



## KY-A-Syst for the Home

Environmental Stewardship for Homeowners

# Storm Water Management



### Why Should You Be Concerned?

Storm water is water from rain or melting snow that does not soak into the ground. Instead, it flows from rooftops, across paved areas, and through sloped lawns. As storm water moves across these surfaces, it can pick up and carry along pollutants such

as yard and pet waste, sediment, chemicals, oil, grease, and other possible contaminants.

Storm water pollutes by entering lakes, streams, and rivers. It also goes into storm sewers, which bypass wastewater treatment plants and act like streams. Polluted storm water can have a negative impact on your property's environmental quality. It can also cause costly damage when it comes into your basement or into your well through a poorly sealed shaft.

### How Can KY-A-Syst Help?

This publication leads you through an evaluation of your home and property to determine pollution and health risks. After you have read this publication, walk around your home and property and answer the questions in the boxes, circling the answers that best apply. Your answers will help you become familiar with your homesite and home maintenance practices so you can reduce your risk of polluting the water supply through storm water runoff.

If you answer all questions with choice A, you have few risks to water quality due to storm water runoff. If you answer any question with choice B, there may be a problem. If you answer any question with choice C, you will want to consider making changes. Use the action checklist in this publication to help you.

If you would like further help assessing your homesite and how your actions affect storm water quality, please contact your local office of the Cooperative Extension Service.

### Managing Automotive Wastes

Following a rainstorm, oil stains on your driveway and outdoor spills of antifreeze, brake fluid, and other automotive fluids are easily carried away by water runoff. If you see an oily sheen on runoff from your driveway, it is a sure sign that you need to be more careful. Routine maintenance can prevent your



car from leaking and help identify potential leaks. If you change your own oil, be careful to avoid spills and collect the waste oil for recycling. Used oil or other automotive fluid, if dumped down a storm drain or on the ground, may end up in your drinking water.

### Safe Handling of Chemicals

Safe storage of chemicals is very important, but so is safe handling. When mixing chemicals, try to do it in a confined area such as a washtub so that spills are contained. Be sure to read labels carefully before mixing chemicals together. If you spill chemicals, act quickly to contain them and clean up the spill.

The timing of the application of chemicals in yards, gardens, and landscapes is very important. *Do not* apply pesticides and chemicals if rain is expected within 24 hours. Besides being uneconomical, application just before rain almost guarantees pollutant runoff. Also, follow application rates for your soil, which should be listed on the product label. If you exceed recommended rates, the excess chemicals may run off.

#### How do you manage automotive wastes?

- A. Oil drips and fluid spills are cleaned up. Storm water runoff does not come in contact with dirty car parts and vehicle wastes.
- B. Drips and spills are not cleaned up. Vehicle waste is left on outside unpaved areas.
- C. Used oil, antifreeze, and other wastes are dumped down a storm sewer, in a ditch, or on the ground.

#### How do you handle pesticides, fertilizers, and other outside chemicals?

- A. Spills are cleaned up immediately. Minimum amounts of chemicals are applied according to label instructions. Applications are delayed to avoid rain.
- B. Applications are not delayed to avoid rain.
- C. Spills are not cleaned up. Products are used in greater amounts than recommended.

### Washing Your Car

Washing your car in the driveway creates runoff without the help of a rainstorm—your hose provides the water. Dirty, soapy runoff water drains directly into storm sewers. Wash your car on the lawn or take it to a commercial car wash or spray booth that sends its dirty water to a wastewater treatment plant.

### Protecting Your Basement

If storm water enters your home, not only can it damage your furnishings, but it can be a health hazard by carrying in contaminants. Storm water that enters your home can be a health hazard in another way, too: as it recedes from your home, it can pick up chemicals and carry them into the sewer or ground. Basement windows or doors are common entry points for storm water and should be sealed against leaks. If windows are at or below ground level, they can be protected with clear plastic covers, which are available at building supply stores. In addition, your yard should be sloped away from the foundation to prevent water from pooling near the house and leaking into the basement.

### Paved Surfaces

Concrete or asphalt roads, driveways, and walkways prevent rainwater from soaking into the ground. If you have a choice, consider using alternative materials, such as gravel or wood chips for walkways. Where you need a more solid surface, consider using a “porous pavement” made from interlocking cement blocks or rubber mats that allow space for rainwater to seep into the ground.

### Dealing with Bare Soil

Areas of bare soil are common in garden areas, on newly seeded lawns, and around construction projects. Rainwater and melting snow can remove large amounts of soil and carry it into surface waters including rivers, lakes, and streams. Plant ground covers or apply mulch to gardens or newly seeded areas to slow erosion and prevent soil from polluting surface water.



#### Reducing Erosion with Landscaping

Many lawns are sloped to encourage water to run off onto neighboring property or streets. By landscaping low areas with shrubs and flowers, you can encourage water to soak into the ground.

If you have a large lot, consider naturalizing parts of it with prairie, woodland, or wetland plants. If your property adjoins a stream or lake, consider leaving a buffer strip of thick vegetation that includes trees and native grasses.

To prevent concentrated erosion near your home, direct drainage from your roof to your lawn or flower bed.

### Where do you wash your vehicle?

- A. Cars and trucks are taken to a commercial car wash or spray booth.
- B. Cars and trucks are washed on a lawn or gravel drive.
- C. Cars and trucks are washed on a driveway, street, or other paved area.

### How well is your basement protected from storm water leakage?

- A. Storm water is diverted from basement windows by window well covers and other devices. Downspouts direct roof drainage away from the house.
- B. No special methods are used to divert water, but storm water has never entered the basement.
- C. Storm water runoff has entered the basement or flows near the foundation.

### What part of your property contains paved surfaces?

- A. Paved surfaces are kept to a minimum, and alternatives such as wood chips or paving blocks are used when possible.
- B. Some small areas are paved for patios or basketball, but there are also some larger grassy areas.
- C. A large portion of the property is paved, and there are only small areas of lawn.

### How long is bare soil left exposed to the weather?

- A. Bare spots in the lawn are promptly seeded and covered with a layer of straw, and garden areas are mulched.
- B. Grass is spotty, especially on sloping ground. However, all areas of bare soil are surrounded by grass.
- C. Bare spots in the lawn or garden are left without mulch or vegetation for long periods of time. Mounds of bare soil are present, or bare areas are near pavement.

### Does your landscaping reduce erosion?

- A. Yard is landscaped to slow the flow of water and provide areas where storm water can soak into the ground.
- B. No areas are landscaped to encourage water to soak into the ground. Mowed grass or spotty vegetation exists near stream banks or lakeshores.
- C. No landscaping to control erosion exists, especially on hillsides. Stream banks and lakeshores are eroding.

For More Information About:

- **Oil Recycling**
  - Local service stations (check local listing).
- **Basement Leakage Protection**
  - County office of the Cooperative Extension Service (check local listing).
- **Landscaping for Erosion Control**
  - *Ground Covers for Kentucky Landscapes* (HO-78) by Lenore J. Nash, Mary L. Witt, William M. Fountain, and Robert L. Geneve, University of Kentucky Cooperative Extension Service.
  - *Creating Urban Storm Water Control Ponds for Water Quality and Wildlife Habitat* (FOR-73), Thomas G. Barnes, University of Kentucky Cooperative Extension Service, and Lowell Adams, National Institute for Urban Wildlife.
  - County office of the Cooperative Extension Service (check local listing).
  - Natural Resources Conservation Service (check local listing).



What Is the KY-A-Syst for the Home Program?

The KY-A-Syst for the Home program is a series of publications that can help you be a good environmental steward and protect the health and well-being of your family. KY-A-Syst for the Home publications provide problem-solving information and list agencies that can provide help in specific areas.

### Action Checklist

Look back at the assessment questions and make sure you have answered all questions. Record all B and C responses, and list the improvements or changes you plan to make. You can use recommendations from this publication or from other sources to help you decide on action you are likely to take. Write down a date to keep you on schedule. Read back through the assessment questions from time to time to see if any responses have changed, and take any action needed to address new concerns.

Write all B and C responses below.	What can you do to reduce risk?	Set a target date for action.
<i>Sample:</i> Cars and trucks are washed on a driveway, street, or other paved area.	Park car on lawn before washing.	Each time car is washed.

This publication is based on *Home\*A\*Syst: An Environmental Risk-Assessment Guide for the Home* developed by the National Farm\*A\*Syst/Home\*A\*Syst Program (authors Carl DuPoldt, Natural Resources Conservation Service, and Carolyn Johnson, University of Wisconsin Cooperative Extension) in cooperation with NRAES, the Northeast Regional Agricultural Engineering Service. Permission to use these materials was granted by University of Wisconsin, the copyright holder. Kentucky's modification of Home\*A\*Syst was coordinated by Kimberly Henken, Amanda Abnee, and Marla Hall. Technical editing was provided by Steve Workman. This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project number 99-EWQI-10515.

**Contact: Kimberly Henken, Extension Associate, Family and Consumer Sciences**