



**KY-A-Syst for the Home**  
Environmental Stewardship  
for Homeowners

# Storm Water Management

## Teaching Guide

### Introduction:

Storm water is rain or melting snow that doesn't soak into the ground. Instead, it flows from rooftops, over paved areas, and through sloped yards. This runoff can pick up and carry along soil, pet waste, salt, pesticides, fertilizer, oil and grease, and other possible contaminants. These contaminants can pollute streams, wetlands, lakes and rivers. Often, storm water goes into storm sewers, which bypass wastewater treatment plants. It can cause property damage if it comes into your basement or into your well.

Storm water cannot be avoided, but methods can be employed to reduce the pollutants in the water and to control the runoff to minimize damage. Routine maintenance can keep automotive fluids out of storm water. Recycle waste oil and avoid spills while changing the oil in your car. Oil dumped on the ground or down a storm drain may end up in your drinking water, as can leaking antifreeze, oil, brake fluid or transmission fluid.

When using cleaning products, pesticides and other chemicals, always mix in a confined area so spills are contained. If you do have a spill, clean it up immediately. Always read the label first. *Do not* apply pesticides or chemicals if rain is expected within 24 hours. Besides being uneconomical, application just before a rain almost guarantees pollutant runoff. Do not exceed recommended application rates.

The simple task of washing your car can also introduce contaminants into storm water. Wash your car on the lawn or take it to a commercial car wash. Washing it in the driveway can cause dirty, soapy runoff water to flow directly into storm sewers.

Paved surfaces contribute to storm water problems, so try to avoid too many paved surfaces around your home. They prevent rainwater from soaking into the ground. Try to use alternative materials such as gravel or wood chips for walkways.

Protecting your basement from storm water is important because the storm water can both carry in contaminants and pick up and carry out chemicals as it recedes. Basement windows and doors should be sealed against leaks. Yards should be sloped to drain away from the foundation. This will prevent water from pooling by the house and leaking into the basement.

Rainwater and melting snow can remove bare soil and carry it into streams, rivers, and lakes. Ground covers or mulch should be used to cover gardens or newly seeded areas. Landscaping with shrubs and flowers can encourage water to soak into the ground instead of running off onto neighboring yards or streets. If your property adjoins a stream, consider leaving a buffer strip of thick vegetation such as native grasses and trees.

**Focus on Children:**

Proper management of storm water is important to children's health. Children are at higher risk for contamination from toxins in their water because their nervous, respiratory, and immune systems are not yet well developed. Children drink more liquids per pound than adults, so their exposure to chemicals in the water may be greater. Children are also at risk from wading in polluted streams or rivers or from playing with pets that have been in polluted water. Control of storm water to reduce pollutants and minimize runoff can reduce possible problems for children.

**Lesson Purpose and Objectives:**

**Purpose:** This lesson is designed to assist people in managing storm water on their property. The lesson presents information about the need for storm water management, and presents tips and solutions for storm water problems.

**Objectives:** This lesson guide contains a lot of information about managing storm water runoff and reducing pollutants in storm water. It may be difficult to cover all the material in one session. Therefore, you are encouraged to select a program based on the type of audience you are serving and their needs. It is best to select and focus on *only two or three* of the following objectives.

Learn how to minimize automotive fluids in storm water runoff.

Understand how to properly handle pesticides, fertilizer, and outside chemicals.

Become knowledgeable about the correct way to wash your vehicle.

Know how to protect your basement from storm water leakage.

Study ways to minimize paved surfaces on your property.

Realize the importance of quickly covering bare soil to minimize runoff.

Explore landscaping options that will reduce erosion.

Other (Please list in the space below):

## **Suggested Resources & Materials:**

The following items are available for your use in teaching this lesson. Select and use resources according to your program focus and needs. County agents should request these items in advance.

### Publications & Fact Sheets

Numbered-series Extension publications available through order entry:

- *Ground Covers for Kentucky Landscapes* HO-78
- *Creating Urban Storm Water Control Ponds for Water Quality and Wildlife Habitat* FOR-73
- *Trees, Shrubs, Ground Covers, and Vines for Kentucky Landscapes* HO-61
- *Principles of Home Landscape Fertilization* ID-72
- *Selecting the Right Grass for Your Kentucky Lawn* AGR-52

Videos (Available through the Ag. Communications video library.)

- *After the Rain-Urban Runoff* (VEI-1334)
- *Groundwater and Your Family's Health* (VET-0252)
- *Safely Applying Pesticides in Lawns and Gardens* (VET-0431)

Other: (Please specify below.)

## **Suggested Teaching Techniques and Activities:**

Select only those activities that will help you teach the lesson. Limit selection according to your program focus, audience, and length of lesson.

- Use the transparencies to give an overview of management of storm water. Encourage discussion as you present the information.
- Have the participants read the Ky-A-Syst for the Home publication *Storm Water Management*. Ask them to go back through the publication and answer the questions in the boxes. Suggest participants record all B and C responses and list changes they plan to make from information in the publication or from other sources. They can do this on the Action Checklist on Page 4. Encourage them to set target dates for taking action. Suggest that they review the checklist from time to time to see if any responses have changed.
- Show the video *After the Rain-Urban Runoff*. Discuss with the audience ways they can protect local drinking water supplies. Discuss what they can do to reduce storm water runoff.

### **Suggested Teaching Techniques and Activities: (cont'd.)**

- Invite someone from a local nursery to talk about landscaping to slow storm water runoff. Ask them to bring examples of good trees and shrubs to plant for this purpose. Discuss alternatives to paved surfaces and the correct way to use wood chips or paving blocks.
- Show the video *Groundwater and your Family's Health*. Discuss the health effects of contaminated water and possible solutions.
- Ask someone from a basement water proofing company to speak to the group about techniques they can use to divert water from their basements and to seal windows and doors. Allow the audience to ask questions if they have specific problems.
- Other: (Please specify below.)

### **Suggested Evaluation Techniques:**

Select the technique(s) best suited to the information you would like to obtain from your audience. Immediate evaluation will provide reaction to the presenter and program materials. Delayed evaluation will give a better indication of changed behavior and attitudes.

- ◆ At the close of the program, ask each participant to name *one* thing they learned from the lesson.
- ◆ At the end of the program, ask each participant to list something they will go home and do as a result of the lesson. Have them write the item on a piece of paper with their name and the date of the lesson. Save the papers and several weeks/months later survey the group to see if they actually did it.
- ◆ Hand out a copy of the *Help Us Serve You Better* evaluation form. Ask participants to complete the form and leave it in a specific place as they leave.
- ◆ Return to the group several weeks later and ask them to fill out the Follow-up Feedback Form and collect them as they leave. If you cannot return to the group in person, contact a representative number of the participants by phone and collect the data requested on the Follow-Up Feedback Form from each.
- ◆ Other: (Please specify below.)

**Reporting Impacts (*Information for County Extension Agents*):**

Use the following priority indicators and program accomplishment (PAC) codes when reporting impacts as a result of this program. Information taken from the FY01 PAC and priority indicators lists.

PAC Code 610 - Indicator:

- Number of individuals adopting practices that insure safe water.

PAC Code 440 – Indicator:

- Number of persons who report practice changes related to safety.

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