

## Food Industry Pollution Prevention and Waste Reduction

Written by Michigan Department of Environmental Quality  
Friday, 02 July 2010 12:51

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**Each day, food-related businesses throughout Michigan toss valuable materials into the tra**

Commercial and institutional food-related facilities can save money and protect the environment by reducing waste and practicing pollution prevention. Facilities that may benefit from this information are restaurants, supermarkets, produce and concession stands, school cafeterias, hospitals, food processors, farmers, hotels, prisons, employee lunch rooms, parks and recreational facilities, and community events. Discretion should be used in determining the use of the contents of this document and compliance with local ordinances.

While there are many opportunities for reducing waste and preventing pollution, a few tried and true methods are presented here. Keep in mind that any waste or pollution created by your facility cuts into profits, reduces operation efficiency, may involve worker safety issues, and could require regulatory involvement. Pollution prevention and waste reduction efforts can increase business profitability.

As you implement pollution prevention ideas, you and your employees will identify more ideas. Your success is only limited by your willingness to try something different – and the payoff could be immense. Remember, participating in a pollution prevention program can create an improved public image for your business.

### ***GENERAL WASTE REDUCTION TIPS AND POLLUTION PREVENTION ACTIVITIES***

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#### **The Plan**

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Establish a company-wide commitment to preventing pollution as part of doing business. Develop employee education programs on pollution prevention. Employee participation is the key to success; make pollution prevention a way of life. Ensure that all employees understand the program.

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Hang eye-catching posters and other promotional material to stimulate interest in the program. Institute an incentive program, giving awards or recognition to employees for their waste reduction/pollution prevention efforts.

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Establish a task force headed by an enthusiastic pollution prevention advocate.

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Develop a budget, making sure that needed resources will be available.

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Establish a pollution prevention hierarchy for your company. Typically, source reduction is the highest priority, followed by reuse and recycling.

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Design a management strategy to reduce waste, prioritize waste reduction options, and then develop an implementation schedule.

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Develop goals with measurable objectives.

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Identify when and where waste is generated.

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## Energy and Water Use

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Conduct an energy audit to help determine ways to conserve energy and cut energy expenditures. The following may reduce energy consumption: install energy- efficient light bulbs; install motion-sensitive lights; turn off lights at the end of the evening; turn off machines not in use; install programmable, mercury-free thermostats; and replace outdated equipment and appliances with more energy-efficient models.

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Conduct a water audit to determine if water use may be reduced and leaks minimized. Regularly check water faucets and other outlets to reduce the amount of water used at your facility. The following may reduce water consumption: repair or replace leaky water faucets, turn off water faucets and hoses when not in use, install low-volume toilets, install low-flow faucets, and serve water to guests who request it rather than as a standard service. Limiting water service will also reduce the number of glasses that need to be washed.

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To reduce costs of lawn care, water lightly and frequently to reduce the potential for disease and insect damage. Michigan grasses require only 0.5 to 1.5 inches of water per week. A 15-20 minute daily watering during dry weather is usually sufficient.

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### Solid Waste

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Identify and prioritize problem wastes; evaluate reduction potentials. Identify your target materials.

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Identify waste characteristics, including quantities of each material and how they are handled and disposed.

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Procure recycled and recyclable products instead of items composed of nonrecycled materials.

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Work with suppliers to reduce packaging, thereby reducing disposal costs.

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Ask suppliers to provide you with products that are packaged in materials such as recyclable or reusable paper, glass, steel, aluminum, or plastic.

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Replace beverage bottles and cans. Most beer and soft drinks can be served on tap, reducing both the costs of buying beverages and disposing or recycling cans and bottles.

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Food service establishments that use disposable items such as napkins, utensils, placemats, cups, trays, and single-serving condiment packages can reduce waste volume by switching to reusable items.

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Separate newspaper, office paper, tin and bimetal cans, glass, plastics (high-density polyethylene-HDPE, polyethylene terephthalate-PET), corrugated cardboard, wooden pallets, aluminum, kitchen grease, food waste, and other recyclables from solid waste and implement a recycling program. Use color-coded collection bins in the kitchen and bar for easy identification.

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Check with container suppliers to determine if they participate in a recycle program for polystyrene.

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Check with your waste hauler and ask what types of recycling services are available. Look for haulers who are flexible and willing to work with you to design a recycling program based on your needs. Ask your waste hauler for advice about keeping recyclables and wet waste

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separate.

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Research the feasibility of investing in a mini-cardboard baler, can crusher, and glass pulverizer. This equipment will allow for efficient management of space and may increase the likelihood of favorable recycling service contracts.

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Let your patrons know that you recycle. If your establishment is self-serve, post signs letting customers know that you are recycling and what they should do with their bottles and cans. Either put out a bin for these items or have customers leave them on a designated counter for collection by your staff.

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Be sure that your grounds crew knows to keep yard waste separate from other waste so that the yard waste may be recycled as compost.

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### Hazardous Waste

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Institute a hazardous waste collection program. Many commercial cleaning products contain hazardous materials such as caustics or strong acids. Never pour hazardous wastes down the drain. Never mix different wastes. If possible, consider using alternative materials. Look for "non-toxic," "non-petroleum based," "free of ammonia, phosphates, dye or perfume," or "readily biodegradable" on the label. Avoid chlorinated compounds, petroleum distillates, phenols, and formaldehyde.

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Phosphate is an aquatic plant nutrient that can cause excessive growth of aquatic algae and water quality problems after the detergent is washed down the drain. Ask your supplier about the many phosphate-free, biodegradable detergents on the market. Refer to Part 39 of Public

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Act 451 of 1994, as amended, for additional information regarding cleaning chemicals.

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Integrated Pest Management (IPM) programs combine chemical, cultural, and biological practices into one program to manage pest populations. IPM principles incorporate preventive practices, remedial practices, and economic thresholds, thus reducing the amount of chemicals used by applying pesticides only when necessary and at the minimum effective rate. Use less-soluble, less-leachable, less-persistent, and less-toxic pesticides whenever possible.

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Practice good housekeeping to reduce pest populations and the need for chemical controls. Keep doors shut when not in use; place weather stripping on doors; caulk and seal openings in walls; install or repair screens; install air curtains; keep vegetation, shrubs, and wood mulch at least one foot away from structures. Store food and waste in tightly sealed containers that are inaccessible to pests.

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Use compost and/or mulching as an alternative to lawn fertilizers or use fertilizers sparingly. Over fertilizing can actually encourage certain insects and diseases.

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Store all fertilizer and pesticide containers safely to prevent spills, and dispose of the empty containers properly. Never store these products with food products.

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### Food Waste

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Use a "first-in, first-out" inventory policy for raw materials to prevent them from exceeding their shelf life. Rotate perishable stock at every delivery to minimize waste. Strict inventory control is the most effective and cost efficient way to prevent usable materials from needlessly becoming waste. Improperly stored, labeled, or outdated food becomes waste.

## Food Industry Pollution Prevention and Waste Reduction

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Buy in bulk to reduce container waste, but avoid buying too much of a product that might spoil. Buy locally to minimize transportation costs and to increase local economy.

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Store raw vegetables in appropriate reusable containers to prevent dehydration and spoilage.

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Food discard recovery methods include making donations, processing into animal feed, rendering, and composting.

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Donate non-perishable and unspoiled perishable nutritious foods to food banks, soup kitchens, food pantries, charities, and shelters. Local and national programs frequently offer free pick-up and provide reusable containers to donors. Local charities, the Michigan Family Independence Agency, and local chapters of national charities can provide information on food donation.

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Recover food discards as animal feed for operations such as hog farmers. Farmers may provide storage containers and free or low-cost pick-up service. Coffee grounds and foods with high salt content are not usually accepted as they can be harmful to livestock. State veterinarians can provide information on diversion to animal feed.

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Recycle or package for reuse any used cooking oil, grease, and meat fat. Store in tallow bins or sealed containers.

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Collect and send used grease to a renderer. By avoiding disposal of kitchen grease down the drain, you will minimize clogging of pipes, use of toxic chemicals used to clear drains, and unnecessary discharge to your sewer system resulting in wastewater treatment upsets. Liquefied fats and solid meat products can be used as raw materials in the rendering industry,

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which converts them into animal food, cosmetics, soap, and other products. Find an industry that will provide storage barrels and free pick-up service. Local chambers of commerce, county agricultural extension agencies, commercial food suppliers, or the telephone book (under tallow or rendering companies) can provide information on area rendering companies.

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Inspect and clean grease traps and grease interceptors often enough to prevent clogs, spills, and overflows. Never pour grease, oil, or large quantities of oil liquids such as sauces or salad dressings down a sink, floor drain, storm drain, or into a dumpster.

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Use composting diversion to reduce your waste hauling and tipping costs. Look for a composting facility in your area that will take your food discards. Composting is the controlled, natural breakdown or degradation of organic material by microorganisms. Most organic materials are acceptable for composting, including egg shells, coffee grounds, paper, shredded brush, nonpesticide-treated grass clippings, fruit and vegetable scraps, garden waste, fireplace ashes, and leaves. Food scraps provide most of the nitrogen for composting. Organic materials that should not be composted include meat or bones; fatty foods such as cheese, oil and grease; diseased plants; plants treated with weed killer; and pet waste.

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### Stormwater

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Develop a stormwater pollution prevention policy that is readily available for use by management, employees, and contractors. Make sure that all concerned are aware of your "Don't pollute, drains to the surface water" policy.

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You may be polluting the stormwater if you rinse washwater down a storm drain, spill materials or wastes in your parking lot without cleaning them up, or allow materials or wastes stored outside to leak. Prevent these activities from occurring and stencil storm drains "Dump no waste-drains to river" (lake, stream, etc).

## Food Industry Pollution Prevention and Waste Reduction

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Dumpsters used for garbage should be protected from rainwater, and loading docks should be kept clean to avoid unwanted substances from entering storm drains.

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Some helpful hints for dumpster maintenance include keeping the dumpster lid closed to keep out rainwater, replacing damaged or missing lids as soon as possible, never placing liquid waste or leaky garbage bags into a dumpster, keeping dumpsters or the dumpster enclosure locked to prevent illegal dumping, not hosing out the dumpster interior, applying absorbent over any fluids spilled in the dumpster, and sweeping up litter. Leaking dumpsters should be replaced by the dumpster leasing company.

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Some helpful hints for loading dock maintenance include keeping litter from accumulating around the dock by providing trash receptacles, sweeping up litter, and not hosing down the area.

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Clean equipment such as floor mats, exhaust filters, garbage cans, carts, or tray racks in a designated indoor area such as a janitor/utility/mop sink or floor areas with a drain connected to the sanitary sewer.

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Never pour washwater down a storm drain or gutter; use the mop sink for proper disposal.

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### Additional Resources

- [www.deq.state.mi.us/ead](http://www.deq.state.mi.us/ead) Michigan Department of Environmental Quality (MDEQ)  
Environmental Assistance Division (EAD) Environmental Assistance Center PO Box 30457  
Lansing, MI 48909-7957 800/662-9278

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Friday, 02 July 2010 12:51

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The EAD is Michigan's approach to environmental protection through pollution prevention and regulatory compliance assistance. The EAD provides current information and technologies about regulatory requirements, pollution prevention, waste reduction, recycling, and compliance assistance.

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[www.deq.state.mi.us/swq](http://www.deq.state.mi.us/swq) Michigan Department of Environmental Quality Surface Water Quality Division (SWQD) PO Box 30273 Lansing, MI 48909-7773

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SWQD oversees a number of programs related to the surface waters of the state. The mission of the SWQD is to protect and enhance the quality of the state's surface waters. The division administers a number of programs and activities including the stormwater program. A listing of watershed groups may be accessed on the SWQD internet home page or by calling the MDEQ office in your district.

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[www.mda.state.mi.us](http://www.mda.state.mi.us) Michigan Department of Agriculture PO Box 30017 Lansing, Michigan 48909

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Can provide information on pesticide control, pesticide use, pesticide applicators, integrated pest management, and composting.

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Your local health department can provide information on septage systems and safer alternatives to toxic cleaning materials.

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[www.epa/opptintr/library/libppic.htm](http://www.epa/opptintr/library/libppic.htm) *United States Environmental Protection Agency (US EPA) Pollution Prevention Information Clearinghouse (PPIC) 703/821-4800*

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PPIC is a free, nonregulatory service of the US EPA that provides the public with technical, programmatic, and policy references about source reduction and recycling. It can provide additional reference information about developing and implementing a pollution prevention program.

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[es.epa.gov](http://es.epa.gov) *United States Environmental Protection Agency Enviro\$en\$e*

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Provides a single repository for pollution prevention, compliance assurance, and enforcement information and databases.

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[www.msue.msu.edu](http://www.msue.msu.edu) *Michigan State University Cooperative Extension Service*

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Can provide information on back yard composting and preserving food safely.

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[www.msue.msu.edu/ipm](http://www.msue.msu.edu/ipm) *Michigan State University Integrated Pest Management Programs (IPM) 11 Agriculture Hall East Lansing, MI 48828-1039 517/353-4951*

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The MSU IPM program is a joint program of MSU Extension and the Center for Integrated Plant Systems. It can provide information on integrated pest management and pesticides.

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*Foodchain 800/845-3008*

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A network of prepared and perishable food rescue programs throughout the United States and Canada. Foodchain provides listings of local organizations that accept donations and distribute them to those in need.

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*Second Harvest 800/532-FOOD*

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Operates a national network of local food banks, working mainly with the food industry to distribute surplus food inventories. Second Harvest provides a nationwide listing of food programs.

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[www.mienv.org/mrc](http://www.mienv.org/mrc) Michigan Recycling Coalition 1609 E. Kalamazoo Lansing, MI 48912  
517/371-7073

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Fosters environmental conservation by promoting sustainable resource use and recovery.

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[www.mienv.org/mrc/page3.html](http://www.mienv.org/mrc/page3.html) Michigan Composting Council (MCC) 517/371-7073

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The MCC promotes composting as a method of recycling within an integrated approach to solid waste management.

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[www.ingham.org/hd/foodbnk](http://www.ingham.org/hd/foodbnk) The Self Help Garden Project c/o Ingham County Health Department Food Bank PO Box 30161 Lansing, MI 48909 517/887-6388

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Can provide assistance on mulching and back yard composting.

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*Food Gatherers 734/761-2796*

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A nonprofit organization that distributes otherwise wasted perishable food to shelters, soup kitchens, senior citizens' homes, etc. Donations are accepted from a wide range such as restaurants, university dining services, grocery stores, bakeries, farms, and others.

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Contact your local utility about energy and water conservation tips or for an on-site audit.

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Contact your local watershed group. Watershed groups work to restore the water quality of the state's surface and groundwater by reducing pollutants entering them. Their programs are intended to help communities, businesses, and citizens work together to restore and protect our water.