

MANAGING HOUSEHOLD WASTE: Preventing, Reusing, Recycling, and Composting

There are many ways to reduce household waste and many alternatives for disposing of the waste you do make. This chapter will help you examine your current waste disposal and consumption practices and how they may affect air, soil, and water quality on your property or in your home or community. It covers the following:

1. Preventing and Minimizing Waste—choosing products and services to reduce waste (“pre-cycling” or “enviro-shopping”)
2. Reusing, Recycling, and Composting—creative ways to deal with wastes
3. Waste Disposal on Your Property—alternatives to on-site dumping and burning

Why should you be concerned?

As the U.S. population increases, the amount of waste produced each year also rises. In fact, material consumption has increased faster than the population. Studies estimate that in 1996, each person produced around 4.3 pounds of waste each day—a significant increase from the 2.7 pounds produced per person daily in 1960.

Surveys also found that most consumers do not realize what comprises solid waste. Many, for example, think that we throw away more plastics by weight than we really do, or that disposable diapers are a major problem (they are not). Figure 11.1 shows what is in the mountain of solid waste thrown away in the United States each year. What would you find if you examined wastes from your household over a year’s time?

What is the big picture?

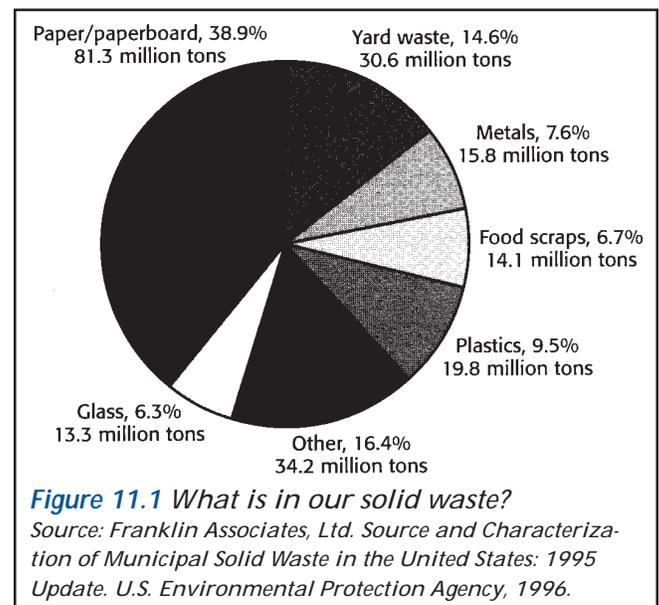
The United States is number one in waste produced, energy consumed, and use of the earth’s natural resources. While the United States has only 6 percent of the world’s population, it uses about 40 to 50 percent of the world’s nonrenewable resources and produces an estimated 15 to 38 percent of the world’s waste. We use more than our share of the world’s natural resources and often

turn them into waste or unusable products. Changing from a resource-consuming lifestyle to a resource-conserving one would help maintain natural resources and create less waste.

The problem with waste

Most of our waste is destined for landfills. But because of public concern about landfill location and stricter disposal regulations in many parts of the country, acceptable landfill space is becoming scarcer and/or more expensive. Environmental laws have forced many dumps and incinerators to close or modernize at a cost of millions of dollars. In areas without nearby disposal options, consumers may be paying higher rates to have waste hauled hundreds of miles to be buried or incinerated. As a result, waste has become a major environmental and economic issue for consumers and municipalities.

The good news is that these problems have caused us to look for new ways to deal with or reduce our waste. Producing less waste and finding creative alternatives for dealing with waste not only save taxpayer dollars but help protect air, soil, and water quality and the health of people and wildlife.



DEFINING HOUSEHOLD WASTE

What do you call the stuff you want to get rid of? Trash? Garbage? Solid waste? Recyclables? Refuse or junk? Here's how we define terms for this chapter:

1. "Trash" and "waste" refer to items and materials that are no longer wanted—anything discarded or useless.
2. "Reusables" are items that are used again by a different user or for a different purpose, like a hand-me-down jacket or a jar used for a cup. They are not reprocessed into raw materials.
3. "Recyclables" are materials like glass, metal, paper, and even refrigerators that are collected, separated, processed back into raw materials, and made into new products.
4. "Compostables" are primarily yard and food wastes that can decompose and return to the earth as nutrients or soil.
5. "Garbage" is generally food waste or wet food either of animal or plant origin.
6. "Municipal solid waste" (MSW) is household waste combined with commercial, business, and institutional waste.

PART 1—Preventing and Minimizing Waste

If you do not produce waste, you will not need to get rid of it—it's that simple. But since we all generate at least some waste, we need to think about ways to make less. People have choices and can reduce the volume of waste they produce by making thoughtful choices when they buy products.

A strategy to help maintain natural resources and create less waste is source reduction, which is defined by the U.S. Environmental Protection Agency as "reducing the amount of materials entering the waste stream by redesigning products or patterns of production or consumption." An example of source reduction is using returnable beverage containers.

Part I will help you examine your potential for cutting the amount of waste you produce and preventing some kinds of waste completely. At the end of Part 1, fill out the assessment table to determine your waste potential. Use the information below to help answer the questions.

Can you become a waste-conscious shopper?

You make purchasing decisions every day, and each purchase involves a certain amount of waste production and use of natural resources. Whether buying groceries, toys, furniture, or appliances, your decision to select a certain product or no product at all will determine the type and volume of waste that you must someday discard. If you buy with the environment in mind—that is, if you use

your purchasing power to minimize your impact on the environment—you will select products that produce a minimum of waste, last longer, and use fewer natural resources. "Precycling" and "enviro-shopping" are terms that refer to this kind of purchasing. An "enviro-shopper" typically asks the following questions before making a purchase:

How much do I need?

Among other things, enviro-shopping means buying only what you need. A good price or bulk packaging may tempt you to buy more paint, food, or household cleaner than you may really need. But what may seem like a "good deal" may end up wasting money and natural resources, because the unused or spoiled product will eventually have to be thrown away. Make sure you can use what you buy, or find someone who can use your leftovers. Remember that latex paint and many pesticides are time and temperature sensitive, so that storage under low temperatures renders many of them worthless.

Are my purchases long-lasting and reusable?

In our "throw-away" society, it is sometimes hard to find good quality products at an affordable price. Although durable products may be more expensive, they are usually a better investment in the long run. Look for products that can be fixed when broken. Long-lasting products make good hand-me-downs, too. Also, select products which are energy-efficient for even greater savings.

Products and materials that can be reused—passed along to someone else or used for other purposes—save money and conserve resources. For example, reusable gift bags can reduce your need to buy wrapping paper. If it is safe to do so, carry your own shopping bag or use no bag at all. In a world with increasing numbers of disposable and single-use products, it is a real challenge to avoid waste when shopping.

Is the product package recyclable?

Many product containers and packaging materials are potentially recyclable—such as glass bottles, paper, plastic bags, and cardboard boxes. To promote recycling, many manufacturers use a chasing-arrows recycling symbol (Figure 11.2). But be careful; this symbol may mean the product or packaging is made from materials that are suitable for recycling if your local recycling program will take them. If a product cannot be recycled locally, then the product packaging is not truly recyclable—at least not where you live. The list of materials that your local recycling program will accept probably changes over time, so you will need to keep up-to-date.

If you cannot recycle something locally, you might be able to take it to a close neighboring community that will accept it. But do not waste more natural resources (such as gasoline) than you will

save by recycling. Combine trips to recycling facilities with other tasks.

Is the product or its packaging made from recycled materials?

There are a surprising variety of products made from recycled material: everything from carpets to detergent bottles. Once materials are recycled, they will be made into new products or packaging only if there is a market for them. As a consumer, you can use your buying power to support and encourage markets for recycled-material products. “Closing the loop”—that is, recycling and buying recycled—ensures that materials are cycled again and again.

On product packaging, look for the words “made from recycled materials” or, even better, “made from post-consumer recycled materials.” Post-consumer means that all or part of the packaging is made from materials that have been recycled by consumers in community recycling programs; the packaging has been in the consumer’s hands before. Each year, for example, billions of recycled aluminum beverage cans are melted down and made into new cans. But remember—just because you see a chasing arrow, do not assume that the product or packaging can be locally recycled.

Do I buy products with the least amount of packaging?

About a third of the paper, plastic, glass, cardboard, and metal we throw away comes from packaging. While packaging serves many useful purposes—such as preventing food spoilage, ensuring customer safety, meeting legal requirements, and providing information—some is unnecessary, wastes natural resources, and soon after purchase ends up as waste.

Good enviro-shopping means choosing products that have the least amount of wrapping (as long as your safety is assured). Buying bulk foods (if they will not be wasted) and selecting concentrated products are examples of minimizing waste

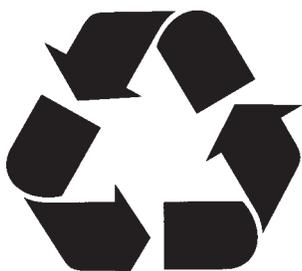


Figure 11.2 The recycling symbol means the product or packaging is recyclable. But if your local recycling program won't accept the product, it isn't really recyclable—at least not where you live.

HOW MUCH HOUSEHOLD WASTE DO YOU MAKE EACH DAY?

This project is for the truly adventurous. Carry a large bag for one to three days and put all of your daily waste inside (if it is safe to carry). Do not change your buying or eating habits. You might want to keep wet wastes in plastic bags so things do not get too messy.

At the end of the experiment, weigh the bag. If you carried your bag for three days, divide the total weight by three to get the average daily amount of waste. Then analyze your waste: How much of the total weight or volume is paper? How much is recyclable, and how much is potentially hazardous? How much could have been avoided? How many pounds of waste would you produce in a year?

from packaging (Figure 11.3). If your packaging selections are limited, tell the store manager what you want, or write or call the product manufacturer about your community’s solid waste situation and your preference for minimally packaged products.

Assessment 1—Preventing and minimizing waste

Use the table before to identify areas where you can minimize waste. Indicate your waste potential in the right-hand column. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information above to help you answer the questions.

Responding to your waste potential

Your goal is to reduce the amount of waste you produce—especially waste that ends up in a landfill or incinerator. Turn to the Action Checklist on page 116 to record the high- and medium-waste potentials you identified in the assessment table. Use the ideas in Part 1 to help you become an enviro-shopper.

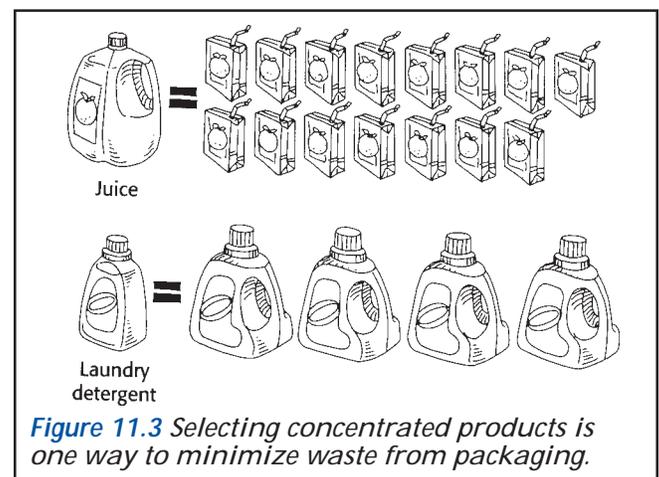


Figure 11.3 Selecting concentrated products is one way to minimize waste from packaging.

PART 2—Reusing, Recycling, and Composting

Once you make waste, it has to go somewhere. Part 2 reviews three ways to keep materials out of a landfill or incinerator. For each item of waste, there are three questions to ask:

First, is it reusable?

Reuse should be your first objective, as it typically has the least environmental impact. Refillable glass beverage bottles are an example of a reusable product. Empty bottles are collected and trucked back to the bottler, where they are washed and refilled. Natural resources are still used in cleaning and hauling the product for reuse. To compare this to recycling, see the story about glass recycling in the next section.

Often, reuse is limited only by the imagination—you can usually find uses for more materials than you realize. Sharing old clothes and used furniture is a common form of reuse. If you cannot share with friends or family, try to donate usable items to programs like Goodwill or thrift shops. Holding a neighborhood yard sale is a good way to eliminate unwanted possessions. Give your packaging foam “peanuts” to a local gift shop, or see if neighbors can use your excess paint, lumber, or empty plastic pails—if the items can be reused safely. Try listing materials you want to get rid of on a postcard and posting it on a local community bulletin board. Reusing an item is a great way to save natural resources if it does not use more natural resources than other options.

Second, is it recyclable?

Studies have shown that more than half of all household wastes are recyclable. Recycling is a good idea, although it still requires energy and other resources and produces waste and pollution. For empty glass bottles to be recycled into new bottles, for example, they must be collected, sorted, sometimes crushed, and trucked to a glass factory where they are washed, melted, and re-formed into new bottles. The new bottles are then trucked to a beverage company to be filled. In the end, though, recycling usually does save more resources and results in less pollution than making items from raw natural resources.

Check with your city or county agencies, trash haulers, and local or area recycling business to see what is recycled in your area, where items are recycled, and how to prepare items for recycling (Figure 11.4). Remember to keep current about what your local program will accept; use the table below to keep track. Plastic milk jugs, for example, are usually recyclable, but wax-coated paper milk cartons can be recycled only in a few areas. Plastic containers are marked with a number, usually inside the recycling symbol. Numbers 1, 2, and 3 are most easily recycled, and should be the first choice in plastic packaging.

A growing number of programs require recycling by law. You should not limit recycling to typical grocery store purchases such as aluminum cans, cardboard, glass bottles, and plastic milk jugs. There may be local scrap dealers or industrial salvage yards that want your broken appliances, used vehicles,

ASSESSMENT 1—Preventing and Minimizing Waste

	LOW-WASTE POTENTIAL	MEDIUM-WASTE POTENTIAL	HIGH-WASTE POTENTIAL	YOUR WASTE POTENTIAL
Quantities purchased	I only buy what I need and avoid accumulating unused products.	I sometimes buy more product than I can use.	I often buy more product than I can use.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Product durability and potential for reuse	I select products based on their durability, ease of repair, and potential for reuse.	I sometimes consider durability, ease of repair, or potential for reuse.	I never consider durability, ease of repair, or potential for reuse.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Recyclability of packaging	I regularly purchase containers/packaging that can be recycled locally.	I sometimes consider recyclability when making purchases.	I never consider recyclability.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Packaging selected	When safe to do so, I select packaging that minimizes waste.	I sometimes consider packaging that minimizes waste.	I never consider packaging that minimizes waste.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

wood and metal wastes, bricks, concrete, doors, windows, and so on. Many localities now require residents to recycle large appliances, car batteries, used motor oil, and other recoverable materials.

Third, can it be composted?

Yard trimmings and food wastes typically make up 10 to 25 percent of the wastes going into landfills. Your amount of yard and food wastes depends on your eating and gardening habits, yard size, climate, and type of vegetation. Many landfills across the country have banned yard waste from disposal because of its large volume, high moisture content, and potential to contribute to landfill gas and groundwater problems. Composting—or “nature’s recycling”—is a much more effective way to handle organic waste.

It is important to place the composting site where it will prevent the yard waste from entering nearby water ways or water bodies. Although leaves,

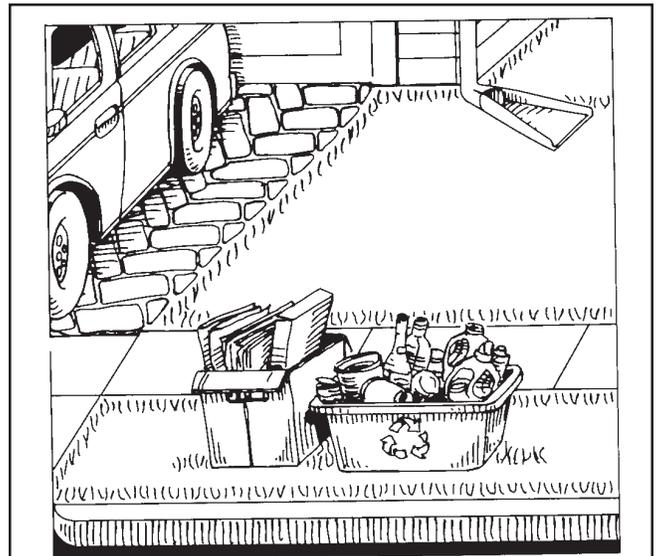


Figure 11.4 Find out what is recyclable in your area and how to prepare items for recycling.

WHAT CAN YOU RECYCLE IN YOUR AREA?

Item	Recycled where?	How should it be prepared?
Paper/cardboard		
Glass		
Plastic		
Aluminum		
Steel		
Other metals		
Automobile batteries		
Oil		
Tires		
White goods/appliances		
Wood/lumber		
Bricks/concrete		
Other:		

etc. will compost where they naturally fall, it is NOT natural for large amounts of grass clippings to accumulate on stream banks. When a composting operation is located on a slope or stream bank, rainfall washes off chemical residues before they can be deactivated. In addition, the nutrients which make compost so valuable are leached out and are carried off by storm water to the nearest water resource, where water quality and fish habitat are compromised.

Composting is a natural process that turns kitchen and garden wastes (with the help of microbes, earthworms, and fungi) into a high-quality soil conditioner. Many common materials can be composted in your own backyard: leaves, grass clippings, plant trimmings, straw, some kitchen scraps (but not animal wastes like fat, bones, or pet manure), and even small amounts of paper. The final product is a dark brown, crumbly compost that has a clean, earthy scent. It can be spread on lawns or mixed with garden soil as an excellent natural soil conditioner. As an alternative to landfill disposal, many communities have established yard waste compost programs with convenient drop-off sites or curbside pick-up. Some trash haulers have yard waste composting programs. Many cities also have special programs to deal with seasonal waste, such as Christmas trees and spring clean-ups.

To compost at home, you can use one of the many compact and efficient composting bins on the market, or you can build your own (see Figure 11.5 for examples). For kitchen scraps, you might even try a type of indoor composting that uses earthworms to break down wastes. Your nearest county K-State Research and Extension Office can provide you with more detailed information about composting.

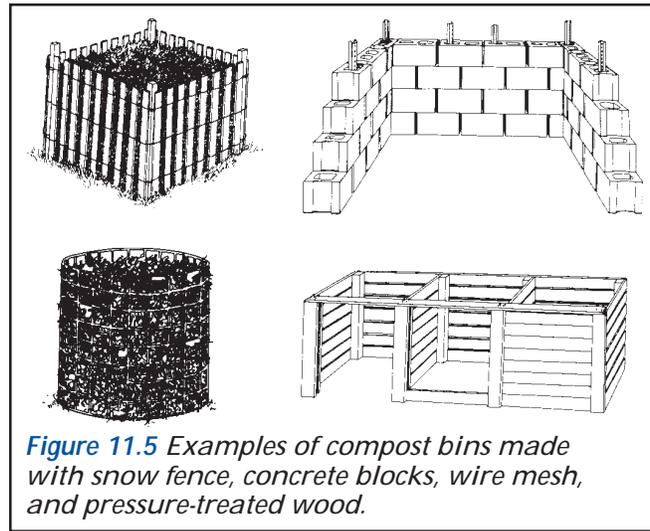


Figure 11.5 Examples of compost bins made with snow fence, concrete blocks, wire mesh, and pressure-treated wood.

Assessment 2—Reusing, recycling, and composting

Use the table below to identify preferred methods to keep waste out of the landfill. Indicate your waste potential level in the right-hand column. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information above to help you answer the questions.

Responding to your waste potential

Your goal is to reduce waste or find the best alternatives for dealing with it. Turn to the Action Checklist on page 116 to record the high- and medium-waste potentials you identified above. The information in Part 2 can help you plan improvements.

ASSESSMENT 2—Reusing, Recycling, and Composting

	LOW-WASTE POTENTIAL	MEDIUM-WASTE POTENTIAL	HIGH-WASTE POTENTIAL	YOUR WASTE POTENTIAL
Reusing	I reuse as many household wastes as possible.	I reuse items when it is convenient to do so.	I never reuse items.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Recycling	I recycle as many household wastes as possible.	I recycle when it is convenient to do so.	I never recycle.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Composting	I compost all yard wastes and kitchen vegetable scraps at home or in a city program.	I compost some yard or kitchen wastes.	I never compost.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

PART 3—Waste Disposal on Your Property

Disposing of household waste by burning it or dumping it on private property can pose threats to your health and the environment. Although these disposal methods have been used in many rural areas for decades, local and state laws are becoming more restrictive. Many Kansas communities ban dumping or burning of waste in order to protect soil, water, and air quality. Complete the table at the end of this section to determine your risks and consider alternatives to on-site methods of disposal.

Do you burn household waste?

In the past, some residents used burn barrels to get rid of many household wastes. When paper, plastics, printing inks, batteries, and other common materials are burned, a noxious mix of chemicals can be released into the air (see sidebar at right). Some of these—such as lead or mercury or even byproducts given off when leaves are burned—can be hazardous to breathe.

Eventually, most byproducts from burning are removed from the air by rain or snow and are deposited on land or in water. Due to concerns about such depositing of hazardous air pollutants, Kansas has passed laws to restrict if or what you can burn. Generally, open burning has been banned. Always check with local authorities before burning.

Do you dump household waste on your land?

It is generally illegal in Kansas to dispose of waste on your land. Waste dumped on your property is not only unsightly, it may contain harmful chemicals that can leach out and contaminate groundwater (Figure 11.6), or be spread by wind and rain. Discarded paint, for example, may contain lead or mercury. If not properly rinsed, pesticide containers may contain toxic residue, and used oil filters usually harbor petroleum products and harmful metals. These pollutants can soak into the soil, pollute well water, and find their way into nearby lakes, streams, or wetlands. If your waste contains hazardous substances—even in small quantities—it can cause problems. Another problem is caused by discarded tires, which provide a haven for mosquitoes.

Lending institutions are commonly requiring an environmental assessment before they will consider loaning money on rural property. Property owners should be prepared to disclose environmental information such as known dumpsites or other hazards on the property being sold. So if you have a dump or burn site, such as an oil or pesticide dump site, you may be required to tell potential buyers.

For more information about disposing of waste on your property, contact the Kansas Department of Health and Environment at (785) 296-1600, your

BY-PRODUCTS OF OPEN BURNING

Smoke, particles, or ash from burning waste may contain some of the following pollutants:

- Arsenic from some wood preservatives or pesticides
- Benzene and other solvents from some paint or varnish strippers
- Cadmium from nickel-cadmium batteries and plastics such as PVC
- Carbon monoxide from incomplete combustion
- Chromium from colors in some colored paper and paints
- Dioxin from byproducts formed when chlorine-containing products such as some plastics are burned
- Formaldehyde from some particle board and fabric treatments
- Hydrochloric acid from some mixed waste paper
- Lead from some paint on old boards, batteries, and PVC plastics (lead is used as a stabilizer in PVC)
- Mercury from some batteries, paints, plastics, and fluorescent lights
- Nitrogen oxide from some colors and inks
- Sulfuric acid from some chemicals, dyes and pigments, rayon, and film

NOTE: Some of these chemicals have burning points higher than a burn barrel will reach. However, they might end up in ash on the ground or as floating particles.

local environmental or health department, codes department, or a licensed landfill operator.

Do you dump household waste down a storm sewer or drain?

Especially for homes served by street drains and storm sewers, any solid or liquid wastes exposed to the weather—including pet wastes, motor oil spills, solvent spills, solvent-based paints and products, and other product spills—can wash directly into lakes and streams. Storm sewers, remember, are rarely connected to wastewater treatment facilities. It is illegal in Kansas to dispose of waste in storm drainage systems.

Some materials, like foam “peanuts” and other plastic debris, can be transported by storm runoff to open water where they may be mistaken for food and eaten by fish or birds.

Dumping potentially hazardous substances down a drain that leads to a septic system or sewer system can also cause problems; see Chapter 4, “Household Wastewater,” and Chapter 5, “Managing Hazardous Household Products,” for more information.

Assessment 3—Waste disposal on your property

The assessment table on the following page can help you examine potential risks due to on-site waste disposal. Choose the statement in the right-hand column that best fits your situation. Refer to the information above in Part 3 to help you respond.

Responding to risks

Your goal is to reduce your risks. On the Action Checklist on the following page 116, write all high and medium risks you identified. Use the ideas in Part 3 to help plan actions to take.

ACTION CHECKLIST

Go back over the assessment tables to ensure that all medium- and high-waste potentials and risks you identified are listed in the Action Checklist on page 116. For each item listed, write down the improvements you plan to make. Use recommendations from this chapter and other resources to decide on actions you are likely to complete. A target date will keep you on schedule. You don't have to do everything at once, but try to eliminate the most serious problems as soon as you can. Often it helps to tackle the inexpensive actions first.

For More Information

*Kansas Home*A*Syst* web site: www.engg.ksu.edu/enggext/ppi/homeasyst has many hot links to other informative web sites grouped by topic.

WHICH WASTES ARE HAZARDOUS?

By reading product labels, you can generally tell which ones have hazardous ingredients. Look for words like DANGER, FLAMMABLE, POISON, VAPOR HARMFUL, or FATAL IF SWALLOWED. These are clues that a substance in the product is potentially hazardous to your health.

Carefully dispose of such products—especially if unused portions of the product are in liquid form. Although dry chemicals can be hazardous, liquids can more easily injure waste haulers, react with other discarded chemicals to start fires or create deadly gases, or seep through soils and into water sources. The best approach for dealing with these products is to use them up, if it is safe and legal to do so, so nothing is left to discard. Check to see if your community has implemented a Household Hazardous Waste collection program.

Always read the label for disposal recommendations, or contact the manufacturer. For more information on dealing with hazardous wastes, see Chapter 5, "Managing Hazardous Household Products."

Recycling, composting, and waste disposal

Contact your local environmental, health, or sanitation department, recycling center, fire department, city office, or your county K-State Research and Extension Office. Get the latest list of what is recyclable and how to prepare items for recycling. Ask for information on composting and other

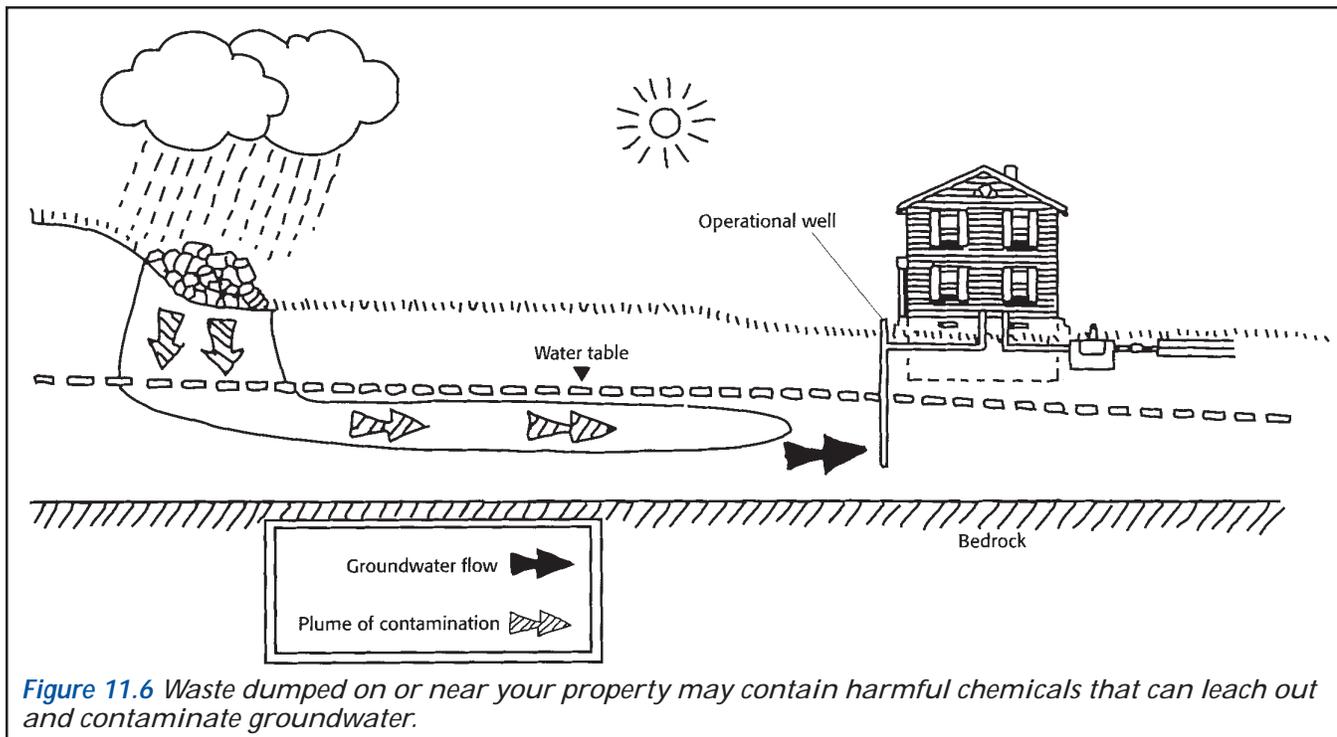


Figure 11.6 Waste dumped on or near your property may contain harmful chemicals that can leach out and contaminate groundwater.

ASSESSMENT 3—Waste Disposal on Your Property

	LOW RISK	MEDIUM RISK	HIGH RISK	YOUR RISK
Burning waste	No household waste is burned on-site.	Only non-toxic materials are burned. If burning is legal, burning guidelines are strictly followed.	Mixtures of waste (including paper, solvents, batteries, and plastics) are burned, releasing metals, acids, and chloride compounds.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
On-site dumping	No household waste is dumped on my property or on public property.	Only nontoxic wastes are dumped on-site—in an approved, properly designed site.	Household wastes and liquids, appliances, tires, and other junk are dumped on-site.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Dumping down storm sewers or drains	No hazardous materials are discarded in a sewer system, septic system, or storm drain.	Some runoff from a driveway carries spills and yard chemicals away; runoff occasionally flows into storm sewers.	Hazardous and other wastes are improperly discarded in a sewer system, septic system, or storm drain.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

disposal alternatives and a schedule of hazardous waste collection days. Find out where to take used motor oil, batteries, and appliances.

Local regulations on burning and dumping

Most Kansas communities ban dumping and/or burning waste on your land. Such activities on agricultural land may be allowed with the appropriate permits; contact the Kansas Department of Health and Environment, (785) 296-1600 for more information.

Publications

Bulletins available from your County

K-State Research and Extension Office:

- *Household Waste Management*. NCR396A.
- *Household Waste Management, Leader's Guide*. GT325
- *Word Game: Waste Management Wise*. GT325A.
- *Family Garbage Inventory*. GT325B.
- *Family Garbage Inventory, Activity 4 Idea*. GT235C.
- *Making & Using compost at Home*. MF-1053.
- Franklin Associates, Ltd. *Characterization of Municipal Solid Waste in the United State: 1997 Update*. Report no. 530/R98,007. U.S. Environmental Protection Agency. Copies are available from the National Center for Environmental Publications and Information, PO Box 42419, Cincinnati, OH 45242-2419.
- Lund, Herbert F., ed. *The McGraw-Hill Recycling Handbook*, New York: McGraw-Hill, Inc. 1993.

- Makower, Joel. *The Green Consumer Supermarket Guide*. New York: Penguin Books. 1991.
- Rathje, William and Cullen Murphy. *Rubbish! The Archaeology of Garbage*. New York: Harper Collins. 1992.
- Sax, N. Irving and Richard I. Lewis. *Hawley's Condensed Chemical Dictionary*. New York: Van Ostrand Reinhold. 1987.
- Tchobanoglous, G., H. Theisen, and S. Vigil. *Integrated Solid Waste Management: Engineering Principles and Management Issues*. New York: McGraw-Hill, Inc. 1993.
- Wackernagel, Mathis and William E. Rees. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Philadelphia: New Society Publishers. 1996.

Kansas Home*A*Syst Helps Ensure Your Safety

This *Kansas Home*A*Syst* handbook covers a variety of topics to help homeowners examine and address their most important environmental concerns. See the complete list of chapters in the table of contents at the beginning of this handbook. The end of each chapter lists resources and other useful information. For more information about topics covered in *Kansas Home*A*Syst*, or for information about laws and regulations specific to your area, contact your nearest county or K-State Research and Extension Office.

Contact the Kansas Farm*A*Syst/Home*A*Syst Office at Biological and Agricultural Engineering, Seaton Hall, Manhattan, KS 66506–2917; phone: (785) 532-5418.

Web page: www.engg.ksu.edu/enggext/ppi/homeasyst; or the National Farm*A*Syst/Home*A*Syst Office : B142 Steenbock Library, 550 Babcock Drive, Madison, WI 53706–1293; phone: (608) 262-0024; e-mail: <HOMEASYST@MACC.WISC.EDU>.

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Action Checklist

Managing Household Waste: Preventing, Reusing, Recycling, and Composting

Write all high- and medium-waste-making potentials and risks below.	What can you do to cut the waste or reduce the waste?	Set a target date for action
Sample: Products are purchased without considering whether the packaging is recyclable.	Find out about town recycling program and try to buy products with packaging that can be recycled locally.	One week from today: March 8

*Kansas Home*A*Syst*, an environmental risk-assessment guide for the home, is a cooperative project of the Pollution Prevention Institute, K-State Research and Extension Service, Kansas Department of Health and Environment, U.S. Environmental Protection Agency, and the Environmental Department, Conservation District, and Natural Resources Conservation Service of Johnson County, Kansas, and Johnson County/K-State Research and Extension Office.

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