

**Draft Stormwater Quality BMP Matrix**

All BMP's must meet the design minimums to qualify for the listed runoff retention, TSS treatment and disconnection credit.

**WQV & Disconnection Credit**  
Percentages based on minimum design criteria

Type of BMP	BMP	WQV & Disconnection Credit			Approximate Footprint Size	Recommended Contributing Drainage Area (DA)	Typical Soil Types (NRCS: A, B, C, D)	Use in High Water Table	Use in Contaminated Soil or Groundwater	Use in Aquifer Protection Area	*Approximate Capital Cost (1" Treated per Acre)	Annual Average O&M Cost	Comments
		Runoff Retention Credit (RR)	Treatment Credit (Independent of RR)	Disconnection Credit (RR + Treatment)									
Simple Disconnection	Qualifying Natural Dispersion / Vegetative Filter Areas	50%	50%	100%	2 Criteria Based on Slope - See One Pager	Limited to 75' of run-on from Impervious Areas (IA)	Any	X	X	X	N/A	Low	Concentrated flow requires use of level spreader prior to beginning of dispersion area
Conveyance	Grass Channel	0%	15%	15%	N/A	< 5 Acres	Any	X		X	<\$5,000	Low	Soil amendments can be added to increase infiltration.
	Dry Water Quality Swale (With or Without Underdrain) (No Check Dams)	50%	25%	75%	6 - 10% of DA	< 5 Acres	A, B, C*, D*			X	\$10,000 - \$60,000	Moderate	
	Water Quality Swale (Wet)	N/A	25%	25%	6 - 10% of DA	< 5 Acres	C, D	X		X	\$10,000 - \$60,000	Moderate	
Infiltration or Filtration (w/underdrain)	Infiltration Trench (No Underdrain)	100%	N/A	100%	4-20% of DA	< 5 Acres	A, B				\$45,000	Moderate-High	Footprint size influenced heavily by infiltration rate. *Could add underdrain for locations with poor soils
	Infiltration Basin (No Underdrain)	100%	N/A	100%	4-10% of DA	< 25 Acres	A, B				\$23,000-\$90,000	Moderate-High	Footprint size influenced heavily by infiltration rate
	Dry Well / Leaching Catch Basin	100%	N/A	100%	5-10% of DA	1 Acre or Less	A, B				\$35,000	Low-Moderate	Footprint size influenced heavily by infiltration rate & depth to groundwater
	Permeable Pavement	75%	25%	100%	DA	N/A	A, B				\$20,000 - \$66,000	High	Pervious asphalt typically have lower capital cost than pervious concrete
	Bioretention (No Underdrain)	100%	N/A	100%	5-10% of DA	< 2 Acres	A,B				\$56,000	Moderate-High	
	Sand Filter (with underdrain)	N/A	75%	75%	1-5% of DA	<10 Acres	Any with Underdrain			X	\$65,000	High	Sand filters should be considered when targeting removal of specific pollutants including nitrogen, phosphorus, sediment, metals and bacteria
Treatment - Wet Ponds / Wetlands	Wet Pond	N/A	50%	50%	2-5% of DA	> 25 Acres	C, D	X		X	\$10,000 - \$25,000	Low - Moderate	A sediment forebay is required. Smaller contributing drainage areas are acceptable if groundwater flow.
	Constructed Shallow Wetland	N/A	50%	50%	5-10% of DA	> 10 Acres	C, D	X			\$11,000	Moderate	
	Subsurface Gravel Wetland	N/A	75%	75%	10-15% of DA	< 10 Acres	C, D	X			\$33,000	Moderate	
Treatment - Proprietary / Structural BMPs	Hydrodynamic Separator	N/A	50%	50%	5' - 10' Diameter Manhole	Per Manufacturer	Any		X	X	\$10,000 - \$30,000	Low	
	Oil / Grit Separator	N/A	50%	50%	Range from 3'x6' up to 8'x16'	Per Manufacturer	Any		X	X	\$10,000 - \$30,000	Low	

Runoff retention and TSS treatment efficiencies based on the VA BMP

- <https://www.swbmp.vwrrc.vt.edu/>
- [https://www.njstormwater.org/bmp\\_manual2.htm](https://www.njstormwater.org/bmp_manual2.htm)

\* Capital and O&M Cost Estimates From:

- <https://www3.epa.gov/region1/npdes/stormwater/ma/green-infrastructure-stormwater-bmp-cost-estimation.pdf>
- <https://www.pca.state.mn.us/sites/default/files/p-aen3-13x.pdf> and adjusted for inflation at approximately 3%/yr from 2010 costs
- [https://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/426/426-122/426-122.pdf.pdf](https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-122/426-122.pdf.pdf)
- [http://epa.ohio.gov/Portals/41/storm\\_workshop/lid/CRWP\\_LID\\_Cost%20Study.pdf](http://epa.ohio.gov/Portals/41/storm_workshop/lid/CRWP_LID_Cost%20Study.pdf)
- [https://www3.epa.gov/npdes/pubs/usw\\_d.pdf](https://www3.epa.gov/npdes/pubs/usw_d.pdf)

O&M Cost Categories:

- Low - Less than \$500 ac/yr
- Moderate - Between \$1000 - \$2000 ac/yr
- High - \$2,500 ac/yr or more