



WATER RESOURCE CENTER

FACT SHEET

Southwestern Pennsylvania Commission

WATER RESOURCE CENTER

Mission

To promote regional collaboration on water topics; be a leader in facilitating coordination and education; and provide technical assistance to its member governments.

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Wet Pond / Retention Basin

STRUCTURAL STORMWATER BMPs

Wet Ponds (WPs), also called Retention Basins, are stormwater basins that include a permanent pool of water as well as additional capacity for temporary storage of stormwater. They are effective at controlling peak stormwater rates and also provide water quality benefits. Beyond stormwater management, WPs can also provide aesthetic and wildlife benefits. WPs can be used in a variety of land use settings, including residential, commercial, ultra urban, industrial, retrofit, and highways/roads.

WPs can be designed as either online (hydrologically connected to existing waterway) or offline (not hydrologically connected to an existing waterway). They are often used in conjunction with other stormwater BMPs that mitigate sediment accumulation. Existing dry detention basins can be retrofitted into a WP in order to achieve additional benefits.

BMP Profile	
Name	Wet Pond / Retention Basin
Type	Structural
Grouping	Runoff Quality and Peak Rate BMP
Stormwater Management Benefits	<ul style="list-style-type: none"> ◆ Peak Rate Control ◆ Water Quality ◆ Volume Reduction ◆ Groundwater Recharge
Potential Applications	<ul style="list-style-type: none"> ◆ Residential ◆ Commercial ◆ Ultra Urban ◆ Industrial ◆ Retrofit ◆ Highway/Road

Existing dry detention basins can be retrofitted into a WP in order to achieve additional benefits.



Wet ponds are relatively easy to construct and maintain. Their stormwater management functions include peak rate control and water quality improvement. *Photo: rwmwd.org*



Including a 25-foot vegetated buffer around the wet pond (above) can greatly enhance pond health, mediate water temperature, provide habitat, and aesthetics. *Photo: utahkoi.com*

Key Considerations for Wet Ponds

- ◆ Require sufficient source of inflow to maintain permanent pool and biological health
- ◆ Need high groundwater table
- ◆ Should include a forebay for sediment collection and removal
- ◆ Typically cover 1% - 3% of the total drainage area
- ◆ Vegetation is a key element of the functioning and health of a WP
- ◆ Should be surrounded by dense emergent wetland vegetation
- ◆ Can discharge warm water; must be used with caution near temperature-sensitive waterbodies
- ◆ Minimum length to width ratio 2:1

This information was adapted from the Pennsylvania Stormwater Best Practices Manual. Check out SPC's other fact sheets to learn more about specific BMPs, flooding, and more.

