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Sediment & Erosion Control Workshop  
April 28, 2016

*Department of Environmental Quality*



## *What's New in Stormwater?*



- Terminology
- Web site
- MDC for SCMs
- Rules
- Design Manual
- TN Credit for Wet Ponds



# New Terminology



# SCM



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# Stormwater Control Measures



Bioretention



Stormwater Wetland



Permeable Pavement



Wet Pond



Infiltration



## Stormwater









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## Stormwater BMP Manual

Learn how to implement stormwater best management practices to treat or limit pollutants and other damaging effects of stormwater runoff.

[View the Manual](#)

 <p><b>Construction Stormwater</b> STORMWATER</p> <p>Learn about stormwater control practices for construction activities.</p>	 <p><b>Post-Construction Stormwater</b> STORMWATER</p> <p>Learn about post-construction stormwater management.</p>	 <p><b>Phase I and II</b> STORMWATER</p> <p>Phase I and Phase II stormwater permitting.</p>
 <p><b>Cultural Stormwater</b> STORMWATER</p> <p>Learn about stormwater permitting in cultural resource areas.</p>	 <p><b>Waterbody Protection/Restoration</b> STORMWATER</p> <p>Learn about the Waterbody Protection Program.</p>	 <p><b>Stormwater Plans &amp; GIS Resources</b> STORMWATER</p> <p>Downloadable stormwater plans and GIS resources.</p>

 <p><b>Stormwater Regulations</b> Rules and regulations that govern stormwater.</p>	 <p><b>Permit Fees</b> Fees for stormwater permits.</p>	 <p><b>MSW &amp; Special Waterbodies</b> Pollution Prevention, Waters and Special Waterbodies.</p>
 <p><b>Contact Us</b> Contact for stormwater staff.</p>	 <p><b>Public Notices</b> Calendar of public notices and hearings.</p>	 <p><b>Training</b> Find stormwater training opportunities.</p>

Home > [Bios](#) > [Databases](#) > [Data, Files, and Land Resources](#) > [Stormwater](#)

## Stormwater



## Stormwater BMP Manual

Learn how to implement stormwater best management practices to treat or limit pollutants and other damaging effects of stormwater runoff.

[View the Manual](#)

## Stormwater BMP Manual

Below are links to the Stormwater Best Management Practices Manual, as well as subordinate forms and operation and maintenance agreements. Be sure to check out the new [SDS 12.302.01](#), which allows you to create and operation and maintenance agreement for an entire site. For your convenience, only the cover page has to be signed and notarized.

[State Stormwater and Non-Construction Pollution Prevention](#)

[SDS Permit Certification Process](#)

[SDS as to Non-SDS SDS Manual Updates](#)

[Contract for the SDS Manual & Related Forms](#)

[SDS Manual 0104 State Rev. 12/12/12](#)

### Stormwater BMP Manual

- 1 - Introduction [PDF](#) + 1/20/17
- 2 - NC Stormwater Requirements [PDF](#) + 4/16/16
- 3 - Stormwater Calculations [PDF](#) + 4/16/16
- 4 - Selections for Best Management Practices [PDF](#) + 12/16/12
- 5 - General SDS Contract [PDF](#) + 1/16/16
- 6 - Landowner and Best Management Practices [PDF](#) + 6/17/16
- 7 - SDS Maintenance [PDF](#) + 9/28/17
- 8 - Land Selection and Installation Data Sheet [PDF](#) + 3/16/11
- 9 - Stormwater Budget [PDF](#) + 1/10/16
- 10 - SDS Selection Sheet [PDF](#) + 4/16/16
- 11 - SDS Log [PDF](#) + 4/16/16

### Stormwater Program

[Stormwater Plans & GIS Resources](#)

[Fees](#)

[Stormwater BMP Manual](#)

[Stormwater Permit Rates & Procedures](#)

[Forms](#)

[Construction SW](#)

[MPODS Industrial SW](#)

[MPODS Phase I and II](#)

[NCR & Local Ordinances](#)

[H2O & 2016](#)

[Universal Stormwater Management Program](#)

[Water Quality Mitigation Protection Program](#)

[Stormwater MSD Team](#)

[Stormwater LID and Storm 62](#)

[SW Technical Review Mechanism](#)

[SW Training & Outreach](#)

[Stormwater FAQ](#)

[Preconstruction Stormwater](#)

[Stormwater Rates Resolution](#)

[Stormwater and Water Quality](#)

[Stormwater](#)

- 13 - [Public Assets BMP Toolkits](#) | 4/8/14
- 14 - [Grassed Water](#) | 6/6/09
- 15 - [Restored Riparian Buffer](#) | 9/28/07
- 16 - [Infiltration Devices](#) | 7/23/09
- 17 - [Dry Detention Basin](#) | 4/1/09
- 18 - [Permeable Pavement](#) | 10/16/12
- 19 - [Sediment Runoff Management](#) | 9/28/07
- 20 - [Vegetative Systems](#) | 12/5/12
- 21 - [SW Construction Techniques](#) | 7/2/07
- 22 - [SW Substrate Requirements](#) | 7/2/07
- 23 - [References](#) | 7/2/07
- 24 - [Disconnected Imp. Surfaces \(DAIS\)](#) | 4/1/14
- 25 - [Remotely Sensed DNMI](#) | 4/1/14
- 26 - [Historic Design Criteria](#) | 12/17/15
- [Appendix A](#) | 1/22/14
- [Appendix B](#) | 7/2/07
- [Appendix C](#) | 7/2/07

**BMP Forms and Documents**

The screenshot shows the NC Department of Environment and Natural Resources website. The main content area is titled "Stormwater Maps & GIS Resources". Below the title, there is a section for "Stormwater Permitting Interactive Map" with a brief description and several links: "The Table and List", "Interactive Map (New Study)", "Sediment in Stormwater Treatment", "The Goals and Objectives", and "Links to Other Sites that Provide Stormwater BMPs". There is also a "Reference Maps for Determining Permitting Requirements" section with links to "Sedimentation & TSS Map", "Sediment Classification Map", and "Sediment Control Area Map". On the right side, there is a vertical sidebar menu titled "Stormwater Program" with various sub-items. The "Stormwater Permitting Interactive Map" item in the sidebar is circled in purple.

## Stormwater Permitting Interactive Map

### Stormwater Permitting Map Viewer

Enter Address:

Latitude (decimal degree, N):  Longitude (decimal degree, W):

Need to convert degrees, minutes, seconds to decimal format? [Go to our conversion tool.](#)  
 Do you need coordinates in the WGS84 format? [Go to our tool.](#) [Map the area](#) and [Print this address.](#)  
 Need help with the map? [Contact Bethany Bingsodes](#) at (919) 807-6372 or [bethany.bingsodes@ncdhs.gov](mailto:bethany.bingsodes@ncdhs.gov)

*Click on the map to see permitting information.*  
*Please check with the local government to verify current boundaries and specific stormwater requirements.*



Need to convert degrees, minutes, seconds to decimal format? [Go to our conversion tool.](#)  
 Do you need coordinates in the WGS84 format? [Go to our tool.](#) [Map the area](#) and [Print this address.](#)  
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*Click on the map to see permitting information.*  
*Please check with the local government to verify current boundaries and specific stormwater requirements.*





# MDCs for SCMs

MDC based on long-term effectiveness & durability.  
 If not needed for those objectives, only a recommendation.



- Any SCM for flood control
- Infiltration devices allowed everywhere in NC
- No more level spreaders downslope of SCMs

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## Major MDC changes for Wet Ponds



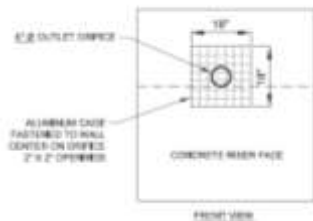
Forebay 15-20% of main pool.



Fountains shall not resuspend sediment or erode side slopes.



Vegetated shelf reduced to 6 feet.



A trash rack is required.





## Major MDC Changes for Bioretention Cells



1 in/hr at surface.



75-85% medium to coarse washed sand.



10% fines



5-15% organic



50% canopy at maturity  
OR  
Non-clumping, deep-rooted sod

## Current Organization 02H .1000 Section

.1001	Stormwater Management Policy
.1002	Definitions
.1003	Stormwater Management: Coverage: Application: Fees
.1005	Stormwater Requirements: Coastal Counties
.1006	Stormwater Requirements: High Quality Waters
.1007	Stormwater Requirements: Outstanding Resource Waters
.1008	Design of Stormwater Management Measures
.1009	Staff Review and Permit Preparation
.1010	Final Action on Permit Applications to the Division
.1011	Modification and Revocation of Permits
.1012	Delegation of Authority
.1013	General Permits
.1014	Stormwater Management for Urbanizing Areas
.1015	Urbanizing Areas Definitions
.1016	Development in Urbanizing Areas
.1017	Post-Construction Practices
.1020	Universal Stormwater Management Program



## *Proposed Organization* *02H .1000 Section*

.1001	Post-Construction Stormwater Management	}	<b>Framework</b>
.1002	Definitions		
.1003	MDC for All Subject Projects	}	<b>Program Requirements</b>
.1016	Development in Urbanizing Areas: Applicability		
.1017	NPDES and Urbanizing Areas: Post-Construction		
.1018	Urbanizing Areas: Delegation		
.1019	Coastal Counties: MDC		
.1020	Universal Stormwater Management Program		
.1021	Non-Coastal County HQW and ORW: MDC		
.1040	Permit Administration	}	<b>Permit Administration</b>
.1041	General Permits		
.1042	Standard Permitting Process		
.1043	Fast Track Permitting Process: Authorization to Construct		
.1044	Fast Track Permitting Process: Final Permit		
.1045	Permit Transfers and Renewals		
.1050	MDC for all Stormwater Control Measures	}	<b>MDCs</b>
.1051-.1062	MDC for Individual SCMs		

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2H 3043	Fast Track Permitting Process: Authorization to Construct	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Creates Step #1 of the fast-track permitting process.</li> </ul>
2H 3044	Fast Track Permitting Process: Final Permit	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Creates Step #2 of the fast-track permitting process.</li> </ul>
2H 3045	Permit Transfers and Renewals	-	Adopt	<ul style="list-style-type: none"> <li>Codifies policies for permit transfers and renewals.</li> </ul>
2H 3050	MDC for all Stormwater Control Measures	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Organizes MDCs that apply to all SCMs in one rule.</li> </ul>
2H 3051	MDC for Infiltration Systems	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Updates and organizes current design standards for this type of SCM.</li> </ul>
2H 3052	MDC for Bioretention Cells	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Updates and organizes current design standards for this type of SCM.</li> </ul>
2H 3053	MDC for Wet Ponds	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Updates and organizes current design standards for this type of SCM.</li> </ul>
2H 3054	MDC for Stormwater Wetlands	-	Adopt	<ul style="list-style-type: none"> <li>Based on MDC Team deliberations.</li> <li>Updates and organizes current design standards for this type of SCM.</li> </ul>

## *Rule-Making Schedule*

- ✓ Nov 12, 2015 WQC approves rule text
- ✓ Nov-Dec 2015 DEMLR develops RIA
- ✓ Jan 14, 2016 EMC approves rules & RIA
- ✓ Jan 20, 2016 DEMLR files rules & RIA in Register
- ✓ Feb 17, 2016 Comment period begins
- ✓ March 2016 Three Public Hearings
- ✓ Apr 18, 2016 Comment period ends
- Jul 13, 2016 EMC adopts rules

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[www.photoimage.com](http://www.photoimage.com)

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## Fast-Track Permitting

### *The MDC Team's Approach*

Instead of reviewing plans at initial application, review as-builts for compliance with MDC.



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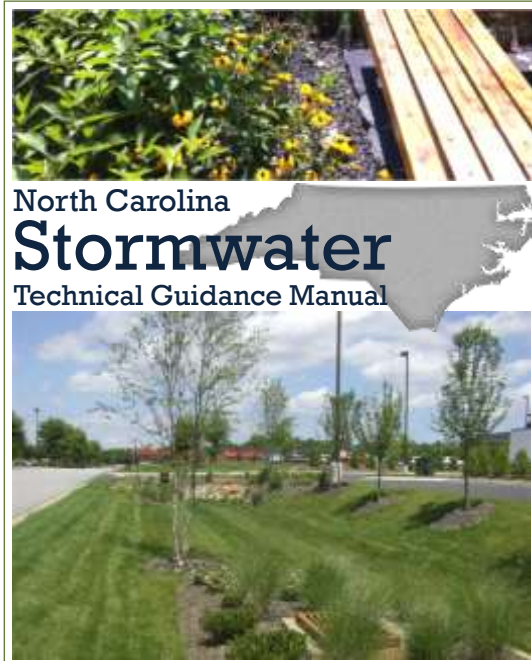
## Regular vs Fast-Track

	Regular/Express	Fast-Track
Who may submit	Licensed prof.	PE
# of submittals/permits	1	2
Time for initial permit	Up to 90 days	Up to 30 days
Vary from MDC?	Yes	No
Engineer of record required?	No	Yes
Yardstick for compliance	Approved plans	MDC

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North Carolina  
**Stormwater**  
 Technical Guidance Manual

- It will be technical guidance only, not required.
- Designers can use the manual or meet the MDC in another way.



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## 10. Wet Detention Basin

### Description

A wet detention basin is a stormwater management facility that includes a permanent pool of water for removing pollutants and additional capacity above the permanent pool for detaining stormwater runoff.

### Regulatory Credits

#### Pollutant Removal

85% Total Suspended Solids

25%30% Total Nitrogen

40% Total Phosphorus

#### Water Quantity

yes Peak Runoff Attenuation

no Runoff Volume Reduction

### Feasibility Considerations

Med-Large Land Requirement

Med Cost of Construction

Med Maintenance Burden

Med-Large Treatable Drainage Basin

Med Size

Med Possible Site Constraints

Community Acceptance

### Advantages

- Can be aesthetically pleasing and can be sited in both low- and high-visibility areas.
- Can provide wildlife habitat and a focal point for recreation.
- Provides good water quantity control for reducing the frequency of flooding events that cause bank erosion.

### Disadvantages

- Sometimes create problems such as nuisance odors, algae blooms, and rotting debris when not properly maintained.
- Local regulations may impose unappealing features such as fencing around basins to reduce safety hazards.
- May attract excessive waterfowl, which can be a nuisance and can increase fecal

*Thank you!*



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