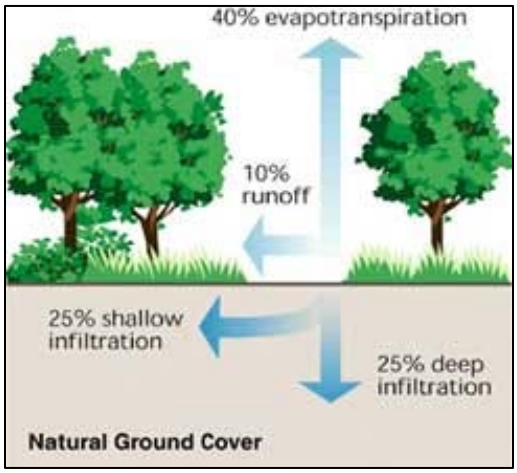
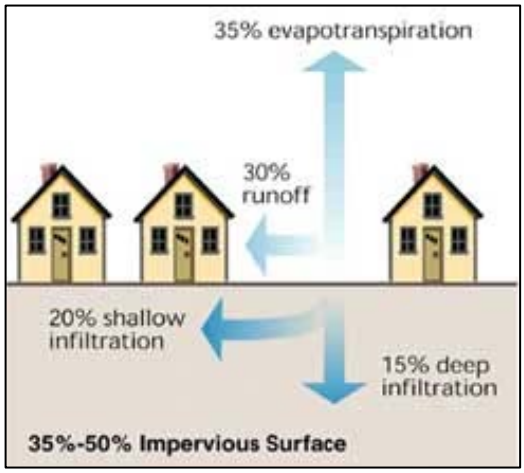
Mississippi River – Grand Rapids
Watershed Restoration & Protection Strategies

Strategies for Water Quality Restoration
Stormwater Management

As development around our lakes and rivers increases, so does the threat posed by stormwater runoff. Impervious surfaces like roofs, driveways, and even lawns don't allow water to penetrate and be absorbed into the soil. As the water runs off it can pick up pollutants like lawn fertilizer, vehicle oil and fluids, pet wastes, grass clippings, sediments, and even bacteria and viruses. These are carried to the lowest points on the landscape – usually a lake, stream, or wetland.

On a site with natural ground conditions about 50% of rainfall infiltrates into the ground, 40% evaporates or is transpired through plants, and 10% actually runs off the ground surface.





As development and impervious surfaces increase the amount of infiltration and transpiration decreases, and runoff of stormwater increases. The figures above illustrate this change in the landscape. (pictures courtesy of lakesuperiorstreams.org)

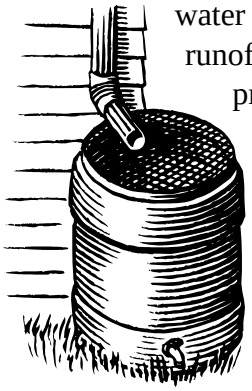
Natural and human induced factors affect the amount of water quality pollution resulting from stormwater runoff. The most important factors affecting the quantity of stormwater runoff are

1). The amount of impervious surfaces in a watershed
2). The connectedness of the impervious surfaces

Waterbody Impairments Associated with Stormwater	
Lakes	Nutrients (mainly phosphorus) and Pathogens can impair the lake for recreational use.
Rivers & Streams	Nutrients, Sediment, Chloride, Pathogens, & Temperature can impair the river / stream for aquatic vegetation, recreation, & habitat
Wetlands	Nutrients and Sediment can impair wetlands for habitat

What can be done to reduce the water quality impacts of stormwater runoff? There are several Best Management Practices that landowners can use on their own properties. A few of these are highlighted below.

Rain Barrels - Capture Stormwater! A rain barrel is any type of container that is used to catch water flowing from a downspout. Stormwater runoff is reduced by capturing and storing the roof runoff. A rain barrel will capture stormwater runoff that might reach lakes, rivers, or wetlands, protecting water quality. Captured water can be used to water lawns and gardens. Rain barrels help reduce soil erosion at the outlet of a downspout and also limit any pollutants that might be carried into lakes and streams.



Rain Gardens – A Simple Solution for Cleaner Water

A rain garden is a simple landscaped area, planted with flowers or other native vegetation. Designed and shaped to capture runoff, these gardens can stop the flow of stormwater.

During a rain event, water fills the garden basin and is allowed to slowly infiltrate into the ground. Since the garden contains native plants, water is also absorbed by the plants and transpired into the air. These simple gardens can do wonders to protect water quality. In addition, they are beautiful and can provide food for pollinators.

Slow and Filter Stormwater with Shoreline Buffers

A strip or area of deep-rooted native vegetation along a lake or river acts as a buffer. The plants' roots help hold soil in place along the shoreline, reducing erosion. In addition, these plants provide wildlife habitat and filter out pollutants in any stormwater runoff. There are native plant options for any site – dry, wet, sunny, shady. A shoreline buffer is a simple and beautiful option for protecting your shoreline and water quality. The natural communities of plants and animals that call the shoreland home will thank you!

Sound interesting? Staff members are willing to visit with you at your property and discuss options for improving water quality. We may even be able to offer financial assistance to help with the costs of installing a Best Management Practice. Let us know how we can help you!

For more information. Please contact one of the Soil and Water Conservation Districts partnering on this project.

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