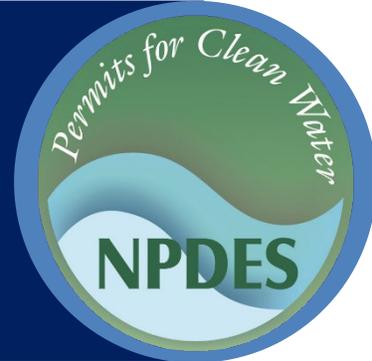




Stormwater Best Management Practice

Proper Disposal of General and Hazardous Waste



Minimum Measure: Public Education and Outreach on Stormwater Impacts
Subcategory: Education for Residents

Description

The United States produces around 292 million tons of municipal solid waste annually, as of 2018 (U.S. EPA, 2020). This waste comes from facilities such as schools and hospitals, businesses such as restaurants and auto shops, and households across the country. Improperly managed general and hazardous waste can pollute waterways, clog pipes and pose a threat to human health and the environment. For example, when residents or restaurants dump cooking oils and grease down the drain instead of in the trash, these substances can congeal in the sanitary and storm sewer systems and cause backups and flooding.

Additionally, about 1.6 million tons of annual residential waste is hazardous waste that contains toxic, flammable, corrosive or reactive ingredients (NC DEQ, n.d.). Products such as oven cleaners, bug killers and drain cleaners are just a few common hazardous products in the home. Others include car care and maintenance products (motor oil, battery acid and gasoline) and home improvement products (paints, preservatives, strippers, brush cleaners and solvents). Mixed with regular garbage, these toxic wastes can make their way into local waterways through storm sewers. To reduce the amount of toxic wastes flowing through the system, a municipality can encourage residents to properly dispose of household hazardous waste at designated collection facilities. In addition, a municipality can also inform residents and business owners about less harmful alternatives to toxic wastes. Using safer alternative products instead of toxic substances in homes, schools and businesses can drastically reduce pollutants in stormwater and the local streams and rivers that it flows into.

Understand Community Knowledge Gaps and Current Practices

To launch an effective general and hazardous waste management education program, a municipality can first determine the community's baseline of knowledge on the



Proper disposal of general and hazardous household waste in appropriate receptacles can keep trash and toxic substances out of local waterways.

topic. Do community members know which items are general waste (waste the municipality's solid waste collection services will accept) and which are hazardous? Do they know how general and hazardous waste can pollute the environment and harm human health? Do they know how to correctly store, handle and dispose of their different types of waste? Are they familiar with alternatives to toxic substances? Some community members may not know that they need to dispose of hazardous waste separately from general waste. Residents also may not be aware of hazardous waste collection services or drop-off sites in the municipality.

Municipalities can also gather information about residents and businesses' current waste disposal methods. Are they combining general and hazardous waste? Are they using municipal trash and recycling services? Are there pick-up or drop-off options available just for commercial waste? By analyzing current understanding and practices, municipalities can formulate the right outreach and programs to effectively educate residents about proper waste disposal practices. See the [Soliciting Public Opinion](#) fact sheet for tips on how municipalities can use surveys, interviews,

and public meetings to effectively gather this information from community members.

Determine a Program Approach

After municipalities have identified the knowledge gaps and current practices, they can craft their general and hazardous waste management programs. An education program may involve many elements, such as distributing educational materials, offering workshops or posting online resources. Municipalities can aim to educate the public on alternatives to toxic substances, how to store and dispose of specific waste items, the hours and locations of collection facilities, and which items collection facilities will accept.

Distributing Print Materials

To educate community members on acceptable general and hazardous waste disposal practices, municipalities can draft and distribute resources like flyers, brochures and guidebooks. They can print these outreach materials and distribute them at community events, display them at city government buildings, or include them as mailers in utility bills or other correspondence. For example, the Town of Brookhaven, New York, put together a guidebook with information on how to dispose of all types of general waste, including bulky items and hazardous substances. The guide, *Throwing It Out in Brookhaven*, includes collection schedules, acceptable curbside pickup items, recycling guidance and hazardous waste drop-off information. A guide like this is helpful because it has all the relevant waste management information in one place.

Municipalities can also create flyers or brochures that list the acceptable trash and recycling items, locations of collection centers, and tips for minimizing waste. For example, the City of Greenbelt, Maryland, has a [flyer](#) on accepted items for its curbside and non-curbside recycling programs. Hillsborough County (Florida)'s [household hazardous waste program brochure](#) is another helpful example. Because some waste requires different disposal methods depending on its chemical formula, such as oil-based versus water-based paint, municipalities may choose to create materials that explain the proper disposal methods for each type. The City of Southfield in Michigan created a [flyer](#) detailing the disposal options for each type of paint, along with local collection or drop-off options for paint that residents may

not throw out with general waste. Another way to share information about waste management is through calendars that list collection days or events. Many municipalities use social media to share calendars and advertise events to their followers.

Online Resources

To reach a wider audience, municipalities may choose to share resources online. The Iowa Department of Natural Resources created an [in-depth webpage](#) with information on the storage and disposal of hazardous substances, including batteries, motor oil and paint. The page explains how to use, store and dispose of hazardous products; it also has a search feature to find a nearby regional collection center. The page also has downloadable documents for a variety of common household hazardous products—such as aerosol, antifreeze and bleach—with detailed information on specific products, the potential hazards associated with each product, and the appropriate disposal methods.

Municipalities can also create online tools that community members can use to easily search for disposal options for all kinds of waste, like the City of Sacramento's [Waste Wizard tool](#) or the City of Phoenix's [Recycle Right Wizard](#). Resources like these allow people to type in the item they're trying to throw away and find the available disposal methods. The search results will show whether curbside collection is available and when—or whether they need to take the item to a special collections drop-off location. The City of Phoenix's tool even tells users which colored bin to put an item in. Municipalities can promote these online tools through local e-newsletters and link to them on public works or waste management websites.

To promote the use of non-toxic substances, municipalities can share information from EPA's [Safer Choice program](#), which helps consumers, business owners and purchasers swap out their commonly used products and replace them with safer alternatives. People can use [this map](#) to help find safer products by venue and business in their communities. Similarly, King County, Washington, created [recipe cards](#) in English and Spanish for alternatives to common hazardous cleaning products, like drain cleaner, toilet bowl cleaner and floor cleaner. The recipe cards are available for download on the municipality's website.

Workshops and Presentations

To help familiarize community members with the solid waste disposal options available in their area, municipalities can offer workshops and presentations that review accepted items, collection drop-off or pick-up options, managing and storing hazardous waste, and alternatives to common household toxic substances. Washington D.C., offers [zero waste presentations](#) to community groups, businesses and other organizations. The presentation covers all the waste, recycling, composting and special waste handling information for the city.

The City of Elk River, Minnesota, offered a [fats, oils and grease \(FOG\) workshop](#) to educate owners and employees of restaurants, grocery stores, and other food service businesses about what products generate FOG, how to properly manage FOG, and any consequences for noncompliance. Presentations like this are helpful for disseminating information to businesses that may need to take extra steps when disposing of waste they may not mix with general trash.

Evaluate Program Effectiveness

After implementing a general and hazardous waste education program, a municipality can continuously monitor the program's effectiveness. There are several ways to do this.

- A municipality can use before-and-after surveys to gauge whether people's perceptions and behavior have changed.
- By holding focus groups and evaluating the number and nature of complaint calls about improper disposal of residential and commercial general and hazardous waste, a municipality can investigate public opinion on the topic.
- A municipality can analyze the amount of materials collected through pickups or at drop-off locations, before and after the program. Alternatively, it can estimate how much hazardous waste enters landfills along with general waste to see if that amount decreases over time.

If the results of these evaluations do not show improvement, the municipality can reassess its community's knowledge and adjust its educational programs as needed.

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at [EPA's National Menu of Best Management Practices \(BMPs\) for Stormwater website](#)

References

North Carolina Department of Environmental Quality (NC DEQ). (n.d.). *Household hazardous waste*.

U.S. Environmental Protection Agency (U.S. EPA). (2020). *National overview: Facts and figures on materials, wastes and recycling*.

Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.