

STORMWATER MANAGEMENT BASICS

Groundwater and surface water sources are critical resources

1. Recreation (fishing, boating, swimming)
2. Domestic water supply (drinking, cooking, bathing)
3. Economics (industry, manufacturing, tourism)

How we manage stormwater has a direct and significant impact on water resources

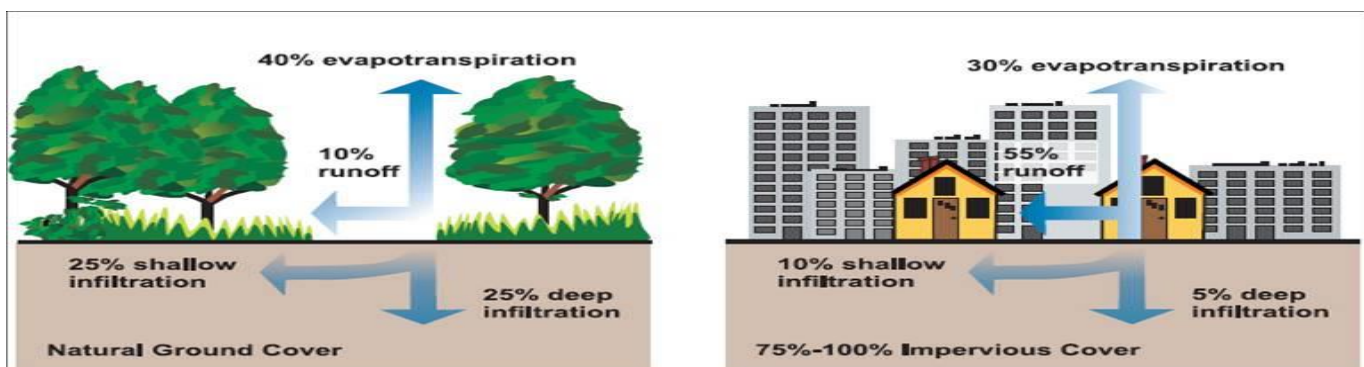
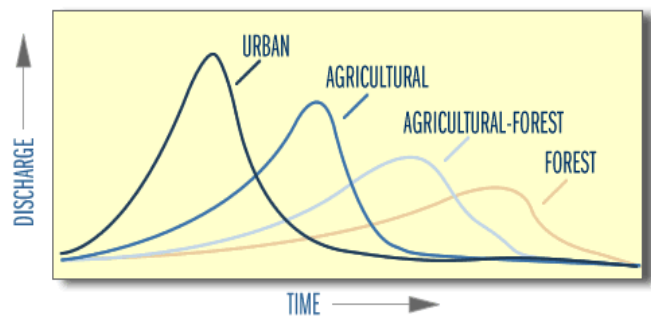
The best land cover for stormwater management is forest.

1. Interception and use by trees and vegetation
2. Absorbent ground layer
3. Uneven terrain

Streams adapt to the runoff conditions of the watershed. As we remove forests and replace them with agriculture, suburban and urban uses, the runoff conditions of the watershed change.

1. Increased impervious cover
2. Greater volumes of water
3. Faster delivery of runoff to stream
4. Pollutants carried by runoff

STORMWATER DISCHARGES FROM VARIOUS LAND COVERS



This change has significant impact on streams and watershed hydrology.

1. Decreased groundwater recharge and baseflow
2. Increased frequency and severity of flooding
3. Channel erosion and stream degradation
4. Decreased quality of instream habitat and organisms
5. Increased infrastructure costs

There has been an evolution of stormwater management philosophy

1. Early stormwater management was to capture the water and pipe it to the nearest as quickly as possible. Stormwater was treated as a nuisance. This was a disaster for watersheds and streams.
2. The next step was the detention pond. Stormwater was captured and delivered to holding ponds as quickly as possible then released to streams at a slower rate. This was not quite as bad but still a disaster for watersheds and streams.
3. Current stormwater management philosophy considers runoff as a resource with the goal of managing stormwater to have minimal impacts on the watersheds and streams.

This is accomplished through the use of Best Management Practices or BMPs.

1. Planning and design BMPs
2. Infiltration BMPs
3. Treatment BMPs
4. Erosion control BMPs

REGULATORY ASPECTS

Recent changes in regulations place more emphasis on Post Construction Stormwater Management (PCSM) and the long term operation and maintenance of structural BMPs.

1. Beginning November 19, 2011 National Pollutant Discharge Elimination (NPDES) permits began requiring that an instrument be recorded with the Recorder of Deeds that:
 - identify the BMP
 - provide access to the BMP for operation and maintenance
 - provide notice that the long-term operation and maintenance of the BMP is a covenant that runs with the land and is binding upon subsequent grantees

The permittee, or the entity that agrees to accept responsibility for the long term operation and maintenance of BMPs, is responsible, along with the landowner, for the long term operation and maintenance of BMPs located on the property.

2. How this is to be recorded is not specified. It may show up as only a reference to another recorded document on the deed.
3. Failure to adhere to these regulations is a violation of the regulations.
 - The Department of Environmental Protection (DEP) has enforcement authority.
 - Possible enforcement actions include remediation and fines.

Additionally, many municipalities have adopted ordinances under Act 167 (Pennsylvania Stormwater Management Act) that mirror these regulations.

For more information visit the stormwater page on the DCCD website:
<http://www.dauphincd.org/swm/swmgmt.html>