SOIL & WATER PROTECTION APPLICATION FOR COMPOST

The Michigan **Landscape for the Lakes** campaign promotes sustainable landscaping, construction, and land management practices by increasing the use of compost to protect and enhance soil function. The program aims to raise awareness about the value of compost and share best practices for the application of compost-based products and systems to create functional landscapes which also provide environmental benefit. Campaign educational resources will provide information on the use of compost to:

1) improve soil health and structure and nutrient retentiono;

2) reduce soil erosion; and

3) better manage stormwater run-off and improve water quality in Michigan rivers and stream and ultimately the Great Lakes.

Compost is a valuable soil amendment that can improve water holding capacity and reduce run-off and erosion, improving downstream water quality to the benefit of state and local governments and priority industries. Compost, compost-based media, and compost-based systems used in erosion control applications have proven to be highly effective in mimicking natural soil functions to manage erosion and stormwater, and protect surface waters. The structures explained below can be used in a variety of applications to better manage the flow of water in landscapes.

Compost Blanket

Compost Berm

Compost Sock

EROSION & SEDIMENT CONTROL APPLICATIONS

COMPOST BLANKETS A compost layer (1-2" depth) is blanketed over the disturbed soil slope to reduce stormwater runoff and erosion. The coarsely sized particles that make up the 'compost blanket' retain a large volume of water, which aids in establishing vegetation growth within the blanket. Because of the blankets can absorb large volumes of water, they are used for both stormwater volume reduction, as well as erosion control.

COMPOST BERMS A compost filter berm is a permeable dike of compost or a composted product that is placed perpendicular to sheet flow runoff to control erosion in disturbed areas and retain sediment. Berms can provide long terms water filtration, or can be broken down post-use and the compost spread around to provide soil for vegetation growth.

COMPOST SOCKS A mesh sock filled with a coarse composted product is placed perpendicular to concentrated-flow runoff to control erosion and retain sediment in disturbed areas. The compost socks intercept runoff, reduce flow velocities, promote infiltration, and act as a filter that traps sediment The use of these newer soil and water management tools can decrease the cost of soil management for contractors by reducing waste, conserving water, and reducing labor for silt fence and topsoil replacement.

Compost-based systems help to create faster and healthier stands of vegetation. Grasses, plants, and trees in newly developed landscapes will have a better chance remaining healthy and well maintained with the nutrient compost makes available. The construction industry has been using these tools for over 30-years, with incredible success.

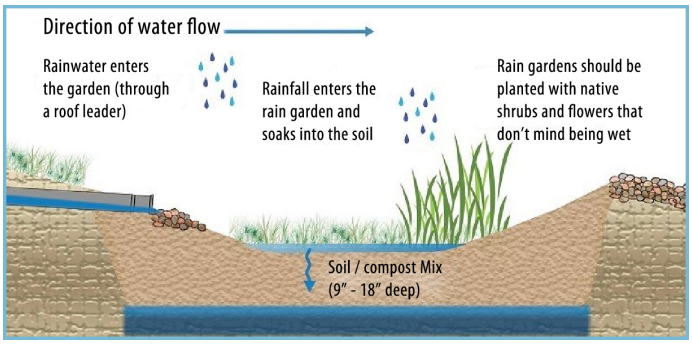
STORMWATER MANAGEMENT FUNCTIONS OF HEALTHY, AMENDED SOILS

Unlike traditional solutions for stormwater and drainage management, green infrastructure increases the permeability of our cityscapes so that they behave more like natural soils—slowing, holding, and purifying stormwater. Establishing good soil depth and quality regains even greater stormwater functionality in the post development landscape. It provides increased treatment of pollutants and sediments that result from development and habitation, and minimizes the need for some landscaping chemicals, thus reducing pollution through prevention. One aim of the Landscape for the Lakes campaign is to establish statewide standards for integration of compost in green infrastructure development.

SOIL & WATER PROTECTION APPLICATION FOR COMPOST continued

LOW IMPACT DEVELOPMENT is a management approach and set of practices that aims to reduce runoff and pollutant loading by managing runoff as close to its source(s) as possible. Some applications include:

BIORETENTION FEATURES are built to manage a specified amount of runoff from a large impervious area. They are vegetated with plants that can withstand both heavy watering and drought. The organic matter inherent in compost is extremely chemically reactive with a large electrically charged surface area per unit volume. This means organic matter can pull metals, organic chemicals, and nutrients out of the water. These bound chemicals can then be absorbed onto soil surfaces, broken down by soil microbes, or used for growth by plants and microbes.



RAIN GARDENS are smaller or residential systems. These gardens have a slight depression to help collect water and are vegetated with plants that can withstand moisture regimes ranging from flooded to dry. Compost has the same benefits in this application as it does in Bioswales.

ENHANCING SOIL PERMEABILITY can be achieved by incorporating compost into the top 6-12" of soil decompacts them, making it easier for water to be absorbed and held.
This application:

- Provides high rates of water infiltration and retention, which aids in establishing vegetation growth.
- Minimizes surface water runoff and erosion.
- Traps sediments, heavy metals and excess nutrients; and biodegrades chemical contaminants.
- Encourages vigorous protective vegetative cover.
- Supports beneficial soil life that fight pests and disease, and supply plant nutrients — reducing need for fertilizers and pesticides that may contaminate waterways.