

## Proper Use and Disposal of Household Chemicals

Many household cleaners and solvents are considered toxic or hazardous. Even common cleaners contain acids, lye, volatile organic compounds, and other materials that can contaminate our water. Hazardous materials can be difficult to dispose of safely. Pouring them on the ground, into storm drains, or onto paved surfaces ensures that they will end up in our surface and groundwater. Also, pouring them down the drain sends them to on-lot or community sewage plants, neither of which can completely remove them from the water. Follow all directions when storing, using, and disposing of these materials. Seek alternatives to caustic cleaners, pesticides, paint products and other toxic chemicals. Many of these alternatives are commonly available in stores. Also, buy environmentally friendly products (biodegradable, organic, phosphate-free, etc.).



## Maintain Septic Systems in Proper Working Order

Many residents of Dauphin County have on-lot septic systems. Improperly working on-lot septic systems pose a high risk of ground and surface water contamination. Signs of a failing system include: thriving green grass over the system when grass in other areas turns brown, seepage in nearby ditches or streams, wastewater bubbling out of the ground, and unpleasant odor. To help maintain the system keep all components in good repair. Inspect the system annually and have the septic tank pumped by a licensed professional at least once every two years. Practice water conservation to reduce the amount of waste entering the system. Maintain a grass cover over the absorption area. Keep trees and other plants with invasive roots at least 10 feet from the absorption area. Do not flush non-biodegradable wastes into the septic system. Do not add harsh chemical cleaners to your septic system. Never divert storm drains or basement pumps into the system.

## Maintain Your Vehicle

Petroleum based fluids leaking from automobiles or improper disposal cause serious environmental damage. When it rains these contaminants soak into the ground contaminating aquifers or are carried in runoff to local waterways. For example, one quart of oil may contaminate up to 250,000 gallons of drinking water. Also, washing vehicles over impervious surfaces washes sediment, road salts, detergents, and other pollutants into waterways. Fix automotive leaks as soon as possible. Do not wash vehicles in areas that will drain to storm sewers or waterways. Consider using a commercial car wash that recycles water. Recycle used petroleum products.



## Sources of Additional Information

Dauphin County Conservation District: 717-921-8100;  
[www.dauphincd.org](http://www.dauphincd.org).

Pennsylvania Department of Environmental Protection: Bureau of Watershed Management-Stream Relief-Forest Buffer Tool Kit:  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us).

Penn State Cooperative Extension: [www.extension.psu.edu](http://www.extension.psu.edu)

United States Environmental Protection Agency:  
[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater) or [www.epa.gov/nps](http://www.epa.gov/nps).

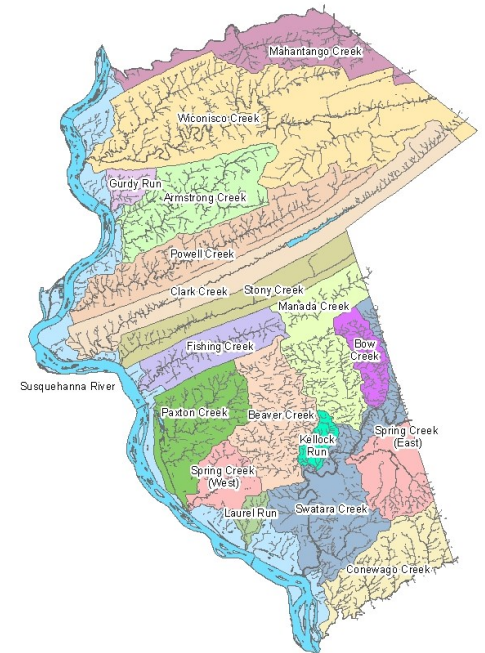
University of Wisconsin Extension: "Raingardens—A how-to manual for homeowners." Available at <http://clean-water.uwex.edu/pubs>.

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## Homeowner Guide for Protection of Waterways in Dauphin County



*The Watersheds of Dauphin County*



## Sources of Water Pollution Around the Home

People are often surprised to learn that the greatest source of pollution to our waterways is not from industrial waste, but from contaminants carried in stormwater runoff, or *nonpoint source pollution*. Nonpoint source pollutants include sediment, nutrients, gasoline, oil, heavy metals, pesticides, herbicides, pathogens, and trash. During a storm, these pollutants are picked up from impervious surfaces around the home such as roofs, driveways, parking areas and patios and carried in runoff, then discharged to a waterway via storm sewers or overland. In addition, improper use and disposal of household chemicals and lawn care products also cause waterway degradation. All these pollutants cause harmful effects on drinking water supplies, recreation, fish and wildlife habitat, and the local economy. The protection of Dauphin County's valuable water resources is everyone's responsibility. What follows are techniques homeowners can use to assure healthy waterways throughout the County.



*Sediment Pollution is a major source of stream degradation.*

## Install Structural Best Management Practices (BMPs)

Structural BMPs are constructed devices that detain, retain, filter and infiltrate stormwater runoff. Surface runoff diverted to structural BMPs is treated for water quality, infiltrated to reduce runoff volume, or retained or detained to reduce peak discharges. What follows are examples of BMPs that homeowners can use to manage runoff on their property.

**Rain Gardens:** Rain gardens are designed to mimic the layered conditions of a forest floor, which naturally filters pollutants from water. The rain garden consists of a vegetated ponding area, mulch layer, a planting soil layer, a sand bed, and a gravel base. Rain gardens are well-suited

for use on individual residential sites, as they provide for stormwater management on a lot-by-lot basis. They are very versatile and provide an attractive landscape feature. Homeowners with a bit of know-how and a few tools can readily install an appropriately sized rain garden. A rain garden how-to manual is available on the DCCD website at [www.dauphincd.org](http://www.dauphincd.org) on the publications page and from the University of Wisconsin Extension at : <http://clean-water.uwex.edu/pub>.



*Flexible shapes and designs make rain gardens very versatile. Photos courtesy of Watershed Management Division, City of Lincoln, Nebraska.*

**Downspout Disconnections:** During a rainfall event, downspouts collect and discharge roof water; in some cases directly or indirectly to waterways. Roof water does contain some amounts of pollutants and the volume of stormwater delivered to streams can be significant. Where practical, disconnect downspouts from direct or indirect discharge to streams by directing the discharge to vegetated areas, rain gardens or other BMPs.



**Additional Stormwater BMPs:** There are many other BMP options that can be installed around the home that can reduce, infiltrate and filter runoff. Consider installing porous asphalt or concrete driveways, parking areas, and patios. Porous block pavers can be used for patios and parking areas. Use grass swales to convey and infiltrate runoff instead of pipes. Also, consider the use of rain barrels to capture and reuse water from roofs.

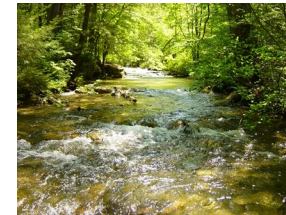


*Porous Asphalt & Porous Block Paver Parking Area*

## Protect and Maintain Riparian Buffers

A riparian buffer is a vegetated strip of land along the shores of a waterbody. Buffers provide numerous environmental benefits including runoff infiltration, groundwater recharge, removal of pollutants from runoff, prevention of stream-bank erosion, and enhanced fish and wildlife habitat. Forested riparian buffers provide significantly higher levels of benefits than grass-lined streambanks. Forested buffers are one of the most cost-effective options for streamside stormwater management.

*Poorly maintained riparian buffer showing eroded streambanks and poor water quality.*



*Properly maintained buffers provide numerous benefits.*

## Proper Use and Disposal of Lawn Care Products

When used carelessly, lawn care chemicals are carried to our waterways or infiltrate into our groundwater creating significant pollution problems. Use fertilizers, herbicides and pesticides only as needed and carefully follow all manufacturer directions for use. Eliminate or reduce the amount of fertilizer used on lawns. Many homeowners apply much more fertilizer than needed by their lawn. Test the soil using a soil test kit to determine the right amount of fertilizer to apply, if any. Rinse empty containers and use in the mixture. Also, leave lawn clippings on your yard and compost lawn and garden waste. Do not dispose of yard waste in storm sewers or waterways.

