



## DISCONNECTION OF NON-ROOFTOP RUNOFF

The Disconnection of Non-Rooftop Runoff methods described in the following section are based on the guidelines found in Chapter 5 of the Maryland Storm Water Design Manual and the ESD Process & Computations Supplement dated July 2010. Where deemed appropriate, the design specifications have been modified by the Montgomery County Department of Permitting Services (DPS).

### A. Facility Description

Disconnection of Non-Rooftop Runoff is a nonstructural method of dispersing flows from impervious surfaces across vegetated areas to reduce runoff volume and pollutants.

### B. System Design Considerations

#### 1. Applicability

Disconnection of Non-Rooftop Runoff is appropriate for new and redevelopment applications. This is most frequently applied to small impervious areas such as driveways and small parking areas, patios, pool decks, etc.

#### 2. Conveyance

Disconnected runoff must discharge directly to relatively flat vegetated areas to receive treatment credit. The average slope of the disconnection path may not exceed 5%. Disconnections must encourage sheet flow.

Swales may not be used to modify disconnection flow paths, as they discourage sheet flow.

The entire disconnection flow path must be located on the subject property. Disconnection credit will not be given for flow beyond the property line.

Flow path length shall be at least 10 feet. Credit will not be given for flow path lengths above 75 feet.

Disconnected flow must remain disconnected throughout its entire credited flow length. Credit will not be given beyond the point where flow converges with flow from another source.

Disconnection areas must be clearly shown and labeled on construction plans.

A 1 to 2 foot wide pea gravel transition strip between the treated impervious area and the pervious treatment area should be provided to ensure runoff will flow in a safe and non erosive manner.

#### 3. Soil Suitability

Disconnection of Non-Rooftop Runoff works best on uncompacted soils that support healthy vegetation and that allow runoff to infiltrate. In areas where the soils are compacted by construction equipment or are unsuitable for other reasons, soil amendments or deconsolidation may be required.

#### 4. Reconnections

Disconnection of Non-Rooftop Runoffs may not flow across impervious areas or connect with flow from other sources for their entire treatment length. The credited flow length must remain separate from other areas of concentrated flow for its entire credited flow length.

#### 5. Vegetation

Disconnection of Non-Rooftop Runoff is most commonly proposed for lawn areas with turf grass. However, other types of vegetation such as trees, shrubs or other herbaceous plants are acceptable provided the flow area is a well vegetated area with healthy plants.

### C. Specifications and Details

The following table will be used to compute Disconnection of Non-Rooftop Runoff credits in Montgomery County.

Ratio of Disconnection Length to Contributing Length					
Impervious Ratio	0.2:1	0.4:1	0.6:1	0.8:1	1:1
$P_{E (in.)} =$	<b>0.2</b>	<b>0.4</b>	<b>0.6</b>	<b>0.8</b>	<b>1.0</b>

When the target  $P_e = 1.0$  because the impervious area  $\leq 15\%$ , if the provided treatment per the table is 1.0 then no additional calculation is necessary.

#### Disconnection of Non-Rooftop Runoff Sizing Example

Disconnection of Non-Rooftop Runoff is being proposed to provide treatment for the runoff from a driveway. The target  $ESD_v$  for the overall project has already been determined. The driveway to be treated is 20 feet in width and 45 feet long. The receiving lawn area is at an average slope of less than 4%, and the flow length to the property line is 60 feet.

$A = 900$  sq. ft. (For purposes of calculating ESD credit for Non-Rooftop Disconnection,  $A$  = the impervious area being treated.)

Contributing Impervious Length = 20 feet

Receiving Pervious Length = 10 feet

Impervious Ratio = 0.5:1

$P_e = 0.5$  (from chart)

$R_v = .05 + 0.009(l) = .05 + 0.009(100) = 0.95$

$ESD_v \text{ provided} = (0.5) (.95) (900) / 12 = 36 \text{ cf}$