

Why Sustainable Stormwater Management Matters

Before Portland was developed, forests and open spaces absorbed rainwater. Today, rain falls on buildings, streets, sidewalks, and other hard surfaces and runs off into rivers and streams. Stormwater runoff causes erosion, carries pollution and sediment to the river, decreases groundwater recharge, and increases river temperatures. Sustainable stormwater management is a strategy that helps the City of Portland comply with pollution prevention and resource protection regulations by managing water at its source.

Sustainable stormwater management is rapidly gaining acceptance in the United States, particularly here in Portland. The increased interest is a response to mounting infrastructure costs of new development and redevelopment projects, more rigorous environmental regulations, and concerns about the impact of growth on natural resources.

The strategy recognizes the relationship between the natural environment and the built environment, and manages them as integrated components of a watershed. Sustainable stormwater management is an alternative to the traditional piped approach. It promotes onsite collection and conveyance of stormwater from roofs, parking lots, streets, and other surfaces to infiltrate into the ground or collect for reuse, often reducing the need for costly underground structures.

The approach relies on vegetated natural systems to slow and filter the water. Vegetation enhances both interception and evaporation of rainfall through its leaves. Vegetation reduces stormwater runoff volume as well as pollutants in urban runoff.

Studies show that natural landscaping at a residential development can reduce annual stormwater runoff volume by as much as 65%. Natural drainage and native landscaping areas in residential developments can remove up to 80% of the

suspended solids and heavy metals, and up to 70% of nutrients like phosphorous and nitrogen from stormwater runoff.

Sustainable stormwater management uses both structural devices such as rain barrels, cisterns, and planters, and non-structural devices like landscaped swales and infiltration basins. The sustainable approach is cost effective and attractive. It also addresses erosion, water pollution, combined sewer overflows and other stormwater runoff problems all at once.

The information presented shows how to use one or a combination of technologies to effectively manage stormwater onsite and reduce the impacts of development on water quality.

This information is not intended as a substitute for professional advice applicable to specific project circumstances. Design approaches are offered to facilitate understanding of the concepts and must be considered in terms of the project, site conditions, local building codes, water availability, and regional climate. Readers are urged to seek professional assistance before applying any of these techniques. The techniques and other information presented may not represent the latest, approved approaches of the City of Portland.



ENVIRONMENTAL SERVICES
CITY OF PORTLAND

working for clean rivers



www.cleanriverspdx.org or 503-823-7740

For Clean River Rewards information www.CleanRiverRewards.com or 503-823-1371

WS 0603
July 2006