

Best Management Practices

for New Hampshire Solid Waste Facilities

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NEW HAMPSHIRE - DON'T WASTE IT!



Best Management Practices for New Hampshire Solid Waste Facilities

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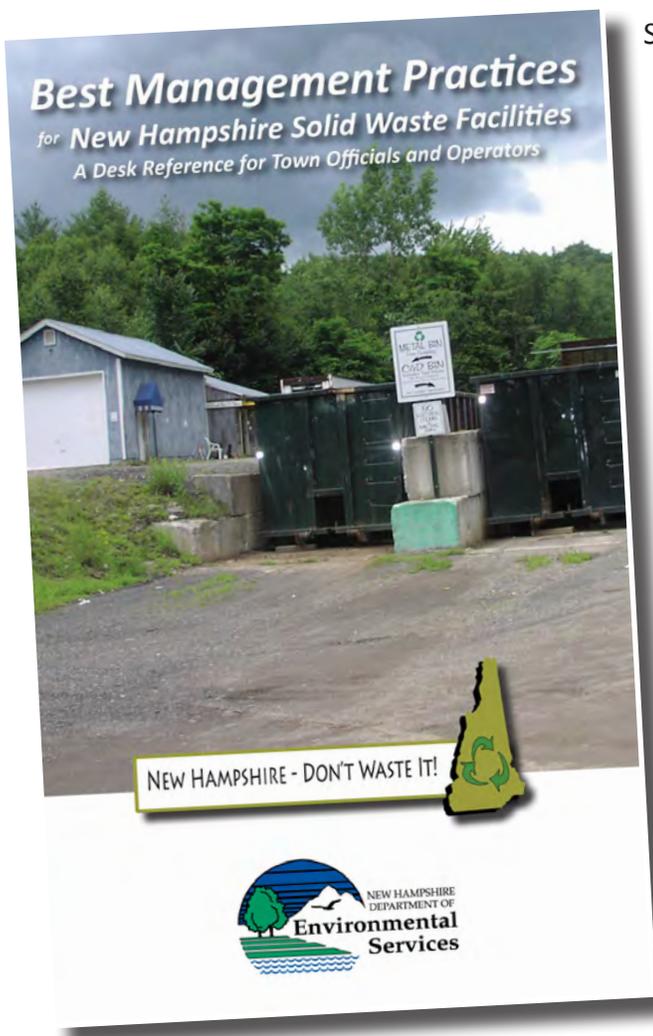
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Best Management Practices for New Hampshire Solid Waste Facilities

New Hampshire is a unique state with a quality of life that consistently ranks among the highest in the nation. Maintaining this quality of life depends, in part, on working together to properly manage the waste we generate and reduce the amount of waste that requires final disposal in landfills and incinerators. While most people might agree that the wise management of solid waste is critical to assuring the state's economic prosperity, and to protecting public health and the environment, not everyone knows how to accomplish it. Therefore, this manual is designed to help our community leaders and solid waste facility operators have a thorough understanding of how best to manage the wastes brought to their transfer stations.

Funded in part by a United States Department of Agriculture grant, this manual provides information on Best Management Practices (BMPs), outreach and training materials, current waste management strategies, forms, and New Hampshire Department of Environmental Services (NHDES) contacts. It is intended for use by municipal officials and solid waste facility operators in rural communities to promote the implementation of BMPs for municipal solid waste and improve effective transfer station operations.



Specifically, this manual provides:

- 18 BMP guidance sheets presenting preferred work methods and strategies for assuring that the wide variety of wastes received by solid waste transfer stations is handled in a manner that protects environmental quality and public health, meets regulatory requirements and avoids unnecessary costs.
- Information to help municipal officials explore options for reducing town solid waste budgets through waste reduction and recycling.
- Helpful tools for meeting facility permit requirements, including maintaining current Facility Operating and Closure Plans, performing compliance inspections, and reporting data and other information.
- Information, application forms and recordkeeping tools for facility operators to obtain and manage professional operator certification as required by state law.

It is important to note that this manual is designed to be a desk reference, to be kept and used at each facility and town office in the state. In order to avoid having the manual become obsolete, we have intentionally used a three ring binder, which allows new and updated information to be added as appropriate.

By becoming familiar with the BMPs and other content of this manual, municipal officials and facility operators will have a number of tools to help educate and motivate

residents to properly manage their wastes and become partners in maintaining New Hampshire's quality of life.

Overview of Municipal Solid Waste

Looking in the Rear View Mirror and Down the Road

A Brief History of Practices and Regulations

Nationwide, prior to the 1890s, there was little local government effort to provide an organized system for waste collection and disposal. As the 19th century ended, the need for such a collection system was becoming apparent, primarily due to shifting public needs and awareness in four key areas. First, as cities grew and America became a more consumer-oriented society, household wastes, ashes, horse droppings, street sweepings and general rubbish were becoming significant problems for cities and individuals to manage. Second, the danger to public health from unsanitary conditions was firmly established and better understood. Third, both citizens and politicians realized that a clean city would attract businesses and create jobs that would, in turn, improve local economies. Fourth, local government involvement in public sanitary services was already well-established with water supplies and sewage management systems, providing a model for also establishing a more organized system of solid waste collection and disposal.

Starting in the early 1900s, some cities in the United States started to develop policies to address the problem of disposing of “municipal solid waste.” During this time, many municipalities established a city or town “dump” where residents and the local business community disposed of its waste. In N.H., farm and mill village dumps were also prevalent during this time period. Although easy to construct and relatively cheap to operate, these open dumps were often located near rivers and streams, where refuse from the dumps could easily be dumped directly into the river and contaminants from the dump could threaten surface water and groundwater quality through stormwater run-off and leaching. In addition, open dumps during this time period were unsanitary, attracted vermin, gave off repugnant odors, and were fire hazards. Even so, it was not until 1929 that the federal government issued the first location restriction for disposal sites by recommending, but not requiring, dumps to be located away from river banks. This was certainly an important step in the right direction, but it was not comprehensive in solving all of the problems and concerns associated with open dumps.

Open dumps were operated for many decades as open burning dumps, as a means to manage the pests and odors associated with simply dumping trash and garbage on the ground in the open. Later, starting in the mid-1960s, some towns began operating “sanitary landfills” by placing a layer of soil over exposed waste at the end of each operating day. By alternating layers of waste and soil, the belief was that vermin

The term “municipal solid waste” or “MSW” is used broadly to mean non-hazardous garbage, trash and other such waste generated by residences, commercial or industrial establishments and institutions. The term is not typically used to mean construction and demolition debris (“C&D waste”), motor vehicle scrap and waste, or wastes requiring special handling such as infectious waste, asbestos waste, soils contaminated by petroleum or other regulated substances, or ash.

populations, odors, and fires could be reduced, making land disposal less smelly and more “sanitary” and acceptable. In N.H., the practice of open burning continued up until the mid-1980s, when the N.H. Legislature took steps to ban open burning and promote closure of all unlined landfills in the state.

It was not until 1965 that the federal government finally put the solid waste problem on par with protection of water resources. In that year, Congress passed the Solid Waste



Open burning dump.

Disposal Act (SWDA), which was the federal government's first effort to implement a comprehensive management framework for the nation's solid waste. SWDA was designed to assist state and local governments with the technical and financial aspects of developing and managing waste disposal programs and to promote the development of guidelines for waste collection, transportation, recovery, and disposal. Further, no state, including N.H., had yet established any real solid waste legislation. Instead, solid waste was indirectly regulated under health and nuisance statutes. Then, in 1970, Congress passed the Resource Recovery Act, shifting the emphasis of federal involvement from disposal to recycling, resource recovery and waste-to-energy technologies.

In 1981, the N.H. Legislature enacted the N.H. Solid Waste Management Act (RSA 149-M), authorizing the agency that is now the N.H. Department of Environmental Services (NHDES) to regulate the management of solid waste through a permit system. Since 1981, the law has provided a basis for N.H. to promote environmentally responsible ways to manage its own solid waste and waste entering the state from outside sources. As a result, N.H. has succeeded in closing all open burning and unlined sanitary landfills in the state, replacing them with engineered lined landfills and other facilities, including waste-to-energy incinerators and recycling/material recovery facilities. Additionally, in 1996, the Legislature amended RSA 149-M to establish a goal for the state to manage 40% of its solid waste by recycling and a hierarchy of preferential facility types.

Source Reduction Hierarchy

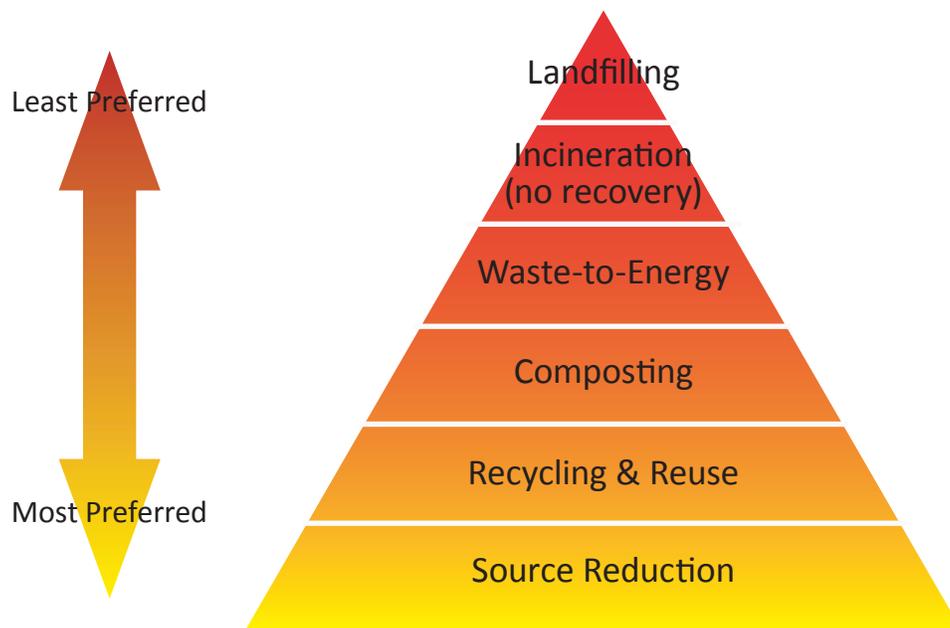


Figure 1

As shown in Figure 1, the hierarchy of preferential solid waste management methods established by the Legislature identifies landfilling as the least preferred option for managing solid waste in the state, with preference given to more sustainable options, such as source reduction, recycling and reuse, and composting.

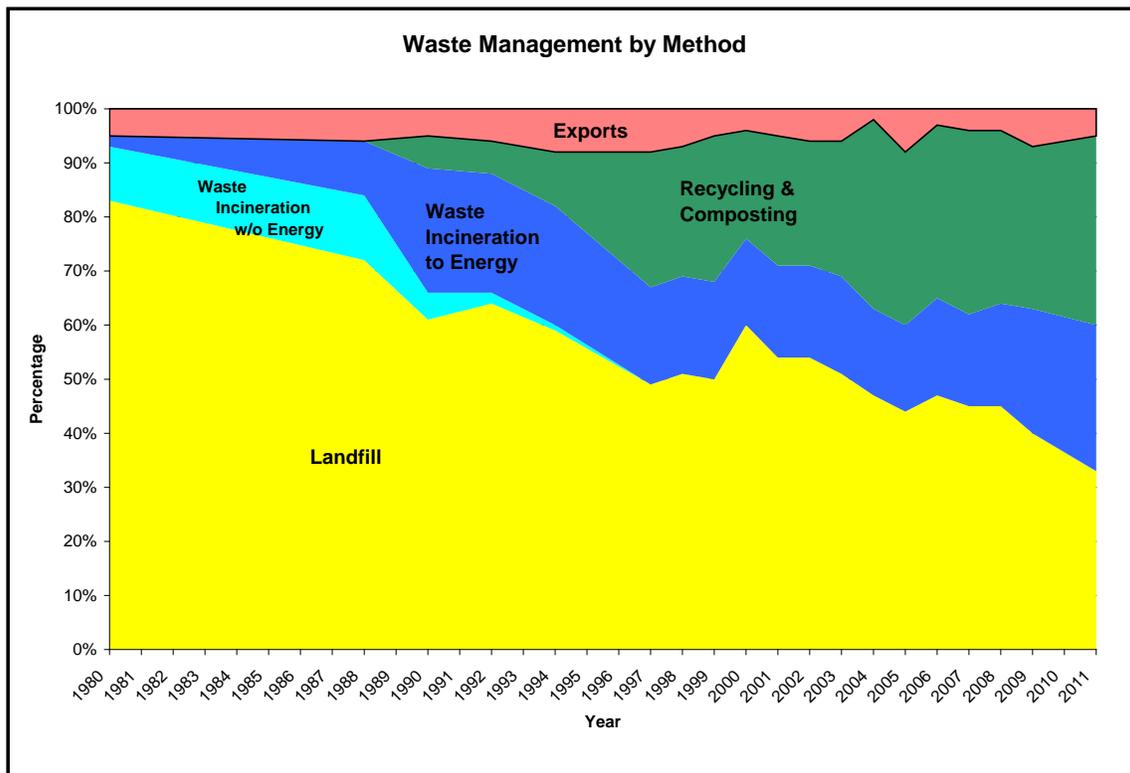


Figure 2

Current Conditions

Currently, about 1.5 million tons of solid waste is generated each year in New Hampshire. Approximately 5 percent of it is exported to other states; 35 percent is recycled or composted; 27 percent is incinerated at waste-to-energy facilities; and 33 percent is disposed of in lined landfills.

Although the N.H. rate of recycling and composting has improved from 6 percent to 35 percent since 1990, there has been no overall increase in the rate since mid-decade, and it still falls short of the statutory 40 percent goal. See Figure 2. This is unfortunate in light of the fact that up to 80 percent of solid waste is recyclable.

There are roughly 260 permitted solid waste facilities operating in N.H. today. Most of them are municipally owned and operated transfer stations that collect waste from residents for transfer to facilities that landfill, incinerate or recycle it. There are six lined municipal solid waste landfills operating in the state, with adequate capacity for disposing of N.H.'s waste through 2022. Most of the landfills have room to expand. In addition, there are currently two waste-to-energy facilities in the state.

Solid waste is big business. Nationally, it is a \$57 billion industry, with four companies having nearly 50 percent of the market share. Management of solid waste costs N.H. citizens roughly \$290 million, of which approximately \$116 million is handled through municipal budgets. This reflects a cost of about \$270 per year per N.H. household.

MSW can be costly to dispose of. In fact, solid waste is one of the largest budget items for towns and cities. In order to keep costs down, municipalities can encourage source reduction, recycling or composting and consider less expensive collection and disposal options. The information provided in this manual is intended to help N.H. municipalities, especially small rural communities, understand good solid waste management practices that will protect water quality and other environmental resources, and options for finding cost savings in the local solid waste budget without compromising those protections.

In addition to being a financial concern, solid waste is also a potential risk to public health, safety and the environment when it is not properly managed. Past practices of dumping it on bare ground, burning it in the open, and discharging it to our rivers are no longer acceptable, for good reason. Although great strides have been made in developing a network of facilities that provide more responsible options for handling solid waste, even more can and should be done to move the state toward managing its waste in a more sustainable and responsible manner.

Moving Forward

Clearly, there is a need to start viewing and managing the solid waste that we generate as a sustainable material in order to find cost savings, conserve valuable natural resources and realize other benefits. Estimates indicate that for every 1 percent increase in the recycling rate, we could save \$1 million state-wide, create new jobs, conserve valuable landfill capacity and natural resources, and protect environmental quality. In light of this, it is not entirely clear why recycling rates have not steadily increased in the past decade. Certainly the market place and the economy are factors. Although the prices for recycled materials fell from record highs in recent years, municipalities can still garner significant revenues from the sale of their collected recyclables and at the same time reduce the amount they pay to dispose of waste in landfills and incinerators.

As we move forward, it is important for N.H. town officials and facility operators to have the information and tools needed to manage solid waste as a sustainable material and implement best management practices to protect the environment, public health and safety. This manual provides resources to assist in this effort.

NEW HAMPSHIRE - DON'T WASTE IT!





BMPs

Best Management Practices for N.H. Solid Waste Facilities

Antifreeze

Antifreeze contains chemicals that can be toxic to people, plants and animals. The most common antifreeze solutions are mixtures of water and either ethylene glycol or propylene glycol. Ethylene glycol is much more toxic than propylene glycol and is slowly being phased out. Both types of antifreeze must be managed and stored to prevent impacts to the environment and public health.

Instead of sending used antifreeze to an expensive hazardous waste disposal facility, recycle it. In New Hampshire, the Universal Waste Rule simplifies the requirements for managing antifreeze if you recycle it. For more information about managing waste antifreeze under the Universal Waste Rule, refer to the Universal Waste BMP Guidance Sheet or contact NHDES.

Best Management Practices for Waste Antifreeze

- Do not pour antifreeze into septic tanks, sewer systems, storm drains, surface waters or onto the ground.
- Store antifreeze in containers that are in good condition and will not rust, rot or be dissolved by the contents.
- If stored outdoors, place all used antifreeze containers including buckets, drums and tanks:
 - > In secondary containment (a container that can hold at least 110 percent of the volume of the largest used antifreeze container or 10% of the total volume of all containers, whichever is greater).
 - > On an impervious surface such as intact concrete or heavy duty/rigid plastic.
 - > Under cover to keep the storage container and secondary containment dry.
- Clearly label each container with one of the following phrases to show how the antifreeze is being managed: "Universal Waste – Antifreeze", "Waste Antifreeze" or "Used Antifreeze".
- Clearly mark each container or tank with the date the antifreeze was first added. Reuse, recycle or dispose of it within a year of that date.
- Keep the antifreeze containers tightly closed, except when actively adding or removing antifreeze.
- If collecting different types of waste antifreeze, use separate funnels, drip pans and containers for each type. Label your equipment to avoid mixing the wastes.
- Immediately contain and clean up all spills and leaks. Keep spill control equipment nearby.
- Before shipping any antifreeze, make sure the shipping documents have been completed and the receiving facility has agreed to receive the shipment and is authorized under state law to receive it.
- Recycle waste antifreeze to restore its quality by:
 - > Hiring a contractor to come to your facility with a mobile recycling unit; or
 - > Transporting the waste antifreeze to a "universal waste destination facility" or "universal waste handler" that will recycle the antifreeze and meets all other requirements in the Universal Waste Rule; or
 - > Purchasing the proper equipment and doing it yourself.

Remember...

- Ethylene glycol antifreeze is very dangerous because children and animals are attracted to its sweet odor. Drinking it can cause severe illness or death.
- Never put antifreeze in the trash, on the ground or down the drain.

NO!



Antifreeze containers are in poor condition and some are open. There is no secondary containment to catch spills and leaks. These containers are not stored on concrete or other impervious surfaces to prevent leaks into the environment. They are exposed to the weather and should be under a roof.

YES!



The closed container is in good condition, correctly labeled and stored indoors on an impervious surface.

For additional information, contact:
Solid Waste Management Bureau
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29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
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solidwasteinfo@des.nh.gov





BMPs

Best Management Practices for N.H. Solid Waste Facilities

Asbestos

Asbestos is a term for a group of naturally occurring fibrous minerals known for their high tensile strength and thermal insulating properties. A wide variety of products contain asbestos, including heating system insulation, vinyl floor tiles and sheet flooring, roofing paper and shingles, cement siding shingles, and a variety of other building construction products. When disturbed, asbestos can break down into microscopic fibers that may become airborne. These fibers can be inhaled and trapped in the lungs, causing deadly respiratory diseases including asbestosis and lung cancer, as well as mesothelioma, a cancer of the chest cavity lining.

Asbestos-containing materials or “ACM” is categorized as either:

- **Non-friable**, meaning it can NOT be crushed under hand pressure, such as the house shingles shown in Figure 1; or
- **Friable**, meaning it can be crushed under hand pressure, such as the pipe and boiler insulation shown in Figures 2 and 3, respectively. Friable asbestos has a greater risk of being inhaled than non-friable.

Did You Know?

- Asbestos is classified as a hazardous air pollutant, but can be disposed of as a solid waste in a landfill with a permit to accept it.
- Asbestos is still used in modern building products, such as roof coatings and felt, cement shingles and pipe, millboard, floor tiles and some automotive products.

State and federal regulations require workers who remove ACM from structures to be properly trained, equipped and certified to do their work. However, homeowners are allowed to remove ACM themselves. Although it is unlawful to put ACM in with the regular trash, it happens. Therefore, solid waste facility operators should learn to recognize ACM in the trash and know what steps to take to protect themselves and others from being exposed.

ACM can only be disposed of at authorized landfills. It must be delivered separately in sealed containers or heavy duty bags that are labeled “DANGER—CONTAINS ASBESTOS FIBERS—AVOID CREATING DUST—CANCER & LUNG HAZARD”. Shipping papers are required. If your facility accepts asbestos waste as part of its normal operations, special permit provisions apply. Contact NHDES for more information.

Best Management Practices for Asbestos

- Obtain necessary permits and training prior to your facility accepting asbestos waste.
- Even if your facility does not accept ACM, be prepared to handle it correctly in case it is found in the regular trash. In your facility’s Operating Plan, clearly state what workers must do to manage asbestos waste if it is discovered. Contact a licensed asbestos abatement contractor or NHDES for technical assistance.
- Learn to recognize the variety of products and materials that may contain asbestos.
- With proper training and equipment, follow these basic steps if ACM is discovered at your facility:
 - > Secure the area to keep unauthorized people away.
 - > Prevent fibers from becoming airborne by wetting it with a fine mist of water.
 - > If the material is not properly contained and labeled, contact a licensed asbestos abatement contractor for assistance in cleaning it up.

- > Store the properly contained and labeled material in a restricted area.
- > Make arrangements to ship the waste to an authorized landfill.
- Ship properly contained and labeled ACM, with shipping papers, to authorized landfills with at least 24 hours prior notice.
- Keep records, including shipping papers, disposal receipts, incident reports and worker training.
- Contact your physician if you think you have been exposed to asbestos.



Figure 1: Non-friable asbestos shingles



Figure 2: Friable pipe insulation



Figure 3: Friable asbestos insulation on an old furnace

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solidwasteinfo@des.nh.gov





BMPs

Best Management Practices for N.H. Solid Waste Facilities

Batteries

Batteries come in a variety of types, shapes and sizes. Therefore, proper management of waste batteries can be confusing. The BMPs listed below will help you recognize general use battery types.

Some batteries with hazardous properties or hazardous characteristics can be managed as a Universal Waste as long as they are managed in a way that protects the environment. Some batteries can be discarded in the trash.

Best Management Practices for Batteries by Type

The list below includes general use battery types. Contact NHDES if you are unsure what to do with a specific type of battery.

- **Button cell batteries** are the small batteries mostly used in hearing aids, calculators and watches. They may contain mercury, a toxic heavy metal, making it illegal to dispose of them in the trash. Handle them as a universal waste, and keep them separate from non-mercury batteries. Cover the battery contacts with tape, or place batteries in plastic bags, individually.
- **Rechargeable batteries** are nickel-cadmium (Ni-Cd), lithium ion (Li-ion), nickel metal hydride (Ni-MH) and small, sealed lead-acid (Pb) batteries used to power electronic devices like phones, computers and cameras. These batteries cannot be disposed of as solid waste because they contain cadmium, lithium and lead, which are toxic metals. If lithium ion batteries are not fully discharged, improper storage can result in intense fires. If not fully discharged, cover the rechargeable battery's electrodes with electrical or other plastic tape or place it in a plastic bag, individually. Rechargeable batteries can be recycled for free through the Rechargeable Battery Recycling Corporation (RBRC), a non-profit public service organization dedicated to recycling used rechargeable batteries and old cell phones. RBRC collects the Ni-Cd, Ni-MH, Li-ion, and sealed Pb rechargeable batteries through their national program Call2Recycle™, with the help of retail and community partners. To find the collection site nearest you, call the RBRC toll free helpline 1-877-273-2925 or use the online locator <http://www.rbrc.org/call2recycle/index.html>.
- **Alkaline batteries (including zinc carbon and zinc chloride batteries)** are the standard AA, C and D cells, and 9-volts used to power products like flashlights, remote controls and small electronic devices. Prior to 1996, popular alkaline batteries, such as Duracell™ and Energizer™, typically contained mercury and other heavy metals. Alkaline batteries on the market now are not hazardous and can be disposed of as solid waste. Place pre-1996 batteries that may contain mercury with button batteries and other mercury-added devices that are recycled.
- **Lead-acid batteries** include those used in vehicles, motorcycles, boats and emergency lighting.

Did You Know?

- New Hampshire law bans the disposal of mercury containing batteries at incinerators and in landfills, so the only options are recycling or proper disposal.
- All batteries can be cheaply recycled or disposed of — some for free. Identify the kind of battery to determine if it can be recycled.
- Cracked or broken lead-acid batteries can leak acid and lead into the environment.

Although intact lead-acid batteries can be managed as Universal Waste, cracked or leaking batteries pose a serious health and environmental risk. Intact vehicle and other lead-acid batteries are recyclable commodities with scrap metal value. Recycle them at authorized scrap metal dealers or at a battery recycler.

- **Lead-acid batteries** should be:

- > Stacked neatly upright (preferably on a pallet) on an impervious surface.
- > Stacked no more than five layers high, with rigid, non-conducting material such as cardboard or thick plastic between layers to prevent damage and to keep the electrodes from arcing.
- > Stored inside, or outside under cover to protect them from the weather.
- > Stored, if cracked or leaking, in a leak-proof container on top of a layer of baking soda or lime. Do NOT add the baking soda or lime directly to the battery case because the acid in the cracked battery may react and splash.

- **All Batteries:**

- > Store batteries in an intact, plastic container or on an impervious surface and under cover to protect from the weather.
- > Do not store leaking batteries with non-leaking ones; acids from the leaking batteries can corrode the other batteries.
- > Keep the seal loose on the storage containers to avoid the buildup of explosive hydrogen gas.
- > Store batteries away from sources of sparks or flames.

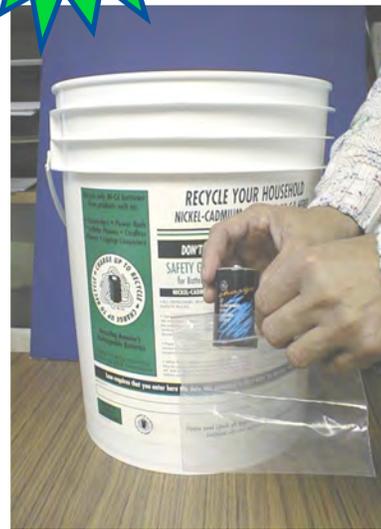


NO!



YES!

Good signage, protected from weather and contained.



Battery with taped terminals, placed in plastic bag and then placed in rigid, properly labeled container.

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BMPs

Best Management Practices for N.H. Solid Waste Facilities

Brush Pile

As a practical matter, there are two basic methods for managing brush piles: **chipping**, which is preferred, and **burning**, which is least preferred. Both methods require the brush pile to be free of “non-conforming materials”, including:

- Construction and demolition debris;
- Combustible domestic waste, including trash, tires, plastics, Styrofoam, paper, cardboard and garbage;
- Composite material, such as plywood, chipboard, flakeboard, masonite, plastic decking, laminated wood; and
- Any wood that is glued, painted, stained, coated with plastic, pressure treated, creosoted, or otherwise treated, laminated or veneered.

In other words, the only materials allowed in brush piles are brush, timber and untreated sawn dimensional lumber from sources other than construction or demolition projects.

Did You Know?

- The disposal of leaf and yard waste in landfills and incinerators has been banned in New Hampshire since 1993.
- In 2008, N.H. banned the combustion of construction and demolition (C&D) debris, even the clean wood portion. However, the law does not apply to the incidental combustion of untreated C&D wood at any municipal transfer station under the supervision of a solid waste facility operator.

When you chip your brush pile, you produce a valuable material that can be used as ground cover in landscaping projects and as a bulking agent at compost facilities. When you burn your brush pile, you produce ash and wood smoke. Although the ash can be used in certain agricultural and composting applications when it is produced strictly from virgin wood, the wood smoke contributes to air pollution. Wood smoke contains fine particulates, nitrogen oxides, sulfur oxides, carbon monoxide, volatile organic compounds, dioxins and furans. Breathing air containing wood smoke can cause a number of serious respiratory and cardiovascular health problems.

Air pollution from brush piles is made worse by burning non-conforming materials. In addition, burning non-conforming materials can produce ash that is a hazardous waste due to the presence of toxic heavy metals such as lead and cadmium.

If you burn your brush pile and you keep non-conforming materials from being burned, you can be reasonably certain, without having it tested, that the ash is not a hazardous waste. However, if you burn non-conforming materials, you will have to hire a qualified professional to have the ash tested by a laboratory to determine if it is toxic for heavy metals or other contaminants. If test results show it is a hazardous waste, you will have to dispose of it at a hazardous waste facility and pay hazardous waste generator fees, all of which can be very expensive.

Best Management Practices for Brush Piles

- Inspect all incoming loads of brush and wood destined for the brush pile to be certain they do not contain non-conforming materials.
- To avoid having non-conforming materials added to the brush pile, instruct residents to leave their waste wood in a stockpile near the brush pile and allow only trained facility operators to add waste wood to the brush pile.

- If you chip your brush pile (most preferred):
 - > Locate the stockpile of wood chips over a firm surface to prevent soil, stones and other potential contaminants from entering the pile.
 - > A pile of wood chips can generate strong odors after just a few days, so make plans to get rid of it quickly. For example, coordinate the chipping events with landscapers and your own public works department or road agent, and advertise the event so your residents know when the chips will be available.
 - > If you hire a contractor to chip your brush pile, rather than doing it yourself, consider contacting other towns to coordinate your chipping event with theirs, to possibly save money.
- If you burn your brush pile (least preferred):
 - > Obtain a burn permit from the local Fire Department or Fire Warden and comply with other state and federal open burning requirements.
 - > Provide a minimum 50-foot distance from the edge of the brush pile to the nearest structure and tree line. Contact your Forest Ranger or Fire Warden for additional guidance.
 - > Keep fire suppression equipment close by when burning.
 - > Be a good neighbor; consider wind direction and weather conditions before burning.
 - > Properly manage ash from burning clean, untreated wood and brush, as follows:
 - Actively manage it. Do not stockpile it for long periods of time. Do not bury it.
 - Dispose of it at a permitted landfill or have it used as a soil amendment in controlled agricultural applications, a compost bulking agent, or an odor control agent for septage and sludge management, if it meets NHDES standards for these uses.
 - > Manage ash from burning anything other than clean, untreated wood and brush as a hazardous waste, unless laboratory testing shows that it is not a hazardous waste. While waiting for the test results, contain and cover it to keep out rain and storm water and prevent dust.



Burned and unburned non-conforming material.



Burning of non-conforming material.

Burn pile with a clear containment area, minimal lumber and a wide fire lane.



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Best Management Practices for N.H. Solid Waste Facilities

Construction & Demolition Debris

The term “construction and demolition debris,” or “C&D debris,” includes waste building materials and rubble which is solid waste resulting from the construction, remodeling, repair or demolition of structures or roads. C&D debris may contain materials that are harmful to human health and the environment. Those materials include, for example, asbestos, lead based paint, PCBs and chemicals found in wood treatment products and glues.

Burning C&D debris can cause air pollution. Therefore, combustion of C&D debris is prohibited in N.H. by state law, except municipal transfer stations are allowed to burn incidental amounts of unpainted and untreated C&D wood under the supervision of a certified solid waste operator.

Various materials in C&D can be separated for reuse and recycling. For example, concrete, brick and other inert masonry waste can be processed and used as general fill or other construction material without a permit. Wood material can be separated and processed by permitted facilities to produce wood chips used to manufacture chip board or other recycled wood products. Wood chips can also be used as fuel in states that allow it to be burned.

Best Management Practices for Construction & Demolition Debris

- Inspect incoming C&D debris to make sure it does not include asbestos or other materials requiring special handling.
- Store C&D debris in a separate area of the facility, preferably in a container.
- Sort C&D debris by type of material according to how it will be recycled or disposed of.
- Never burn painted or treated wood or wood products. Treated wood includes, but is not limited to:
 - > Railroad ties and other pressure treated wood products.
 - > Products containing glue, including plywood, masonite, flakeboard, laminated beams, veneered panels and particle board.
 - > Products with plastic coating or cores such as moulding and plastic composites used for decking.



This C&D wood waste has been processed into a recyclable material, for use in manufactured wood products such as chip board.

Did You Know?

- Burning treated wood releases pollutants that cause serious human health problems to persons in the vicinity.
- Recycling C&D debris saves contractors money through avoided tipping (disposal) fees and by reselling or reusing C&D materials on future projects.

- At transfer stations with burn piles, control what is burned by having residents leave their waste in a stockpile near the burn area, allowing only facility operators to add acceptable wastes to the burn pile.
- Remove C&D debris from the facility when a full load is accumulated.
- Only dispose of C&D debris at facilities that are authorized to accept it, such as a permitted recycling or processing facility, or a lined landfill.



C & D debris stored loose on the ground.



C & D debris actively managed in a controlled manner.

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N.H. Department of Environmental Services
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(603) 271-2925 fax: (603) 271-2456
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BMPs

Best Management Practices for N.H. Solid Waste Facilities

Electronic Waste

Electronic waste, or e-waste, includes computer towers and monitors, televisions, cell phones, office electronic equipment, DVD players and VCRs. In 2007, N.H. banned the disposal of video display devices, computer towers and non-mobile video display media devices such as large TVs in New Hampshire landfills or incinerators. The only options for these banned items are reuse and recycling.

The ban is due to the possible release of hazardous materials from these items into the air and groundwater when they are landfilled or incinerated. For example, lead solder is one hazardous material that almost all electronics contain. Additional hazardous materials found in electronics include cadmium, mercury, other precious and heavy metals, and flame retardants. The effects of exposure to these hazards include sensory impairment, memory loss, reduced fertility, damage to vital organs, various forms of cancer and death in humans and animals.

To assure that banned items are reused or recycled, facility operators should post signs at the facility or provide written notification to customers. As with all other wastes collected at your facility, e-waste must be actively managed and stored for reuse, recycling or proper disposal.

Did You Know?

- In addition to glass and plastics, computers contain more than 36 different toxic metals, including gold, silver, lead and mercury.
- Homeowners store up to five times more e-wastes by weight than businesses.

Electronics that are not specifically identified in the ban should also be recycled instead of landfilled. Many businesses collect these items for recycling. Contact NHDES Solid Waste Management Bureau for up-to-date information on electronics recycling options.

Cathode ray tubes (CRTs) are not only classified as an electronic waste but also as a Universal Waste. Examples of CRTs are the video display units found in older (non-flat panel display) televisions and computer monitors. For more information on how to properly manage CRTs, please read the BMP Guidance Sheet for Universal Waste.

Best Management Practices for E-Waste

- Encourage residents and clients to donate their electronic equipment for reuse. Provide them with information from local or national charities that are interested in accepting the electronic equipment.
- Educate residents and clients about other recycling methods. For example, some manufacturers have take-back programs.
- Partner with electronic retail outlets, charities or electronic recyclers as part of a special e-waste recycling event at your facility or possibly at their place of business.
- Contact local and national recycling associations for how-to documents for municipal e-waste recycling programs.

- If residents or clients do not have reuse or recycle options, and if you accept e-waste at your facility, store it:
 - > Under cover and away from the weather.
 - > In a designated area that is clearly marked.
 - > In a way that prevents breakage.
 - > So that it complies with Universal Waste Rules regarding CRTs.



E-waste is not actively managed and is not stored in a manner that would prevent items from breaking. It is stored outside without cover or labels.



This photo shows proper storage and signage for e-waste.

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BMPs

Best Management Practices for N.H. Solid Waste Facilities

Food Waste Composting

Composting is an excellent way to manage food waste. Like leaf and yard waste composting, compost from food waste is a valuable soil amendment. When added to gardens and lawns, finished compost will increase soil moisture retention, provide additional nutrients, and reduce the need for chemical fertilizers.

Composting food waste reduces the quantity of waste disposed of in landfills and incinerators, and saves money. In rural communities especially, residents can easily compost food waste on their own property, with or without their yard waste. This activity does not require a permit. Food waste can also be composted at centralized facilities, such as solid waste transfer stations, with a permit.

As with leaf and yard waste composting, it is important to understand the basic science of composting in order to achieve high quality finished compost without producing adverse effects, such as odors, and without attracting rodents, flies and other pests. See table on reverse side. Also, read the Leaf & Yard Waste Composting BMP Guidance Sheet to learn more about the science of composting.

It is also important to understand certain terminology, including:

Composting Terms & Definitions

- Feedstock – the mixture of organic wastes brought to your facility for composting.
- Greens – organic wastes high in nitrogen (green grass and leaves, food waste, and garden cuttings).
- Browns – organic wastes high in carbon (autumn leaves, wood chips or sawdust – FOOD ITEMS).
- Carbon-to-Nitrogen Ratio (C:N ratio) – the balance of energy and nutrients needed by microorganisms.
- Windrow – a pile with a shorter height and width, but greater length (example: 8' by 12' by 60').
- Plant Pathogens – microscopic organisms such as bacteria and viruses that are harmful to other plants.

Did You Know?

- Bacteria is the most important component in the composting process.
- Chopping up all the compost ingredients into pieces less than 2 inches in size will speed up the composting process.
- Charcoal and wood ash can be used to control odors during the compost process; however, too much ash can harm plants grown in the compost.

Best Management Practices for Food Waste Composting

The following BMPs may differ, depending on whether you use windrow, static pile, or in-vessel methods.

- Mix roughly equal amounts by weight of browns and greens to provide the proper 30:1 C:N ratio.
- Do not leave food waste uncovered for more than 2 hours and blend all food waste into a windrow within 24 hours after its arrival, or store the food waste in a closed container to avoid odors and pests (birds, rodents, etc.).
- Routinely turn each windrow or pile to maintain aerobic (oxygen rich) conditions.
- Do not turn windrows during cold winter days or during rain storms.

- Consider applying water after windy days as windrows may have become too dry.
- It can take two or more days for compost piles kept at temperatures greater than 140°F to kill weed seeds and plant pathogens; at temperatures above 155°F, it may take only a few hours. However, do not allow windrow temperatures to remain above 155°F for more than a few hours, as beneficial organisms will also begin to die.
- Periodically check moisture levels. Grab a handful of compost from inside the pile and squeeze. If it drips, it is too wet, in which case add more dry material and turn the pile. If it is damp but does not drip when you do the squeeze test, it is about right.
- Pile heights can vary based on the amount of space and type of equipment available, but should not be more than 10 feet.
- Do not compost domestic animal fecal matter. It may contain viruses that will not be killed during the compost process.
- Do not compost feedstock containing weeds that have gone to seed because they may survive the compost process.
- Allow the compost to mature/stabilize until it no longer reheats after turning. It should have a dark brown to black color, a crumbly cake-like texture and an earthy odor.
- If considering composting sludge or septage, you must comply with the NHDES sludge and septage rules.

Composting: Potential Problems and Solutions

Problems	Solutions
Not heating up*	ADD water, grass or garden clippings, or manures, and TURN pile.
Too wet	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Foul odor	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Freezing	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay. Do NOT turn pile; wait for a warm day to turn.
Too dry	ADD water, grass or garden clippings, or manures, and TURN pile.

*For a compost pile that is not heating up, it may mean it's either too dry, you have too much carbon (leaves), or not enough nitrogen (green grass). Do a squeeze test; if the pile isn't too dry then try adding a feedstock, such as grass or manure, which has less carbon and more nitrogen to the pile.



Compost piles are too close to one another and too tall. Poor drainage is allowing water to accumulate between windrows.



Compost piles are actively managed. There is good spacing between them.

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Best Management Practices for N.H. Solid Waste Facilities

Glass

Generally speaking, glass can be recycled over and over again and not lose its quality. In fact, 90 percent of recycled glass is used to make new containers. Recycled glass can also be used in kitchen tiles, counter tops, wall insulation and other products. Glass recycling has grown considerably in recent years through increased collection by curbside recycling programs and increased demand for recycled glass in manufacturing.

Cullet is crushed glass from food and beverage containers that is used to manufacture new glass products. To produce cullet, you must collect and separate glass according to color (clear, brown, green, etc.) and remove any contaminants.

Processed Glass Aggregate (PGA) is a type of aggregate used in road construction that is produced from crushed glass. In order to use PGA in road construction, it must meet an engineered technical specification. There are restrictions on the use, storage, handling and production of PGA. If your facility wants to produce PGA, contact NHDES to obtain the technical specifications and additional information.

Did You Know?

- The largest source of glass generated and recovered for recycling is from soft drink, beer, food, wine and liquor containers.
- Americans generated 11.53 million tons of glass in the municipal solid waste (MSW) stream in 2011.
- Most glass manufacturers rely on a steady supply of cullet to supplement raw materials.



Processed Glass Aggregate

Best Management Practices for Source-Separated Glass

- Encourage residents to separate glass from other recyclables.
- Post signs directing customers to the correct drop-off location.
- Collect and store glass in a specific area of your facility.
- Handle using protective gear such as gloves and eyewear.
- Place glass in a dumpster. If this is not possible, store on a hard surface such as asphalt or concrete.
- Do NOT bury glass or use it for general fill at your facility.
- Actively manage glass stockpiles and avoid accumulating excess quantities.

NO!



Glass is not actively managed and is being used as fill.

YES!



Glass is actively managed in a roll off container. There is signage marking what can and cannot be thrown into the container.

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BMPs

Best Management Practices for N.H. Solid Waste Facilities

Household Hazardous Waste

Household hazardous waste, or HHW, is a hazardous product or material that is disposed of by residents from their homes. Many common household products, such as oil-based paints, solvents, chemical drain openers, oven cleaners, polishes, waxes, pesticides, cleaning agents and spent automotive products are considered hazardous because they have one or more of the following hazardous properties.

Ignitable/Flammable – Catches fire easily.

Corrosive/Caustic – Burns and destroys living tissue on contact.

Reactive/Explosive – Detonates or explodes when exposed to heat, sudden shock or pressure.

Toxic/Poison – Capable of causing injury or death through ingestion, inhalation or absorption through the skin.

Ignitable or reactive household chemicals can release toxic fumes or even explode if mixed together, causing fires and injuring workers. Products like lye can burn skin, eyes or respiratory passages. Exposure to some pesticides, paints and solvents can cause weakness, confusion, dizziness, irritability, headaches, nausea, sweating, tremors, and convulsions. Repeated chemical exposure can cause cancer or birth defects.

Did You Know?

- The average household throws 15.5 pounds of hazardous materials into the trash each year.
- Product labels include signal words to help you quickly identify hazardous products. The words “Danger” (most toxic), “Warning” and “Caution” (least toxic) help identify the various degrees of toxicity.

Although it is legal to throw out most types of HHW with the regular trash, collecting it separately for disposal at a hazardous waste treatment or disposal facility is a more responsible way of managing it. Several N.H. towns periodically sponsor special HHW collection events for their residents, using grant money from NHDES to help defray the costs. In addition, permanent collection centers can be established.

Facilities that collect HHW separately from regular household trash do not need a permit from NHDES, but they are required to notify NHDES, obtain a hazardous waste generator identification number, and comply with hazardous waste generator standards. If your facility or town is considering this, contact NHDES for technical assistance and obtain the services of a hazardous waste professional to help you design and operate the facility.

Best Management Practices for Household Hazardous Waste

- Encourage residents to keep HHW out of their regular trash and save it for disposal at a local HHW collection event if one is planned for your town.
- Sponsor a HHW collection event in your town on a yearly or more frequent basis, so that residents can depend on having a place to take their HHW rather than having to put it in the regular trash. Call NHDES for possible grant assistance.

- If you collect HHW separately from the regular trash, whether at a one-time event or on a more permanent basis at your facility, you or your contractor must comply with hazardous waste generator standards, including but not limited to.
 - > Submit a completed Notification of Hazardous Waste Activity Form to NHDES and obtain a hazardous waste generator identification number.
 - > Make sure all workers at the collection site are properly trained to identify and handle hazardous waste. Depending on the quantity of HHW you collect monthly, you may also need at least one person on staff to become a NHDES Certified Hazardous Waste Coordinator.
 - > Store HHW safely according to the following:
 - Store collected HHW in a secure, dry area away from sources of heat, spark or flame, with an intact concrete floor, no floor drains, and protection from wind and precipitation.
 - Post warning signs against unauthorized entry, and emergency contact information.
 - Keep collected HHW in original, tightly closed containers with the labels intact; do not mix them.
 - If a container is deteriorated or leaking, place the entire container inside a leak-proof covered container made of the same material and label it. Add an absorbent material, such as cat litter, or an acid neutralizing agent, such as baking soda or lime, to the outside container if appropriate.
 - Keep ignitables, corrosives, reactives and toxics separate from one another. For example, store them on separate shelves.
 - Post NO SMOKING signs near ignitable or reactive wastes.
 - Keep spill and fire control equipment nearby.
 - Organize and maintain the storage area so that you can easily inspect for, contain, and clean up leaks.
 - Inspect the storage area on a weekly or more frequent basis.
 - Store collected HHW no longer than 90 days. Hire a State of N.H. registered hazardous waste transporter to deliver it to an authorized hazardous waste treatment or disposal facility, using a manifest.



HHW is stored haphazardly on the ground and is exposed to the weather. Some containers are not closed.



HHW is neatly stored and categorized, off the ground and under cover.

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Best Management Practices for N.H. Solid Waste Facilities

Household Sharps

Household generated “sharps” include hypodermic needles and syringes, lancets and infusion sets. They are typically used in the home for insulin injection or for administering other medications. Sharps can carry human and animal disease. As a result, careless disposal of sharps in the general household trash puts neighbors, children and waste workers at risk of needle stick injuries and possible life-long health problems.

Although placing household generated sharps in the regular trash is allowed if properly contained, residents have other options such as using a Container Mail Back Program that distributes empty containers for clients to fill and mail back for safe disposal. There may be a charge for such services. Go to www.safeneedledisposal.org for more information. Another alternative is using a specially designed needle cutter or home incineration device purchased from pharmacies.

Best Management Practices for Household Sharps

- Let residents who bring trash to your facility know that they should not throw out their sharps with their regular waste unless they put them in a container that is rigid and puncture-proof, such as a laundry detergent bottle that has the screw-top securely taped and is labeled “Medical Sharps Container – Not for Recycling”.
- Let residents know that printable labels are available on the NHDES website. Go to www.des.nh.gov, click on “A to Z List” and scroll down to “Sharps Disposal”. Rolls of preprinted labels are

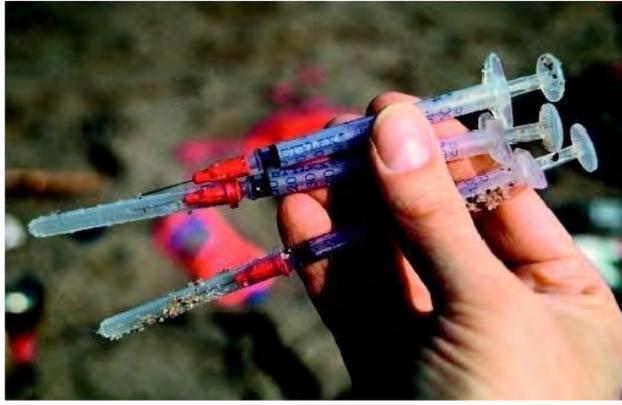
Did You Know?

- Needle stick injuries are a serious public health risk to family members as well as to solid waste operators.
- Many different facilities generate infectious wastes, including doctor and dentists’ offices, hospitals, clinics, schools, nursing homes, mortuaries and veterinary facilities.

also available from NHDES for local transfer stations to distribute to residents, while supplies last.

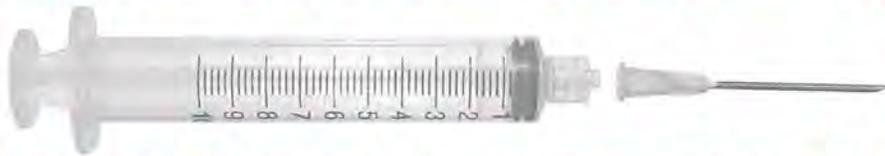
- If you see a container on the tipping floor labeled “Medical Sharps Container – Not for Recycling”, make sure it does not go into a recycling bin. It should be disposed of in a landfill or incinerator.
- Train workers to be aware of needle stick hazards and to report injuries immediately for proper medical attention.
- If you find needles or other sharps not in containers, for example loose on the tipping floor, have them removed by trained workers wearing protective equipment including leather gloves. Package and dispose of them as described above.
- For more information about proper sharps disposal, contact NHDES.





Syringes have the needle part commonly known as “sharps.”

MEDICAL SHARPS CONTAINER!



NOT FOR RECYCLING!

www.des.nh.gov

Funded by NH Dept. of Environmental Services, NH Local Government Center, Granite State Diabetes Educators & NH Medical Society

The above label is available from NHDES for containers of sharps brought into your facility.

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BMPs

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Leaf & Yard Waste Composting

Composted leaf and yard waste is a valuable soil amendment. When added to gardens or lawns, finished compost will increase soil moisture retention, provide additional nutrients and reduce the need for chemical fertilizers. State law prohibits leaf and yard waste from being disposed of in N.H. landfills and incinerators. Therefore, composting these materials is an excellent option. Successful composting requires a basic understanding of the science.

Composting Terms & Definitions

- Feedstock – the mixture of organic wastes brought to your facility for composting.
- Greens – organic wastes high in nitrogen such as green grass, green leaves and garden cuttings.
- Browns – organic wastes high in carbon, such as autumn leaves, wood chips or sawdust.
- Carbon-to-Nitrogen Ratio (C:N ratio) – the balance of energy and nutrients needed by microorganisms.
- Windrow – a pile that is longer than it is high or wide.
- Plant Pathogens – microscopic organisms such as bacteria and viruses that are harmful to other plants.

A compost pile is a mixture of different organic material such as leaves, wood chips, animal manures and grass. Each of these materials have different C:N ratios that when mixed will create the pile's average C:N ratio. Getting the mixture right is important because the best C:N ratio for a compost pile is 30:1.

Composting Processes

- "Hot" or Aerobic Composting – requires routine turning of the pile to allow oxygen into the composting process and optimum temperatures above 140°F. The entire process takes as little as two to three months. A few hours at temperatures above 155°F is needed to kill weed seeds and plant pathogens.
- "Cold" or Anaerobic Composting – requires minimal turning of the pile, temperatures should reach 55°F, and can take up to one to two years to complete. Consider cold composting if your facility receives more browns than greens. Start with a bottom layer of wood chips to increase the flow of oxygen into the pile, layering the browns and greens, and if the pile produces odors, consider adding more browns.

Remember...

- Bacteria are the most important ingredient in the composting process.
- Shredding your feedstock helps reduce composting time, and provides better temperature distribution and heat retention.
- Temperatures can increase to more than 150°F in about three days.
- Leaf and yard waste composting does not require a permit.

The compost process is complete when the pile doesn't reheat after turning and adding water. Finished compost will have significantly reduced in volume, appears dark brown to black in color, has a crumbly texture and an earthy odor.

Best Management Practices for Leaf and Yard Waste Composting

- Mix roughly equal amounts by weight of browns and greens to provide the proper 30:1 C:N ratio.

- Pile heights should not be above 10 feet.
- To create compost quickly, turn the pile at least every two weeks or more often as needed, depending on moisture and temperature.
- Periodically check moisture levels. Grab a handful of compost from inside the pile and squeeze it. If it drips, it's too wet (see table below). If it's damp but doesn't drip, it's about right.
- Don't turn your windrows during cold winter days or during rain storms; consider watering after windy days as your windrows may dry out.

Composting: Potential Problems and Solutions

Problems	Solutions
Not heating up*	ADD water, grass or garden clippings, or manures, and TURN pile.
Too wet	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Foul odor	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Freezing	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay. Do NOT turn pile; wait for a warm day to turn.
Too dry	ADD water, grass or garden clippings, or manures, and TURN pile.

*For a compost pile that is not heating up, it may mean it's either too dry, you have too much carbon (leaves), or not enough nitrogen (green grass). Run a squeeze test; if the pile isn't too dry then try adding a feedstock, such as grass or manure, which has less carbon and more nitrogen to the pile.



Do not mix domestic waste with the leaf and yard waste compost pile.



Windrows have plenty of spacing between them and are not too tall. The piles are actively managed and clean of debris.

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Best Management Practices for N.H. Solid Waste Facilities

Mercury-Containing Devices & Lamps/Bulbs

Mercury is a heavy metal that can accumulate in living tissue and cause health problems. Mercury and mercury compounds are sometimes intentionally added to products to provide a specific characteristic, appearance or quality, or to perform a specific function. There is a ban on the disposal of mercury-added products, including lamps and compact fluorescent bulbs, thermometers, thermostats, switches and relays, in solid waste landfills and incinerators.

To comply with this ban, facility operators must:

- Post a sign at the facility about the ban on the disposal of mercury-added products;
- Provide facility customers with written notice of the prohibition against the disposal of mercury-added products;
- Provide customers with information about collection programs that can accept mercury-added products; and
- Monitor incoming wastes to detect the presence of mercury-added products.

Transfer stations are encouraged to collect and recycle mercury-containing items. Separate them from regular solid waste and manage the items as a Universal or Hazardous Waste. Managing mercury wastes under the Universal Waste Rule is the best option for most facilities. Municipalities are eligible to use the State contract to recycle fluorescent bulbs, lamps and other mercury-containing devices.

Best Management Practices for All Mercury-Containing Wastes

- Train employees who handle mercury containing devices to implement proper handling and emergency procedures, including proper cleanup of mercury spills.
- Store devices in containers that are sturdy, intact and stable (to prevent tipping).



Collect button cell batteries, thermometers, thermostats, relays, switches and other mercury containing devices in labeled, covered plastic containers.

- Store containers in a designated location away from high traffic areas and inside, where they will not be exposed to weather.
- Label containers with the words “Universal Waste – Mercury-Containing Devices,” or “Used Mercury-Containing Devices” or “Waste Mercury-Containing Devices”.
- Place a start date on the container when first used and contact a cleanup contractor for proper disposal.

Best Management Practices for Fluorescent Bulbs and Lamps

- Clearly label each container holding universal waste lamps with any of the following: “Used Lamp(s),” “Universal Waste – Lamps,” or “Waste Lamps.”

Did You Know?

- In N.H., mercury has been detected in freshwater fish and there is a statewide fish consumption advisory issued by the N.H. Department of Health & Human Services.
- Even “green tip” fluorescent bulbs and lamps have mercury.
- It is illegal to intentionally break fluorescent lamps.

- Handle fluorescent lamps to make sure they do not break. In addition, separate them from metal-halide, mercury vapor and high intensity discharge (HID) lamps.
- Store used, intact lamps indoors in the same box that new lamps were shipped in or other boxes of similar size, in a fiber drum, or in containers supplied by a State contractor. Do not store lamps in a metal drum because they will break easily.
- Pack boxes to minimize breakage; use box spacers between lamps so bulbs cannot move. Do not pack too many lamps into a container as the pressure can cause breakage.
- Do not tape lamps together. Many recycling facilities do not accept lamps that are taped.
- Seal the boxes with tape as soon as they are filled.
- If a bulb breaks:
 - > Clear the area then ventilate the room, or go outside, for 15 minutes.
 - > Remove all materials you can but DO NOT VACUUM.
 - Wear disposable gloves, if available.
 - Carefully clean up the glass fragments and residue with a stiff paper or cardboard or sticky tape.
 - Wipe the area clean with a damp paper towel, cloth or disposable wet wipe.
 - > Place all cleanup materials in a sturdy glass container with a tight-fitting metal lid. Store the container away from high traffic areas as described above.
 - > Hire a cleanup contractor for proper disposal at a permitted facility.



Never store fluorescent lamps/bulbs unsheltered, without containers or in such a manner where they could be easily broken.



Place fluorescent lamps/bulbs inside a structure that shelters them from the weather, stored inside sturdy containers and away from high traffic areas; inspect periodically.

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BMPs

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Paint

Getting rid of left over paint can be a big problem. Certain types of paint, paint thinners and strippers are made with hazardous ingredients that have the potential to be harmful to humans, animals, ground water and the environment.

Proper disposal depends on the type of paint:

Water-based (latex) paint disposal – Latex paints are the least harmful. If they cannot be donated for use by others, they can be placed in the regular trash in a dried up or solidified state. Mixing the paints with cat litter or sawdust is one way to solidify them.

Oil-based, lead-based or solvent-based paint disposal – These paints contain hazardous ingredients. If they are being thrown out by private individuals rather than businesses, they are considered household hazardous waste (HHW) and should be taken to a HHW collection facility or event. If they are being thrown out by non-household sources, like painting contractors or auto body shops, they can not be managed at solid waste facilities. They must be taken by registered hazardous waste transporters to authorized hazardous waste facilities.

Aerosol paint disposal – Aerosol paints are made with hazardous propellants and solvents. As noted above, if they come from household sources, they should be taken to a HHW collection facility or event. If they come from businesses, they cannot be managed at solid waste facilities and must be transported to authorized hazardous waste facilities by registered hazardous waste transporters.

Artist or hobby paint disposal – Paints for art may contain solvents or heavy metals and should also be disposed of at a HHW event or facility if they come from household sources. If they come from businesses, they can not be managed at solid waste facilities and must be transported to authorized hazardous waste facilities by registered hazardous waste transporters.

Best Management Practices for Paint

- Learn to recognize the various types of paint and understand their proper disposal methods.
- Inspect incoming waste for paint and make sure it goes to the right location for disposal.
- Encourage residents to keep leftover paint for future use or donate it to be used by others, rather than disposing of it.
- Encourage residents to save non-latex paint for collection by a special paint collection program or household hazardous waste collection event offered in your area.
- Encourage residents to buy only the quantity of paint they need for the job they are doing. This is the best way to reduce the amount of waste paint your facility may have to handle.

Did You Know?

- Paint produced before 1992 may contain mercury. If you think you may have pre-1992 paint, contact the manufacturer or NHDES to find out about proper disposal methods.
- Paint is the most common waste brought to HHW collection events.
- Paint can be recycled in some areas of the country. For more information, contact the Household Hazardous Waste Coordinator.

- If your facility is a transfer station and you want to accept non-latex paint from residents – even small amounts – so you can dispose of it separately from the regular trash, you will need to obtain hazardous waste generator status and follow NHDES Hazardous Waste Rules applicable to generators. Contact the NHDES Household Hazardous Waste Coordinator for technical assistance.
- Remove the lids of paint cans before they are thrown in with the regular trash to make sure the paint is no longer in liquid form.
- Recycle empty paint cans.
- Keep materials and equipment nearby to clean up spills or leaks when they happen.
- Never dispose of liquid paint in a landfill.



These paint containers are stored outside without secondary containment and exposed to the weather. Some of the containers are in bad condition without readable labels.



These paint containers are stored indoors in a closeable storage unit, separated by waste type. Their labels are intact and readable.

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BMPs

Best Management Practices for N.H. Solid Waste Facilities

Refrigerants

Refrigerants, such as R-12 (Freon) and R-134a, found in certain appliances and automobiles are harmful to Earth's atmosphere if released to the air. Freon belongs to a group of chemicals known as chlorofluorocarbons (CFCs). CFCs rise into the upper atmosphere where they destroy the ozone layer that protects Earth from high-energy ultraviolet radiation. Increased exposure to this radiation raises the risk of skin cancer and damages plants and animals. R-134a belongs to a group of chemicals known as hydrofluorocarbons (HFCs) and is also known as a "greenhouse gas" because it contributes to global climate change.

One of the largest single uses of Freon is as a refrigerant in air conditioners, refrigerators and freezers. By the end of 1995, manufacturing of new Freon was no longer permitted. However, Freon can still be used until supplies are depleted. Newer appliances use other refrigerants, such as R-134a.

It is illegal to vent any refrigerant to the atmosphere and it is important to manage refrigerants in a way that protects the environment. Before refrigerant containing appliances and other items are disposed of, the refrigerants must be removed by trained and certified technicians using equipment meeting standards established by the United States Environmental Protection Agency (EPA). Recovered refrigerants have value and can be sold to certified reclamation facilities. Until the refrigerant is shipped to a reclamation facility, it must be stored properly.

Did You Know?

- Skin cancer is one of the fastest growing forms of cancer. In the US, one person dies of skin cancer every hour.
- Freon can only be sold to certified technicians or to certified reclamation facilities that will reclaim it to its original purity specifications.
- R-12 (Freon) is also known as CFC-12. R-134a is also known as HFC-134a.

Best Management Practices for Refrigerants

- Do not vent refrigerants to the atmosphere.
- Designate a place at your facility where appliances and other items that may contain refrigerants can be stored temporarily while waiting to have the refrigerants removed.
- Assume all such items still contain refrigerant when they first arrive at your facility, unless the item is so damaged it is obvious the refrigerant has been released already.
- Take care to prevent refrigerant-containing items from being damaged while waiting to be evacuated. For example, keep the items upright on a level surface out of the path of snowplows and other traffic and avoid stacking them.
- Have the refrigerant removed from each item by trained and certified technicians using EPA approved recycling/recovery equipment only.
- Write "EVACUATED" or put an "X" or other distinguishing mark on each refrigerator, air conditioning unit and other items after the items are fully evacuated.
- Send recovered refrigerant to an EPA-approved reclamation facility.
- Keep all refrigerant reclamation records for three years. Include volume and final destination in records of off-site reclamation.

- If your facility performs its own refrigerant removal using its own equipment, certify to EPA that you are using equipment that meets EPA standards. To obtain the appropriate certification form, call the EPA Stratospheric Ozone Information Hotline (1-800-296-1996) or visit the EPA website at www.epa.gov.
- If you hire a contractor to remove the refrigerant, keep records to show you have complied with the law that requires refrigerants to be removed by certified technicians using approved equipment only.
- For more information about managing refrigerants, call the EPA Stratospheric Ozone Information Hotline (1-800-296-1996).



The appliances are not marked as to whether they have been evacuated. Stockpiling makes it difficult to tell which appliances may contain refrigerants and creates a physical hazard.



These appliances are clearly marked to show the refrigerants have been evacuated. The appliances are stored upright and are easily accessible.



You can hire mobile contractors to remove refrigerants. The contractors travel from site to site performing this service. Make sure they are certified and have approved equipment.

For additional information, contact:
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 N.H. Department of Environmental Services
 29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
 (603) 271-2925 fax: (603) 271-2456
solidwasteinfo@des.nh.gov



Best Management Practices for N.H. Solid Waste Facilities

Scrap Metal

Scrap metal is highly recyclable and valuable. The price of steel rises and falls, therefore facility operations need to be efficient, clean and safe to be profitable under all market conditions. If not properly managed, scrap metal can lose its value and can also be a source of pollution. For example, leaking components found in white goods (appliances), such as capacitors, ballasts, compressors and pumps, can release pollutants such as polychlorobiphenyls (PCBs), oils, lubricants or refrigerants into the environment. Lawnmowers, vehicle parts and other equipment and machinery are a source of petroleum and gasoline contamination, as well as battery acid and various toxic heavy metals such as lead, cadmium and mercury. Scrap metal from construction or demolition projects may be contaminated with chemical residues, oily wastes, asbestos, PCBs, lead, mercury and other heavy metals that can be harmful. Similarly, tanks, drums and other containers may still contain industrial waste, fuel, oily residues and sludge even when they appear to be empty. Scrap metal items can sometimes contain radioactive material, explosive gasses and vapors, and other serious hazards.

This list does not include all the potential risks that can be encountered in the scrap metal industry. Therefore, operators of scrap metal facilities must understand that this valuable resource can be a source of contamination to land, water and air. They must be aware of the potential hazards, use proper safety equipment and follow best management practices to protect human health and the environment.

Did You Know?

- Some scrap metal facilities need a storm water discharge permit from EPA. For more information, contact EPA-Region 1 (Boston) at: (617) 918-1615
- Some types of scrap metal are regulated as a hazardous waste. If in doubt, call the NHDES Hazardous Waste Hotline Monday through Friday, 8:00 AM to 4:00 PM, toll free at (866) HAZWAST (in-state only) or at (603) 271-2942.

NO!



Scrap metal is haphazardly stored; contaminants may be leaking into the groundwater.

Best Management Practices for Scrap Metal

- Inspect incoming loads to identify materials you are not authorized or willing to accept, as well as hazardous conditions, such as leaking components or asbestos, that require immediate attention and containment.
- Prevent unauthorized access to the facility by installing a fence or barrier to keep out thieves and vandals.
- If your facility buys scrap metal, keep seller identification records, including copies of a driver's license and vehicle information, to guard against purchasing stolen scrap metal and to allow transactions to be traced.

- Inspect incoming tanks and containers to make sure they are empty before adding them to a storage container or stockpile.
- If you accept scrap metal that contains fluids, have the proper equipment and procedures in place to remove the fluids without spilling or leaking them onto the ground.
- Keep spill kits and fire extinguishers nearby, and train employees on the procedures to follow in the event of a fire, spill or other emergency or hazardous condition.
- Separate ferrous metal (iron-containing scrap metal) from non-ferrous metal (aluminum, copper, brass, etc.) and other metals as desired and store them separately to increase the market value of your metal.
- Store scrap metal off the bare ground using the following options.
 - > In transportation containers, covered or under a roof to keep out precipitation.
 - > In stockpiles, on a concrete surface or within concrete bunkers that are covered if piles include greasy, oily items and other possible contamination sources.
- Make sure scrap metal stockpiles are:
 - > Free of plastic, wood and other debris.
 - > Stable by limiting their height and size.
 - > Accessible for fire equipment.
- Divert stormwater runoff away from stockpiles.
- Obtain coverage under the federal stormwater discharge permit and implement the related stormwater management plan as applicable. Contact EPA Region I for more information.
- Inspect stockpiles and storage areas on a regular basis for possible polluting, hazardous or unsafe conditions.
- Handle and store refrigerators and air conditioners in a manner that does not release refrigerants to the air. Have only trained and certified persons remove the refrigerants using EPA approved equipment. See Refrigerant BMP Guidance Sheet.



By collecting scrap metal in a transportation container, you keep it off the ground and only have to handle it once before sending it to a scrap metal dealer. The container is under a roof to keep out precipitation.

For additional information, contact:
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Best Management Practices for N.H. Solid Waste Facilities

Scrap Tires

Stockpiles of waste tires can cause safety and health problems. Although tires are difficult to ignite, once lit, they are almost impossible to extinguish. When tires burn, they emit toxic fumes that pollute the air and cause respiratory problems for nearby residents and firefighters. Fire also melts the rubber in tires and generates oil (called “pyrolitic oil”) that can pollute the ground and surface water.

Another hazard is stagnant water. When water collects inside tires, it becomes an excellent breeding ground for mosquitoes. This is a concern, since mosquitoes transmit illnesses, including West Nile Virus and encephalitis.

Waste tires can be expensive and difficult to dispose of. Landfilled tires take up valuable space and can be an unstable base for landfill capping. Although recycling markets for waste tires are improving, the number of waste tires stockpiled in this country, plus the number being generated each year, far exceeds the market demand.

Best Management Practices for Scrap Tires

- Tires may be collected and stored in outdoor transfer containers or on the ground, although collecting them in a trailer keeps them dry and ready for prompt shipping without additional handling.
- If tires must be stored outside in the open, cover the pile with plastic tarps to help minimize the collection of water. Store the tires in a sunny location to allow evaporation of standing water and to kill heat-intolerant mosquito larvae.
- Check with the local fire officials and configure waste tire stockpiles according to their instructions. In no case should the stockpiles be larger than 25 feet in diameter and 15 feet in height. Provide fire lanes at least 25 feet wide around each stockpile. Also, construct a berm at least 12 inches high around each stockpile to contain the pyrolitic oils and other liquids resulting from fire and fire fighting.
- If stored indoors, the storage facility must comply with the National Fire Protection Association (NFPA) Standards for storage of rubber tires. Contact local fire officials for more information.

Did You Know?

- In 2012, over 308 million of scrap tires were generated in the United States.
- N.H. municipalities can charge a fee on motor vehicle registrations to be used to pay for tire disposal at local transfer stations. (RSA 149-M:18).
- In a fire, tires can melt into an oily substance. When the fire is doused with water, this oily substance can become run-off and contaminate nearby surface water.

NO!



Tires are not actively managed. The pile is too large and there is not adequate access for firefighting equipment. Tires are not covered, which allows water to accumulate.

- Keep equipment, cover material and other supplies nearby to help control a fire until the nearest fire company can arrive to extinguish the fire.
- Ship tires from transfer stations once a full load (approximately 1000 to 1500 tires) has accumulated.
- If landfilled, split, quarter or shred the tires beforehand to reduce the potential for the tires to resurface.



Tires are actively managed. The tires are stored in a closed trailer where water cannot accumulate. There is access for firefighting equipment.

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Best Management Practices for N.H. Solid Waste Facilities

Universal Wastes

Universal Waste is a category of regulated Hazardous Waste comprised of certain widely produced items and materials that are routinely discarded by households and businesses. Due to their less risky nature, they can be handled under relaxed provisions of the Hazardous Waste Rules, referred to as the Universal Waste Rules.

In New Hampshire, the list of Universal Wastes includes:

- **Antifreeze** used in internal combustion engine cooling systems, which can become contaminated with harmful gasoline constituents and heavy metals such as lead, chromium and cadmium. Refer to the Antifreeze BMP Guidance Sheet for additional information.
- Certain types of **Batteries**, including rechargeable nickel-cadmium, small sealed lead-acid, metal hydride and lead-acid vehicle batteries. Refer to the Battery BMP Guidance Sheet for additional information.
- **Cathode ray tubes (CRTs)**, which are the glass video display units found in non-flat screen color televisions and computer monitors. CRTs contain lead in the tube, neck and enclosed glass seal, which is harmful to human health if it is released to the environment. For that reason, and the fact that CRTs take up a lot of landfill capacity, they are banned from disposal in N.H. landfills and incinerators.
- **Fluorescent lamps and other Mercury-Containing Devices**, including thermometers, thermostats and fluorescent bulbs or lamps, which because they contain mercury that can build up in living tissue and cause serious health problems, cannot be disposed of in N.H. landfills or incinerators. Refer to the Mercury-Containing Devices BMP Guidance Sheet for additional information.
- Certain **Pesticides**, including recalled and suspended/canceled pesticides regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). These are not covered here. Instead, contact the N.H. Department of Agriculture, Division of Pesticide Control at (603) 271-3550 for technical assistance.

Did You Know?

- You do not need a permit to handle Universal Waste at your facility. However, you do need to follow the Universal Waste Rules.
- Some vendors and stores will collect Universal Waste from consumers. Let your residents know which ones do this in your community.



CRTs stored pending recycling.

No permits are required to collect and handle Universal Waste, but you must follow the Universal Waste Rules. A short summary of those requirements is provided in the below listed BMPs. However, if you manage Universal Waste at your solid waste facility, you should contact the NHDES to be certain you have all of the information needed to do things properly.

Best Management Practices for all Universal Wastes, regardless of type

- Notify NHDES Solid Waste Bureau that you are handling Universal Waste at your facility and update your Operating Plan.

- If you store more than 11,000 pounds of Universal Waste (other than batteries) at your facility, also submit a completed “Notification of Hazardous Waste Activity Form” to NHDES and you must comply with the additional requirements for being a “Large Quantity Universal Waste Handler.”
- Train facility operators to properly handle Universal Waste according to these BMPs and the Universal Waste Rules.
- Label containers of Universal Waste with the words “Universal Waste” or “Waste” or “Used”, followed by the specific type of waste in the container, for example “Universal Waste – Antifreeze” or “Waste Antifreeze” or “Used Antifreeze.”
- Keep track of how long the waste has been in the container by dating the container or keeping an inventory.
- Keep containers closed when not adding or removing waste.
- Ship the waste to an authorized “destination facility” or other handler within one year.
- If stored outside, cover the containers to keep precipitation out. Also, if you put the containers inside secondary containment, it will be easier to clean up spills or releases if they happen.
- Clean up spills and releases immediately, within 24 hours. Contact the local fire department or emergency response team plus NHDES if the release goes into a storm drain, sewer, onto the land or into the air, groundwater or surface water, or otherwise poses a threat to human health or the environment.
- Use a Bill-of-Lading when shipping waste and follow applicable federal Department of Transportation (DOT) requirements for shipping hazardous materials.
- Keep records documenting your Universal Waste storage, shipment, personnel training and spill response activities.

Additional BMPs for specific types of Universal Waste

- For **Antifreeze**, follow the BMPs in the Antifreeze BMP Guidance Sheet
- For **Universal Waste Batteries**, follow the applicable BMPs in the Battery BMP Guidance Sheet.
- For **Cathode Ray Tubes (CRTs)**:
 - > Do not intentionally break CRTs. Only specially equipped and trained Universal Waste Handlers are allowed to intentionally break or shred CRTs.
 - > Put broken or damaged CRTs inside a closed, leak tight container.
- For **Fluorescent lamps** and other **Mercury-Containing Devices**, follow the BMPs in the Mercury-Containing Devices BMP Guidance Sheet.



NO!

Fluorescent bulbs or lamps improperly stored. This is an accident waiting to happen!



YES!

This CRT storage area is protected from weather and properly signed. CRT units are properly contained, ready for transport.

For additional information, contact:

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 N.H. Department of Environmental Services
 29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
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solidwasteinfo@des.nh.gov



Best Management Practices for N.H. Solid Waste Facilities

Used Oil & Filters

The term “Used oil” includes motor oil, transmission fluid, differential oil, brake fluid, power-steering fluid and transaxle fluid. Used oil is classified as a Hazardous Waste in New Hampshire because it may contain contaminants, including toxic metals and chemicals, that can pollute our waterways and drinking water. Used oil that is not mixed with other substances such as gas, antifreeze or solvents is typically recyclable and can be managed under the **Used Oil Recycling Requirements**, which is a less strict section in the NHDES Hazardous Waste (HW) Rules. Otherwise, it must be handled under the full scope of the HW Rules.

Did You Know?

- Approximately 3 million gallons of used oil are generated in N.H. each year, almost half of which comes from people who change their own oil.
- It takes only one pint of oil to produce a one acre slick on lakes and ponds, which can kill plants, fish and other wildlife.

Solid waste facilities can collect used oil for recycling from residents who change the oil in their personal vehicles. This is called Do-It-Yourselfer (DIY) used oil. You can also collect used oil from businesses or generators that are not DIYs, but only if you register as a Used Oil Marketer and meet other requirements. Contact NHDES for technical assistance.

Options for recycling used oil that has not been contaminated by other substances include:

- Burning the used oil in a registered used oil furnace to heat your facility;
- Having it picked up by an authorized Used Oil Marketer (recycler); or
- Hiring a registered hazardous waste transporter to recycle it.

N.H. municipalities (as well as motor vehicle inspection stations and nonprofit organizations) are eligible to receive grants from NHDES to establish collection centers for DIY used oil and used oil filters. Contact NHDES for more information. State law (RSA 149-M:18) also authorizes towns to charge a fee on motor vehicle registrations, to be used to pay for collection and disposal of certain motor vehicle waste, including used oil.

Best Management Practices for DIY Used Oil & Filters



Tanks and drums are not in secondary containment not under a roof. Partially burying them makes leak inspections impossible, they are not properly labeled and the filler cap is open even though it is not actively being filled. Spills are evident.

- Instruct residents to bring used oil to your facility in a tightly capped container, preferably a rigid plastic clear or translucent container that allows you to inspect the contents for possible mixing with gasoline, solvents or antifreeze. Mixtures can be costly to handle if they are found to be hazardous waste.
- Do not accept open containers such as five-gallon pails.
- Allow only trained facility operators to transfer the contents of DIY jugs to permanent used oil storage.

- Store used oil in metal tanks or drums that are in good condition, on a concrete or other impervious surface and labeled “Used Oil for Recycle.”
- Place the collection tank or drum so that the fill pipe and funnel are positioned no higher than waist level to make pouring easier and to reduce the risk of spilling.
- If stored outdoors, protect from the weather and place used oil collection containers in secondary containment (a leak-proof structure that can hold at least 110% of the volume of the largest container), under a roof.
- Keep used oil collection containers closed when not actively adding or removing oil.
- Post emergency contact information and cleanup instructions in the used oil storage area. Make sure all employees know emergency spill procedures.
- Keep a spill kit in the used oil storage area, including a bucket, absorbent material (for example, kitty litter) and a scoop or shovel.
- Clean up spills right away. If more than 25 gallons are spilled, or if any amount of spilled oil is not immediately cleaned up, you must call NHDES at (603) 271-3899.
- If your facility accepts used oil filters, make sure they are fully drained and punctured or crushed. Fully drained used oil filters can be recycled as scrap metal.
- Transfer used oil to a Used Oil Marketer or Registered Hazardous Waste Transporter only.
- Use a bill-of-lading or manifest when shipping used oil and keep copies of shipment records for at least three years as proof of shipment.
- An above-ground storage tank (AST) or container of petroleum larger than 660 gallons, or multiple containers holding more than 1,320 gallons collectively, must be registered with NHDES and meet AST standards.
- Any underground storage tank (UST), even one partially underground, must be registered with NHDES and meet UST standards.



Tank is indoors, on a concrete surface and is correctly labeled. Customers leave oil jugs on top of tank for facility operator to inspect and empty into tank.



Drums are correctly labeled, have secondary containment and are on a concrete surface, covered by a roof.

For additional information, contact:
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Waste Reduction & Recycling

Approximately 1.5 million tons of municipal solid waste are generated each year in New Hampshire. Much of that waste is incinerated or landfilled right here in our state. State law establishes a goal to divert 40 percent of this waste away from landfills and incinerators through recycling and composting. Unfortunately, many recyclable materials end up in landfills or burned in incinerators.

This section provides information to help municipal officials and facility operators explore waste reduction and recycling options to decrease town solid waste budgets by reducing the quantity of waste they pay to have landfilled or incinerated. There are a number of strategies for achieving waste reduction and recycling goals, including single stream, dual stream and multiple stream programs for collecting recyclables, and SMART or PAYT programs that provide economic incentives for residents to recycle more and dispose of less trash.

Regardless of which strategy or strategies a town pursues, community recycling programs are most successful when residents understand how recycling benefits them and believe their efforts can make a difference. The basic benefits of recycling include:

- **Revenue** – Collecting recyclables can bring in revenue to help offset the cost of managing solid waste. For example, towns can get a good financial return from the collection and recycling of aluminum cans.
- **Reducing taxpayer costs for landfilling and incineration** – Recycling part of the solid waste stream results in sending less waste to landfills and incinerators. The cost for disposing of waste in a landfill or incinerator in N.H. currently ranges from \$65-\$90 per ton! Therefore, for every ton of recyclables collected, taxpayers can save \$65-\$90, plus earn revenue on top of that.
- **Conservation of energy and natural resources** – Manufacturing new products from raw materials that must be mined or pumped out of the earth can require more energy than using materials already extracted. In addition, using recycled materials to make new products helps to conserve natural resources such as timber, fossil fuels, water and minerals.
- **Preventing pollution and decreasing greenhouse gas emissions** – By conserving energy and natural resources through recycling, we help to prevent pollution and decrease harmful greenhouse gas emissions.

When residents understand that recycling can save them money now and help sustain the environment for future generations, you will be well on your way toward establishing a successful program. If the program also provides data and information showing the actual results of the program, you will be able to show that their participation does make a difference.

For residents to understand the benefits of recycling, it helps to have them understand the process. Most of us are familiar with the 3-arrow recycling symbol, although we may not understand its full meaning, i.e., each of the three arrows represent the three different phases of the recycling process.

Arrow 1 – Collection and Processing

There are four primary collection methods: curbside, drop-off centers, buy-back centers, and deposit/refund programs.

Recyclables (e.g., glass, paper, aluminum) are collected and sent to a materials recovery facility (MRF) to be sorted and returned as feedstock to produce marketable commodities. Processed recyclables are bought and sold just like any other product or good, and prices for the materials change with the market. Overall, the price for the recyclables is less expensive than purchasing raw materials for the manufacture of new products.



Arrow 2 – Manufacturing

Once cleaned and separated, the recyclables are manufactured into new products with total or partial recycled content. For example, paper is one of the primary products with recycled content. Recycled materials are used in many other applications, such as recovered glass in roadway asphalt (glassphalt) and new bottles, or recovered plastic in carpeting, park benches, patios, decks, and pedestrian bridges.

Arrow 3 – Purchasing

Purchasing recycled products completes the recycling loop. By “buying recycled,” consumers, including government, business, and industry each play an important role in making the recycling process a success for us and the environment. Without a demand for recycled products in the market place, recycling strategies suffer.



Making Recycling Work

Conventional recycling programs have generally relied on the “multi-stream” collection method that requires recyclable materials to be collected and stored separately by type, for example, glass, plastic, paper, aluminum and cardboard. However, other methods are emerging in the market place, providing options for handling recyclables that may be easier for residents to implement and therefore provide greater acceptance and participation. Those options include:

- **Dual stream** collection systems, which allows paper waste to be separated and all other recyclable items (plastic, glass, aluminum, etc.) to be co-mingled. Using this system, residents need two containers for collecting recyclables.
- **Single stream** collection systems, which allow all types of

recyclables, including paper, to be combined in one collection container. Using this system, residents need only one container for collecting recyclables.

With each of these newer methods, there is a cost for the vendor to separate the different materials. However, the ease of collection results in more diversion of waste, making the programs cost effective. Regardless of how recyclables are collected, the key components to any good recycling program include:

- **Education:** Educate your residents about what is accepted/not accepted at your facility and how to keep the items clean and marketable. Provide information about alternative options for managing materials that are not accepted. Distribute recycling information brochures with other town mailings (for example, insert a brochure with tax bills) or hand them out with “transfer station stickers” or vehicle registrations or at voting locations. Put the information on the Town’s website. Keep the information updated and easy to understand. Have the local newspaper periodically print recycling information to help residents remember how your system works. Set goals to give residents a target. “Lead by example” by putting recycling bins at all town owned facilities, schools and events.
- **Ease:** Make it easy and convenient for residents to recycle. At drop-off facilities, place recycling bins in locations where they are easy for residents to reach. Design the drop-off area to avoid traffic conflicts and other frustrations and hazards. In communities with curbside pick-up, provide “right-sized” containers with enough capacity to hold all of the recyclable materials the average household is expected to produce.
- **Signage:** Post clear, easy-to-read signs on collection containers and indicate types of materials accepted and types of materials not accepted to make it easy for residents to place their recyclables into the correct container.
- **Collection/Storage:** Collect and store recyclables according to vendor requirements, to preserve their market value. For instance, some vendors will ask you to store waste paper indoors so that it is protected from the weather.

- **Keep Current:** Periodically re-evaluate what you accept and how you manage it to make sure you are being efficient and getting the best deal. Take into account your available collection, storage and marketing options.
- **Recordkeeping:** Keep records that track the amount and final destination of recyclables, as well as revenue and costs. This will make it easier to do end of year reporting, both for the town and NHDES. Plus, you can use the information to educate residents about how well they are doing with their waste reduction and recycling efforts, and encourage them to achieve goals by recycling even more.

Some N.H. communities have made recycling mandatory for their residents. To help enforce recycling ordinances, some municipalities require residents to use clear bags that allow facility operators to easily inspect the contents. This is a good way to make sure that residents are not throwing recyclables in with the non-recyclable trash.

Partnerships with other Towns

Many rural communities do not generate large enough volumes of recyclables to effectively market their materials independently. Some of these communities come together to form partnerships and combine their efforts to recycle. A partnership facility can collect larger quantities of recyclables from several surrounding communities and transfer them to the MRF or reprocessor. The larger volume can lower transportation costs, and may yield more revenue for the material. Partnerships can also help rural recycling programs to expand services. By sharing the costs, the facility can collect more types of recyclables and encourage greater community participation. Greater participation means more revenue and less disposal costs at landfills and incinerators.



Save Money and Reduce Trash (SMART) or Pay-As-You-Throw (PAYT) Programs

Save Money And Reduce Trash or “SMART” (also referred to as Pay-As-You-Throw or “PAYT”) programs are a way to provide direct economic incentives for residents to recycle more and dispose of less trash, resulting in taxpayer cost savings. In fact, SMART programs are proving to be one of the most successful systems to increase recycling. For that reason, in the section that follows, we have provided a detailed

explanation of how SMART works, along with some basic tools to evaluate whether this type of program might work in your community.

Full Cost Accounting

In order to determine whether SMART – or any other recycling program, for that matter – can help save money in your community, you need to know your actual costs for managing solid waste. Often, towns do not actually know how much is being spent for solid waste management in all areas of the town budget. As above, in this section, you will find information about Full Cost Accounting. Full Cost Accounting provides a systematic approach to reporting the actual costs of solid waste management, i.e., past and future outlays of expenditures, overhead costs and operating costs. With knowledge of your actual costs, you can begin to evaluate where actual cost savings can be obtained and the best options for doing so.

The information presented in this section can help towns and facility operators obtain a better understanding of the many different approaches to setting up waste reduction and recycling programs. With that understanding, NHDES encourages town officials and facility operators to establish recycling programs where they do not yet exist, and improve already existing programs. For additional guidance, contact NHDES.

SMART Programs

Some communities in N.H. have established the Save Money And Reduce Trash (SMART) recycling program (also known as Pay As You Throw or PAYT), which charges residents for the cost of collecting municipal solid waste – ordinarily called household trash – based on the amount they throw away. This creates a direct economic incentive to recycle more and to generate less waste and less out of pocket costs.

Traditionally, N.H. residents have paid for waste collection through property taxes or a fixed fee, regardless of how much or how little trash they individually generate. SMART breaks with tradition by treating trash services just like electricity, gas and other utilities. With SMART, households pay a variable rate depending on the amount of service they use.

Most communities with SMART programs charge residents a fee (generally \$1-2 per bag) for each bag of waste they generate. In a small number of communities, residents are billed based on the weight of their trash. Either way, these programs are simple and equitable. The less individuals throw away, the less they pay.

Communities with programs in place have reported significant increases in recycling and reductions in waste, due primarily to the waste reduction incentive created by SMART. SMART programs offer a good approach to solid waste management because they encompass three interrelated concepts that are key to successful community recycling and waste reduction programs:

- 1. Environmental Sustainability** – Increased recycling and waste reduction results in conservation of natural resources, energy and landfill capacity, which protects and benefits environmental quality. In addition, greenhouse gas emissions associated with the manufacture, distribution, use and subsequent disposal of products are reduced as a result of the increased recycling and waste reduction SMART encourages. In this way, SMART helps slow the buildup of greenhouse gases in Earth's atmosphere, which lead to global climate change.
- 2. Economic Sustainability** – SMART is an effective tool for communities struggling to cope with increasing municipal solid waste management expenses. Well-designed programs generate the revenues communities need to cover their solid waste costs and give residents the opportunity to take control of their trash bills.
- 3. Equity** – One of the most important advantages of a variable-rate program may be its inherent fairness. When the cost of managing trash is hidden in taxes or charged at a flat rate, residents who recycle and prevent waste subsidize their neighbors' wastefulness. Under SMART, residents pay only for what they throw away.

NHDES has developed a brochure that explains in plain language what a SMART program is about. It is a handy reference and a tool that can be handed out to residents in communities that are considering a SMART program. You can download the GET SMART brochure from the NHDES website at www.des.nh.gov. For additional assistance, contact NHDES at (603) 271-2925 or solidwasteinfo@des.nh.gov.

**Get
SMART!**



**Save-Money-And-
Reduce-Trash**



29 Hazen Drive, Concord, NH 03301
des.nh.gov (603) 271-2975

Full Cost Accounting

Information cited from U.S. Environmental Protection Agency, Region I

<http://www.epa.gov/waste/conserve/tools/fca/benefits.htm>

Basic Information

Full Cost Accounting (FCA) is a systematic approach for identifying, summing and reporting the actual costs of solid waste management. It takes into account past and future outlays, overhead (oversight and support services) costs and operating costs.

FCA can be a new way of thinking about Municipal Solid Waste (MSW) management for some communities. For others, it can be simply an extension of current management practices. Understanding the benefits of FCA can help ease its implementation in your community.

Definition of FCA

Historically, local governments have tended to use cash flow accounting (also called general fund accounting) to track the flow of current financial resources (dollars). This accounting system records outlays when cash is actually paid for goods and services. It helps government agencies account for the expenditure of tax dollars and other public funds.

While FCA is consistent with generally [accepted accounting principles](#), it serves different goals and audiences than traditional government accounting reports. FCA is not the same as cash flow or general fund accounting, as it focuses on the flow of economic resources (assets) and recognizes costs as resources are used or committed, regardless of when money is spent. Because solid waste management can entail significant expenditures both before and after the operating life of management facilities, focusing solely on the use of current financial resources misrepresents the costs of MSW management and can be misleading.

FCA focuses on three major [types of costs](#) that are relatively easy to determine. These are up-front costs, operating costs and back-end costs. Other categories of costs that can be included in the scope of FCA, but require special consideration are remediation costs at inactive sites, contingent costs, environmental costs and social costs.

Benefits of FCA

FCA can help you:

[Identify the cost of MSW management](#)

When municipalities handle MSW services through general tax funds, the costs of MSW management can get lost among other expenditures. With FCA, managers can have more control over MSW costs because they know what the costs are.

[See through the peaks and valleys in MSW cash expenditures](#)

Using techniques such as depreciation and amortization, FCA produces a more accurate picture of the costs of MSW programs, without the distortions that can result from focusing solely on a given year's cash expenditures.

[Explain MSW costs to citizens more clearly](#)

FCA helps you collect and compile the information needed to explain to citizens what solid waste management actually costs. Although some people might think that solid waste management is free (because they are not billed specifically for MSW services), others might overestimate its cost. FCA can result in "bottom line" numbers that speak directly to residents. In addition, public officials can use FCA results to respond to specific public concerns.

Adopt a businesslike approach to MSW management

By focusing attention on costs, FCA fosters a more businesslike approach to MSW management. Consumers of goods and services increasingly expect value, which means an appropriate balance between quality and cost of service. FCA can help identify opportunities for streamlining services, eliminating inefficiencies and facilitating cost-saving efforts through informed planning and decision-making.

Develop a stronger position in negotiating with vendors

When considering privatization of MSW services, solid waste managers can use FCA to learn what it costs (or would cost) to do the work. As a result, FCA better positions public agencies for negotiations and decision-making. FCA also can help communities with publicly run operations determine whether their costs are competitive with the private sector.

Evaluate the appropriate mix of MSW services

FCA gives managers the ability to evaluate the cost of each element of their solid waste system, such as recycling, composting, waste-to-energy and landfilling. FCA can help managers avoid common mistakes in thinking about solid waste management, notably the error of treating avoided costs as revenues.

Fine-tune MSW programs

As more communities use FCA and report the results, managers might be able to “benchmark” their operations to similar communities or norms. This comparison can suggest options for “re-engineering” current operations. Furthermore, when cities, counties and towns know what it costs to manage MSW independently, they can better identify any savings that might come from working together.

Five FCA Principles

FCA embodies several key concepts that distinguish it from standard accounting techniques. The following list highlights the five basic tenets of FCA.

1. Accounting for costs rather than outlays

An outlay is an expenditure of cash to acquire or use a resource. A cost is the dollar value of the resource as it is used. For example, an outlay is made when a collection truck is purchased, but the cost of the truck is incurred over its active life (e.g., 10 years). The cost of the truck must be allocated over a period of time because every year of its use contributes to the deterioration of the truck’s value.

2. Accounting for hidden costs

With FCA, the value of goods and services is reflected as a cost even if no cash outlay is involved. One community might receive a grant from a state, for example, to purchase solid waste equipment. This equipment has value, even though the community did not pay for it in cash. The equipment, therefore, should be valued in an FCA analysis.

3. Accounting for overhead and indirect costs to individual solid waste services

FCA accounts for all overhead and indirect costs, including those that are shared with other public agencies. Overhead and indirect costs might include legal services, administrative support, data processing, billing and purchasing.

4. Accounting for past and future outlays

Past and future cash outlays often do not appear on annual budgets under cash accounting systems. Past (or upfront) costs are initial investments necessary to implement MSW services such as the acquisition of vehicles, equipment or facilities. Future (or back-end) outlays are costs incurred to complete MSW operations such as landfill closure and postclosure care and post-employment health and retirement benefits.

5. Accounting for costs according to activities or paths

Integrated solid waste management systems consist of a variety of MSW activities and paths.

Activities are the building blocks of the system, which may include waste collection, operation of transfer stations, transport to waste management facilities, waste processing and disposal,

and sale of byproducts. **Paths** are the directions that MSW follows in the course of integrated solid waste management (i.e., the point of generation through processing and ultimate disposition) and include recycling, composting, waste-to-energy and land disposal. The cost of some activities is shared between paths. Understanding the costs of MSW activities is often necessary for compiling the costs of the entire solid waste system, and helps you evaluate whether to provide a service yourself or contract out for it. However, in considering changes that affect how much MSW ends up being recycled, composted, converted to energy or landfilled, you should focus the costs of the different paths. Understanding the full costs of each MSW path is an essential first step in discussing whether to shift the flows of MSW one way or another.

FCA Frequent Questions

What is FCA?

1. *Is there a standard definition of FCA?*

Yes. FCA is a method of accounting for all monetary costs of resources used or committed for MSW services. FCA goes beyond the limits of cash flow accounting, which is often used by local governments, by considering direct and indirect (overhead) operating costs of MSW services as well as upfront (past) and back-end (future) expenses.

2. *How does FCA differ from what local governments already do?*

Many cities currently use budget-based, or cash-flow, accounting – they report their current costs and figure their expenditures in terms of their current budget. The biggest difference between budget-based accounting and FCA is that FCA recognizes costs over the life of a program or service. It also includes up-front, overhead and future costs, which is rarely considered under budget-based accounting.

Scope of FCA

3. *What are the specific types of costs that FCA addresses?*

FCA addresses up-front costs, such as public education and outreach, land acquisition, permitting and facility construction and modification. It also addresses operating costs such as operation and maintenance, capital costs, interest payments and “hidden” costs. Finally, it includes back-end costs, such as site closure, building and equipment decommissioning, postclosure care, and retirement and health benefits for current employees. The five basic principles of FCA explain the types of costs accounted for by FCA.

4. *Does FCA take into account all aspects of integrated solid waste management?*

Yes. FCA identifies all the activities communities undertake in their solid waste programs including recycling and composting. FCA helps managers understand the costs of different strategies for managing MSW. It also helps managers determine how they can deliver an integrated set of components in the most efficient manner possible.

5. *Does FCA take into account the environmental and social costs of MSW management?*

No. FCA does not account for these types of costs. Noise, for example, is a type of social cost associated with solid waste management. While a community might suffer increased traffic noise from trucks hauling waste or recyclables, this social cost is not easily measurable. FCA also does not include the costs of environmental impacts, such as air emissions associated with methane gas that might be coming from a landfill. While these costs are not quantifiable through FCA, they are still important considerations that communities might examine when making their decisions.

6. *Will the use of FCA discourage communities from considering the environment when they consider solid waste management options?*

No. While FCA focuses on tangible, monetary costs of solid waste management, communities can and should weigh environmental and social costs in their decision-making. Siting a new landfill, for example, might be the least expensive option for managing solid waste, but a community might decide not to do it for environmental reasons and might start a recycling program instead.

FCA encourages communities to see each solid waste management option in the context of the solid waste system as a whole. FCA can reveal how changes in one program (e.g., recycling) affect costs in other programs, such as collection, processing and disposal.

Getting Started With FCA

7. *Why do communities begin using FCA?*

There are many reasons why communities begin using FCA. For example:

- To explain more clearly MSW costs to citizens.
- To implement law in some states.
- To help local governments run solid waste program operations more like independent businesses.
- To determine the cost of alternative waste management options.
- To determine potential areas of cost savings.

8. *Is there only one way to conduct FCA?*

No. It is important for each community to consider the FCA process in the context of its specific waste management goals and objectives. Often, there are several ways to arrive at the correct number.

Implementing FCA

9. *Is it possible to implement FCA in the absence of a general ledger accounting system?*

Yes. FCA can be implemented for any solid waste management system and any accounting system. While detailed accounting data, such as that provided by a general ledger system, can be useful, it is not essential. Where accounting data are limited or difficult to obtain, however, more effort might be involved in implementing FCA.

10. *How long does it take to implement FCA?*

Generally, it may take about 2 to 3 years to fully implement FCA and get all employees comfortable with it.

11. *What is the greatest difficulty in implementing FCA?*

One major FCA challenge communities often face is getting other municipal divisions, such as fleet maintenance or the legal or personnel departments, to identify the costs they incur due to solid waste management. Another difficulty can be getting the board or city council to understand the long-range planning value of FCA.

Another problem is that FCA gives different figures from traditional general accounting or budget-based accounting; MSW managers must be prepared to reconcile the two different sets of figures to sell the program.

12. *What is the ideal minimum or maximum community size for FCA?*

FCA is not size dependent; it is a common-sense approach to managing money and knowing where the money is being used.

Benefits and Uses of FCA

13. *What types of benefits have communities realized due to FCA?*

Communities have realized the following benefits from using FCA.

- Rates or tipping fees are set correctly and fairly.
- Budget requests are defended with clear data.
- Privatization questions are answered based on complete cost data.
- More services are delivered for less cost.

14. *Will using FCA save money?*

It depends. Ultimately, the more a department knows about what it takes to deliver a unit of service (e.g., recycling cost per ton), the more effectively it can manage that unit cost. FCA points out where departments can look for cost reductions, and where they might need to change service delivery.

FCA also gives communities the ability to more evenly match the rate they are charging for different services (e.g., residential versus commercial) to the actual costs of those services. Through FCA, Columbia found that the rate charged for one element of its refuse service “subsidized” the cost for some of the others. During rate adjustments, Columbia evened out the rates for all services. FCA does not automatically save money and it cannot guarantee that cost savings are returned to the customer.

15. *Will the use of FCA promote or enhance the regionalization of solid waste facilities?*

No. The use of an FCA approach will not, in and of itself, determine whether any particular regionalization proposal is cost-effective. That will depend on the proposal as well as the characteristics of the region. Use of FCA will help ensure that regionalization proposals are analyzed properly.

FCA and Rate Setting

16. *Can FCA help in setting up unit-based fees (“pay-as-you-throw”)?*

Yes. FCA can be a useful tool in developing fair and equitable service fees. It enables communities implementing a pay-as-you-throw program to evaluate the system costs and appropriate fees.

Seekonk, Massachusetts, for example, used FCA to understand the base costs for its solid waste system. With that information, the town was able to set its flat and variable fees for its pay-as-you-throw program. While FCA doesn’t provide an answer in terms of what a community should charge on a variable-rate basis, it can provide the baseline information to determine what the base costs are.

FCA and Recycling

17. *Can FCA help make recycling programs profitable?*

There are many factors that affect the costs and revenues of recycling programs. FCA can identify cost drivers which may lead to less costly recycling programs. One of the challenges faced by solid waste managers is to find least-cost management options and, if the community has a recycling component, to examine how to make the system most efficient.

18. *Does FCA help to support recycling? How?*

No. FCA does not champion recycling or any other waste management option. It does, however, provide an important tool for analyzing and improving system performance and cost-effectiveness. A community can use FCA to determine the least cost way to provide recycling services.

Privatization

19. *Has FCA been effective in addressing privatization questions?*

Yes. When Greensboro, North Carolina, implemented its recycling program, it was required to compete with the private sector. To do that, the city had to evaluate the program and decide whether the private sector could meet Greensboro's standards and costs. Now the city is running the service because it out-performed the private sector.

20. *Can FCA guarantee that a certain service won't be privatized?*

No. FCA, in and of itself, cannot keep a service from being privatized. FCA can show, however, whether or not it is more cost-effective to privatize.

21. *What is the relevance of FCA for communities that contract out all of their solid waste management services?*

Unless a community is entirely out of the business of solid waste management, local government will continue to have costs associated with the contract. The city might have monitoring costs, various overhead costs, and education costs, depending on the role the government actually plays. FCA can help communities understand and track all of these costs.

Cost of FCA

22. *How is the cost of FCA best justified to the public?*

FCA is an approach, not a fixed product. It is possible to tailor a cost-effective FCA system to meet the needs of most, if not all, solid waste management systems. Assuming FCA has been implemented in an appropriate manner, the cost can best be justified to the public by publicizing the uses and benefits that solid waste managers make of FCA, focusing on uses of particular interest to the public. Stress how FCA allows solid waste managers to operate their programs as an efficient streamlined business, carefully accounting for all costs; FCA is the best way to get a handle on solid waste related issues, such as privatization, and getting these issues "right" can save the public money; and FCA might have up-front costs (e.g., data development, software installation and consulting assistance), but these are investments in a management information capability that can save money over the long run. See also [Types of Costs](#).

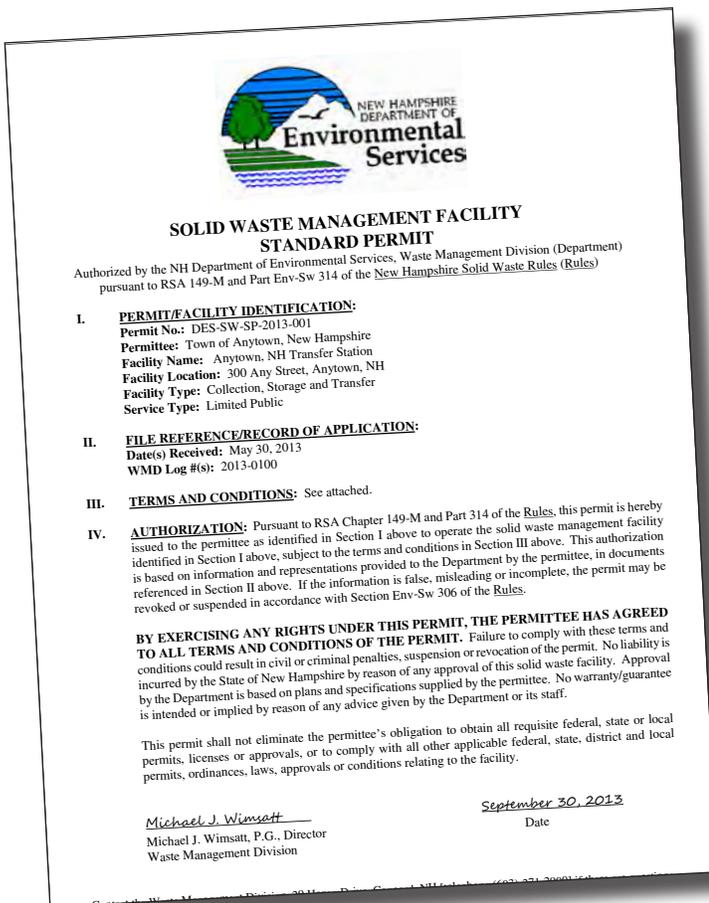
Introduction to Permit Information

This section is designed to help you keep track of and understand your facility's Solid Waste Facility Permit issued by NHDES under the authority of RSA 149-M (N.H. Solid Waste Management Act) and the N.H. Administrative Rules for Solid Waste Management (now codified as Env-Sw 100 – Env-Sw 2000, and previously codified under the subtitles “Env-Wm” and “He-P”).

To make good use of this manual, you should place a copy of your permit and all approved modifications in this section for reference when needed. Contact NHDES if you do not have a copy of your permit.

Also, place a copy of your facility's Operating Plan and Closure Plan in this section. If you can not find these documents and your permit title does not include the phrase “Permit by Notification,” please contact NHDES to obtain copies. In some cases, the Operating and Closure Plans may not exist or may be very outdated, in which case the permittee should prepare new or updated ones. In this section of the manual you will find some tools to help you do this, including:

- Introduction to Operating Plans – basic things you need to know.
- Operating Plan Content Checklist.
- Introduction to Closure Plans – basic things you need to know.
- Closure Plan Content Checklist.



Note: If the title of your permit includes the phrase “Permit-by-Notification,” you are not required to submit to NHDES for approval. For all other permitted facilities, you are required to submit both plans for review and approval by the NHDES.

In addition to the above, you may find that certain information in your permit is outdated, including citations to the NHDES Solid Waste Rules, especially if the permit was issued in the 1980's or 1990's. Because Solid Waste Facility Permits typically do not expire, their meaning can become confusing when cited rules have been readopted, amended and recodified since the date the permit was issued. If you find that your permit contains citations to “old” Solid Waste Rules (using the subtitles “Env-Wm” or “He-P”) and you want the permit to be updated to reference the current rules, you can request NHDES to reissue the permit under the provisions of Env-Sw 307.11. Contact the compliance inspector assigned to your facility for more information.

Copies of RSA 149-M and the NHDES Solid Waste Rules are available online through the NHDES website at www.des.nh.gov. If you do not have internet access, contact the NHDES Public

Information and Permitting Unit at (603) 271-8876 to obtain copies.

Introduction to Operating Plans – *basic things you need to know*

Who needs an Operating Plan?

All permitted solid waste facilities in New Hampshire are required to have an up-to-date Operating Plan, describing in plain language how to operate the facility on a day-to-day basis in compliance with the terms and conditions of the permit, the Solid Waste Rules and the Law.

What has to be in an Operating Plan?

Operating Plans must provide enough information and detail to allow trained and certified operators to properly operate the facility without further explanation or guidance. In other words, by reading the plan, a person with general solid waste knowledge should be able to clearly understand how to do his/her job. Operating Plans must be organized according to the eight sections shown below. Each section must contain certain specified information, as shown on the detailed checklist provided.

- Section 1: Facility Identification
- Section 2: Authorized and Prohibited Waste
- Section 3: Routine Operating Plan
- Section 4: Residual Waste Management Plan
- Section 5: Facility Maintenance, Inspection, and Monitoring Plan
- Section 6: Contingency Plan
- Section 7: Employee Training Plan
- Section 8: Recordkeeping and Reporting

When is an Operating Plan required?

Typically, Operating Plans must be prepared when applying for a permit. When facility operations change, the permittee must update the Operating Plan to reflect the change and in some cases obtain NHDES approval in the form of a permit modification.

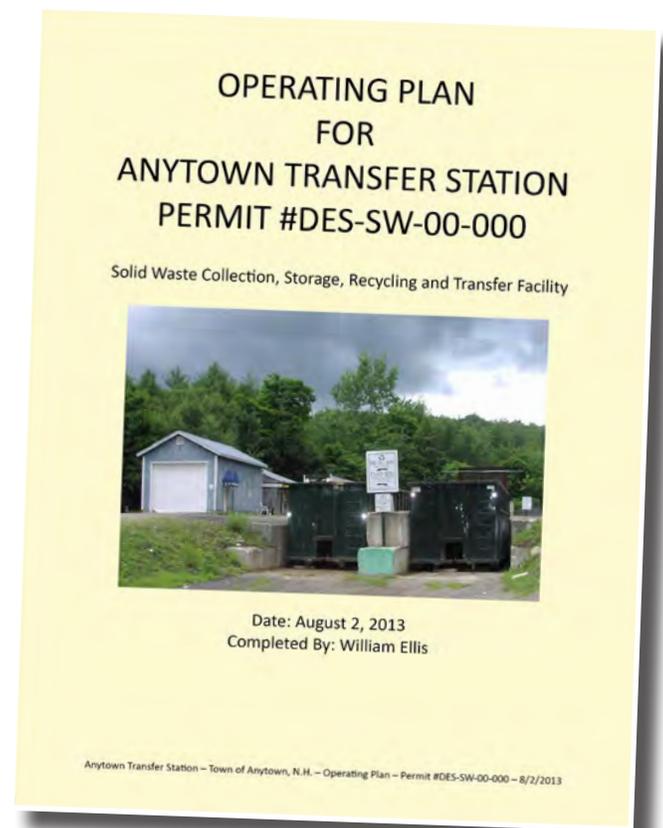
Facilities that do not have an Operating Plan must prepare one. If the permit does not have the phrase “Permit-by-Notification” in its title, the plan must be submitted to NHDES for approval with an application for permit modification.

Where are Operating Plans kept?

A copy of a facility’s approved Operating Plan must be kept at the facility where it can be used by facility operators and shown to NHDES inspectors on request. NHDES also keeps copies of the Operating Plans it has approved, for use in preparing for facility compliance inspections and other purposes. Remember, an approved Operating Plan is part of the permit and is enforceable. Therefore, you should keep it up-to-date.

How do I go about preparing or updating an Operating Plan?

Using the checklist provided, you can write or update your own Operating Plan, or hire a consultant to do it for you. Compile the Operating Plan in a loose leaf binder with each page showing the date of preparation or revision and the facility name, location and permit number. This will make it easy to keep the plan up-to-date, by adding or replacing pages as needed. If your permit has the phrase “Permit-by-



Notification” in its title, you are not required to submit it to NHDES for approval, but you are required to keep it at the facility and show it to inspectors when requested. If your permit does NOT have the phrase “Permit-by-Notification” in its title, submit the plan to NHDES for approval with application for a permit or permit modification. For more information about applications, please contact the NHDES Solid Waste Management Bureau at 603-271-2925 or solidwasteinfo@des.nh.gov.

Operating Plan Content Checklist

Use the checklist below to prepare and update your solid waste facility Operating Plan. Compile the Operating Plan in a loose leaf binder with each page showing the date of preparation or revision and the facility name, location and permit number. Write the plan so that it contains enough information and detail to allow certified operators to operate the facility in compliance with the permit and applicable rules and law, without further explanation and guidance. For additional guidance, refer to Part Env-Sw 1105 of the NHDES Solid Waste Rules. Copies of the rules are available through the NHDES website at www.des.nh.gov and by contacting NHDES at 603-271-8876.

- Section 1 – Facility Identification** must identify:
 - The facility name, mailing address, location by street address and municipality, and permit number.
 - The type of the facility.
 - The capacity of the facility.
 - The facility service type.
 - The facility service area.
 - The name, address and telephone number of the permittee, property owner, and operator.

- Section 2 – Authorized and Prohibited Waste** must provide a list of:
 - The specific types of waste to be received by the facility.
 - The specific types of waste to be prohibited by the facility.

- Section 3 – Routine Operations Plan** must provide a detailed description of how the daily operations of the facility will be conducted to assure that the facility will be operated in accordance with the Solid Waste Rules, including a description of:
 - Hours of operations.
 - Facility access control and on-site traffic patterns.
 - Waste acceptance and rejection procedures, including unloading, sorting and inspection procedures.
 - The procedure by which the quantity and source(s) of all wastes received by the facility will be determined and recorded.
 - The procedure by which the quantity and destination of all outgoing waste and certified waste-derived products will be determined and recorded.
 - The storage time and capacity limits for all wastes received by the facility and the procedures by which the limits will be monitored to assure compliance.
 - All collection, storage, transfer, processing, treatment and disposal methods and procedures employed by the facility for managing waste following receipt.

- Section 4 – Residual Waste Management Plan** must provide a detailed description of how all residual waste, if any, will be managed by the facility. Include:
 - The type and estimated quantity of all residual wastes to be generated by the facility.
 - How such wastes will be managed at the facility prior to removal.
 - Information to demonstrate how the provisions of Env-Sw 1105.10 will be met.
 - Quality assurance/quality control provisions, to assure that the wastes to be transferred are acceptable to the receiving facility.

- Section 5 – Facility Maintenance, Inspection and Monitoring Plan** must identify all routine maintenance, inspection and monitoring requirements necessary to assure the integrity of facility operations, including a description of the measures to be undertaken to monitor and inhibit:
 - Spontaneous combustion.
 - Other fire hazards.
 - Vector production.
 - Generation of methane, hazardous and/or explosive gases.
 - Odors.
 - Dust.
 - Windblown litter.
 - Leachate.
 - Spills.
 - Other potential or anticipated hazards or nuisances.

- Section 6 – Contingency Plan** must:
 - Identify all reasonably foreseeable emergencies, such as fire, explosion, operator injury, and the like, based on the type of facility and wastes being handled.
 - Describe the appropriate response of facility personnel for each emergency identified above.
 - Include identification of and telephone numbers for all local and state officials to be notified in the event of an emergency.

- Section 7 – Employee Training Program** must provide a description of employee training program(s).

- Section 8 – Record Keeping and Reporting** must provide a description of record keeping procedures as necessary to comply with Env-Sw 1105.06 and Env-Sw 1105.07.

Introduction to Closure Plans – *basic things you need to know*

Who needs a Closure Plan?

All permitted solid waste facilities in New Hampshire are required to have an up-to-date Closure Plan, describing in plain language how the facility will be closed in compliance with the terms and conditions of the permit, the Solid Waste Rules, and the law.

What has to be in a Closure Plan?

Closure Plans must provide enough information and detail to allow a third party to implement and complete all tasks needed to close the facility, without further explanation or guidance. The plan must also provide a cost estimate for closing the facility. Closure Plans must be organized according to the nine sections shown below. Each section must contain certain specified information, as shown in the detailed checklist provided.

- Section 1: Facility Identification
- Section 2: Closure Schedule
- Section 3: Waste Identification
- Section 4: Notifications
- Section 5: Closure Requirements
- Section 6: Post-Closure requirements
- Section 7: Recordkeeping and Reporting
- Section 8: Other Permits
- Section 9: Closure Cost Estimate

When is a Closure Plan required?

Typically, Closure Plans must be prepared when first applying for a permit. Depending on the type of permit, the draft Closure Plan may be required as part of the permit application. Facilities seeking a “permit-by-notification” do not have to submit the plan with the permit application, but they must certify in the application that a conforming Closure Plan has been prepared and will be available at the facility for inspection on request. During the operating life of a facility, the Closure Plan must be periodically updated to reflect changes in operation, technology, and regulatory requirements. If the facility’s permit does not have the phrase “Permit-by-Notification” in its title, the updated Closure Plan must be submitted to NHDES for approval as part of an application for permit modification.

Existing facilities that do not have a Closure Plan must prepare one. Again, if the permit does not have the phrase “Permit-by-Notification” in its title, the plan must be submitted to NHDES for approval with an application for permit modification.

Where are Closure Plans kept?

A copy of a facility’s Closure Plan must be kept at the facility and shown to NHDES inspectors on request. NHDES also keeps copies of the Closure Plans it has approved, for use in preparing for facility compliance inspections and other purposes.

How do I go about preparing or updating a Closure Plan?

Using the checklist provided, you can write or update your own Closure Plan, or hire a consultant to do it for you. Compile the Closure Plan in a loose leaf binder with each page showing the date of preparation or revision and the facility name, location and permit number. This will make it easy to keep the plan up to date, by adding or replacing pages as needed. If your permit has the phrase “Permit-by-Notification” in the title, you are not required to submit it to NHDES for approval, but you are required to keep it at the facility and show it to inspectors when requested. If your permit does not have the phrase “Permit-by-Notification” in its title, submit the plan to NHDES for approval with your application for a permit or permit modification. For more information about applications, please contact the NHDES Solid Waste Management Bureau at 603-271-2925 or solidwasteinfo@des.nh.gov.

Closure Plan Content Checklist

Use the checklist below to prepare and update your solid waste facility Closure Plan. Compile the Closure Plan in a loose leaf binder with each page showing the date of preparation or revision and the facility name, location and permit number. Write the plan so that it contains enough information and detail to allow a third party to implement and complete all tasks necessary to close the facility in compliance with the permit and applicable rules and law, without further explanation and guidance. For additional guidance, refer to Part Env-Sw 1106 of the NHDES Solid Waste Rules. Copies of the rules are available through the NHDES website at www.des.nh.gov and by contacting NHDES at 603-271-8876.

- Section 1 – Facility Identification** must provide the facility name, mailing address, location by street and municipality and permit number.
- Section 2 – Closure Schedule** must provide the anticipated date of closure and a closure schedule that sets forth each discrete activity that will be undertaken to complete facility closure, the order in which the activities will be undertaken and the estimated length of time required to complete each activity.
- Section 3 – Waste Identification** must identify all types of waste received or intended to be received by the facility during its active life.
- Section 4 – Notifications** must provide a description of how notice will be given by the permittee to facility users prior to terminating receipt of waste.
- Section 5 – Closure Requirements** must provide:
 - A list of each major closure work task required to implement and complete closure of the facility.
 - A description of the procedures for completing all required closure work tasks.
- Section 6 – Post-Closure Requirements** must identify and describe all required post-closure testing, inspection, maintenance and monitoring that will be performed at the facility pursuant to the provisions of the Solid Waste Rules and the permit.
- Section 7 – Record Keeping and Reporting** must identify and describe:
 - All record keeping and reporting obligations required of the facility following completion of the closure work identified in Section 5 of the Closure Plan.
 - Locations and provisions for storing facility records, including the operating records, following facility closure.
- Section 8 – Other Permits** must:
 - Identify all other local, state and federal permits and approvals required to implement facility closure, including the implementation of all post-closure monitoring and maintenance requirements.
 - Identify the status of each required permit and approval.
- Section 9 – Closure Cost Estimate** must provide a closure cost estimate prepared in accordance with the criteria in Env-Sw 1403.02. Closure cost estimation forms are available from the NHDES Solid Waste Management Bureau at (603) 271-2925.

Introduction to Facility Inspections

NHDES periodically inspects facilities to assure they are operating in compliance with their permit and applicable rules and statutes. Inspections are also an opportunity for NHDES to provide technical assistance to facility operators who may be looking for help with particular problems.

Inspect your own facility regularly

NHDES considers facility operators to be the agency's partners in making sure solid waste is properly managed in New Hampshire to protect environmental quality, public health and safety. Therefore, facility operators should regularly perform "self-inspections" similar to an NHDES inspection to identify and correct problems before they become serious. As an example, a blank copy of the NHDES inspection report form for municipal transfer stations is provided in this section. Inspection forms for other types of facilities are available on the NHDES website (www.des.nh.gov) or by request. Use these NHDES forms, or make versions of these forms that better suit your needs, to conduct your own inspections. Use this section of the manual to keep master copies of your self-inspection forms, a facility inspection log or other related information. Keep copies of your completed inspection reports as part of the facility's operating record.



NHDES inspector conducts a mock inspection with solid waste facility operators, to explain how NHDES conducts its inspections.

What to expect during an NHDES inspection

NHDES inspections are typically unannounced. When inspectors arrive at your facility, they will show identification, request to speak with the owner or operator in responsible charge, and explain their purpose for visiting the facility. They will also explain how they intend to proceed with the inspection. Part of the inspection will involve a review of facility records and other paperwork, and part of the inspection will involve walking throughout the facility and asking questions to determine whether operations conform to the permit and applicable rules and statutes. Also, inspectors may take photographs as needed.

Following completion of the record review and walk through, inspectors will go over the inspection results before leaving the facility. They will identify any conditions that do not appear to be in compliance or are in need of improvement. Depending on the deficiency, they may also provide guidance documents or other information to help with correcting the deficiency. In addition, they will also try to answer any questions you have.

After the inspectors leave your facility, they will send you a formal inspection report, with written instructions and a time frame for correcting problems, if any.

Preparing for Inspection

NHDES inspections should not be a problem if you take steps to stay on top of things at your facility. To prepare for an inspection and assure good results:

- Review the form that NHDES uses to inspect your facility to learn what NHDES inspectors will be looking for when they come to your facility.
- Conduct your own inspections on a regular basis – periodic inspections are required by rule but weekly self-inspections are recommended.
- Document those inspections in writing, using a copy of the NHDES inspection form or an inspection checklist of your own.
- Correct problems when you find them.
- If you keep finding the same problems, find the source of the problem and provide more worker training and/or instruction to drop-off customers, as needed.
- Contact NHDES for technical assistance when you are unsure of the correct way to do something.



Inspection Report for a Municipal Collection/Storage/Transfer Facility

[Yes = ; No =]

A. GENERAL INFORMATION		
Facility Name:		
Permittee Name:		
Permit #:		
Permit Type: <input type="checkbox"/> Standard <input type="checkbox"/> Permit-by-Notification <input type="checkbox"/> Other:		
Facility Location:		
Date of Inspection:		
Nature of Inspection: <input type="checkbox"/> Routine <input type="checkbox"/> Re-inspection <input type="checkbox"/> Requested <input type="checkbox"/> Complaint		
Inspector:		
Facility Contact:		
Has any enforcement action been issued to the facility? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Enforcement Action #:		
Enforcement Action Status:		
Photos taken: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, photos are attached.		
Note: Citations [NH Solid Waste Rule Env-Sw # or RSA]		
B. OPERATOR REQUIREMENTS/POSTINGS		
1	Are operator certifications prominently posted? [Env-Sw 1105.05(e)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Are all persons who operate the facility certified by either issued certification or interim certification? [Env-Sw 1005.07(b)(1)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Does the facility's most senior operator(s) have a Level III or IV certification? [Env-Sw 1603.02(a)&(b)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
4	Is there at least one supervisor for every 5 operators? [Env-Sw 1005.07(b)(2)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
5	Are there signs posted at the facility providing notice of the disposal ban for mercury-added products? [RSA 149-M:58(V)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	Is the facility's permit posted? [Env-Sw 1105.05(d)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
C. REPORTING/RECORDKEEPING		
1	Is there a copy of the facility's Operating Plan on site? [Env-Sw 1105.05(c)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Is there a copy of the facility's Closure Plan on site? [Env-Sw 1105.05(c)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Have there been any reportable incidents at the facility in the past year? [Env-Sw 1005.09(a)]	
	<input type="checkbox"/> Fire <input type="checkbox"/> Slip/Trip/Fall <input type="checkbox"/> Spill	
4	Have there been any complaints made by abutters or others involving facility operations? [Env-Sw 1005.09(d)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
5	Does the permittee maintain records at the facility? [Env-Sw 1105.06(1-14)]	
	<input type="checkbox"/> Complaints <input type="checkbox"/> Incidents <input type="checkbox"/> Inspections	
	<input type="checkbox"/> Maintenance <input type="checkbox"/> Operations <input type="checkbox"/> Other:	
6	Does the facility have a scale? If not, how is volume or weight determined?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7	Source(s) of waste accepted?	
	<input type="checkbox"/> Local Commercial <input type="checkbox"/> Local Residential <input type="checkbox"/> Other:	
8	Has the permittee filed its annual facility report for the prior calendar year? [Env-Sw 1105.07(b)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
9	Does the permittee maintain records on the quantity, type, source and destination for all wastes accepted? [Env-Sw 1105.13(e)]	<input type="checkbox"/> Yes <input type="checkbox"/> No

D. WASTE TYPES MANAGED				
1	Which of the following wastes are managed at the facility?			
	<input type="checkbox"/> Burn pile	<input type="checkbox"/> Glass	<input type="checkbox"/> Plastic	
	<input type="checkbox"/> C&D	<input type="checkbox"/> MSW	<input type="checkbox"/> Scrap Metal	
	<input type="checkbox"/> Cans (metal/tin/aluminum)	<input type="checkbox"/> Magazines	<input type="checkbox"/> Tires	
	<input type="checkbox"/> Cardboard	<input type="checkbox"/> Mixed Paper	<input type="checkbox"/> White Goods	
	<input type="checkbox"/> Electronics	<input type="checkbox"/> Newspaper		
2	Does the facility also manage any of the following wastes?			
	<input type="checkbox"/> Antifreeze	<input type="checkbox"/> Fluorescent Lamps	<input type="checkbox"/> Propane Tanks	
	<input type="checkbox"/> Batteries	<input type="checkbox"/> Mercury Devices	<input type="checkbox"/> Other:	
	<input type="checkbox"/> CRTs	<input type="checkbox"/> Motor Oil		
E. WASTE HANDLING & STORAGE AREAS				
1	Are the wastes in each area being properly managed? [Env-Sw 404.04(a)&(b)]			
	<input type="checkbox"/> Antifreeze	<input type="checkbox"/> Fluorescent Bulbs	<input type="checkbox"/> Propane Tanks	
	<input type="checkbox"/> Batteries	<input type="checkbox"/> Glass	<input type="checkbox"/> Scrap Metal	
	<input type="checkbox"/> Burn Pile	<input type="checkbox"/> MSW	<input type="checkbox"/> Tires	
	<input type="checkbox"/> C&D	<input type="checkbox"/> Magazines	<input type="checkbox"/> White Goods	
	<input type="checkbox"/> Cans (metal/tin/aluminum)	<input type="checkbox"/> Mixed Paper	<input type="checkbox"/> Yard Waste	
	<input type="checkbox"/> Cardboard	<input type="checkbox"/> Newspaper	<input type="checkbox"/> Other:	
	<input type="checkbox"/> Electronics	<input type="checkbox"/> Plastic		
2	Are stockpiles located, sized and configured:			
	<input type="checkbox"/> to be stable	<input type="checkbox"/> to prohibit precipitation from collecting in the stockpile area		
	<input type="checkbox"/> to provide access for fire control	<input type="checkbox"/> to prevent physical injury/destruction of property		
3	Are these areas being managed in a manner that is safe and protective of the environment, public health and safety? [Env-Sw 404.04(a)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Are putrescible wastes removed before odor is produced or within 7 days, whichever is first? [Env-Sw 405.03(d)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Does the facility have a compost pile? If yes: <input type="checkbox"/> Yard Waste <input type="checkbox"/> Food Waste		<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Are all wastes actively managed? [Env-Sw 405.03(a)] If no, what is not being actively managed?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	Are recyclables being managed to preserve their market value? [Env-Sw 405.03(a)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	Are legible signs used to delineate each area? [Env-Sw 404.04(c)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	Is access to non-public areas adequately restricted by the use of signs and/or barriers? [Env-Sw 404.04(e)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	Does the facility contain any wastes for which it does not have arrangements for proper storage or removal to an authorized facility? [Env-Sw 405.02(a)/(b)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	Are all wastes transferred to a facility that is authorized to receive them? [Env-Sw 405.03(b)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
F. GENERAL OPERATIONS				
1	Do the roads and access ways allow for safe movement of residential and bulk transport vehicles and people into and throughout the facility? [Env-Sw 1005.03]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is unauthorized access adequately restricted? [Env-Sw 404.04(e)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Are regular inspections of incoming waste conducted?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Does the facility's entrance sign contain the following? [Env-Sw 1105.05(a)&(b)]			
	<input type="checkbox"/> Facility Hours	<input type="checkbox"/> Permittee Address	<input type="checkbox"/> Phone Number	<input type="checkbox"/> Unlawful dumping statement
	<input type="checkbox"/> Facility Name	<input type="checkbox"/> Permit Number	<input type="checkbox"/> Waste types	
5	Do signs adequately assist people in managing their wastes? [Env-Sw 404.04(c)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Is the facility managed in a manner that minimizes litter, dust, odors, vectors, spills, fire, noise and other hazards? [Env-Sw 404.04(d)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	Are there any impacts to abutting properties as a result of facility activities? [Env-Sw 1103.04]		<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	Are there controls in place to manage storm run off?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	Does the permittee regularly inspect, monitor and maintain the facility to assure compliance? [Env-Sw 404.04(f)]		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Introduction to Facility Reporting & Recordkeeping

Solid waste facilities in New Hampshire must keep a facility operating record that includes the information listed below. Some of that information also must be reported to NHDES in an annual report, submitted by March 31, for the prior calendar year. A copy of the 2012 Annual Report Form for Transfer Stations and Recycling Facilities is provided in this section of the manual as an example of what is typically required. From year to year, the form may change slightly, so make sure you have the most current form when you are ready to file your annual report. Forms can be downloaded from the NHDES website (www.des.nh.gov). Although NHDES puts reminders in various electronic newsletters, mark your calendar to also remind yourself. In addition to submitting an annual report, facilities must also report other information concerning changes in operations.

Below is a list of information that must be kept in the facility operating record, and that must be reported. The data and information you submit to NHDES is important to tracking and forecasting solid waste management capacity, service and program needs. Keeping good records will help in this effort.

Keep the following information in the Facility Operating Record

1. Quantity, type, source and destination of all waste received by the facility.
2. Quantity, type, source and destination of all waste generated by the facility, if any. For example, an incinerator generates ash as a waste.
3. Quantity, type and destination of all certified waste-derived products produced by the facility. For example, finished compost or processed glass aggregate.
4. Operator/worker information, including proof of certification.
5. Record of Universal Waste, Used Oil, Household Hazardous Waste activities.
6. Record of inspections, maintenance and repairs.
7. Record of accidents, violations, remedial and emergency event response actions.
8. Record of complaints received and related response actions.
9. Environmental monitoring data, if applicable.

Report the following information to NHDES

- By March 31 for the prior calendar year, file an Annual Report, using the information kept in the records listed in items 1-5 above.
- Changes in facility ownership or operational control – for example, if the facility is sold. A permit modification or transfer may be required.
- Changes in the scope of facility's permitted operations – for example, a change in the type of waste being received or an on-site management practice, such as composting food waste instead of disposing of it. Before making the change, contact NHDES to find out if you first need to have your permit and operating plan modified.
- Waste management activities taking place at the facility that do not require a permit – for example, if you operate a transfer station and begin collecting used oil for recycle or universal waste at the facility, notify NHDES of the activity.
- Any incidents or situations at the facility that involve an imminent and substantial risk to human health, safety or the environment, or that are in violation of the facility's permit or applicable rules. (Make a verbal report upon discovery, followed within 5 working days by a written report.)
- Complaints made by abutters and others concerning facility conditions that have the potential of impacting human health, safety or the environment.

2012 ANNUAL FACILITY REPORT

TRANSFER STATIONS and RECYCLING FACILITIES



Report activity for calendar year 2012 (January 1 - December 31). Please complete all 4 pages.

1. Facility Location (Env-Sw 1105.13(a))

Facility Name		
Street Address (facility location, <u>not</u> mailing address)		
Town/City	Zip	Solid Waste Permit #

2. Permittee Information as indicated on permit (Env-Sw 1105.13(b))

Permittee Name			
Mailing Address 1		Mailing Address 2	
Town/City	State	Zip	Phone () -
Permittee Email			

3. Facility Status (Env-Sw 1105.13(d))

<input type="checkbox"/> Operated all of 2012.	<input type="checkbox"/> Did not receive waste in 2012.
<input type="checkbox"/> Operated part of 2012 only. Started receiving waste on _____. Stopped receiving waste on _____.	
Please check the boxes of any wastes you accept that are not covered by your solid waste permit.	
Universal Wastes <input type="checkbox"/> Antifreeze <input type="checkbox"/> Batteries (Automotive) <input type="checkbox"/> Batteries (Rechargeable) <input type="checkbox"/> Cathode Ray Tubes (CRTs) <input type="checkbox"/> Fluorescent Lamps <input type="checkbox"/> Mercury-Containing Devices	Other <input type="checkbox"/> Used Oil <input type="checkbox"/> Household Hazardous Waste <input type="checkbox"/> Other (Specify) _____ _____ Do you compost leaf and yard waste? Yes <input type="checkbox"/> No <input type="checkbox"/> Do you have a burn pile? Yes <input type="checkbox"/> No <input type="checkbox"/>

4. Contact Information (Provide the name of the person who can answer questions about this report.)

Name [Redacted]	
Mailing Address	
Email	Daytime Phone Number () -

Facility Name: _____

5. Recycling (Env-Sw 1105.13(e) + (f)) Please list sources, tonnages and disposal destination/market for recyclable materials.

Attach additional sheets if necessary, but they must conform to this format.

Material	Source		Tons Accepted in 2012	Destination/Market
	NH Town	State, if other than NH		
Dual Stream Recycling				
Single Stream Recycling				
Containers - Aluminum + Steel/Tin Cans				
Containers - Commingled Metals & Plastic				
Containers - Other (Specify)				
Containers - Plastic only				
Electronics (Other than CRTs)				
Fiber - Corrugated Cardboard (OCC)				
Fiber - Mixed Paper (Office/Newspaper/Magazines)				
Glass - Processed Glass Aggregate (PGA)				
Glass (Excluding PGA)				
Plastic - Rugged (Yard Toys, etc.)				
Propane Tanks				
Scrap Metal				
Scrap Tires				
Other Recyclables (Specify)				

Facility Name: _____

6. Waste Accepted from New Hampshire and Out of State (Env-Sw 1105.13(e) + (f))

Attach additional sheets if necessary, but they must conform to this format.

Waste Type	Source of Waste		Tons Accepted in 2012	Disposal Destination (Accepting Facility)
	NH Town	State, if other than NH		
Commercial/ Industrial SW				
Construction & Demolition Debris				
Residential SW				
Other (Specify)				

7. Operator Information (Env-Sw 1105.13(c)) Attach additional sheets if necessary, but they must conform to this format.

	Name & Home Address of Facility Operators	Home/Cell Phone	Certificate #	Expiration Date
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

Facility Name: _____

8. Estimated Quantity of Waste Stored at the Facility, by Type, as of the End of the Calendar Reporting Year (Env-Sw 1105.13(i))

Waste Type	Tons in Storage as of 12/31/12
Commercial/Industrial Solid Waste	
Construction/Demolition Debris	
Recyclables	
Residential Solid Waste	

9. Summary/Assessment of Environmental Monitoring in 2012 (Env-Sw 1105.13(j))

Did you conduct any environmental monitoring in 2012? Yes No

If yes, please indicate what compelled the facility to conduct the monitoring (for example, a permit).

10. Signature of Permittee or Authorized Official

I certify that the information on this form is accurate and complete to the best of my knowledge.

Signature

Date

Printed Name and Title

Complete and return this form by MARCH 31, 2013 to:

Department of Environmental Services
Waste Management Division - SWCAS
PO Box 95
Concord, NH 03302-0095
FAX: (603) 271-2456
Email: solidwasteinfo@des.nh.gov

(Please retain a copy for your records.)

Solid Waste Facility Operator Training & Certification

And Upcoming Changes

Since 1989, state law (RSA 149-M:6) has required persons who operate solid waste facilities to be trained and certified by NHDES. Clearly, much has changed in the solid waste industry since that time. For that reason, NHDES is currently reviewing the program to find ways to streamline certain requirements, update the training to make it more relevant to today's waste management needs and be more accessible.

This section of the manual provides information pertaining to the program as it currently exists (Summer/Fall 2013), including:

- A "Fact Sheet" summarizing program requirements.
- Application form for applying for certification for the first time.
- Application form for renewing certification, as required annually.
- Log sheet for maintaining continuing education training records for individuals.

NHDES will notify certified operators, municipal officials and other facility owners when proposed program changes (in the form of proposed amendments to Chapter Env-Sw 1600 of the NHDES Solid Waste Rules) are available for public review and comment. In the meantime, we always want to hear your suggestions and ideas for improving the program. Please submit those ideas and suggestions to:

solidwasteinfo@des.nh.gov and put "SWOT" in the subject line

or, send to:

NHDES—SW Bureau
PO Box 95, 29 Hazen Drive
Concord, NH 03302
Fax: (603) 271-2456

When program changes are implemented, most likely in early 2014, you should place the updated program information in this section and remove the outdated information. In addition, you are encouraged to add any other information to this section of the manual for easy reference, for example training schedules, when published.

ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WMD-SW-9

2013

Solid Waste Operator Training and Certification

The solid waste industry is regulated to protect human health and the environment. Operators that work at solid waste facilities need to be aware of the law and regulations that affect them and their workplace. The solid waste operator training and certification program, administered by the DES Waste Management Division, provides education and training to increase compliance with the *Solid Waste Rules*. Compliance helps operators to properly maintain the facilities and can help keep operating costs down, extend the life of solid waste facilities, and provide the greatest possible protection to the environment, public health and safety.

State Certification

Most solid waste facilities in New Hampshire are collection/storage/transfer facilities that send recyclables to markets and disposables to landfills and incinerators, mostly within New Hampshire. Facilities must be permitted by DES and they must only employ state certified operators. Operators are responsible for their own certification, even if the employer pays the annual fee. Solid waste operator training became mandatory in New Hampshire on July 1, 1989, pursuant to RSA Chapter 149-M:6. The program is implemented in accordance with Chapter Env-Sw-1600 of the New Hampshire *Solid Waste Rules*.

Application Procedure

All new operators must submit a complete application and the \$50 fee. This qualifies them for interim certification until they attend training and take the examination. DES notifies interim operators of the next opportunity to train and interim certification is withdrawn if the operator does not attend. Operators that successfully complete training and testing become certified and are eligible to work at solid waste facilities in New Hampshire. Applications are available on the DES web page or by request.

Renewal Procedure

Operators must renew their certification every year prior to the date their certification expires. There are three components to the renewal process: 1) renewal application (pre-populated forms are sent to current operators about 2 months prior to their annual renewal date); 2) verification of at least 2 ½ hours of continuing education within the previous 12 months; 3) \$50 annual fee. If the application is received after the expiration date, operators must pay an additional \$25.

Continuing Education

DES accepts any training that helps the operator improve their job performance at the solid waste facility. In addition to DES classes on environmental issues, operators may use safety training or monthly networking meetings, for example. DES posts some ideas on its web site. Refer to

www.des.nh.gov/organization/divisions/waste/swrtas/workshop.htm. To document training, operators should submit a certificate of attendance or another form of verification, such as a letter signed by the trainer. In all cases, verification must include the training date, the content and the length of the training.

For More Information

For more information, contact the Solid Waste Management Bureau, DES Waste Management Division, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095; or (603) 271-2925.

<http://des.nh.gov/organization/divisions/waste/swrtas/index.htm>

Name of Employer 2: _____
Address: _____
Supervisor's Name: _____ Phone: _____
Dates of Employment: From: _____ To: _____
Job Title: _____ Ave. hours per week worked: _____
Description of Waste-Related Duties: _____

Name of Employer 3: _____
Address: _____
Supervisor's Name: _____ Phone: _____
Dates of Employment: From: _____ To: _____
Job Title: _____ Ave. hours per week worked: _____
Description of Waste-Related Duties: _____

Name of Employer 4: _____
Address: _____
Supervisor's Name: _____ Phone: _____
Dates of Employment: From: _____ To: _____
Job Title: _____ Ave. hours per week worked: _____
Description of Waste-Related Duties: _____

Name of Employer 5: _____
Address: _____
Supervisor's Name: _____ Phone: _____
Dates of Employment: From: _____ To: _____
Job Title: _____ Ave. hours per week worked: _____
Description of Waste-Related Duties: _____

6) Signature and Affirmation:

I hereby certify that the information given is true and complete to the best of my knowledge. I further agree to comply with the NH Solid Waste Administrative Rules, Env-Sw 100 – Env-Sw 2000, in the performance of my duties as a certified solid waste facility operator.

Signature: _____ Date: _____

Do you require any special needs during training and/or testing? If so, please describe:



N.H. Solid Waste Operator Certification Instructions and Qualifications

(Reference Chapter Env-Sw 1600 of the N.H. Solid Waste Rules)

Certification Levels and Requirements

There are four levels of certification with the following education and experience requirements:

- a. **Level 4 Manager/Operator:** Must have a high school diploma or GED and a minimum of five years experience in a field related to waste management. A Level 4 Manager/Operator is qualified to be in responsible charge of all lined landfills as well as unlined landfills, transfer stations, composting facilities and recycling centers that are permitted to accept more than 30 tons of waste per day annually.
- b. **Level 3 Advanced Operator:** Must have a high school diploma or GED and three years experience in a field related to waste management. Facilities requiring a Level 3 Advanced Operator are: landfills, transfer stations, recycling centers and composting facilities permitted to accept up to 30 tons of waste per day; and monofills that only receive scrap metal, demolition debris or asbestos.
- c. **Level 2 Operator:** Must have completed eighth grade and have two years work experience in a field related to waste management. Individuals certified at this level are eligible to be in charge at monofills that only accept brush and/or stumps.
- d. **Level 1 Attendant:** Must have completed eighth grade and have one year or less experience in a related field; may not be in charge at any type of solid waste facility.

Substitutions to Operator Qualifications

The following substitutions may be made to the previously listed requirements:

- a. One year of college education may be substituted for one year of experience, up to a maximum of four years for Level 4, two years for Level 3, and one year for Level 2.
- b. One year of experience may be substituted for one year of elementary or high school up to a maximum of one year.
- c. High school education shall not be credited towards experience.
- d. Education applied toward experience shall not be applied toward the education requirement.

Licenses and Certifications from Other States

Licenses and certifications from other states may be acceptable for reciprocity in New Hampshire. If you believe that your training and certification from another state may meet New Hampshire requirements, please contact DES at (603) 271-2925 to obtain the appropriate information and form. Regardless of acceptability of an out-of-state certification, you will need to complete this form and submit it with the appropriate fee.

Application Fee and Mailing Instructions

Please enclose a check or money order with this application in the amount of **\$50, made payable to "Treasurer, State of New Hampshire."** The application fee is non-refundable. There is no fee for **currently** certified operators who wish to change their level of certification. For more information, please call (603) 271-2925 or see <http://des.nh.gov> and, using the A-Z Topic List, click on "Solid Waste Management & Disposal Information."

Submit Application and fee to: NH Department of Environmental Services
Solid Waste Operator Certification
PO Box 95
29 Hazen Drive
Concord, NH 03302-0095



SOLID WASTE OPERATOR CERTIFICATION
RENEWAL APPLICATION

PLEASE PRINT OR TYPE

1. Personal Information

Last Name First Name MI Suffix

Address City State Zip+4

Home Phone Business Phone E-mail Address

Facility(ies) where currently employed Job Title

Address City State Zip+4

Work Phone Work E-mail Address Supervisor's Name & Title

HAS ANY OF THE ABOVE INFORMATION CHANGED SINCE LAST RENEWAL/CERTIFICATION

Yes [] No []

2. Current Certification

Certificate Number Level Expiration Date

Date(s) of Continuing Education Title/Subject of Continuing Education

I have attached verification of attendance. Yes [] No []

3. Signature and Affirmation

I hereby certify that the information given is true and complete to the best of my knowledge. I acknowledge that failure to operate my facility in accordance with the NH Solid Waste Rules and the facility permit is grounds for denial, suspension or revocation of my certification under Chapter Env-Sw 1607.

Date: Signature:

Submit this form and the \$50 fee to the address on the reverse side of this form. If your certificate has expired, RSA 149-M:6 requires an additional fee of \$25. DES can NOT process your application without documentation of continuing education and the mandatory fees.

This program is conducted in accordance with Chapter Env-Sw 1600 of the NH Solid Waste Rules.

See reverse side for additional instructions.

RENEWAL INSTRUCTIONS

Operator certifications are valid for one year. Renew your certification each year no later than the expiration date on your certificate. If you do not know the expiration date, call (603) 271-2925 for assistance. Include in the renewal package the following.

1. A completed renewal form with an original signature. Photocopies are not sufficient.
2. A copy of a certificate or letter documenting attendance at training* taken since the last renewal (or since the initial training, in the case of a first renewal).
3. A check for \$50 (or \$75 if late) payable to "Treasurer, State of New Hampshire."

Send the renewal form, the check, and a copy of the continuing education workshop to:

DES, Waste Management Division
Attention: Solid Waste Management Bureau
PO Box 95
Concord, NH 03302-0095

* Continuing education is a required component of certification. Operators must take a minimum of 2.5 hours of applicable training each year, which may include workshops offered by DES or other organizations.

Remember, YOU are responsible for renewing your own certification each year, regardless of whether you receive a reminder from DES.

Solid Waste Management Bureau Contact Information

Michael E. Guilfoy, P.E.
Administrator
(603) 271-2925
michael.guilfoy@des.nh.gov

Nelson E. Ordway
Executive Secretary
(603) 271-2925
nelson.ordway@des.nh.gov

Compliance Assurance Section

Facility Inspections; Technical Assistance;
Enforcement; Annual Reports & Data Management;
Financial Assurance; Landfill Closure Grants; Auto
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Certification; Hauler Registration

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Permitting and Design Review Section

Permit Applications; Permit Modifications; Design
Plan Approvals; Construction Monitoring; Landfill
Operation Monitoring; Inactive Asbestos Disposal
Sites

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SPECIAL THANKS

To the individuals who assisted in the creation of this manual, a sincere thank you for your time, commitment and support, and for your dedication to the protection of New Hampshire's Environment.

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