inundation for any downstream lake or wetland beyond the limit specified below applicable to the one-year precipitation event for the lake or wetland susceptibility class; or (b) increase the one- or 100-year peak flow of, sedimentation into or erosion of the bed or banks of a watercourse.

Susceptibility Class	Permitted Bounce Up to 100-Year Event	Inundation Period for One-Year Event	Inundation Period for 10- and 100-Year Event
Highly susceptible wetland	Existing	Existing	Existing
Moderately susceptible	Existing + 0.5 feet	Existing plus 1 day	Existing plus 2 days
Slightly susceptible wetland	Existing + 1.0 feet	Existing plus 2 days	Existing plus 14 days
Least-susceptible wetland/Lake	No limit	Existing plus 7 days	Existing plus 21 days

3. BEST MANAGEMENT PRACTICES REQUIREMENTS.

(a) BMPs addressing the potential water resource impacts associated with the proposed activity must be incorporated in all projects requiring a permit under this rule to limit creation of impervious surface, maintain or enhance on-site infiltration and peak flow control and limit pollutant generation on and discharge from the site. BMPs include site design, structural and non-structural practices.

(b) BMP's must be designed and installed in accordance with generally accepted design practices and, if specifications for the BMP are contained in the MPCA manual "Protecting Water Quality in Urban Areas (revised July 1991) and its subsequent revisions, consistent with that manual.

(c) No new point source may discharge to a wetland without pretreatment for sediment and nutrient removal. Pretreatment may be provided by non-structural means. An activity changing flow that discharges from an existing point source is not a new point source.

(d) All applications for which compliance only with BMP's is required shall delineate buildings and structures showing that door and window openings are a minimum of two feet above the 100 year high water elevation.

4. CONTROL REQUIREMENTS.

(a) Development on a site shall not increase the peak rate of stormwater runoff at the downgradient site boundary from the rate existing before the proposed-development. The criterion shall be analyzed and met for runoff-producing events of critical duration with return frequencies of 1, 10 and 100 years in the subwatershed in which the site is located.

(b) Natural existing low areas will be used, where feasible, for detention of runoff to comply with rate control criteria. Reservoir routing procedures

and critical duration runoff events shall be used for design of detention areas and outlets.

(c) The proposed project shall not adversely affect water levels off the site during or after construction.

(d) Runoff tributary to the project must be accommodated in the analyses and design of new stormwater management facilities.

(e) The volume of runoff may not increase due to the project when the receiving area of said runoff is landlocked and not capable of handling the increased volume of runoff. In addition, the applicant shall either own or have proper rights over the landlocked property to handle water from the development. Back-to-back 100-year runoff events will be used to analyze holding capacity and freeboard for landlocked areas.

(f) All stormwater rate control facilities shall be located above the projected 100-year flood elevation for the site and within drainage, utility and/or flowage easements to provide access and to prevent future alteration or encroachment.

(g) Water quantity control methods and facilities used or constructed pursuant to this rule shall be in conformance with approved Municipal Stormwater Management Plans. Outfall structures shall incorporate designs to minimize erosion and scouring.

New buildings and structures shall have door and window openings a minimum of two feet above the 100 year high water elevation.

5. WATER QUALITY REQUIREMENTS.

(a) Facilities shall be established on site to meet the water quality standards of this section. Facilities, including wet detention ponds and other systems using BMP's in addition to or in place of ponding, shall be designed to reduce phosphorus loading at the downgradient site boundary by at least 50 percent on an annual average removal basis. The applicant shall demonstrate that this requirement is met using a model and methodology that is acceptable to the District. Total tributary drainage area shall be used to calculate permanent pool volume. Pond outlets shall remove floatables from runoff before discharge for a one-year event. All ponds must provide a ten (10) foot safety bench at a slope no steeper than 10:1 (H:V) and two (2) feet of freeboard above the 100 year pond level.

(b) Quality control facility outfall structures shall incorporate designs to minimize erosion and scouring.

(c) New buildings and structures shall have door and window openings a minimum of two feet above the 100 year high water elevation.

6. REQUIRED EXHIBITS (SUBMIT IN DUPLICATE).

(a) If the water quantity or water quality provisions set forth in sections 4 and 5 of this rule apply to a proposed development, plans certified by a professional engineer registered in the State of Minnesota and reflecting the following items shall accompany the permit application (one set of plans must be full size; one set must be reduced to a maximum size of 11" x 17"):

- (1) Property lines and delineation of lands under ownership of the applicant.
- (2) Delineation of the subwatershed contributing runoff from off-site and proposed and existing subwatersheds on-site.
- (3) Proposed and existing stormwater facilities location, alignment, and elevation.
- (4) Delineation of existing on-site wetland, marshes, shoreland, and/or floodplain areas.
- (5) Identification, description, permeability and approximate delineation of site soils in both existing and proposed as-developed condition, for applications proposing infiltration as a stormwater management practice.
- (6) Existing and proposed normal, and 100 year water elevations on-site.
- (7) Existing and proposed site contour elevations at two foot intervals, related to NGVD, 1929 datum.
- (8) Construction plans and specifications of all proposed stormwater management facilities.
- (9) Stormwater runoff volume and rate analyses for the 1, 10 and 100 year critical events, existing and proposed conditions.

(10) All hydrologic, water quality, and hydraulic computations completed to design the proposed stormwater management facilities.

(11) Documentation indicating conformance with an existing municipal stormwater management plan. When a municipal plan does not exist, documentation that the municipality has reviewed the project.

(12) Delineation of any flowage easements or other property interests dedicated to stormwater management purposes, including, but not limited to, county or judicial ditches.

(13) Documentation that the project has received a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit from the Minnesota Pollution Control Agency (MPCA) if required by the MPCA, once available.

(b) A maintenance agreement shall be submitted for: stormwater treatment ponds, outlet structures for such ponds, culverts, outfall structures, and all other stormwater facilities. The maintenance agreement shall specify the methods, schedule and responsible parties for maintenance and must include at a minimum, the elements contained in the District's Maintenance Agreement Form. A Maintenance Agreement Form will be provided to the applicant for use by the applicant as a maintenance agreement or as guidance if the applicant desires to draft a separate maintenance agreement. The maintenance agreement must be filed of record in the county recorder's office before any land-altering activity occurs at the site.

(c) Geotechnical soil boring results if available.

7. EXCEPTIONS.

(a) If the District has approved a municipal stormwater management plan for a municipality, or for a subwatershed within a municipality, the requirements of this rule may be deemed satisfied upon showing of compliance by an individual developer with the municipal plan.

(b) The peak flow requirement of this rule will be waived on a determination by the Board of Managers that a downstream facility(ies) is in place or has been ordered and the facility(ies) is designed with adequate capacity to limit the peak runoff rate from the subwatershed under fully developed conditions. The peak flow requirement of this rule may also be waived on a determination by the Board of Managers that the time of

concentration of the downstream receiving water body is sufficiently long such that limiting the peak rate of runoff from the project has either no practical effect or an adverse effect.

(c) The water quality requirement of this rule will be waived on a determination by the Board of Managers that a downstream facility(ies) is in place or has been ordered and the facility(ies) is designed to remove at least 50% of the total phosphorus from runoff entering the facility from the subwatershed under fully developed conditions.

(d) The requirement of paragraph 4(a) or paragraph 5(a) that peak flow or stormwater quality be managed on site will be waived on a determination by the Board of Managers that meeting the requirement on site is infeasible; that an off-site facility treating the runoff from the applicant's development or its equivalent will allow the applicant to meet the requirement or provide equivalent management; and that the applicant, before commencing any land-altering activity, will hold the legal rights necessary for design, construction and long-term operation and maintenance of the facility.