WISCONSIN DEPARTMENT OF NATURAL RESOURCES

DNR Storm Water Program Updates

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Topics

- Code Revisions
- Guidance
- Technical Standards
- The Future

DNR Storm Water Program Info

dnr.wisconsin.gov/topic/Stormwater

NR 216 Rule Updates:

Chapter NR 216, Wis. Admin. Code, Storm Water Discharge Permits was last updated in 2003. Since that time there have been changes to state statutes, federal requirements, and Chapter NR 151, Wis. Admin. Code that need to be reflected in administrative code. A **public hearing** on the proposed rule updates is scheduled for **April 20, 2021 at 1:00 p.m.** via Zoom. Comments on the proposed rule must be received on or before **April 30, 2021.** View meeting notice and draft rule at:

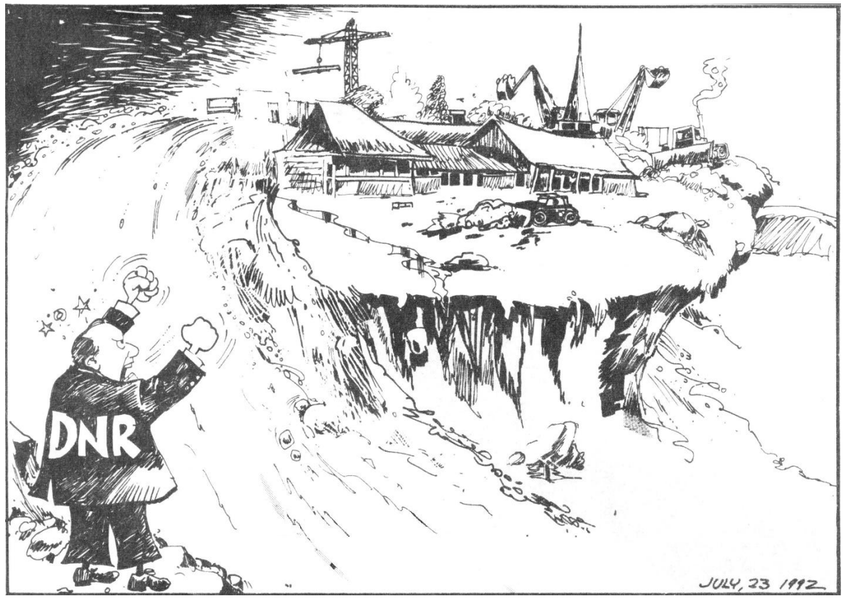
- NR 216 Rule Updates

Code Revisions - NR 216

The purpose of Chapter NR 216, Wis. Admin. Code [exit DNR] is to establish criteria defining those storm water discharges needing WPDES storm water permits, as required by s. 283.33, Stats., and to implement the appropriate performance standards of subchs. III and IV of ch. NR 151. Chapter NR 216 identifies which industrial facilities, construction sites and municipalities require WPDES storm water permits, application requirements, and storm water discharge permit criteria for each type of facility.

In accordance with the Scope Statement, the proposed modifications include:

- Address technical inconsistencies with Federal Law identified in the July 2011 legal authority review letter from USEPA Region 5, also known as the 75 issues letter [exit DNR]. Issues 24-25, 52, 56, 57, and 67 pertain to storm water and require updates to NR 216. Issue 23 was addressed through an unauthorized rule repeal process after the scope statement was approved. The status of the 75 issues as of May 11, 2020 is available in this status table [PDF exit DNR].
- Incorporate provisions to implement the NPDES Electronic Reporting Rule [exit DNR] and the NPDES Municipal Separate Storm Water Permit Remand Rule [PDF exit DNR].
- Update references to ch. NR 151, Wis. Adm. Code that became obsolete effective January 1, 2011.
- Clarify how state statutes and code related to Total Maximum Daily Load (TMDL) implementation and drainage to wetlands will be implemented in storm water discharge permits
- Update 2003 construction site application fees to fund the program in the manner specified in s. 283.33 (9), Statutes. Current fees range from $140-$350 based on the proposed disturbed area. These fees are not expected to impact efforts to provide affordable housing since permits are not required for sites with less than 1 acre of land disturbance.



Acres of Land Disturbance	Application Fee before January 1, 2023	Application Fee after January 1, 2023
Less than 2	140	$250
~~Less~~ 2 or more and less than 5	140	$460
5 or more and less than 25	235	$780
25 or more and less than 50	350	$1160
~~25~~ 50 or greater	350	$1740

NR 216.47 (7) WETLANDS. For construction activities that include grading in areas that drain to wetlands regulated under ch. NR 103, the storm water management plan required under s. NR 216.46 shall include an evaluation of potential impacts to wetlands and adjacent properties due to changes in hydrology. The storm water management plan shall identify measures taken to avoid or minimize those impacts.

Program Guidance

Title	Number	Effective date
Erosion Control Notes [PDF]	3800-2019-01	Oct-19
Water Quality Review Procedures for Additives [PDF]	3400-3800-2019-01	Oct-19
Construction Site Soil Loss and Sediment Discharge [PDF] USLE Model (file contains MS-Excel macro-enabled spreadsheet) [ZIP]	3800-2017-03	Sept-17
Design Considerations for Post-Construction Performance Standards for Public Trails near Waterways and Wetlands [PDF]	3800-2017-02	May-17
Wetland Screening and Delineation Procedures [PDF]	3500-2016-01	Jun-16
Modeling Post-Construction Storm Water Management Treatment [PDF]	3800-2020-01	Mar-20
Protective Areas for Wetlands [PDF]	3800-2015-02	Apr-15
Common Plan of Development [PDF]	3800-2014-02	Feb-15
Uniform Statewide Standards [PDF]	3800-2014-03	Oct-14
Meeting infiltration performance standard of ch. NR 151 [PDF]	3800-2013-05	Mar-14
MS4 Illicit Discharge Detection and Elimination [PDF]	3800-2012-01	Mar-12
Snow Treatment and Disposal for Municipalities [PDF]	PUBL-WR-154-06REV	

Municipal Leaf Collection

- Increased phosphorus removal credit for weekly sweeping using regenerative air or vacuum-assisted sweeper (17% to 25%)
- Specify start dates for leaf collection based on county (September 23, October 1 or October 7)

Technical Standards

Erosion and Stabilization Practices	Number	Effective Date
Channel Erosion Mat [PDF]	1053	Nov-18
Construction Site Diversion [PDF]	1066	Mar-06
Ditch Checks [PDF]	1062	Mar-18
Dust Control [PDF]	1068	Nov-17
Land Application of Additives for Erosion Control [PDF]	1050	Dec-15
Mulching for Construction Sites [PDF]	1058	Jun-03
Non-channel Erosion Mat [PDF]	1052	Nov-18
Seeding [PDF]	1059	Nov-03
Trackout Control Practices [PDF]	1057	Jul-18
Grading Practices for Erosion Control - Temporary [PDF]	1067	Mar-04
Vegetative Buffer for Construction Sites [PDF]	1054	May-03

Sediment Control Practices	Number	Effective Date
Dewatering Practices for Sediment Control [PDF]	1061	Apr-20
Sediment Bale Barrier [PDF]	1055	Aug-03
Sediment Basin [PDF]	1064	Mar-06
Sediment Trap [PDF]	1063	Oct-14
Silt Curtain [PDF]	1070	Sep-05
Silt Fence [PDF] • illustration [PDF]	1056	Mar-06
Storm Drain Inlet Protection For Construction Sites [PDF]	1060	Jun-16
Turbidity Barriers [PDF]	1069	Sep-05
Water Application of Additives for Sediment Control [PDF]	1051	Dec-15
Interim Manufactured Perimeter Control and Slope Interruption Products [PDF]	1071	Nov-10

Post-construction standards	Number	Effective date
Bioretention for infiltration [PDF]	1004	Oct-14
Compost [PDF]	S100	Oct-17
Infiltration basin [PDF]	1003	Oct-04
Infiltration trench [PDF]	1007	May-12
Permeable pavement [PDF] Tech note [PDF]	1008	Feb-16
Proprietary storm water filtration devices [PDF] Tech note [PDF] Filter efficiency adjustment spreadsheet [XLSX]	1010	Sep-20
Proprietary storm water sedimentation devices [PDF]	1006	Apr-09
Rain Garden [PDF]	1009	Sep-18
Site evaluation for stormwater infiltration [PDF]	1002	Sep-17
Vegetated swale [PDF]	1005	Dec-17
Wet detention pond Part 1 [PDF], Part 2 [PDF]	1001	Oct-07

Errata and notes

- Process to assess and model grass swales (TSS reduction) (Nov-10) [PDF]
- Internally drained area (Apr-09) [PDF]

Proprietary Filtration Devices (PFD)

- For manufactured media or membrane filtration systems
- Establishes TSS and TP removal credit procedure

Proprietary Filtration Devices

Filter Sizing (Number of Filters)

1. Filters needed based on maintenance life (12 month minimum)
   - NJDEP maximum allowable drainage area per filter cartridge
2. Filters needed to meeting pollutant removal goal
   - Tech standard process or approved model (e.g., WinSLAMM)
   - Removal efficiency based on modified Washington State TAPE data (DNR spreadsheet)
3. Use higher number of filters (1 vs 2).

1010_PropFiltrationSpreadsheet_09-2020.xlsx - Excel

Rortvedt, Eric - DNR

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Proprietary Storm Water Filtration Devices (Technical Standard 1010)

Overall Adjusted TSS Filter Efficiency Calculation

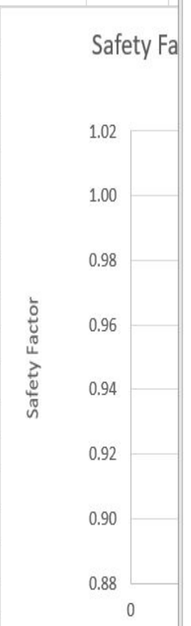
Update data in the blue shaded cells based on TAPE GULD report data.

Yellow cells are automatically updated.

TAPE GULD overall efficiency for TSS =	**83%**
Influent PSD events measured =	**3**
Effluent PSD events measured =	**12**

Particle Size (microns)	NURP PSD (% by mass)	Average Influent PSD (% by mass)	Formulas Used in Column C
< 4	29%	**23%**	
4 – 62.5	58%	**62%**	
> 62.5	13%	**15%**	
	Sum =	100%	IF(C14+C15+C16>1,"Error: Sum exceeds 100%",C14+C15+C16)
X ≤ 29%	X =	23%	IF(C14>B14,B14,C14)
< 4 microns % carry over =		0%	IF(C14>B14,C14-B14,0)
Y ≤ 58%	Y =	58%	IF(C15+C20>B15,B15,C15+C20)
NURP % Adj. Factor =		94%	C19+C21+0.13
NURP-Adjusted Efficiency =		78%	C8*C22
Lower value of influent or effluent PSD events measured =		3	IF(C9>C10,C10,C9)
Safety Factor =		0.90	LOOKUP(C24,F14:F26,G14:G26)
Adjusted for safety factor		70%	C23*C25
Limit value to maximum of 80%		70%	IF(C26>0.8,0.8,C26)
Limit value to minimum of 50%		70%	IF(C27<0.5,0.5,C27)
Overall Adjusted TSS Filter Efficiency =		**70%**	C28

Lookup Table PSDs	Safety Factor
3	0.90
4	0.90
5	0.90
6	0.94
7	0.94
8	0.94
9	0.96
10	0.96
11	0.96
12	0.98
13	0.98
14	0.98
15	1.00



TSS Adjustments

130%

Proprietary Filtration Devices (PFD)

- Operation & Maintenance
  - Quarterly inspection for first 12 months
    - Can be reduced to once per year after first year
  - Replace media filters every 12 months
    - Maximum 24 months if no indicators that replacement is needed at 12 months

Coming Soon

- Horizontal Directional Drilling (new)
  - Frac-out prevention
- Inlet Protection (update)
- Permeable Pavement (update)

Permeable Pavement

Danz, M., Selbig, W.R., and Buer, N., 2020, Assessment of restorative maintenance practices on the infiltration capacity of permeable pavement, *Water*, 12, 1563, 17 p., https://doi.org/10.3390/w12061563

Permeable Pavement

- Clean permeable pavement AND run-on pavement in early spring and late fall
- Clean when evidence of surface clogging observed (e.g., excessive ponding, overflows during routine storm events, accumulation of sediment or debris)
- Distribute run-on evenly across permeable surface to minimize preferential flow

The Future

- Update of all older erosion and sediment control technical standards
- Dry pond technical standard
- Enhanced phosphorus removal technical standard

The Future

Incremental Pollutant Removal Rates for FTW Pond Retrofits					
Pollutant	Raft Coverage in Pond				
	10%	20%	30%	40%	50%
TN	0.8%	1.7%	2.5%	3.3%	4.1%
TP	1.6%	3.3%	4.9%	6.5%	8.0%
TSS	2.3%	4.7%	7.0%	9.2%	11.5%

Questions

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