



## Save the Swales!

When land is converted from its natural state to other uses, such as roads, homes, and shopping centers, many impervious or paved surfaces are created. Rainfall becomes storm water when it can no longer soak into the ground and “runs off” the impervious surfaces. The volume, speed and pollutants of storm water runoff increase with land development. Storm water management practices are used to retain or detain runoff to filter out the pollutants. These practices also minimize flooding, protect property and reduce pollution of water bodies.

Swales and berms have been used to control water flow for centuries. Today they are still used around the world but have been all but forgotten here in the United States as a way to conserve water.

**Swales** are simply shallow, low depressions in the ground designed to encourage the accumulation of rain during storms and hold it for a few hours or days to let it infiltrate into the soil. Swales ideally are lined with trees and store water for the immediate landscape as well as help cleanse the water as it percolates down. Surprisingly one tree can reduce storm water runoff by 4,000 gallons a year thus greatly reducing the need to build costly water treatment plants. So swales lined with trees are an extremely-cost effective, and often overlooked low-tech, water conservation technique.

A swale slows down the rapid flow of storm water runoff by ponding water between its sloping sides, often called **berms**. The ponding not only slows the rate of flow but allows pollutants to settle out of the water. When the swale becomes full, the cleaner surface water will spill over the berm and slowly run into a local water body. Eventually, the remaining ponded water will either evaporate or infiltrate into the soil. Swales can be installed separately or as part of a larger water rain catchment system with rain gardens, cisterns and other water conservation measures.

Swales are one of the cheapest and easiest water storage methods and can be installed almost anywhere. If properly built they greatly reduce storm runoff; thereby reducing the impact of storms on local storm runoff systems. But more importantly they catch and preserve fresh rain where it can be used by your shrubs and trees. Swales are an easy solution that can be effective in homes, commercial buildings and along street mediums in place of curbs.

**Berms** are raised beds that can be used to direct water to swales. They are the equivalent of the slope in road used to push water off the middle of the road toward the curbs.

Ideally, berms and swales should be designed into the landscape where there is any noticeable slope to slow and capture runoff. They can be part of the site plan for an individual home or integrated into the design of an entire multi-unit complex or subdivision development.

Swales can either be grassed, gravel or rock, all designed to slow and retain the flow of runoff. They can also be used instead of costly curbs and gutters found in most neighborhoods and communities today.

### Key elements to consider when building a swale:

- ✓ Swales are not intended to move water but to hold water for soil absorption.
- ✓ The width of the swale should be covered by the crown of the mature surrounding trees.
- ✓ Soil in the swale should not be compacted or sealed but should be loose to encourage absorption.

Swales with the proper plants and trees help manage runoff and make water healthy for people, nature and fish. They are a low-cost win-win solution. Isn't it time we tried them?