Community Forestry Assistant

Newsletter May 2009

What is "Green Infrastructure"?

Green infrastructure is an approach to wet weather management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure management technologies infiltrate, evapotranspire, capture and reuse stormwater to maintain or restore natural hydrologies.

At the largest scale, the preservation and restoration of natural landscape features (such as forests, floodplains and wetlands) are critical components of green stormwater infrastructure. By protecting these ecologically sensitive areas, communities can improve water quality while providing wildlife habitat and opportunities for outdoor recreation.

On a smaller scale, green infrastructure practices include rain gardens, porous pavements, green roofs, infiltration planters, trees and tree boxes, swales, and rainwater harvesting for non-potable uses such as toilet flushing and landscape irrigation.

Green infrastructure applications can reduce, capture, and treat stormwater runoff at its source before it can reach the sewer system. Site-specific practices, such as green roofs, downspout disconnections, rain harvesting/gardens, planter boxes, and permeable pavement are designed to mimic natural hydrologic functions and decrease the amount of impervious area and stormwater runoff from individual sites. These applications and approaches can keep stormwater out of the sewer system to reduce overflows and reduce the amount of untreated stormwater discharging to surface waters.

This is certainly not an exhaustive list, but here are a few examples of green infrastructure techniques that could be implemented locally.

A **rain garden** is a planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, and compacted lawn areas the opportunity to be absorbed. This reduces rain runoff by allowing stormwater to soak into the ground (as opposed to flowing into storm drains and surface waters which causes erosion, water pollution, flooding, and diminished groundwater). Rain gardens can cut down on the amount of pollution reaching creeks and streams by up to 30%.

Vegetated swales are landscape elements designed to remove silt and pollution from surface runoff water. They consist of a swaled drainage course with gently sloped sides (less than six percent) and filled with vegetation, compost and/or riprap. The water's flow path, along with the wide and shallow ditch, is designed to maximize the time water spends in the swale, which aids the trapping of pollutants and silt. Depending upon the geometry of land available, a swale may have a meandering or almost straight channel alignment. Biological factors also contribute to the breakdown of certain pollutants. A common application is around parking lots, where substantial automotive pollution is collected by the paving and then flushed by rain. The swale, or other type of biofilter, wraps around the parking lot and treats the runoff before releasing it to the watershed or storm sewer.

Low Impact Development (LID) is a term used to describe a land planning and engineering design approach to managing stormwater runoff. LID emphasizes conservation and use of on-site natural features to protect water quality. This approach implements engineered small-scale hydrologic controls to replicate the pre-development hydrologic regime of watersheds through infiltrating, filtering, storing, evaporating, and detaining runoff close to its source.

For more information and examples, visit the Environmental Protection Agency's "Managing Wet Weather with Green Infrastructure" website at http://cfpub.epa.gov/npdes/greeninfrastructure/technology.cfm.

If you have questions about this newsletter or the Community Forestry Assistance Program, please contact Tera King with Northwest Management, Inc. at 208-883-4488 ext. 133.