



# PERMIT APPLICATION SUBMITTAL REQUIREMENTS

## **Rule 5 – Stormwater Exhibits and Information**

The following exhibits and information must accompany the permit application. One set, full size; one set, reduced to 11"x17"; and a copy of all submittals in electronic .pdf format.

### General

- Property lines and delineation of lands under ownership of the applicant.
- Delineation of the drainage areas contributing runoff from off-site, proposed and existing sub-watersheds onsite, emergency overflows, and drainage ways.
- Existing soils map for site.
- Aerial photo showing the locations of water bodies downstream of site.
- Proposed and existing stormwater facilities location, alignment, and elevation.
- Delineation of existing onsite wetland, marshes, shoreland, and floodplain areas.
- Identification of existing and proposed normal, ordinary high and 100-year water elevations for all lakes, ponds, wetlands, ditches, creeks and swales onsite.
- Identification of existing and proposed site contour elevations with at least a 2-foot contour interval including offsite contours where overflows are directed.
- Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet control structures.
- Specific details related to stormwater management facilities (pond outlet structures, bioretention area typical cross-section, etc.).
- Stormwater utility plan to show the location, alignment, type, diameter, slope, and elevations of storm sewer pipes and related infrastructure.
- Narrative addressing incorporation of stormwater BMPs.

### Rate Control

- All runoff input parameters must comply with principles presented in the *Minnesota Hydrology Guide Method (SCS)*, *Minnesota Stormwater Manual*, or the Rational Method.
- Stormwater runoff rate analysis for the 2-year, 10-year, 100-year, and 7.2-inch snow-melt critical storm events, existing and proposed.
- Clearly show all discharge routes from the site to a public conveyance system. The conveyance system may consist of a stream, lake, river, wetland or publicly owned storm sewer system.
- New point discharges at property lines where there is no receiving body are only allowed with the permission of the adjacent property owner.
- Curve numbers or runoff coefficients should accurately reflect the soil type, land use, and vegetation. The County Soil Survey and/or soil borings may be used to determine soil types.
- When selecting existing conditions land use, it shall be the predominant land use over the last ten years.

- When selecting proposed conditions curve numbers, consider the effect of construction activity on the compaction of site soils. Typically, the curve number should be increased “one-half” of a hydrologic soil group to account for compaction in the proposed site condition. For example, a lawn area that is mass-graded and is considered a Type B hydrologic soil, the curve number should be assumed as 68 instead of 61.
- Land-locked basins (basins with no outlet) should be designed to retain all runoff from back-to-back 100-year, 24-hour storms.
- Rate control comparisons (existing rate vs. proposed rate) should be performed for all discharge locations from a site, and existing rates shall not be greater than proposed.
- Wetlands can be used to achieve rate control, if the following three conditions are met:
  1. Water quality treatment (according to MFCRWD standards) is provided prior to discharge to the wetland;
  2. The wetland is located completely within the subject property boundaries; and
  3. The WCA LGU determines that secondary impacts will not occur as a result of an increase in water level bounce.
- If filling within floodplain, demonstrate effect fill will have on floodplain elevations.

#### Water Quality/Infiltration

- Provide water quality treatment consistent with NPDES criteria. In general, submit calculations demonstrating that treatment is provided for runoff from 0.5-inch of runoff from all newly created or redeveloped impervious surface on the property. If the development or redevelopment drains to a point within one mile of a special or impaired water, the treatment requirement increases to the runoff from 1.0-inch of runoff and one-half of the runoff volume must be infiltrated.
- When using infiltration or bioretention (infiltration, storage, and water uptake by vegetation) for volume reduction, the following requirements must be met:
  1. The design shall follow the guidelines established in Chapter 12-7 of the *Minnesota Stormwater Manual* and the requirements of this section.
  2. Infiltration areas shall be limited to the horizontal areas subject to prolonged wetting. Areas of permanent pools tend to lose infiltration capacity over time and shall not be accepted as an infiltration practice.
  3. Stormwater runoff must be pretreated to remove solids before discharging to infiltration areas to maintain the long term viability of the infiltration areas. The pretreatment shall be designed to protect the system from clogging and to protect groundwater quality. Pretreatment options may include, but are not limited to, oil/grease separation, sedimentation, biofiltration, filtration, swales or filter strips.
  4. Bioretention and infiltration areas must be designed to bypass higher flows.
- Appropriate water quality models and calculations demonstrating site compliance can be found in the *Minnesota Stormwater Manual*.