

## Stormwater BMP Selection Factors

### Stormwater Management Suitability

[Table 8- 1](#) provides a summary comparison of the structural stormwater BMPs addressed in this Manual relative to their suitability for providing various stormwater management functions and their ability to provide credit toward meeting the standards and performance criteria described in [Chapter 4 - Stormwater Management Standards and Performance Criteria](#), including stormwater retention and treatment (Standard 1) and peak runoff attenuation (Standard 2).

As described in [Chapter 7 - Overview of Structural Stormwater Best Management Practices](#) and [Chapter 10 - General Design Guidance for Stormwater Infiltration Systems](#), stormwater BMPs designed specifically for infiltration (i.e., Infiltration BMPs, Filtration BMPs, and dry water quality swales) are the preferred practices for meeting the stormwater retention requirement because they reduce stormwater runoff volumes and pollutant loads and provide groundwater recharge. Many of these practices can also be designed to attenuate peak runoff rates, providing both stormwater quality and quantity control in a single facility.

Stormwater Reuse BMPs (rain barrels and cisterns) and green roofs can also be used to satisfy the retention requirements although these practices do not infiltrate runoff or provide groundwater recharge. Filtering BMPs (bioretention systems, tree filters, and sand filters) can provide stormwater retention when specifically designed for infiltration, although they are generally less cost-effective than Infiltration BMPs and therefore are typically used where site characteristics limit the use of Infiltration BMPs.

Most Infiltration BMPs, Filtering BMPs, Stormwater Pond and Wetland BMPs, and Water Quality Conveyance BMPs are suitable choices for stormwater treatment, and most require the use of one of the Pretreatment BMPs identified in this Manual to preserve the pollutant removal efficiency, extend the service life, and reduce maintenance costs of the main stormwater BMP. In addition to pretreatment, Proprietary BMPs can also be used as stand-alone treatment systems (without retention) when selected and designed in accordance with the evaluation criteria described in [Chapter 11 - Proprietary Stormwater BMPs](#).

**Table 8- 1 Stormwater Management Suitability**

BMP Category	BMP Type	Retention		Treatment	Pretreatment	Peak Runoff Attenuation (5)	Requires Pretreatment?
		Volume Reduction	Infiltration/ Recharge				
<b>Pretreatment BMPs</b>	Sediment Forebay				●		No
	Pretreatment Vegetated Filter Strip				●		No
	Pretreatment Swale				●		No
	Deep Sump Hooded Catch Basin				●		No
	Oil Grit Separator				●		No
	Proprietary Pretreatment Device				(1)		No
<b>Infiltration BMPs</b>	Infiltration Trench	●	●	●		●	<b>Yes</b>
	Underground Infiltration System	●	●	●		●	<b>Yes</b>
	Infiltration Basin	●	●	●		●	<b>Yes</b>
	Dry Well	(2)	(2)	(2)			No
	Infiltrating Catch Basin	(3)	(3)	(3)			<b>Yes</b>
	Permeable Pavement	●	●	●		●	No
<b>Filtering BMPs</b>	Bioretention	(4)	(4)	●		●	<b>Yes</b>
	Sand Filter	(4)	(4)	●		●	<b>Yes</b>
	Tree Filter	(4)	(4)	●			<b>Yes</b>
<b>Stormwater Pond BMPs</b>	Wet Pond			●		●	<b>Yes</b>
	Micropool Extended Detention Pond			●		●	<b>Yes</b>
	Wet Extended Detention Pond					●	<b>Yes</b>
	Multiple Pond System			●		●	<b>Yes</b>
<b>Stormwater Wetland BMPs</b>	Subsurface Gravel Wetland			●			<b>Yes</b>
	Shallow Wetland			●			<b>Yes</b>
	Extended Detention Shallow Wetland			●		●	<b>Yes</b>
	Pond/Wetland System			●		●	<b>Yes</b>

BMP Category	BMP Type	Retention		Treatment	Pretreatment	Peak Runoff Attenuation (5)	Requires Pretreatment?
		Volume Reduction	Infiltration/Recharge				
<b>Water Quality Conveyance BMPs</b>	Dry Water Quality Swale	●	●	●		●	<b>Yes</b>
	Wet Water Quality Swale			●		●	<b>Yes</b>
<b>Stormwater Reuse BMPs</b>	Rain Barrel	●					No
	Cistern	●				(7)	<b>Yes</b>
<b>Proprietary BMPs</b>	Manufactured Treatment System			(6)	●		No
<b>Other BMPs and BMP Accessories</b>	Green Roof	●				●	No
	Dry Extended Detention Basin					●	<b>Yes</b>
	Underground Detention (no infiltration)					●	<b>Yes</b>

Notes:

- (1) When used for pretreatment. See Proprietary BMPs for use as stand-alone treatment.
- (2) Clean roof runoff only.
- (3) Requires pretreatment BMP separate from the infiltrating catch basin itself.
- (4) When designed for infiltration.
- (5) When designed as an on-line system.
- (6) See [Chapter 11 - Proprietary Stormwater BMPs](#) for use of proprietary stormwater BMPs as stand-alone treatment.
- (7) May provide peak runoff attenuation depending on the volume of water in the cistern at the start of a storm event.

Legend	●	●	●	Suitable for providing stormwater management function
	(See notes)	(See notes)	(See notes)	Suitable for providing stormwater management function under certain conditions or with design restrictions as noted
				Generally not suitable for providing stormwater management function