

4.0 Stormwater Management

4.1 Policy

It is the policy of the District to regulate the management of stormwater runoff to:

- 4.1.1 Require that onsite and regional systems operate together to provide complete and effective runoff management, through the following principles:
 - a Manage peak runoff rates to achieve rates equal to or below existing rates;
 - b Manage runoff volume to achieve a net reduction from existing conditions;
 - c Provide effective water quality treatment to remove sediment, pollutants and nutrients from stormwater and snowmelt before discharge to surface water bodies and wetlands; and
 - d Provide for antidegradation of surface water bodies in the watershed.
- 4.1.2 Encourage designs that minimize impervious surface on a site.
- 4.1.3 Maximize opportunities to improve stormwater and snowmelt management presented by redevelopment of land.
- 4.1.4 Minimize impacts of chloride compounds on water resources by minimizing their use on roads, parking lots, sidewalks and other impervious surfaces.

4.2 Regulation

A permit from the District, incorporating an approved stormwater management plan, is required under this rule prior to the commencement of any activities to which this rule applies. The District may review a stormwater management plan at any point in the development of a regulated project and encourages project proposers to seek early review of plans by the District.

- 4.2.1 The requirements of this rule apply to:
 - a Land-disturbing activities that will disturb 50 cubic yards or more of earth;
 - b Land-disturbing activities that will disturb 5,000 square feet or more of surface area or vegetation; or
 - c Subdivision of a property or properties into three or more residential lots.
- 4.2.2 Even if proposed land-disturbing activities fall into one or more of the categories in section 4.2.1, the requirements of this rule do not apply to:
 - a Development, redevelopment or reconstruction on a single-family home site consistent with a subdivision, development or redevelopment plan implemented consistent and in accordance with an approved District

permit, as long as applicable current District stormwater-management standards and requirements are achieved.

- b Rehabilitation, including mill and overlay, of paved surfaces.
- c Trails, sidewalks and retaining walls that do not exceed 10 feet in width and are bordered downgradient by a pervious area extending at least half the width of the trail, sidewalk or retaining wall.
- d Land-disturbing activities the NMCWD engineer determines will be undertaken solely for the purposes of water-resources improvement or flood-damage reduction.

4.2.3 **Redevelopment.** For sites other than those that qualify for the linear (4.2.4) or single-family home (4.2.3a) provisions below, if proposed activity on a site will disturb more than 50 percent of the existing impervious surface on the site or will increase the imperviousness of the entire site by more than 50 percent, the stormwater criteria of section 4.3 will apply to the entire project site. Otherwise, the criteria of section 4.3 will apply only to the disturbed areas, replaced and net additional impervious surface on the project site. For purposes of this paragraph, disturbed areas are those where underlying soils are exposed in the course of redevelopment.

- a **Redevelopment of single-family home properties.** For single-family home properties:
 - i If the proposed activity will increase total impervious surface by less than 50 percent or disturb less than 50 percent existing impervious areas, no demonstration of compliance with the criteria is required.
 - ii If the proposed activity will increase total impervious surface by 50 percent or more and will disturb 50 percent or more of the existing impervious surface on the site, the stormwater criteria will apply to the entire site.

4.2.4 **Linear projects.** Even if proposed land-disturbing activities fall into one or more of the categories in section 4.2.1, a permit under this rule is not required for a linear project entails construction or reconstruction, including mill and overlay or other maintenance, creating less than 1 acre of new or additional impervious surface. For linear projects creating more than 1 acre of new or additional impervious surface, the criteria of section 4.3.1 or 4.3.2, as applicable, will apply only to the net new or additional impervious surface.

4.2.5 **Common scheme of development.** Activity subject to this rule on a site or adjacent sites under common or related ownership will be considered in the aggregate, and the requirements applicable to the activity under this rule will be determined with respect to all development and redevelopment that has occurred on the site or on adjacent sites under common or related ownership since the date this rule took effect (March 2008), except that development

and redevelopment on single-family home properties is not subject to this subsection.

- a For development or redevelopment under common or related ownership, compliance with the criteria of section 4.3 may be achieved through a shared stormwater management facility or facilities as long as the criteria are met for each contributing drainage area within the common or related ownership.

- 4.2.6 **Performance monitoring.** As a specific term in a permit, NMCWD may impose monitoring, performance evaluation, additional compliance measures or other requirements for the purposes of demonstrating that performance standards are being met if the NMCWD engineer determines that the stormwater-management plan relies on insufficiently proven facilities.

4.3 Stormwater management standards

- 4.3.1 Except for sites qualifying as “restricted” under subsection 4.3.2, an applicant for a permit under this rule must demonstrate that the implementation of its stormwater management plan will:
 - a Provide for the retention onsite of 1.1 inches of runoff from the regulated impervious surface of the site;
 - i Where infiltration or filtration facilities, practices or systems are proposed, pretreatment of runoff must be provided.
 - ii Drawdown of water levels in infiltration and filtration facilities must be within 48 hours.
 - b Limit peak runoff flow rates to that from existing conditions for the 2-, 10- and 100-year frequency storm events using a nested 24-hour rainfall distribution for all collection points where stormwater discharge leaves the site; and
 - c Provide for at least 60 percent annual removal efficiency for total phosphorus and at least 90 percent annual removal efficiency for total suspended solids from site runoff.
 - i Onsite retention systems may be included in demonstrating compliance with the total suspended solids and total phosphorus removal requirements.

Where the NMCWD engineer concurs that existing site conditions make it infeasible for the applicant to meet the standards in paragraphs a and c through management of runoff from the regulated area of the site, runoff from an undisturbed area of the subject site that is and will remain in the same or a more intensive use and drains to the same receiving water(s) as the area to be disturbed may be retained and treated to meet the standards.

- 4.3.2 **Restricted sites.** Where the NMCWD engineer concurs that an applicant has demonstrated that the retention standard in paragraph 4.3.1a cannot practicably be met through a combination of onsite best management practices and relocation of project elements to address varying soil conditions and other site constraints, or that infiltration is reasonably likely to cause or exacerbate migration of underground contaminants, or that other conditions inherent to the site preclude retention to the standard in paragraph 4.3.1a, the applicant must provide rate control in accordance with the standard in paragraph 4.3.1b, and retention and water-quality protection in accordance with the following priority sequence:
- a Retention of at least 0.55 inches of runoff from regulated impervious surface determined in accordance with the applicable provision of section 4.2 and stormwater treatment to the standard in paragraph 4.3.1c; or
 - b Retention of runoff onsite to the maximum extent practicable and stormwater treatment to the standard in paragraph 4.3.1c; or
 - c Off-site retention and treatment elsewhere within the Nine Mile Creek watershed or use of the NMCWD volume-banking program in section 4.4 to achieve the standards in paragraphs 4.3.1a and 4.3.1c.
- 4.3.3 **Low-floor elevation.** All new and reconstructed buildings must be constructed such that the low 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 facility.

In addition, a stormwater management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with a standard in this subsection 4.3.3.

As an alternative to demonstrating compliance with the applicable freeboard requirement(s) above, an applicant may site a stormwater management facility relative to a new or reconstructed building (and vice versa) at a location set in accordance with Appendix 4a: , “Low-Floor Elevation Assessment.” Under any circumstances, all new and reconstructed buildings must be constructed such that no opening where surface flow can enter the structure is less than two feet above the 100-year high water elevation of an adjacent facility or waterbody:

- d All buildings riparian to inundation areas or constructed or natural stormwater management facilities must be located and elevations must be set according to Appendix 4a: , “Low-Floor Elevation Assessment.”
 - e **Landlocked basins.** Any new or reconstructed structure wholly or partially within a landlocked basin must be constructed such that its low-floor elevation is:
 - 1 1 foot above the surface overflow of the basin, or
 - 2 2 feet above the elevation resulting from two concurrent 100-year single rainfall events in a 24-hour period or a 100-year, 10-day snowmelt, whichever is higher.
 - 3 The starting elevation of the basin prior to the runoff event must be established by one of the following:
 - A Existing ordinary high water elevation established by the Minnesota Department of Natural Resources;
 - B Annual water balance calculation approved by the District;
 - C Local observation well records, as approved by the District; or
 - D Mottled soil.
- 4.3.4 **Chloride management.** An applicant for a permit under this rule for land-disturbing activity on property other than single-family home sites must provide a plan for post-project management of chloride use on the site that includes, at a minimum:
- i Designation of an individual authorized to implement the chloride-use plan; and
 - ii Designation of a Minnesota Pollution Control Agency-certified salt applicator engaged in the implementation of the chloride-use plan for the site.

The chloride-management plan for a residential subdivision need not encompass the individual home properties within the subdivision.

- 4.3.5 **Maintenance.** 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 and inspection plan that identifies and protects the design, capacity and functionality of onsite and offsite stormwater management facilities; specifies the methods, schedule and responsible parties for inspection and maintenance; provides for the inspection and maintenance in perpetuity of the facility, with documentation retained onsite and available to the District upon reasonable notice; and contains at a minimum the requirements in the District’s standard maintenance

declaration. For applications managing runoff through stormwater reuse, the maintenance plan must provide for the protection of greenspace to be irrigated or other land-use restrictions, as necessary, to ensure continuing treatment capacity. The plan must be recorded on the deed in a form acceptable to the District. A public entity assuming the maintenance obligation may do so by filing with the District an agreement signed by an official with authority.

4.3.6 Regional Stormwater Management

- a An applicant² may comply with the stormwater criteria for unrestricted sites in subsection 4.3.1 by providing equal or greater volume control, rate control or phosphorus and sediment 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-disturbing 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:
 - i The use of a regional facility/ies in place of onsite stormwater management is not reasonably likely to result in adverse impacts to local groundwater or natural resources located upstream of the regional facility/ies, including, for example, reduced water quality, altered wetland hydrology, changes to stream velocities or base flow, erosion or reduced groundwater recharge; and
 - ii the plan incorporates onsite BMPs where necessary, to mitigate adverse impacts and provide local benefits not provided by the regional facility or facilities.
- b Where an applicant demonstrates that it is not reasonably feasible to comply with the stormwater volume-retention requirements of subsection 4.3.1a for a defined region or subwatershed, the applicant(s) may submit a plan for stormwater management within the region that:
 - i Provides for compliance with the stormwater volume-retention criterion in 4.3.1a to the maximum extent practicable;
 - ii provides for compliance with the rate-control and water-quality requirements in 4.3.1b and c;
 - iii prevents degradation of downstream receiving water(s); and

² NMCWD anticipates that regional stormwater management plans will be submitted by cities on behalf of and with the authorization of landowners within a region, however applications for regional stormwater plan approval could also be submitted by coalitions of property owners.

- iii incorporates onsite BMPs where necessary, to mitigate adverse impacts and provide local benefits not provided by the regional facility or facilities.

The use of regional facilities in place of onsite stormwater management may not result in adverse impacts to local groundwater or natural resources located upstream of regional facilities, including, but not limited to, reduced water quality, altered wetland hydrology, changes to stream velocities or base flow, erosion, or reduced groundwater recharge.

4.4 Volume banking

The District has established and will maintain a bank of available runoff retention and water quality volume credits.

- 4.4.1 Volume reduction or runoff retention achieved onsite in excess of the requirement of paragraph 4.3.1a may be credited into the District's bank as volume credits for use on other projects within the District in accordance with paragraph 4.3.2c.
- 4.4.2 Stormwater-management facilities or practices relied upon to create volume credits must be included in the recorded permanent maintenance plan specified in subsection 4.3.5.
- 4.4.3 Volume credits may be utilized by permit applicants to meet the requirements of paragraphs 4.3.1a and 4.3.1c pursuant to paragraph 4.3.2c.
- 4.4.4 The District will maintain an inventory of all qualified volume credits accumulated and sold. Permit applicants are responsible for contacting a seller of volume credits and arranging the sale on terms established by the interested parties. The District will certify the sale through a form established by the District and completed by the buyer and seller of the volume credits.
- 4.4.5 If a project qualifies for use of volume credits but applicable volume credits are not available in the bank for the volume reduction required, the applicant must pay into the District's Stormwater Facilities Fund to cover the cost of implementing offsetting volume-reduction and water-quality projects elsewhere in the watershed. The required contribution rate will be set by the Board annually based on the cost of creation of the required retention capacity.

4.5 Required information and exhibits

The following exhibits must accompany the permit application. Exhibits must be submitted in an electronic format acceptable to the District:

- 4.5.1 A narrative explaining how options to minimize impervious area were evaluated during the development of the design for the project, the results of the evaluation of each and, for any techniques that were deemed infeasible, the reasoning for the determination.

- 4.5.2 Stormwater management system modeling in a form acceptable to the District and that utilizes the most recent applicable precipitation reference data (e.g., Atlas 14). For example, HydroCAD, SWMM, MIDS calculator, P8.
- 4.5.3 A site plan showing:
 - a Property lines and delineation of lands under ownership of the applicant.
 - b Existing and proposed elevation contours.
 - c Identification of existing and proposed normal, and ordinary high and 100-year water elevations onsite.
- 4.5.4 A stormwater management plan including, at a minimum:
 - a Proposed and existing stormwater facilities' location, alignment and elevation.
 - b Delineation of existing wetlands, marshes, shoreland and/or floodplain areas onsite or to which any portion of the project site drains, except that where a project will not alter or change the hydrology of a wetland, the wetland need only be identified on the plan.
 - c Geotechnical analysis including soil borings at all proposed stormwater management facility locations.
 - d If infiltration of runoff is proposed, data must be submitted showing:
 - i No evidence of groundwater or redoximorphic soil conditions within 3 feet of the bottom of the facility, practice or system;
 - ii soil conditions within 5 feet of the bottom of any stormwater treatment facility, practice or system; and
 - iii if requested by the NMCWD engineer, site-specific infiltration capacity of soils at the of the bottom of the facility, practice or system.In addition, the NMCWD engineer may require submission of a phase I environmental site assessment and/or other documentation to facilitate analysis by the District of the suitability of the site for infiltration.
 - e Construction plans and specifications for all proposed stormwater management facilities, including design details for outlet control structures.
 - f Stormwater runoff volume and rate analyses for the 24-hour, 2-, 10- and 100-year critical events, existing and proposed conditions.
 - g All hydrologic, water quality, and hydraulic computations completed to design the proposed stormwater management facilities.

- h Narrative addressing incorporation of retention BMPs.
 - i Platting or easement documents showing sufficient drainage and ponding/flowage easements over hydrologic features such as floodplains, storm sewers, ponds, ditches, swales, wetlands and waterways, if required by the municipality with jurisdiction.
 - j Documentation as to the status of the project’s National Pollutant Discharge Elimination System stormwater permit, if applicable.
 - k If a stormwater harvest and reuse practice is proposed to meet applicable requirements, submission of:
 - i An analysis using a stormwater reuse calculator or equivalent methodology approved by the NMCWD engineer;
 - ii documentation of the adequacy of soils, storage capacity and delivery systems;
 - iii delineation of greenspace area to be irrigated, if applicable; and
 - iv a detailed irrigation or usage plan showing compliance with the District volume-retention requirements.
- 4.5.5 An applicant must demonstrate that it holds the legal rights necessary to discharge to any offsite stormwater facility or facilities used for compliance, and that the facility or facilities are subject to a maintenance document satisfying the requirements of subsection 4.3.5.
- 4.5.6 Upon completion of site work, a permittee must submit as-built drawings demonstrating that at the time of final stabilization, stormwater facilities conform to design specifications as approved by the District.

Appendix 4a: Low-Floor Elevation Assessment.
 See p. 48.