

# STORMWATER WETLAND SCM DESIGN CHECKLIST

**Stormwater Management Division  
c/o Development Services Department**

One Exchange Plaza, 4<sup>th</sup> Floor  
Raleigh, NC 27601  
Telephone (919) 996-3773

## I. PROJECT INFORMATION

Project Name: \_\_\_\_\_ Phase: \_\_\_\_\_  
 Project Address: \_\_\_\_\_ Disturbed Area (sf): \_\_\_\_\_  
 PIN: \_\_\_\_\_ Case #: \_\_\_\_\_ Submittal Date: \_\_\_\_\_  
 Previous Permit numbers (if applicable): \_\_\_\_\_  
 Zoning District: \_\_\_\_\_  
 Legal Name of Owner: \_\_\_\_\_  
 Owner Contact: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Owner Address: \_\_\_\_\_  
 Design Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Design Contact Email: \_\_\_\_\_  
 The regulatory drainage basin in which the site is located: \_\_\_\_\_  
 The water supply watershed in which the site is located: \_\_\_\_\_

Function of Facility [check all that apply]:	
<input type="checkbox"/>	Nutrient (Total Nitrogen) Reduction
<input type="checkbox"/>	Green Stormwater Infrastructure
<input type="checkbox"/>	TSS Reduction
<input type="checkbox"/>	Peak Flow Rate Attenuation
<input type="checkbox"/>	<input type="checkbox"/> 1-Year event
<input type="checkbox"/>	<input type="checkbox"/> 10-Year event
<input type="checkbox"/>	<input type="checkbox"/> 100-Year event
<input type="checkbox"/>	<input type="checkbox"/> Other [ _____ ]
<input type="checkbox"/>	<input type="checkbox"/> Other [ _____ ]

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- II. **SUBMITTAL REQUIREMENTS** - See COR Stormwater Management Design Manual Chapter 5 for additional guidance. This completed checklist shall be submitted to the City of Raleigh with any proposed Stormwater Wetland. All files shall also be submitted electronically via CD or flash drive.

Routed flows and water surface elevations (WSE) at SCM (as applicable):			
Storm Event	Inflow	Outflow	WSE
1-Year			
10-Year			
100-Year			
____-Year			
Peak flow rates at immediate point of analysis to which the SCM drains:			
Condition	1-year	10-year	____-year
Pre-development			
Post-development			

General Design Criteria	
<input type="checkbox"/>	<b>Sizing:</b> The design volume of the SCM accounts for the runoff at full build-out from all surfaces draining to it (calculations provided in Stormwater Development Analysis).
<input type="checkbox"/>	Design Storm Volume: _____ cf
<input type="checkbox"/>	<b>Side Slopes of SCM:</b> Vegetated side slopes are no steeper than 3:1.
<input type="checkbox"/>	<b>Excess Flows:</b> SCM includes an overflow/bypass device for inflow volumes in excess of treatment volume or, if applicable, peak attenuation volume (calculations provided in Stormwater Development Analysis).
<input type="checkbox"/>	Description of Overflow/Bypass: _____
<input type="checkbox"/>	Emergency Outlet Elevation: _____ ft
<input type="checkbox"/>	Emergency Spillway Width: _____ ft
<input type="checkbox"/>	Emergency Spillway Side Slopes: _____ : 1
<input type="checkbox"/>	Emergency Spillway Slope: _____ %
<input type="checkbox"/>	Depth of Flow: _____ in

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<input type="checkbox"/>	<b>Freeboard:</b> Minimum 0.5 ft freeboard required for 100-year storm.
<input type="checkbox"/>	Freeboard provided: _____ ft
<input type="checkbox"/>	<b>Dewatering:</b> SCM has a method to draw down any standing water to facilitate maintenance and inspection.
<input type="checkbox"/>	<b>Clean Out After Construction:</b> SCM impacted by sedimentation and erosion control during the construction phase shall be cleaned out and converted to its approved design state.
<input type="checkbox"/>	<b>Maintenance Access:</b> SCM has been provided with adequate access per City standards.
<input type="checkbox"/>	<b>Easements (except for SCMs located on single family residential lots):</b> Includes maintenance access, entire SCM footprint, and an additional 10 ft or more around the SCM.
<input type="checkbox"/>	<b>Single Family Residential Lots:</b> Plats for residential lots that contain an SCM shall include the location of SCM, typical detail of SCM, and note that the SCM on the property is required to meet stormwater regulations and that the property owner may be subject to enforcement actions if the SCM is removed, relocated, or altered without prior approval.
<input type="checkbox"/>	<b>Operation and Maintenance (O&amp;M) Agreement.</b>
<input type="checkbox"/>	<b>Operation and Maintenance (O&amp;M) Plan.</b>
<input type="checkbox"/>	<i>Operation and Maintenance (O&amp;M) Manual Submittal Checklist.</i>
<input type="checkbox"/>	<b>Dam Embankment:</b> The dam top width is at least 10-ft with face slopes no steeper than 3:1. Material, compaction, and other appropriate geotechnical specifications for the construction of the dam embankment have been provided. Appropriate permanent turf grass stabilization has been specified for the entire dam.  Note: Trees, shrubs, and clumping grass are prohibited on <b>ALL</b> dams.
<input type="checkbox"/>	<b>Principal Spillway:</b> Riser and principal spillway pipe is reinforced concrete.
<input type="checkbox"/>	Appropriate seepage control elements have been provided.
<input type="checkbox"/>	A surface baffle, trash rack, or similar device has been specified for the riser top and intakes (as applicable).
<input type="checkbox"/>	Anti-floatation calculations and details have been included with the design of the riser structure.
<input type="checkbox"/>	<b>Erosion Protection:</b> The SCM inlets and outlet have been designed to protect areas downstream of the discharge points from erosion resulting from peak flows for the 10-year storm event.

Specific Stormwater Wetland Design Criteria	
<input type="checkbox"/>	<b>Design Sizing:</b> The ponding depth for the design volume is a maximum of 15 inches above the permanent pool. The surface area of the wetland is sufficient to limit the ponding depth to 15 inches or less.
<input type="checkbox"/>	Ponding Depth: _____ in

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<input type="checkbox"/>	Surface Area at Permanent Pool:	sf
<input type="checkbox"/>	Surface Area at Temporary Pool:	cf
<input type="checkbox"/>	<b>Location of Inlet(s) and Outlets:</b> The inlet(s) and riser/outlet structures have been positioned to avoid the short circuiting of pond flows. A flow length to wetland width ratio (L:W) is at least 3:1.	
<input type="checkbox"/>	Length to Width Ratio:	
<input type="checkbox"/>	<b>Forebay:</b> Forebays have been provided at all inlets to the wetland and are configured for energy dissipation. The forebay comprises 10-15% of the wetland surface area and has a depth 24-40 inches below the permanent pool elevation.	
<input type="checkbox"/>	Forebay Surface Area Percentage:	%
<input type="checkbox"/>	Forebay Depth:	in
<input type="checkbox"/>	The forebay entrance is deeper than the forebay exit.	
<input type="checkbox"/>	<b>Non-Forebay Deep Pool:</b> Deep pools have been provided throughout the wetland and/or adjacent to the outlet structure. The non-forebay deep pools comprise 5-15% of the wetland surface area and have a depth of at least 18 inches below the permanent pool elevation.	
<input type="checkbox"/>	Deep Pool Surface Area Percentage:	%
<input type="checkbox"/>	Deep Pool Depth:	in
<input type="checkbox"/>	<b>Shallow Water Zone:</b> The shallow water zone comprises of 35-45% of the wetland surface area and has a depth of between 0-9 inches below the permanent pool elevation.	
<input type="checkbox"/>	Shallow Water Surface Area Percentage:	%
<input type="checkbox"/>	Shallow Water Depth:	in
<input type="checkbox"/>	<b>Temporary Inundation Zone:</b> The temporary inundation zone comprises of 30-45% of the wetland surface area and shall be between 0-15 inches above the permanent pool elevation.	
<input type="checkbox"/>	Temporary Inundation Surface Area Percentage:	%
<input type="checkbox"/>	Temporary Inundation Depth:	in
<input type="checkbox"/>	<b>Landscaping plan:</b> The landscape plan has been prepared by a licensed professional and includes a delineation of planting zones, plant layout, and total number and sizes of plan species. <i>Note: Refer to NCDEQ Stormwater Design Manual for more information on the planting requirements of wetland zones.</i>	
<input type="checkbox"/>	Number of Plant Species in Shallow Water Zone:	
<input type="checkbox"/>	Number of Plant Species in Temporary Inundation Zone:	
<input type="checkbox"/>	<b>Soil Amendments:</b> The pH, compaction, and other attributes of the first 12-inch depth of soil will be adjusted as necessary to promote plant establishment and growth.	
<input type="checkbox"/>	A minimum of 4 inches of topsoil will be applied to the top layer of the stormwater wetland to promote plant growth.	
<input type="checkbox"/>	<b>Drawdown Time:</b> The design volume draws down to the permanent pool level between 2-5 days.	

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<input type="checkbox"/>	Drawdown Time:	hr
<input type="checkbox"/>	<b>Protection of Receiving Stream:</b> Wetland has been designed such that the runoff from the one-year, 24-hour storm has minimal hydrologic impacts to the receiving channel.	
<input type="checkbox"/>	<b>Trash Rack:</b> A trash rack or similar structure has been provided to prevent large debris from entering the outlet system.	

The SCM Plan Submittal shall also include the following elements:	
<input type="checkbox"/>	A plan view of the SCM, with grading and appropriate critical spot shots, has been provided.
<input type="checkbox"/>	A profile (showing all relevant component elevations and WSEs) through the riser, dam, and outlet structure/outfall has been provided.
<input type="checkbox"/>	Details of other required SCM elements have been provided.
<input type="checkbox"/>	All supporting design calculations (including all applicable site design calculations and drainage area exhibits) have been provided.

### III. PROFESSIONAL CERTIFICATION

Name: \_\_\_\_\_

Contact Email: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Professional Seal:

