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Benefits:

Removes pollutants from runoff
Decreases stormwater runoff volume,
flow rate, and temperature
Can reduce irrigation demands
Attracts birds and butterflies
Aesthetic appeal

Target Pollutants:

Copper
Lead
Nitrogen
Phosphorus

Uses:

Parking lot islands
Street medians
Areas reserved for landscaping
Retrofits

Limitations:

Large drainage areas
Steep slopes
Highly erosive soils and watersheds

Resources:

Urban Drainage and Flood Control
District; Volume 3, Bioretention
EPA NPDES Post-Construction Menu
of Stormwater BMPs; Bioretention

RAIN GARDENS

DESCRIPTION

Rain gardens, also known as porous landscape detention, are engineered landscaped depressions that provide bioretention of pollutants in stormwater runoff. Bioretention removes pollutants through multiple processes including sedimentation, filtering, adsorption, evapotranspiration, and biological uptake. Rain gardens are designed to collect and temporarily hold stormwater runoff where runoff can be directed via pipes, swales, or curb openings into areas planted with grasses and shrubs. Rain gardens can be used in new construction or retrofit applications and are good substitutes for small extended detention basins.

DESIGN AND INSTALLATION

- Soils, drainage area, amount of rainfall, slopes, and percentage of impervious surface in the contributing watershed determine size and specifications.
- Rain gardens require a stable watershed. If contributing area is not stabilized a pretreatment BMP is required.
- Rain gardens should be placed 10 feet from buildings and 50 feet from groundwater wells. A geotechnical engineer should evaluate suitability of this BMP when proposed near a structure.
- Avoid overcompaction of soils to preserve infiltration capacities.
- Vegetate rain gardens with native, drought resistant species that thrive in sandy soils. If used as an area for snow storage, plant with salt tolerant, nonwoody plant species.

MAINTENANCE

- Routine inspections for sediment accumulation, gully erosion, litter, and debris to prevent clogging.
- Inspection of infiltration surfaces at least twice annually after a rain event to check for ponding. If ponding persists after 24 hours, rain garden may be clogged.
- Yearly inspection of vegetation and replacement of dead or diseased plants as needed.
- Removal of invasive species or noxious weeds by hand, or other mechanical methods, before they flower.
- Water in times of drought.

