



Keeping Streams, Rivers & Lakes Clean

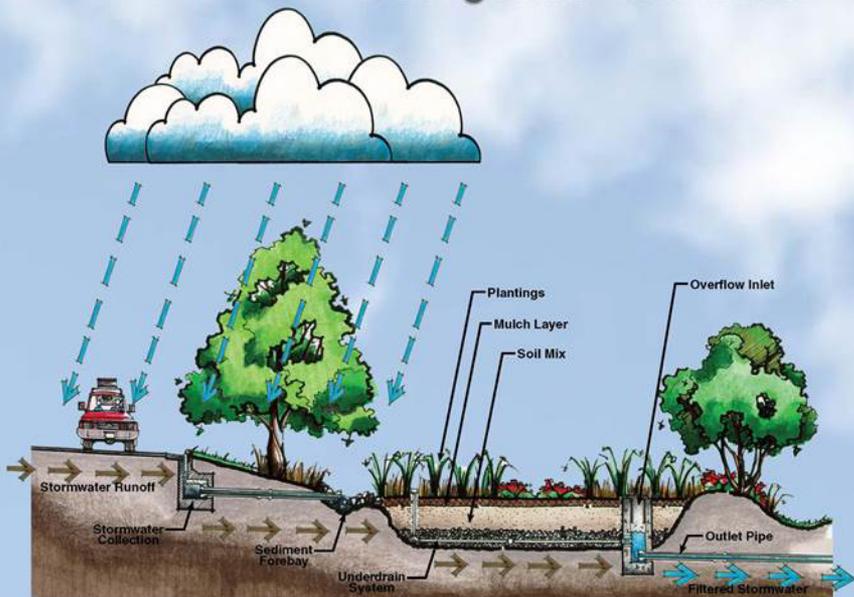


Treating Stormwater Runoff

BIORETENTION BASIN

Pollutants found in rainfall runoff can be harmful to the environment. In an effort to reduce the amount of pollutants found in runoff water, stormwater treatment devices are being utilized on this rest area site. One such device is a bioretention basin as illustrated to the right.

A bioretention basin is a shallow planted depression designed to retain, filter and treat runoff water prior to its discharge into the nearest stream, river or lake. During rainfall events, runoff water collected from the sidewalks, parking lots and roadway surfaces is piped into a sediment forebay where water flow is slowed and heavier particles are allowed to settle. As runoff water flows from the forebay into the basin it slowly soaks through layers of soil and mulch. Pollutant removal takes place by way of absorption, microbial activity, plant uptake and filtration. Once treated, the water is released from the basin



through an underdrain system and outlet pipe.

Bioretention basins are better known as rain gardens. While the two terms may be used interchangeably, rain gardens are usually built on a much smaller scale and do not have an

underdrain system. Rain gardens are especially appealing to homeowners and small businesses because of their ease of installation, beauty and low maintenance requirements. They can be sized and shaped to fit any application and landscaped with a variety of plants to compliment any surrounding.

BIORETENTION PLANTS

Landscaping is critical to the function and appearance of all bioretention basins. Plants are needed to encourage biological and bacteriological activity in the soil and to establish a diverse vegetative cover that will aid in the treatment of stormwater runoff through the capture of pollutants. Plants used in bioretention basins are selected for their ability to adapt to periods of both wet and dry conditions while surviving high levels of pollutant build-up.

Since most bioretention basins are designed to replicate the functions of a native forest ecosystem, a combination of trees, shrubs, grasses and herbaceous plants are used. Plants tolerant of short-term flooding are used in the shallow depression area of the basin where runoff water is retained, filtered and treated. At the basin's edge and on its side slopes that remain primarily dry, upland species are most suited. Pictured are a few of the native plant species typically used in our bioretention basins.



Winterberry



Woolgrass



Joe Pye Weed



Rudbeckia



Bushy Bluestem



Echinacea