

# Bioretention Area Feasibility Checklist

## Stormwater BMP Category

- Receiving Low Impact Development Practice
- Stormwater Management Practice

## SWM Credits

- SWM Criteria #1:** Runoff Reduction
  - Non-underdrained (infiltration): subtract 100% of storage volume from  $RR_v$
  - Underdrained: subtract 50% of storage volume from  $RR_v$
- SWM Criteria #2:** Water Quality Protection
  - Non-underdrained (infiltration): subtract 100% of storage volume from  $RR_v$
  - Underdrained: subtract 50% of storage volume from  $RR_v$
- SWM Criteria #3:** Aquatic Resource Protection: Proportionally adjust CN to calculate  $ARP_v$
- SWM Criteria #4:** Overbank Flood Protection: Proportionally adjust CN to calculate  $Q_{P25}$
- SWM Criteria #5:** Extreme Flood Protection: Proportionally adjust CN to calculate  $Q_{P100}$

## Site Feasibility

### Contributing Drainage Area

- $\leq 2$  acre Contributing Drainage Area (CDA) to the BMP
- $> 2$  acres CDA to the BMP with conditions
  - Low percentage impervious cover; e.g.,  $< 50\%$  IC
  - Evenly distributed drainage area (timing of contributing runoff)
  - Large storm bypass; energy dissipators; overflow structure

### Surface Area of Bioretention Practice

- 5% to 10% of CDA available for the BMP surface area

### Site Topography

- $\leq 6\%$  (average) slopes in the CDA
- $> 6\%$  (average) with provisions to address runoff velocity & soil erosion and sedimentation

### Depth of BMP

- $\geq 3.5'$  total depth: surface ponding (6"), planting bed (24"), & gravel (12" w/ underdrain)
- $\geq 3.0'$  total depth: surface ponding (6"), planting bed (18", shallow WT) & gravel (12" w/ underdrain)
- $\geq 2.5'$  total depth: surface ponding (6"), planting bed (24"), & no underdrain (infiltration)

### Water Table

- $\geq 2'$  separation (bottom of practice to SHWT)

### Soils

- $\geq 0.25''/\text{hr}$  infiltration rate (infiltration; 100% Runoff Reduction & Water Quality Protection)
- $< 0.25''/\text{hr}$  infiltration rate (underdrain; 50% Runoff Reduction & Water Quality Protection)

## Site Applicability

- Rural Use: Suitable for use on rural (large lot) subdivisions
- Suburban Use: Suitable for use on most subdivisions, or designated open space areas
- Urban Use: Suitable for use on most commercial/business developments
- Construction Costs:           Low           Medium           High
- Maintenance:                    Low           Medium           High