Stormwater Best Management Practice

Hazardous Materials Storage

Minimum Measure: Pollution Prevention/Good Housekeeping for Municipal Operations
Subcategory: Municipal Facilities

Description

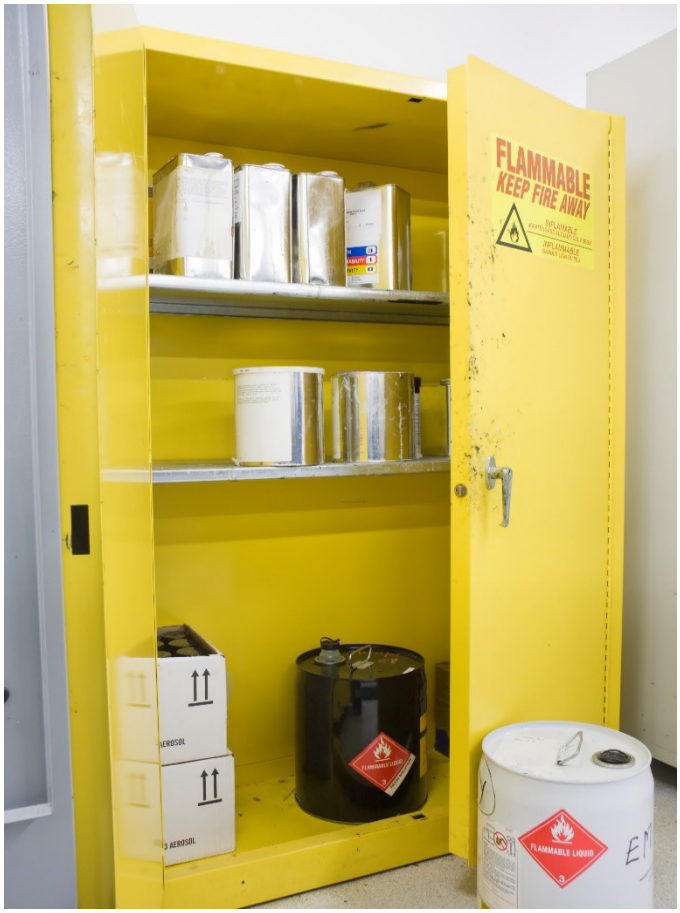
Generally, hazardous materials have properties that make them dangerous or capable of having a harmful effect on human health or the environment. Hazardous materials can be in many forms including liquids, solids or gases and sludges. They are often generated from common municipal activities, such as vehicle maintenance and fueling, firefighting, landscaping and park maintenance, roadway repairs and maintenance, and hazardous waste drop-off locations. Proper management, storage and handling of hazardous materials is critical for reducing the possibility of stormwater contamination through leakage and spills.

Applicability

Hazardous materials storage is relevant to both urban and rural settings in all geographic regions. Some common hazardous material sources are:

- Petroleum products
- Fuels
- Asphalt products
- Concrete curing compounds
- Pesticides
- Pharmaceutical products
- Acids (e.g., from batteries)
- Paints, stains, and solvents
- Septic wastes
- Wood preservatives

The effects of hazardous materials contamination may be more pronounced in geographic areas with heavier rainfall due to the greater volume of stormwater and potential for contribution of pollutants to stormwater discharges.



Hazardous materials should be stored appropriately for the type of material, such as in a flammables cabinet.

Siting and Design Considerations

Regulatory Requirements

Municipal staff should store, manage and dispose of hazardous materials in accordance with all applicable federal, state and local regulations. Two common requirements include general safety requirements of The Occupational Safety and Health Administration (OSHA 29 CFR 1910.176) and storage requirements from the National Fire Protection Association Code 30 (NFPA 30) for flammables and combustibles.

EPA-832-F-21-030B
December 2021

General Storage Considerations

Best practices for hazardous materials storage minimize the possibility of spills, weathering, leaks or improper handling from regular site activities. They include:

- Properly inspect, label and seal all containers.
- Segregate incompatible materials based on physical and chemical properties and secondary containment requirements (refer to Safety Data Sheets for useful information).
- Store all hazardous materials in areas that will not be subject to rain, flooding, or vandalism (under lock and key if necessary).
- For outdoor storage locations, provide proper ventilation, storage foundations (e.g., pallets or a concrete slab) and secondary containment as recommended by the manufacturer or required by regulation.
- Confine storage of hazardous materials to designated areas.
- Ensure enough aisle space to ease inspections and handling and minimize the chance of accidental spills.
- Store hazardous materials away from high-traffic areas.
- Perform loading and unloading operations in areas designed to contain potential spills.
- Make sure workers have easy access to spill cleanup materials.
- Use dry cleanup methods instead of wet (e.g., hosing areas down).
- Train employees on proper storage techniques.

A number of resources outline best practices for various contexts—see the box to the right for two of these.

Vehicle Maintenance and Washing

Vehicle and equipment fueling, maintenance and washing may involve hazardous materials. Municipal staff should confine these activities to designated areas that contain the discharge. They should also follow all federal, state and local disposal requirements for disposing of generated hazardous waste. For more information, refer to the Vehicle Equipment and Maintenance and Vehicle and Equipment Washing fact sheets.

Storage of Household Hazardous Materials

Residents waiting to dispose of their household hazardous materials should store them properly until their hazardous waste collection day. For example, they could:

- Put hazardous material—in its own, original container—into a plastic container with a lid (e.g., a 5-gallon bucket), filled halfway with unused cat litter.
- Fasten the bucket lid and clearly mark the contents of the container.
- Store the bucket away from children and anyone else who might ingest the stored hazardous material.
- Store the bucket off the ground to reduce the potential for corrosion.

Limitations

Hazardous materials storage containers, structures and buildings all have finite life spans. For example, tarpaulins and plastic sheets used for coverings on outdoor storage locations may not last very long in some climates—though a roof or other covered storage building structure would last much longer.

Some hazardous materials or generated waste products may have limitations on the volume and length of time that anyone may store them. Refer to EPA's Hazardous Waste Generator Regulatory Summary page for more on storage requirements for specific hazardous wastes.

Resources on hazardous material storage best practices and requirements for different contexts:

- The U.S. EPA's Multi-Sector General Permit for Stormwater Discharges associated with Industrial Activity
- The U.S. EPA's Construction General Permit for Stormwater Discharges from Construction Activities

Maintenance Considerations

Along with keeping storage areas neat, orderly and well lit, municipal staff should implement a regular inspection program. In particular, they should routinely inspect storage spaces and containers for leaks, signs of cracks or deterioration, or any other signs of leakage. They should immediately repair any leaks or containment weaknesses they find.

Cost Considerations

Costs for storing hazardous materials depends on the substance, the type of storage facility, and the frequency with which that facility's operators store, transport or dispose of the materials. Cleanup costs vary widely depending on the type and amount of substance that has leaked, as well as the surfaces or environments the substance has come in contact with. Municipal staff should immediately protect any spilled hazardous material from stormwater, clean all contaminated surfaces and dispose of the waste, regardless of the expense. To offset the cost of covering or enclosing hazardous materials, they might reconsider procurement, inventory and disposal practices to minimize the amount of materials stored on-site.

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

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.