

# Wisconsin's **Runoff** Rules

## what farmers need to know

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**F**arms, like all major industries, must follow environmental requirements to control runoff from fields, pastures and livestock facilities. Otherwise this pollution can harm our lakes, streams, wetlands and groundwater.

Wisconsin adopted administrative rules in 2002 (NR 151), with revisions effective in 2011 that set statewide performance standards and prohibitions for all Wisconsin farms. All farmers must comply with these standards and prohibitions. Cost-share funding may be available to assist with compliance. Some state and local programs may require compliance whether or not cost-share funds are available.

This fact sheet explains the basic information that farmers need to know about these rules and how to comply with them. It is recommended that farmers contact their county land conservation staff for further details on these rules and their impact on farm operations.

### ► Agricultural Standards and Prohibitions:

#### ALL FARMERS MUST:

- *Meet tolerable soil loss ("T") on cropped fields and pastures.*
- *Annually develop and follow a Nutrient Management Plan (NMP) designed to keep nutrients and sediment from entering lakes, streams, wetlands and groundwater. Farmers may hire a certified crop advisor or prepare their own NMP if they have received proper training.*
- *Use the phosphorous index (PI) standard to ensure that their NMP adequately controls phosphorous runoff over the accounting period.*
- *Avoid tilling within 5 feet of the edge of the bank of surface waters. This setback may be extended up to 20 feet to ensure bank integrity and prevent soil deposition.*

#### ► Additional Standards:

#### FARMERS WITH LIVESTOCK MUST:

- *Prevent direct runoff from feedlots or stored manure from entering lakes, streams, wetlands and groundwater.*
- *Limit access or otherwise manage livestock along lakes, streams and wetlands to maintain vegetative cover and prevent erosion.*
- *Prevent significant discharges of process wastewater (milkhouse waste, feed leachate, etc.) into lakes, streams, wetlands, or groundwater.*

#### FARMERS WHO HAVE, OR PLAN TO BUILD, MANURE STORAGE STRUCTURES MUST:

- *Maintain structures to prevent overflow and maintain contents at or below the specified margin of safety.*
- *Repair or upgrade any failing or leaking structures to prevent negative impacts to public health, aquatic life and groundwater.*
- *Close idle structures according to accepted standards.*
- *Meet technical standards for newly constructed or significantly altered structures.*

#### FARMERS WITH LAND IN A WATER QUALITY MANAGEMENT AREA (300 feet from streams, 1,000 feet from a lake, or in areas susceptible to groundwater contamination) MUST:

- *Avoid stacking manure in unconfined piles.*
- *Divert clean water away from feedlots, manure storage areas, and barnyards located within this area.*

### ► Farmland Preservation Tax Credit:

A farmer must comply with applicable state standards to receive the Farmland Preservation Tax Credit, even if cost sharing is not available. Farmers may be considered in compliance by entering into a schedule of compliance.

This requirement applies to farmers whose land is located in a certified farmland preservation zoning district (i.e. exclusive agriculture), or for farmers who signed a farmland preservation agreement after standards were in effect for that county. Farmers should contact their county land conservation staff for more information regarding applicable standards and compliance documentation.

### ► Implementation and Financial Assistance:

Under DNR rules, a landowner is normally entitled to cost sharing if the landowner is required to implement best management practices on "existing cropland" or an "existing" livestock facility or operation in order to comply with a DNR performance standard. Cropland or livestock facilities brought into service after the effective date of the standard are considered "new" and must meet standards and prohibitions without cost-share funding. Farmers with existing cropland or livestock facilities may be eligible for state or federal cost sharing and are encouraged to contact their county land conservation staff or USDA Natural Resources Conservation Service (NRCS) office for information about current funding sources, rates and practices eligible for cost sharing.

Farmers also should work with their land conservation staff to determine how these performance standards and prohibitions may affect their participation in various federal, state and local programs, such as Farmland Preservation. You can find a directory of land conservation offices and related agencies at <http://datcp.wi.gov/Environment> under "Land and Water Conservation."

### ► Permits and Licensing:

Farmers may be required to meet NR 151 Standards in order to obtain local and state permits. For livestock siting and manure storage ordinance permits, for example, nutrient management plans and other requirements may be imposed on livestock operations without providing cost sharing. Contact your local officials for additional information.

Farmers with 1,000 or more animal units must operate under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit and do not qualify for state cost sharing to meet permit requirements. Contact your DNR Service Center for more information about WPDES permits.

For more information about runoff management in Wisconsin and topics found in this brochure please visit:

[runoffinfo.uwex.edu](http://runoffinfo.uwex.edu)



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## Non-Agricultural Revisions to Chapter NR 151, Runoff Management Rule

The Wisconsin Department of Natural Resources (WDNR) has revised Chapter NR 151, Wisconsin Administrative Code, an administrative rule that establishes runoff pollution performance standards for both agricultural and non-agricultural practices and manure management prohibitions for agricultural facilities and practices. These standards and prohibitions are intended to achieve water quality standards. Polluted runoff from both urban and agricultural land uses contribute to the nutrients that cause unsightly algae blooms, the loss of aquatic habitat, fish kills, and other water quality problems that affect Wisconsin's lakes and streams. The rule was originally promulgated in 2002. The revised rule was published in December 2010 and became effective on January 1, 2011.

Please note that under state budget bill 2011 Wisconsin Act 32, there were two provisions which became effective on July 1, 2011, that impact implementation of Chapter NR 151. Those provisions will be mentioned under the section related to the developed urban area performance standards.

This fact sheet includes a summary of major non-agricultural revisions to Chapter NR 151 and is not inclusive of all the revisions that were made to the rule. The complete version of Chapter NR 151 can be found at <http://legis.wisconsin.gov/rsb/code/nr/nr151.pdf>. This fact sheet includes information on the following:

### **Subchapter I – General Provisions**

Revisions to Key Definitions

Revisions to Location of Best Management Practices on Navigable Waters

### **Subchapter III – Non-Agricultural Performance Standards**

Revisions to the Construction Site Performance Standards

Revisions to the Post-Construction Performance Standards

Revisions to the Developed Urban Area Performance Standards

### **Subchapter IV – Transportation Facility Performance Standards**

Revisions to Transportation Performance Standards

## **SUBCHAPTER I – GENERAL PROVISIONS**

### **Revisions to Key Definitions**

Several definitions were added because they are used in revisions to the performance standards. The terms added are “direct conduits to groundwater”, “existing development”, “filtering layer”, “impaired water”, “silviculture activity”, and “total maximum daily load”.

Several definitions were amended to add clarification: “average annual rainfall”, “connected imperviousness”, “impervious surface”, and “in-fill”. The most significant change is to the definition of MEP or “maximum extent practicable” in s. NR 151.002(25). This definition was modified to indicate that MEP is a different level of achieving a performance standard. Section NR 151.006 was created to identify when MEP applies. This definition will be used for all performance standards except those in s. NR 151.13, the developed urban area performance standard for municipalities.

## Revisions to Location of Best Management Practices on Navigable Waters

In the 2002 version of the rule, best management practices (BMPs) associated with construction sites for new development may not be located in navigable waters to receive credit for meeting any performance standard in Chapter NR 151. This restriction has been retained in the revised rule. Also in the 2002 version of the rule, best management practices for existing development, re-development or in-fill development could receive credit for construction in either perennial and intermittent streams if all applicable permits were received. As of January 1, 2011, s. NR 151.003 only allows treatment credit for newly constructed BMPs in intermittent streams for which all applicable permits have been received.

## SUBCHAPTER III – NON-AGRICULTURAL PERFORMANCE STANDARDS

### Revisions to the Construction Site Performance Standards

#### 1. Construction Site Performance Standards for Non-Permitted Sites

Specific erosion and sediment control requirements have been added for non-permitted sites. Non-permitted sites may include: construction sites that consist of land disturbing construction activity of less than one acre and construction projects that are exempted by federal statutes or regulations. Some construction sites are exempt from the performance standards. The exempt sites include one- and two family dwellings regulated by the Department of Safety and Professional Services (DSPS) (formerly the Wisconsin Department of Commerce), agricultural facilities and practices, and silviculture activities.

The revisions set minimum standards for smaller sites to protect water quality. Erosion and sediment control practices are now required at non-permitted sites to prevent or reduce all of the following:

- (a) The deposition of soil from being tracked onto streets by vehicles.
- (b) The discharge of sediment from disturbed areas into on-site storm water inlets.
- (c) The discharge of sediment from disturbed areas into adjacent waters of the state.
- (d) The discharge of sediment from drainage ways that flow off the site.
- (e) The discharge of sediment by dewatering activities.
- (f) The discharge of sediment eroding from soil stockpiles existing for more than 7 days.
- (g) The transport by runoff into waters of the state of chemicals, cement and other building compounds and materials on the construction site during the construction period. However, projects that require the placement of these materials in waters of the state, such as constructing bridge footings or BMP installations are not prohibited by this paragraph.

A permit under Subchapter III of Chapter 216, Wis. Adm. Code, is not required for these construction sites unless the WDNR determines under s. NR 216.51(3) that a permit is needed. These revisions do not include a requirement for an erosion control plan or any kind of modeling to demonstrate compliance with a numeric performance standard. Compliance can be achieved by selecting and implementing practices in accordance with WDNR technical standards as appropriate. The WDNR technical standards can be found at <http://dnr.wi.gov/runoff/stormwater/techstds.htm>.

#### 2. Construction Site Performance Standards for Permitted Sites

The revisions to the construction site performance standards for permitted sites are found in s. NR 151.11(6m). The construction site performance standards promulgated in 2002 were retained in s. NR 151.11(6) for sites where a Notice of Intent (NOI) was submitted prior to January 1, 2011. The revisions apply to sites that are permitted under subchapter III of Chapter 216, Wis. Adm. Code, and for which an NOI is submitted to the WDNR on or after January 1, 2011. Erosion and sediment control requirements for permitted sites have been modified to incorporate non-numeric effluent limit guidelines from the United States Environmental Protection Agency (USEPA). The USEPA's non-

numeric effluent limits became effective in February 2010. In addition, the erosion and sediment control requirements for permitted sites have been modified to be consistent with the erosion and sediment control standards of ch. COMM 60 for commercial building construction sites originally under the authority of the Wisconsin Department of Commerce (now DSPS). Revisions to the construction site standards for permitted sites can be broken down into four categories: *Erosion and Sediment Control Practices*, *Sediment Performance Standards*, *Preventive Measures*, and *Location and Implementation*.

#### *Erosion and Sediment Control Practices*

Erosion and sediment control practices are required at permitted sites to prevent or reduce the following:

- Items (a) through (g) listed in 1 above for non-permitted sites.
- The discharge of sediment from erosive flows at outlets and in downstream channels.
- The transport by runoff into waters of the state of untreated wash water from vehicle and wheel washing.

#### *Sediment Performance Standards*

The performance standard of 80% sediment reduction will remain in effect until January 1, 2013, after which the standard will change to a maximum discharge of 5 tons per acre per year of sediment. This modification results in a measurable number expressed as a load, making it consistent with the way total maximum daily loads (TMDLs) are calculated. The change to a load also provides equity with the sheet, rill and wind erosion performance measure for agriculture. Five tons per acre per year is roughly equivalent to the most prevalent tolerable soil loss rate in the state.

The WDNR is currently working on a modification to the revised universal soil loss equation 2 (RUSLE2) model that can be used to estimate the sediment load leaving a construction site under varying land and management conditions. The WDNR anticipates that the model will be available for public use prior to January 1, 2013. If it is not available, compliance will continue to be determined by the development of an adequate erosion and sediment control plan that utilizes appropriate BMPs that are consistent with the technical standards.

#### *Preventive Measures*

The erosion control plan for permitted sites must incorporate maintenance of existing vegetation, especially adjacent to surface waters whenever possible, minimization of soil compaction and preservation of topsoil, minimization of land disturbing construction activity on slopes of 20% or more and the development of spill prevention and response procedures.

#### *Location and Implementation*

BMPs must be located so that treatment occurs before runoff enters waters of the state. Also, the BMPs used to comply with the performance standards must be implemented as follows:

- Erosion and sediment control practices must be constructed or installed in accordance with the erosion control plan before land disturbing construction activities begin.
- Erosion and sediment control practices must be maintained until final stabilization.
- Final stabilization must commence when land disturbing construction activities cease and final grade has been reached on any portion of the site.
- Temporary stabilization activity must commence when land disturbing construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days.
- BMPs that are no longer necessary for erosion and sediment control must be removed by the responsible party.

## Revisions to the Post-Construction Performance Standards

The revisions to the post-construction performance standards were added via s. NR 151.12(2)(bm) and ss. NR 151.121 to 151.128. The post-construction performance standards promulgated in 2002 were retained in s. NR 151.12(5) for sites where an NOI was submitted prior to January 1, 2011. The revisions to the post construction performance standards in ss. NR 151.121 to 151.128 only apply to sites required to obtain coverage under a construction site discharge permit as regulated under Chapter NR 216, Wis. Adm. Code, and that are subject to the construction performance standards of s. NR 151.11, and only apply to those sites where an NOI was received by the WDNR on or after January 1, 2011.

### 1. Applicability

The exception for a redevelopment post-construction site with no increase in exposed parking lots or roads was eliminated for sites where an NOI is filed on or after January 1, 2011.

### 2. Maintenance of Effort

For redevelopment sites where the redevelopment will be replacing older development that was subject to the post-construction performance standards of the 2002 version of Chapter NR 151, the storm water management plan must meet the TSS reduction, peak flow control, infiltration, and protective areas standards applicable to the older development or meet the redevelopment standards of the revised code, whichever is more stringent. The purpose of this is to prevent back-sliding to a lesser standard.

### 3. Total Suspended Solids (TSS) Performance Standard for Redevelopment

The requirement to reduce the TSS load by 40% compared to no controls for the entire redevelopment post-construction site has been revised to 40% reduction of the TSS generated on parking areas and roads on a redevelopment post-construction site. This focuses the treatment effort on the dirtiest source areas for TSS.

### 4. Peak Discharge Performance Standard

The peak discharge performance standard has been revised to include the 1-year, 24-hour design storm along with the current 2-year, 24-hour design storm as peak flow rates that must match the pre-development 1- and 2-year storms. This change is based on research showing that the previous standard was not protective enough of the bank-full condition.

Maximum pre-development runoff curve numbers have been added for woodland and grassland cover condition. The revised Table 2 is included below.

| <b>Table 2. Maximum Pre-Development Runoff Curve Numbers</b> |                              |          |          |          |
|--|------------------------------|----------|----------|----------|
| <b>Runoff Curve Number</b>                                   | <b>Hydrologic Soil Group</b> |          |          |          |
|  | <b>A</b>                     | <b>B</b> | <b>C</b> | <b>D</b> |
| Woodland   | 30                           | 55       | 70       | 77       |
| Grassland  | 39                           | 61       | 71       | 78       |
| Cropland   | 55                           | 69       | 78       | 83       |

The peak discharge exemption for not increasing the existing surface water elevation at any point within the downstream receiving water by more than 0.01 of a foot for the 2-year, 24-hour storm event has been eliminated and replaced with an exemption for a post-construction site where the discharge

is directly into a lake over 5,000 acres or a stream or river segment draining more than 500 square miles. A map identifying lakes over 5,000 acres and stream and river segments draining more than 500 square miles is included in the WDNR's guidance document for Modeling Post-Construction Storm Water Management Treatment dated December 20, 2010. This document can be found at: [http://dnr.wi.gov/runoff/stormwater/guidance/Modeling\\_PostConstruction.pdf](http://dnr.wi.gov/runoff/stormwater/guidance/Modeling_PostConstruction.pdf).

**5. Infiltration Performance Standard**

The revised infiltration standards are summarized in the following table:

| <b>Level of Connected Imperviousness<sup>1</sup></b>                                   | <b>Infiltration Performance Standard</b>       | <b>Maximum % of the Post-Construction Site Required as Effective Infiltration area</b> |
|--|--|--|
| Low Imperviousness<br><i>Up to 40% Connected Imperviousness</i>                        | 90% of the pre-development infiltration volume | 1%   |
| Moderate Imperviousness<br><i>More than 40% and up to 80% Connected Imperviousness</i> | 75% of the pre-development infiltration volume | 2%   |
| High Imperviousness<br><i>More than 80% Connected Imperviousness</i>                   | 60% of the pre-development infiltration volume | 2%   |

<sup>1</sup>A histogram showing typical percent connected imperviousness for various standard land uses can be found in the WDNR's guidance document for Developed Urban Areas and the 20% and 40% TSS Reductions dated November 24, 2010. This document can be found at: [http://dnr.wi.gov/runoff/stormwater/guidance/Guidance\\_TSS.pdf](http://dnr.wi.gov/runoff/stormwater/guidance/Guidance_TSS.pdf)

The prohibitions, exemptions, and other limitations for infiltration previously outlined under ss. NR 151.12(5)(c)5. and 6. have been reorganized. The actual language of the section remains largely unchanged. The section has been reorganized as follows:

*Source Areas*

Prohibitions – Runoff from certain source areas may not be infiltrated and no credit will be given towards meeting the infiltration performance standard.

Exemptions – Infiltration of runoff from certain source areas may be credited towards meeting the standard, but infiltration is optional.

*Location of Practices*

Prohibitions – Infiltration practices may not be located in certain areas. Minimum distances between the bottom of the infiltration system and bedrock or groundwater are identified based on source areas.

Exemptions – Infiltration rate exemptions are provided for low permeable soils and certain soil classifications.

**6. Protective Area Performance Standard**

The rule revisions increase the protective area from 50 feet to 75 feet for certain high quality wetlands such as sedge meadows, open and coniferous bogs, low prairies, calcareous fens, coniferous

swamps, lowland hardwood swamps and ephemeral ponds. Information on wetland types can be found at: <http://dnr.wi.gov/wetlands/types.html>

### **Revisions to the Developed Urban Area Performance Standards**

Revisions to this section included an option for permitted municipalities that may have difficulty meeting the 40% TSS reduction requirement by March 31, 2013. A permittee could declare they were unable to meet the deadline and the rule revisions identified a process for them to follow. The process included the requirement for a storm water management plan, storm water management plan submittal requirements, the WDNR review process, and the allowance of up to 10 more years to comply with the standard provided the plan is followed. Under state budget bill 2011 Wisconsin Act 32, there were two provisions which directly impact implementation of the revisions to the developed urban area performance standard. First, specific to the requirement to reduce TSS by 40% by 2013, 2011 Wisconsin Act 32 prohibits the WDNR from enforcing the 40% TSS performance standard by a certain date. This provision of the budget bill does not impact any other performance standards in Chapter NR 151. The requirement to meet the 20% TSS reduction is still in force as are all performance standards addressing new construction and redevelopment. A second provision of 2011 Wisconsin Act 32 identifies that where a permitted municipality has achieved a reduction above the 20% TSS performance standard, all structural best management practices in place on July 1, 2011, must be maintained to the maximum extent practicable.

Implementation of the provisions of 2011 Wisconsin Act 32 will be reflected in the MS4 general permit and MS4 individual permits when those permits are issued or reissued.

## **SUBCHAPTER IV – TRANSPORTATION FACILITY PERFORMANCE STANDARDS**

### **Revisions to Transportation Performance Standards**

The modifications to Subchapter IV include many of the same changes to the performance standards in Subchapter III. However, since Subchapter IV is specifically for transportation, several provisions are tailored to those types of facilities.

#### 1. Applicability

Transportation facilities include highways, railroads, public mass transit facilities, public-use airports, public trails, and harbor improvements. The modifications of new construction site and post-construction performance standards only apply to transportation facility construction sites for which the WDNR receives a Notice of Intent to apply for construction site storm water discharge permit coverage under Chapter NR 216, Wis. Adm. Code, on or after January 1, 2011; or to transportation facility construction sites for which bids have been advertised or construction contracts signed for which no bid was advertised on or after January 1, 2011.

#### 2. Definitions

The definition of “minor reconstruction” as it applies to a highway no longer includes the replacement of a vegetated drainage system with a non-vegetated drainage system. If there is a conversion of the drainage system from vegetated to non-vegetated (e.g., swales to storm sewer), then the area of the conversion is not minor reconstruction and is subject to the applicable reconstruction performance standards.

#### 3. Performance Standards for Small Sites and Routine Maintenance

The prescriptive construction site performance standards for transportation facility construction sites disturbing less than one acre of land and routine maintenance consisting of less than 5 acres are the



same as those listed for non-permitted construction sites (See *Construction Site Performance Standards for Non-Permitted Sites* on page 2 above).

**4. Performance Standards for Sites Disturbing One or More Acre**

The construction site performance standards for transportation facility construction sites disturbing one acre or more of land are the same as those listed for permitted construction sites (See *Construction Site Performance Standards for Permitted Sites* on page 2 above).

**5. Post-Construction Performance Standards**

There have been some modifications to the post-construction performance standards and exemptions for highways. The table below illustrates the applicability and exemptions of the post-construction performance standards for highways.

**Post-Construction Performance Standards for Highways**

|                         | Minor Highway Reconstruction | Highway Reconstruction <sup>1</sup> | New Highway Construction |
|-------------------------|------------------------------|-------------------------------------|--------------------------|
| <b>TSS Reduction</b>    | No                           | Yes (40% reduction) <sup>2</sup>    | Yes (80% reduction)      |
| <b>Peak Discharge</b>   | No                           | No                                  | Yes                      |
| <b>Infiltration</b>     | No                           | No                                  | No <sup>3</sup>          |
| <b>Protective Areas</b> | Yes                          | Yes                                 | Yes                      |

<sup>1</sup> For highway reconstruction less than 1.5 miles that does not qualify as minor reconstruction because of the drainage system conversion, the 40% TSS performance standard only applies to the areas converted from a vegetated drainage system to a non-vegetated drainage system.

<sup>2</sup> For municipalities covered under a municipal separate storm sewer system (MS4) permit, this 40% TSS performance standard first applies 1/1/2017. For municipalities not covered by an MS4 permit, this 40% TSS performance standard applies as of 1/1/2011.

<sup>3</sup> This exemption applies to new stand-alone highways such as an interstate, state highway, county highway, or local road. New roads that are part of a larger common plan of development such as residential, commercial, or industrial development are subject to Subchapter III of Chapter NR 151.

**Swale Treatment**

The swale treatment performance standard references compliance with the existing technical standard for swales, “Vegetated Infiltration Swale” (Technical Standard No. 1005). This technical standard is available at: <http://dnr.wi.gov/runoff/stormwater/techstds.htm#Post>. Additional guidance on implementation of this performance standard is available in the WDNR’s guidance document for Modeling Post-Construction Storm Water Management Treatment dated December 20, 2010. This document can be found at:

[http://dnr.wi.gov/runoff/stormwater/guidance/Modeling\\_PostConstruction.pdf](http://dnr.wi.gov/runoff/stormwater/guidance/Modeling_PostConstruction.pdf).

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