STATE OF NEW HAMPSHIRE
SOLID WASTE PLAN

April 2003

NEW HAMPSHIRE
DEPARTMENT OF
Environmental
Services

R-WMD-03-2

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cover photos: Concord Landfill; before and after undergoing closure

Preface

This planning document is intended to provide the reader with an overview of the courses of action that will be pursued by the Department of Environmental Services (DES) in solid waste management over the next several years. The Plan, as such, is constantly evolving. It is an ambitious Plan and one that includes the recommendations of the 1999 Governor's Solid Waste Task Force delivered in 2001, the elements of the 2001 Solid Waste Report to the Legislature and the DES Strategic Objectives. The statutory requirement for DES to prepare the Solid Waste Plan is found at RSA 149-M:29.

While the Plan specifies the *Guiding Principles, Goals, Sub-goals and Objectives* for DES, it is also apparent that many other parties, including the Legislature, municipalities, the Waste Management Council, the business community, non-governmental organizations and the public at large all substantially influence the outcomes and that no single entity can achieve the lowest cost, least environmental impact goal. The combined effort of all the above entities is needed to produce a successful outcome over the next few years.

As a means to keeping the Plan succinct while making detailed information quickly available, DES has placed on its web site (www.des.state.nh.us) supporting documentation describing:

- Solid Waste Generation,
- Solid Waste Facilities And Services,
- Solid Waste Disposal Capacity,
- Waste Stream Analysis, And
- Related Reports.

As a result of this approach, DES's objective is to make the solid waste plan more easily accessible and useful to everyone; more efficient to update and modify as conditions change; and functionally consistent with and supportive of DES's overall Strategic Objectives.

I. Introduction

The Department of Environmental Services (DES) administers a solid waste program that must achieve a balance between the critical need to protect the environment and the realities of a culture whose people generate more solid waste per person than any other country in the world. This Solid Waste Plan strikes that balance by promoting reduction of the volume and toxicity of the waste stream and diversion of recyclables and compostables, and also by providing objectives to secure sufficient disposal capacity and safe handling and management of solid waste.

The Plan addresses the following goals:

1. Reduce the volume of the solid waste stream;
2. Reduce the toxicity of the solid waste stream;
3. Maximize diversion of residential and commercial/industrial solid wastes;
4. Assure disposal capacity for New Hampshire; and
5. Assure that solid waste management activities are conducted in a manner protective of human health and the environment.

The first three goals address the concepts that solid waste should be minimized when possible and managed as a resource rather than a waste, placing a strong emphasis on reuse, toxics reduction, recycling and composting. For example, when the toxics are removed from the waste, there is more likelihood that it will be composted, because the resulting product will be cleaner and more in demand. The last two goals are directed at the need for solid waste facilities and services available that are protective of public health and the environment. These goals are not entirely independent of one another. When toxic constituents are removed from the waste stream, there is less concern about the safety of incineration, the ash resulting from incineration and the leachate from landfills, offering more protection to human health and the environment. Similarly, reducing the volume of the waste stream means there is less demand for disposal capacity.

The State of New Hampshire has reached a crossroad in its efforts to expand recycling and to reduce the solid waste stream. Diligent efforts over the last decade have resulted in a 24% diversion rate in 2001 despite a legislative goal of 40% by the year 2000. DES and the Governor's Recycling Program, and other organizations have worked extensively with New Hampshire communities to provide support and assistance in efforts to reduce, reuse and recycle; and many municipalities and businesses have made important progress. But this progress is not enough if we are to take real strides forward. Additional, bold steps are needed by the Legislature, business community, municipalities and individuals to improve solid waste management in our state.

II. Guiding Principles

In carrying out its objectives, DES adheres to the seven principles listed below. These statements are consistent with the *Proper Waste Management & Effective Site Remediation* goal of DES's Strategic Objectives, and the findings of the Governor's Solid Waste Task Force, which published its report in 2001.

1. ***The responsibility for solid waste management is shared between state government, local government and industry.***

   The burden of environmental protection is not left to the regulators alone. Certainly, government plays a leadership role in ensuring that the environment and human health are not threatened by the ways that citizens work and play, but it is incumbent upon all sectors to do their part.

2. ***Manufacturers must subscribe to product stewardship and take responsibility for their role in source reduction, altering the manufacturing process to avoid using toxic materials to produce a product and minimizing the volume of packaging.***

   If the manufacturer can not or will not use source reduction to address the problem, they should be obligated to take responsibility for the waste through collection programs. All too often, the burden of paying for the disposal of toxic products, excess packaging and bulky items falls to the local government that provides its residents with waste management services. This end-of-the-pipe approach is the least effective way to approach the problem of toxics and waste reduction.

3. ***Whenever possible, solid waste should be reused, recycled or composted rather than disposed of by incineration or landfilling.***

   There is a continuing need to manage waste according to what is best for the environment in the long-term. Unfortunately, decisions on managing solid waste often hinge on short-term costs rather than environmental soundness. We need to focus on innovative ways to create more options for waste diversion rather than disposal.

4. ***The public and private sectors should have access to solid waste management options at a competitive cost.***

   New Hampshire's primary reliance on the private sector to provide disposal capacity has not allowed the State much influence on the amount of capacity available and the cost of that capacity. Further, increased diversion of wastes in New Hampshire will not necessarily contribute to reservation of NH capacity for NH wastes.

5. ***Planning for the future of solid waste management is critical to our ability to meet our needs.***

In order to determine the needs for solid waste management in the future, we must review past and current trends, then project that data for years to come. The most important element for success of this exercise is a baseline of data.

6. ***Education, compliance assistance and enforcement actions are necessary to promote compliance.***

   The Department of Environmental Services is committed to a consistent, predictable and appropriate compliance assurance program which is protective of public health and the environment while creating a credible deterrent against future violations. DES believes that compliance with environmental laws is best ensured by using a multi-tiered, multi-media approach that includes education and outreach, compliance assistance, compliance monitoring, and where appropriate, formal enforcement.

7. ***Proper closure and post-closure care of solid waste landfills are critical to protection of the State's waters.***

   Proper closure of landfills is necessary to protect public health and the environment. To ensure the proper performance of a closed landfill, it is necessary to monitor groundwater quality; maintain and monitor a gas control system; monitor settling, slope stability, and erosion; maintain groundwater and surface water management systems; maintain and repair the final cover system; provide financial assurance; and in certain instances, monitor the leachate control systems (lined landfills). All of the data must be summarized in a formal report provided to the DES on an annual basis for a minimum of 30 years or until the facility stops generating leachate, ceases generating decomposition gasses, achieves maximum settlement, has no adverse impacts on air, groundwater or surface water, and does not otherwise pose a risk to human health or the environment.

III. Goals and Objectives

Goal 1: Reduce the volume of the solid waste stream.

Basis for Goal

Reducing the quantity of solid waste helps prolong the availability of existing landfill capacity and lessens the need to develop replacement capacity. Further, because volume source reduction involves a redesign of products to result in less waste at the end of the product's use, it slows the depletion of environmental resources and decreases costs of transportation and waste management. Source reduction does *not* rely on post-waste activities, such as recycling and composting, to remove items from the solid waste stream; these *diversion* activities are addressed in Goal 3.

The U.S. Environmental Protection Agency has established a voluntary partnership program (Design for the Environment) that works directly with industry to integrate health and environmental considerations into business decisions. These partnerships inform businesses in the design or redesign of products and processes that are cleaner, more cost-effective, and safer for workers and the public. The Design for the Environment process promotes voluntary environmental improvement by addressing industries' need for key information on how to incorporate environmental concerns into business decisions. These environmental concerns are critical if reserving landfill capacity remains a high priority in the future.

Source reduction of solid waste is also accomplished when a product is reused or repaired, rather than replaced. Reuse makes the most of a product before it is ultimately disposed. This happens everyday when common household items and "hand-me-down" clothes are given second lives, when restaurants forgo the use of disposable utensils, and when office workers use both sides of a piece of paper. On a larger scale, the Solid Waste Rules encourage beneficial re-use of waste materials that can serve a useful life as a component of some other product. The process allows for certification of these waste-derived products; once certified, they are no longer regulated as solid waste. A waste-derived product certification is not like a permit for a solid waste facility; it is a certification for a particular product made from a particular waste. Simply, the product is not a waste until it is discarded. There is an initial application process, but once certified, anyone can use the product, as long as the terms of the certification are met. Examples of typical products that have met this certification include: a 50/50 mixture of processed construction/ demolition debris and soil used as an alternate daily cover at lined landfills; and crushed glass used for purposes of pipe bedding, road sub-base and foundation backfill.

In its 2001 Report, the Governor's Solid Waste Task Force emphasized source reduction along with recycling and composting as key components in the efforts to extend disposal capacity and lower the costs of solid waste disposal. The recommendation to increase these activities in order to achieve these two goals was directed to both "public and private entities" to stress that the burden does not lie with either side, but with a combination of the two, since cost and capacity are affected by activities in both sectors.

Sub-goal 1.1: Work with the commercial and residential sector to increase reuse of products and by-products.

Objectives (Target completion dates are noted in parentheses.)

1.1.1 Determine whether the waste exchange program coordinated by WasteCapReCon can be enhanced by assistance from or involvement with the State and/or the Department of Environmental Services. (January, 2004)

1.1.2 Develop a strategy for increasing construction & demolition waste processing. (January, 2005)

1.1.3 Develop an outreach campaign to promote the purchase of products and packaging that are reusable and repairable. (July, 2005)

Sub-goal 1.2: Increase source reduction at the manufacturing level.

Objectives

1.2.1 Pursue legislation to establish a state-wide tipping fee on the disposal of solid waste in New Hampshire as a disincentive to disposal and as a mechanism to raise funds to support diversion activities. (July, 2005)

1.2.2 Develop a strategy in conjunction with national and regional organizations to encourage and require manufacturers to accomplish more volume source reduction in products and packaging. (January, 2006)

1.2.3 Partner with WasteCap ReCon to offer technical assistance to a minimum of 10 NH manufacturers on how to use source reduction within their companies. (July, 2006)

Goal 2: Reduce the toxicity of the solid waste stream.

Basis for Goal

The toxicity of the waste stream is just as important as the focus on the volume of material, the costs, or the use of virgin materials in manufacturing. Twenty years ago, the emphasis was on toxic wastes in open lagoons and 55-gallon drums found in fields. The fact that the toxicity of everyday items, such as fluorescent lamps, electronic devices and components, are now of concern is an indicator of how much progress has been made. Today, there is a much better understanding that the potential to harm human health and the environment comes from many sources, common and otherwise. From the perspective of waste management, a proliferation of toxic components in the waste stream significantly increases the potential for groundwater contamination from landfills and air emissions from incinerators.

There are many chemical elements or compounds that have environmental and public health implications. In addition to categories of toxic substances, such as pesticides and organic solvents, there are specific substances of concern, like mercury and lead. The focus should be on practicing *source reduction* during manufacturing products to remove or minimize toxics in waste, and to require *separation and special handling* of wastes when toxic constituents have not been removed. Solid wastes should have management options that are consumer-friendly and highly protective of the environment and public health. This means the components of the waste should be safely handled or disposed of without fear of environmental or health repercussions due to toxic compounds.

Sometimes, this change comes about as a result of legislation and regulation. For example, in 1990, New Hampshire passed the toxics in packaging law to curb the amount of toxic metals entering the municipal solid waste stream, and ultimately, landfills and incinerators. The law prohibits manufacturers from intentionally introducing lead, mercury, cadmium and hexavalent chromium in packaging and packaging components that are distributed in New Hampshire. Eighteen states have adopted the same model as New Hampshire and 10 of these states work together to ensure consistent application of the law through the Toxics in Packaging Clearinghouse. This law has resulted in changes at companies that distribute a large volume of products and packaging to consumers throughout the country.

Recently, there has been a paradigm shift in industry that shows real promise. *Product stewardship* means that manufacturers accept responsibility for the end-of-life problems associated with their toxic products. For example, several organizations, including the Product Stewardship Institute, the Northeast Waste Management Officials Association and the Northeast Recycling Council, are participating in a national dialogue with manufacturers to address disposal of electronic products. The *National Electronic Product Stewardship Initiative* (NEPSI) is looking at strategies like "take back" programs to collect the used products and "design for the environment," which would incorporate source reduction concepts at the manufacturing stage.

Sub-goal 2.1: Reduce waste toxicity in products and packaging through pollution prevention concepts.

Objectives

2.1.1 Work with national and regional initiatives to develop industry standards for production, identification of material substitutes and the reduction of volume, targeting consumer items that are responsible for contributing to the toxicity of the waste stream. (ongoing)

2.1.2 In coordination with the Toxics in Packaging Clearinghouse, develop model legislation to reduce or eliminate the presence of dioxin precursors in packaging. (October, 2004)

2.1.3 Pursue legislation requiring toxic consumer items to be labeled to educate consumers about the availability and use of alternatives to toxic products. (July, 2006)

Sub-goal 2.2: Minimize the release of hazardous materials into the solid waste stream.

Objectives

2.2.1 Continue to implement DES's Mercury Reduction Strategy and provisions of Chapter 278, Laws of 2000 *(An Act Relative to Mercury-Containing Products).* (ongoing)

2.2.2 Pursue legislation to require car manufacturers to pay for the removal of mercury switches and to phase out the use of mercury in motor vehicles. (July, 2006)

2.2.3 Finalize a strategy on reuse and recycling and proper disposal of electronic equipment. (December, 2003)

2.2.4 Review the implementation of the universal waste rule to determine if it is keeping these wastes out of landfills and incinerators. (October, 2005)

2.2.5 Increase by at least 10% the cost effectiveness (cost per pound) and management efficiency of household hazardous waste collection through education and promotion of permanent collection centers. (July, 2004)

2.2.6 Research legislation to require manufacturer product collection programs with a phased-in Advanced Disposal Fee (ADF) on products for which manufacturers do not demonstrate product responsibility. (July, 2005)

2.2.7 Ensure that 95% of New Hampshire's political subdivisions have access to a do-it-yourself (DIY) used oil collection center. (October, 2005)

Goal 3: "Maximize" diversion of residential and commercial/industrial solid wastes.

Basis for Goal

After waste is generated, it should be diverted from disposal in landfills and incinerators by recycling or composting whenever possible. The more waste that is managed through alternatives to disposal, the less concern there is about the public health and environmental impacts of disposal. When wastes are incinerated, there is concern about the release of harmful air emissions and the quality of the ash. Landfilling wastes causes concerns about groundwater contamination and leachate, and the release of gases that contribute to climate change. Wasteful practices must be replaced with a more responsible attitude of resource management.

People often look at recycling as a way to reduce dependence on landfills and incinerators, but this is only one in a list of benefits. First, there is an economic benefit to recycling. Sometimes, this includes revenue from the sale of the recyclable materials, but more often, the economic benefit is derived from savings that result from *cost avoidance*. Cost avoidance refers to the fact that, even when the cost of handling recyclables is factored in, there are still savings from avoiding the "per ton" tipping fee at the landfill or incinerator. Using recycled feedstock saves energy, conserves natural resources, and reduces greenhouse gases and is often more economical than using virgin material. Finally, more jobs are created in the processing and marketing of recyclables and in the use of recycled feedstock than there are created by the disposal of waste.

Composting is nature's way of returning resources to the earth. Over 50% of municipal solid waste is organic (food waste, paper and paperboard, and leaf and yard waste) and, therefore, compostable. Like recycling, composting reduces waste disposal costs and conserves natural resources. In addition, composting produces a valuable soil amendment, reduces the need for chemical fertilizers and protects soils from erosion. With even a little space in the back yard, most residents can compost kitchen wastes in addition to their leaf and yard waste. Many towns operate a leaf and yard waste compost pile and there are several commercial facilities as well.

New Hampshire's legislative goal from 1990 was to reach 40% diversion by the year 2000. The solid waste facility reports for calendar year 2001 indicate that our percentage of diversion was about 24%. DES believes that it is possible to achieve higher levels of diversion, but not without the full participation of towns, businesses, manufacturers and the State.

New Hampshire has access to a variety of organizations that share the goal to divert as much waste as possible. In addition to state government, there are organizations such as the NH Business & Industry Association's WasteCap Resource Conservation Program that work in the business community to reduce wastes. The Northeast Resource Recovery Association has provided technical, educational and marketing support to municipal recycling programs since 1981. The Northeast Recycling Coalition and the Northeast Waste Management Officials' Association are multi-state organizations involved in promoting recycling.

Sub-goal 3.1: Develop and promote markets for recyclable commodities.

Objectives

3.1.1 Work with appropriate partners to identify where new markets are needed and prepare strategies to develop the markets. (ongoing)

3.1.3 Pursue legislation that provides tax incentives for NH manufacturers that use recycled feedstock. (July, 2005)

Sub-goal 3.2: Assist municipalities and businesses in diverting more recyclables and compostables from the waste stream.

Objectives

3.2.1 Pursue legislation to provide DES with the resources to award grants to maximize recycling and composting activities. (December, 2005)

3.2.2 Focus technical assistance on communities in NH with the highest population and the lowest diversion rate. (ongoing)

3.2.3 Publish a guidance document for recycling and composting at short-term events, such as fairs and conferences. (October, 2003)

3.2.4 Develop a strategy for recycling and composting at multiple-family dwellings. (January, 2004)

3.2.5 Develop a strategy to increase diversion of commercially generated solid waste. (July, 2004)

3.2.6 Pursue legislation imposing a ban on the disposal of certain recyclables. (July, 2005)

3.2.7 Encourage the composting of food waste from institutional buildings by developing and publishing a guidebook, and by sponsoring workshops. (July, 2005)

3.2.8 Increase by 30% the composting and other diversion of food wastes. (October, 2005)

Goal 4: Assure disposal capacity for New Hampshire

Basis for Goal

With the life span of existing landfill capacity estimated to last until 2012, concerns have been raised as to whether there will be enough capacity for New Hampshire's waste in a long-term manner that is cost effective. Without sufficient disposal facilities, haulers will need to transport waste long distances. This would be unacceptable for the long term considering the costs of hauling, the potential for liability and environmental impact, and the strategies devised by states to curb imports. While DES does not subscribe to the concept of "crisis" for our capacity outlook, there is a need for new initiatives now to address the demand for long-term capacity within the borders of New Hampshire. New Hampshire should maintain a constant future disposal capacity of 7-10 years for solid waste generated in the state that is cost effective and environmentally safe.

A concern regarding adequate capacity was expressed by the Waste Management Council to Governor Shaheen in its annual report for 1998. In response to this and other concerns about industry concentration and increasing costs of solid waste disposal, the Governor issued Executive Order 99-6, which created a 27 member Solid Waste Task Force to investigate these issues. The Task Force found that there are two sides to assuring adequate capacity: using existing capacity wisely; and encouraging new capacity. The Task Force recommended increasing source reduction, recycling and composting, as well as limiting imported solid waste, to extend the use of existing capacity. Because most of New Hampshire currently relies on privately owned capacity, the Task Force recommended facilitation of collaborative host community agreements and regional municipal agreements to encourage public development of new capacity.

Imports of solid waste can have more than just a physical and environmental effect on a state or community. Imported trash creates a feeling of resentment among people in the receiving location. People do not think it is fair to suffer the increased truck traffic and noise or that they should have to be the "dumping ground" for waste from another state. Further, there is a demoralizing effect on recycling efforts when people wonder why they are working so hard to save disposal capacity that is only used up by waste from another location or another state. Finally, there is an additional cost to the host state for permitting and regulating landfills and incinerators that is borne by the citizens of that state, unless there is a fee that reimburses the State for its costs. New Hampshire does not have such a fee.

Not surprisingly, the Department of Environmental Services places a high priority on extending capacity for the disposal of solid waste. Goal 4.1 of DES's Strategic Objectives (*Effective Waste Management and Site Remediation*) is "Continue efforts to minimize waste volumes and toxicity through programs, policies and rules which extend waste management capacity and minimize exposure to persistent, bioaccumulative and toxic (PBT) chemicals." This is the basis for DES's ongoing source reduction, recycling and composting program and for a new emphasis on diverting commercially generated solid wastes from disposal.

Sub-goal 4.1: Obtain more thorough data regarding solid waste generation, diversion activities and disposal and assist in assuring solid waste disposal capacity at a reasonable cost to NH municipalities and businesses.

Objectives

4.1.1 Report on the benefits of a state solid waste disposal contract designed for state as well as municipal use in order to obtain a less expensive tipping fee. (July, 2004)

4.1.2 Pursue legislation for registration of and reporting by solid waste haulers operating in New Hampshire. (July, 2005)

4.1.3 Report on the benefits of publicly owned solid waste disposal facilities, including one or more owned and/or operated by the State. (July, 2006)

Goal 5: Assure that solid waste management activities are conducted in a manner protective of human health and the environment.

Basis for Goal

As authorized by state law (RSA 149-M), the *New Hampshire Solid Waste Rules* (Rules) set forth the requirements for solid waste management. Permittees and operators are obligated by law to comply with those requirements. Whether the solid waste is recycled or composted, or disposed of in an incinerator or landfill, it must be done in accordance with standards designed to protect human health and the environment.

DES believes that compliance with environmental laws is best ensured by using a multi-tiered, multi-media approach that includes education and outreach, compliance assistance, compliance monitoring, and where appropriate, formal enforcement. Goal 10 – *Compliance Assurance* – of DES's Strategic Objectives states, "To foster full compliance with the laws it is responsible for administering, DES provides education and outreach to the public, provides assistance to the regulated community, monitors compliance on an on-going basis, and maintains a fair and effective enforcement process."

Many of DES's activities are geared toward helping the regulated community to comply with regulations and all of the solid waste programs in the Waste Management Division have education and outreach components. One of the main functions of the Solid Waste Technical Assistance Section is to offer technical assistance on source reduction, recycling and composting to businesses and towns. Since 1990, more than 2,200 operators have been certified through the Solid Waste Operator Training program. Staff members make regular visits to solid waste facilities, publish a quarterly newsletter and sponsor an annual conference to help operators and local officials. Also, the Pollution Prevention & Education Program offers free non-regulatory assistance to industry and communities and the Household Hazardous Waste (HHW) Coordinator runs a grant program and is available for technical assistance with HHW issues. A new initiative to establish Best Management Practices for Motor Vehicle Salvage Yards has education at the center of activities.

Although the regulated community is required to comply with the Rules, there are errors, intentional and not. For this reason, DES is obligated by law to undertake an inspection and compliance assurance program. Permitted facilities are subject to inspections for monitoring compliance activities of the operations. Facilities not in compliance with the Rules may be subject to enforcement actions ranging from a report of initial compliance inspection, letter of deficiencies, administrative orders, administrative fines and civil or criminal actions.

New Hampshire's solid waste regulations are performance-based, which means that the regulated community has some flexibility in achieving the desired standards. For situations where more flexibility is warranted, there is a waiver provision available if the applicant can demonstrate that an alternative method can still deliver the same degree of protection to human health and the environment.

Sub-goal 5.1: Minimize the release of contaminants to the environment and risk to public health and safety from the improper management of solid waste through education, outreach, well-reasoned regulations and compliance assurance activities.

Objectives

5.1.1 Revise and recertify the *Solid Waste Rules* to retain regulatory oversight and to ensure they reflect current and changing technology. Schedule:

July, 2005	Main body of rules
May, 2009	Landfill closure and incinerators grant rules
April, 2010	Asbestos disposal site rules
July, 2010	Automotive Recycling Facility rules

5.1.2 Regulate asbestos disposal sites (ADS) to prevent the release of asbestos fibers to the environment. (July, 2004)

5.1.3 Maintain a 95% rate of appropriate level certified operators at solid waste facilities. (ongoing)

5.1.4 Decrease the average screening time for complaints from 21 days to 14 days. (July, 2005)

5.1.5 Ensure all approved outdoor asbestos remediation projects are performed in a manner that is environmentally safe and protects public health. (July, 2006)

5.1.6 Register automotive recycling facilities. (January, 2007)

5.1.7 Provide annual payments from the grant program for closure of unlined landfills and small municipal incinerators by including awards to all eligible facilities that properly proceed with the closure process. (July, 2007)

5.1.8 Inspect all 216 operating permitted solid waste facilities. (September, 2007)

5.1.9 Ensure 30 of the remaining uncapped, post-1981 unlined landfills are properly capped. (December, 2007)

NEW HAMPSHIRE SOLID WASTE DISTRICTS

May 2002

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Alexandria Solid Waste Management District	Alexandria	Single town status granted 7-10-90	Plan approved 5-21-92.	Board of Selectmen Town of Alexandria 45 Washburn Road Alexandria, NH 03222 744-3220	
Alton Solid Waste District	Alton	Single town status granted 8-29-89	Plan approved 1-24-91	Town Administrator P.O. Box 659 Alton, NH 03809	
Ammonoosuc Solid Waste District	Bath Benton Haverhill Monroe	Memorandum of Understanding 7-7-83	Plan approved 1-7-92.	Chairman Ammonoosuc Solid Waste District Municipal Building RR #1 Box 23A North Haverhill, NH 03774	
Androscoggin Valley Regional Refuse Disposal District	Berlin Dummer Errol Gorham Jefferson Milan Northumberland Randolph Stark	RSA 53-B (1990) AVSWD deactivated when AVRRDD formed 4-25-91. RSA 53-B agreement	Plan approved 08-29-94.	AVRRDD P.O. Box 336 Berlin, NH 03570 752-3342	
B.C.E.P. Solid Waste Planning District	Barnstead Chichester Epsom Pittsfield	RSA 53-B agreement	Agreed to submit plan by 6-30-93.	Earl Weir P.O. Box 426 Pittsfield, NH 03263 Office - 435-6237	District approved on 2-20-90.
Bear-Camp and Ossipee Rivers District	Effingham Freedom	RSA 149-M By-laws	County-wide plan submitted 1-2-90.	Board of Selectman P.O. Box 25	

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
	Madison Ossipee Tamworth		Specific district plan was due by 2-11-91.	So. Effingham, NH 03882 539-7770	
Chatham, NH-Fryeburg, ME Solid Waste District	Chatham	No By-laws Single town district	County-wide plan submitted 1-2-90. Specific district plan was due by 2-11-91.	Chatham Board of Selectmen HCR 68 Box 233 Center Conway, NH 03813 694-3426	Has annual service contract with Fryeburg, ME. for use of LF.
City of Concord	Concord	Single town district	Agreed to comply with district plan.	City of Concord 41 Green Street Concord, NH 03301	Former member of Central NH Solid Waste District
City of Franklin	Franklin	Single town district	Agreed to comply with district plan.	City of Franklin 316 Central Street Franklin, NH 03235	Former member of Central New Hampshire Solid Waste District
City of Portsmouth	Portsmouth	Single town district	Agreed to comply with district plan.	City of Portsmouth One Junkins Avenue Portsmouth, NH 03801	Former member of Southeast Regional Solid Waste District
Contoocook Valley Solid Waste District	Hancock Peterborough Sharon	RSA 149-M By-laws (currently under revision). RSA 53-A agreement between Sharon, Peterborough for solid waste. RSA 53-A agreement Hancock and Peterborough for recyclables.	Plan approved 3-5-92.	Town Manager 1 Grove Street Peterborough, NH 03458	
Dover-Rochester Solid Waste District	Dover Rochester	RSA 149-M By-laws adopted November 1983.	Plan approved 11-4-91.	City Manager 31 Wakefield Street Rochester, NH 03867 332-1167	
Gilsum Solid Waste	Gilsum	Single town status	Plan submitted 5-31-90.	Board of Selectmen	Formerly a member of

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Management District		granted 1-30-90.	Plan review completed 10-10-90. Revision submitted and reviewed 2-10-92. Revision needs to be submitted.	Town of Gilsum P.O. Box 67 Gilsum, NH 03448 357-0320	Southwest SWMD.
Goffstown Solid Waste Management District	Goffstown	Single town status granted 7-17-90	Plan approved 2-19-93.	Board of Selectmen Town of Goffstown 16 Main Street Goffstown, NH 03045 497-3616	Former member of TriCounty SWMD.
Hebron-Bridgewater Regional Refuse Disposal District	Bridgewater Hebron	RSA 53-B (1976) agreement.	Plan needs to be submitted.	Board of Selectmen Town of Bridgewater 297 Mayhew Turnpike Bristol, NH 03222 744-5055	Former members of Lakes region SWMD.
Hinsdale Solid Waste Management District	Hinsdale	Single town status granted 4-13-90.	Plan submitted 1-2-90. Plan review completed 8-3-90. Revision submitted and reviewed 2-27-92. Revision needs to be submitted.	Office of Selectmen Town of Hinsdale PO Box 13 Hinsdale, NH 03451 336-5401	Formerly a member of Southwest SWMD.
Hopkinton-Webster Solid Waste District	Hopkinton Webster	RSA 149-M By-laws	Plan approved 2-8-91.	Town Administrator Town of Hopkinton Rte. #3, Box 258 Hopkinton, NH 03229 746-3170	Both towns participate in RSA 53-A agreement (Concord Regional Solid Waste/Resource Recovery Cooperative).
Jackson - Bartlett - Hart's Location Solid Waste District	Bartlett Hart's Location Jackson	Memorandum of Understanding signed 9-29-83.	County-wide plan submitted 1-2-90. Specific district plan due by 2-11-91.	Board of Selectmen P.O. Box 476 Jackson, NH 03846 383-4223	Jackson and Bartlett share a site but have separate compactors.
Keene Solid Waste Management District	Keene	Single town status granted 3-20-95	Plan approved 03-20-95.	Duncan Watson Public Works 580 Main Street Keene, NH 03431	Keene was a member of the Southwest Solid Waste Management District.

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Laconia-Gilford-Belmont Solid Waste District	Belmont Gilford Laconia	RSA 53-A agreement signed 11-30-76 between Laconia and Gilford for use of TS in Laconia.	Plan submitted 2-26-90 as draft. Final submitted on 3-19-90. Plan review completed 10-15-90. Revision needs to be submitted.	Director, Public Works Dept. Beacon St., East Laconia, NH 03246 542-1520	All towns participating in RSA 53-A agreement (Concord Regional Solid Waste/Resource Recovery Cooperative).
Lamprey Regional Solid Waste Cooperative	Barrington Durham Epping Greenland Lee Madbury Newfields Newington Newmarket Northwood Rollinsford Somersworth Stratham	RSA 53-A agreement (1978). Amendments received 8-3-88	Plan approved 11-16-92.	Lamprey Regional Solid Waste Cooperative 24 Fitch Road Dover NH 03820-9564 742-3087	Exempted from RSA 149-M:18 on 12-9-82 with conditions.
Lincoln-Woodstock Solid Waste District	Lincoln Woodstock	RSA 53-A agreement signed 11-23-81	Plan submitted 1-2-90. Plan review completed 5-31-90. Revision needs to be submitted.	Board of Selectmen P.O. Box 25 Lincoln, NH 03251 745-8782	
Landaff Solid Waste District	Landaff	RSA 53-A agreement signed 1-23-89.	Plan approved 2-27-92.	Board of Selectmen PO Box 125 Landaff, NH 03585	Landaff did not submit warrant article in time for town meeting to join the Pemi-Baker District
Litchfield Solid Waste District	Litchfield	Operates as a single town district.	Plan approved 12-3-90.	Chairperson Solid Waste Management Committee Town of Litchfield 255 Charles Bancroft Hwy. Litchfield, NH 03051 424-4046	

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Lower Mt. Washington Valley Solid Waste District (Conway-Albany- Eaton Solid Waste Cooperative)	Albany Conway Eaton	RSA 149-M By-laws (1988)	Plan submitted (no date) Update received 11-14-89. Plan review completed 4-11-90. Revision needs to be submitted.	Chairman Board of Selectmen PO Box 70 Ct. Conway, NH 03813 447-3811	Organized originally under RSA 53-A agreement as Mt. Washington Valley Regional Solid Waste Disposal Cooperative.
Manchester Solid Waste District	Manchester	Single town status granted 9-15-81.	Plan submitted 12-29-89. Plan review completed 3-20-90. Revision submitted on 1-8-91. Plan review completed 11-12-91. Revision needs to be submitted.	City Coordinator Office of the Mayor 908 Elm Street Manchester, NH 03101 624-6500	
Moultonborough Solid Waste Management District	Moultonborough	Single town status granted 3-7-90.	Plan approved 11-6-91.	Town Administrator P.O. Box 139 Moultonborough,NH 03254 427-2347	Former member of Lakes Region SWMD.
Nashua Region Solid Waste Management District	*Amherst *Brookline *Hollis Hudson Merrimack Milford *Mont Vernon Nashua Windham	RSA 149-M By-laws signed by Milford, Merrimack, and Nashua 10-83. Hudson and Windham were assigned to the district 10-28-83. *Souhegan Regional Landfill District RSA 53-B agreement.	Plan approved 3-5-92.	Nashua Regional Planning Commission P.O. Box 847 Nashua, NH 03061 883-0366 Souhegan Regional Landfill District William W. Dunklee Chairman P.O. Box 360 Amherst, NH 03031 673-8359	Souhegan Regional Landfill District included as a sub-district. 8-23-83 letter exempts Souhegan District from RSA 149-M:18 with conditions.
New Hampton Solid Waste Management District	New Hampton	Single town status granted 3-8-90.	Plan approved 10-30-91.	Board of Selectmen Box 428 New Hampton, NH 03256	
New Ipswich Solid	New Ipswich	Single town status	Plan approved 3-31-93.	Board of Selectmen	

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Waste Management District		granted 11-8-89.		Town of New Ipswich Main Street New Ipswich, NH 03071 878-2772	
Pelham Solid Waste District	Pelham	Operates as a single town district.	Plan submitted 1-12-90. Plan review completed 6-5-90. Revision needs to be submitted.	Pelham Board of Selectmen 6 Main Street Pelham, NH 03076 635-7811	
Pemi-Baker Solid Waste District	Ashland **Campton Danbury Dorchester Easton **Ellsworth Franconia Groton Lisbon Littleton Lyman Plymouth Rumney Sugar Hill **Thornton *Warren Waterville Wentworth	RSA 53-B agreement on 1-31-89. *Needs town vote to approve agreement. **Towns have agreement for use of Thornton TS.	Plan submitted (prepared February 1986). Plan approved 8-26-92.	North Country Council 107 Glessner Road Bethlehem, NH 03574 444-6303	Landaff did not submit warrant article in time for town meeting to join the Pemi-Baker District
Rindge,NH-Winchendon, MA Solid Waste District	Rindge, NH Winchendon, MA	Not formally a single town district.	Plan submitted 8-20-90. Plan review completed 12-6-90. Revision needs to be submitted.	Board of Selectmen P.O. Box 163 Rindge, NH 03461 899-5181	Contract to use landfill facility in Winchendon, MA Requested exemption 9-14-83.
Salem Solid Waste District	Salem	Single town status granted	Plan approved 10-28-91.	Board of Selectmen 33 Geremonty Drive Salem, NH 03079 893-5731	Exempt from RSA 149-M:18.

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Sanbornton Solid Waste Management District	Sanbornton	Single town status granted 11-07-89	Plan submitted 1-9-90 as a draft. Final received 2-5-90. Plan review completed 7-8-90. Revision needs to be submitted.	Board of Selectmen Town of Sanbornton P.O. Box 124 Sanbornton, NH 03269	
Sandwich Solid Waste Management District	Sandwich	Single town status granted 11-30-89	Plan approved 2-26-92.	Board of Selectmen Selectmen's Office PO Box 194 Center Sandwich, NH 03227 284-7701	
Shelburne Solid Waste District	Shelburne	Single town status granted 7-10-90	Plan approved 1-29-92.	Office of Selectmen Town of Shelburne 74 Village Road Shelburne, NH 03581	Former member of Androscoggin Valley RRDD.
Southeast Regional Refuse Disposal District	Brentwood Fremont Hampton Hampton Falls Kensington New Castle North Hampton Rye Sandown South Hampton	RSA 53-B (1988)	Southeast Regional Solid Waste District (SRSWD) plan approved in 1988	SRRDD 86 Lafayette Road North Hampton, NH 03862 964-7116	SRRDD was a member of the Southeast Regional Solid Waste District that disbanded in 1997.
Strafford Solid Waste District	Farmington Middleton Milton New Durham Strafford	RSA 149-M By-laws.	Plan approved 1-31-91	Town Administrator 4 Main Street P.O. Box 207 New Durham, NH 03855 829-2091	

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Sullivan County Regional Refuse Disposal District	Acworth Center Harbor Claremont Cornish Croydon Goshen *Grantham Langdon Lempster Meredith New London Newport *Plainfield Springfield Sunapee	RSA 53-B agreement adopted 12-17-81. Reprinted 1-89. 149-M District approved 4-83.	Plan approved 4-3-83.	NH/VT Project 130 Pleasant Street Suite 3 Claremont, NH 03743 543-1201	Participates in the NH/VT Project. Cornish & Newport go to Claremont transfer station. *Participates in joint Upper Valley Recycling and Waste Management Contract.
Swanzey Solid Waste Management District	Swanzey	Single town status granted 4-13-90	Plan submitted 12-29-89. Plan review completed 8-15-90. Revision needs to be submitted.	Office of Selectmen Town of Swanzey P.O. Box 9 Swanzey, NH 03446-0009.	Formerly member of Southwest SWMD.
Three Rock Solid Waste Planning District	Auburn Candia Nottingham	RSA 149-M By-laws.	Plan approved 6-8-92.	Three Rock Solid Waste Planning District 74 High Street Office of Selectmen Candia, NH 03034	Towns were former members of Tri-County SWMD. District approved 11-8-89.
Town of Allenstown	Allenstown	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Allenstown 16 School Street Allenstown, NH 03275	Former member of Central New Hampshire Solid Waste District
Town of Alstead	Alstead	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Alstead PO Box 60 Main Street Alstead, NH 03602	Former member of Southwest Solid Waste Management District
Town of Andover	Andover	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Andover	Former member of Central New

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
				PO Box 61, 11 School Street Andover, NH 03216	Hampshire Solid Waste District
Town of Atkinson	Atkinson	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Atkinson 21 Academy Avenue Atkinson, NH 03811	Former member of Southeast Regional Solid Waste District
Town of Bedford	Bedford	Single town district	Agreed to comply with district plan.	Town Council Town of Bedford 24 North Amherst Road Bedford, NH 03110	Former member of TriCounty Solid Waste Management District
Town of Boscawen	Boscawen	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Boscawen 17 High Street Boscawen, NH 03303	Former member of Central New Hampshire Solid Waste District
Town of Bow	Bow	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Bow 10 Grandview Road Bow, NH 03304	Former member of Central New Hampshire Solid Waste District
Town of Bradford	Bradford	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Bradford 75 West Main Street Bradford, NH 03221	Former member of Central New Hampshire Solid Waste District
Town of Bristol	Bristol	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Bristol 71 Lake Street Bristol, NH 03222	Former member of Central New Hampshire Solid Waste District
Town of Canterbury	Canterbury	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Canterbury PO Box 500 Hackleboro Rd. Canterbury, NH 03224	Former member of Central New Hampshire Solid Waste District
Town of Chester	Chester	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Chester	Former member of TriCounty Solid Waste

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
				PO Box 275 Chester, NH 03036	Management District
Town of Chesterfield	Chesterfield	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Chesterfield PO Box 175 Chesterfield, NH 03443	Former member of Southwest Solid Waste Management District
Town of Danville	Danville	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Danville PO Box 11 210 Main Street Danville, NH 03819	Former member of Southeast Regional Solid Waste District
Town of Deerfield	Deerfield	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Deerfield P O Box 159 Deerfield, NH 03037	Former member of TriCounty Solid Waste Management District
Town of Deering	Deering	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Deering RFD 1, Box 166 Hillsborough, NH 03244	Former member of Central New Hampshire Solid Waste District
Town of Derry	Derry	Single town district	Agreed to comply with district plan.	Town Council Town of Derry 48 East Broadway Derry, NH 03038	Former member of Southeast Regional Solid Waste District
Town of Dublin	Dublin	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Dublin PO Box 277 Main Street Dublin, NH 03444	Former member of Southwest Solid Waste Management District
Town of Dunbarton	Dunbarton	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Dunbarton 1011 School Street Dunbarton, NH 03045	Former member of Central New Hampshire Solid Waste District
Town of E. Kingston	E. Kingston	Single town district	Agreed to comply with district	Board of Selectmen	Former member of

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
			plan.	Town of E. Kingston 24 Depot Road E. Kingston, NH03827	Southeast Regional Solid Waste District
Town of Exeter	Exeter	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Exeter 10 Front Street Exeter, NH 03833	Former member of Southeast Regional Solid Waste District
Town of Fitzwilliam	Fitzwilliam	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Fitzwilliam PO Box 725 Fitzwilliam, NH 03447	Former member of Southwest Solid Waste Management District
Town of Gilmanton	Gilmanton	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Gilmanton PO Box 550, RTE 107&140 Gilmanton, NH 03237	Former member of Central New Hampshire Solid Waste District
Town of Hampstead	Hampstead	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Hampstead 11 Main Street Hampstead, NH 03841	Former member of Southeast Regional Solid Waste District
Town of Harrisville	Harrisville	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Harrisville PO Box 34 Harrisville, NH 03450	Former member of Southwest Solid Waste Management District
Town of Henniker	Henniker	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Henniker 2 Depot Hill Road Henniker, NH 03242	Former member of Central New Hampshire Solid Waste District
Town of Hill	Hill	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Hill PO Box 236 32B Crescent Street Hill, NH 03243	Former member of Central New Hampshire Solid Waste District
Town of Hillsborough	Hillsborough	Single town district	Agreed to comply with district	Board of Selectmen	Former member of

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
			plan.	Town of Hillsborough PO Box 7, 29 School Street Hillsborough, NH 03244	Central New Hampshire Solid Waste District
Town of Hooksett	Hooksett	Single town district	Agreed to comply with district plan.	Town Council Town of Hooksett 16 Main Street Hooksett, NH 03106	Former member of TriCounty Solid Waste Management District
Town of Jaffrey	Jeffrey	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Jaffrey 10 Goodnow Street Jaffrey, NH 03452	Former member of Southwest Solid Waste Management District
Town of Kingston	Kingston	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Kingston 163 Main Street PO Box 716 Kingston, NH 03848	Former member of Southeast Regional Solid Waste District
Town of Londonderry	Londonderry	Single town district	Agreed to comply with district plan.	Town Council Town of Londonderry 50 Nashua Road, Suite 100 Londonderry, NH 03053	Former member of TriCounty Solid Waste Management District
Town of Loudon	Loudon	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Loudon PO Box 7837 South Village Road Loudon, NH 03301	Former member of Central New Hampshire Solid Waste District
Town of Marlborough	Marlborough	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Marlborough PO Box 487 236 East Main Street Marlborough, NH 03455	Former member of Southwest Solid Waste Management District
Town of Marlow	Marlow	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Marlow PO Box 184 Marlow, NH 03456	Former member of Southwest Solid Waste Management District

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Town of Nelson	Nelson	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Nelson HCR 33, Box 660 Nelson, NH 03457	Former member of Southwest Solid Waste Management District
Town of New Boston	New Boston	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of New Boston PO Box 250 New Boston, NH 03070	Former member of TriCounty Solid Waste Management District
Town of Newbury	Newbury	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Newbury PO Box 296 Newbury, NH 03255	Former member of Central New Hampshire Solid Waste District
Town of Newton	Newton	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Newton PO Box 378 Town Hall Road Newton, NH 03858	Former member of Southeast Regional Solid Waste District
Town of Northfield	Northfield	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Northfield 21 Summer Street Northfield, NH 03276	Former member of Central New Hampshire Solid Waste District
Town of Pembroke	Pembroke	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Pembroke 311 Pembroke Street Pembroke, NH 03275	Former member of Central New Hampshire Solid Waste District
Town of Plaistow	Plaistow	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Plaistow 145 Main Street Plaistow, NH 03865	Former member of Southeast Regional Solid Waste District
Town of Raymond	Raymond	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Raymond 4 Epping Street Raymond, NH 03077	Former member of TriCounty Solid Waste Management District

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Town of Roxbury	Roxbury	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Roxbury 3 Middletown Road Roxbury, NH 03431	Former member of Southwest Solid Waste Management District
Town of Salisbury	Salisbury	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Salisbury PO Box 214 Salisbury, NH 03268	Former member of Central New Hampshire Solid Waste District
Town of Seabrook	Seabrook	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Seabrook PO Box 456 99 Lafayette Street Seabrook, NH 03874	Former member of Southeast Regional Solid Waste District
Town of Stoddard	Stoddard	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Stoddard PO Box 216 Stoddard, NH 03464	Former member of Southwest Solid Waste Management District
Town of Sullivan	Sullivan	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Sullivan PO Box 110 Sullivan, NH 03445	Former member of Southwest Solid Waste Management District
Town of Surry	Surry	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Surry 1 Village Road Surry, NH 03260	Former member of Southwest Solid Waste Management District
Town of Sutton	Sutton	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Sutton PO Box 85 93 Main Street North Sutton, NH 03260	Former member of Central New Hampshire Solid Waste District
Town of Tilton	Tilton	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Tilton 257 Main Street Tilton, NH 03276	Former member of Central New Hampshire Solid Waste District

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Town of Troy	Troy	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Troy PO Box 249 Troy, NH 03465	Former member of Southwest Solid Waste Management District
Town of Walpole	Walpole	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Walpole PO Box 729 Walpole, NH 03278	Former member of Southwest Solid Waste Management District
Town of Warner	Warner	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Warner PO Box 265 5 East Main Street Warner, NH 03278	Former member of Central New Hampshire Solid Waste District
Town of Washington	Washington	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Washington PO Box 473 7 Half Moon Pond Road Washington, NH 03280	Former member of Central New Hampshire Solid Waste District
Town of Weare	Weare	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Weare 15 Flanders Memorial Road PO Box 190 Weare, NH 03281	Former member of Central New Hampshire Solid Waste District
Town of Westmoreland	Westmoreland	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Westmoreland PO Box 55 Westmoreland, NH 03467	Former member of Southwest Solid Waste Management District
Town of Wilmot	Wilmot	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Wilmot PO Box 72 Wilmot, NH 03287	Former member of Central New Hampshire Solid Waste District
Town of Windsor	Windsor	Single town district	Agreed to comply with district plan.	Board of Selectmen Town of Windsor	Former member of Central New

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
				RR 2, Box 145 Hillsborough, NH 03244	Hampshire Solid Waste District
Tri-Town Solid Waste Management District	Antrim Bennington Francestown	RSA 53-A agreement (1974) RSA 53-A agreement for 10 years on 2-1-82.	Plan submitted 10-13-83. Update received 2-27-89. Plan review completed 9-28-90. Revision needs to be submitted.	Town Administrator P.O. Box 257 Bennington, NH 03442 588-2189	
Tuftonboro Solid Waste District	Tuftonboro	Single town status granted 3/9/83.	County-wide plan submitted 1-2-90. Specific district plan was due 2-11-91.	Board of Selectmen P.O. Box 98 Center Tuftonboro, NH 03816 569-4539	
Twin Mountain Solid Waste Management District	Carroll	Single town status granted 4-17-90.	Plan approved 6-23-92	Office of Selectmen Town of Carroll P.O. Box 146 Twin Mountain, NH 03595 846-5754	Formerly a member of Upper Grafton Lancaster Area SW District.
Upper Connecticut River Valley Solid Waste District	Clarksville Colebrook Columbia Dixville Pittsburg Stewartstown Stratford	Memorandum of Understanding (No date) Plan states RSA 149-M.	Plan submitted 12-29-89. Plan review completed 4-25-90. Revision needs to be submitted.	Board of Selectmen 10 Bridge Street Colebrook, NH 03576 237-4070	
Upper Grafton Lancaster Area Solid Waste District	Bethlehem Dalton Lancaster	No By-laws Memorandum of Understanding (No date-unsigned) references 149-M.	Plan submitted (Prepared 3-86) Letter updating plan submitted 7-23-90. Plan review completed 2-3-92. Revision needs to be submitted.		The towns of Easton, Franconia, Littleton, and Sugar Hill have joined the Pemi-Baker Solid Waste District

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
Upper Valley Solid Waste District	Canaan Charlestown Enfield Grafton Hanover Lebanon Lyme Orange Orford Piermont Unity	RSA 149-M By-laws (9-22-83)	Plan approved 6-29-92	Upper Valley Lake Sunapee Regional Council 199 Heater Road Suite 1 Lebanon NH 03766-1451	Grantham and Plainfield also participate in contract.
Wakefield-Brookfield Refuse Disposal District	Wakefield Brookfield	Wakefield single town status granted 11-30-89. Wakefield formed 53-A with Brookfield in 1992.	Plan approved 4-1-91 New Plan needed to include Brookfield.	Board of Selectmen Town of Wakefield 2 High Street Sanbornville, NH 03872 522-6205	
White Oak Solid Waste District	Holderness	Single town status granted 3-7-90.	Plan submitted 3-7-90 Plan review completed 8-17-90. Revision needs to be submitted.	Town Administrator Town of Holderness PO Box 203 Holderness, NH 03245 968-3537	
Whitefield Solid Waste Management District	Whitefield	Single town status granted 1-19-90.	Plan submitted 1-3-90 Plan review completed 11-2-90. Revision needs to be submitted.	Board of Selectmen Selectmen's Office Whitefield, NH 03598 837-2551	Has a petition to join AVRRDD.
Wilton Solid Waste District	Greenfield Greenville Lyndeborough Mason Temple Wilton	Contract (10Years)between Wilton Recycling Center and participating towns.	Plan submitted 1-2-90 Plan review completed 6-7-90. Revision needs to be submitted.	Board of Selectmen Town of Wilton Box 83 Wilton, NH 03056 654-9451	District was granted an exemption from 149-M:18 with conditions on 11-19-82 and 8-3-83.
Winchester Solid Waste Management District	Richmond Winchester	RSA 53-A agreement signed 9-9-91.	Plan approved 12-19-90.	Board of Selectmen Town of Winchester Town Hall	Status as a new district was granted 11-30-89.(Former member of

DISTRICT NAME	MEMBER TOWNS	ORGANIZATIONAL FRAMEWORK	PLAN STATUS	CONTACT NAME	COMMENTS
				Winchester, NH 03470	Southwest SWMD). Richmond's transfer into the district was approved 1-19-90.
Wolfeboro Solid Waste Management District	Wolfeboro	Single town status granted 3-25-83.	Plan approved 4-3-92.	Public Works Director Town Office P.O. Box 629 Wolfeboro, NH 03894 569-3900	

STATE OF NEW HAMPSHIRE
POPULATION AND SOLID WASTE GENERATION FOR 2001
September 2002

Town	2001 Population	2001 Res. MSW tons/yr	2001 C/I tons/yr	2001 Cons/Demo tons/yr	2001 Recyclables tons/yr	2001 Compost tons/yr	2001 Other tons/yr	2001 Total MSW tons/yr
Acworth	842	301		1,100	294	15	28	1,738
Albany	658	728		124	129			981
Alexandria	1,360	578		196	64			838
Allenstown	4,934	3,083				56		3,139
Alstead	1,970	390		105	79		11	585
Alton	4,627	1,500		1,100	266	5		2,871
Amherst	11,026	3,743		639	920			5,302
Andover	2,148	1,270		89	264	10		1,633
Antrim	2,483	582			81			663
Ashland	1,972	805		207	193	50		1,255
Atkinson	6,387	322						322
Auburn	4,825	3,171			341			3,512
Barnstead	3,996	**2,407**						2,407
Barrington	7,687	650		300	350			1,300
Bartlett	2,757	2,097		327	5			2,429
Bath	904	**544**						544
Bedford	19,205	8,760	0		1,432	63		10,255
Belmont	6,905	6,387			30			6,417
Bennington	1,415	369			83			452
Benton	308	**185**						185
Berlin	10,543	4,656		1,665	1,326	1,000	492	9,139
Bethlehem	2,242	351			225			576
Boscawen	3,662	2,283	756		245	5		3,289
Bow	7,277	6,244						6,244
Bradford	1,484	979		175	6	20		1,180
Brentwood	3,369	150						150
Bridgewater	1,001	**603**						603
Bristol	3,067	3,770	2,556	254				6,580
Brookfield	629	213		69	80			362
Brookline	4,300	1,623		232	390	1		2,246
Campton	2,774	852		280	397	10		1,539
Canaan	3,358	1,720						1,720
Candia	4,024	886			476	20	122	1,504
Canterbury	2,036	728		322		13		1,063
Carroll	689	1,397		54	4	2		1,457
Center Harbor	1,006	304		168	164			636
Charlestown	4,811	**2,897**						2,897
Chatham	261	85		25	75			185
Chester	4,094	750			393	4		1,147
Chesterfield	3,596	671		135	167	7		980
Chichester	2,335	**1,406**						1,406
Claremont	13,187	12,986		152	127			13,265
Clarksville	297	74			62			136
Colebrook	2,335	943		291	745	4		1,983
Columbia	760	240		44	89			373
Concord	41,116	24,179	24,179			1,710		50,068
Conway	8,710	9,261		1,582	1,634	292		12,769
Cornish	1,680	547			41			588
Croydon	681	340						340
Dalton	942	116		17				133

Town	2001 Population	2001 Res. MSW tons/yr	2001 C/I tons/yr	2001 Cons/Demo tons/yr	2001 Recyclables tons/yr	2001 Compost tons/yr	2001 Other tons/yr	2001 Total MSW tons/yr
Danbury	1,084	596		94	79			769
Danville	4,115	**2,478**						2,478
Deerfield	3,915	1,371		174	430			1,975
Deering	1,918	351						351
Derry	34,436	9,027	1,073	818	3,881	840		15,639
Dorchester	353	120		41	26			187
Dover	27,437	377			229	1,101		1,707
Dublin	1,490	277		38	193			508
Dummer	313	110			50			160
Dunbarton	2,315	1,073			316			1,389
Durham	12,700	1,965	531	566	1,067	25		**4,154**
E.Kingston	1,827	52						52
Easton	260	74		23	50			147
Eaton	392	416		71	73			560
Effingham	1,285	295			61			356
Ellsworth	87	27		9	12	1		49
Enfield	4,719	2,639			417			3,056
Epping	5,742	**3,458**						3,458
Epsom	4,184	**2,520**						2,520
Errol	302	117	100		310			527
Exeter	14,192	3,135				112		3,247
Farmington	5,953	3,000	15	450	399	8		3,872
Fitzwilliam	2,176	250		80	270	1		601
Francestown	1,521	473		76	29			578
Franconia	947	494		154	180	3		831
Franklin	8,456	6,400	643	480	644			8,167
Freedom	1,340	506		288	35	48		877
Fremont	3,679	2,114						2,114
Gilford	6,935	6,989		299	141	428		7,857
Gilmanton	3,150	1,136						1,136
Gilsum	788	**475**						475
Goffstown	17,099	5,446	248	1,044	2,113	1,800		10,651
Gorham	2,937	2,125	1,022	318	376	550		4,391
Goshen	754	173						173
Grafton	1,149	499		116				615
Grantham	2,231	1,206						1,206
Greenfield	1,671	233		123	135			491
Greenland	3,296	1,450			127		5,398	6,975
Greenville	2,260	**1,361**						1,361
Groton	467	172						172
Hampstead	8,440	**5,083**						5,083
Hampton	15,037	9,679		1,320	1,667	1,900		14,566
Hampton Falls	1,921	**1,157**						1,157
Hancock	1,759	316		12	123	11		462
Hanover	10,953	6,398						6,398
Harrisville	1,086	**654**						654
Harts Loc	39	**23**						23
Haverhill	4,474	**2,694**						2,694
Hebron	475	276						276
Henniker	4,554	2,830		257	540	6		3,633
Hill	1,031	541			50			591
Hillsborough	5,020	3,295	2,380	407	463			6,545
Hinsdale	4,162	816		89	107	14		1,026
Holderness	1,971	900		350	175			1,425

Town	2001 Population	2001 Res. MSW tons/yr	2001 C/I tons/yr	2001 Cons/Demo tons/yr	2001 Recyclables tons/yr	2001 Compost tons/yr	2001 Other tons/yr	2001 Total MSW tons/yr
Hollis	7,215	2,720		328	935			3,983
Hooksett	12,009	4,566				50		4,616
Hopkinton	5,484	4,112		930	999	300		6,341
Hudson	23,156	9,404		449	1,124	28		11,005
Jackson	852	636		206	5			847
Jaffrey	5,539	823		526	446			1,795
Jefferson	1,014	319		76	196			591
Keene	22,800	37,976			8,521	400		46,897
Kensington	1,934	656			162			818
Kingston	6,102	2,560	34,985	0	0	11		37,556
Laconia	16,648	18,594	11,638	664	126	191		31,213
Lancaster	3,303	516		357	816	40		1,729
Landaff	381	76		20	49			145
Langdon	594	213						213
Lebanon	12,824	19,990			842	500		21,332
Lee	4,242	**2,555**						2,555
Lempster	997	504						504
Lincoln	1,279	477		371	320			1,168
Lisbon	1,614	509		133	215			857
Litchfield	7,604	780		240				1,020
Littleton	5,923	574		185	1,477	50		2,286
Londonderry	23,798	9,770		350	1,682	1		11,803
Loudon	4,617	3,417		110	109			3,636
Lyman	496	102		27	66			195
Lyme	1,700	818		77	192	50		1,137
Lyndeborough	1,639	**987**						987
Madbury	1,585	**955**						955
Madison	2,028	837		363	58			1,258
Manchester	108,078	**45,427**		4,123	1,511	6,394	3,892	61,347
Marlborough	2,030	465		80	230	10		785
Marlow	762	2,080		40	91			2,211
Mason	1,178	**709**						709
Meredith	6,055	2,356		1,270	1,009			4,635
Merrimack	25,829	8,060	15,719	2,640		438		26,857
Middleton	1,498	565						565
Milan	1,357	465			175			640
Milford	13,871	3,446	500	1,752	1,865	375		7,938
Milton	4,037	610		306	140			1,056
Monroe	774	432		1				433
Mont Vernon	2,130	786			241			1,027
Moultonborough	4,589	843		569	373	118		1,903
Nashua	87,449	44,190	29,787	10,286		6,114		90,377
Nelson	647	**390**						390
New Boston	4,395	1,552		177	587	50		2,366
New Castle	1,022	463				1		464
New Durham	2,295	**1,382**						1,382
New Hampton	2,004	693		255	115			1,063
New Ipswich	4,489	500		500				1,000
New London	4,232	2,949			708			3,657
Newbury	1,743	862		270				1,132
Newfields	1,584	492			171			663
Newington	789	**475**						475
Newmarket	8,268	**4,979**		244	193	120		5,536
Newport	6,343	4,328						4,328

Town	2001 Population	2001 Res. MSW tons/yr	2001 C/I tons/yr	2001 Cons/Demo tons/yr	2001 Recyclables tons/yr	2001 Compost tons/yr	2001 Other tons/yr	2001 Total MSW tons/yr
Newton	4,459	2,364			110	8		2,482
North Hampton	4,415	**2,659**			304	6		2,969
Northfield	4,635	2,700	970	168	92			3,930
Northumberland	2,468	858		333	225			1,416
Northwood	3,708	848		271	142			1,261
Nottingham	3,814	318		90	211			619
Orange	304	60						60
Orford	1,109	595						595
Ossipee	4,258	1,179		751	369	7	133	2,439
Pelham	11,300	2,300						2,300
Pembroke	6,989	4,474						4,474
Peterborough	5,951	416		93	655			1,164
Piermont	719	118			106			224
Pittsburg	874	319			186	3		508
Pittsfield	4,035	2,135		743	1,549	125		4,552
Plainfield	2,306	873					1,764	2,637
Plaistow	7,812	3,200			429	20		3,649
Plymouth	6,141	934	100	224	1,750	300		3,308
Portsmouth	20,906	6,289			1,863	1,793		9,945
Randolph	341	92	249		50			391
Raymond	9,938	4,150		857	367			5,374
Richmond	1,199	**722**						722
Rindge	5,651	679		218	160	6		1,063
Rochester	28,874	14,685	10,843	657	1,577	4,778	1,680	34,220
Rollinsford	2,655	**1,599**						1,599
Roxbury	240	**145**						145
Rumney	1,510	488		109	75			672
Rye	5,280	1,000		300	1,000	34		2,334
Salem	28,571	11,106		1,400	2,584	112		15,202
Salisbury	1,165	585		33	60			678
Sanbornton	2,668	462		358	301	1		1,122
Sandown	5,220	2,000		520	200	100		2,820
Sandwich	1,304	289		85	189			563
Seabrook	8,162	3,745		362	686	150		4,943
Sharon	367	**221**						221
Shelburne	385	182			76	4		262
Somersworth	11,591	**6,981**						6,981
S.Hampton	860	**518**						518
Springfield	971	**585**						585
Stark	525	88		**47**	28			163
Stewartstown	1,030	319		39	117			475
Stoddard	944	208		180	128		7	523
Strafford	3,713	999		155	236			1,390
Stratford	931	183		163	111			457
Stratham	6,531	**3,933**						3,933
Sugar Hill	569	153		48	103			304
Sullivan	760	**458**						458
Sunapee	3,120	1,766		1,105	720			3,591
Surry	685	**413**						413
Sutton	1,600	408		360	88	20	17	893
Swanzey	6,896	1,230		333	1,161			2,724
Tamworth	2,531	667		37	113	10		827
Temple	1,351	**814**						814
Thornton	1,877	1,309		149	211	5		1,674
Tilton	3,516	5,031						5,031

Town	2001 Population	2001 Res. MSW tons/yr	2001 C/I tons/yr	2001 Cons/Demo tons/yr	2001 Recyclables tons/yr	2001 Compost tons/yr	2001 Other tons/yr	2001 Total MSW tons/yr
Troy	1,983	179		98	78			355
Tuftonboro	2,184	809		180	199	4		1,192
Unity	1,562	**941**						941
Wakefield	4,325	1,563		505	595	45		2,708
Walpole	3,623	545		325	441			1,311
Warner	2,802	1,779	339	211	362			2,691
Warren	888	295			66			361
Washington	908	375		237	75	1		688
Waterville Valley	262	987		209	53	37		1,286
Weare	8,007	3,432		441	383			4,256
Webster	1,630	785						785
Wentworth	809	185		96	26			307
Westmoreland	1,804	302		69	153			524
Whitefield	2,059	298		29	230			557
Wilmot	1,165	460			39			499
Wilton	3,809	**2,294**						2,294
Winchester	4,219	954		389	348	23		1,714
Windham	11,491	3,622		851	2,009	125		6,607
Windsor	205	**123**						123
Wolfeboro	6,188	3,034		1,764	840	250		5,888
Woodstock	1,154	423		329	283			1,035

STATE OF NEW HAMPSHIRE
COLLECTION, STORAGE, AND TRANSFER FACILITIES
September 2002

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Acworth Beryl Mt. Rd. Acworth, NH	Town of Acworth P.O. Box 637 Acworth, NH 03601	DES-SW-TP-96-009	Acworth	NCES LF, Bethlehem	Yes	
Alexandria Smith River Rd. (Old Route 104) Alexandria, NH	Town of Alexandria 45 Washburn Road Bristol, NH 03222	DES-SW-90-034	Alexandria	W-to-E, Concord	No	C&D to NCES LF, Bethlehem.
Allenstown 156 Granite Street Allenstown, NH	Town of Allenstown 16 School St. Allenstown, NH 03275	DES-SW-90-018	Allenstown	W-to-E, Concord	Yes	
Allenstown 104 River Road Allenstown, NH	J.M. Container Corp. 104 River Road Allenstown, NH 03275	DPHS-SW-85-009	Spot Market	Various Sites in MA, ME and NH	No	Company was recently bought by Casella Waste Systems.
Alstead Rt. 12 A Alstead, NH	Town of Alstead PO Box 60 Alstead, NH 03602	Pre-1983	Alstead	W-to-E, Claremont	Yes	Local mandatory recycling ordinance.
Alton Hurd Hill Rd. Alton, NH	Town of Alton P.O. Box 659 Alton, NH 03809	DES-SW-91-009	Alton	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Amherst Route 101 Amherst, NH	Souhegan Regional LF District P.O. Box 360 Amherst, NH 03031	No Permit	Amherst	W-to-E, Concord	Yes	Former LF is owned by Souhegan Regional Landfill District.
Andover Route 11 Andover, NH	Town of Andover P.O. Box 61 Andover, NH 03216-0061	DES-SW-87-034	Andover	W-to-E, Concord	No	Local mandatory recycling ordinance.
Antrim Goddell Rd. Antrim, NH	Town of Antrim P.O. Box 517 Antrim, NH 03440	DES-SW-LP-92-504	Antrim	W-to-E, Concord	No	Local mandatory recycling ordinance.
Ashland Collins St. Ashland, NH	Town of Ashland PO Box 517 Ashland, NH 03217	DES-SW-LP-95-506	Ashland	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Atkinson Pope Road Atkinson, NH	Town of Atkinson 21 Academy Rd. Atkinson, NH 03811	No Permit	Atkinson	Waste Management, Inc.	No	
Auburn 24 Grey Point Avenue Auburn, NH	WMNH, INC-Auburn 24 Grey Point Avenue Auburn, NH 03032	DES-SW-SP-97-001	Spot Market	Turnkey LF, Rochester W-to-E, Concord	No	Transfer station receives Manchester waste along with spot market waste. Auburn has host community benefit to use facility for drop-off of recyclables and trash. Local mandatory recycling ordinance.
Barrington Smoke St. and Brewster Rd. Barrington, NH	Town of Barrington 41 Province Lance Barrington, NH 03825	Pre-1983	Barrington	Turnkey LF, Rochester	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Bartlett Route 16 Bartlett, NH	Town of Bartlett RR 1, Box 49 Bartlett, NH 03845	DES-SW-90-033	Bartlett	NCES LF, Bethlehem	No	Operates on same site as Jackson TS. Each town has its own compactor. Local mandatory recycling ordinance.
Bedford 77 Chubbuck Road Bedford, NH	Town of Bedford 24 North Amherst Road Bedford, NH 03110	DES-SW-LP-94-504	Bedford	W-to-E, Haverhill, MA	Yes	

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Belmont Sargent St. Belmont, NH	Town of Belmont PO Box 310 Belmont, NH 03220	No Permit Needed	Belmont	W-to-E, Concord	No	Recycling center located at highway garage.
Belmont 277 Hurrican Road Belmont, NH 03220	Belmont Salvage 277 Hurricane Road Belmont, NH 03220	DES-SW-TP-97-007	Spot Market			"Junk Yard"
Bennington North Bennington Rd. Bennington, NH	Town of Bennington 7 School Street Unit 101 Bennington, NH 03442	DES-SW-LP-92-508	Bennington	W-to-E, Concord		
Berlin AVRRDD MRF Route 110 Berlin, NH	AVRRDD PO Box 336 Berlin, NH 03570	DES-SW-91-011	Berlin Errol Dummer Gorham Jefferson Milan Northumberland Randolph Stark Lancaster Thornton	Mt. Carberry LF, Berlin, (Success)	No	Recycling only. Also processes C&D on site.
Bethlehem Trudeau Rd. Bethlehem, NH	NCES 501 South Street, Box E Bow, NH 03304	DES-SW-87-015	Bethlehem, NH	NCES LF, Bethlehem	Yes	TS is located at the same site as current and operating LF.
Boscawen Corn Hill Rd. (Marlboro Rd.) Boscawen, NH	Town of Boscawen 17 High St. Boscawen, NH 03303	DES-SW-89-017	Boscawen	W-to-E, Concord	Yes	
Bow 12 Robinson Road Bow, NH	Town of Bow 10 Grandview Rd. Bow, NH 03304	DES-SW-PN-98-003	Bow	W-to-E, Concord	No	Town has curbside private pickup of MSW and recyclables.
Bradford Rt. 114 Bradford, NH	Town of Bradford 75 West Main Street Bradford, NH 03221	Pre-1983	Bradford	W-to-E, Concord	Yes	Local mandatory recycling ordinance.
Brentwood 1 Dalton Rd. Brentwood, NH	Town of Brentwood 1 Dalton Rd. Brentwood, NH 03833	DES-SW-PN-00-005	Brentwood	Turnkey LF, Rochester	No	Town has applied for permit to move facility.
Bridgewater Dick Brown Road Bridgewater, NH	Town of Bridgewater 297 Mayhew Turnpike Bristol, NH 03222	No Permit	Bridgewater Hebron	Hebron-Bridgewater Incinerator	Yes	Landfill on site for disposal of incinerator ash and C&D. Local mandatory recycling ordinance.
Bristol Ayer's Island Dam Road Bristol, NH	Town of Bristol 230 Lake Street Bristol, NH 03222	Pre-1983	Bristol	W-to-E, Concord	No	Located on two sites. One site is for trash, newspaper, and cardboard. Second site is located down the road and is for scrap metal and C&D.
Brookline North Mason Rd. Brookline, NH	Town of Brookline PO Box 360 Brookline, NH 03033	DES-SW-PN-98-001	Brookline	W-to-E, Concord	Yes	Trash is handled through Souhegan Regional Landfill District.
Canaan Cardigan Mountain Rd. Canaan, NH	Town of Canaan P.O. Box 38 Canaan, NH 03741	DES-SW-89-023	Canaan Orange	Lebanon LF	No	
Candia 119 New Boston Road Candia, NH	Town of Candia 74 High Street Candia, NH 03034	DES-SW-TP-96-002	Candia	Candia Incinerator	Yes	Local mandatory recycling ordinance.
Canterbury Baptist Rd. Canterbury, NH	Town of Canterbury P.O. Box 500 Canterbury, NH 03224	DES-SW-PN-00-004	Canterbury	W-to-E, Concord	Yes	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Carroll New Straw Rd. Twin Mountain, NH	Town of Carroll Box 146 Twin Mountain, NH 03595	DES-SW-LP-91-002	Carroll	NCES LF, Bethlehem	Yes	Landfill C&D on site. Town is planning to construct a new transfer station.
Charlestown Route 12 Charlestown, NH	Town of Charlestown P.O. Box 385 Charlestown, NH 03603	DPHS-SW-84-009	Charlestown	W-to-E, Claremont	Yes	
Chester 50 Dump Road Chester, NH	Town of Chester PO Box 275 Chester, NH 03036	DES-SW-LP-96-506	Chester	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Chesterfield Pond Brook Rd. Chesterfield, NH	Town of Chesterfield P.O. Box 175 Chesterfield, NH 03443	DES-SW-88-017	Chesterfield	Keene TS Brattleboro VT	Yes	Local mandatory recycling ordinance. Recyclables to TTT in VT.
Claremont Newport Rd. Route 11 and 103 Claremont, NH	City of Claremont 8 Grandview St. Claremont, NH 03743	DES-SW-TP-96-042	Claremont Cornish Newport	W-to-E, Claremont	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Claremont Industrial Blvd. Claremont, NH	Recycling Services, Inc. Plains Road PO Box 305 Claremont, NH 03743	DES-SW-91-015	Spot Market		No	Privately owned recycling center.
Colebrook Bridge Street Colebrook, NH	Town of Colebrook 10 Bridge Street Colebrook, NH 03576	DES-SW-LP-93-505	Colebrook	Mt Carberry LF, Success	Yes	Local mandatory recycling ordinance.
Concord 77 Old Turnpike Road Concord, NH	City of Concord 311 N. State Street Concord, NH 03301	DES-SW-89-020	Concord	W-to-E, Concord	Yes	Operated by Waste Management, Inc. Recycling only. Curbside recycling (resident pays).
Concord 25 Sandquist St. Concord NH	Advanced Recycling 25 Sandquist St. Concord NH 03301	DES-SW-SP-99-001	Spot Market		No	Owned by Max Cohen & Sons. Also has facilities in Manchester and Rochester.
Conway East Conway Rd. Conway, NH	Town of Conway PO Box 70 Center Conway, NH 03813	DES-SW-89-025	Albany Conway Eaton	Regional LF, Conway	Yes	Town opened a secure landfill at another location on East Conway Rd. in 1991 for MSW disposal. Local mandatory recycling ordinance.
Cornish Route 120 Cornish, NH	Town of Cornish PO Box 181 Cornish Flat, NH 03746	No Permit	Cornish	W-to-E, Claremont	Yes	Claremont TS is available to Cornish residents. Recycling only. Recyclables go to Keene.
Croydon Off Rt. 10 Croydon, NH	Town of Croydon HCR 63 Box 9 Croydon, NH 03773	DES-SW-PN-02-003	Croydon	W-to-E, Claremont	Yes	Local mandatory recycling ordinance.
Dalton Whitefield-Dalton Rd. Route 142 Dalton, NH	Town of Dalton RFD 2, Box 143 Dalton, NH 03598	DES-SW-LP-97-503	Dalton	NCES LF, Behtlehem	No	Pay-As-You-Throw dropoff program.
Danbury North Rd. Danbury, NH	Town of Danbury High Street Box 4A Danbury, NH 03230	DPHS-SW-85-002	Danbury	Various Markets	Yes	Local mandatory recycling ordinance.
Deerfield Brown Road Deerfield, NH	Town of Deerfield PO Box 159 Deerfield, NH 03037	DES-SW-LP-94-500	Deerfield	W-to-E, Concord	Yes	
Derry Transfer Station Rd. Fordway Derry, NH	Town of Derry 40 Fordway Derry, NH 03038	DES-SW-90-005	Derry	MERC, ME	No	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Dover Mast Road Dover, NH	City of Dover 288 Central Ave. Dover, NH 03820	DES-SW-PN-02-002	Dover	Turnkey LF, Rochester	No	Pay-as-you-throw curbside program.
Dublin Cobb Meadow Rd. Bonds Corner Rd. Dublin, NH	Town of Dublin PO Box 277 Dublin, NH 03444	DES-SW-TP-95-015	Dublin	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Dunbarton Route 77 Dunbarton, NH	Town of Dunbarton 1011 School Street Dunbarton, NH 03045	DES-SW-TP-91-002	Dunbarton	W-to-E, Concord	Yes	
Durham Durham Point Rd. Durham, NH	Town of Durham Public Works Department 100 Stone Quarry Drive Durham, NH 03824	DES-SW-90-008	Durham	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
East Kingston 7 Main Street East Kingston, NH	Town of East Kingston 24 Depot Road East Kingston, NH 03827	No Permit	East Kingston	Waste Management, Inc.	No	Collects commingled containers and cardboard.
Effingham Snow Road Center Effingham, NH	Town of Effingham PO Box 25 So. Effingham, NH 03882	DES-SW-LP-93-509	Effingham	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Enfield East Hill Rd. Enfield, NH	Town of Enfield P.O. Box 373 Enfield, NH 03748	DES-SW-PN-00-009	Enfield	Lebanon LF	Yes	
Epping Old Hedding Rd. Epping, NH	Town of Epping 157 Main St. Epping, NH 03042	Pre-1983	Epping	Turnkey LF, Rochester	Yes	Town Annual Facility Report indicates some residents from Newfields bring recyclables to this site.
Epping 270 Exeter Road Epping, NH 03042	ERRCO PO Box L Epping, NH 03042	DES-SW-SP-92-003	Spot Market		No	Processes C&D.
Epsom 78 White Birch Road Epsom, NH	Ponderosa Salvage 78 White Birch Road PO Box 520 Epsom, NH 03234	DES-SW-SP-01-001	Spot Market		No	
Errol Colebrook Road Errol, NH	Town of Errol PO Box 100 Errol, NH 03579	DES-SW-LP-92-505	Errol	Mt Carberry LF, Success	Yes	
Exeter Cross Road Exeter, NH	Town of Exeter 10 Front Street Exeter, NH 03833	DES-SW-LP-93-506	Exeter	Turnkey LF, Rochester	Yes	Pay-as-you-throw curbside program.
Farmington Watson Corner Road Farmington, NH	Town of Farmington 39 North Main Street Farmington, NH 03835	DES-SW-90-040	Farmington	Farmington LF	Yes	Pay-as-you-throw drop off program.
Fitzwilliam Route 12 Fitzwilliam, NH	Town of Fitzwilliam P.O. Box 725 Fitzwilliam, NH 03447	DES-SW-PN-00-003	Fitzwilliam	Waste Management TS, Peterborough	Yes	Waste picked up by Monadock and delivered to spot market. Local mandatory recycling ordinance.
Francestown Todd Rd. Francestown, NH	Town of Francestown PO Box 5 Francestown, NH 03043	Pre-1983	Francestown	Waste Management, Inc.	Yes	Local mandatory recycling ordinance.
Franconia Route 116 Franconia, NH	Town of Franconia PO Box 900 Franconia, NH 03580	DES-SW-PN-99-002	Easton Franconia Sugar Hill	NCES LF, Bethlehem	Yes	Pay-as-you-throw drop off program.
Franklin Punch Brook Rd. Franklin, NH	City of Franklin Municipal Services 43 West Bow Street Franklin, NH 03235	DPHS-SW-84-002	Franklin	W-to-E, Concord	No	Adjacent to ash LF for Concord W-to-E facility.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Freedom Bennett Road Freedom, NH	Town of Freedom PO Box 227 Freedom, NH 03836	DES-SW-LP-94-502	Freedom	MERC, ME	Yes	Local mandatory recycling ordinance.
Gilford 150 Kimball Road Gilford, NH	Town of Gilford Dept. of Public Works 55 Cherry Valley Road Gilford, NH 03246	Pre-1983	Gilford	W-to-E, Concord	Yes	Recycling only. No collection of MSW. Inactive C&D landfill located behind recycling facility.
Gilmanton Route 107 Gilmanton, NH	Town of Gilmanton PO Box 550 Gilmanton, NH 03837	DES-SW-PN-00-011	Gilmanton	W-to-E, Concord	Yes	
Gilsum Off Dump Rd /Surry Rd Gilsum, NH	Town of Gilsum P.O. Box 67 Gilsum, NH 03448	Pre-1983	Gilsum	Waste Management, Inc.	Yes	Local mandatory recycling ordinance. Pay-as-you-throw drop off program.
Goffstown 404 Elm Street Goffstown, NH	Town of Goffstown Department of Public Works 51 Depot Street Goffstown, NH 03045	DES-SW-LP-93-502	Goffstown	MERC, ME	Yes	Local mandatory recycling ordinance. Automated curbside collection of recyclables.
Gorham 24 Lower Main Street Gorham, NH	Town of Gorham Department of Public Works 24 Lower Main Street Gorham, NH 03581	DES-SW-PN-98-002	Gorham	Mt. Carberry LF, Berlin, (Success)	No	Recycling center located at public works garage. Local mandatory recycling ordinance.
Goshen Brook Rd. Goshen, NH	Town of Goshen P.O. Box 752 Goshen, NH 03752	DES-SW-PN-99-004	Goshen	W-to-E, Claremont	Yes	
Grafton Public Works Road Grafton, NH	Town of Grafton Town Hall Grafton, NH 03240	DES-SW-TP-97-015	Grafton	Lebanon LF	Yes	Local mandatory recycling ordinance.
Grantham Springfield Rd. Grantham, NH	Town of Grantham P.O. Box 276 Grantham, NH 03753	DES-SW-PN-01-007	Grantham	W-to-E, Claremont	Yes	
Greenfield Off Route 31 Bennington Rd. Greenfield, NH	Town of Greenfield P.O. Box 256 Greenfield, NH 03047	DES-SW-PN-00-010	Greenfield	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Greenland Off Cemetery Lane Greenland, NH	Town of Greenland 575 Portsmouth Ave. Greenland, NH 03840	Pre-1983	Greenland	MERC, ME	Yes	
Groton North Groton Rd. Groton, NH	Town of Groton HC 58 Box 580-3 Groton, NH 03241	DES-SW-LP-92-509	Groton	W-to-E, Concord	Yes	Recycles scrap metal, car batteries, and aluminum cans.
Hampton Tide Mill Road Hancock, NH	Town of Hampton 136 Winnacunnet Road Hampton, NH 03842	DES-SW-SP-94-003	Hampton	Turnkey LF, Rochester	Yes	
Hancock Route 137 Bennington Rd. Hancock, NH	Town of Hancock School Street P.O. Box 6 Hancock, NH 03449	DES-SW-90-021	Hancock	Waste Management TS, Peterborough	Yes	Local mandatory recycling ordinance.
Harrisville Willard Hill Road Harrisville, NH	Town of Harrisville PO Box 34 Harrisville, NH 03450	DES-SW-LP-91-001	Harrisville	Waste Management TS, Peterborough	Yes	Local mandatory recycling ordinance.
Henniker 61 Weare Road Henniker, NH	Town of Henniker 2 Depot Hill Rd. Henniker, NH 03242	DES-SW-89-022	Henniker	W-to-E, Concord	Yes	

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Hill Rt. 3A North of Village Hill, NH	Town of Hill PO Box 236 Hill, Nh 03243	Pre-1983	Hill	W-to-E, Concord	No	
Hillsborough Dump Rd. Off Main St. Hillsborough, NH	Town of Hillsborough 29 School St. P.O. Box 7 Hillsborough, NH 03244	DES-SW-88-033	Deering Hillsborough Windsor	W-to-E, Concord	Yes	
Hinsdale Dump Road Hinsdale, NH	Town of Hinsdale PO Box 13 Hinsdale, NH 03451	DES-SW-PN-01-004	Hinsdale	Hinsdale LF	Yes	Pay-as-you-throw drop off and curbside program.
Holderness Tada Dump Rd. Holderness, NH	Town of Holderness P.O. Box 203 Holderness, NH 03244	Pre-1983	Holderness	Waste Management, Inc.	Yes	Local mandatory recycling ordinance.
Hollis Rocky Pond Rd. Hollis, NH	Town of Hollis P.O. Box 509 7 Monument Square Hollis, NH 03049	Pre-1983	Hollis	W-to-E, Concord	Yes	
Hooksett 34 Industrial Park Drive Hooksett, NH	BFI Waste Systems 757 N. Eldridge Houston, TX 77079	DES-SW-90-023	Spot Market		No	Privately owned recycling center.
Hooksett 210 West River Rd. Hooksett, NH	Town of Hooksett 16 Main St. Hooksett, NH 03106	DPHS-SW-85-013	Hooksett	W-to-E, Concord	Yes	
Hopkinton 491 E. Penacook Road Hopkinton, NH	Town of Hopkinton 330 Main Street	DES-SW-89-001	Hopkinton Webster	W-to-E, Concord	Yes	
Jackson Route 16 Bartlett, NH	Town of Jackson PO Box 268 Jackson Falls Center, NH 03846	DES-SW-89-002	Jackson	NCES LF, Bethlehem	No	Operates on same site as Town of Bartlett. Each town has its own compactor. Local mandatory recycling ordinance.
Jaffrey Old Sharon Rd. Jaffrey, NH	Town of Jaffrey 69 Main St. Jaffrey, NH 03452	DES-SW-LP-92-003	Jaffrey	Various Markets	Yes	Local mandatory recycling ordinance.
Jefferson Rt. 116 & Rt. 2 Jefferson, NH	Town of Jefferson PO Box 81 Jefferson, NH 03583	DES-SW-TP-91-003	Jefferson	Mt. Carberry LF, Success	Yes	Local mandatory recycling ordinance.
Keene 55 Summit Road Keene, NH	City of Keene Department of Public Works Solid Waste Division 580 Main Street Keene, NH 03431	DES-SW-SP-92-002	Cheshire County	W-to-E, Claremont Turnkey LF, Rochester Chicopee,MA	Yes	Local mandatory recycling ordinance.
Kingston Route 125 Kingston, NH	Town of Kingston 168 Main Street Kingston, NH 03848	No Permit	Kingston	Kingston LF	No	
Laconia Meredith Center Rd. Laconia, NH	City of Laconia 45 Beacon St. East Laconia, NH 03246	DES-SW-TP-95-040	Gilford Laconia	W-to-E, Concord	Yes	Former incinertor site. Operated by Waste Management, Inc.
Lancaster Water St. Lancaster, NH	Town of Lancaster 25 Main St. P.O. Box 151 Lancaster, NH 03584-0151	DES-SW-TP-96-027	Lancaster	Mt. Carberry LF, Success	Yes	Local mandatory recycling ordinance. Pay-as-you-throw drop off program.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Langdon Off 12A Langdon, NH	Town of Langdon RR1 Box 158A Alstead, NH 03602	DES-SW-TP-96-031	Langdon	W-to-E, Claremont	No	
Lebanon Route 12A West Lebanon, NH	Janci Metals Recycling, Inc. P.O. Box 5117 West Lebanon, NH 03784	DES-SW-91-007	Spot Market		No	Privately owned facility located next to City of Lebanon solid waste facility.
Lebanon Route 12A West Lebanon, NH	City of Lebanon PO Box 1207 Lebanon, NH 03766	No Permit	Lebanon	Lebanon LF	Yes	Local mandatory recycling ordinance. Pay-as-you-throw drop off program. Receives recyclables from Canaan and Orange.
Lee 111 Recycling Drive Lee, NH	Town of Lee 7 Mast Rd. Lee, NH 03824	DES-SW-PN-00-006	Lee	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Lempster Lovejoy Rd. Lempster, NH	Town of Lempster P.O. Box 33 Lempster, NH 03605	DES-SW-PN-02-006	Lempster	W-to-E, Claremont	Yes	
Lincoln Main Street Lincoln, NH	Lincoln-Woodstock SW Board PO Box 25 Lincoln, NH 03251	DES-SW-PN-99-003	Lincoln Woodstock	Waste Management, Inc.	Yes	Ash landfill located on site. Local mandatory recycling ordinance.
Lisbon Ecology drive Lisbon, NH	Town of Lisbon 46 School Street Lisbon, NH 03585	DES-SW-PN-00-007	Lisbon Lyman Landaff	NCES LF, Bethlehem	Yes	Local mandatory recycling ordinance. Pay-as-you-throw drop off program.
Litchfield Incinerator Road Litchfield, NH	Town of Litchfield 255 Charles Bancroft Hwy Litchfield, NH 03052	No Permit	Litchfield	Litchfield Incinerator	Yes	Local mandatory recycling ordinance.
Littleton 1213 Mt Eustis Road Littleton, NH	Town of Littleton 2 Union Street Littleton, NH 03561	DES-SW-LP-92-502	Littleton	NCES LF, Bethlehem	No	Local mandatory recycling ordinance. Pay-as-you-throw drop off program.
Londonderry 160 Rockingham Rd. Londonderry, NH	Spartan Consolidated, Inc. 117 Londonderry Turnpike Hooksett, NH 03106	DES-SW-88-005	Spot Market	Primarily Turnkey LF	No	Privately owned transfer station and recycling facility.
Londonderry Dan Hill Road Londonderry, NH	Town of Londonderry 50 Nashua Road, Suite 100 Londonderry, NH 03053	DES-SW-TP-93-001	Londonderry	Turnkey LF, Rochester	No	
Loudon Dump Road Loudon, NH	Town of Loudon P.O. Box 7837 Loudon, NH 03301	DES-SW-89-019	Loudon	W-to-E, Concord	Yes	
Lyme Town Highway Garage High St. Lyme, NH	Town of Lyme PO Box 125 Lyme, NH 03768	No Permit	Lyme	Lebanon LF	No	Facility operates on Sunday mornings only. Transfer vehicles for MSW and recyclables are loaded and materials are removed the same day.
Madison Boulder Rd. Madison, NH	Town of Madison P.O. Box 248 Madison, NH 03849	DES-SW-TP-97-028	Madison	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Manchester 18 Chagnon Street Manchester, NH	B. Rovner & Company, Inc. 18 Chagnon Street Manchester, NH 03102	DES-SW-LP-97-001	Spot Market		No	Privately owned facility that collects scrap metal.
Manchester 500 Dunbarton Road Manchester, NH	City of Manchester 227 Maple St. Manchester, NH	DES-SW-LP-96-505	Manchester	Auburn TS	No	Manchester resident MSW drop-off facility.
Manchester 87 Union Street Manchester, NH	Manchester Recycling Corp. PO Box 4387 Manchester, NH 03108	DES-SW-90-004	Spot Market		No	Privately owned recycling facility.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Manchester 399 Willow Street Manchester, NH	Max Cohen & Sons, Inc. Advanced Recycling 25 Sandquist St. Concord, NH	DES-SW-LP-93-501	Spot Market		No	Privately owned facility that collects scrap metal.
Marlborough Rte 12 Troy Road Marlborough, NH	Pinetree Recycling Corp. PO Box 402 Keene, NH 03431	DES-SW-TP-94-040	Spot Market		No	Privately owned recycling facility.
Marlborough 114 Roxbury Road Marlborough, NH	Town of Marlborough PO Box 487 Marlborough, NH 03455	DES-SW-LP-93-507	Marlborough Roxbury	Hinsdale LF	Yes	Local mandatory recycling ordinance. Recyclables go to Keene.
Marlow Route 10 N. Marlow, NH	Town of Marlow PO Box 184 Marlow, NH 03456	DES-SW-LP-92-002	Marlow	Keene TS	No	Local mandatory recycling ordinance. Recyclables go to Keene.
Meredith Jenness Hill Rd. Meredith, NH	Town of Meredith 41 Main Street Meredith, NH 03253	DES-SW-87-040	Center Harbor Meredith	W-to-E, Claremont	Yes	Local mandatory recycling ordinance.
Merrimack Lawrence Road Merrimack, NH	Town of Merrimack PO Box 940 Merrimack, NH 03054	DES-SW-90-015	Merrimack	Merrimack LF	Yes	
Milford 120 North River Rd. Milford, NH (Recycling Center adjacent)	Town of Milford 1 Union Square Milford, NH 03055	DES-SW-90-032	Milford	MERC, ME	Yes	Commingled recyclables are received at Recycling Center adjacent to TS. Local mandatory recycling ordinance.
Milton White Mountain Hwy Rte 125 Milton, NH	Town of Milton PO Box 310 Milton, NH 03851	DES-SW-LP-94-506	Milton	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Mont Vernon Weston Hill Rd. Mont Vernon, NH	Town of Mont Vernon PO Box 444 Mont Vernon, NH 03057	Pre-1983	Mont Vernon	W-to-E, Concord	Yes	
Moultonborough Route 109 Holland Street Moultonborough, NH	Town of Moultonborough P.O. Box 139 Moultonborough, NH 03254	DES-SW-LP-92-001	Moultonborough	Waste Management, Inc.	Yes	Local mandatory recycling ordinance. Landfill was reclaimed in 2000.
Nashua 840 West Hollis Street Nashua, NH	City of Nashua Solid Waste Department 840 West Hollis Road Nashua, NH 03062	DES-SW-TP-92-002	Nashua	Nashua LF	Yes	
New Boston 412 Old Coach Rd. Boston, NH	Town of New Boston PO Box 250 New Boston, NH 03070	DES-SW-87-029	New Boston	W-to-E, Concord	Yes	Local mandatory recycling ordinance.
New Durham Old Route 11 New Durham, NH	Town of New Durham P.O. Box 207 New Durham, NH 03855	DES-SW-89-010	New Durham	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
New Hampton Route 132 New Hampton, NH	Town of New Hampton 6 Pinnacle Hill Road New Hampton, NH 03256	DES-SW-91-014	New Hampton	NCES LF, Bethlehem	No	
New Ipswich 1381 Turnpike Road New Ipswich, NH	Town of New Ipswich PO Box 258 New Ipswich, NH 03071	DES-SW-TP-95-035	New Ipswich	New Ipswich LF	Yes	
New London Newport Rd. New London, NH	Town of New London P.O. Box 240 New London, NH 03257	DES-SW-87-014	New London	W-to-E, Claremont	No	

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Newbury Post Rd. Newbury, NH	Town of Newbury P.O. Box 296 Newbury, NH 03255	Pre-1983	Newbury	Lebanon LF	Yes	
Newington 14 Patterson Lane Newington, NH	Blue Fin Technologies, Inc 55 Green St. Newington, NH 03801	DES-SW-LP-97-505	Spot Market		No	Recycle computers and electronic equipment.
Newington Little Bay Rd. Newington, NH	Town of Newington 205 Nimble Hill Rd. Newington, NH 03801	Pre-1983	Newington	Turnkey LF, Rochester	Yes	
Newmarket Ash Swamp Road Newmarket, NH	Town of Newmarket 186 Main Street Newmarket, NH 03857	No Permit	Newmarket	Turnkey LF, Rochester	No	Pay-as-you-throw curbside program.
Newport 264 John Stark Highway Newport, NH	Casella Waste Management 25 Greens Hill Lane PO Box 866 Rutland, VT 05701	DES-SW-LP-93-508	Spot Market		No	Privately owned facility.
Newton Dugway Rd. Newton, NH	Town of Newton PO Box 378 Newton, NH 03858	DES-SW-90-012	Newton	Via Spartan, Londonderry to various markets	Yes	
North Hampton Cherry Rd. North Hampton, NH	Town of North Hampton Atlantic Ave. P.O. Box 710 North Hampton, NH 03862	DPHS-SW-84-003	North Hampton		No	Site is for transfer of recyclables only. Town has direct pick up and haul of MSW to disposal facilities.
Northfield 33 Sargent Street Northfield, NH	Town of Northfield 21 Summer St. Northfield, NH 03276	DES-SW-89-024	Northfield	W-to-E, Concord	No	Site receives bulky waste, C&D, and recyclables only. Town has curbside pickup and haul of MSW to W-to-E, Concord.
Northumberland Brown Rd. Groveton, NH	Town of Northumberland 2 State Street Groveton, NH 03482	DES-SW-90-029	Northumberland	Mt. Carberry LF, Success	No	Glass is landfilled at old MSW landfill located down the road from the transfer station. Local mandatory recycling ordinance.
Northwood Route 4 (Old Dump Rd.) Northwood, NH	Town of Northwood P O Box 818 Northwood, NH 03261	DES-SW-PN-01-005	Northwood	Turnkey LF, Rochester	Yes	
Northwood 42 Harding Drive Northwood, NH 03261	Harding Metals, Inc. 42 Harding Drive Northwood, NH 03261	DES-SW-TP-92-024	Spot Market			Local mandatory recycling ordinance.
Nottingham Freeman Hall Road Nottingham, NH	Town of Nottingham PO Box 114 Nottingham, NH 03290	DES-SW-PN-01-003	Nottingham	Atlantic North (Casella)	Yes	Unlined LF is still operating and receiving C&D>
Orford Townshed Road Orford, NH	Town of Orford PO Box F Orford, NH 03777	No Permit	Orford	NCES LF, Bethlehem	Yes	Pay-as-you-throw drop off program.
Ossipee Chickville Road Ossipee, NH	Town of Ossipee PO Box 67 Ctr. Ossipee, NH 03814	No Permit	Ossipee	Ossipee Incinerator	Yes	Closed landfill on site.
Pelham Rte 111A Windham Road Pelham, NH	Town of Pelham 60 Old Bridge Road No. Pelham, NH 03076	DES-SW-PN-00-008	Pelham	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Pembroke 8 Exchange St. Pembroke, NH	Town of Pembroke 311 Pembroke St. Pembroke, NH 03275	Pre-1983	Pembroke	W-to-E, Concord	Yes	
Peterborough Sanitation Lane Off Scott Mitchell Rd. Peterborough, NH	Town of Peterborough 1 Grove St. Peterborough, NH 03458	DES-SW-TP-96-022	Peterborough Sharon	Waste Management, Inc. TS, Peterborough Disposed at various markets	Yes	Local mandatory recycling ordinance. Recycling only.
Peterborough Route 202 N. Peterborough, NH	Waste Management of NH 26 Liberty Dr. P.O. Box 1187 Londonderry, NH 03053	DES-SW-LP-96-002	Spot Market	Various markets	No	Privately owned facility.
Piermont Bedford Rd. Piermont, NH	Town of Piermont PO Box 67 Piermont, NH 03779	DES-SW-LP-95-502	Piermont	W-to-E, Concord	Yes	Recyclables go to Littleton and Recycling Services.
Pittsburg Back Lake Rd. Pittsburg, NH	Town of Pittsburg P.O. Box 308 Pittsburg, NH 03592	DES-SW-91-012	Pittsburg Clarksville	Mt. Carberry LF, Success	Yes	Local mandatory recycling ordinance.
Pittsfield Rte. 107 Pittsfield, NH	B.C.E.P. Solid Waste District P.O. Box 426 Pittsfield, NH 03263	DES-SW-89-016	Barnstead Chichester Epsom Pittsfield	Various Markets	Yes	Local mandatory recycling ordinance.
Plainfield Stage Rd. Plainfield, NH	Town of Plainfield HC 64 Box 16 A Meriden, NH 03770	DES-SW-90-001	Plainfield	W-to-E, Claremont	No	Pay-as-you-throw curbside program. Facility receives recyclables only.
Plaistow Old County Rd. Plaistow, NH	Town of Plaistow 145 Main St. Plaistow, NH 03865	No Permit	Plaistow	Spot Market	Yes	Recycling Center is run by volunteers. Only open 2 Saturdays per month.
Plymouth Beech Hill Plymouth, NH	Town of Plymouth Office of Selectmen 6 Post Office Square Plymouth, NH 03264	DES-SW-LP-97-502	Plymouth	NCES LF, Bethlehem	Yes	Incinerator closed October, 1997. Uses pre-crusher to process bulky items before going into compactor. Local mandatory recycling ordinance.
Portsmouth 680 Peverly Hill Road Portsmouth, NH	City of Portsmouth 680 Peverly Hill Road Portsmouth, NH 03801	DES-SW-PN-99-008	Portsmouth	Waste Management, Inc.	No	Recycling center only.
Raymond Prescott Road Raymond, NH	Town of Raymond 4 Epping Street Raymond, NH 03077	No Permit	Raymond	Turnkey LF, Rochester	yes	Recycling center only.
Rindge Main St. Rindge, NH	Town of Rindge PO Box 117 Rindge, NH 03461	DES-SW-91-005	Rindge	Hinsdale LF	No	Local mandatory recycling ordinance.
Rochester 155 Turnkey Way Rochester, NH	Waste Management of NH PO Box 7065 Gonic, NH 03839	DES-SW-90-030	Spot Market		Yes	Material Recovery Facility (MRF)
Rochester 10 Wallace Street Rochester, NH	Max Cohen & Sons, Inc. Advanced Recycling 25 Sandquist St. Concord, NH	DES-SW-TP-92-004	Spot Market		No	Receives scrap metal. Privately owned recycling facility.
Rollinsford Jessie Doe Road Rollinsford, NH	Town of Rollinsford P.O. Box 309 Rollinsford, NH 03869	DES-SW-LP-92-507	Rollinsford	Turnkey LF, Rochester	No	Local mandatory recycling ordinance.
Rumney Buffalo Rd. Rumney, NH	Town of Rumney PO Box 220 Rumney, NH 03266	DES-SW-TP-94-022	Dorchester Rumney	NCES LF, Bethlehem	Yes	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Rye 309 Grove Rd. Rye, NH	Town of Rye 10 Central Rd. Rye, NH 03879	DPHS-SW-85-010	Rye	Turnkey LF, Rochester	No	Local mandatory recycling ordinance.
Salem Shannon Rd. Salem, NH	Town of Salem 33 Geremonty Dr. Salem, NH 03079	DES-SW-LP-95-002	Salem	W-to-E, Haverhill, MA	Yes	Users pay a permit fee to take waste to facility. Local mandatory recycling ordinance.
Salem 87 Lowell Road Salem, NH	Lowell Road Wood Processing 87 Lowell road Salem, NH 03079	DES-SW-SP-94-002	Spot Market		No	Processor of construction and demolition debris.
Salisbury Warner Rd. Salisbury, NH	Town of Salisbury PO Box 214 Salisbury, NH 03268	DES-SW-89-030	Salisbury	W-to-E, Concord	Yes	
Sanbornton 184 Shaw Hill Road Sanbornton, NH	Town of Sanbornton PO Box 124 Sanbornton, NH 03269	DES-SW-LP-94-503	Sanbornton	NCES LF, Bethlehem	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Sandown Depot Rd. Sandown, NH	Town of Sandown 320 Main St. Sandown, NH 03873	DES-SW-90-003	Sandown	Turnkey LF, Rochester	Yes	
Sandwich Route 113 Sandwich, NH	Town of Sandwich PO Box 194 Center Sandwich, NH 03227	DES-SW-TP-94-046	Sandwich	MERC, ME	Yes	Local mandatory recycling ordinance.
Seabrook 70 Rocks Road Seabrook, NH	Town of Seabrook P.O. Box 456 Seabrook, NH 03874	DES-SW-87-012	Seabrook	W-to-E, Haverhill, MA	Yes	Local mandatory recycling ordinance.
Shelburne 11 Landfill Drive Shelburne, NH	Town of Shelburne 74 Village Road Shelburne, NH 03581	DES-SW-LP-94-501	Shelburne	Mt Carberry LF, Success	Yes	Local mandatory recycling ordinance. Adopted Pay-As-You-Throw program in 2001.
Stark North Rd. Stark, NH	Town of Stark 1189 Stark Highway Stark, NH	DES-SW-91-004	Stark	Mt. Carberry LF, Success	Yes	Local mandatory recycling ordinance.
Stewartstown Route 3 and Back Pond Rd. West Stewartstown, NH	Coos County P.O. Box 10 West Stewartstown, NH 03597	DES-SW-90-025	Columbia Stewartstown Lemington, VT Norton, VT	Mt. Carberry LF, Success	No	Operated by Coos County.
Stewartstown Route 3 West Stewartstown, NH	Coos County P.O. Box 10 West Stewartstown, NH 03597	DES-SW-LP-92-500	Clarksville Colebrook Columbia Pittsburg Stewartstown Canaan, VT Lemington, VT Norton, VT		No	Owned and operated by Coos County. Recycling Center only.
Stoddard Route 123 Stoddard, NH	Town of Stoddard Box 216 Stoddard, NH 03464	Pre-1983	Stoddard	Keene TS	No	Users are required to have a permit. Local mandatory recycling ordinance. WMI operates facility.
Strafford Ricky Nelson Rd. Strafford, NH	Town of Strafford Box 23 Center Strafford, NH 03815	DES-SW-PN-02-004	Strafford	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Stratford Route 3 Stratford, NH	Town of Stratford PO Box 366 N. Stratford, NH 03590	DES-SW-PN-99-001	Stratford	Mt. Carberry LF Berlin, (Success)	No	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site	Comments
Stratham Union Road Stratham, NH	Town of Stratham 10 Bunker Hill Ave. Stratham, NH 03885	DES-SW-LP-95-509	Stratham	Turnkey LF, Rochester	No	
Sunapee Avery Rd. Sunapee, NH	Town of Sunapee Route 103 B/P.O. Box 717 Sunapee, NH 03782	DES-SW-TP-93-018	Springfield Sunapee	W-to-E, Claremont	Yes	Annual Report from Town reports bulky and C&D to NCES LF, Bethlehem. Local mandatory recycling ordinance.
Sutton Rte 114 Sutton, NH	Town of Sutton PO Box 85 No. Sutton, NH 03260	DES-SW-PN-01-006	Sutton	Lebanon LF	Yes	Local mandatory recycling ordinance.
Swanzey 97 Pine Street West Swanzey, NH	Town of Swanzey P.O. Box 9 East Swanzey, NH 03446	Pre-1983	Swanzey	Various Markets	Yes	Local mandatory recycling ordinance.
Tamworth Route 25 Tamworth, NH	Town of Tamworth PO Box 359 Tamworth, NH 03886	DES-SW-PN-99-007	Tamworth	Waste Management, Inc	No	Built new transfer station in 2000.
Thornton Rte 175 Thornton, NH	Town of Thornton PO Box 1438 Thornton, NH 03223	DES-SW-LP-94-505	Campton Ellsworth Thornton	NCES LF, Bethlehem	Yes	Local mandatory recycling ordinance.
Tilton Rte. 3 Tilton, NH	Town of Tilton 145 Main St. Tilton, NH 03276	DES-SW-PN-01-009	Tilton	W-to-E, Concord	Yes	Volunteer operated recycling center. Curbside pickup of trash.
Troy 60 Quarry Road Troy, NH	Town of Troy PO Box 249 Troy, NH 03465	DES-SW-PN-99-005	Troy	Troy LF	Yes	Local mandatory recycling ordinance.
Tuftonboro 250 Mountain Road Tuftonboro, NH	Town of Tuftonboro PO Box 98 Center Tuftonboro, NH 03816	DES-SW-LP-95-505	Tuftonboro	Waste Management, Inc.	Yes	
Unity Mica Mine Road Unity, NH	Town of Unity HCR 66 Box 176 Newport, NH 03773	DES-SW-LP-96-509	Unity	Unity LF	Yes	
Wakefield 330 Rines Road Wakefield, NH	Town of Wakefield 2 High Street Wakefield, NH 03872	DES-SW-PN-99-006	Brookfield Wakefield	Casella	Yes	Town has built a new transfer station and has stopped landfilling as of November, 2000.
Walpole Rte 123 Walpole, NH	Town of Walpole PO Box 729 Walpole, NH 03608	DES-SW-LP-92-501	Walpole	Brattleboro Salvage	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Warner Route 103 Warner, NH	Town of Warner PO Box 265 Warner, NH 03238	DES-SW-89-021	Warner	W-to-E, Concord	No	Local mandatory recycling ordinance.
Warren Pine Hill Rd. Warren, NH	Town of Warren Main St. P.O. Box 66 Warren, NH 03279	DES-SW-TP-95-038	Warren	W-to-E, Concord	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Washington 961 South Main Street Washington, NH	Town of Washington PO Box 473 Washington, NH 03280	DES-SW-LP-96-508	Washington	W-to-E, Claremont	Yes	C&D to ERRCO. Local mandatory recycling ordinance.
Waterville Valley 6 Tripoli Road Waterville Valley, NH	Town of Waterville Valley 2 Tripoli Road Waterville Valley, NH 03215	DES-SW-PN-00-002	Waterville Valley	NCES LF, Bethlehem		Town has packer truck to collect waste from dumpsters.
Weare Merrill Rd. Weare, NH	Town of Weare PO Box 190 Weare, NH 03281	DES-SW-89-015	Weare	W-to-E, Concord	Yes	Local mandatory recycling ordinance.

Transfer Station Location	Owner/ Operator	Permit Number	Service Area	MSW Disposal Facility	Former Landfill Site?	Comments
Wentworth Turner Rd. Wentworth, NH	Town of Wentworth PO Box 2 Wentworth, NH 03282	Pre-1983	Wentworth	NCES LF, Bethlehem	Yes	
Westmoreland Dump Rd. 403 London Rd. Westmoreland, NH	Town of Westmoreland P.O. Box 55 Westmoreland, NH 03467	DES-SW-PN-01-010	Westmoreland	Keene TS	Yes	Local mandatory recycling ordinance.
Westmoreland 712 Glebe Road Westmoreland, NH	Waste Management, Inc. 26 Liberty Drive Londonderry, NH 03053	DES-SW-LP-95-001	Spot Market		No	Did not operate in 1999.
Whitefield Hazen Road Whitefield, NH	Town of Whitefield 7 Jefferson Road Whitefield, NH 03598	DES-SW-LP-93-503	Whitefield	Mt Carberry LF, Success	Yes	Pay-as-you-throw drop off program. Local mandatory recycling ordinance.
Wilmot Route II Wilmot, NH	Town of Wilmot PO Box 72 Wilmot, NH 03267	DPHS-SW-84-007	Wilmot	W-to-E, Concord	Yes	Local mandatory recycling ordinance.
Wilton 291 Gibbons HWY Wilton, NH	Town of Wilton PO Box 83 Wilton, NH 03086	DES-SW-TP-96-032	Greenfield Greenville Lyndeborough Mason Temple Wilton	Wilton Incinerator	Yes	Local mandatory recycling ordinance.
Winchester Forest Lake Road Winchester, NH	Town of Winchester PO Box 25 Winchester, NH 03470	DES-SW-LP-96-507	Richmond Winchester	Turnkey LF, Rochester	Yes	Local mandatory recycling ordinance.
Windham Ledge Rd. Windham, NH	Town of Windham PO Box 120 Windham, NH 03087	DES-SW-90-019	Windham	W-to-E, Concord	No	Local mandatory recycling ordinance.
Wolfeboro Beech Pond Road Wolfeboro, NH	Town of Wolfeboro PO Box 629 Wolfeboro, NH 03894	DES-SW-LP-96-504	Wolfeboro	MERC, ME	Yes	Local mandatory recycling ordinance.

STATE OF NEW HAMPSHIRE
INFECTIOUS WASTE INCINERATORS OPERATING IN 2001

August 2002

Location/ Facility Name & Address	Owner/ Permit #	Total Tons/yr Burned	Tons/yr Infectious Waste	Tons/yr Ash Generated	Ash Disposal	Comments
Berlin Androscoggin Valley Hospital 59 Page Hill Rd. Berlin, NH 03570	Androscoggin Valley Hospital DES-SW-89-029 PO-C-0370	15	15	1	Mt Carberry LF	Receives medical waste from other facilities.
Hanover Dartmouth Medical School 805 Vail Building Rt. 10 Hanover, NH 03755	Trustees of Dartmouth College DES-SW-90-031	24	24	1	Permitted Subtitle D LF	
Lancaster Weeks Memorial Hospital 173 Middle Street Lancaster,NH 03584	Weeks Memorial Hospital DES-SW-91-001 PO-C-0325	11	11	1	Town of Lancaster Solid Waste Transfer Station	

STATE OF NEW HAMPSHIRE
MSW INCINERATORS OPERATING IN 2001

November 2001

Incinerator Location/ Permit#	Owner/ Operator	Permitted Capacity	Facility Users	Total Tons Incinerated (from NH)	Secondary Site Activities	Ash Generated (tons)	Ash Disposal Site	Former Site Activities	Comments
Bridgewater Dick Brown Rd. Bridgewater, NH PO-C-281	Board of Selectmen Bridgewater Town Office 297 Mayhew Turnpike Bristol, NH 03222 (603) 744-5055	14 TPD	Bridgewater Hebron	259 133 Estimate	SM recycled Composting	40	On-site	Landfill	Ash is disposed of on site next to C&D lan
Candia New Boston Rd. Candia, NH PO-C-315	Town of Candia Board of Selectman 74 High Street Candia, NH 03034 (603) 483-8101	5 TPD	Candia	495 Estimate	Recycling Composting	119	NCES, Bethlehem	Landfill	
Claremont Grissom Ln. Claremont, NH (Waste-to-Energy) DPHS-SW-84-010 PO-C-362, 363	Wheelabrator Claremont Co., LP RFD 2 Box 298 Grissom Lane Claremont, NH (603) 542-8764	200 TPD	Acworth Claremont Cornish Croydon Goshen Grantham Langdon Lempster Meredith New London Newport Plainfield Springfield Sunapee NH Spot Market VT Spot Market Sp. Spot Marke VT District VT C&D NH C&D	292 13,256 488 327 345 1,162 234 504 2,266 2,943 4,497 924 64 1,719 16,919 518 6 22,563 518 931	Recycling (batteries, some metal)	16,164 6,750	NH/VT Solid Waste Project Ash LF, Newport, NH Shrewsbury, MA		Acworth amount includes Langdon. Meredith amount includes Center Harbor. Sunapee amount includes Springfield.
Concord 11 Whitney Rd. Penacook, NH (Waste-to-Energy) DPHS-SW-86-006 PO-C-374 PO-C-375	Wheelabrator Concord Co., L.P. 11 Whitney Road Penacook, NH 03303 (603) 753-8411	500 TPD	Allenstown Andover Belmont Boscawen Bow Bradford Bristol Canterbury Concord Deering Dunbarton Franklin Gilford Gilmanton Henniker Hill Hillsborough Hopkinton Laconia Loudon Northfield Pembroke Salisbury Tilton Warner Weare Webster NH Spot Market	3,058 1,267 6,228 2,399 5,932 907 3,339 771 47,112 481 1,060 6,840 6,860 1,168 2,818 526 4,020 3,505 18,614 3,395 2,601 4,231 586 4,926 1,810 3,331 792 42,452		67,015	Concord Regional Solid Waste/Resource Recovery Cooperative Ash LF, Franklin, NH		
Litchfield Incinerator Rd. Litchfield, NH PO-C-335	Town of Litchfield Board of Selectmen Two Liberty Way, Suite 1 Litchfield, NH 03052-2345 (603) 424-4046	11 TPD	Litchfield	780 Estimate	Recycling Composting	120	BFI-Fall River, MA	Landfill	

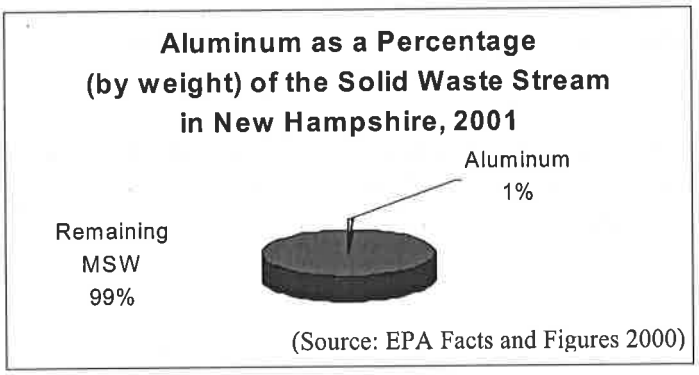
Incinerator Location/ Permit#	Owner/ Operator	Permitted Capacity	Facility Users	Total Tons Incinerated (from NH)	Secondary Site Activities	Ash Generated (tons)	Ash Disposal Site	Former Site Activities	Comments
Ossipee Chickville Rd. Ctr. Ossipee, NH DPHS-SW-85-011 PO-3-351	Town of Ossipee Board of Selectmen P.O. Box 67 Ctr. Ossipee, NH 03814 (603) 539-4181	6 TPD	Ossipee	1,081 Estimate	Recycling	147	Turnkey LF, Rochester	Landfill	Landfill closed in 1995.
Wilton Rte. 101 Wilton, NH PO-C-328	Town of Wilton Board of Selectmen 42 Main St. PO BOX 83 Wilton, NH 03086 (603) 654-9451	10 TPD	Greenfield Greenville Lyndeborough Mason Temple Wilton	454 649 422 389 357 973 Estimates	Recycling Composting	324	Turnkey LF, Rochester	Landfill	

STATE OF NEW HAMPSHIRE
MSW AND ASH LANDFILLS OPERATING IN 2001
August 2002

Landfill Location/ Permit #	Owner/Operator	Estimated Life Expectancy	Facility Users	MSW/Ash Landfilled (Tons)	Secondary Site Activities	Comments
Berlin Mt. Carberry LF Off Hutchins St. Success, NH DES-SW-86-029 (Secure, double-lined)	Mt Carberry Landfill, LLC 650 Main Street Berlin, NH 03570	20 years	Berlin/Ferco Colebrook Columbia Coos Dummer Errol Gorham Jefferson Lancaster Milan Mt. Washington Valley Northumberland Pittsburg Randolph Shelburne Stark Stewartstown Stratford Whitefield Maine Vermont Groveton Compay Waste Gorham Sludge Colebrook C&D	8,221 943 110 593 110 117 2,125 319 516 465 179 822 319 92 182 88 406 183 298 34 929 1,072 72,980 379 13	None	Company waste includes paper, sludge, dirt, grit, sawdust, asbestos, gravel, lime, paper and cardboard, and building debris. Mt. Carberry is allowed to receive 32,500 tons of MSW per year.
Bethlehem Trudeau Road Bethlehem, NH DES-SW-87-002 DES-SW-89-009 (Secure, double-lined)	North Country Environmental Services, Inc. 501 South Street, Box E Bow, NH 03304	4.5years	NH Spot Market Maine Massachusetts Vermont NH C&D NH Other Waste Maine C&D MA C&D MA Other VT C&D VT Other	96,983 9,970 7,064 3,388 28,875 50,848 1,416 5,186 849 1,259 258	Transfer Station Recycling (DES-SW-87-015)	Transfer Station/Recycling Center for Town of Bethlehem
Conway Lower Mt. Washington Valley Landfill E. Conway Road Conway, NH DES-SW-90-028 (Secure, double-lined)	Town of Conway P.O. Box 70 Center Conway, NH 03813	23 years	Albany Conway Eaton Albany C&D Conway C&D Eaton C&D	728 9,261 416 124 1,582 71	Recycling Composting	Residents bring wastes and recyclables to transfer station. Nonrecyclable waste is transferred to landfill which is located on a different site.
Farmington Watson Corner Road Farmington, NH DES-SW-TP-93-010	Town of Farmington Town Hall 39 North Main St. Farmington NH 03835	1 year	Farmington C&D Commercial/Industrial	3,000 Estimate 450 15	Recycling Brush burned Composting	
Franklin 73 Punch Brook Road Franklin, NH DPHS-SW-85-003	CRSW/RRC 6-B SOUTH MAIN STREET Penacook, NH 03303	8 years	W-to-E, Concord	65,369	None	Dedicated landfill for ash from W-to-E incinerator in Penacook, NH.
Kingston Rte. 125 Kingston, NH DES-SW-TP-97-037	Board of Selectmen Town of Kingston PO Box 716 Kingston, NH 03848	2 yrs.	Kingston Kensington Durham Phillips Exeter Academy Commercial/Industrial Other	2,561 657 579 296 34,987 9,383	Recycling Composting	"Other" refers mainly to NH area businesses and curbside collection.
Lebanon Rte. 12-A Lebanon, NH DES-SW-91-003 (Secure, double-lined)	City of Lebanon PO Box 1207 51 North Park St. Lebanon, NH 03766	6.2 years	Canaan Enfield Grafton Hanover Lebanon Orange Plainfield(C&D) Lyme Newbury Sutton Orford Vermont	1,720 2,639 499 6,398 19,773 60 4 817 868 71 577 15,326	Recycling Composting	

Landfill Location/ Permit #	Owner/Operator	Estimated Life Expectancy	Facility Users	MSW/Ash Landfilled (Tons)	Secondary Site Activities	Comments
Merrimack Rearon Rd. & Lawrence Rd. Merrimack, NH DES-SW-TP-94-013	Town of Merrimack Box 940 Merrimack, NH 03054	3 years	Merrimack C&D Commercial/Industrial	8,060 2,640 15,719	Recycling Tires separated Brush burned	
Nashua Route 111 840 W. Hollis St. Nashua, NH DES-SW-TP-96-012	Solid Waste Department 840 West Hollis Street Nashua, NH 03062	1 year	Residential Commercial/Industrial C&D Other	44,190 29,787 10,286 6,248	Recycling Composting	Double-lined landfill to be opened in 2001.
New Ipswich 1381 Turnpike Road New Ipswich, N.H. DES-SW-TP-95-034	Town of New Ipswich PO Box 258 Main St. New Ipswich, NH 03071	3 years	New Ipswich C&D Commercial/Industrial	500 Estimate 500 170	Recycling	
Rochester Rochester DES-SW-87-023 DES-SW-87-024 DES-SW-88-019 (Secure, double-lined)	Waste Management of NH P.O. Box 7065 Gonic, NH 03839	9 years	In State Out-of-State	571,080 530,842	Recycling (DES-SW-90-030)	
Unity North End Rd. Unity, NH DES-SW-TP-94-026	Town of Unity HCR 66, Box 176 Newport, NH 03773	1 year	Unity C&D	360 1,400 Estimate	Recycling Tires separated Brush burned	

Aluminum Cans



Weight and Volume --Aluminum is used to produce a variety of durable products such as automobiles and other modes of transportation, beverage cans and construction materials. The Governor's Recycling Program reported that New Hampshire municipalities recycled 835 tons of aluminum and 59 tons of mixed cans (includes both steel and aluminum cans) during that same time period. Over 96 percent of New Hampshire residents can recycle aluminum containers in curbside or drop-off programs.

Collection, Processing, and Storage—In New Hampshire and elsewhere, aluminum containers are frequently collected in a mix with steel containers or in a mix with steel and plastic containers. Dirt, moisture, glass, non-container aluminum, and other metals can contaminate aluminum containers, but these contaminants rarely interfere with recycling efforts. Drop-off centers collecting aluminum containers crush and/or bale the containers before they are shipped to markets for further processing.

The weight of the aluminum can has been reduced by 52 percent since 1972 and the weight of collected aluminum is less than many other recyclables. However, the high scrap value of aluminum cans provides revenue to offset other activities that occur at a recycling facility. Aluminum cans can also be stored outside without significant loss of market value.

Disposal --No demonstrable environmental concerns are associated with the disposal of aluminum packaging in landfills or incinerators. Aluminum is non-degradable and can be identified in landfill excavations after decades. Aluminum is also non-combustible and is found in the bottom ash of waste-to-energy incinerators, where it remains as an inert component after disposal.

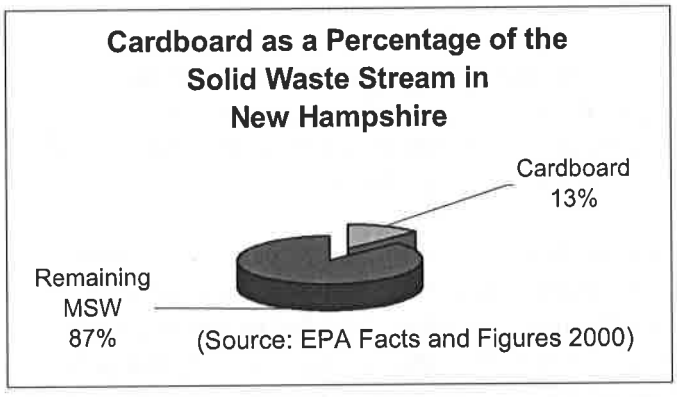
Recycling Markets for Aluminum Cans -- Although prices fluctuate for recyclables, aluminum has always commanded a higher price in comparison to other recyclables. In 2000, the aluminum industry paid out $1.2 billion to aluminum recyclers nationwide. The largest consumer of aluminum is the transportation sector (28%) followed by containers/packaging (23%) and construction materials (14%). The remainder is used in electrical products, machinery, or exported.

Aluminum as a Manufacturing Feedstock -- Aluminum cans can be processed back into new containers, requiring only about 5 percent of the energy needed to produce virgin aluminum from bauxite ore. The facilities required to produce recycled aluminum are also simpler and much less expensive than those required to produce aluminum from ore. Because the fundamental economics are so favorable, aluminum manufacturers actively seek out recycled aluminum.

Many aluminum producers are increasing aluminum capacity overseas where electricity for production is less expensive. This could push domestic mills towards using more recycled aluminum. The energy savings could help compete with foreign producers and stimulate the market.

Summary-- Although aluminum cans make up a small portion of the waste stream, they continue to be a recycling program staple. The revenue generated from the sale of the cans makes them an attractive addition to any recycling program.

Corrugated Cardboard



Weight and Volume -- Cardboard, also known as old corrugated cardboard (OCC), is the largest single constituent of municipal solid waste (MSW). The U.S. Environmental Protection Agency (EPA) estimates that nearly 30.2 million tons of waste cardboard containers were generated in 2000, representing 13 percent of the nation's MSW. Based upon EPA estimates, NH generated approximately 176,800 tons of cardboard in 2001. The Governor's Recycling Program reported that New Hampshire's municipalities recycled 16,668 tons of corrugated cardboard during that same time period.

Collection, Processing, and Storage -- The majority of cardboard recycled in the U.S. is collected and prepared for shipment on-site by medium and large commercial establishments. These establishments include department stores, supermarkets, and other retailers and businesses with active shipping and receiving operations. In addition, many private waste haulers, as well as municipal solid waste programs, offer separate pickup of cardboard for their commercial and public accounts. In New Hampshire, cardboard is collected by 156 of the state's 234 municipalities.

Although cardboard can be marketed loose, it is almost universally baled before it is shipped to end-markets to maximize efficiencies and revenues. Before and after baling, moisture is of most concern, as it will degrade the fiber quality, and reduce the value of the cardboard.

Like any recyclable, the specifications of the end market will determine the extent of processing and the acceptable degree of contamination and degradation of product. To maintain market quality, cardboard should be stored under cover, off the ground (on pallets, for example), and care should be taken to minimize the addition of other non-cardboard materials. One such contaminant for cardboard recyclers is Asian (rice) cardboard. It is an inferior corrugated product manufactured from low quality recycled fibers and/or rice fibers, and is considered a contaminant.

Recycling Markets for Cardboard -- Historically, markets for recycled cardboard have been among the strongest of all recycled papers. As with all recyclable commodities, prices tend to fluctuate as a result of supply and demand. Municipal recycling programs and commercial establishments continue to recycle cardboard even during down times in markets because of the avoided disposal costs. There are two factors that negatively impact marketing of recycled cardboard in New Hampshire. The first is that there are many commercial establishments (supermarkets, retail outlets, restaurants and hotels) generating relatively small quantities of cardboard that require storage and/or "milk run" methods of collection. Some towns allow businesses to bring cardboard to municipal recycling centers. Commercial haulers also collect small quantities in dumpsters or compactors. Secondly, the distance to major cardboard end-use

markets is great, so transportation costs can be significant. Buying products made from recycled materials helps to complete the "Buy Recycled" loop and maintains a strong recycling market for cardboard which can assist in overcoming the hurdles of collection and transportation.

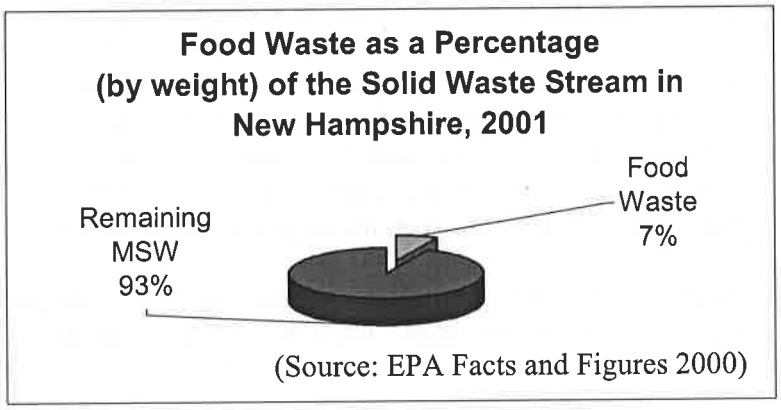
Cardboard as a Manufacturing Feedstock -- Cardboard is a high-quality paper product characterized by long fibers and high fiber strength. As such, it can be used as feedstock to manufacture a wide variety of recycled paper products, including new cardboard, printing and writing papers, paper and boxboard, paperboard tubes, cans, and drums.

In a typical remanufacturing process, recycled cardboard is first immersed in a water-based solution to dissolve the contaminants (e.g., tape, staples, dirt, etc.). These contaminants are removed by gravity, flotation, or filtration, and the recycled pulp is blended to produce a mix with the characteristics required for production of a specific paper product. Finally, the pulp is pumped to a paper machine where the final product is manufactured. Additional operations may include deinking and/or bleaching.

Disposal -- Cardboard is typically free of toxic and other hazardous constituents that might pose environmental or health concerns when it is disposed of in landfills. Although biodegradable, cardboard degrades very slowly in a moisture and oxygen-depleted landfill environment and its decomposition releases methane, a greenhouse gas. In incinerators, cardboard is a valued addition to the mix of fuels, releasing about twice as much heat per pound as MSW, and producing little ash. However, burning paper, including cardboard, in the presence of any chlorinated product (PVC pipe, salt, pool chemicals, etc…) contributes to the release of dioxins into the atmosphere.

Summary—Cardboard is found residentially, commercially and at institutions. It is easily separated, collected and recycled. The benefits associated with recycling cardboard can be both economical and environmental. Although revenues for cardboard fluctuate, end markets have been consistently available. For these reasons and the availability to cardboard recycling, it will continue to grow as a waste management practice by residents, municipalities, state agencies, and private businesses.

Food Waste



Weight and Volume-- Food waste consists of trimmings from the preparation of meals and the leftover uneaten portions. It is the third largest component of the waste stream behind yard waste and corrugated cardboard. As shown in the graph, food waste accounts for 7 percent by weight (95,200 tons) of the municipal solid waste stream in New Hampshire.

Collection, Processing, and Storage -- Apart from disposal, food waste can be managed in one of three ways. First, the food can be donated to food kitchens or community food banks. A great deal of food is wasted in hotels and restaurants and includes soups, breads and pre-made meals. Secondly, food waste can be used as feed for animals. The third method involves composting the material along with other organic wastes higher in carbon such as leaves, wood chips, and paper fibers.

Private or public haulers can collect food wastes not destined for a community kitchen or farm. The food waste at commercial establishments, such as supermarkets, cafeterias, restaurants, and fast food chains, can be collected in plastic trash barrels, dumpsters or closed top roll-offs and transported to a food waste composting or disposal facility.

Processing of food waste can range from a low level of technology to a highly sophisticated system. Residentially generated food waste could also be handled using backyard composting bins. As the technology increases, labor and equipment requirements also increase. As a trade off, the higher levels of technology require less land, and the breakdown of the material occurs at a more rapid rate. For low-tech methods, material is placed in windrows (long rows of organic material) and turned as needed with a front-end loader. A marketable product can be obtained in 6-12 months.

Inside the Compost Pile--The naturally occurring microorganisms found in a compost pile and soil break down in a windrow into an easily crumbled material. Other factors include temperature, moisture, and carbon/nitrogen content.

The **temperature** in the compost pile should be between 100° and 140° F. The natural digestion process by organisms results in increased temperatures within the compost. There are two types of microorganisms found in a compost pile: mesophilic and thermophilic organisms. Mesophilic organisms are active at temperatures above freezing and their activity causes temperatures within the windrow to increase. At temperatures above 110° F, thermophilic organisms become active

and decomposition increases, however, above 140° F, these aerobic, oxygen-loving organisms begin to die and decomposition decreases. When properly constructed, the temperature in a windrow will be self-sustaining until the compost is stabilized. Thermometers can be used to monitor the temperature of compost and to indicate how decomposition is progressing.

Moisture is necessary to dissolve nutrients for use as a food source by the microorganisms, however, excessive moisture in food waste creates an undesirable anaerobic condition. **Moisture content** between 40 and 60 percent by weight, much like the consistency of a wrung-out sponge, is optimal. To solve excessive moisture, a bulking agent such as sawdust, wood chips, or shredded paper may be added. This will help maintain the proper moisture content.

A **Carbon: Nitrogen ratio** of 20:1 to 30:1 is ideal for composting. Materials high in nitrogen, such as food waste and grass clippings, can be added to improve the ratio, and speed up the composting process.

To ensure that the pile recipe is working properly, the windrow or pile should be turned to maintain these conditions and speed decomposition. Turning the windrow can be done as little as once a year to as frequently as once a week. It should be noted that the less frequently a compost pile is turned, the longer the process will take and the greater the problem of odors due to the anaerobic state that exists within the pile.

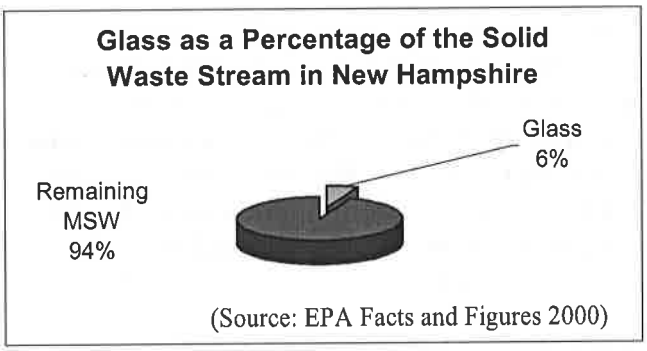
Markets for Food Waste Compost --There are a number of uses for compost. As a soil amendment, it improves the texture, water holding capacity, and the organic content of the soil. For mulch, it is placed around plants to suppress weeds, modify soil temperature, and conserve soil moisture. On slopes, it can be used for stabilization and reducing soil erosion. In a greenhouse or nursery, it can be used as one of the components of a potting soil mix.

The product can be given away or sold to residents, landscapers, nurseries, greenhouses, and local governments. As with any product, the higher the quality, the easier it is to market. Nurserymen and landscapers are more apt to reject a product with extraneous material in it and should be consulted in the initial planning stages.

Disposal -- In general, food waste has high moisture content and does not burn well in an incinerator. Additionally, the burning of organics in the presence of any chlorinated products (PVC pipe, salt, pool chemicals, etc…) contributes to the emission of dioxins. Food waste is biodegradable, but in the confines of an oxygen-depleted landfill environment, it degrades very slowly and releases the greenhouse gas methane.

Summary—Food waste makes up a large portion of the waste stream by weight and can be easily composted. For some in the commercial sector (supermarkets, restaurants and institutions), food waste represents nearly 50% of the waste generated. To increase diversion of food waste generated by homeowners, inexpensive backyard compost bins have been made available by the Northeast Resource Recovery Association (www.recyclewithus.org).

Glass



Weight and Volume -- Nationally, over 80 percent of all glass discarded is from residential sources; the remainder comes from commercial and industrial sources. The nation's glass recycling rate has risen from 22% in 1990 to 31% in 1998. It is estimated that New Hampshire residents generated 81,600 tons of glass in 2001.

There are 116 solid waste facilities in New Hampshire collecting glass and over 96 percent of New Hampshire's residents have access to glass recycling through curbside or dropoff programs. The Governor's Recycling Program reported that New Hampshire municipalities recycled 7,382 tons of glass in 2001.

Collection, Processing, and Storage -- Glass collected for recycling into new glass containers must be separated by color: flint (clear), amber (brown), and green. These containers must be free of contaminants such as plate glass, mirrors, and ceramics. Glass that has not been separated has a lower market price and limited market.

Once glass has been collected, preparing for market can take a couple of forms. If the containers are going to a glass-to-glass recycling market, the container should be kept unbroken. Containers going for non-container production can be size reduced to increase transportation efficiencies.

To comply with federal storm water regulations, glass should be stored in a manner that reduces both run-on and run-off. Tarping piles, storing in a shed or using berms and swales can accomplish this.

Recycling Markets for Glass – During the past two decades, two issues have dramatically impacted glass markets: industry consolidation and product replacement for container manufacturing.

Although New Hampshire doesn't have any glass manufacturers, there are regional options. The Container Recycling Alliance owned by Waste Management, Inc. operates a glass processing center in Franklin, MA. The processing center provides furnace-ready cullet for glass container manufacturers. The largest markets for glass cullet are container manufacturers. The second largest buyer is the fiberglass industry.

Revenue received for glass depends on several factors, including: color, distance to processor, and the region of the country. It is important to note that more than half of imported bottles are green, resulting in low demand and low prices in the US. Green glass seldom returns revenue

and, in some cases, communities pay the recycler, although not as much as they would pay to dispose of the glass in a landfill or incinerator.

The New Hampshire Department of Transportation was the first in the nation to adopt a specification allowing the use of processed glass aggregate (PGA) on state highway projects. Many New Hampshire communities also create and use PGA in municipal road construction projects. PGA has been certified by the DES as a waste-derived product for road construction, bedding for pipe, and fill for retaining walls and foundations. The DES specification for this material is one inch minus and free of debris. The private sector is also producing and using PGA. For example, Waste Management, Inc.'s Turnkey Landfill takes glass collected at curbside and creates PGA for use in on-site road construction.

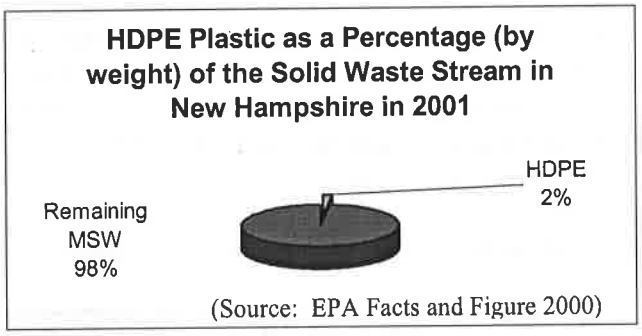
Glass as a Manufacturing Feedstock – The Earth Works Group's Recycler's Handbook reports that one ton of virgin glass requires 1,330 pounds (57%) of sand, 433 pounds (18%) of soda ash, 433 pounds (18%) of limestone, and 151 pounds (6%) of feldspar. Glass is unique in that it can be recycled indefinitely as it never wears out and is 100 % recyclable. In other words, one ton of recyclable glass bottles and jars can be recycled into one ton of new glass.

Once the glass is processed (crushed with labeling removed), the material, termed *cullet*, typically is delivered to a manufacturer that can once again make containers, or create other end products, such as fiberglass or asphalt. The specifications are extremely important with regard to reuse of containers, as an entire load may be rejected based upon contamination by just a single ceramic container or other similar waste materials that impact the reheating process.

Disposal – At the present time, there is no New Hampshire law or regulation to prevent glass from being disposed of in a landfill or incinerator. Although certain decorated glass may contain toxic or hazardous constituents, most glass can be landfilled or incincerated without environmental concern. Since glass is chemically and biologically inert, it remains intact in landfills for thousands of years. Glass melts upon incineration, and is captured for disposal in incinerator bottom ash. However, melted glass can present problems with equipment inside the chamber and may increase maintenance costs.

Summary-- Glass is a unique material in the recycling industry, in that it is 100% recyclable. A glass bottle can be recycled time and time again into another glass bottle or product, without any loss of quality. Since glass represents 8% by weight of the waste stream, glass is a good candidate for municipal recycling programs.

High Density Polyethylene (HDPE)



Weight and Volume -- High Density Polyethylene (HDPE) is used in the manufacturing of a variety of products such as rigid containers, pipe and lawn and garden supplies. HDPE accounts for about 2 percent by weight of municipal solid waste (MSW), but because of its size, makes up a larger volume than weight would indicate. The Governor's Recycling Program reported that municipalities in New Hampshire recycled 691 tons of HDPE in 2002.

Collection, Processing, and Storage -- Recycling of HDPE plastics is available to more than 75% of New Hampshire residents through curbside or drop-off recycling programs. There are two types of HDPE (#2) plastic. One type, which includes milk jugs, laundry detergent and shampoo bottles (rigid bottles) is universally collected, marketed and recycled. The second type of HDPE plastic, is recycled less frequently and contains items such as butter tubs and yogurt containers (tubs).

The major difference between the two types is not the "ingredients", it is how the material is created. Rigid bottles are produced using blown molding technology where the plastic is "blown" into a mold to create the desired shape. Tubs are produced using injection-molding technology where the runny plastic is injected into a mold. These differences in production affect the melting point of the end product. The simplest way to tell the two types apart is to "check for a neck". If the container has a neck, like a bottle, it is a blown molded HDPE plastic and can be readily recycled. If the container doesn't have a neck, like a tub, it is an injection molding HDPE plastic and recycling markets are harder to find.

To address the increased use of plastic container,s the American Plastics Council has developed an "All Bottles" collection method that reduces the confusion as to what is accepted at the recycling center. This method excludes the pigmented #2 tubs. Research has shown that this method of collection and separation not only increases diversion, but also reduces contamination.

Once collected, HDPE plastics can be prepared for market in one of two ways: by baling or chipping. Most of New Hampshire's communities collecting HDPE plastic choose to bale. A small number of towns create flake or chip the plastic. Flake receives higher revenue, but requires more labor and a better understanding of market specifications.

Storage for collected plastic is always an issue because large volumes are required to generate sufficient revenues. A cubic yard of HDPE containers may weigh as little as 50 pounds. Since a typical bale weight for HDPE is around 900 pounds, it could take up to 18 cubic yards of plastic to make a bale. Bales should be covered because milk jugs degrade in sunlight and mills will reject loads containing ice and snow.

Disposal -- The primary concern related to plastics disposal in landfills is the fact that they do not degrade. Regarding incineration, plastics have a very high "BTU content" (an expression of their heat value as fuel), approximately equivalent to the heat released by fuel oil, and two to four times greater than MSW. Plastics also burn with very little ash, and are a valued component of the fuel mix in waste-to-energy incinerators. These factors make them attractive as a waste derived fuel. However, incinerating plastics releases carbon dioxide, a greenhouse gas. A more general concern is that plastics disposal represents a waste of a valuable, non-renewable resource, because plastics are manufactured from oil and natural gas.

Recycling Markets for Plastics -- Historically, markets for recycled plastics have been subject to fluctuation. Prices for recycled plastics are directly related to prices for oil and natural gas as well as worldwide virgin plastics production. Most plastics recycled in New Hampshire communities are marketed outside of New England. Buying products made from recycled HDPE helps to keep the plastics recycling markets strong.

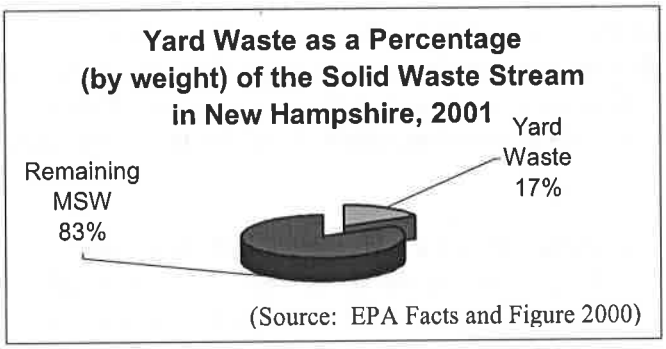
HDPE as a Manufacturing Feedstock -- Recycled plastics are typically chipped, washed, and heated to produce pellets or flakes that can be remanufactured into secondary products. Some mixed plastic items can be separated by weight into their component resins, but in general, plastics must be separated before they are used in a secondary manufacturing process. Technologies to automatically sort mixed plastics are still several years away from widespread use. Although a third of HDPE recycled is used to produce bottles, other items manufactured from recycled HDPE include flowerpots, pipes, toys, pails and drums.

The Resin Identification Code

The resin identification code was introduced in 1988 by the Society of the Plastics Industry (SPI; the largest plastics trade association) as a voluntary measure to aid in plastics identification for recycling. The code has since been made mandatory on rigid containers with a holding capacity of 8 ounces to 5 gallons in 39 states. The code includes a number from 1 through 7 surrounded by chasing arrows, plus a resin acronym. Professional recyclers and the general public have encountered significant problems with the code, because many coded plastics are not recyclable in the majority of U.S. communities, and because the code is ambiguous (e.g., not all "2s" can be recycled together).

Summary-- HDPE, like other plastics, is a small portion (by weight) of the waste stream. However, units sold and materials made from HDPE are increasing every year. Due to the increased replacement of traditional containers with plastic, HDPE should continue to be separated for recycling.

Leaf and Yard Waste



Weight and Volume – Leaf and yard waste consists of organic material such as leaves, grass, garden waste, brush, stalks and roots. As shown in the graph, leaf and yard wastes account for 17 percent by weight of the municipal waste stream in New Hampshire.

Leaf and yard waste volumes fluctuate throughout the year, depending on the season and weather conditions. Harsh winters can contribute to the amount of brush and a hot summer will reduce the amount of grass clippings. The composition of yard waste also fluctuates. In the fall and early spring, large volumes of leaves and brush are generated and in late spring and summer, grass becomes the more dominant material.

Collection, Processing, and Storage -- Collection of yard wastes for a municipal program can be separated into three categories: drop-off; curbside pickup in bags or other containers; or bulk pickup where the leaves are collected loose off the street. If bags are to be used for collection, it is advantageous to use paper or biodegradable plastic because this type of bag can be shredded and mixed into the compost while non-degradable plastic bags must be removed prior to composting. Bulk collection requiring the material to be scooped, raked, swept or vacuumed off the street can be slow and may contain contaminants from the street. The choice of collection methods should be determined by cost, convenience, household participation rate, and the amount and type of yard waste to be collected.

Processing of yard wastes can be done in three different ways: composting, chipping or burning. Each method has its benefits and results in three different products. Composting and chipping yield a usable product while burning simply reduces the amount of material and, ultimately, the ash must be disposed of as a solid waste.

A pile or windrow method is used to compost yard waste. Both methods can range from a low level of technology (using front-end loaders) to a highly sophisticated system (using windrow turners, blowers, tub grinders and screens). As the technology increases, labor and equipment requirements also increase. As a trade off, the higher levels of technology require less land, and the breakdown of the material occurs at a more rapid rate. For low-tech methods, material is placed in windrows (long rows of organic material) and turned with a front-end bucket loader or skid-steer. A marketable product can be obtained in 6-12 months.

Storage of the end product is determined by quantities and the management style selected. Storing compost does not require a building or structures, however, it is necessary to reduce the amount of precipitation and run-off in and around the pile. This storm run-off can impact surrounding water supplies, but can also leach beneficial nutrients out of the pile. To reduce these concerns, use a tarp and locate finished compost on higher ground.

Chipping of yard waste is usually done with brush only. A wood chipper or tub grinder is used to create chips of wood that can be used as a mulch product or a fuel to produce electricity at one of New Hampshire's biomass plants. Brush that is chipped should not present any storage problems. Chips can be stored outside with little concern for leachate or product down grading. Piles of wood chips should not too large and periodic turnings may be necessary to reduce the possibility of spontaneous combustion. To avoid this problem, chips should be used soon after production.

Many of NH's municipal transfer/recycling centers burn yard waste, especially brush and unpainted and untreated dimensional lumber. The brush pile should be kept free of painted and otherwise treated wood. Permits to operate a burn pile are required from the Air Resources Division, Department of Environmental Services and the Department of Resources and Economic Development. If the clean brush portion is burned, the ash must be managed as a solid waste and stored in a manner that reduces run-on and run-off and be disposed of in a lined landfill.

Inside the Compost Pile--The naturally occurring microorganisms found in the yard wastes and soil break down a windrow into an easily crumbled material. Other factors include temperature, moisture, and carbon/nitrogen content.

The **temperature** in the compost pile should be between 100° and 140° F. The natural digestion process by organisms results in increased temperatures within the compost. There are two types of microorganisms found in a compost pile; mesophilic and thermophilic organisms. Mesophilic organisms are active at temperatures above freezing and their activity causes temperatures within the windrow to increase. At temperatures above 110° F, thermophilic organisms become active and decomposition increases, however, above 140° F, these aerobic, oxygen-loving organisms begin to die and decomposition decreases. When properly constructed, the temperature in a windrow will be self-sustaining until the compost is stabilized. Thermometers can be used to monitor the temperature of compost and to indicate how decomposition is progressing.

Moisture is necessary to dissolve nutrients for use as a food source by the microorganisms, however, excessive moisture in food waste creates an undesirable anaerobic condition. **Moisture content** between 40 and 60 percent by weight, much like the consistency of a wrung-out sponge, is optimal. To solve excessive moisture, food waste, such as sawdust, wood chips, or shredded paper, may be added as a bulking agent. This will help maintain the proper moisture content.

A **Carbon: Nitrogen ratio** of 20:1 to 30:1 is ideal for composting. Materials high in nitrogen, such as food waste and grass clippings, can be added to improve the ratio, and speed up the composting process.

To ensure that the pile recipe is working properly, the windrow or pile should be turned to maintain these conditions and speed decomposition. Turning the windrow can be done as little as once a year to as frequently as once a week. It should be noted that the less frequently a

compost pile is turned, the longer the process will take and the greater the problem of odors due to the anaerobic state that exists within the pile.

Markets for Leaf and Yard Waste Compost -- There are a number of uses for compost. As a soil amendment, compost improves the texture, water holding capacity, and the organic content of the soil and can be used as one of the components of a potting soil mix in greenhouses and nurseries. For mulch, it is placed around plants to suppress weeds, modify soil temperature, and conserve soil moisture. Compost is also used on slopes for stabilization and reducing soil erosion.

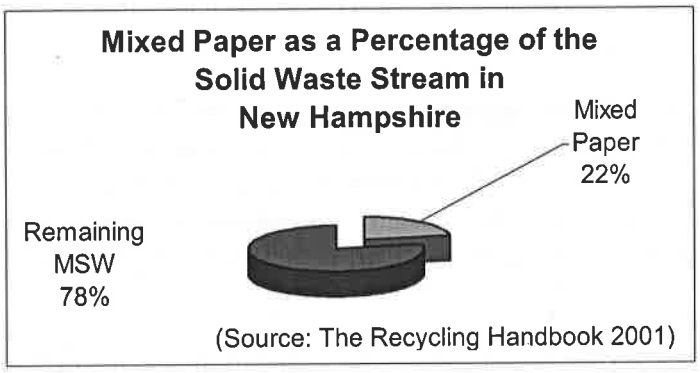
The product can be given away, sold, or traded to residents, landscapers, nurseries, greenhouses, and local governments. Compost is usually distributed in bulk, with pick up at the composting site by the user. As with any product, the higher the quality, the easier it is to market. Nurserymen and landscapers are more apt to reject a product with extraneous material in it, so if they are to be a major outlet for the compost, they should be contacted in the initial planning stages to ensure that an acceptable product is produced.

To support the development of the compost industry, the State of NH Department of Transportation (NHDOT) has used compost in their highway median beautification projects. In these projects, NHDOT used six inches of compost in median strips throughout the state to plant native wildflowers.

Disposal – In 1992, the New Hampshire Legislature instituted a ban on the disposal of leaf and yard waste in both landfills and incinerators. The rationale for this restriction is that leaf and yard waste can use precious capacity in our solid waste management facilities and is more effectively composted.

Summary— Leaf and yard waste is the largest portion of the waste stream and there are a variety of methods to manage leaf and yard waste. This material is different from other typical recyclables because it can be processed into a usable product at the point of generation or at a processing facility. For this reason, municipalities should actively manage yard waste generated by residents.

Mixed Paper



Weight and Volume -- Mixed paper consists of several types of waste streams, including magazines, phone books, junk mail, paperboard packaging, office paper and any other paper that doesn't meet the specification for newspaper or corrugated cardboard. As indicated in the chart, mixed paper is about 22 percent by weight (299,200 tons) of the solid waste stream in New Hampshire. In 2002, the Governor's Recycling Program reported that New Hampshire's municipalities recycled 11,254 tons of mixed paper.

Collection, Processing, and Storage -- Residential curbside recycling programs typically collect commingled paper (newspaper and mixed paper). Currently, there are 39 curbside recycling programs in NH, serving 41% of the state's population.

Mixed paper is also collected loose at municipal recycling centers in gaylord boxes, rolloffs or in bunkers. The presence of glossy magazines makes it difficult to make a bale of mixed paper that does not fall apart. Because mixed paper is made up of different grades of paper, it has low value, but is generally cheaper to recycle than to haul and to dispose of it. Handling and marketing mixed paper loose can reduce labor/processing costs. This processing cost savings can make up for the loss in revenues.

Contamination with food, broken glass, moisture, or other non-paper materials is also a concern for recyclers, as is the deterioration caused by prolonged storage or exposure to sunlight and moisture. Consequently, paper must be stored under cover or moved to markets relatively quickly.

Disposal -- In general, mixed paper burns very well in waste-to-energy incinerators and produces little ash. However, most magazines are printed on clay or plastic coated, groundwood paper. The coating is used to smooth the paper surface to enable the adherance of the glossy inks. The groundwood paper is similar to newsprint used for newspapers. Burning of paper, in the presence of any chlorinated products (PVC pipe, salt, pool chemicals, etc.), contributes to the emission of dioxins. Additionally, most mixed paper is biodegradable, although in a moisture and oxygen-depleted landfill environment, it degrades very slowly. During its decomposition, methane, a greenhouse gas, is released.

Manufacturing -- Mixed paper can be remanufactured back into paper, but paper cannot be recycled indefinitely. Typically, paper can be recycled 6-7 times before the paper no longer has any value due to degraded fiber strength. End-product performance dictates what feedstocks will be used in the manufacturing process. Products made with mixed paper are not considered high value and primarily include paperboard items such as hard covers for books, game boards, and

cereal boxes. Due to the large quantity of mixed paper being collected, some mills are using more mixed paper in their primary feedstock to fill capacity. Using mixed paper as a feedstock does require more chemicals to be added during the de-inking process to eliminate the number of different inks used on the paper.

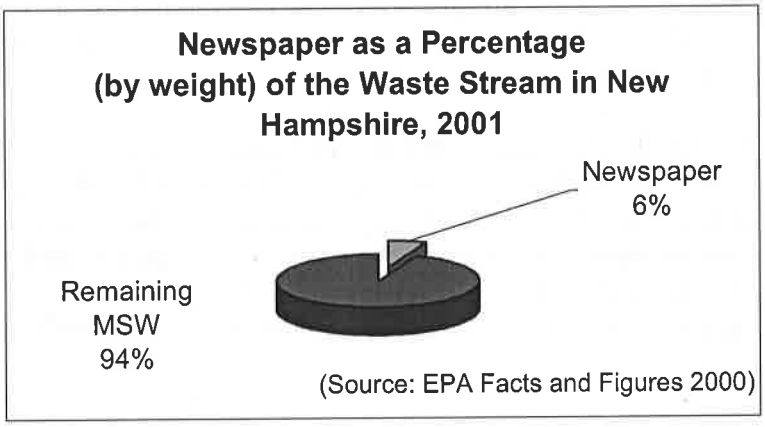
Recycling Markets for Mixed Paper – Mixed paper markets depend largely on how other paper markets are doing. If high-grade ledger or newspaper is doing well, mixed paper will be doing poorly because processors will separate out the higher value paper. However, factoring in the avoided hauling and disposal costs, mixed paper recycling usually has positive savings. Price or cost for mixed paper will also depend on what is included with larger portions of higher-grade paper bringing the most value.

Currently, there are three mills in NH that accept mixed paper to be added to their primary feed stock. Products made include: tissue paper, container tubes and paper match sticks. End-markets are also located throughout the northeast and in Canada. A portion of mixed paper is shipped overseas to foreign markets as revenues dictate.

Junk mail-- Mixed paper includes junk mail, also known as "business bulk". It is estimated that each NH household receives nearly 100 pounds of junk mail annually. This material can be reduced from the waste stream. The Department of Environmental Services has developed a web site to assist residents in reducing the amount of junk mail received. The web address is www.des.state.nh.us/junkmail. With identity theft on the rise in the US, residents are removing their names from advertisers mailing lists. This activity, along with increased collection opportunities, will assist in reducing the amount of mixed paper disposed of.

Summary— Mixed paper represents a high percentage of the waste stream because it includes so many types of paper. Quantities collected for recycling are increasing due to curbside recycling programs. Avoided disposal costs work favor recycling activities and soon mixed paper may surpass cardboard as the most recycled material in the nation.

Newspaper



Weight and Volume – According to Environmental Protection Agency (EPA) estimates, more than 84,000 tons of newspaper were discarded in New Hampshire during 2001. Households generate a vast majority of all newspaper, with commercial hotels, restaurants and industrial sources making up the remainder of newspaper discards. In 2001, the Governor's Recycling Program reported that municipalities had recycled 10,644 tons. This is a slight drop in tonnage from the previous year.

Collection, Processing, and Storage -- In New Hampshire, approximately 96 percent of the public solid waste facilities accept newspaper for recycling. Newspaper comprises between 80-90% of curbside collected paper, according to Northshore Fibers, the Newark Group a buyer of curbside collected paper in the Northeast. Some of NH recycling centers are also collecting newspaper along with a "mixed paper" blend in an effort to increase diversion. This method of collecting newspaper reduces the need to separate out many grades of paper, making it easier for residents to recycle.

Wastepaper brokers recognize many different grades of newsprint ("newsprint" is the paper itself; "newspaper" is the printed product). Most communities recycle either a "Number 6 blend," which may contain up to 25% of other papers, such as brown shopping bags, junk mail, office paper, telephone directories, envelopes, box board and magazines, or "Number 8 news," which has higher quality specification, allowing only for newspaper and newspaper inserts. The prices paid by brokers and mills vary by grade. Grades with a smaller proportion of mixed papers or other contaminants receive higher prices.

Newsprint can be marketed either baled or loose. A baled product is easier to handle, and generally commands a higher price. Contamination with food, broken glass, moisture, or other foreign materials is a concern for recyclers. In addition, newspaper deteriorates with prolonged storage or exposure to sunlight and moisture; consequently, it must be moved to markets in a timely manner.

Recycling Markets for Newspaper -- As with all recyclable materials, markets and prices tend to fluctuate based on supply and demand. New manufacturing capacity for recycled newsprint has come on line as manufacturers have responded to both the large available supplies of newspaper and to increasing demand for recycled newsprint. A significant factor in this new demand growth has been a large number of legislative mandates and public/private voluntary agreements to expand recycled newsprint consumption. For example, in 1990, New Hampshire's eight daily

newspaper publishers signed a voluntary agreement with the State to consume increasing quantities of recycled newsprint. By 2000, the newspapers had achieved a recycled content of 33%. The Northeast Recycling Council (NERC) is working with other states in the northeast on similar projects. NERC resolves to work in cooperation with newspaper publishers in the region and increase the use of recycled content newsprint as appropriate.

Newspaper as a Manufacturing Feedstock --Newspapers that are reprocessed into new newsprint are pulped into a mush. Next, the mush is spun and screened to remove the ink and unwanted particles. It is air-treated in a flotation cell, causing any remaining unwanted particles to float to the surface. After one more washing and screening, the mush is bleached and used as 100% recycled content or combined with virgin pulp. It is then pressed and dried. On average, newspaper can be recycled five to seven times before fiber strength is completely compromised.

Newspapers are readily recyclable, and can be remanufactured back into newsprint or into any number of other paper products, such as boxboard, newsletter stock, hard cover books and game boards. Additionally, newsprint can be reprocessed into many other products including insulation, tarpaper, roofing shingles, and animal bedding.

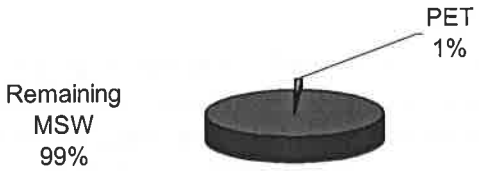
Composting--NH Solid Waste Rules include paper as an approved bulking agent for composting. In areas where the distance to markets is great, composting of newspaper is an option. A few of NH's communities have partnered with area farmers to divert newspaper from landfills and incinerators and into animal stalls and, ultimately, the compost pile.

Disposal -- Due to the lack of oxygen and moisture in landfills, newspaper degrades very slowly and contributes to the accumulation of methane, a greenhouse gas. The heat released by burning newspaper in a solid waste incinerator is about 7,500 British Thermal Units (BTU) per pound, compared to about 4,500 BTU/pound for MSW. The incineration of newspaper produces little ash under normal operating conditions. Due to changes in newspaper inks, lead and other hazardous constituents are no longer a concern.

Summary-- New Hampshire communities are recycling an estimated 20% of the newspaper generated in the state. Since newspaper is easily collected for recycling and markets are readily available, there is great opportunity to recycle much more newsprint.

Polyethylene Terephthalate (PET)

PET as a Percentage of the Solid Waste Stream in New Hampshire



(Source: EPA Facts and Figure 2000)

Weight and Volume – Polyethylene terephthalate, better known as PET, makes up almost half of all plastic bottles and is also found in strapping used to palletize goods and in some fabrics. It accounts for only about 1 percent, by weight (13,600 tons) of NH municipal solid waste (MSW), however, due to its size, PET contributes to a larger portion of MSW by volume. The Governor's Recycling Program reported that municipalities in New Hampshire collected 545 tons of PET (beverage containers) in 2001.

Collection, Processing, and Storage -- Recycling of PET is available to over three-fourths of New Hampshire residents through curbside or dropoff recycling programs. Containers must be carefully sorted by resin type before they can be sold into recycling markets. This is a particular concern for PET bottles, which can be contaminated by only a small number of look-alike PVC containers and other non-bottle PET plastics. Technologies to automatically sort mixed plastics are still several years away from widespread use. Processing can be accomplished by granulating, but more often is baled. Once processed, PET should be stored under cover to reduce exposure to sunlight to maintain market quality.

The Resin Identification Code

The resin identification code was introduced in 1988 by the Society of the Plastics Industry (SPI; the largest plastics trade association) as a voluntary measure to aid in plastics identification for recycling. The code has since been made mandatory on rigid containers in 39 states. The code includes a number from 1 through 7 surrounded by chasing arrows, plus a resin acronym. Professional recyclers and the general public have encountered problems with the code because most coded plastics are not recyclable in the majority of U.S. communities, and because the code is ambiguous (e.g., not all "2s" can be

The strength and lightweight quality that make plastics a desirable packaging material can also make them problematical to recycle. Since a large volume of plastics must be collected before they can be economically processed and marketed, unprocessed volumes consume a very large amount of space in curbside collection vehicles and curbside/dropoff storage facilities.

Collection and recycling will need to allow for increased amounts of PET, as well as for different color materials. Recently, Gerber Baby Foods has moved away from glass containers for some of their more popular flavors. Another example of a product line that is undergoing changes is the Tropicana Company, which is moving products away from glass and into more plastic containers, and is also producing colored PET bottles (pink or yellow for grapefruit).

Disposal -- The primary concern related to plastics disposal in landfills is the fact that they do not degrade. The "BTU content" of plastics (an expression of their heat value as fuel), is

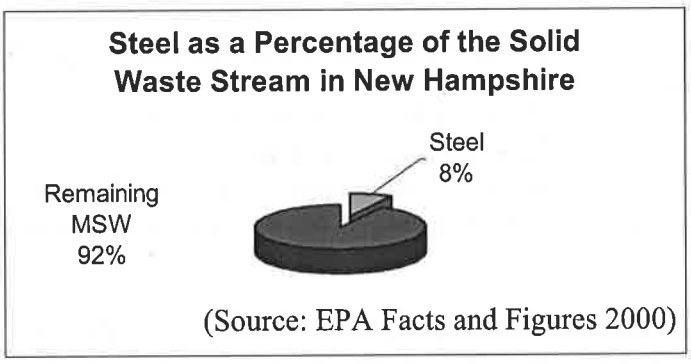
approximately equivalent to the heat released by fuel oil, and two to four times greater than mixed MSW. The burning of plastics results in very little ash, and the material may be viewed as a valued component of the fuel mix in waste-to-energy incinerators. However, incinerating plastics releases carbon dioxide, a greenhouse gas. A more general concern, however, is that plastics disposal represents a waste of a valuable, non-renewable resource, because they are manufactured from oil and natural gas.

Manufacturing-- Recycled plastics are typically granulated, washed, and heated to produce pellets or flakes that can be manufactured into secondary products. Items manufactured from recycled PET include carpet fiber, fiberfill insulation for jackets and sleeping bags, appliance casings and handles, and floor tiles. Other uses include strapping for shipping, sheet products, and containers. Buying products made from recycled PET helps to maintain strong recycling markets. Only a limited volume is currently used to manufacture containers.

Recycling Markets for PET-- Historically, markets for recycled plastics have been subject to significant fluctuation. Prices for recycled plastics are directly related to prices for oil and natural gas and worldwide virgin plastics production. Most plastics collected for recycling in New Hampshire communities are marketed outside of New England and more than half of the PET recycled is used in the fiber industry.

Summary— PET is a commonly collected and highly recyclable portion of the waste stream. Although significant volumes may be required for storage and separation of materials may be time intensive, several recycling markets exist and manufacturers can use the materials as feedstock in a variety of products.

Steel



Weight and Volume -- Steel is used in the production of many durable products, which have a life span from a few months to many years. They include steel cans, appliances, automobiles, and construction materials. In New Hampshire, the Governor's Recycling Program reported that municipalities had recycled 1,421 tons of steel cans, along with 59 tons of mixed cans (mixed steel and aluminum containers) and 13,527 tons of commingled containers (mixed steel, aluminum, glass, and plastic) in 2001.

Steel Cans

Steel cans account for about 1.4 percent of municipal solid waste (MSW) by weight. The figure reported for recycled steel cans has declined slightly over the past three years because several communities have begun commingling their cans or containers.

Collection, Processing, and Storage -- Many recycling programs, both drop-off and curbside, collect steel cans separate from other recyclables, or commingle the cans with other mixed steel, aluminum containers and/or plastic containers. Steel cans are separated from commingled materials with the use of simple magnets and is then stored loose or baled prior to shipment to market. Recycling processes are also very forgiving of contaminants and containers with labels and food residue (burned off during steel making), small quantities of aluminum (e.g., from steel/aluminum "bi-metal" cans), tin, or non-container steel. Steel can be stored outside, however, to reduce the effects of weather it should be moved to a market in a timely fashion.

Potential concerns for local recycling programs are the handling of aerosol containers (because they may still contain compressed gases) and paint cans (a concern if any liquid residues remain). Therefore, aerosol cans and paint cans are typically recycled with scrap metal and not with steel food containers.

Appliances

Appliances, sometimes called "white goods", are comprised of approximately 75% steel. According to the Steel Recycling Institute, an estimated 84% of appliances were recovered for recycling in 2001.

Collection, Processing and Storage--Appliances can be collected at a drop-off center or at the curb. Curbside programs may require residents to schedule an appointment or set the appliance on the curb on a given day. Fees collected at a drop-off or for a curbside program help to offset the costs.

Doors of refrigerators should be removed prior to storage to reduce the danger of entrapment. Refrigerators without doors should be stored door-side down to reduce collection of snow and rain.

There are three components of household appliances that are of potential environmental concern and require special handling. These components are *Chlorofluorocarbons* (CFCs), *polychlorinated biphenyls* (PCBs), and *mercury*. CFCs that have been associated with stratospheric ozone depletion are used as a coolant in most refrigerators and room air conditioners. Under federal law, CFCs must be removed from these appliances before they are disposed of. Many scrap dealers have the equipment to remove CFCs from appliances, and now offer on-site removal of CFCs.

Electric transformers in some older appliances (air conditioners, dryers, fluorescent lights, and others) contain PCBs, a known carcinogen. These transformers must be removed before the appliances are processed for sale in scrap metal markets. Ballasts NOT containing PCBs have a label on them stating "No PCBs". Operators should contact their metal recycler to find out if non-PCB ballasts can be included with scrap metal. Ballasts without this label should be managed as a hazardous waste.

Mercury, found in the switches of many appliances, is a nerve toxin that is converted by bacteria into methyl mercury. Mercury (methyl) enters the food chain and builds up in the tissues of fish and eventually concentrates in the humans and wildlife that eat the fish. Mercury switches are found in gas appliances, such as ranges, ovens, clothes dryers, and space heaters, as well as chest freezers, sump pumps, and automobiles. Before processing or disposal, the mercury switches must be removed and handled as a universal waste.

Automobiles

In 2000, approximately 14,736,000 tons of steel were used to produce automobiles. Nearly 14 million tons were recovered nationally, demonstrating the high recyclability of steel.

Collection, processing and storage--There are approximately 175 automotive dismantlers in New Hampshire. The dismantlers remove the environmentally hazardous materials such as gasoline, antifreeze, CFCs, oils and other lubricants. After the automobile has been drained of hazardous fluids and parts salvaged, the vehicle is crushed and sent to a regional shredder.

Construction Material

Steel is used to construct buildings and other structures such as bridges and is used in the manufacturing of metal roofing, I-beams, steel 2X4s, and fasteners such as nails and screws. Many construction sites maintain a recycling rate of 40-50% for steel items.

Collection, processing and storage--Steel material can be separated during building or demolition. It is typically left on site until such time as collection boxes are filled.

Scrap metal can be stored outside for long periods with no significant deterioration or loss of value. Many municipalities stockpile scrap metal for a year or more before moving it to a processor. To reduce the potential for run-off of pollutants and suspended solids to bodies of

water through storm water, piles should be maintained using best management practices. Some of these practices include storing on high ground, the use of vegetative swales, compost berms around a scrap pile, the use of an impervious surface with a collection system or vegetative berm, a tarped roll-off and dikes to reduce run-on and run-off.

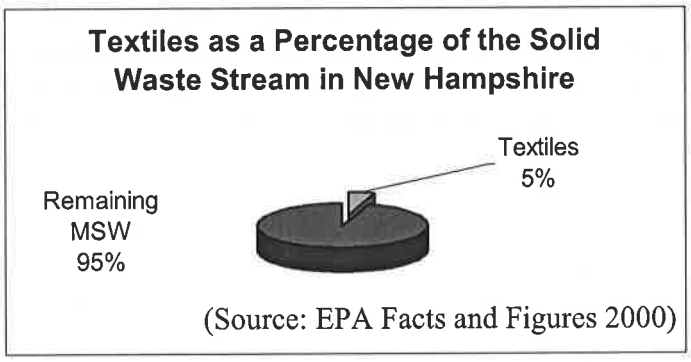
Disposal – Steel is resistant to most disposal methods. It degrades very slowly (by rusting) in the environment and large pieces can puncture landfill liners and cause leachate problems. Steel is noncombustible and when placed in an incinerator, will not burn and ends up in the bottom ash. Waste-to-energy facilities typically use magnets or other equipment such as loaders to separate steel (and other ferrous metals) from incoming wastes or from ash prior to disposal in an ash landfill.

Recycling Markets for Steel -- Most New Hampshire municipalities market their steel to an established network of dealers in the northeast. Many towns take advantage of local salvage facilities to handle much of the scrap generated. These dealers consolidate shipments from many municipalities (plus commercial/industrial sources) into loads that are resold into regional markets. Prices for steel cans and other steel scrap are sufficient to justify their relatively low collection and processing costs. In an effort to encourage the use of domestic steel and keep mills open, tariffs on imported steel have been imposed.

Steel as a Manufacturing Feedstock –Scrap has been used in metal manufacturing for as long as metalworking technologies have existed. The majority of US steel production capacity is made up of basic-oxygen furnaces. Basic-oxygen furnaces can use up to 20-30% scrap to produce steel for cans, appliances and automobiles. Electric arc furnaces (a newer steel-making technology) can operate with 100% scrap to make new steel. Foundries for iron and steel, aluminum, brass, and other metals also routinely use scrap as a raw material. There are few limitations on the range of metal products in which recycled scrap can be used as an input.

Summary— Steel is used in a variety of products and is readily recyclable. It is a considerable portion of the waste stream and stable markets exist in the region. Revenues and disposal cost avoidance make steel recycling an attractive part of any recycling program.

Textiles



Weight and Volume – The U. S. Environmental Protection Agency estimates that 9.4 million tons of textiles were generated in 2000. As shown in the graph, textiles account for 5% by weight of the municipal solid waste stream in New Hampshire. In 2001, the Governor's Recycling Program reported that NH communities recycled 1,292 tons of textiles.

Collection, Processing and Storage – The two more common collection methods are both drop-off options. Municipal transfer stations/recycling centers collect the textiles and either bag the material loose or bale it for resale to the reuse clothing or "rag" markets. The other method employs organizations such as Goodwill Industries and Salvation Army, as well as other local charities.

Many municipalities encourage residents to reuse old clothes that are left off at the transfer station swap shop. This method of collection reduces labor costs due to limited processing and keeps the clothing in local use. Regardless, there will always be a residual amount of clothing to process for recycling or disposal.

Textiles must be kept under cover and free of moisture; otherwise mold develops and the textiles have little or no market value. During winter months, textiles should be monitored to reduce infestation by rats, mice and other vectors.

Disposal – Textiles disposed of in an oxygen-depleted landfill decompose very slowly and release methane, a greenhouse gas. Natural fibers (cotton, linen, silk, and wool) burn well and produce little ash. Man made fibers; especially from petroleum products (acrylic, nylon, and polyester) burn rapidly, and produce a hard ash. Incinerated textiles also produce carbon dioxide, a greenhouse gas.

Recycling Markets for Textiles – In the US, used clothing is the eighth largest export material behind automotive parts and wheat. It is reported that almost 50 percent of recycled textiles are reused as clothing with 20 percent made into wiping cloths and another 25 percent converted back into textile fiber for use as stuffing or insulation in vehicles. Domestic economic conditions also impact textile recycling activities. For example, in 1998, the General Motors strike affected the "rag" market since 80 pounds of rag material are used to deaden sound in each automobile.

Textiles as a Manufacturing Feedstock – The remanufacturing process will depend on the intended end-use. Textiles can be shredded and used as stuffing in furniture or can be broken down into fibers, color-sorted and spun into thread to make new textiles or bleached and used in

the manufacturing of paper. Textiles that are not suitable for reuse as clothing or do not meet other market specifications can be cleaned, sorted and torn for use as wipers.

Summary—There are many reuse options, including Planet Aid, Salvation Army, Goodwill Industries and church organizations. NH also has textiles processors that prepare the material for overseas markets. The use of textile swap shops in municipal recycling centers gives residents more reason to visit and acts as an incentive to recycle other material as well.

Asbestos

Background

"Asbestos" is the name given to a group of minerals that occur naturally as masses of fibers which can be separated into thin threads and woven, or combined with binding materials and pressed into solid form. There are six primary types of asbestos: Chrysotile; Amosite; Crocidolite; Anthophyllite; Actinolite; and Tremolite.

Asbestos is non-combustible, is resistant to corrosion, has a high tensile strength and has low electrical conductivity. These characteristics, in addition to the material's relatively low cost, made asbestos an attractive material for producing a variety of commercial products over a period of 100 years, beginning around 1880. Such products (and examples) included:

- friction devices (clutches and brake shoes);
- plastic products (floor tile, coatings and sealants);
- paper products (roofing felt and gaskets);
- textile products (curtains and gloves);
- building construction materials (siding and roofing shingles, "cement board," peg board);
- road construction materials (wearing surfaces and curbing); and
- insulating products (boiler insulation, pre-formed pipe wrapping and troweled/sprayed coatings).

For nearly a century, New Hampshire was home to a number of asbestos manufacturing facilities. Plants were located in Nashua, Meredith and Tilton. The Nashua plant, owned by the Johns-Manville Corporation, commenced operations around 1900. It ceased manufacturing asbestos-containing products in 1985 and the buildings were razed in 1997. The principal raw materials used at the Nashua plant consisted of asbestos fiber and Portland cement. These were combined to produce 4 feet by 8 feet sheets of "cement board" material which ranged from 1/8" to 4" in thickness. In addition, the Nashua plant produced a variety of other asbestos-cement products for construction and industrial uses, primarily durable insulation products.

For many years (c. 1900-1970), the Nashua plant made its asbestos-containing waste material available free of charge to area property owners for use as fill. Consequently, asbestos-containing waste material was dumped in large quantities throughout the Nashua/Hudson communities, generally to fill low lying areas and facilitate land development. Today, over 300 properties in Nashua and Hudson are identified as asbestos disposal sites. Additional sites are being identified each year.

Less is known about the waste disposal practices of the asbestos manufacturing plants formerly located in Meredith and Tilton. At the site of the Tilton plant, there are two areas which the company used to landfill asbestos waste. These areas are no longer in use and are capped with soil materials. In Meredith, asbestos waste was disposed of at the town landfill. The existence of other dump sites in Tilton and Meredith is not known.

Health and Environmental Issues

The U.S. Occupational Safety and Health Administration (OSHA) is aware of no instance in which exposure to a toxic substance has more clearly demonstrated detrimental health effects on humans than has asbestos exposure. For this reason, asbestos manufacturing has largely ceased in this country and a number of government regulatory programs have been established to address the safe management of asbestos within our living environment.

The inhalation of asbestos fibers in high concentrations is known to cause:

Asbestosis, a debilitating and irreversible respiratory illness which is characterized by a scarring of the lung tissue, or linings of the lung, reducinh lung function and making breathing more difficult;

Mesothelioma, a cancer of the thin membranes lining the chest and abdomen, which is almost exclusively caused by exposure to asbestos and is almost always fatal; and

Lung cancer and other cancers, including cancers of the larynx, tongue, sinuses, mouth, throat, stomach, colon, rectum, intestines, kidney, pancreas, and gall-bladder.

Symptoms of asbestos-caused diseases generally do not appear for 10-35 years after the first exposure to asbestos. There is no known level of asbestos exposure which is considered risk free. Moreover, among people exposed to asbestos, cigarette smokers are at much greater risk of developing lung cancer than those individuals who do not smoke.

The inhalation of asbestos is the primary exposure route of concern. Ingestion of asbestos is another concern. Direct contact with asbestos is not of concern from the perspective of absorption through the skin. However, by making direct contact with asbestos, a person's skin or clothing can become contaminated with asbestos fibers and the fibers can then be carried into the home or workplace, where they may become airborne or transferred to the mouth. The same applies when tools, machinery or toys come in contact with asbestos-containing materials.

Asbestos fibers are not water soluble and do not move through groundwater to any appreciable extent. Based on studies of other insoluble particles of similar size, the expected migration rate of an asbestos fiber through soils by the forces of groundwater is approximately 1 to 10 centimeters (0.4 to 4 inches) per 3,000 to 40,000 years. Thus, asbestos is not considered a groundwater contaminant.

Although asbestos does not move with groundwater flow, it can move with surface water flow. Therefore, if asbestos waste is allowed to come in contact with rivers, wetlands and other surface water bodies, fibers may be transported to places that will result in human exposure, including intakes for drinking water supplies and recreation areas.

Rules/Policy

Asbestos management programs in New Hampshire are focused on two primary activities: the control of asbestos waste generation; and the control of asbestos waste disposal sites. The New Hampshire Department of Environmental Services (NHDES) administers the programs through its Air Resources and Waste Management Divisions. In addition, the NH Department of Health & Human Services, Office of Community & Public Health (NHDHHS-OCPH) administers a supporting program that licenses employers and certifies employees who handle asbestos waste during demolition, renovation and construction activities.

The Waste Management Division (WMD) oversees the management of asbestos disposal sites, both active and inactive. A number of New Hampshire's operating landfills are currently authorized to receive asbestos waste and the WMD regularly monitors all such active disposal facilities for compliance. In addition, there are several hundred inactive asbestos disposal sites located on residential, commercial, industrial, and public properties throughout Nashua and Hudson. The WMD administers an inactive asbestos disposal site program comprised of the following program elements: investigation / confirmation of new sites; periodic inspection of known sites; technical assistance for developing / implementing emergency response and remedial action plans; long term site maintenance; and coordination of program initiatives with the U.S. Environmental Protection Agency (US-EPA). Education is also a critical element of helping individuals in working safely with asbestos. In conjunction with DHHS, DES has provided training programs to certify workers who disturb Asbestos Disposal Sites (ADS). This aspect of the program will assure that work in these properties is properly done, and help to avoid putting people at unnecessary risk.

Summary

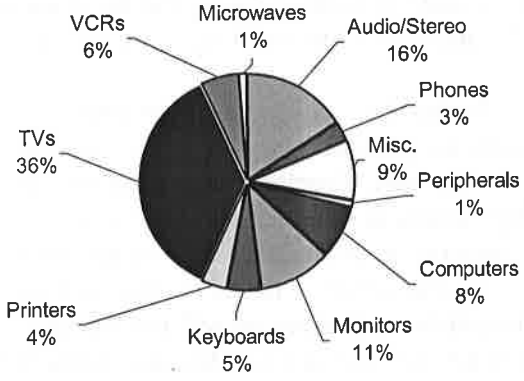
Asbestos poses a serious health risk when inhaled or ingested, therefore most efforts are intended to minimize the ability of asbestos to become airborne. The NHDES Asbestos program relies on maintaining strong partnerships with local officials, property owners, and federal environmental officials. At the present time, NH-DES is evaluating measures to further strengthen these partnerships and establish a clear framework to manage the problems at hand and assure long-term protection of public health through the proper management of asbestos wastes.

Computers and Televisions

Background

Among electronics, computers and televisions dominate concerns, mostly because of their bulk, toxicity and cost. A study by the US Environmental Protection Agency, Common Sense Initiative[1] examined the results of five electronic collection events in Missouri. The distribution in Table 1 shows that televisions, computer accessories, and audio equipment are the most common wastes at these collections. The high profile and popularity of these items, combined with a lack of forethought toward end of life issues, has caused televisions and computers to rise to the forefront of product stewardship discussions.

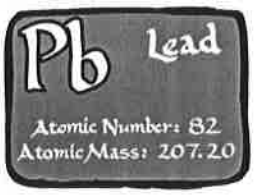
Table 1
Percentage by Type and Number of Items Collected, Weighted Average of Five Collection Events
(Source: U.S. EPA, 1999)



Generation According to the U.S. EPA, monitors make up 11 percent of the electronics waste stream and contribute 28 percent of the lead found in the entire municipal waste stream. In the next ten years, it is estimated that 315 million computers will inundate the national waste infrastructure, with about 1.5 million units impacting New Hampshire. Additionally, the television industry is bracing for a change to digital broadcasting, scheduled to happen after 2007, which means that existing televisions will most likely be replaced and disposed of at an increasing rate after that date.

Recycling Approximately 95 percent of discarded computers end up in the solid waste stream, headed for disposal or treatment in landfills and incinerators. Generally speaking, more commercial computers are likely to be recycled than their household counterparts, primarily because of bulk volume and the likelihood of parts usable to the recycler.

Health and Environmental Concerns



First, computer components and televisions are heavy and extremely bulky. A typical monitor (from a computer or color television) may weigh as much as 70 lbs and occupy significant space. Indeed, the very bulk of these items have created problems for handlers in terms of back strain and injuries due to dropping and the shattering of the glass.

Secondly, the cathode ray tubes (CRTs) in monitors and televisions contain lead in the tube, neck and the enclosed glass seal ("frit"). According to a study provided for the University System of Florida[2], the funnel portion alone can contain as much as 75 ppm of leachable lead as determined through a toxicity characteristic leaching procedure (TCLP). EPA interprets this level of lead,

which exceeds the 5 ppm regulatory limit, to be indicative of a hazardous waste and is restrictive on the types of outlets which supposedly constitute recycling. Apparently, the level of lead found in older black and white televisions is of lesser concern, as they have not been found to exceed TCLP limits.

In addition to the CRTs, computer components in general contain a significant and diverse number of materials, many of which are not amenable to recycling activities. For example, there are about 18 different plastics that make up the casings, the cables, and the wiring. Long appreciated for its durability, its heat conduction properties, and ease of production, the mixture of plastics, particularly in older models, has long been a source of frustration to recyclers. This is complicated by the presence of "brominated flame retardants" which decrease ignitability, but also raise health concerns. There are also metals in computer components, such as mercury in batteries and the motherboard (.154 lbs in a typical 70 lb computer), aluminum and copper, which combined make up 20% of the computer, and iron at another 20%.

When electronics are disposed of in landfills, there are two problems. First, as noted, because the items are generally large, there is a concern about the use of valuable capacity for these wastes. Secondly, leachate containing various "heavy metals," such as lead and mercury, can be readily treated, but the metals will become a component of the treatment sludge generated as a byproduct of the treatment. With incineration, there are always concerns with the potential emissions and resulting levels of lead found in the ash. The result is that many disposal facilities in New Hampshire will not accept CRTs. Alternatives to CRT disposal can be found on the DES website at www.des.state.nh.us/pcas.

Management Strategies and Issues

Collection, Processing and Storage

Collection The local transfer/recycling center is often the recipient of household computers and televisions. Oftentimes, the transfer station is forced by a lack of funds to throw the items away in the disposal container or consider the material as metal and place it in the metal bin. With a "swap shop," there is the possibility for reuse or scavenging for parts by local repair shops or residents, however, the transfer station will likely receive the residual wastes (empty casings, broken parts, etc.) at a later date once parts of value have been removed.

Another technique for communities is the organized electronics collection, which is growing in popularity. In 2001, DES estimates that at least 50 of the 234 towns in New Hampshire had access to collections of CRTs from computers and televisions, and of these, about half collected a user fee of $5-10. At an average cost of $2,500 per collection event, DES estimates an annual collective cost to NH municipalities at $62,500. On the state level, the Department of Administrative Services, which administers the program to surplus equipment, reports that their cost to recycle 2,520 CRTs during 2002 was $12,600. State agencies are charged $5 for each CRT sent to surplus to cover this cost. DES has also been involved in a successful Northeast Recycling Council USDA Rural Collections Grant Project, which studied the economics of various methodologies used for collection and transport of household electronics. One of the benefits of that project was a collection of used electronics held in Concord in 2002, which resulted in over seven tons of electronics collected in a two-day period.

Reuse/Repair:
There are three levels of reuse and repair: community based, non-profit/donation and commercial activities. At the local level, mention has already been made of the swap shop option for residents. For donation outlets and non-profit organizations (e.g., Goodwill, churches, schools), there are pros and cons. While it may be preferable to give used units to charitable or non-profit organizations, there is the increasing reality that these organizations need units able to access the Internet, provide for current software needs, and give some assurance that the item will not become a burden in terms of maintenance cost and time for personnel training.

Although many commercial facilities in the northeast are at least in part designed for reuse, they face many hurdles. The cost effectiveness of reuse or repair options on a large scale, is dependent upon the age of the computers, the method of transport, the volume, and the value of the reused computers as compared to the virgin product. For example, dot matrix printers are only slightly less obsolete than typewriters, and computers with a 386 CPU processor speed or less are simply not practical for reuse. The labor costs to refurbish computers and televisions are considerable, and the increased use of less expensive prison labor has been controversial. Additionally, there is the problem with bundled software and the need for future upgrades since there are restrictions on the licensing of software that can be installed on the refurbished machines. Thus, the cost of a license can negate any cost effectiveness of the activity. Particularly for televisions, the manuals for repair can be especially costly (an average of $30.00 each), adding overhead to the repair activity.

Recycling/Processing
In New Hampshire, computers sent for recycling are typically salvaged for valuable parts with the residuals recycled or disposed of. Cathode ray tubes are often shredded and sent to smelting operations to recover lead or other precious metals. In more rare instances, the monitor glass may be recycled through "glass to glass" recycling operations. Several businesses *demanufacture* computers and direct the components for recycling and reuse to the greatest extent practicable. This is an opportunity for commercial sources of computers, particularly if they have newer models to trade for rebates on usable parts. The number of permitted solid waste facilities that recycle computer equipment in New Hampshire has doubled in the last two years and the cost of recycling computers has been significantly reduced. However, it is still quite costly for a business who finds the specifications for recycling difficult to meet, the processing service too costly, and transportation difficult. There are several smaller businesses, which also retrofit and demanufacture the units, but they also require parts with value, and have residuals for disposal or recycling. Finally, some of the components, such as the circuit boards and older computer housings, end up in the scrap metal piles (allowable through federal exemption), which are then redirected for recycling.

Factors that Affect Generation and Collection:
There are other factors that impact the generation/collection rates of computers and televisions.

First, the majority of computers and televisions destined for disposal or recycling are currently in storage. In part, this is due to limited options for removal, but more likely, it is due to the perception of the owners that there may be options for reuse, or there is likely a reluctance to part

with an expensive item purchased just a short time ago. Stored computers from the last ten years, particularly from residential consumers, have only a few dollars worth of parts. Computers from commercial entities typically have some value and offer at least the potential for some type of rebate to the generator from the recycling facility. Falling prices of new products can exacerbate the situation by limiting the resale value of older units, limiting the upgrade options, and creating a larger universe of replaced computers.

Consumer activities have a profound impact on generation rates, especially since computers have an obsolescence often less than three years and televisions less than seven years. Users will often upgrade to products, peripherals, and features that may not even be needed, such as monitors or printers for new computer units included in bundled equipment packages. Consumers will often upgrade in response to the increasing hardware demands derived from the Internet and software. The old units and items are then stored or discarded. On a more positive note, many of the replacements for CRTs are less toxic, less bulky and far more energy efficient than their predecessors. Regardless, as long as the industry has relatively no universal standards for manufacturing their materials with the thought of recycling the components, the problem of management will continue to mount. Industry can solve this problem by setting uniform standards for production and reuse, allow for easier and cost effective upgrades, and providing "universal" software (such as that suggested by the State of Massachusetts), which can bridge the gap as technology changes.

Additionally, the television industry is bracing for a change to digital broadcasting around 2007, which will cause many consumers to replace their existing units. Given the fact that televisions made currently are not designed with an end of life consideration, the ensuing flow of televisions will have a substantial impact on state and local resources, particularly considering the lack of markets for television recycling. Additionally, VCRs, which are being replaced by their digital cousins (DVD players), will end up in collections along with obsolete satellite dishes that are being discarded due to replacement with smaller, more efficient dishes and cable based broadband technology.

Rules/Policies

Computer monitors are not regulated at the residential level unless collected for recycling or disposal. If individual residents bring computer monitors to be disposed of, there is no NH law that would prohibit disposal. Commercial enterprises are regulated, however, and their computer monitors should be handled as a universal waste, which is a less burdensome method of disposal than if the business were to handle the monitor as a hazardous waste. Also, many disposal facilities, such as the Waste Management, Inc. facility in Rochester, NH, are not accepting monitors from any source, simply because they are concerned about inability to discern commercial from residential CRTs.

Cathode ray tubes are covered in the state's Universal Waste Rule; all other electronic wastes, including collection, transport, disposal, and recycling/processing, are regulated under the New Hampshire Solid Waste Rules. In order to encourage the development of the demanufacturing industry, the DES has lessened the requirements for financial assurance typically associated with a standard solid waste permit.

National/Regional Efforts

An advance disposal fee on electronics has been the subject of intense national debate because the concern transcends the borders of any one state. One particular effort, the National Electronics Product Stewardship Initiative, or NEPSI, seeks to establish a national collection system for electronics and define a mechanism by which the collections are paid. The NEPSI process has involved many public and private groups, including the Northeast Waste Management Officials Association (NEWMOA) and the Northeast Recycling Council (NERC), both of which have New Hampshire representatives. The crux of the discussions is whether there should be a fee on computer purchases, and if so, whether the manufacturer should shoulder that fee. Despite the fact that the consumer will ultimately be responsible for all or part of the fees, DES has joined many other northeastern states in supporting a fee at the level of the manufacturer, rather than establishing a regulatory scheme which would likely be more expensive for no more effectiveness. The agency believes that encouraging manufacturers to consider what becomes of their product when it enters the waste stream is the most appropriate path to follow and several manufacturers have begun to do so.

Summary

There are numerous problems with the functional reuses or actual disposal of computers and televisions in terms of unit volume, toxicity, and the obsolescence of the original items. Most importantly, there are impacts in the consumer market caused by technological and marketing changes. Within the next several years, we expect to see the common usage of high definition television and an increasing use of flat screen monitors for computers. It is estimated that greater than 50% of replaced units are currently in storage, awaiting other uses and most likely, ending up in the waste stream. Preparations must be made for the large volumes of discarded materials, but the problem will only be solved when the electronics industry as a whole adopts procedures, policies and designs that will decrease the current burden on the consumers, local government and the solid waste disposal industry.

[1]U.S. EPA, Common Sense Initiative. Analysis of Five Community Consumer/Residential Collections, EPA-901-R-98-003, 1999.

[2] Townsend,T., Musson, S.,Jang, Y.,Chung,I. Characterization of Lead Leachability from Cathode Ray Tubes, Using the Toxicity Characteristic Leaching Procedure, Florida Center for Solid and Hazardous Waste Management, Report ##99-5, 1999.

Construction and Demolition Debris

Background

"Construction and Demolition Debris" is the term used to describe the material generated by all phases of the construction and demolition industry and household renovation. It is a mixture of materials generated through the housing market, but also encompasses the woody debris of brush and stumps, as well as the residual wastes of the timber industry and the remains of violent storms.

By lumping the two terms "construction" and "demolition" together, we tend to distort the fact that the two are very different in their generation, management, and disposal options. Construction materials, which tend to be more prevalent in urban areas, are cleaner, can be easily separated at the job site, and are easier to reuse because newer, more universal, materials are used. Clean, woody materials are often desirable for wood processing for production of clean "fines" or wood chips. In contrast, demolition material is often dirty, has more contaminants (such as lead paint, glass, and insulation), and the presence of older construction materials means that it is less likely to be reused. The reuse market is quite specialized and is similar to salvage operations. The processing of demolition material can be problematic due to the persistence of contaminants in the final product and the high volume of residuals from processing requires costly disposal.

Total 2001 construction and demolition waste generation in NH is estimated at 260,000 tons or approximately 1 lb/person/day. DES estimates that >90% of all residential C&D waste generated was managed in-state with approximately one half processed and the remainder disposed of or burned. The state also accepted approximately 182,000 tons of imported C&D wastes in 2001, primarily from Massachusetts, Vermont and Maine. The vast majority of these imports were processed as well. The state has seen an increase in C&D generation (Figure 1), as data reporting becomes refined and as more Americans

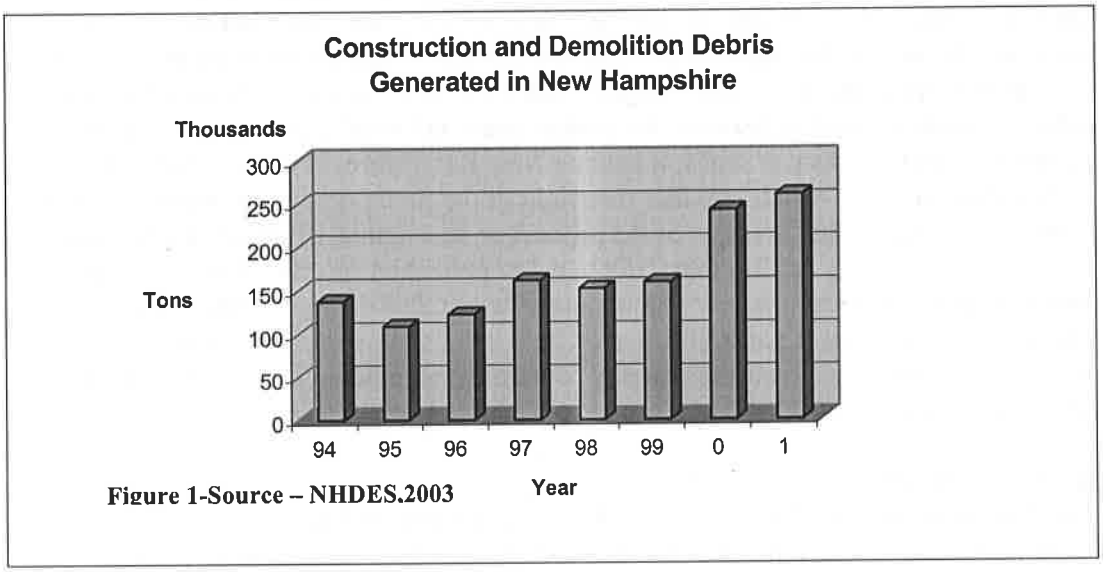


Figure 1-Source – NHDES.2003

focus upon home building and renovations. Certainly, the level of imports has increased as other states look for processing facilities as an alternative to limited choices and pricing within their own state. An upcoming landfill ban in Massachusetts on unprocessed C&D will likely increase this amount. Additionally, pressure treated wood, which will be banned from the consumer marketplace in 2003 as a result of health and environmental concerns, will also likely cause an increase in material.

There is the continued concern, however, that the traditional markets of C&D processors, such as fines, woodchips, and alternative daily cover, are shrinking, particularly as virgin wood chips become more cost effective, the need for backhauled fines shrinks along with landfill space, and the specifications of the final products are scrutinized for contamination. For this reason, many states, including New Hampshire, have invested resources in researching new markets for C&D and assisting with the development of new businesses.

Health and Environmental Issues

There are health and safety issues at all levels of C&D management. At the local collection level, improper handling can injure the operator and provide an unsafe environment for the public to drop off the material. Burning of "dirty" wood (e.g., painted) exposes contaminants to the atmosphere and can distribute particulates over a wide area. Failure to remove storage piles contributes to the leaching of contaminants, incentives for vermin, and fire danger. Often, demo debris enters the facility with a myriad of contaminants that need to be segregated. Examples include household hazardous wastes (e.g., paints, and construction adhesives), large pieces of metal and residual trash, and other contaminants, such as asbestos. All of these present their own safety issues and require regular training on proper handling methods.

At the next level of collection, all of the previous concerns remain, although there is certainly increased danger from use of the processing and sorting equipment, particularly if the material is not managed appropriately, there are no procedures for startup and shutdowns, or workers are not adequately trained. In the processing facilities where there is more accumulation of material, regulations require closure plans and financial assurance in case the business fails. Processing of demo material into usable products must also address the fate of contaminants that may have been initially present, such as asbestos and lead paint; otherwise, the contaminant will also be present in the final material. This is why most states, including New Hampshire, have some form of certification process, which provides oversight of the final product and ensures that there is no greater impact due to usage of the product or its eventual disposal. To become certified, a processing facility must follow either published specifications or accepted protocols prior to marketing any product made from C&D debris. Additionally, boilers that accept chips from these facilities must hold valid solid waste and air permits from NH prior to operations to ensure that any contaminated material is not being emitted during operations.

Disposal/Recycling Options

There are a number of New Hampshire facilities that collect C&D debris and there are a variety of methods and outcomes that can include grinding, mulching, screening,

composting and even disposal. There are three primary facilities that process C&D in NH – the Environmental Resource Return Corp. in Epping (ERRCO), the Turnkey Facility in Rochester, and the LL&S Wood Processing Plant in Salem. In 2001, the ERRCO facility in Epping processed 55,000 in-state tons and another 70,000 tons of imports. The Turnkey facility in Rochester accepted 70,000 tons of in-state C&D and approximately 11,000 from imports. The facility diverted 16,000 tons for processing. The LL& S facility in Salem processed 56,000 tons in-state and 86,000 imported tons. Their product is primarily wood chips and mulch. The impact of these three facilities in New Hampshire has been considerable in that they provide an alternative to landfilling and incineration and produce a product that is in demand. However, there is a significant portion of C&D, mostly the demo material, which is simply landfilled at the three lined and twelve unlined facilities that reported disposal in 2001. Additionally, most towns opt to have a burn pile, which takes care of the brush, stumps and clean wood, and a compost pile to manage brush, sawdust, and even gypsum.

While many towns collect C&D material, the costs of collection and transport can be excessive. The gate rates for a community can approach $100/ton with transportation costs up to $1.50/mile. The costs of processing directly impact decisions at the local level as to whether a community will choose to process, burn, or landfill the material. For example, there is limited accessibility to these facilities from both the northern region and the southwest, and these regions transport less material to the state processors. To combat the rising costs, towns have had to scrutinize their existing infrastructure for collection. Collection procedures can be modified to separate clean wood from the painted wood (so the clean wood can be burned in burn piles), and utilize equipment to volume reduce the material collected so that "dead air" does not fill up storage bins, making transportation more efficient. Volume reduction of C&D can best be accomplished using large augers, which essentially crush large, bulky items into more manageable pieces so that more material can be shipped at any one time. This problem has also been addressed in part through back hauling of processed dirt fines for landfill cover, cooperative hauling agreements and an examination of processing options. Non-profit brokers, such as the Northeast Resource Recovery Association, can usually provide better contract prices for communities and can arrange for cost effective transport.

Rules/Policies

The oversight of construction and demolition materials can be found primarily in the Solid Waste Rules. Transfer stations and disposal facilities must receive a standard permit prior to startup. Public facilities, however, may receive a permit-by-notification providing they accept less then 30 tons of disposable wastes a day at the facility. Facilities that receive C&D and process, such as ERRCO, also require a standard solid waste permit and must submit annual reports detailing their activities. As part of the standard permit, there are closure and financial assurance requirements, storage limits, acceptable materials, and standards for operations. Additionally, like any other solid waste facility, there are regulations for operator training and management of residuals stemming from the processing.

A product resulting from the processing of C&D may fall under additional regulation. For example, if the product is going to act as a substitute for other materials or feed

stocks, then the product will need to be certified as a "waste derived product" under Env-Wm 3200 of the Solid Waste Rules. An approved waste derived product is one where a demonstration has been made, either through application or through published specifications, that the product will not have a more negative impact to the environment or safety when compared to the use of virgin materials. The Department has rewritten the criteria for waste derived products, which was once encompassed in the "beneficial reuse" process, to better reflect the regulations of neighboring states, the need to encourage the use of recyclable materials in manufacturing, and the recognition of the variety of products which can arise from processing operations, such those operated by C&D facilities.

Summary

The C&D industry is constantly evolving to meet the demands of the economy and the need for responsive solid waste management activities. Clearly, the processing industry provides a service that states should embrace, provided the materials produced conform with appropriate checks for health and safety, storage limits can be maintained, and the service is cost effective. Beyond support for the processing industry, the generator of the waste material should endeavor to separate, reduce and reuse C&D materials so as to minimize disposal needs.

Household Hazardous Waste

Background

Household hazardous wastes are produced when household hazardous materials are no longer wanted or needed as household products. These wastes include unused paint thinners (flammable), oven cleaners (caustics) or bleach (oxidizers), and they can affect a consumer's health and contaminate the soil, ground water and surface waters. To make informed decisions when buying and using products with hazardous ingredients, consumers must identify which products are considered harmful and then ensure that they are managed safely upon disposal.

Health and Environmental Issues

We use hazardous products everyday in our homes. These products become a hazard when improper use or disposal causes a threat to the environment or human health. Many common household products (paints, solvents, drain openers, oven cleaners, polishes, waxes, pesticides, cleaning agents and spent automotive products) have hazardous properties (flammability, corrosivity, explosivity, and toxicity).

The average household throws 15.5 pounds of hazardous materials into the trash each year. Household hazardous materials are disposed of in other ways, too. Certain products, such as used oil, are frequently poured down storm drains and many products end up going down the sink drain to septic systems or sewers.

Flammable or reactive household chemicals can release toxic fumes or even explode if they are mixed together in the trash, causing fires or injuring workers. Dumping solvents into septic systems or landfills may contaminate ground and surface waters, ruining drinking water and killing fish and wildlife. Pesticides can damage sewage treatment plants, and oil poured into storm drains can flow directly into streams and ponds.

There are also health threats associated with some of these products. Products like drain openers contain lye that 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. Other repeated chemical exposures can cause cancer or birth defects.

Children are very vulnerable to these products and accidental poisonings can occur if these products are not properly stored. In New Hampshire, the third and fourth leading causes of poisoning are personal care products and cleaning substances (first and second are prescription and nonprescription drugs). These substances should be stored safely and disposed of properly.

Rules/Policy

Household hazardous waste is exempted from the Hazardous Waste Rules until collected as part of a HHW Collection Project or at a permitted solid waste facility. The Rules are designed to facilitate maximum collection of HHW in order to prevent the wastes from being disposed of with other solid wastes. For example, towns may transport HHW to a larger collection site in town vehicles, saving the cost of hiring registered transporters.

Summary

Proper management of HHW requires vigilance from the consumer, towns, solid waste facilities, product manufacturers and the Department of Environmental Services. To protect health and the environment, consumers need to buy products wisely, *store* them safely, and *use* products safely. This includes reading and following label warnings required by federal law. Although these labels typically do not indicate long-term health hazards, they provide valuable information to make informed choices about what products to buy and how to dispose of them if they become a waste.

Towns need to educate their citizens about the proper disposal of HHW and provide safe collection opportunities, either through one-day collection events, or on-going, permanent collections. The Department of Environmental Services provides matching grants and educational assistance to towns for HHW collection, but the towns need to make their own financial commitment to protecting their workers, the public and the environment. Solid waste disposal facilities, whether public or privately owned, have a similar obligation, plus the need to protect the environment from eventual release of toxics in the waste stream through diligent inspection of the waste. The Department imposes such restrictions in permit conditions, but the facilities should also recognize the benefits of preventing long-term liability at their facility.

The achievement of source reduction is easiest when it takes place at the manufacturer. If companies were to pursue harmless or less toxic alternatives for household hazardous *products*, there wouldn't be as much of a concern about the *waste*. It would also help if companies embrace the idea of "product stewardship," and assume responsibility for the proper disposal of their product when it is no longer needed or wanted.

At the state level, there should be exploration of additional funding mechanisms for the disposal of HHW. The concept of advance disposal fees, a true "user fee," has been considered by the Legislature. Because HHW is common to all facilities, it would also be appropriate to use a portion of revenue raised from a per tonnage surcharge on solid waste for the purposes of proper disposal of HHW. In the interim, the Department of Environmental Services will continue to promote permanent collection facilities, offer education, and use the budgeted funds for the grant program for maximum benefit.

Proper management of household hazardous products during use, storage and disposal should be everyone's concern. Responsible actions to reduce the use of these products wherever possible, to reduce the amount of waste generated, and to properly dispose of all household hazardous wastes will help safeguard health and the environment. This involves participation by citizens, towns, solid waste facilities, product manufacturers and the State in finding ways to decrease the toxicity of the waste stream at a reasonable price. All parties must assume their appropriate responsibilities: citizens must become more informed; towns must make a financial commitment to collection; facilities must ensure adequate inspection; manufacturers must engage in research and development of improved, non-toxic products; and the State must continue its outreach and grant program while considering additional methods of funding.

Municipal Solid Waste (MSW) Incinerator Ash

Background

Ash is the solid waste residue produced from the combustion of materials, including municipal solid waste and medical waste. Ash from thermal combustors, such as solid waste incinerators, is commonly broken into two major categories: bottom ash, and fly ash/air pollution control residue. Bottom ash is the term used to refer to the residue, which remains on (or sifts through) the incinerator stoker and grating system during the combustion process. Fly ash is the material that becomes airborne in the incinerator and is collected in either the incinerator stacks or in the air pollution control equipment. In facilities where lime is added for acid-gas scrubbing, reacted and unreacted lime can comprise the dominant weight and volume fraction of the fly ash residue. Typically, MSW incinerators generate both a bottom ash and a separate fly ash whether or not energy recovery is part of the process or not.

The total 2001 MSW incinerator ash generation in New Hampshire is estimated at about 84,000 tons, which includes estimates from municipal combustors and the small amount of ash generated by medical waste incinerators. The state has seen a decline in the amount of MSW incinerator ash generated due to the closure of old MSW combustors and the shift from incinerating medical waste to other new disposal techniques, including microwaving and sterilization.

Health and Environmental Issues

The management of ash is an important regulatory concern because ash can contain contaminants, including heavy metals, and may produce leachate if improperly handled or disposed of, risking contamination of groundwater and surface waters. The primary health and environmental issues associated with ash result from poor handling, storage, transportation and leaching of contaminants from landfills. Ash contains heavy metals such as lead, cadmium and mercury, and dioxins and furans, which are potentially toxic organic compounds created as a product of combustion. This is why the NH Solid Waste Rules cover all facets of ash handling and management, from representative sampling and analytical characterization to disposal.

Disposal and Recycling Options

Until 2000, the ash from the Claremont Wheelabrator incinerator was disposed of in a dedicated double-lined monofill in Newport at a rate of about 22,000 tons/year. The landfill was owned by the NH/VT Solid Waste Project, a bi-state organization serving 29 communities in New Hampshire and Vermont. Now that the landfill is closed, the Project exports the ash to a landfill in Massachusetts.

Ash from the Penacook Wheelabrator incinerator is disposed of at a dedicated double-lined monofill located in Franklin at a rate of about 60,000 tons/year. The Concord Cooperative, a group of 27 New Hampshire cities and towns, owns the Franklin ash landfill (monofill).

Ash from the remaining small municipal waste combustors and medical waste incinerators is disposed of at the North Country Environmental Services double-lined MSW landfill in Bethlehem or the Turnkey MSW Landfill located in Rochester, or it is shipped out of state for disposal.

Ash does not have to be landfilled. Waste-to-energy incinerators equipped with state-of-the-art pollution control equipment and proper management of the ash greatly reduce air emissions and adverse environmental and public health impacts. After being properly tested, ash can be used as landfill cover, road base material, and in cinder blocks. The reuse of MSW waste-to-energy incinerator ash is being actively researched as an alternative to using valuable landfill space for disposal. One promising reuse option is the utilization of bottom ash as a partial substitute for aggregate in the manufacture of binder course pavement.

In May 1993, a Research and Development project was completed which entailed the reconstruction of 2,000 linear feet of U.S. Rt. 3 in Laconia, NH. The bottom ash from Wheelabrator Concord was used as a substitute for 50% of the natural aggregate in the binder course paving of 850 linear feet in the test section roadway. The remainder was constructed as normal pavement to constitute a control section. The results indicate that, after a decade of service and five million vehicles, the "ashphalt" demonstration test section is performing as well as the control section in all aspects.

Rules and Policy

As previously noted, the management of ash is an important regulatory concern because ash can contain contaminants, including heavy metals, and may produce leachate if improperly handled or disposed, thus risking the contamination of groundwater and surface waters. In New Hampshire, ash is regulated primarily under the New Hampshire Solid Waste Rules.

The Solid Waste Rules require sufficient on-site ash storage capacity to ensure that facility operations continue during short-term interruptions of ash transportation and/or disposal. Ash stored on-site must be stored in watertight, leak-resistant containers located inside a building or an enclosed structure, in such a manner to avoid the dispersion of dust. Loaded containers may be stored inside or outside of a building if the containers are sealed or covered to prevent rainwater infiltration or airborne emissions. Ash may also be stored on-site in a waste pile if it is located in an enclosed structure on a base that meets the requirements of the Solid Waste Rules. There must be a run-off management system to collect and control the free liquid that drains from the ash residue.

A quality assurance/quality control (QA/QC) plan developed by each ash generator must specify how representative samples of ash will be obtained, which contaminants and parameters (metals, pH, etc.) will be included in the test, as well as how the laboratory analyses will be performed. It is important to ascertain the analytical characteristics of the ash, particularly in terms of contaminants, so that environmentally sound management and disposal methods can be practiced.

In some cases, depending on the analytical characteristics of the ash, certain ashes may have to be managed and disposed of as a hazardous waste rather than a solid waste. Therefore, the importance of the QA/QC plan must be emphasized at both the operational and management levels of the facility.

The transportation and conveyance of ash must be done in a manner that avoids any dispersion of ash into the environment and is in compliance with all other local, state and federal regulations. Prior to disposal, all ash must be sampled and analyzed in accordance with an approved QA/QC plan. In New Hampshire, ash can only be disposed of at facilities permitted to receive such waste. Much of the MSW ash disposed of in New Hampshire is placed in a secure double-lined monofill that contains only ash. In addition, there are secure double-lined commercial MSW landfills that are authorized to dispose of MSW incinerator ash.

Grant Programs

Unlined former ash landfills are eligible for a 20% state reimbursement grant under the State Unlined Landfill Closure Grant program. Unlined ash landfill closure projects are also eligible for participation in the federal/state Revolving Loan Program (SRF), which provides low interest, loans to communities for those unlined landfill closure projects.

Summary

Incineration is used for the volume reduction and disposal of 22% of New Hampshire solid waste. The resulting ash must be managed in a responsible manner, employing reuse options when available and using secure, safe disposal when reuse is not feasible.

Infectious Waste

Background

Infectious waste is a subcategory of the broader medical waste stream. In New Hampshire, it is defined as any waste which, because of its infectious nature, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed. It is regulated as a solid waste under New Hampshire RSA Chapter 149-M and the New Hampshire Solid Waste Rules (ref. Part Env-Wm 2604), with special treatment and disposal standards.

Infectious wastes are generated at many different facilities, including doctors' and dentists' offices, hospitals, clinics, schools, nursing homes, mortuaries and veterinary facilities. Infectious waste includes, but is not limited to, cultures and stocks of infectious agents, pathological wastes, waste human blood and blood products, sharps used in patient and animal care, laboratory wastes and dialysis waste.

The most common method of disposal for this material is via pathological incineration, which has temperatures and residence times greater than those of municipal solid waste incinerators. However, the number of medical waste incinerators is declining due to more stringent requirements on air emissions. Existing regulations also provide that infectious waste may be disposed of in a permitted landfill if certain criteria are met. Liquid infectious waste may be disposed of via a sanitary sewer, subject to local approval.

Health & Environmental Issues

In the past, the bulk of infectious waste in New Hampshire was generated in hospitals and disposed of in hospital incinerators. Now there are many clinics and healthcare facilities that require disposal sites. Most hospitals that had previously accepted infectious waste from off-site sources are now either at capacity or can no longer afford to accept those wastes.

When burned, infectious wastes emit a number of toxic air pollutants, including hydrochloric acid, dioxin, lead, cadmium, and mercury. The 1998 ***New Hampshire Mercury Reduction Strategy*** identified hospital/medical/infectious waste incinerators as major contributors to mercury emissions in the state, and as a result, led to the implementation of strict new state and federal regulations. The ***New Hampshire Dioxin Reduction Strategy (2001)*** lists medical waste incinerators as the top contributor for dioxin emissions. Many of the plastics used in medicine, particularly intravenous bags and tubing, contain polyvinyl chloride (PVC), which is a known precursor of dioxin formation due to its high chlorine content.

There are several methods that hospitals and health care providers can use to address the problems with incinerator emissions, including source separation (segregating ordinary household waste and recyclables from medical/infectious waste), source reduction, (eliminating dioxin precursors and other toxics from the waste stream) and alternative disposal techniques, including autoclaving and microwaving prior to disposal in a landfill. All of these options are

effective in reducing overall hospital waste generation and minimizing the formation of dioxin and other pollutants.

Rules/Policy

Infectious wastes can be incinerated in a hospital/medical/infectious waste incinerator. These wastes can also be disposed of in landfills, provided (1) the waste has been previously treated in autoclaves or microwave technology to meet disinfection standards, (2) approval has been obtained from the Waste Management Division of the Department of Environmental Services (DES), and (3) notification is given by the transporter to the receiving facility prior to disposal. Shredding or otherwise rendering the waste unrecognizable is not required.

DES does not require manifests or licensing of transporters for the transportation of infectious waste, however, there are requirements for *how* the waste is transported. Untreated waste transported off-site for treatment and disposal must be double-bagged in non-permeable, 3 mil polyethylene (or equivalent) and labeled as infectious waste with the transporter's name and address. Sharps must be encased in rigid, puncture-resistant containers within the double bags. Additional transportation and packaging requirements have been adopted by the United States Department of Transportation (US DOT) under their Hazardous Materials regulations. For the specifics on these federal requirements, the US DOT should be contacted directly at (603) 225-1626.

Summary

The incineration of infectious wastes can contribute significantly to the levels of mercury, dioxin and other air pollutants. Autoclaving and microwave technology are alternatives to incineration that do not cause the release of the pollutants. Education about how to best manage and dispose of infectious wastes can alleviate some of the concerns about infectious waste management. The Department needs to educate hospitals and other members of the health care industry about additional solutions to managing infectious waste. As we learn more about the harmful effects of certain disposal methods, the Department should conduct coordination and outreach efforts. The health care industry and product manufacturers need to recognize their role in the management of infectious wastes and contribute input to efforts to promote safe disposal methods.

Motor Vehicle Salvage Facilities

Background

The motor vehicle salvage industry plays a key role in managing a significant volume of solid and hazardous waste. The Department estimates that there are more than 300 motor vehicle salvage yards in the state, with on-site inventories ranging from less than 50 to more than 500 vehicles. Roughly 75 percent of the material in a vehicle is recycled, conserving natural materials and energy.

Health and Environmental Issues

Properly managed salvage yards can contribute significant environmental benefits. When parts are available from the salvage yard, it is not necessary to manufacture new ones (source reduction). Salvage yards also recycle tons of scrap metal and other materials. However, a poorly managed facility can have a serious impact on environmental quality. The typical motor vehicle salvage yard handles a broad range of fluids (gasoline, oil, lubricants, brake fluid, transmission fluid); each has the potential to contaminate groundwater, surface water and soils if not properly drained and contained. Additional hazardous wastes are handled by the industry, including mercury-containing switches, air bag propellants, and lead parts, such as wheel weights. Other wastes of concern include asbestos brake shoes and clutches, solvents for cleaning parts, soiled shop wipes, lead acid batteries, sludge from oil/water separators, certain types of antifreeze, and chlorofluorocarbons (CFCs). Each of these wastes must be managed without a release to the environment or employee exposure.

Rules/Policy

At present, motor vehicle salvage facilities are regulated by various separately managed programs within local, state and federal government. Since none of those programs provide comprehensive oversight of *environmental* concerns, a key objective of the department is to promote environmentally sound operating practices through integrated management of the existing requirements and a proactive program of pollution prevention.

The Department has been working on an initiative to establish a program for improving environmental management practices within the motor vehicle salvage industry. An important component of this initiative is Best Management Practices (BMPs), which provide guidance for proper management of the wastes. Leaders of the industry have been involved in the development of this program, and have helped to strengthen the proposed rules, which are envisioned to require registration of motor vehicle salvage yards.

The Department of Environmental Services has two main objectives in this initiative. First, we will promulgate and implement program rules; second, we will establish and maintain an inventory of environmental problems at motor vehicle salvage yards. This effort will be implemented through a variety of methods, including education/outreach, and compliance/enforcement. The industry should continue to play an active role and should assist in educating their colleagues through their own organizations.

Summary

To achieve maximum environmental protection and benefits, the Department of Environmental Services will continue to work with the motor vehicle salvage yard industry. This is an area where there are many opportunities for improvement, and most of them are relatively inexpensive to implement. Through the efforts of the Department and the industry, we can reap the benefits of this industry without long-term impacts to the environment.

ScrapTires

Background

The Rubber Manufacturers Association (RMA) reported in 2001 that tire markets had consumed approximately 218 million tires out of 292 million tires generated that year in United States. Of this amount, approximately 84% is from light passenger vehicles, 15% to light and heavy trucks and 1% from heavy vehicles (e.g., aircraft). In addition, the RMA reported that at least 40 million tires were used in civil engineering applications, including 25 million scrap tires used in landfill applications. An estimated 30 million tires were reused, with approximately half of that amount exported.

Facts about Scrap Tires

- *A steel belted tire has about 2.5 pounds of steel.*
- *Each tire has the equivalency of 7 gallons of oil.*
- *Each tire has about 15,000 BTUs per pound of rubber*

(Source: North Carolina P2 Program)

The amount of scrap tires generated in New Hampshire is estimated using the formula of one tire/person/year, with each tire estimated to weigh 20 pounds (without rims and for passenger cars). In 2001, the estimated number of scrap tires generated in New Hampshire was at least 1,259,000 tires or about 12,600 tons.

Health and Environmental Issues

If improperly managed, scrap tires pose a significant fire threat and offer breeding sites for mosquitoes and other vermin. Tire fires are extremely hazardous to public safety and the environment. When tires burn, they produce a black plume of acrid smoke with potentially toxic gases and an oily residue that spreads the fire and contaminates the soil and surrounding surface waters. In addition, because tires are such a good fuel with a higher per pound heat output than most coal, tire fires are difficult to extinguish.

Scrap tires left outdoors fill with rainwater and provide a breeding place for certain species of mosquitoes that have adapted to breeding in water-filled tires. Before there were tires, these mosquitoes, called "container breeders", would breed in natural containers such as tree cavities. Mosquitoes can transmit diseases such as the West Nile Virus, yellow fever, dengue, LaCrosse encephalitis, and eastern equine encephalitis. In 1999, the concerns over proliferation of the West Nile Virus prompted federal and State officials to urge communities and businesses to reduce unnecessary piles of tires and to cover those piles that remain.

Recycling Options

The principal market for tires is tire-derived fuel for cement kilns, pulp/paper mills, electric utility boilers, and industrial boilers. Other applications include civil engineering applications, products, export and agriculture. Whole tires have several uses, including playground equipment, retaining walls, planters, artificial reefs, and weights on covers over silage or hay. Split tires become the feedstock in the manufacturing of floor mats; bumpers on loading docks, wharfs, and docks; and mats for blasting. Shredded tires have many applications, including use in septic systems, road construction, and landfill cover. Crumb rubber from tires is used in products such as running tracks, carpet padding, playgrounds and rubber modified asphalt.

In New Hampshire, tires are generally collected for disposal/recycling through the local community transfer station or through the tire retailer where new tires are purchased. The local

transfer station or tire retailer will usually charge to take scrap tires to cover the cost of hauling and disposal. Unfortunately, these charges can be a disincentive for proper removal and some residents may dispose of tires on back roads, the woods, or on personal property. In addition, those communities that do not charge for tires become the unintended regional collection center, receiving tires from the residents of the surrounding towns that charge for tires.

Scrap tires collected at the local transfer station are typically stockpiled outside until there is enough for a trailer load. A few communities carefully stack tires in a closed box trailer, maximizing the number of tires in a load and preventing the accumulation of water in the tires. The charge for hauling and disposing of tires is usually based on weight in tons, which, in the year 2001, translated to about $1.00 - $1.50/tire.

Several communities have adopted a vehicle registration fee for collecting and disposing of tires, motor oil and motor vehicle batteries. The fee is an additional amount paid by the resident when registering their vehicles at the town or city clerk's office. The money is placed in a town reclamation trust fund for the purpose of paying for collection and disposal of the town's motor vehicle wastes. Any excess monies in the fund can be used for the purpose of recycling and reclamation of other types of solid waste.

Rules and Policies

Scrap tires are regulated as a solid waste in New Hampshire by the Solid Waste Rules. The rules cover requirements for collection, storage and transfer; processing and treatment; disposal; reuse and limitations for reuse; transportation; and testing and reporting. A solid waste permit is required to collect, store and transfer scrap tires unless the tires are sent directly for salvage and re-use as tires. No permit is required to actively collect, store and transfer source separated tires that pass inspection in New Hampshire and are to be re-used as tires. However, a permit is required to collect mixed loads of usable and non-usable tires where the usable tires are then sorted out for future sales.

Collection, Storage and Transfer Tires may be collected and stored in outdoor transfer containers or stockpiled on the ground. Outdoor stockpiles of tires must be underlain by asphalt, concrete or packed soil. To reduce the adverse environmental effects of fires, tire piles must be no greater than 25 feet in diameter and less than 15 feet in height with fire lanes 25 feet in width around each pile. Each pile must have a minimum of a 12-inch berm to prevent any release of oils and liquids in the event of a fire. Further, the solid waste facility must have enough equipment, water, cover material and other supplies sufficient to control a fire until the nearest fire company capable of extinguishing the fire arrives. If stored indoors, the storage facility must comply with the Standards for Storage of Rubber Tires, N.F.P.A. 231D, 1994 edition, as adopted by the National Fire Protection Association, and as it may be amended.

Scrap Tire Piles

During the last decade, many tires in NH were collected for use as a drainage layer for landfills undergoing closure, such as the Rocketenetz Landfill in Pelham. As such, many of the smaller tire piles were eliminated. As of 2001, the State currently has about 225,00 tires remaining in piles.

Processing and Treatment Scrap tires must be processed or treated in accordance with Chapter Env-Wm 2200 of the Solid Waste Rules. A scrap tire processing or treatment

facility must properly account for and manage all bypass and residual waste (including ash) generated by the treatment process. The processing of tires by chipping and shredding must be done in a manner to limit noise, odor and dust emissions to the greatest extent possible. If the treatment method is by incineration, additional requirements apply, as specified by Chapter Env-Wm 2400 of the Solid Waste Rules.

Alternative Uses Manufacturers interested in using processed tires for feedstock in products or for uses in projects (e.g., construction, highway) must first ensure that the final usage is "certified for direct reuse"; which is detailed in Env-Wm 3200 of the Solid Waste Rules. Under this process, the applicant makes the demonstration to the DES that the use of the tires in the eventual project or product presents a legitimate use as an ingredient and will present no greater harm to the environment upon usage or disposal.

Disposal Scrap tires are to be disposed of at authorized facilities only. When landfilled, scrap tires must first be quartered, split or shredded to prevent the tire from floating to the surface. Waste-to-energy incinerators that are permitted and properly equipped may burn scrap tire chips to create energy and reduce the volume of tires landfilled. However, such facilities typically also require that the tires be at least quartered and limit the number of tires per transport. The open burning of tires as a mechanism of disposal is prohibited.

Summary

Because scrap tires pose a significant fire threat and provide breeding grounds for mosquitoes and other vermin, proper management and disposal is important to protecting public health and the environment. Scrap tire pile management has greatly improved in New Hampshire since the Hunt Tire Pile fires in October 1984 and September 1989. Since these fires, new rules have been promulgated requiring proper management of tire piles. Given the abundance of scrap tires and the long term wear and affordability of new tires, markets for scrap tires have been very slow to develop. Tires still have a negative value in that one has to pay for removal. This situation is exacerbated due to long distances to facilities and increased supplies of tires due to events such as tire recalls and the removal of tires to prevent mosquito-breeding areas.

Universal Wastes

Background

"Universal wastes" are wastes which meet the definition of hazardous waste in the NH Hazardous Waste Rules, but which, during accumulation and transport, pose a relatively low risk compared to other hazardous wastes. Many of these universal wastes are post-consumer type wastes that have toxic qualities associated with their structure or formulations and frequently are disposed of in the solid waste stream. Wastes which DES has determined meet universal waste criteria include used antifreeze, mercury-containing lamps and devices, certain types of batteries, Cathode Ray Tubes (CRTs); and recalled or suspended hazardous waste pesticides regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Health and Environmental Issues

- Antifreeze is used as an engine coolant and commonly consists of ethylene glycol or propylene glycol. Antifreeze breaks down over time and forms acids that corrode a vehicle's cooling system. During its use, antifreeze may become contaminated with traces of fuel, metal particles, and grit. Benzene, lead, and other hazardous constituents may cause used automotive antifreeze to be characterized as a hazardous waste.

- Mercury is a heavy metal that can accumulate in living tissue and cause adverse health effects. When a mercury-containing waste is disposed of in a solid waste landfill or incinerator, the mercury can contaminate air, soil, surface water and groundwater. In New Hampshire, mercury has been detected in freshwater fish and a statewide fish consumption advisory has been issued by the NH Department of Health and Human Services.

- Nickel cadmium (Ni-Cd) batteries are the most common type of rechargeable battery in use today. These batteries are found in many products, such as power tools, camcorders, notebook computers and cordless telephones. The advantage of Ni-Cd batteries is that they can be recharged over and over again. Eventually, however, the battery is depleted and requires disposal. The problem with disposing of Ni-Cd batteries is that they contain cadmium, a known cancer-causing heavy metal. As long as the cadmium remains in the battery casing, there is no risk. If the battery is disposed of, though, the heavy metals may be released into our environment through landfill leachate or incinerator emissions and ash. Other types of batteries may contain lithium (which is reactive), mercury and silver (both hazardous).

- Cathode Ray Tubes (CRTs) are glass tubes used to provide the visual display in televisions, computer monitors, and certain scientific instruments. The average CRT contains five to eight pounds of lead to shield the viewer from electromagnetic radiation. The lead has the potential to become airborne if incinerated or released to groundwater over long periods of time. Lead has been known to cause neurological and other toxicological effects on humans and other animals.

- Pesticides are any substances or mixtures of substances intended for preventing, destroying, repelling, or mitigating any pest. Mismanagement causes human and environmental impacts.

Rules/Policy

Due to the concerns listed above, the NH Department of Environmental Services (DES) has developed a policy on universal wastes that promotes recycling, pollution prevention and safe handling methods. Universal waste from businesses, industry and institutions may **not** be disposed of as a solid waste unless they are below the regulatory limits for mercury when subjected to a toxicity test required by the U.S. Environmental Protection Agency and DES. Many mercury-containing devices, including thermostats, exceed the hazardous waste regulatory limit for mercury toxicity of 0.2 milligrams per liter. Generators of waste are responsible for determining whether their wastes are hazardous and, if so, managing these wastes in accordance with the requirements of the NH Hazardous Waste Rules. These requirements may include use of a hazardous waste manifest, NH registered hazardous waste transporter, and delivery to an authorized hazardous waste facility.

Alternatively, universal waste may be handled under the less stringent requirements of the Universal Waste Rule. Under this Rule, hazardous waste generators are not required to include universal waste in their calculation of generator status in accordance with the NH Hazardous Waste Rules, Env-Wm 503. Universal wastes, when recycled, are also not subject to the generator fee required by Env-Wm 512.02. A facility may collect universal waste from other sites or generators without a permit, provided the facility meets the handler requirements and complies with other applicable federal, state, and local regulatory requirements. A "handler" of universal waste means: (1) a generator of universal waste; or (2) an owner or operator of a facility that receives universal waste from other handlers, accumulates the waste, and sends the waste to another handler or to a destination facility.

Also, convenient recycling of Ni-Cd batteries is available to New Hampshire municipalities. The NH Department of Environmental Services (DES) and the Rechargeable Battery Recycling Corporation (RBRC), a non-profit public service organization created by the Rechargeable Power Industry, work together to provide a free household Ni-Cd battery recycling program called "Charge up to Recycle!" Batteries containing silver can also be recycled.

Summary

Universal wastes are hazardous, but because they are so common, the Universal Waste Rule makes it easier to separate and collect these wastes to keep them from contributing to the toxicity of the waste stream. The Rule covers used antifreeze, mercury-containing lamps and devices, certain types of batteries, Cathode Ray Tubes (CRTs), and recalled or suspended hazardous waste pesticides regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Used Oil

Background

To provide financial support for the proper collection of Do-It-Yourselfer (DIY) used oil, the State collects a fee of $0.02 per gallon on the import of virgin automotive oil. The monies are deposited into a dedicated portion of the NH Hazardous Waste Cleanup Fund and used to award grants to establish, improve or operate used oil collection centers. Political subdivisions, other governmental entities and private businesses that are registered state motor vehicle inspection stations are eligible to apply for grants.

Health & Environmental Issues

Used oil is the result of normal use in motor vehicles and motorized equipment. After use, motor oil may contain a number of contaminants, including metals and organic chemicals. It is estimated that approximately 3 million gallons of used oil are generated in New Hampshire each year. As much as 50 percent of this amount may be generated by Do-It-Yourself (DIY) oil changers. Proper management of used oil is important to help prevent contamination of surface water and groundwater.

It takes only one pint of oil to produce a one-acre slick on surface water which may kill plants, fish and other wildlife. One quart of oil can contaminate 250,000 gallons of groundwater and make it unsafe to drink. DIY used motor oil should not be disposed of in the trash or on the ground where it may eventually contaminate drinking water supplies. It should not be spread on roads or driveways or poured down storm sewers where it may be carried to lakes and streams.

The goal is for DIY used motor oil to be recycled or reused. One gallon of used oil can be rerefined into 2.5 quarts of recycled lubricating oil, whereas it takes 42 gallons of crude oil to produce this same amount of virgin lubricant. When meeting the proper specifications, used oil can also be efficiently used as fuel in approved boilers or furnaces.

Rules/Policy

Because of its flammability and tendency to become contaminated during its use, used oil is listed as a hazardous waste under the Hazardous Waste Rules. However, to facilitate the recycling of used oil, Part Env-Wm 807 of the Rules governs "Requirements for Management of Used Oil being Recycled." This Part reduces much of the regulatory burden when used oil is recycled rather than incinerated without energy recovery. There are sections in Part 807 that address the requirements for generators, transporters, marketers of used oil being recycled and burners of used oil fuel.

Summary

Even with the alternatives of electric and solar-powered vehicles, there will still be a significant amount of used oil generated in the coming years. Technology has not yet replaced oil, which

means that it is incumbent upon everyone to properly manage used oil. Readily accessible collection centers and recycling are the solutions.

There are around 27 towns that do not have collection facilities. The Department's goal is to have at least one outlet for DIY used oil in each town. The Department will continue to encourage these particular towns to apply for grant funds and the towns should make this a priority. If towns are not interested, private enterprises can apply for the grants as well. Convenient access to citizens is key to the success of this program.

As the number of towns without access goes down, the Department will devote more time to compliance assurance to protect the environment from used oil releases and to maximize the amount of used oil that is recycled.

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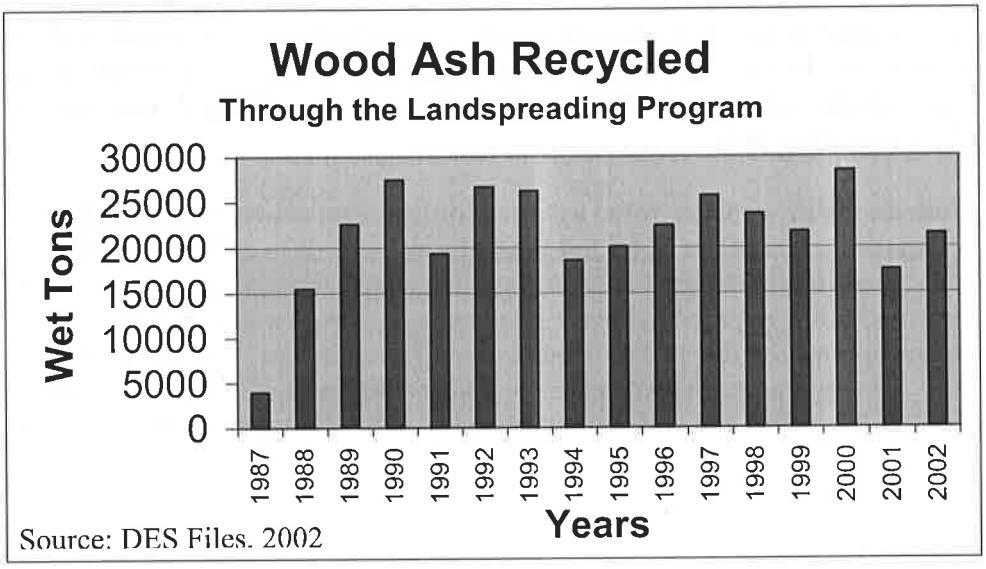
4.3.3. **Wood Ash**

Background "Wood Ash" is a residual material produced when wood is burned, and is defined as solid waste in accordance with RSA 149-M. As a result of the energy crisis, and heavy dependency on foreign oil in the 1970's, the United States Department of Energy encouraged the development of alternative energy sources. It was during this time that the "wood fired" power plants developed as an industry in New Hampshire. The primary fuel utilized by the power plants is whole tree chips, mostly derived from forest thinning and development clearing. The growth of this industry produced a sudden and large increase in the generation of wood ash in the state. In the years prior to 1986, thousands of tons of wood ash generated by wood fired power plants were being disposed in landfills annually.

The wood fired power plants generate electricity from a regional, renewable source and the resulting by-product is completely recyclable. In 1986, the Department of Environmental Services and the Department of Agriculture, Markets and Food, with guidance from the UNH Cooperative Extension, entered into a formal policy to encourage the use of wood ash as a liming agent which raises the pH of the soil on farmland. The use of a liming agent is essential to a soil fertility program, especially in New Hampshire, where many soils tend to be naturally acidic. Wood ash also has significant amounts of potassium, magnesium and phosphorus, which are micro and macronutrients beneficial to plant growth. Today, there are six wood fired power plants operating in New Hampshire to provide the state with approximately 4% of its electricity or 90 megawatts of power. Currently, five of the six power plants recycle all the wood ash they generate.

Generation The total amount of wood ash recycled in New Hampshire during 2002 was 21,483 wet tons, with approximately 18% of that amount imported from Maine and Vermont plants. Since 1987, nearly 350,000 wet tons of wood ash have been recycled and diverted from landfills. It is estimated that NH farmers save over $500,000 a year by using wood ash instead of commercial lime.



Health and Environmental Issues- Crystalline silica, also known as quartz, is a natural component in the earth's crust, and is a basic component of wood ash. The health concern of utilizing wood ash is one of dust. Precautions should be taken when working with wood ash that might include choosing not to spread the ash on a windy day, covering stockpiles, and wearing a dust mask when handling the ash. Long-term inhalation exposure to crystalline silica may cause fibrosis (silicosis) or chronic bronchitis. Also, the Department of Agriculture, Markets and Food recommends waiting 30 days before turning animals out onto a field that has been spread with wood ash.

Wood ash is caustic, and usually has a pH of 11 or greater. Therefore, when physically working with the ash, one should wear gloves, and wash with soap and water after handling.

Will wood ash affect ground and surface waters? The wood ash is tested throughout the year, and has to meet stringent requirements for heavy metals before it is allowed to be used for any agricultural purpose. Wood ash is land-applied only at levels that meet soil and crop needs, thus reducing the potential for run-off problems, and risk of groundwater contamination. DES has developed environmental guidelines for land spreading setback distances from houses, wells, surface water bodies, roadways and property boundaries to further protect the integrity of our state's water systems. No ash may be spread on frozen ground or on slopes of land greater than 15%. That is why it is a requirement for each receiving site to have a farm management plan in place before wood ash is delivered. Each site also must document and maintain records of cumulative loading of heavy metals, as required by Env-Wm 3404.05.

Disposal/Recycling Options The five wood fired power plants in New Hampshire which are permitted by DES, are recycling 100% of their wood ash. Over the years, the number of uses for wood ash has increased. Wood ash has become popular as an odor control agent for biosolid stockpiles, or compost bulking agents. Wood ash is also used as an ingredient in manufactured topsoil, and one of the major components in a product known as "lime-ash". Wood ash characteristics vary from plant to plant, and the discreet characteristics tend to lend the ash to different uses. For example, wood ash generated at Bridgewater Power Co. (located in Ashland) is always high in carbon content, and well suited for composting and odor control of biosolids, or manufacturing of topsoil. However, Pinetree Power, in Tamworth generates an ash with a high calcium/carbonate equivalence (more liming capability/less carbon) and therefore is more suitable for land spreading. Because of the expanded uses of wood ash and fixed supply, currently the demand exceeds the supply.

Rules/Policies DES regulates wood ash used for land application in accordance with Chapter Env-Wm 3400 of the NH Solid Waste Rules. Env-Wm 3403.02 sets forth analytical standards and requirements for sampling and analysis of the ash. Every site receiving wood ash is required to have a farm management plan that includes soil analysis, and application rate recommendations approved by the UNH Cooperative Extension. The joint policy between DES and the Department of Agriculture, Markets and Food is still in effect and was last modified in 1997. All other uses for wood ash are

regulated under Env-Wm 3200, "Certified Waste Derived Products"; however, only wood ash that is certified in accordance with Chapter Env-Wm 3400 may be utilized in other agricultural applications.

Wood ash derived from the burning of clean and /or virgin wood and certified pursuant to Chapter Env-Wm 3400 is required to be sampled monthly, and analyzed quarterly for the parameters listed in Env-Wm 3403.02. The quarterly reports are submitted to DES for review. The wood ash may never exceed those quality standards. At the end of the calendar year, each generator of wood ash must file an inventory with DES, detailing the final destination of the ash. If the ash was land spread, the generator is also responsible to ensure that the receiving site has an approved farm management plan (including soils analysis), and the cumulative metals loading is calculated and tracked, not to exceed standards referenced in Env-Wm 3404.05. If the ash is going to a compost facility, or to a lime/ash or topsoil manufacturing site, then the inventory records only need to document the date of delivery, amount delivered and name/address of recipient.

The DES responsibility for the program is one of oversight and environmental compliance. Since the proper use of wood ash includes the disciplines of plant biology, agronomy, and soil science, the program could not be successful without the active roles played by the UNH Cooperative Extension and the NH Department of Agriculture, Markets and Food.

Future Needs/Recommendations The future of wood fired power plants in New Hampshire is uncertain. The deregulation of public utilities in this state has caused some economic hardship for these facilities, and their ability to compete in a new energy marketplace has not yet been determined. Due to plants shutting down, in the next few years, there may continue to be a shortage of this beneficial residual.

Summary As early as 1986, DES recognized that it was important to "close the loop" in our recycling strategy for wood ash. Through an inter-agency, cooperative effort, we have diverted nearly 350,000 tons of ash from the landfills, and provided farmers with a liming agent (saving NH farmers half a million dollars a year). New Hampshire is fortunate to be able to support an industry that reduces our dependence on foreign fossil fuels, provides energy derived from a renewable resource that can be obtained locally, and produces a beneficial residual end-product.