

Bioretention Areas

Definition/Purpose

Bioretention is the use of plants and soils for removal of pollutants from stormwater runoff. Bioretention can also be effective in reducing peak runoff rates, runoff volumes and recharging groundwater by infiltrating runoff.

Policies

1. Bioretention areas are intended to treat impervious surface areas of greater than 2500 ft². Refer to backyard rain garden practice if treating less than 2500 ft².
2. The seasonal ~~high water~~high-water table must be at least two feet below the proposed bottom of the facility with the exception as noted in the Minimum Design Criteria in the NC Stormwater Manual for this practice. The Manual reads: “The separation may be reduced to no less than one foot if the applicant provides a hydrogeologic evaluation prepared by a licensed professional.”
3. Bioretention facilities may be constructed using native soils when the soil infiltration rate is at least 1 inch/hour. Installation in clay soils will require an imported soil mix and underdrains to achieve the minimum infiltration rate.
4. ~~When~~ draining to nutrient sensitive waters, the bioretention facility shall utilize a soil media with a P-Index ~~between 15-40~~ shall not exceed 30 and shall not exceed 50 in all other waters to promote phosphorus removal.
5. Grassed swales, filter strips, or other structural practices such as forebays should be considered as a method of pretreatment to reduce sediment loading.
6. Native plant species capable of tolerating the extreme moisture conditions typical of this practice should be specified over non-native, invasive, or exotic species that require excessive care.

BIORETENTION AREA	
Lifespan	5 years single-family home, 10 years all other properties
BMP Units	SQUARE FEET
Required Effects	<ul style="list-style-type: none"> • Total Nitrogen • Total Phosphorus <p>Use SNAP tool <u>SNAP tool</u> (Stormwater Nitrogen and Phosphorus tool, <u>includes User Manual</u>)</p>

Community Conservation Assistance Program

JAA	There is no job approval authority for bioretention, a Professional Engineer must design this practice
<u>Standard</u>	<u>NC Stormwater Manual, Bioretention Cell -</u>
<u>Additional Resources</u>	<u>N. C. NRCS Technical Guide, Section IV, Specifications #393 (Filter Strip), #412 (Grassed Waterway).</u>
CS2 Reference Materials	<ul style="list-style-type: none">• NC-CSP-11 Signature Page• Map with BMP location• <u>Receipts for Actual Costs</u>• <u>Receipts Summary form</u>

Standards

~~<https://files.nc.gov/ncdeq/Energy+Mineral+and+Land+Resources/Stormwater/BMP+Manual/C-2%20%20Bioretention%201-19-2018%20FINAL.pdf>~~

~~[N. C. NRCS Technical Guide, Section IV, Specifications #393 \(Filter Strip\), #412 \(Grassed Waterway\).](#)~~

Additional Resources

~~[NC Stormwater Manual, Bioretention Cell-](#)~~

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