



Facts About: Rain Gardens, Rainwater Harvesting, and Dry Wells

Stormwater Best Management Practices (BMPs)

Micro-scale practices are small environmental site design (ESD) water quality treatment devices that capture and treat stormwater runoff from impervious areas less than one acre in size. These practices typically include natural systems, vegetation, and soils. Unlike larger, structural practices, these smaller devices can provide stormwater management at the source. Rain gardens, rainwater harvesting, and dry wells are often implemented in residential settings, and are a good way for residents to help reduce polluted runoff on their own property.

Rain Garden

Rain gardens are shallow, excavated landscape features or saucer-shaped depressions that temporarily hold runoff for a short period of time. Rain gardens typically consist of an absorbent-planted soil bed, a mulch layer, and planting materials such as shrubs, grasses, and flowers. Captured runoff temporarily ponds and then filters slowly into the soil within 24-48 hours after a rain event. They are designed to treat stormwater runoff from rooftops and driveways before it reaches storm drains and receiving streams.



Dry Well

A **dry well** is an excavated pit or structural chamber filled with gravel or stone that provides temporary storage of stormwater runoff from rooftops. Dry wells can be shallow trenches or deep wells. The runoff from rooftops infiltrates into the soil surrounding the well before the next storm event. The amount of pollutants removed depends on the amount of runoff that is stored and infiltrates to the surrounding soils.



Rainwater Harvesting

Rainwater harvesting practices intercept and store rainfall for future use. The capture and re-use of rainwater promotes conservation, while reducing the volume of runoff and the discharge of pollutants downstream.

Rain barrels are typically used in smaller-scale residential applications. Larger tanks, or **cisterns**, are typically used in commercial or industrial applications. Rain barrels and cisterns provide temporary storage for rooftop runoff. The water captured can be used for watering plants and can be directed to gardens/vegetated landscape through a hose or an irrigation tube. Cisterns can be used for non-potable water supply. These practices conserve water and can save property owners money on their water bill.



Rain barrel



Cistern

Design Variants

- Rain garden
- Dry well
- Rain barrel
- Cistern

Pollutant Removal Efficiencies

- Sediments 80%
- Phosphorus 66%
- Nitrogen 56% (as part of a system of ESD practices)

More Information

For information on specific design criteria, go to Maryland's Stormwater Design Manual:
mde.maryland.gov/programs/water/StormwaterManagementProgram/Pages/stormwater_design.aspx