Calculation for Vegetated Buffer Storage Capacity

Project Name:_____

Date Submitted:_____

Property Address:_____

Development/Property Name:_____

GMP Number:_____

Design Firm:_____

Design Engineer:_____Telephone:_____Email:_____

KY PE No.:_____

| MSD Reviewer:_____ |
| WM No._____ |

Step A. Site Planning Recommendation

Define goals and primary function of Vegetated Buffer based on the Vegetated Buffers fact sheet in section 18.4.8. Refer to this section for design specifications as needed throughout the remainder of this calculation sheet.

Step B. Calculate the Water Quality Volume Required (VR) of water to be removed by Vegetated Buffer

1. A = Contributing drainage area to infiltration practice (less than 3 acres):   _____ ft^2

2. RE = Required Water Quality Volume Rain Event in inches (minimum 0.6 in):   _____ inches

3. I = Impervious cover of the contribution drainage area in percent: _____ %

4. VR = (1/12)(RE)(A)(0.05 +(0.009)(I)) =   _____ ft^3

Step C. Determine travel time through the filter strip (minutes)

1. L = length of buffer parallel to flow path   _____ ft

2. P = RE (typically 0.6")   _____ ft^3

3. S = slope of the filter strip along the flow path (2% to 6% maximum)   _____ ft/ft

4. n = Manning' roughness coefficient (Typical values range from 0.20 - 0.03)   _____

5. T = $[0.42*(n*L)^{0.8}]/(P^{0.5}*S^{0.4})$(10 minute minimum)   _____ minutes

Step D. Prepare exhibits A and B for long-term maintenance and operation agreement.

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