

Natural Dispersion / Vegetative Filter Areas

Description: The use of existing vegetation, soils and topography to filter and infiltrate sheet flow delivered from adjacent impervious areas. Requires little to no construction.

BMP Information

BMP Type: Simple Disconnection

Targeted Pollutants: N/A - Not suitable for use to target specific pollutant reductions.

WQV / Disconnection Credit

Runoff Retention Credit: 50%

Treatment Credit: 50%

Disconnection Credit: 100%

Design Criteria

Drainage Area: $\leq 75'$ of contributing impervious area

Slope: 0-6% or $<6-25\%$ (Separate Sizing Criteria)

Sizing for 0-6% Slopes: Dispersion Area Length \geq contributing area length. Dispersion Area Width equal to contributing area width. Minimum of 25'.

Sizing for 6-25% Slopes: Dispersion Area Length \geq contributing area length. Dispersion Area Width 2X the contributing area width. Minimum of 50'.

Sheet: Runoff must enter natural dispersion area as sheet flow.

Soils: NRCS Hydrologic Soil Groups A, B, and C

Plantings: Dispersion area must sustain healthy vegetative cover over the long term. Existing vegetation, grasses and/or plantings are acceptable.

Snow Provisions: Drainage plan must account for snow shelf blocking runoff during winter months



Limitations

Large land requirement

Vegetation must cover $\geq 90\%$ of dispersion area

Must maintain sheet flow to be effective

Dispersion area candidates must be likely to remain as a natural area over the long term

Maintenance Requirements

Periodic inspections

Remove trash & debris as needed

Remove sediment from toe of slope and pretreatment areas as needed

Address areas where rill erosion and flow channelization is occurring as needed

Reseed / replant areas of erosion as needed

Cost Considerations:

Capital Cost: Low

O&M Cost: Low

Notes:

All design criteria must be met for the water quality volume (WQV) to be considered fully disconnected

Partial disconnection credit is allowable if all design requirements cannot be met

Salt tolerant vegetation should be chosen for all roadside applications

References:

2004 Connecticut Stormwater Quality Manual - <http://www.ct.gov/deep/cwp/view.asp?a=2721&q=325704>

Massachusetts Stormwater Handbook - <https://www.mass.gov/files/documents/2016/08/qj/v2c2.pdf>

New Jersey Stormwater BMP Manual - http://www.njstormwater.org/bmp_manual2.htm

Virginia Stormwater BMP Clearinghouse - <http://www.vwrrc.vt.edu/swc/NonProprietaryBMPs.html>

Washington State DOT Highway Runoff Manual - <https://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/highwayrunoff.pdf>