



# COUNTY OF KENOSHA

## Department of Planning and Development

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### **CHECKLIST TO BE USED IN THE REVIEW** **OF STORMWATER MANAGEMENT &** **CONSTRUCTION EROSION CONTROL PLANS** **FOR PROPOSED DEVELOPMENT**

1. Hydrologic and Hydraulic Considerations
  - a. Were the SEWRPC regional rainfall intensity-duration-frequency curves used?
  - b. Were NRCS SSURGO soil data used to determine hydrologic soil groups?<sup>1</sup>
  - c. Were peak flow rates and hydrographs developed for storms with recurrence intervals of two, 10, and 100 years under both pre- and post-development conditions?
  - d. Was the minor stormwater drainage system designed for a 10-year recurrence interval storm? (The minor system consists of sideyard and backyard drainage swales, roadside swales, storm sewers, and possibly stormwater storage facilities.)
  - e. Was the major stormwater drainage system designed for a 100-year recurrence interval storm? (The major system consists of the entire street cross-section and interconnected drainage swales, watercourses and stormwater storage facilities.)
  - f. If a detention basin is intended to detain runoff from storms with recurrence intervals up to, and including, 100 years, are flow paths provided to insure that all runoff would be conveyed to the basin?

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<sup>1</sup>The most current U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil map units on a specific project site may be determined using the Regional Map Server, a mapping application that provides access to planning and resource maps of the Southeastern Wisconsin Region. A cooperative effort between the seven counties of the Region and the Southeastern Wisconsin Regional Planning Commission, the map server offers access to region-wide planning maps and orthophotography, as well as maps contributed by a number of counties. The Regional Map Server website is available at URL: <http://www.sewrpc.org/regionallandinfo/> (Click on "Regional Mapping" and then on "Open Regional Map Server." Select the features to be displayed and use the "Identify" tool to determine the soil map unit at a particular location. It may be necessary to disable the "pop-up blocking" feature in order to use the "Identify" tool.)

Once soil map units on the site are determined, the hydrologic soil groups to be applied in project design should be obtained from the USDA NRCS Soil Survey Geographic (SSURGO) database. The SSURGO data set is a digital soil survey and generally is the most detailed level of geographic soil data developed by the National Cooperative Soil Survey. The SSURGO hydrologic soil group designations should be used because, in some cases, they may differ from those in older NRCS publications. The database is available from the USDA-NRCS Soil Data Mart website at: URL: <http://SoilDataMart.nrcs.usda.gov/>. The site allows users to download tabular and spatial soils data and to generate soil survey reports. (Click on "Select State," "Select County," "Select Survey Area," and "Generate Reports." Then select map unit symbols, select "Water Features" in the "Report Descriptions" drop down menu and click on "Generate Report.")

- g. Is there an overland flow path downstream of the detention basin which will enable overflow during storms greater than the basin design storm to be safely conveyed to a receiving watercourse?
  - h. Is the detention basin located on an outlet?
  - i. Were culverts designed for the following peak rates of runoff as called for under the County subdivision control ordinance?  
**Collector Streets:** Peak rate of runoff from a 10-year recurrence interval storm with two feet of freeboard to the roadway elevation.<sup>2</sup>  
**Arterial Streets and Highways:** Peak rate of runoff from a 50-year recurrence interval storm with two feet of freeboard to the roadway elevation.<sup>1</sup>
  - j. Were culverts under freeways and railways designed for the peak rate of runoff from a 100-year recurrence interval storm, as called for under SEWRPC standards?
2. Environmental and Land Use Considerations
- a. Is the site within the boundaries of an adopted sewer service area? If not, the development should be rejected, or steps should be taken to amend the various plans concerned.
  - b. Is the site, or any portion of the site, located in a primary environmental corridor? If so, those lands within the primary environmental corridor should either have deed restrictions placed on them requiring that the lands be maintained in permanent natural open space use, or development on those lands should be restricted to one house for every five acres of upland.
  - c. Do any proposed activities directly impact wetlands (e.g., filling, excavation, storm sewer construction, etc.)? If so, County shoreland-wetland zoning regulations or State or Federal wetland regulations would apply.
3. Nonpoint Source Pollution and Construction Erosion Control Considerations
- a. If located in a watershed for which a comprehensive watershed plan has been prepared by SEWRPC, are nonpoint source pollution control measures proposed which are likely to achieve the loading reductions recommended in the plan?
  - b. If located outside of a watershed with a comprehensive plan, are there some provisions to minimize the contribution of nonpoint source pollutants to receiving streams, lakes, and wetlands?
  - c. Where a wet detention basin with a permanent pond is proposed for the control of nonpoint source pollution, does the basin have the following characteristics?
    - A pond length between the inlet and the outlet of at least three times the pond width
    - A 10-foot-wide essentially level terrace around the basin perimeter for safety purposes .
    - A minimum 25-foot-wide vegetated buffer strip around the basin perimeter
    - Basin side slopes no steeper than one vertical on three horizontal, preferably flatter
    - An average permanent pond depth of about five feet
    - Erosion protection at basin inlets and outlets

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<sup>2</sup>SEWRPC roadway overtopping standards are the same as the County ordinance requirements, but freeboard is not required under the SEWRPC standards.

05/06/03, 05/23/03, 1/03/05, 1/22/05, 12/13/06

- Vehicular maintenance access to the basin
  - d. Are there provisions for the continued maintenance of any proposed wet detention basins? Either a legal agreement between a homeowners association and the Town involved should be executed, or the land containing the basin should be dedicated to the Town, with the Town assuming responsibility for maintenance
  - e. Developments that meet the eligibility requirements established in Chapter NR 151, "Runoff Management," of the *Wisconsin Administrative Code* shall provide construction erosion control measures consistent with Section NR 151.11.
  - f. After October 1, 2004, any developments that meet the eligibility requirements established in Section NR 151.12 must provide post-construction control of stormwater runoff consistent with the requirements of Section NR 151.12 and must provide setbacks for protective areas consistent with the requirements of Section NR 151.12 (5) (d). Development in the Des Plaines River watershed, must provide controls on the peak rate of runoff from a two-year storm that are consistent with the release rate established below under Item 4 of this checklist. The following Wisconsin Department of Natural Resources (WDNR) Conservation Practice Standards should be applied in project design. These standards can be downloaded at:  
<http://www.dnr.state.wi.us/org/water/wm/nps/stormwater/techstds.htm>:
    - Code 1001, "*Wet Detention Basin*,"
    - Code 1002, "*Site Evaluation for Stormwater Infiltration*,"
    - Code 1003, "*Infiltration Basin*," and the accompanying "*Technical Note for Sizing Infiltration Basins and Bioretention Devices to Meet State of Wisconsin Stormwater Infiltration Performance Standards*," and
    - Code 1004, "*Bioretention for Infiltration*," and the accompanying Technical Note referenced above.
 WDNR Specification S100, "*Compost*," is referenced in some of the standards listed above and should also be applied.
  - g. Are construction erosion control measures consistent with the applicable WDNR construction site erosion and sediment control standards that can be downloaded at <http://www.dnr.state.wi.us/org/water/wm/nps/stormwater/techstds.htm>? For applicable practices not covered by the standards are measures consistent with the 1994 revision to the State of Wisconsin *Construction Site Best Management Practice Handbook* specified? Such measures include, but are not limited to, minimization of land disturbance through phased construction, installation of filter fabric fences across unprotected slopes, mulching or seeding of disturbed areas left bare for extended periods of time, installation of straw bale barriers in disturbed drainage swales and channels, provision of gravel access roads to minimize tracking of soils onto paved roadways, and the provision of protection barriers or insert baskets at storm sewer inlets. Where detention basins are proposed, they should be constructed prior to the commencement of significant site grading so they can function as sediment traps. Following construction, the basin should be excavated to restore the necessary permanent pond depth.
4. Special Considerations For Development in the Des Plaines River Watershed

The boundaries of the Des Plaines River watershed are shown on the attached Map 1. The recently completed Des Plaines River watershed study recommends that peak rates of runoff from new development in the watershed be controlled as follows:

- a) The post-development 100-year storm release rate from the site should be no more than 0.30 cfs per acre.
- b) The post-development two-year storm release rate from the site should be no more than 0.04 cfs per acre.

Runoff from new development within the watershed should be provided with facilities to achieve those levels of control. The following initial screening criteria are to be applied to determine the potential eligibility of a development for the provision of runoff controls:

- a) The development site must be in the Des Plaines River watershed.
- b) The proposed development will create additional impervious area of greater than, or equal to, 10 percent of the total site area (with wetland and primary environmental corridor areas excluded from the total site area). All new impervious surfaces, including new roads are to be included in this calculation.

Except for the following exemptions, any development that meets the above criteria will be required to meet the release rates:

- a) Single residential lots that are not part of a larger development.
- b) Land divisions created by a Certified Survey Map (CSM) without a new road (public or private). 12/13/06
- c) Non-residential development sites with land disturbing construction activity of less than one acre, unless new impervious area of 0.5 acre or more is created.