



LOCAL GOVERNMENT TOPICS



Storm Water Best Management Practices Start at Home

Introduction

Managing storm water runoff is often considered the job of the local government, a subdivision developer, or possibly a homeowners' association. Certainly, good planning and implementation by any or all of these entities is important to a successful community storm water management plan. However, it is also important that individual homeowners understand their role in storm water management and their impact on the larger community.

Recently, more community storm water plans have incorporated the concept of "no net loss" of water from the site. This policy involves keeping and using the rain that falls onto a site *on that site* as much as possible, rather than simply collecting the rain and sending it off site as storm water discharge. One basic starting point for such a plan is for homeowners to reduce runoff from their individual lots. Many simple yet effective methods can be used to help reduce individual runoff.

"We All Live Downstream"

Before considering some methods, or best management practices (BMPs), to reduce home-site runoff, it is important to understand why runoff is a concern. No matter where a person lives, they live in a *watershed*. A watershed is simply an area of land that drains to a specific point of water, whether it is a lake, stream, river, or ocean.

Watersheds vary in size from quite small to very large. For example, each small creek or lake in Illinois has a certain area of land that drains into it, and that watershed area may not be very large in acreage. However, the Mississippi

River also has a certain area that drains into it, which covers several states and millions of acres. All watersheds are interrelated since smaller ones feed into the larger ones that ultimately drain into the ocean.

Activities in the smaller watersheds ultimately impact on the larger watersheds. Although homeowners may not think about it, their individual actions affect everyone "downstream" in the watershed. And, the fact of the matter is that we all live downstream from someone else.

Homeowners should take time to discover what local watershed they live in, who impacts them from upstream, and who they impact downstream. Local Soil and Water Conservation District (SWCD) offices can provide that information. Many communities have watershed management committees that address local issues.

What Is Storm Water Runoff?

Storm water runoff can affect the quantity and quality of water that must be handled somewhere downstream. Excess runoff can contribute to flooding. Contaminated runoff can damage water, making it unfit for human consumption and wildlife habitat. Both situations can be costly to correct. Prevention is more effective and efficient.

Storm water runoff is the rain and melting snow that flows off streets, rooftops, lawns, parking lots, open fields, and any other exposed area. The runoff carries with it whatever can be dislodged from the various sites, such as salt, soil, leaves, pesticides, fertilizers, oil, gasoline, and any other materials present on the surface. These materials are washed off a wide geographic area

rather than originating from one point. That makes preventing contamination more important as well as more difficult.

As land is developed, much of the surface is paved or roofed, creating more runoff potential. Usually, storm sewers are used to carry the resulting runoff to nearby waterways. The water from developed areas often contains contaminants. Even on lawns or other open areas, water that is not absorbed can runoff into the street or parking lot and then into the storm sewers.

Storm sewers are a system of underground pipes that have surface drains or inlets designed to gather storm water. Many people think that storm-sewer water is treated in a sewage treatment plant just like water from sanitary sewers. But in most communities, that is not the case. Storm water usually receives no treatment before entering local waterways.

Some communities are incorporating more natural drainage systems and increased on-site water infiltration to help reduce the quantity of runoff and improve its quality. Also, the increased use of conservation design for housing developments helps reduce storm water runoff by incorporating more open space.

Start at Home

Reducing the quantity and improving the quality of storm water runoff in a community can start with individual homeowners.

Some storm water BMPs can be implemented when first planning and building the home and designing the landscape. Others can be incorporated into day-to-day activities.

Construction phase BMPs:

- ◆ Consider alternatives to concrete- or asphalt-paved surfaces. If you have a choice, consider more porous surfaces such as brick, gravel, wood chips, stone slab, or geo-textile materials. If areas must be paved, keep it to a minimum and direct runoff onto grassy areas, not onto areas that drain to storm sewers.
- ◆ Design and construct the landscape topography to facilitate water holding and infiltration. For example, use low areas for “rain gardens,” terrace to slow water runoff, construct small wetlands, or incorporate subsurface water holding areas.
- ◆ Use natural plantings in the landscape that are deeper-rooted than turfgrass and thus allow for more water infiltration.

- ◆ If near a water source, plant buffer strips of natural vegetation and woody plants to slow runoff.
- ◆ Mulch and plant exposed soil as soon as possible after construction. Use sediment barriers when necessary.
- ◆ Avoid excessive soil compaction and disturbance to the lot.
- ◆ Avoid hooking downspouts directly into the storm-water sewer system or onto paved surfaces.

Day-to-Day BMPs:

- ◆ Avoid overuse of pesticides and fertilizers—use only the amount needed and apply only when necessary.
- ◆ Apply fertilizer and pesticides only onto target areas. Don’t spread fertilizer onto paved surfaces that drain to the storm sewer.
- ◆ Follow recommended watering practices. Avoid excess watering and don’t sprinkle water onto paved or other areas that drain into the storm sewer.
- ◆ Avoid compacting yard and garden soils because compaction impedes water infiltration.
- ◆ Avoid unnecessary pesticide, fertilizer, or water use by using plants adapted to the local area.
- ◆ Clean up hazardous material spills properly and don’t wash waste into the storm sewer.
- ◆ Store oil, gasoline, antifreeze, and other automotive products properly. Keep these substances tightly sealed and avoid leaky containers.
- ◆ Clean up oil or other vehicle fluid drippings. Do not store used vehicle parts on areas that drain to the storm sewer.
- ◆ Wash vehicles at a commercial car wash or on a non-paved surface to avoid drainage to the storm sewer.
- ◆ Avoid allowing pet waste to be dumped or washed into the storm sewer. Properly bury or flush the waste down a toilet into the sanitary sewer system for treatment. Reduce or avoid areas of concentrated pet waste.
- ◆ Mulch grass clippings and leave these on the lawn for natural fertility or use the clippings for composting.
- ◆ Keep grass clippings and leaves from washing into the storm sewer.
- ◆ Drain downspouts onto grassy areas. Collect water from downspouts for use around the home.

- ◆ Do not discharge sump-pump water onto paved surfaces that drain to the storm sewer.
- ◆ Mulch and seed bare soil as soon as possible to prevent the soil from eroding into the storm sewer.

Many of these best management practices may seem rather simple or small, but the cumulative effect throughout an entire watershed can significantly contribute to improved storm water management.

Further Reading

57 Ways to Protect Your Home Environment. 1996. University of Illinois Extension.

HomeACRE Manual: Homestead Assessment for Community and Residential Environs. 1997. University of Illinois Extension.

Lake Notes Fact Sheet Series. Illinois EPA, Lake and Watershed Unit, PO Box 19276, Springfield, IL 62794

Watershed Protection Techniques (periodical). Center for Watershed Protection, 8391 Main St., Ellicott City, MD 21043.

Water Quality Fact Sheet Series. University of Wisconsin Extension, Rm. 170, 630 W. Mifflin, Madison, WI 53703.

References

Carl DuPoldt and Carolyn Johnson. 1997. "Storm Water Management" in *HomeACRE Manual: Homestead Assessment for Community and Residential Environs*. University of Illinois Extension.

University of Wisconsin Extension. *Cleaning Up Stormwater Runoff*.

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