



Bioswales & Rain Gardens:

Making runoff a resource!

What are Bioswales (vegetated swales) or rain gardens?

Bioswales and rain gardens are landscaping features (Best Management Practices – BMPs) designed to collect stormwater runoff from a roof, driveway or other impervious surfaces. Bioswales or

rain gardens collect storm water runoff to allow it to percolate into the ground slowly, rather than flow over the surface of the ground, where it could pick up sediment and other contaminants. They can then send the filtered water to a wetland detention (holding) area. The Bioswales can be designed to handle a peak rainfall event of an example of 1 inch an hour for four hours or collect rain falling on a roof size of 1,300 square feet.

Rather than rushing off into a storm sewer or a local waterway, the rainwater collects in a swale or garden where it is naturally filtered by plants and soil. Bioswales are not vegetated on the bottom and tend to be deeper basins where soil and rock filter the water, while rain gardens tend to be shallow and completely vegetated.



Rainwater + Pollution = Polluted Stormwater. Urban/Rural stormwater runoff has been identified as the primary source of pollution to surface waters. Stormwater comes off our house roofs, driveways, footpaths and roads when it rains. Because roads are impervious surfaces, meaning the rain can not pass through them, the rain is washed into our drains – natural or developed. It drains directly into area creeks, rivers and lakes. Anything carried with the stormwater such as litter, soil, garden waste, car washing

chemicals, car oil and grease from roadways, and fertilizer for lawns or farms results in pollution of waterways.

Our Sugar Creek Watershed Management planning involves looking at ways to install BMPs (Best Management Practices) that will be beneficial to our waters. Bioswales – rain gardens are great in taking part in filtering our water to remove

pollutants. For more information on our Sugar Creek Watershed Project – call Cindy at 317-462-2283 Ext 3 and ask how you can help.

Why build one?

Bioswales and rain gardens can have a significant impact on the water quality in our communities. Studies have shown that as much as 70% of the pollution in streams, rivers and lakes has been carried there by stormwater. By taking responsibility for the rainwater that falls on your own roof and driveway, you'll be helping to protect our rivers, streams and lakes from stormwater pollution. Adding a bioswale or rain garden to your yard will also provide food and shelter for wildlife, and give you a whole new garden that's hardy, low maintenance and naturally beautiful!



How do I build one?

- 1. Choose a location.** Your bioswale or rain garden should be located at least 10 feet from the house. A natural site is a low spot in your yard that often collects water after a heavy rain. There should be a natural slope (at least 1% grade) leading from the water collection area (your roof or driveway) down to the rain garden or bioswale.
- 2. Calculate capacity.** A typical residential rain garden is 100 to 300 square feet and the average bioswale is 40-60 cubic feet, but any size is fine. Most people just size the swale to suit their available space. You can calculate the ideal size based on the surface area of your roof, soil type and the garden or swale's distance from your house.
- 3. Design your layout.** Use a rope or string to delineate the boundary of your future bioswale or rain garden based on the calculations you made in step 2.
- 4. Remove the sod & dig.** Remove the sod and dig a depression. A typical rain garden is 4 to 8 inches deep while a typical bioswale is 6 to 12 inches deep. Slope the sides gradually from the outside edge to the deepest area. Use the soil that you remove to build up a slightly raised area on the lowest side of the garden. This berm will help contain the stormwater and allow it to percolate slowly. Regardless of depth, keep the garden level to allow for maximum infiltration of water.
- 5. Connect your drainage area.** Your downspout should be directed toward your swale. This can be accomplished by a natural slope, by digging a shallow ditch, or by piping the runoff directly to the garden through a buried plastic drain tile.
- 6. Time to plant!** Native plants are the best choice for bioswales and rain gardens. They withstand difficult growing conditions and require little care. Be sure to mix native grasses and sedges in to ensure the garden has a strong root mass that will resist erosion and inhibit weed growth. Once they are well established, your garden should thrive without additional watering.