



Division of Energy, Mineral and Land Resources

Minimum Design Criteria for Stormwater Management

SL 2013-82 requirements

Progress to date

Expected path forward

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NC Division of Energy, Mineral and Land Resources
Stormwater Program



SL 2013-82 (H480) requirements

DENR shall convene stakeholders to:

1. Develop MDC that encompass all requirements for BMPs.
Deadline for DENR to submit to ERC: Feb. 1, 2015.
2. Develop a fast-track permitting process – no technical review when all BMPs comply with all MDC & the permit application is prepared by a qualified individual.
Deadline for rule adoption: July 1, 2016.

Stakeholders represented:

Engineering/design community (8)
Home Builder's Association (1)
Construction (1)
Local government (4)
Environmental Group (2)
Landscape Architect (1)
Academia (2)
Soil Scientist (1)
DOT (1)
DWR & DEMLR (3)





Function in perpetuity



Remove TSS



Protect WQ standards

Nutrient Design Criteria

Design criteria that increase the Total Nitrogen (TN) and Total Phosphorus (TP) pollutant removal rates



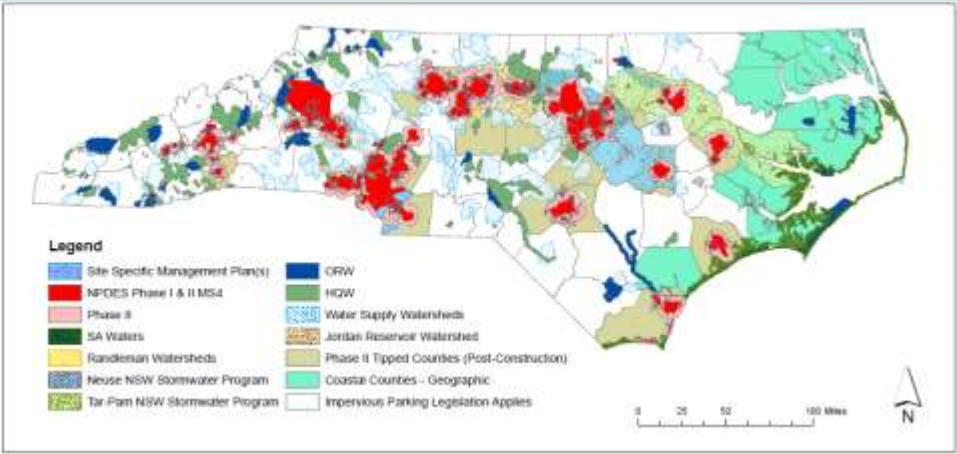
Temperature Design Recommendation

Voluntary design recommendations to optimize the device's effectiveness in reducing SW temperature.



MDC apply to all measures regardless of:

Geographical location, stormwater program or fast-track or regular review process.



MDC Team process since March 2014:

1. Team selects our *Practice of the Month*
2. DEMLR staff list all *Potential MDC* based on 2H .1000 rules and the BMP Manual (~25-40)
3. Team debates merit & wording of each potential MDC and creates updated MDC list for the practice (~7-15)

Completed: Wet ponds, wetlands, infiltration, bioretention, sand filters & level spreader-filter strips

Preview of the MDC....





General MDC

- Recorded drainage easement.
- Dewatering device.
- No erosion at BMP inlets or outlets.
- Operation & maintenance agreement.
- Vegetated slopes no steeper than 3:1.
- Designer certification.
- Water quality volume calculation.

Which one of these is **STILL** a wet pond MDC?

- a. The permanent pool must be within 6" of the SHWT or a liner shall be installed.
- b. The SHWT must be determined for every wet pond.
- c. The vegetated shelf must be 10 feet wide.
- d. The forebay must be approximately 20% of the total volume of the pond.
- e. The SA/DA tables are required.

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~~The permanent pool must be within 6" of the SHWT or a liner shall be installed.~~



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~~The SHWT must be determined for every wet pond.~~

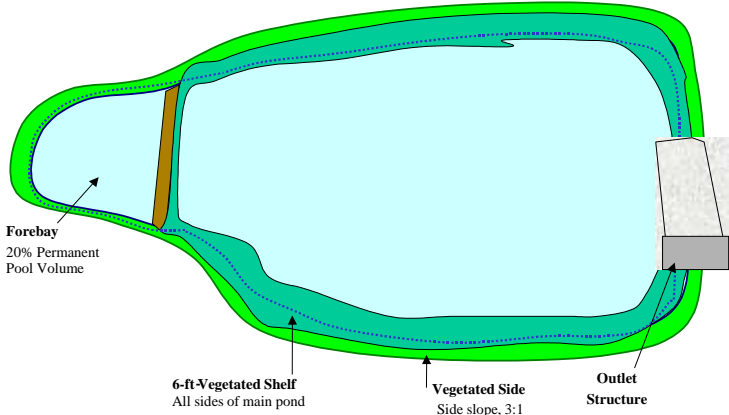


Only if the wet pond is within 50 feet of a wetland

~~The vegetated shelf must be 10 feet wide.~~



The forebay must be approximately 20% of the total volume of the pond.



~~The SA/DA tables must be used for sizing.~~

Option: Hydraulic Retention Time (HRT) method

Permanent Pool Volume, V_{pp} :

$$V_{pp} = \frac{HRT - T_{dd}}{HRT} * WQV$$

Where:

V_{pp}	=	Permanent pool volume (cu ft)
T_{dd}	=	Drawdown time (days)
HRT	=	14 days (hydraulic residence time)
WQV	=	Water quality volume (cu ft)

One other highlight: wet pond MDCs

A level spreader-vegetated filter strip is no longer required at the outlet.



Which one of these is **STILL** an infiltration MDC?

- a. Only the design storm may be conveyed to an infiltration system.
- b. Pre-treatment must be provided to prevent clogging.
- c. The maximum drainage area for an inlet to an infiltration system is 2 acre-inches.
- d. A 4-inch layer of washed sand shall be provided at the bottom of the infiltration system.

~~Only the design storm may be conveyed to an infiltration system.~~



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Pre-treatment must be provided to prevent clogging.



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~~The maximum drainage area for an inlet to an infiltration system is 2 acre-inches.~~



~~A 4-inch layer of washed sand shall be provided at the bottom of the infiltration system.~~



Other highlight: infiltration system MDCs

Infiltration systems shall dewater to the bottom of the infiltration device within 72 hours.

A site-specific soil investigation shall establish the hydraulic properties & characteristics of the infiltration site.



Practices still needing review:

- Disconnected impervious surfaces & Swales (Dec. 15)
- Rainwater harvesting & green roofs (Jan. 12)
- Permeable pavement (Jan. 26)



After the MDC: Fast-track permitting

The EMC shall adopt a fast-track permitting rule no later than July 1, 2016. The rule shall provide processes for:

- Permit application, review, and determination.
- Ensuring compliance with the MDC.
- Specifying the types of professionals that are qualified to prepare a fast-track permit application.
- Establishing the liability of a professional who prepares a fast-track permit application that fails to comply with the MDCs.



Possible Rule-Making Schedule

The fast-track rule must be adopted no later than May 2016.

Jul 8, 2015	WQC approves rule text
Jul - Oct 2015	DEMLR develops fiscal note
Nov 1, 2015	OSBM certifies fiscal note
Nov 12, 2015	WQC (30 day waiver) / EMC approves rule & fiscal note
Nov 20, 2015	DEMLR's files rule & fiscal note in Register
Dec 15, 2015	Comment period begins (hearing after 12/29)
Feb 16, 2016	Comment period ends
May 2016	WQC (30 day waiver) / EMC adopts rule

The screenshot shows the website for the Division of Energy, Mineral and Land Resources. The main content area is titled "Minimum Design Criteria Team". It contains the following text:

The purpose of the Minimum Design Criteria (MDC) Team is to meet the regulatory requirements associated with Section 1001.22 (House Bill 480), which requires DEEM to convene a stakeholder team that includes industry experts, engineers, environmental consultants, faculty from the University of North Carolina and other stakeholders. In summary, the team tasks the MDC Team with the following:

- To consult with DEEM in developing MDC that encompasses all requirements for siting, design, construction and maintenance of commercial WPP. The MDC shall be developed with the goal of generating state commercial permits that comply with state water quality standards. DEEM shall submit its recommendations to the Environmental Review Committee by September 1, 2014.
- To consult with the W.C. Environmental Management Commission (EMC) in developing a fast-track permitting process for issuing state commercial permits without a technical review when all best management practices comply with all MDCs and the permit application is prepared by a qualified individual. The EMC shall adopt a fast-track permitting rule no later than July 1, 2014.

MDC Team meetings will usually be held on the fourth Monday of each month. The table below includes the required MDC Team members, need to read and review in preparation for meetings, as well as agendas and meeting minutes.

DEEM is very grateful to the MDC Team members for sharing their considerable expertise and limited time to accomplish these goals.

MDC Team work products include:

- Final MDC Team Charter
- MDC Stakeholder Process
- MDC for all WPPs
- MDC for Wind Generation Plants

Meeting	Please Read & Analyze Before the Meeting	Meeting Agenda and Minutes
1 - Mar 24, 2014	MDC Team Draft Charter MDC Stakeholder Process MDC for all WPPs MDC for Wind Generation Plants	3:20-10 MDC_03g_000001

Thank you to the MDC Team!

Marc Houle, PE
 Cameron Moore
 Ronald Horvath, PE
 Tim Clinkscales, PE
 Hunter Freeman, PE
 Mike Gallant, PE
 Tom Murray, PE
 JD Solomon, PE
 Rob Weintraub
 Jonathan Bivens, PE
 Derek Pielech, PE
 Virginia Spillman, PE

Robert Patterson, PE
 Mike MacIntyre, PE
 Todd Miller
 Peter Raab
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 Eban Bean, PhD, PE
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