

Protecting Water Quality



Guide No. 1

It's Your River

Did you know that more than one-third of the pollution in the Rouge River and its tributaries comes from stormwater runoff? As rain water flows over land it picks up a variety of pollutants, including eroded soil, trash, fertilizers and pesticides. Automobile fluids, including motor oil, antifreeze, gasoline, and brake fluid contain trace metals and poisons that often leak from vehicles onto streets and parking lots. These pollutants may make their way into storm sewers and ultimately into nearby streams and rivers.

The Rouge River is one of the most degraded river systems in the country; but today, significant efforts are underway throughout the watershed to improve the river's water quality. This river system is affected by over 1.5 million residents that live within the watershed. The watershed is comprised of over 400 square miles of land area that includes 48 communities.



Canton and Plymouth Townships are entirely located within the Rouge River Watershed, and all of the creeks and streams within these two communities flow into the Rouge River. Both of these communities are committed to protecting water quality and are working with other communities in the watershed to develop proactive methods of controlling water

pollution.

The information presented in this guide, developed by Canton and Plymouth Townships, is intended to inform local residents and business owners of the role they can play in pollution prevention.

Despite advances in technology, environmental clean-up costs continue to increase every year. Preventing pollution is much easier and less costly to implement than trying to correct environmental damage after it has occurred



occurred. Rouge River Watershed Vashtenaw County Canton C

A watershed is all of the land area and waterways that drain into a river.

POLLUTANTS: THEIR SOURCES AND IMPACTS

A pollutant is any substance that can harm living things. Pollutants commonly found in the Rouge River include:



Sources: Toxic substances include vehicle fluids, solvents, lawn herbicides and pesticides, paints and metals such as chromium, copper and mercury.



Impacts: Toxins can accumulate in the aquatic food chain, as one larger organism eats many smaller ones that have been contaminated. Even in very small concentrations, oil and other toxic substances can harm aquatic plants and animals.



NUTRIENTS

Sources: Septic systems, lawn fertilizers, animal waste, cleaning products, plant debris and eroded soil.

Impacts: Phosphorous and nitrogen can over-stimulate aquatic weed and algae growth. As they decay, excess weeds and algae use oxygen in the water, which is needed by fish and other aquatic life.



LITTER AND DEBRIS

Sources: Grass clippings, leaves and litter generated by careless disposal practices.



Impacts: Litter and leaves that wash into storm sewers can clog detention basin inlets and outlets, and eventually pollute streams and rivers. Excessive leaves and other organic materials decompose and lower the amount of oxygen available to aquatic life.



For additional information, contact Canton Township Engineering Services at (313) 397-5405 or Plymouth Township Public Works at (313) 453-8131. Source: Washtenaw County's Community Partners for Clean Streams program and the Rouge Repair Kit. Revisions by Canton Township Engineering Services and JJR Incorporated

(Fall 1997). Graphics by David Zinn. Guide preparation and distribution funded, in part, through the Rouge River National Wet Weather Demonstration Project (Grant



Catch Basin Care



Guide No. 2

Why be concerned?

Catch basins are storm sewer inlets that filter out debris such as leaves and litter. They are typically located next to street curbs or within the rear yards of residential areas.

It is important to maintain catch basins to prevent storm sewer blockages and minimize the amount of pollutants entering storm sewers, which discharge into detention basins or directly into streams.

Clogged catch basins can also cause water to pond along streets and in vards. This flooding can be a nuisance to motorists and homeowners.



Sources and Funding

The Community Partners for Clean Streams program (Janis A. Bobrin, Washtenaw County Drain Commissioner). Original graphics by David Zinn. Revisions by Canton Township Engineering Services and JJR Incorporated (Fall 1997).

Are You Responsible for **Catch Basin** Care? Help." Your Homeowners' Association is responsible for catch basin maintenance if

you live in a platted subdivision with private roads or in a site condominium or attached condominium neighborhood.

How are Catch Basins **Maintained?**

1) Remove Debris from Grates

The grates of catch basins can become clogged with litter or leaves, especially in the spring and fall. Regularly inspect the grate and remove debris.

2) Remove Debris from Storage Area

Catch basins should be cleaned out before the storage area is half full. Once this level is reached, debris begins to wash into sewer pipes. Cleaning should be done in the spring after the first large snow melt, in the fall after trees have shed their leaves, and additionally if needed.

To find out how much material has accumulated in the storage area of your catch basin, insert a long pipe or broom stick into the storm drain grate. Notice where the pipe or stick hits the debris and continue to the bottom to estimate the depth of accumulation.

If the catch basin is shallow enough, you may be able to clean it out yourself with a shovel and bucket. Be careful not to drop the grate down the opening when you remove it; it can be extremely hard to retrieve. If you can't perform your own maintenance, professional services are

available to do it for you. For assistance identifying suitable contractors, contact one of the agencies listed under "Getting

Stenciling Your Storm Drains

Stenciled messages that say "Dump No Waste - Drains to Rouge River" are a good reminder that nothing but water belongs down a storm drain. Contact your



township for more information about participating in storm drain stenciling.

GETTING HELF	
Canton Township Engineering Services(313) 397-5405	
Plymouth Township Public Works(313) 453-8131	
Wayne County Public Works Office(313) 729-2011	
Michigan Department of Environmental Quality(800) 662-9278	

TETTINC HELD

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Maintaining Septic Systems



Guide No. 3

Why be concerned?

Septic systems are wastewater treatment systems designed to collect all wastewater from residences where sanitary sewer systems are not available. They are typically designed to be effective over a 20-year period if properly maintained.

Poorly maintained and failing septic systems can cause serious problems. Sewage from overloaded systems can pond on the ground near the drainfield or back up into buildings. Poorly treated septic liquids can contaminate ditches, creeks and shallow drinking water supplies. Animals and people may become ill from contact with these polluted waters.

In addition to public health concerns, it is costly to repair or replace a failing system.

How the Septic System Works

A septic system consists of a septic tank and a drainfield (Figure 1). Wastewater flows from the house to the septic tank where natural bacteria begin to break down the solid materials. This breakdown reduces solids in the wastewater, but leaves a sludge residue behind in the tank which builds up and must be removed to prevent it from entering the drainfield and clogging the system.

The center liquid layer flows slowly from the tank (Figure 2) into the drainfield. The drainfield is made up of perforated pipes that



equally distribute the wastewater across the gravel-filled drainfield. The liquid then soaks into the soil, which acts as the final filter for treatment of wastewater received from the septic tank or from the house.

Do's and Don'ts if You Are on a Septic System

Do's

• Learn the location of your septic tank and drainfield. Keep a sketch of it handy with your maintenance record for service visits. Obtain a copy of your septic permit from the Health Department, if possible.

- Connect laundry and kitchen water to the septic tank.
- Divert other sources of water, like roof drains, house footing drains and sump pumps, to lawn areas away from the septic system. Excessive water keeps the soil in the drainfield saturated and prevents adequate treatment of the waste water.
- Have your septic tank pumped out by a licensed operator every 2-3 years.
- Have the operator make sure there is a tee or baffle on the outlet of the septic tank. The baffle stops the scum

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- Rouge RAP Advisory Council On-Site Septic Subcommittee and Rouge Repair Kit. Graphics by JJR Incorporated (Fall 1997).
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from floating into the drainfield.

- Check with the Health Department if you are having problems. They can assist with operation, maintenance and design questions.
- Take leftover hazardous household chemicals to your approved hazardous waste collection center for disposal.
- Use bleach disinfectants and toilet bowl cleaners sparingly and in accordance with product labels. Preferably use alternative cleaning products as

could damage the system.

- Don't cover the drainfield with a hard surface such as concrete, asphalt, above-ground pools or decks. This area should have only a grass cover.
- Don't repair your septic system without checking with the Health Department to see if you need a permit.
- Don't use a kitchen garbage disposal unit. Heavy use adds large quantities of solids and shortens the



recommended in Guide No. 13.

Limit water entering your tank:

- Use water-saving faucets, showers and toilets.
- Minimize the amount of water used for bathing and dishwashing.
- Drain appliances one at a time.
- Spread clothes-washing over the entire week and avoid half-loads.
- Check toilets for leaks at least once a year by putting a few drops of food coloring into the toilet tank. If colored water appears in the toilet bowl, you have a leaking toilet.

Don'ts

- Don't go down into a septic tank. Toxic gases are produced by the natural treatment processes and can kill humans in minutes. Extreme care should be taken when inspecting a septic tank, even when just looking in the lid opening.
- Don't allow heavy vehicles to drive over, or park on top of, the septic system.
- Don't plant trees or shrubs on, or directly adjacent to, the septic tank or drainfield. The roots from the plants

life span of the septic system.

- Don't use commercial septic tank additives. These products do not help, but rather harm your system in the long run.
- Don't use your toilet or sink as a trash can. Pouring harsh chemicals and cleansers down the drain can kill the beneficial bacteria that treat your wastewater and contaminate the groundwater.

Do not flush or wash down the drain:

- coffee grinds dental floss
- meat fat kitty litter
- grease or oil paper towels
- cigarette butts disposable diapers
- personal hygiene items

The same goes for hazardous chemicals, such as:

- paints
 varnishes
- paint thinners pesticides
 - gasoline
- photographic solutions

• oils

 household cleaning products These items can overtax or destroy the biological digestion taking place within your system. In addition, the hazardous chemicals can contaminate your groundwater.

What To Do If Your System Is Failing

Signs that your system is failing:

- Sewage backup in drains or toilets.
- Slow flushing toilets, sinks or drains.
- Visible liquid on the surface of the ground near the septic system. It may or may not have an odor associated with it.
- Lush, green grass over the drainfield, even during dry weather. Often, this indicates that an excessive amount of liquid from the system is moving up through the soil, instead of downward, as it should.
- Build-up of aquatic weeds or algae in lakes or ponds adjacent to your home. This may indicate that nutrient-rich septic system waste is leaching into the surface water.
- Unpleasant odors around your house.
- Gurgling sounds in the sinks and drains.

If your system exhibits one or more of the failure indicators, contact your county health official for assistance in assessing the situation. Sometimes the system can be repaired without complete replacement. Sewage contains harmful bacteria, so keep pets and children away from the system. Limit water use until repairs can be made. If a new system or repairs are needed, a permit is often required from your local Health Department.

GETTING HELP

Wayne County Environmental Health (313) 326-4920



Landscaping Near the Water's Edge



Guide No. 4

Why be concerned?

Lands adjacent to streams, rivers and inland lakes are called riparian areas. Riparian vegetation serves many functions, such as providing shade which helps cool stream water (a survival requirement of some fish species, like trout). Riparian vegetation also traps sediment and nutrients collected by rain water as it flows across pavement and other impervious surfaces before it reaches a waterway.



Residents who live next to a stream, river or lake, often replace most of the existing vegetation between their house and the edge of water with lawn grasses and a few ornamental trees. The shallow root systems of lawn grasses are ineffective in preventing streambank erosion, which is a major problem within local streams and rivers. Eroded soil can cover fish habitat and degrade water quality.

Riparian Landscape Design Considerations

Residential developments next to waterways can be designed to protect riparian vegetation and benefit homeowners, wildlife and water quality.

Factors to consider in any landscape design project include: 1) use of the landscape; 2) views that should be protected or enhanced; and 3) desired maintenance level.

Typically, the most actively used outdoor areas are found in the "backyard." The backyard landscape may need to accommodate a variety of uses such as active play, outdoor dining, gardening, sunbathing, resting, or work space for hobbies. Often the total area available for these different uses is relatively small, and wise use of space is a necessity.

Views from the home and within the backyard are another factor to consider in landscape design. Many people value the views of an adjacent stream and want access to the water's edge to experience

What Does "Native" Mean?

When a plant is termed "native," rather than "exotic," it means it is adapted to an area, including the local climate and soils, and provides habitat and food for local wildlife. Planting native plants in your yard adds to the scenic quality that is unique to Lower Michigan.

the sound and sight of moving water. Views can be directed by sensitive placement of trees and shrubs in relationship to viewing points, such as windows, outdoor paths and patios.

Many people complain about mowing lawns, yet, they are desired by most and are even a requirement of many developments. Lawns do provide an ideal surface for many outdoor activities and permit open views which may be desired for safety or aesthetic reasons. Most of us, however, need much less lawn to accommodate our outdoor activities.

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- Prepared by Canton Township Engineering Services and JJR Incorporated (Fall 1997).
- Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).

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Landscape Zones

A Landscape Zone plan can be drawn as a simple way to visualize how a residential property which borders a waterway can be organized by use, views and desired maintenance levels. The following example illustrates how a variety of uses and scenic views of the adjacent stream can be accommodated while a riparian buffer zone is maintained or enhanced.



(adapted from a graphic by David Merkey)

Riparian Buffer Zone

Retain existing or plant new native trees, shrubs, grasses and wildflowers along the water's edge. The width of the vegetated buffer zone is likely to be influenced by many factors; however, ideally, the zone should be at least 15 feet wide.

Choose plants which are adapted to the site conditions (soil type, pH, sun exposure, etc.). Avoid exotic plants because they typically require more chemical use to sustain their health.

Planting Plan

The following sketch illustrates how the sample Landscape Zone plan could be implemented.



Planting Plan Option (adapted from a graphic by Dave Merkey)

Native Michigan Plants to Consider Planting Near Water

Trees: green ash, swamp white oak, honeylocust, black walnut, sycamore, silver maple and red maple.

Understory Trees and Large Shrubs: alternate-leaf dogwood, redbud, serviceberry, nannyberry viburnum, highbush-cranberry and black chokeberry.

Shrubs: red-osier dogwood, silky dogwood, buttonbush, common elder and compact highbush-cranberry.

Wildflowers and Groundcovers for Shade: common violet, mayapple, wild ginger, bloodroot, jack-in-the-pulpit, trillium, wild geranium, woodland phlox, marsh marigold and Dutchman's breeches.

Wildflowers for Sunny Wet Areas: New England aster, joe-pye-weed, boneset, ironweed, cardinal flower, and swamp milkweed.

Wildflowers for Sunny

Dry Areas: blazing-star, beebalm, black-eyed susan, yellow coneflower, stiff goldenrod, showy goldenrod, wild strawberry, evening primrose, and coreopsis.

Many people think our native goldenrods are responsible for hay fever, but they're not. The real cause of the allergy is usually ragweed, which blooms at the same time.

A number of native ferns, grasses, rushes and sedges should be also be considered for the riparian zone. See "Getting Help" for more information.

Floodplains and Wetlands

Floodplains and wetlands are often located within riparian areas. A floodplain is a flat area next to a stream or river that is subject to flooding after storms. Wetlands are areas of land that are covered with water at least part of the year and contain plants and animals that are adapted to these conditions. For more information on wetlands see Guide No. 9. To learn more about floodplains, contact the Michigan Department of Environmental Quality.

GETTING HELP

MSU Extension Office for Wayne County.....(313) 833-3412

Michigan Department of Environmental Quality...(800) 662-9278





Maintaining Healthy Lawns, Shrubs and Trees



Guide

Guide No. 5

Why be concerned?

Landscape practices affect the environment, especially streams and rivers. Homeowners often overfertilize their lawns, apply too much herbicide and spray pesticides as a preventative measure even when pest problems do not exist. It is estimated that homeowners use ten times more pesticide per acre than farmers. The problem with these activities is that the excess chemicals sometimes run off the property into storm drains and ultimately nearby creeks and streams.

Lawn fertilizers that are washed off from rain increase the level of nutrients in waterways and promote algae growth. Algae "blooms" are a problem in the Rouge River because they deplete the dissolved oxygen in the water, which ultimately affects the types and numbers of fish that can survive.



Minimizing the use of chemicals also makes good economic sense. You may be able to reduce your landscape maintenance costs by using less chemicals and less water as a result of replacing lawn areas with shrubs and groundcovers that are native to Michigan.

Three Steps to a Strong Soil Foundation

1. Have the pH and fertility of your soil tested by MSU Extension. Your soils may not require *any* fertilizer. Contact the local MSU Extension Office for more information (see "Getting Help"). A small fee is charged for the soil-testing service.

2. Test soil compaction. Compacted soils are unhealthy for plants and can cause rainwater to run off like it does on pavement. To test for soil compaction, try sinking a screwdriver into the ground without pounding. If the screwdriver doesn't penetrate easily, aerate the soil with a hand or mechanical corer.



3. Examine soil texture. Neither very sandy nor heavy clay soils provide a good foundation for lawns or other plantings. To examine soil texture, squeeze a handful of soil into a ball. If the soil falls apart, it's too sandy; if the soil stays in a clump, it has too much clay. Good textured soil will form a ball when squeezed, but can be broken apart with minimal force.

Add compost or other organic matter lightly on top of your lawn and rake in. Over time, repeated "top dressing" will improve soil texture.

Watering With Care

Heavy soils composed of clay are common in Wayne County, including

Canton and Plymouth Townships, and are easily saturated. Overwatering clay soils can cause plants and beneficial insects to drown.

Watering tips:

- Use drip irrigation or soaker hoses to get water directly to the root zone.
- Capture rain water in a barrel and use it for flowerbeds.
- Adjust timers on automatic sprinkler systems every week or so, depending on the weather.
- Maintain irrigation systems to minimize leakage and maintain efficient application patterns.

Using Mulch

Mulch your flower beds, shrubs and newly planted trees with leaves, bark or wood chips. A couple of inches of mulch retains soil moisture, improves the texture of soil, and helps control weed growth.

Converting Lawns to Low-Maintenance Plantings

Reduce the need for fertilizers, herbicides, mowing and watering by replacing turf grass with lowermaintenance plantings. Steep slopes and areas that are wet or shaded may not be suited for growing grass.

Examine your lawn for opportunities to replace it with other plantings. These can range from expanding flowerbeds and other plantings, to using turf *only* where it's the best plant to fulfill a particular function, such as active recreation.

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- The Community Partners for Clean Streams program (Janis A. Bobrin, Washtenaw County Drain Commissioner) and Southeastern Oakland County Resource Recovery Authority (SOCRRA). Original graphics by David Zinn. Revisions by Canton Township Engineering Services and JJR Incorporated (Fall 1997).
- Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).

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High Mowing, Deep Roots

High mowing will keep lawns thick and healthy, and help to shade out weeds. Adjust mowers so that only the top onethird of the grass blade is cut and/or leave grass at least 3" high after cutting. Taller grass helps promote strong root development.

Recycling Clippings

If left on the lawn, clippings provide important moisture and nutrients (clippings can provide up to half the nitrogen needed by your lawn). Since they're about 85% water, clippings quickly break down and *don't* cause thatch.

If your grass grows vigorously, you may need to periodically collect clippings. If they haven't decomposed before the next mowing, remove clippings and recycle them by using them as mulch or adding them to a compost pile.

Managing Thatch

Thatch is the woody remains of grass. Thatch builds up when there aren't enough microorganisms in the soil to breakdown woody grass remains.

To encourage microorganisms that reduce thatch, keep soil aerated and don't use insecticides. If thatch builds up over one half-inch, aerate the soil and sprinkle compost or sifted topsoil over the lawn instead of fertilizing.

Composting

Compost is decomposed organic material such as lawn clippings and leaves. Consider starting a compost pile at home.

See Guide No. 7 for more information.



"WEED & FEED" COMBINATIONS: A Dangerous Diet

Many lawn care companies routinely combine fertilizers and pesticides in a series of applications throughout the spring, summer and fall. These multistep programs are promoted as the sure and easy path to a "perfect" lawn. The pressure to have a perfect lawn, however, has clouded a number of issues.

Routine pesticide application.

Since most insects found on a lawn are beneficial, insecticides should rarely be part of a lawn care program. Research indicates that only about one lawn in 200 will need an insecticide application in a given year. Even on lawns where harmful insects exist, better horticultural practices or other natural controls can be used to reduce their threat.

Routine herbicide application.

Weeds aren't the cause of an unhealthy lawn, they're the *result* of one. The best defense against weeds is a thick, healthy lawn that comes from proper watering, fertilizing and mowing. Use of routine herbicide applications are unnecessary.

Routine nutrient application.

Most commercial fertilizers contain phosphorus, a major water pollutant. Yet many soils already contain enough phosphorus for a healthy lawn.

GETTING HELP

MSU Extension Office for Wayne County(313) 833-3412
MSU Extension Office for Washtenaw County(313) 971-0079
Wayne County Department of Environment 24-hour Hotline

Choosing the Right Fertilizer

It is important to select fertilizers that contain the right amount of nutrients, including nitrogen (N), phosphorus (P), and potassium (K). The amount of phosphorus placed on lawns is a concern because it is a major pollutant within the Rouge River Watershed.



To help protect water quality, follow these three important steps when choosing a fertilizer:

- 1. Choose a slow-release fertilizer.
- 2. Choose a fertilizer with little or no phosphorus.
- 3. Fertilize in the fall, not in the spring.

Fall fertilizing promotes deep, healthy root systems, and minimizes weed and disease problem. Spring applications can actually harm lawns by promoting more blade growth than root growth, making the lawn more susceptible to drought.

Fertilizing Shrubs and Trees

Healthy trees and shrubs do *not* require annual fertilizing. If woody plants appear unhealthy, it may be due to poor soils, insects, disease or current weather patterns. Fertilizers should be applied only when a tree or shrub is growing poorly and the problem can't be traced to other causes. If trees or shrubs do need fertilizer, apply it when the plants are dormant, in late fall or early spring.

Applying Fertilizers, Herbicides and Pesticides

If you use lawn care chemicals, follow the label directions *exactly* and keep them off paved areas. With liquid chemicals, be careful to avoid overspraying.



Controlling Garden Pests



Guide No. 6

Why be concerned?

Chemical pesticides are poisonous substances. Many of them are harmful to plants, animals and people, and can pollute groundwater and surface waters. The approach of Integrated Pest Management (IPM) is an alternative to purely chemical pest control. It provides a safer, less expensive and more consistent eradication of any pest over the long term.



What is Integrated Pest Management (IPM)?

IPM recognizes that pests are an integral part of the natural system. This approach works to keep pests at tolerable levels by using cultural, mechanical and biological controls instead of chemical ones, whenever possible. IPM involves paying attention to the landscape and managing it in a way that provides optimum growing conditions for those plants desired, since healthy plants are less susceptible to pests. This includes working to eliminate conditions favorable to pests and promoting natural controls such as beneficial insects.

When pest controls are needed, the pest and its stage of development are identified, and the least toxic control possible is used. Pesticides are used only as a last resort, and only in a way that maximizes their effectiveness and minimizes damage to the environment.

Choosing Plants

Choose plants that naturally tend to be free of major pests and diseases. In addition, select plants that are well-adapted to our temperate climate, and to the specific soil, light and moisture conditions on-site. Plants that require shade, for example, are more susceptible to pests when grown in full sun. The pH level of soil can also affect a plant's ability to withstand pests.

For help identifying the plant(s) best suited for your purposes and site, contact the MSU Extension (see "Getting Help"), a local nursery, or a landscape architect.

Keeping Plants Healthy

Weeds, pests and diseases are usually the *result* of poor growing conditions and unhealthy plants, not the *cause* of them. To keep plants healthy, use good horticultural techniques. Maintaining healthy soil conditions is the foundation of any IPM program:

- Space, thin and prune shrubs and trees to promote air circulation.
- Plant seedlings after the threat of frost and before hot weather.
- Maintain a variety of plants instead of only one or two species, to minimize the spread of diseases.
- Aerate and add organic matter to the soil.
- Water and fertilize plants only as needed.
- Mow grass as high as possible and leave clippings on the lawn.

There are *no cures* for plant diseases, they can only be *prevented*.



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Sources and Funding

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Watching Your Landscape

Walk through your yard at regular intervals. Learn to identify pests and diseases, as well as beneficial insects. For each of these, become familiar with their development stages and what they need to survive. This way, you can take actions during the most vulnerable stage of weed, insect or disease development.

Defining "Damage"

For each potential pest, decide when a problem is serious enough to justify taking action. For example, broadening your definition of "lawn" to include certain "weeds" can lower the need for chemical herbicides. Changing our beliefs about what looks good is one of the most important things we can do to protect water quality.

Protecting Sensitive Areas

Consider whether the site is near a water body, detention basin, drainage ditch, vegetable garden, children's play area, or public place. If it is, select a pest management technique that minimizes harm to these sensitive areas.

Evaluating Your Actions

Notice whether the treatment worked and



consider adjustments that might work better. Keep records of your observations, actions taken, and the results of those actions.

The Secrets of Chemical-Free Pest Control

Use methods of pest control that are the least disruptive to human health and the environment.

Plant Selection

Select disease- and pest-resistant plant varieties. There are dozens of different varieties of crabapple trees, for example, with different levels of disease resistance. Consult with a professional landscape architect or nursery for help in plant selection.

Low Cost / Simple Control Methods

Simple methods to control pests include:

- removing weeds by pulling or hoeing;
- covering planting areas with 2"-3" of mulch to prevent weed germination;
- removing pest-infested plant residue in the fall; and
- removing insect eggs, larvae, cocoons, and adults from plants by hand.

Retain and Promote Natural Pest Controls

Many organisms feed on, or infect, pests. These natural enemies frequently prevent the pest population from reaching damaging levels. Natural enemies include insect and non-insect predators, parasites, and bacterial, fungal and viral pathogens. Contact the MSU Extension Office for more information (see "Getting Help").

Managing Gypsy Moths

Gypsy moth outbreaks have been identified in Canton and Plymouth Townships. There is not need for alarm, however, because the moths can be managed and do not typically kill trees. Homeowners are encouraged to learn more about this pest. For more information, contact Canton Township at (313) 397-5483 or Plymouth Township at (313) 454-0530.

Natural Enemies

Common garden pests include grubs, aphids, scale insects, mealybugs and whiteflies. Populations of these insects are kept in control by natural enemies such as predatory bugs and other animals. Lady beetles (or "Ladybugs") and lacewings, for example, feed on aphids. Robber fly larvae can substantially reduce grub populations in the soil. Garden spiders capture insects in their webs and kill their prey by injecting them with venom. Birds, frogs, and toads, and small mammals such as mice, shrews and moles also help control insect populations.

You can help encourage these natural enemies of garden pests by minimizing or avoiding use of chemicals that are poisonous to all insects and insect feeding animals.

Chemical Pesticides: a Last Resort

In IPM, chemicals are just one small part of the whole plan. If pesticides are used, the least toxic one should be chosen and applied at the most effective time in the pest's life cycle.

GETTING HELP

MSU Extension Office for Wayne County.....(313) 833-3412



Home Composting



Guide No. 7

The Home Composting guide was provided by the Southeastern Oakland County Resource Recovery Authority (SOCRRA).

Through the natural process of composting, leaves and grass clippings from your yard can be transformed into a soil-enriching substance called compost. The steps for making compost outlined below reflect the experience of SOCRRA Master Composters working in an urban setting.

When possible, mix materials together as you build (or add to) the pile.

soil or compost organic materials (shredded leaves, grass clippings, spent flowers, etc.) soil or compost



MATERIALS FOR COMPOSTING

To avoid nuisances and odors, select the materials for your compost pile with care. Check with your Department of Public Works for specific home composting regulations.

Yes:	No:
Grass clippings	Dairy products
Leaves — shredded, if possible	Oils and fats
Spent flowers & garden clippings	Meat, fish, bones
Young weeds (without seeds)	Pet manure; Cat litter
Hedge trimmings	Cooked food
Fruit & vegetable peelings	Diseased plants
Lettuce leaves	Black walnut leaves
Coffee grounds, filters, & tea bags	Bread
Fertilizer	Weeds with seeds
Soil or compost	Invasive weeds

For an *ideal* composting mix, combine shredded leaves (50% of total volume), green grass clippings, (25% of total volume) and soil or compost (25% of total volume). Start with available yard clippings and add other materials, as needed, to balance the pile.

The "green" materials have a high nitrogen content which typically causes the pile to heat up and decompose more quickly. To avoid odors, make sure that green materials are mixed thoroughly with brown materials and soil.

BUILDING THE COMPOST PILE

To build the pile, follow these steps:

- 1. Start with a layer of organic materials such as shredded leaves, grass, or other garden debris.
- 2. Water the layer until it is as *moist as a wrung-out* sponge.
- 3. Add 2"-3" of soil or compost to provide microorganisms.
- 4. If possible, mix all materials together as you build the pile.
- 5. Continue the process of adding organic materials, soil, and water until the bin is filled. Add grass clippings in small amounts and mix in thoroughly.
- 6. Water each layer...and check moisture periodically.

Build the pile to a size of 3 feet x 3 feet x 3 feet or slightly larger — or fill the compost bin.

TURNING THE PILE

Turning and mixing the compost pile with a pitchfork or compost turner adds oxygen and accelerates the rate of decomposition. The pile may be turned once a week, once a month, several times a year, or not at all. If the pile is turned over and mixed from time-to-time and kept moist, finished compost is usually available in six to nine months.

Don't worry about the temperature of the pile — either hot or cold composting yields beneficial compost.

GIVING BACKEARTH'S RICHES

BENEFITS OF COMPOST

Compost is an excellent soil conditioner. When mixed with sandy soil, compost helps to retain and hold water. When mixed with clay soils, compost loosens the soil particles and improves drainage.

Compost is known as gardener's gold because it improves soil structure, retains water, encourages root growth, aerates soil, releases nutrients slowly, supports beneficial microorganisms and earthworms, and suppresses some soilborne diseases.



Composting is nature's way with waste. Why not be good to your garden?

USING COMPOST

... IN THE GARDEN Compost may be added to the garden soil at any time. Spread compost on top of the garden in a 1- 3 inch layer and dig in several weeks before planting. During the growing season, use compost as a topdressing to give your plants a healthy "snack."



... FOR CONTAINER GARDENING Add sifted compost to potting soil or container garden soil mixes. For best results, compost should not exceed 1/3 of the total amount of soil. Small amounts of compost can be sprinkled around potted plants at any time. ... AS A TOP-

DRESSING ON

compost over the lawn

to help build soil and

encourage healthy

THE LAWN

Sprinkle sifted

grass.



AS A MULCH AROUND TREES AND SHRUBS

Spread 2 - 4 inches of compost under the canopy of trees and shrubs. Compost will help retain moisture and gradually release nutrients to delicate tree roots. When planting trees, compost should usually *not* be added to the planting hole.

Shredded bark or wood chips can be added over the compost to reduce weeds and help hold in moisture. Always keep woody mulches several inches away from the tree trunk.

Funding provided through grants from the Rouge River National Wet Weather Demonstration Program and the W.K. Kellogg Foundation.





Natural Mulches



Guide No. 8



WHY NOT TURN OVERA NEW (OLD) LEAF?

Fallen leaves carry 50-80 percent of the nutrients a tree extracts from the soil and air, including carbon, potassium, phosphorus, and other elements. These nutrients and elements are essential for plant growth.

What can be done with leaves? There are many options available. Here are five simple, earth-friendly ways to use your leaves -- and enhance your own soils:

- 1. Compost your leaves. Mix leaves (50%) with grass clippings (25%) and soil (25%). Add sufficient water to maintain a compost pile as wet as a wrung out sponge.
- 2. Bag extra dry leaves to save for use in your compost pile during spring and summer.
- 3. In the fall, spread leaves over the vegetable garden or flower bed (sheet composting). Leaves may be chopped and partially mixed with garden soil to speed decomposition. In the spring, at least a month prior to planting, dig in (or remove) any leaves that have not decomposed. These leftover leaves can be recycled under shrubs or trees to help reduce weeds.
- 4. Use leaves as a mulch around your ornamental plants, bushes, and trees. Mulch maintains moisture, suppresses weeds, and adds tilth to your soil.
- 5. Let leaves lie where they fall and mow them into the lawn. Shredded leaves nourish the soil and do not harm the lawn.

When leaves fall to the ground, they are naturally broken down by earthworms and microorganisms. Humus (similar to compost) is the end result of the decomposition process. Humus is light and fluffy, and improves the structure of sandy and clay soils.



MULCHIS MARVELOUS

Shredded leaves, grass clippings, and other shredded yard materials can be recycled as mulch. Mulching around flowers, vegetables, bushes and trees helps to support healthy plant growth.

WHY MULCH?

Here are some reasons:

• To reduce the need for watering and weeding.



- To stabilize soil temperature.
- To hold moisture in the soil, while allowing rainfall to pass through.
- To enrich your soil through the gradual decomposition of natural yard materials.
- To increase yield and hasten maturity of plants such as tomatoes and peppers.
- To keep soil warm during the winter.
- To help control insects and diseases.

Mulch should be applied thick enough to inhibit weeds without depriving soil of water and oxygen.

A good mulch is readily available, inexpensive, and easy to apply. A good mulch fits your needs, yard materials, and landscape. Why not try different natural mulches and help reduce the yard waste sent to landfills?



SELECT THE NATURAL MULCH THAT FITS WITH YOUR LANDSCAPE

SHREDDED LEAVES: Chop or shred leaves with a mower or shredder since whole leaves may mat and prevent water from reaching the soil. Leaves help cool soil during the summer and warm soil in the winter. Leaves raked into a shrub border will gradually break down and help nourish the soil.

GRASS CLIPPINGS: Spread dry clippings in a one-inch layer under bushes or around plants. Keep clippings away from young seedlings. Avoid clippings with a herbicide residue or clippings with weed seeds. In a vegetable garden, try laying grass clippings on top of wet newspaper to help resist weeds. Both the newspaper and the clippings will eventually decompose and help build the soil.

PINE NEEDLES: Use pine needles around acid-loving plants such as rhododendrons and azaleas. Pine needles help form the same rich mat of humus that nourishes trees in the forest.

COMPOST: Compost can be placed around plants as a mulch, especially to hold moisture and enrich soil. Apply in 1-3 inch layers.

HAY OR STRAW: Hay and straw are useful mulches in the vegetable garden, provided that rodents are not a problem. Since hay contains many seeds, straw is often preferred.

SHREDDED BARK OR WOOD CHIPS: Spread in a thick layer around shrubs and trees to be effective as a weed control. Shredded cypress or pine bark, nugget pine bark, or wood chips are useful options.

> HEALTHY GARDEN TIP: Diversify the type of mulch used in various sections of your garden. Different mulches encourage different types of microorganisms and contribute different nutrients. Diversity of mulches~ as with diversity of plantings, helps build natural resistance to pests and disease.

Funding provided by a grant through the Department of Natural Resources, under the Protecting Michigan's Future Bond Program.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Fact Sheet prepared by The Southeastern Oakland County Resource Recovery Authority 3910 W. Webster Road, Royal Oak, MI 48073-6764 810-288-5150 Seventh Printing - Spring 1997

Printed on recycled paper







Guide No. 9

Why be concerned?

Michigan is reported to have lost approximately 50% of its original wetlands. Today, over 75% of Michigan's wetlands are privately owned.

Wetlands are areas of land that are covered with water at least part of the year, and contain plants and animals adapted to these conditions.

Also called bogs, swamps and marshes, wetlands are vital to the Rouge River Watershed. Wetlands provide many benefits, including water quality improvements, food and habitat for fish and wildlife, flood control and streambank erosion control, and recreational opportunities.



Water Quality Improvements

Wetlands improve water quality by naturally filtering pollutants before they reach a stream, river or lake. These pollutants include fertilizer nutrients and sediments.

Nutrients such as nitrogen and phosphorus from fertilizers are pollutants in the Rouge River. Excess nutrients lead to increased algae growth, which reduces the amount of oxygen in the water. Wetlands can filter as much as 91% of the phosphorus and 86% of the nitrogen.

Sediments suspended in stormwater that runs off pavements and across the ground can also be removed by wetlands. As stormwater runoff enters a wetland, the water slows and the sediment (dirt) settles out. Some wetlands can filter out as much as 94% of the sediment. Sediment is a major problem in the Rouge because it can destroy aquatic habitat and reduce recreational opportunities.

Food and Habitat for Fish and Wildlife

Wetlands provide critical habitat for fish and wildlife. Most species of freshwater fish are dependent on wetlands as a source of food, as cover from predators, and as a habitat for breeding.

Many varieties of waterfowl and non-game birds depend on wetlands for feeding and resting areas during their spring and fall migration. Resident birds rely on them for nesting and as primary feeding areas.



Nearly all of Michigan's amphibians are wetland-dependent. Many species of turtles, frogs and toads dine on the insects living in wetlands.

Other wildlife such as mink and muskrat also rely on wetlands for shelter and food.

Endangered Species

Wetlands are vital to the survival of threatened and endangered species. Endangered species are those plants or animals in danger of becoming extinct. Threatened species are those that are likely to become endangered. Approximately 30% of Michigan's threatened and endangered plants, and 60% of the threatened and endangered animals, are wetland-dependent species.

Flood Control and Streambank Erosion Control

Wetlands function like big sponges, slowing down and absorbing excess water during storms. This combined action of slowing and storing water reduces flooding downstream and erosion along streambanks. *(Continued on other side)*

- The Rouge River National Wet Weather Demonstration Project Demo Info Wetland fact sheet and the Tip of the Mitt Watershed Council publication, <u>Living With Michigan's Wetlands: A Landowner's Guide</u>.
- Prepared by Canton Township Engineering Services and JJR Incorporated (Fall 1997).
- Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).

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Recreational Opportunities

There are many recreational activities that involve wetlands. Hunting and fishing for wetland-dependent species are major recreational activities in Michigan. People also seek out wetlands as areas for birdwatching, photography and hiking.

Where are Wetlands Found?

Wetlands are typically found in the lowest portion of the landscape, or adjacent to streams, rivers and lakes.

You may have a wetland on your property if:

- the ground is soggy underfoot in the spring or the water pools in a depression;
- a depression in the ground has vegetation which looks different than the surrounding vegetation (cattail, bulrush, willow and red-osier dogwood shrubs are good indicators of wetlands);
- wooded areas contain matted, darkly stained leaves; or,
- the base of trees are stained by water marks, indicating that water pools in the area during the spring.

Wetland References

Local libraries and bookstores have many reference books on wetlands. Two reference books published by the Tip of the Mitt Watershed Council are recommended:

Living With Michigan's Wetlands: A Landowner's Guide

Michigan Wetlands, Yours to Protect

Contact the Tip of the Mitt at (616) 347-1181 to receive a copy of either softcover book for a small charge, or the Rouge Program Office for other wetland references (313) 961-0700.

How to Protect Wetlands

Avoid dredging or filling a wetland unless you have received a permit from the Michigan Department of Environmental Quality (MDEQ).

Dredging a wetland on residential property is sometimes done to create ponds. Although a shallow pond is a type of wetland, it may not be an improvement over the existing wetland type, especially if the pond edges are maintained as lawn.

To serve as an effective wildlife habitat, ponds should be shallow with gently sloping sides. Wetland vegetation such as grasses, wildflowers and shrubs should be planted along the banks to filter pollutants in stormwater runoff and create cover for wildlife.

Wetlands are often filled with soil to expand lawn areas. Unfortunately, many of the functions associated with a wetland may be lost when this is done, including flood control, water quality improvement and wildlife habitat. A better solution is to consult a landscape architect with wetland design experience who can integrate the feature into your landscape design. Depending on the size and type of wetland, a boardwalk may be installed through the area as an amenity.

Planting in a Wetland

Planting wildflowers, grasses, shrubs and trees in your wetland can be a positive way to improve water quality and enhance wildlife habitat. However, care should be given to the choice of plantings.

Many exotic plants are beautiful to look at, but are invasive (that is, they choke out the native vegetation and alter the way wetlands function). Purple loosestrife is the most striking example of an exotic plant negatively impacting wetlands. It is a perennial plant that spreads by its roots and produces between 100,000 and 2,000,000 seeds each year per plant. The plant seeds are dispersed by wind and water, and can enter wetlands from nearby gardens. Purple loosestrife has been widely planted because of its distinctive purple flower spikes.

Because it has no natural parasites or diseases in this country, purple loosestrife can out-compete native wetland plants and literally take over a wetland.



Do not plant purple loosestrife

Few wildlife find purple loosestrife palatable; consequently, wetlands dominated by the plant provide minimal wildlife benefits.

In response to the negative impacts of purple loosestrife on Michigan's wetlands, it is now illegal for nurseries to sell the plant in Michigan. Unfortunately, people continue to purchase the plant from outof-state nurseries and use it in their flower gardens. Even "sterile" cultivars are not safe.

For information on the identification and removal of this species from wetlands, contact the Michigan Department of Natural Resources Wildlife Division at (517) 373-9309.

GETTING HELP

Michigan Department of Environmental Quality......(800) 662-9278

Michigan Department of Natural Resources.....(517) 373-9309







Guide No. 10

Why be concerned?

Washing cars in your driveway can add pollutants to the Rouge River. Wash water that enters storm drains often contains detergents, oil, grease, heavy metals and dirt. Storm drains in Canton and Plymouth Townships eventually discharge these substances into the Rouge River.



Vehicle fluids dumped down a storm drain or directly into a waterway can cause serious problems. Four quarts of oil, the amount it takes to fill your automobile's engine, can form an eight acre oil slick in a river. Other vehicle fluids such as antifreeze are poisonous to people, fish and wildlife. Many cats and dogs have died from drinking sweet-tasting puddles of antifreeze found on driveways, in ditches or near storm drains.

Washing Tips

• Wash your car at a commercial car wash that uses water efficiently and disposes of the wash water properly. If a commercial car wash isn't available

near you, then wash your car on the lawn to prevent soapy runoff from entering storm drains or roadside ditches.



- Remove dirt around the wheels first with a wire brush. Collect the soil with a broom and dispose of it in a manner that will keep it out of storm drains.
- Use non-phosphate biodegradable detergents and mild soaps, such as vegetable oil-based soaps.
- Wash one section of the car at a time and rinse it



GETTING HELP

Canton Waste Recycling......(313) 397-5801

Plymouth Township Solid Waste Department......(313) 454-0530

Michigan Department of Environmental Quality.......(800) 662-9278

Car Maintenance Tips

- If you change vehicle fluids, such as motor oil or antifreeze, at home, take the waste fluids to a recycling center (see "Getting Help") or an oil change facility.
- Always use a drip pan under your work and use funnels when transferring fluids.



- Never mix waste oil with gasoline, solvents or other liquids before recycling.
- Change vehicle fluids in the garage whenever possible. If a spill occurs, pour kitty litter, sawdust or cornmeal on the spill to absorb the liquid. Place the waste material in a strong plastic bag and dispose with your trash.
- Inspect vehicles regularly for leaking oil and fluids, and make repairs immediately after problems are detected.

Recreational Vehicle Tips

- Follow the guidelines listed above.
- Contact Canton Township Engineering Services at (313) 397-5405 for a list of disposal facilities for sanitary waste.

- Community Partners for Clean Streams program (Janis A. Bobrin, Washtenaw County Drain Commissioner) and the Rouge River Repair Kit. Original graphics by David Zinn and JJR Incorporated. Revisions by Canton Township Engineering Services and JJR Incorporated (Fall 1997).
- Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).



Reducing Household Waste



Guide No. 11

Why be concerned?

Minimizing waste is one of the most important ways to protect water quality. Look for opportunities to reduce the volume of your waste and take advantage of them whenever possible. This will protect the environment and save landfill space.



Sources and Funding

- **Purchasing Power**
- Buy the most durable products and parts available. Consider whether an item is easily repaired, reused and/or recycled.
- Avoid disposable products and excessive packaging. Buy products with recyclable packaging.
- Buy *only* what you need. For example, buy materials only in amounts that can be completely used in a timely manner.

Ideas for Using, Storing and Disposing of Products

- Recondition and reuse products, instead of buying new ones.
- Carefully read and follow label directions. Never use more product than the directions suggest.
- When possible, apply products to targeted areas *only*, versus excessive use over a larger area.
- Properly maintain equipment (including sprinklers) to prevent leaks, over- application and drift.

Don't apply products outdoors when rain or winds are in the forecast.

- Use up materials *completely* and allow containers to air dry before disposing of them. Many plastic containers can be recycled.
- Keep stored materials dry and contained. Make sure they are properly labeled and dated so that the oldest materials can be used first.
- Separate wastes. Mixing wastes can prevent reuse and recycling.

• Find out if others can use your materials when you're done with them. If they can't be reused, recycle your wastes whenever possible.

Recycling Opportunities

Curbside pick-up of recyclable materials is available to most homeowners in Canton and Plymouth Townships. Drop-off opportunities are also available.

- In Canton, contact the Township at (313) 397-1000 for a copy of the "Services Directory - Trash, Compost and Recycling Guidelines" pamphlet.
- In Plymouth Township, contact the Solid Waste Department for more information.

GETTING HELP

Canton Waste Recycling (313) 397-5801
Plymouth Township Solid Waste Department (313) 454-0530
Michigan Department of Environmental Quality (800) 662-9278
Wayne County Department of Environment 24-hour Hotline

- The Community Partners for Clean Streams program (Janis A. Bobrin, Washtenaw County Drain Commissioner).
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Recycling



Guide No. 12

Why be concerned?

Each person in Canton and Plymouth Townships produces approximately 3.5 pounds of solid waste (or trash) each day.

For most of us, as long as the garbage we place on the curb each week is taken away, there is no solid waste problem. However, we must plan for the future and reduce the amount of waste we produce. Landfills quickly fill up, and locating new ones is not an easy task.

One step in the right direction is to recycle as many containers, papers and compostable materials as possible



What Goes in the Recycle Bin in Canton and Plymouth Townships?

Place the following materials together in your home collection bin and put alongside your trash on your regular trash pickup day.

Glass: clear, green and brown food and beverage containers. Rinse containers thoroughly, throw lids, neck rings, foil and styrofoam labels in the trash. Paper labels may remain.

Sources and Funding

Plastics: milk and water jugs, laundry detergent bottles, or any rigid plastic container marked on the bottom with a 1 or 2. Rinse and flatten; throw lids and neck rings in the trash.

Cans: steel, tin and aluminum food and beverage cans. Rinse cans thoroughly, remove labels. Lids may remain attached, but tucked inside. Smaller cans may be placed inside larger ones with lids tucked between. Clean aluminum foil is also accepted.

Paper: In Canton Township, newsprint only. Remove glossy inserts. In Plymouth Township, glossy inserts are recyclable too. Bundle papers six inches thick and tie with twine, or place in a paper grocery bag.

In addition to the above items, Plymouth Township accepts the following items for curbside pick-up.

Household Batteries: non-leaking alkaline batteries only, AA, AAA, C, D, 6 and 9 volt. Place several at a time in a clear, self-closing plastic baggie in the recycle bin.

Junk Mail: clean, dry, mass mailings, envelopes, billing inserts and other normal papers delivered through the Post Office system. Place inside a clear plastic bag, no larger than 30 gallons in size and tie securely at the top. Place the bag next to the recycle bin for collection.

Magazines: glossy and non-glossy publications. Stack inside a clear plastic bag commingled with junk mail.

Telephone Books: all publications throughout the year. Place inside a clear plastic bag with junk mail and magazines.

Corrugated Cardboard: Remove all packaging material. Cut cardboard to fit in a clear plastic bag or cut 2' x 2' pieces, bundle with string and place next to the recycle bin. Paperboard boxes, wax-coated cardboard and pizza boxes are NOT recyclable in Plymouth Township.

Are Other Items Recyclable in Canton Township?

Yes, used motor oil, antifreeze, household batteries, car batteries, cardboard, loose papers, magazines, glossy newspaper inserts, and telephone books are accepted at Canton Waste Recycling (CWR), which operates the Canton Clean-Up Program at 42020 VanBorn Road. The center is open on Fridays from 10:00 a.m. to 4:00 p.m., and on the second and fourth Saturday of each month from 8:00 a.m. to 12:00 p.m. (except holidays).



On the second and fourth Friday and Saturday of each month (except holiday weekends) residents of Canton can bring up to three cubic yards per visit (a pickup truck load) of unwanted items like appliances, furniture, carpeting and recyclable materials, for free disposal. Contact CWR for more information.

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- Prepared by Canton Township Engineering Services and JJR Incorporated (Fall 1997). Original Graphics by David Zinn and JJR.
- Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).

Is There a Convenient Way to Dispose of Large Items in Plymouth Township, Too?

Yes, appliances such as refrigerators, washers, dryers, etc. may be set out at the curb with your regular trash by 7:00 a.m. on your collection day. If the appliance is not picked up within 24 hours of your trash pick up, call the Plymouth Township Solid Waste Department at (313) 454-0540. Refrigerator and freezer doors must be removed before placing at the curb.

Furniture and carpeting may be also placed curbside with your regular trash for pick up on your collection day. Carpeting must be rolled up and tied. Rolls can be no longer than three feet in length and weigh no more than 50 pounds.

If furniture is still in usable condition, it may be donated to area charity organizations (call the Solid Waste Department for additional information).

How Can Apartment and Condominium Dwellers Recycle?

If you do not have curbside collection, you may take your recyclables to the CWR facility at 42020 VanBorn Road if you live in Canton Township or to the Plymouth Township Drop-site at 46555 Port Street if you live in Plymouth Township. Hours of operation at the Canton CWR facility are described above. Plymouth Township's Drop-site is open 24 hours a day.

See "What Goes in the Recycle Bin in Canton and Plymouth Townships?" earlier in this Guide for information on what materials are recyclable and how they should be prepared.

Composting

Curbside pickup of residential yard waste occurs between April and November. Place compostables alongside your trash and recyclables.

Grass clippings, leaves, yard and garden waste (including pumpkins), pruning debris, wood debris and brush (Christmas trees in January) will be picked up at the curb.



Paper compost bags and 30-gallon reusable containers (with sturdy handles) may be used to hold grass clippings, leaves and garden waste. Reusable containers must be marked with "Compost." Compost stickers for reusable containers are available in the Clerk's office. Plastic bags are not accepted for composting.

Brush, prunings, and wood debris may be tied with heavy twine into bundles no longer than three feet and weighing no more than 50 pounds.

GETTING HELP

Canton Waste Recycling....(313) 397-5801

Plymouth Township Solid Waste Department....(313) 454-0530



Household Hazardous Waste



Guide No. 13

Why be concerned?

Many household products require special attention in their use, storage and disposal. A product is considered "hazardous" if it is:

- Toxic or Poisonous
- Ignitable/Flammable
- Corrosive
- Reactive (i.e., products that can explode if exposed to heat, air, water or shock)

Unwanted portions of hazardous products are considered to be hazardous wastes and should be treated in a careful manner to avoid accidents or polluting our environment.



GETTING HELP

Canton Waste Recycling(313) 397-5801
Plymouth Township Solid Waste Department(313) 454-0530
Wayne County Department of Environment 24-hour Hotline(888) 223-2363
Michigan Department of Environmental Quality(800) 662-9278

Sources and Funding

- The Rouge River National Wet Weather Demonstration Project Demo Info and Rouge Repair Kit. •
- Prepared by Canton Township Engineering Services and JJR Incorporated (Fall 1997).

Examples of Household • Never pour motor oil, paints or chemicals down storm drains or sinks. Hazardous Wastes

Non-ToxicAlternatives

There are many alternatives to using hazardous products for household jobs. Here are a few ideas which are inexpensive, and won't harm you or the environment.

- For an all purpose cleaner, mix a cup of vinegar in a pail of warm water. This is a great solution for windows.
- To disinfect, use 1/2 cup of borax or washing soda (sodium bicarbonate, not baking soda) dissolved in a gallon of hot water.
- To deodorize carpets, sprinkle with baking soda. Vacuum after 30 minutes.
- To polish furniture, use equal parts mineral oil and lemon oil.
- To clean floors, use 1/4 cup white vinegar and 1/4 cup washing soda in one gallon warm water. This same mixture can be used to clean toilets.
- Use a plumber snake instead of drain cleaners to eliminate clogged drains.

Disposal of Hazardous Wastes

Canton Waste Recycling and the Plymouth Township Solid Waste Department can provide more information on the disposal of hazardous waste. If you are concerned that a hazardous chemical has entered your drain, call 911.

Never pour any hazardous material down a drain if you have a septic system.

Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).



Garden/Lawn

bleaching agents

toilet bowl cleaner

household batteries

floor care products nail polish and remover

old medicine

weed killer pesticide (insecticide/fungicide) swimming pool chemicals

Garage

House oven cleaner

antifreeze and brake fluid motor oil and gasoline car batteries oil-based paint and paint thinner wood preservatives adhesives and glue

Check the label to see if a product is hazardous. If it says Warning, Caution, Danger, or Poison, consider it hazardous.

Household Hazardous Waste Tips

- Keep unused portions in their original containers with labels intact and readable.
- Store hazardous materials in a cool, dry place away from children and pets.
- Avoid mixing different products. This can cause explosive or poisonous chemical reactions.





Household Hazardous Wastes and Disposal Methods

Kitchen

Aerosol cans (empty)
Aluminum cleaners
Ammonia-based cleaners
Bug sprays
Drain cleaners
Floor care products
Furniture polish
Metal polish with solvent
Window cleaner
Oven cleaner (lye-based)

Bathroom

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Workshop

Paint brush cleaner with solvent	
Paint brush cleaner with TSP	
Aerosol cans (empty)	
Glue (solvent-based)	
Glue (water-based)	
Paint: latex - dried	
Paint: oil-based, auto, model	

Paint thinner or stripper

Primer
Rust remover
Turpentine or varnish
Wood preservative
Garden fertilizer
Fungicide
Herbicide
Insecticide
Weed killer



Miscellaneous

Ammunition	Y
Artists' paint	Ľ
Dry cleaning solvents	×
Fiberglass epoxy	Ÿ
Gun cleaning solvents	ÿ
Lighter fluid	*
Household batteries	
Moth balls	ÿ
Old fire alarms	ÿ
Photographic chemicals (mixed)	. <u> </u>
Photographic chem. (unmixed)	Y
Shoe polish	ÿ
Swimming pool acid	Y



= Take to hazardous waste collection facility

