

**STORMWATER OPERATION AND MAINTENANCE  
AGREEMENT**

Project Name:

Project Number:

BMP ID:

PIN Number:

Mail after recording to: Henderson County Engineering Department  
100 N. King Street, Suite 118  
Hendersonville, NC 28792

NORTH CAROLINA

HENDERSON COUNTY

This STORMWATER OPERATION AND MAINTENANCE AGREEMENT, made this day  
\_\_\_\_\_ of \_\_\_\_\_, 20 \_\_\_\_\_ by

\_\_\_\_\_ whose principal address is

\_\_\_\_\_

with, to, and for the benefit of Henderson County, a body corporate and politic and duly  
organized and existing under the laws of the State of North Carolina, whose address is 100 N.  
King Street, Suite 118, Hendersonville, NC 28792.

## Bioretention Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

Important operation and maintenance procedures:

- Immediately after the bioretention cell is established, the plants will be watered twice weekly if needed until the plants become established (commonly six weeks).
- Snow, mulch or any other material will NEVER be piled on the surface of the bioretention cell.
- Heavy equipment will NEVER be driven over the bioretention cell.
- Special care will be taken to prevent sediment from entering the bioretention cell.
- Once a year, a soil test of the soil media will be conducted.

After the bioretention cell is established, I will inspect it **once a month and within 24 hours after every storm event greater than 1.0 inches**. Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

<b>BMP element:</b>	<b>Potential problems:</b>	<b>How I will remediate the problem:</b>
<b>The entire BMP</b>	Trash/debris is present.	Remove the trash/debris.
<b>The perimeter of the bioretention cell</b>	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
<b>The inlet device: pipe, stone verge or swale</b>	The pipe is clogged (if applicable).	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged (if applicable).	Replace the pipe.
	Erosion is occurring in the swale (if applicable).	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
	Stone verge is clogged or covered in sediment (if applicable).	Remove sediment and clogged stone and replace with clean stone.

<b>BMP element:</b>	<b>Potential problems:</b>	<b>How I will remediate the problem:</b>
<b>The pretreatment area</b>	Flow is bypassing pretreatment area and/or gullies have formed.	Regrade if necessary to route all flow to the pretreatment area. Restabilize the area after grading.
	Sediment has accumulated to a depth greater than three inches.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and restabilize the pretreatment area.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand.
<b>The bioretention cell: vegetation</b>	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices.
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Tree stakes/wires are present six months after planting.	Remove tree stake/wires (which can kill the tree if not removed).
<b>The bioretention cell: soils and mulch</b>	Mulch is breaking down or has floated away.	Spot mulch if there are only random void areas. Replace whole mulch layer if necessary. Remove the remaining mulch and replace with triple shredded hard wood mulch at a maximum depth of three inches.
	Soils and/or mulch are clogged with sediment.	Determine the extent of the clogging - remove and replace either just the top layers or the entire media as needed. Dispose of the spoil in an appropriate off-site location. Use triple shredded hard wood mulch at a maximum depth of three inches. Search for the source of the sediment and remedy the problem if possible.
	An annual soil test shows that pH has dropped or heavy metals have accumulated in the soil media.	Dolomitic lime shall be applied as recommended per the soil test and toxic soils shall be removed, disposed of properly and replaced with new planting media.

<b>BMP element:</b>	<b>Potential problems:</b>	<b>How I will remediate the problem:</b>
<b>The underdrain system (if applicable)</b>	Clogging has occurred.	Wash out the underdrain system.
<b>The drop inlet</b>	Clogging has occurred.	Clean out the drop inlet. Dispose of the sediment off-site.
	The drop inlet is damaged	Repair or replace the drop inlet.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the NC Division of Water Resources Raleigh Regional Office, or the 401 Oversight Unit at 919-807-6300.

I acknowledge and agree by my signature below that I am responsible for the performance of the maintenance procedures listed above. I agree to notify Henderson County of any problems with the system or prior to any changes to the system or responsible party.

Project name: \_\_\_\_\_

BMP drainage area number: \_\_\_\_\_

Print name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

*Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.*

I, \_\_\_\_\_, a Notary Public for the State of \_\_\_\_\_, County of \_\_\_\_\_, do hereby certify that \_\_\_\_\_ personally appeared before me this day of \_\_\_\_\_, \_\_\_\_\_, and acknowledge the due execution of the forgoing operations and maintenance requirements. Witness my hand and official seal,

SEAL My commission

expires

Henderson, North Carolina

Signature: \_\_\_\_\_

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

Title: \_\_\_\_\_

Acknowledgment of Henderson County, North Carolina I certify that the following person personally appeared before me this day and acknowledged to me that he or she executed the foregoing document on behalf of Henderson County in the capacity indicated with his or her signature: \_\_\_\_\_ . Date: \_\_\_\_\_

(affix notary seal or stamp here) Notary Public Printed/Typed Name:

\_\_\_\_\_ My Commission Expires:

\_\_\_\_\_